

**HARDEE COUNTY
RESOLUTION NO: 2023-53**

**A RESOLUTION OF BOARD OF COUNTY COMMISSIONERS OF
HARDEE COUNTY, FLORIDA, ADOPTING THE TECHNICAL
STANDARDS MANUAL FOR HARDEE COUNTY; PROVIDING
FOR CONFLICTS, SEVERABILITY, AND AN EFFECTIVE DATE.**

WHEREAS, the Hardee County Unified Land Development Code Appendix A – Engineering Design Standards Manual includes information relating to engineering design for development within the County; and

WHEREAS, portions of Appendix A of the Land Development Code are relocated into the Unified Land Development Code via Ordinance 2023-53.

WHEREAS, the County desires to adopt a Technical Standards Manual that will include the remaining information currently contained in Appendix A of the Land Development Code and deleted via Ordinance 2023-xx; and

WHEREAS, in accordance with the procedures required by Chapter 125, Florida Statutes, and other applicable law, the regulations contained within this resolution were considered by the County’s Planning and Zoning Board, sitting as the Local Planning Agency (LPA) as designated by the Board of County Commissioners, at a duly advertised public meeting on TBD date, at which time interested parties and citizens had the opportunity to be heard and such regulations were recommended to the Board of County Commissioners for adoption; and

WHEREAS, the Board of County Commissioners, after taking into consideration the recommendations of the Planning and Zoning Board and the County Staff, and the comments received during the public hearing process, finds that the proposed revisions and amendments are appropriate, desirable, and in the best interests of the County.

NOW THEREFORE BE IT RESOLVED, by the Board of County Commissioners of Hardee County, Florida as follows:

Section 1. RECITALS. The foregoing “WHEREAS” clauses are hereby adopted, ratified, and confirmed as being true and correct and are made a specific part of this Resolution as the Board of County Commissioner’s legislative findings and intent pertaining to this Resolution.

Section 2. PUBLIC WORKS MANUAL. The Technical Standards Manual of Hardee County is hereby adopted as shown in Exhibit “A,” which is attached hereto and made a part hereof.

Section 3. CONFLICTS. Any and all prior resolutions of the Board of County Commissioners which conflict with these requirements, or any portion thereof, are hereby superseded and repealed to the extent of any such conflict.

Section 4. SEVERABILITY. If any section, sentence, phrase, word or portion of this Resolution, including any such section, sentence, phrase, word or portion of **Exhibit “A,”** attached and adopted hereto, is determined to be invalid, unenforceable, unlawful or unconstitutional, said determination shall not be held to invalidate or impair the validity, force or effect of any other section, sentence, phrase, word or portion of this Resolution, including any such section, phrase, word or portion of **Exhibit “A”**.

Section 5. EFFECTIVE DATE. The effective date of this Resolution shall coincide with the effective date of the companion Land Development Code Ordinance xxx.

APPROVED AND ADOPTED this xxth day of TBD, 2023.

**THE BOARD OF COUNTY COMMISSIONERS OF
HARDEE COUNTY, FLORIDA**

By: _____
Noey Flores, Chairman

(Seal)

By: _____
Victoria L. Rodgers
Ex-Officio Clerk to the Board of County Commissioners

NOTE: The language is the language as it exists in Appendix A of the Unified Land Development Code without the language that was relocated into the Land Development Code.

EXHIBIT “A”:
Technical Standards Manual

SECTION 1. - GENERAL REQUIREMENTS.

SECTION 1.1. MEDIAN STRIPS.

Arterial and Collector road pavement, divided by a median strip, shall have a minimum width of 16 feet on each side of the median. Design of roadways and median strips shall provide for safe movement of anticipated traffic. Divided local road pavement will be considered for approval on an individual basis by the County Engineer.

SECTION 1.2. CLEARING OF RIGHT-OF-WAY.

Clearing and grubbing shall be accomplished on the entire width of right-of-way. The surface shall be plowed to a depth of six inches to expose and remove all roots. All stumps within the right-of-way shall be removed.

SECTION 1.3. UNSUITABLE MATERIAL.

Muck and phosphate slimes will be completely removed 20 feet each side of centerline of roadway. Other unsuitable plastic materials, identified as A-2-6, A-2-7, A-5, A-6, and A-7 (AASHTO designation) will be removed to a depth of two feet below finished grade.

SECTION 1.4. GRASSWAY AND MULCHING.

All right-of-way, other than pavement, shall be grasses and mulched in accordance with D.O.T. specifications, except that only Bahia, Bermuda, and Centipede or St. Augustine grasses will be permitted unless specifically approved by the County Engineer.

SECTION 1.5. CONCRETE MATERIAL.

For all concrete structures, minimum compressive strength and maximum slump of concrete shall be as required by D.O.T. specification.

SECTION 1.6. TURNAROUNDS.

Turnarounds constructed in accordance with details shown in Figure 1.7.1 shall be required at the end of all cul-de-sac roads.

SECTION 1.7. REDUCED PAVEMENT WIDTHS.

Pavement having a driving surface or 20 feet wide may be constructed for local roads meeting the following requirements:

- (1) Local cul-de-sac road, having no intersecting side roads and having a turn-around, as specified in Section 4.07.
- (2) Twenty residential units maximum, having lot frontage on the 20 foot wide driving surface.
- (3) Lots forming a continuous line of residential dwellings along the perimeter of the cul-de-sac road which would prevent future extension of, or intersection with, the 20 foot wide driving surface.

SECTION 1.8. NAMES OF ROADS.

The name of a road shall not duplicate names of roads on record.

SECTION 1.10. PRIVATE ROADS.

In order to hold roads or other right-of-way improvements in private ownership, the subdivider shall have secured prior approval of the Board, which approval may be granted if procedures acceptable to the Board are instituted to advise lot owners that the right-of-way improvements will not be maintained by the County.

SECTION 1.11. ROAD MARKERS.

Road name signs and all traffic control signs meeting county specifications shall be erected or security posed for their erection, at no expense to the County, within the subdivision prior to final acceptance and recording of a plat.

SECTION 2. - RIGHT-OF-WAY REQUIREMENTS.

SECTION 2.1. WIDTH OF RIGHTS-OF-WAY.

The width of all right-of-way shall conform to the requirements of the typical sections contained in these regulations. The width of all easements and right-of-way for drainage shall be sufficient to permit maintenance by standard mechanical equipment, as determined by the County Engineer.

SECTION 2.2. TABLE OF MINIMUM WIDTH OF ROADSIDE RECOVERY AREA.

TABLE 2A

Typical Section Type	Design Speed		
	Below 35 MPH	35 MPH - 45 MPH	50 MPH & ABOVE
Section w/o Concrete Barrier Curb	6'	14'	30'
*Section w/ Concrete Barrier Curb	4'	4'	14'
* = From face of Curb			

SECTION 3. STREET SCHEDULE – EXISTING UNPAVED PUBLIC STREETS

- (1) Street drainage shall be provided as follows:
To be determined and approved by the Director of Public Works. Minimum requirements shall be construction of roadside ditches with two-foot bottom and 4:1 side slopes at a minimum depth of 21 inches below the pavement centerline grade and draining to a positive outfall.
- (2) Sub-grade shall be approved by the Director of Public Works as being suitable material, both in its preparation and its thickness.
- (3) Pavement base shall be improved as follows:

Limerock, shell or like material, as approved by the Director of Public Works. Thickness of the pavement base to be determined and approved by the Director of Public Works.
- (4) Wearing surface shall be improved as follows:

Thickness and material type to be determined and approved by the Director of Public Works.

Where applicable, and when it may be required by the Director of Public Works and the County Manager, the provisions of Section 5.04.01 of the Unified Land Development Code, shall apply to this Section. The schedule and standards as set forth in Section 5.04.02 of the Unified Land Development Coide, shall apply specifically to existing unpaved street currently in use.

SECTION 4. - DRAINAGE REQUIREMENTS.

SECTION 4.1. GENERAL DRAINAGE REQUIREMENTS.

Drainage easement or right-of-way shall be provided by the subdivider, where needed, of sufficient width to permit maintenance by standard mechanical equipment, as determined by the County Engineer. Plans for enlargement of existing drainage systems that would be overloaded, due to the proposed developed area, shall be included and the cost for all improvements borne by the subdivider.

- (1) Existing roadway ditches and outfall ditches may be used as drainage facilities for proposed subdivisions, provided those facilities are not overloaded by the additional runoff caused by development. The capacity of existing ditches shall be determined by the County Engineer. A drainage map shall be provided showing all areas that drain into, or through the proposed subdivision and the subdivision outfall system. The diameter, type, size, and flow lines of all existing and designed storm sewer and cross drain pipes shall be shown, along with the drainage area, in tenths of acres, and the "C" factor used. All drainage calculations will be submitted with the construction plans.
- (2) The subdivider shall obtain necessary permits from the appropriate regulatory agencies to discharge runoff into bodies of waters or streams.
- (3) The County will not accept any drainage facilities other than that located in the County right-of-way.

SECTION 4.2. FLOOD PLAIN AREAS.

Lands depicted on the Flood Hazard Boundary Maps as being subject to periodic flooding shall be developed in compliance with applicable regulations.

SECTION 4.3. STORM SEWER DESIGN.

Manning's equation will be used for storm sewer design with coefficient roughness (n) of 0.012 for concrete pipes and 0.012 for smooth lined corrugated metal pipes. Coefficient of roughness (n) for all other pipes shall be as shown in Table 4A.

TABLE 4A

Values of Coefficient of Roughness (n) for Standard Corrugated Steel Pipe (Manning's Formula)								
Corrugations	Annular	Helical						
	2 2/3" x 1/2"	1 1/2" x 1/4" 11,12		2 2/3" x 1/2"				
	All Diameter	8"	10"	12"	18"	24"	36"	48"
Unpaved	.024	.012	.014	.011	.014	.016	.019	.020
25% Paved	.021						.017	.020
Fully Paved	.012						.012	.012

Corrugations	Annular 3" x 1"	Helical 3" x 1"					
	All Diam.	36"	48"	54"	60"	66"	72"
Unpaved	.027	.021	.023	.023	.024	.025	.026
25% Paved	.023	.019	.020	.020	.021	.022	.022
Fully Paved	.012	.012	.012	.012	.012	.012	.012

When pipe is sized using full flow conditions, the hydraulic gradient shall be at least one foot below the gutter profile. Sufficient head should be allowed at inlet entrances to force the flow to the velocity required at full flow conditions. When the design is based on partial depth flows, the depth of flow shall not be over 2/3 pipe diameter at velocities exceeding 15 fps. Pipes will have a physical slope sufficient for minimum flow velocity of 2.5 feet per second.

Inlets not in sump position shall be spaced to receive 80% of the runoff in curb and gutter, village or urban sections. Inlets shall be carefully placed near intersection returns to avoid flooding adjacent properties and intersections.

Capacity of inlets in sump position shall not exceed 12 cfs D.O.T. Inlet Types "P" and "J", with inlet throats Types 1, 2, 5 and 6 shall be used on curbed sections. D.O.T. gutter inlet type "V" may be used only in village sections. Grates shall be parallel to centerline profile grade.

D.O.T. Standard ditch bottom inlets "C", "D", "E" and "H" shall be used in ditches or low areas where water would be collected. Where debris is a problem and there is no safety hazard, slots will be used.

The Rational Method of analysis shall be used in the design of storm sewer systems and small culverts.

$$Q = C I A$$

Q = runoff in cubic feet per seconds (cfs)

I = rainfall intensity in inches per hour

A = drainage areas, in acres

C = coefficient of runoff (See Table 13B)

"I" will be determined by using the intensity-duration curves shown in Figure 4.3.1. The rainfall intensity, as determined by the 3-year curve, will be used for storm sewers. The 10-year curve for minor crossdrain culverts and Collector road culverts and the 25-year curve for Arterial road culverts.

Time of Concentration will be determined by using the Figure 4.3.2 "Velocity of Runoff". Computations will be ten minutes.

TABLE 4B

Average Slope of Terrain	Lots Per Acre	"C" Factor
More Than 0.5%	More Than 3	0.50
	2.5 to 3	0.45
	2 to 2.5	0.40
	Less Than 2	0.35
Less Than 0.5%	More Than 3	.045
	2.5 to 3	0.40
	2 to 2.5	0.35
	Less Than 2	0.30

TABLE 4C

MAXIMUM CAPACITY (Q/tot/cfs) FOR 80% CAPACITY									
		CROSS SLOPES		LONGITUDINAL SLOPES					
	in/ft.	0.20%	0.50%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%
Type 1 Inlet	1/4	6.5	5.0	4.0	3.2	2.5	2.3	2.0	1.5
	3/8	*7.3/85	6.8	5.5	4.7	4.2	3.5	3.0	2.3
	1/2	*5.5/95	7.7	6.6	4.9	4.5	4.0	3.5	2.8
	5/8	*3.9/100	8.5	7.9	6.5	5.3	4.5	4.0	3.5
	3/4	*2.7/100	6.7/95	8.6	7.7	8.7	5.9	4.9	4.0

Type 3 Inlet	1/4	3.0	2.3	1.8	1.6	1.3	1.1	0.9	0.8
	3/8	4.3	3.8	3.2	2.7	2.4	2.1	1.8	1.5
	1/2	5.1	4.1	3.3	2.6	1.8	1.6	1.4	1.2
	5/8	*7.0/75	5.0	3.9	3.2	2.7	2.3	1.9	1.6
	3/4	*6.0/85	5.8	4.5	3.7	3.0	2.7	2.4	2.0
Type 5 Inlet	1/4	4.8	4.3	3.7	3.2	2.8	2.7	2.6	2.5
	3/8	6.4	5.7	5.2	4.6	4.2	3.8	3.6	3.3
	1/2	7.7	7.2	6.7	6.1	5.7	5.3	4.9	4.6
	5/8	*5.6/95	*8.0/80	7.5	6.9	6.2	5.5	5.2	5.0
	3/4	*4.9/100	*7.0/90	*7.6/85	8.2	7.5	7.0	6.5	6.2
Type Y Inlet	3/4	9.3/82.5	—	8.0/75	6.0	8.0/72.5	8.5/75	—	—
* = Roadway Flooded @ cfs / % eff									
— = No data									

SECTION 4.4. DITCHES.

The maximum ditch velocity allowed, without erosion protection, shall be governed by the following table:

Type of Soil	Max. allowable Velocity (feet per second)
Fine sand	1.5
Silt Loam	2.0
Fine Gravel	2.5
Clay	3.0

DITCH PROTECTION

Grade	Flow	Protection
Less than 2%	Less than allowable Velocities shown above	Grass and Mulch
Less than 2%	More than allowable	*Sod
Up to 3%	Less than 15 cfs	*Sod
Exceeds 3%	Exceeds 15 cfs	Paved
* = Where watering natural or artificial, is available.		

Outfall ditches and ditches not adjacent to a roadway shall be situated within a drainage easement of sufficient width to allow a 15-foot wide maintenance berm on one side and a five-foot stability berm on the opposite side. The bottom width of an outfall ditch should be two feet wider than any culvert it serves. Side slopes of outfall ditches shall be 3:1 or flatter, where soil conditions dictate, unless ditches are paved. Drainage easements located on subdivision lots will be noted on the plat to be maintained by the property owner. Drainage easements will not serve as utility easements.

- (1) Highway section ditches shall be a minimum of two feet below shoulder point elevation. Higher centerline grades shall be used where wet conditions are encountered and damage to base material is possible. Ditch bottom width shall not be less than four feet.
- (2) Roadside "V" or swale ditches may require storm sewer protection. Roadside "V" or swale ditches will be permitted only where soil conditions and grades are favorable.

SECTION 4.5. CULVERTS, BRIDGES AND PIPES.

Pipe culverts shall be reinforced concrete, bituminous-coated corrugated metal or aluminum. The minimum diameter shall be 18 inches. When hydraulic conditions indicate the need for a headwall, a D.O.T. standard headwall will be required. Mitered pipe end sections are required. Bridges and box culverts shall be designed to D.O.T. Specifications.

SECTION 4.6. SIDE DRAINS.

Side drains may be bituminous-coated corrugated metal pipe, reinforced concrete pipe or aluminum pipe. The minimum size shall be an 18-inch diameter with poured concrete mitered ends as specified by D.O.T. Specifications.

SECTION 4.7. GROUND WATER.

Soil borings will be taken and analyzed to a depth of six feet below natural ground or profile grade, whichever is the lower. Sufficient borings will be taken to determine the soil conditions and highest ground water evident throughout the proposed subdivision.

If high ground water has been determined to be a problem, provisions acceptable to the County Engineer shall be made to protect proposed limerock base, underdrains will be required in sections without highway ditch protection, unless alternate base material is selected which is resistant to ground water.

Underdrains will be placed on the uphill side of the roadway (or on both sides, where needed) with the crown of the underdrain pipe four feet below natural ground or 1.5 feet

below the base, whichever is the lower. The underdrain systems shall be shown, along with the pipe sizes, flow lines, cleanouts and outfalls. Where required, underdrains shall be designed in accordance with details shown in Figure 4.7.1. Alternate underdrain designs shall be approved by the County Engineer.

SECTION 4.8. ON SITE RETENTION.

On site retention may be permitted where conditions are suitable. Retention type swales cannot be located in road right-of-way to be dedicated to the County. The maximum grade on retention swales shall be 0.3%. Where necessary, swales will outfall into a retention area that will contain a 10-year frequency storm with provisions for overflow conditions that will occur on a frequency in excess of 10 years.

Retention areas designed to contain a 100-year frequency storm will not require provisions for positive outfall.

Where on site retention is to be considered, ground water shall be sufficient distance below natural grade or proposed profile grade of ditches to allow a percolation rate of one inch per minute. Total percolation rate used in calculations shall be 1.5 feet per hour.

When lakes and retention ponds are incorporated within a subdivision and abutted by lots, such abutting lot lines shall be extended into the lake or pond to incorporate all of the area of the lake or pond into the abutting lots.

Retention areas should not have side slopes exceeding 4:1. Retention areas shall be designed, and noted on the plat, as drainage easements to be maintained by the property owners.

Preliminary plans on retention type subdivisions shall be reviewed by the Hardee County Engineering Department to determine feasibility.

It shall be noted on the plat that runoff water will be retained within the subdivision and that temporary ponding conditions will occur.

SECTION 5. - ROADWAY CONSTRUCTION REQUIREMENTS.

SECTION 5.1. NOTIFICATION REQUIREMENT.

The subdivider or contractor retained by the subdivider to construct the subdivision shall give the County at least one week's notice before the commencement of any construction.

SECTION 5.2. INSPECTION.

The engineer or his/her representative shall make periodic inspections on the project during the construction period and all work shall be done under the supervision of said engineer and performed to his/her satisfaction in accordance with the approved plans and specifications. If any change affecting conformance to standard or performance in systems is required in said plans during the period of construction, such changes must first be approved, in writing, by the County Engineer or his/her authorized representative.

The County Engineer reserves the right to perform any inspection necessary to verify conformance with plans and specifications.

SECTION 5.3. TESTING OF MATERIALS.

The engineer shall, at the completion of construction, certify to the County on the standard form, provided by the County Engineer, that work has been performed in accordance with the approved plans and specifications. Reports on all required tests shall be submitted with this certification.

A certified commercial testing laboratory or registered engineer shall certify to the County Engineer that all materials and workmanship entering into the completed work are in accordance with the approved plans and D.O.T. specifications, as modified by (1) below. The County may also conduct any tests deemed necessary.

- (1) The requirements of D.O.T. specifications for testing the surface of base courses and the surface testing requirements for asphaltic concrete surface courses are not excluded from these subdivision regulations on all local roads.

SECTION 5.4. TESTS REQUIRED.

All tests shall be performed and samples taken at intervals defined as job control samples in the current D.O.T. "Guide Schedule for Sampling and Testing Materials."

SECTION 5.5. STABILIZED SUBGRADE.

All roadway subgrade, where applicable, shall be stabilized to the required depth and required Florida bearing value, six inches outside the edge of base on each side of the roadway, and shoulders shall be stabilized six inches deep to Florida bearing value of 60. Where existing soils to be used in roadway subgrade have the required bearing value, no additional material is added.

The stabilizing material, if required, shall be high bearing value soil, clay-sand, limerock, shell or other material conforming to D.O.T. specifications.

SECTION 5.6. BASE COURSE.

The materials permitted as base course for flexible pavement shall be limerock, oyster shell, hotplant mix asphaltic concrete or soil cement and shall meet D.O.T. specifications.

SECTION 5.7. SURFACE COURSE.

Any D.O.T. approved asphaltic concrete surface course will be permitted. Only one type surface course will be permitted in each subdivision or phase of a development. Minimum thickness for all surface courses shall be 1 1/2".

SECTION 5.8. FLEXIBLE PAVEMENT ROADWAY DESIGN.

The method of determining roadway subbase, base and pavement thickness for standard typical sections shown in Figure 5.8.1, shall be the structural number criterion as set forth in the "Procedure Manual for Flexible Pavement Design" prepared by the D.O.T.

The minimum structural number allowable for any roadway section designed for local residential traffic will be 1.58, as determined by the layer coefficient shown in Table 4A. The minimum surface course thickness shall be one and one-half inch.

The total layer coefficient allowed for the subgrade designed for local residential traffic shall not exceed the value assigned for eight inch thickness. The base material specified in Section 4.6 shall be used. The proposed typical section shall be shown on the plans and the structural number computation included under the typical section.

Proposed roadways which are to accommodate commercial or industrial traffic shall be designed for 18 kip single-axle load application, as set forth in the "Procedures Manual for Flexible Pavement Design" prepared by the D.O.T.

- (1) Table 5A is a suggested starting place for determining pavement layer type and material use based on previous general experience. Pavement sections differing from these guidelines are feasible when justified by local experience, construction procedure or appropriate supporting data.
- (2) Thickness not to be more than the maximum or less than the minimum thickness shown above. In any case, the pavement structure must be adequate and meet all requirements for service.
- (3) For cost comparison purposed, it may be desirable to use the thicknesses of ABC in increments of one inch.

TABLE 5A

FLEXIBLE PAVEMENT ROADWAY DESIGN GUIDELINES				
D.O.T. Spec. Section No.	Layer Coeff.	Layer	(b) Thickness	D.O.T. Manual Section No. Remarks
160.3	0.10	Stabilized Subbase	As shown in the plans	5.3, Commercial Material blend 6" into top of finished Type B Stabilized Subgrade LBR 40
160	0.06	Type A, B Stabilization	8" only	5.2, FBV 60 Required
170	0.12	Cement Treated Subgrade (300 PSI)	6"	5.2
290 (sp)	0.15	Limerock Subbase (LBR 100)	4", 6"	5.4
200	0.15	Limerock Base (LBR 100)	5", 6", 8", 10"	5.5
230	0.12	Limerock Stablized Base (LBR = 70)	6", 8", 10"	5.5
250	0.12	Shell Base (LBR = 70)	5", 6", 8", 10"	5.5
270	0.22	Soil Cement Base (MR = 600 psi)	6", 8", 10"	5.5
280 (sp)	0.21	ABC Type 1	(c)4", 5", 6", 8"	5.5
280 (sp)	0.25	ABC Type 2	(c)4", 5", 6", 8"	5.5
280 (sp)	0.30	ABC Type 3	(c)4", 5", 6", 8", 10", 12", 14"	5.5
331	0.40	Type S-I AC	1" to 6" increments by item no.	5.6.1
332	0.20	Type II AC	1" to 6" increments by item no.	5.6.2
333	0.30	Type III AC	0.5" to 6" increments by item no.	5.6.3
338 (sp)	0.20	Skid Resistant Wearing Course	1"	5.7

SECTION 5.9. RIGID PAVEMENT DESIGN.

Portland cement concrete pavement designed in accordance with the requirements of the American Concrete Paving Association Guide Specifications and Design Standards,

contained in the "Municipal Concrete Paving Manual," or an equivalent specification will be approved by the County Engineer for construction.

SECTION 5.10. TYPICAL ROADWAY SECTIONS AND STANDARD INTERSECTION DETAILS.

The following sections and details shall govern minimum design of all pavements, except as modified by Section 5.8.