80.10.07: STANDARDS OF DESIGN AND IMPROVEMENT FOR SUBDIVISIONS

EXECUTIVE SUMMARY OF PROPOSED CHANGES

1. Integration of State Standards (INDOT)

The revised document corrects erroneous references to state code and eliminates generalized references in favor of the INDOT Standard Specifications. By explicitly binding every foundational layer—moving from the Subgrade (A.27) up through the Subbase (A.28) and final Pavement Courses (A.29)—to specific state codes (such as INDOT Sections 203, 207, 301, 402, and 502), the county removes legal ambiguity, protects itself from contractor disputes, and ensures all infrastructure meets state-vetted highway engineering practices.

2. Upgraded Road Lifespans & Structural Design

The revision updates the code to current standards:

- Asphalt (Flexible Type HMA): Total asphalt material thickness has been increased by over 60%—moving from 4-inch standard to 6.5-inch structural footprint. It introduces a required 2-inch Intermediate/Binder course that was missing from the original design to ensure proper load distribution.
- Concrete (Rigid Type PCCP): Pavement design has been standardized into clean, uniform class tiers (6", 7", and 8" profiles) paired with universal INDOT No. 53 aggregate bases, eliminating the confusing layout of the original text.

3. Shift from "Visual Inspection" to Strict Quality Assurance (QA)

Under the original document, field procedures were descriptive, while formal testing was generalized at the end of the text. The revision establishes QA requirements at every phase of construction:

- Foundational Validation: Construction cannot proceed past the initial phase without the Subgrade (A.27) and Subbase (A.28) undergoing mandatory proof-rolling, moisture-density testing, and formal inspection under INDOT Section 203.
- Independent Oversight: The burden of quality control is shifted entirely onto the developer, mandating that independent, INDOT-certified field technicians perform standardized testing (AASHTO methods) on-site.
- Continuous Field Tracking: The county introduces field validation metrics, including mandatory plastic concrete testing for every 50 cubic yards, strength samples for every 100 cubic yards, nuclear density gauge tracking on individual asphalt layers, and a mandatory compliance ticket/JMF report for every single haul truck delivering material to the job site.

CURRENT CODE

27. The subgrade shall be prepared in compliance with Section 207 of the Standard Specifications.

28. The subbase, where required, shall be prepared in compliance with Section 304 of the Standard Specifications. Special subbase drainage in areas of cuts, swales and fills shall be as set out in the approved plans and specifications.

29. The street surface shall be of Portland Cement Concrete materials and construction shall be in accordance with Section 501 of the Standard Specifications and subparagraph 1 below. Hot Asphalt Concrete materials and construction shall be in accordance with Section 403 of the Standard Specifications and subparagraph (b) below. In case of a proposed alternative method, discrepancy, omission or duplication in the required specification standards, the decision of the Franklin County Highway Supervisor or respective Town Board of Trustees shall be sought and considered final.

(a) Rigid Type Pavement (Portland Cement Concrete)

1. Minimum design characteristics of street pavement shall be as follows:

a. 6% air entrained

b. 28-day compressive strength = 4000 p.s.i, 28-day flexural strength = 550 p.s.i.

c. Thickness to conform to the following schedule:

Thickness Residential	Collector	Arterial	Feeder	Concrete Aggregate
7"	8”	6”		
4”	4”	6”		

Subject to review by the Franklin County Highway Supervisor or respective Town Board of Trustees.

2. Portland Cement Concrete pavement shall be in accordance with Section 501 of the Standard Specifications. In addition, the following shall govern and be met:

a. The subgrade shall conform to Section 501.05 and Section 207 of the Standard Specifications. Subgrade shall be moist but not muddy at the time the concrete is placed. If required, it shall be sprinkled, but the method of sprinkling shall be such that mud or pools of water will not be formed,

b. Subbase, if required, shall meet the above minimum thickness requirements and conform to Section 304 of the Standard Specifications.

c. Weakened plane or dummy transverse contraction joints shall be placed not to exceed twenty (20) foot spacing. A transverse contraction joint shall be placed at every catch basin and manhole in line of pavement. The location of manholes, etc., in the pavement shall determine the exact location of joints. All joints must extend throughout sidesteps to full width of pavements. Transverse contraction joints will be a groove and conform to Section 501.04 of the Standard Specifications.

d. Whenever the width between forms of the pavement under construction is greater than thirteen (13) feet, longitudinal joints shall be constructed so as to divide the pavement into strips not to exceed thirteen (13) feet each. Work shall conform to Section 501.14 of the Standard Specifications.

e. Expansion joints, with approved dowel bar assembly, shall be placed at intersections where shown on the plans and shall conform to Section 501.15.

f. Concrete shall be machine finished except on widened portions, intersections, or other places where hand finishing will be permitted if authorized. Finishing machines or vibrating strike-boards of design other than as specified in the Standard Specifications will be permitted only if work of equal quality as set out in these specifications is obtained. Authorization prior to construction is required. Work shall conform to Section 501.15 of the Standard Specifications.

g. Curing with approved impervious membrane or sealing compounds shall be required, conforming to Section 501.17 of the Standard Specifications. Pavement

(b) Hot Asphalt Concrete

1. Thickness of a proposed asphalt residential street:

Surface asphalt: one (1) inch. No binder base required

Base asphalt: three (3) inches

Total asphalt: four (4) inches

Aggregate subbase: four (4) inches of suitable aggregate base and two (2) inches of suitable finish stone,

2. Asphalt pavement shall be in accordance with Section 403 of the Standard Specifications. In addition, the following shall be met:

a. The subgrade shall conform to Section 403 of the Standard Specifications.

b. Subbase, if required, shall meet the above minimum thickness requirements and conform to Section 403 of the Standard Specifications.

c. Base, binder and surface coarser shall meet the above minimum thickness requirements and conform to Section 403 of the Standard Specifications,

d. Seal coats, prime coats and tack coats shall conform to Section 403 and Sections 407, 408 and 409 (as applicable) of the Standard Specifications.

30. Samples for testing purposes shall be taken as required by the appropriate section of the Standard Specifications. All tests shall be performed in accordance with the appropriate section of the Standard Specifications. All testing shall be performed by a certified agency approved by the respective Town Board of Trustees if the plat of the subdivision is proposed to be located in a Town, or the Franklin County Highway Supervisor if the plat is proposed to be located in the unincorporated territory. All testing costs shall be paid by the developer. A complete certified copy of all records shall be provided to the Town Board or County Highway Supervisor, as the case may be. The Town or County Highway Supervisor reserves the right to core the pavement before acceptance.

PROPOSED REVISIONS

A.27. The subgrade shall be prepared, compacted, and stabilized in strict compliance with INDOT Section 207. Prior to the placement of any aggregate subbase or pavement material, the prepared subgrade must undergo mandatory inspection, proof-rolling, and density verification testing in accordance with INDOT Section 203, to be documented by the developer's independent, INDOT-certified technician.

A.28. The subbase, where required, shall be prepared in compliance with Section 302 of the INDOT Standard Specifications. Special subbase drainage in areas of cuts, swales, and fills shall utilize approved open-graded aggregate layers (e.g., INDOT No. 8) or underdrains as set out in the approved plans and specifications, conforming to INDOT Section 301 and Section 302.

A.29. Subdivision roadway surfaces shall be constructed of either Portland Cement Concrete Pavement (Rigid Type PCCP) or Hot Mix Asphalt (Flexible Type HMA) as acceptable options. Materials, design, and construction for the selected pavement type shall strictly adhere to the INDOT Standard Specifications and the specific structural and testing requirements outlined in subparagraphs (a) and (b) below.

In case of a proposed alternative method, discrepancy, omission, or duplication in the required specification standards, the final determination shall be made by the Franklin County Highway Supervisor or the respective Town Board of Trustees.

(a) Rigid Type Pavement (Portland Cement Concrete Pavement - PCCP)

1. Minimum Design Characteristics: Street pavement design and materials shall comply with INDOT Section 502 (Portland Cement Concrete Pavement, Non-QC/QA) and meet the following minimum thresholds:
2. Air Content: 6.0% pm, 1.5% air-entrained.
3. Strength: 28-day compressive strength = 4,000 p.s.i., or
   28-day flexural strength = 550 p.s.i.
4. Thickness Requirements: Pavement and subbase thicknesses shall conform to the following schedule based on roadway classification:

Roadway Classification	PCCP Thickness	Compacted Aggregate Subbase (No. 53)
Residential	6 inches	4 inches
Collector	7 inches	4 inches
Arterial Feeder	8 inches	6 inches

1. Quality Assurance and Testing Requirements:

a. Mandatory field and laboratory testing shall be conducted at each stage of construction. All testing must be performed by an independent, INDOT-Certified Technician (Certified Concrete Field-Testing Technician). All costs associated with testing, sampling, and laboratory analysis shall be borne solely by the developer. A complete certified copy of all records shall be provided to the Town Board or County Highway Supervisor, as the case may be. The Town or County Highway Supervisor reserves the right to core the pavement before acceptance.

b. Subgrade/Subbase: Inspection, proof-rolling, and moisture-density testing shall be performed in accordance with INDOT Section 203 and Section 301 prior to any concrete placement.

c. Plastic Concrete Testing: Sampling and testing for slump American Association of State Highway and Transportation (AASHTO T 119), air content (AASHTO T 152), and concrete temperature shall be performed for every 50 cubic yards (or fraction thereof) of concrete placed.

d. Strength Verification: A minimum of one set of four (4) test cylinders or beams shall be cast for every 100 cubic yards placed to verify 7-day and 28-day compressive/flexural strengths (AASHTO T 22 / T 97).

e. Thickness Verification: Core drilling may be required at the discretion of the County Highway Supervisor to verify final pavement thickness in accordance with INDOT Section 502.22.

(b) Flexible Type Pavement (Hot Mix Asphalt - HMA)

1. Asphalt pavement materials, mixture types, and layer applications shall conform strictly to INDOT Section 402 (Hot Mix Asphalt Pavement for local and commercial applications). The minimum structural thickness layers for a standard residential subdivision street shall be as follows:

   a. HMA Surface Course: One and one-half (1.5) inches minimum compacted thickness (utilizing HMA 9.5 mm mix design criteria).

   b. HMA Intermediate Course: Two (2) inches minimum compacted thickness (utilizing HMA 19.0 mm or 12.5 mm mix design criteria).

   c. HMA Base Course: Three (3) inches minimum compacted thickness (utilizing HMA 25.0 mm mix design criteria).

   d. Total HMA Pavement Thickness: Six and one-half (6.5) inches minimum combined asphalt material.

   e. Compacted Aggregate Subbase: Four (4) inches of INDOT Compacted Aggregate No. 53 Base and two (2) inches of suitable finish stone, or an approved uniform six (6) inches of Compacted Aggregate No. 53 conforming to INDOT Section 301.

2. Material and Construction Standards:

   a. Subgrade: Subgrade preparation, compaction, and stabilization treatments shall conform strictly to INDOT Section 207.

b. Subbase: Aggregate bases shall conform directly to INDOT Section 301.

c. Paving Courses: Base, Intermediate, and Surface mixtures, plant parameters, and paving machine laydown operations shall conform to INDOT Section 402.

d. Tack and Prime Coats: Liquid asphalt applications including tack coats and prime coats shall conform to INDOT Section 406 and Section 405 (as applicable) to guarantee layer bonding.

3. Quality Assurance and Testing Requirements:

a. Mandatory field testing must be performed at each phase of construction by an independent, INDOT-Certified HMA Technician under the INDOT Qualified Technician Program (QTP). All costs associated with testing, sampling, and laboratory analysis shall be borne solely by the developer. A complete certified copy of all records shall be provided to the Town Board or County Highway Supervisor, as the case may be. The Town or County Highway Supervisor reserves the right to core the pavement before acceptance.

b. Subgrade and Aggregate Subbase: Compaction and density testing must be successfully completed and documented via nuclear gauge or light weight deflectometer (LWD) per INDOT Section 203 before any HMA is applied.

c. Mixture Quality Documentation: A Certified Plant Report / Job Mix Formula (JMF) ticket showing compliance with INDOT mix parameters must be submitted to the inspector for every haul vehicle delivering material to the job site.

d. In-Place Density Testing: The developer’s certified technician must perform density, compaction, and mat temperature testing of each individual compacted asphalt course (Base, Intermediate, and Surface) using a calibrated nuclear density gauge in accordance with INDOT Section 402.15.

e. Surface Tolerances: The finished HMA Surface course layer shall be tested for smoothness. Any surface variations exceeding INDOT tolerances must be profile-corrected or replaced immediately at the developer's sole expense.