Concrete Technical Council

February 27, 2013

301 Test Road

CONSTRUCTION CONTRACT NO.

COMPONENTS OF CONTRACT PLANS SET

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 430352-1-32-01
(FEDERAL FUNDS)
CLAY COUNTY (71030)
STATE ROAD NO. 200

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

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53	INTERSECTION DETAIL
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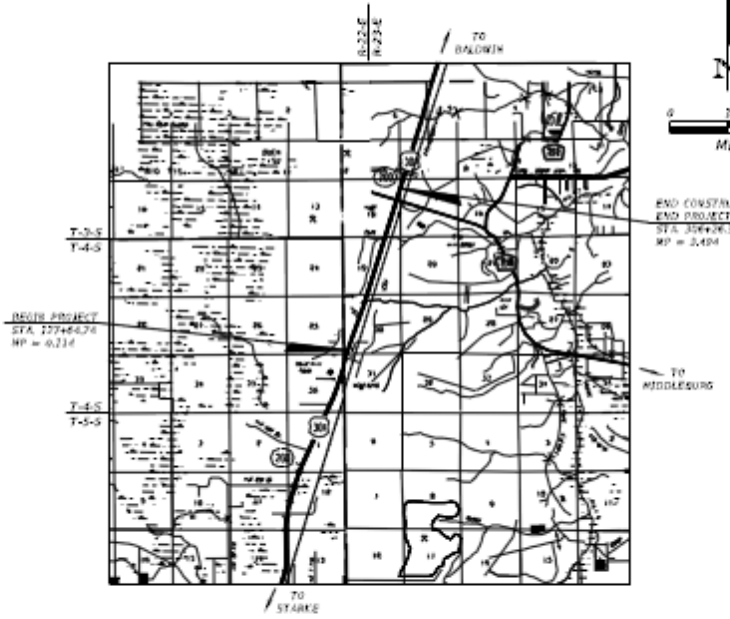


ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:

A. WAYNE STOKES, P.E.
REYNOLDS, SMITH AND HILLS, INC.
P.O. BOX 4850 (32201-4850)
10748 DEERWOOD PARK BLVD. SOUTH
JACKSONVILLE, FLORIDA 32256

PLANS PREPARED BY:

R&H
P.O. BOX 4850 (32201-4850)
10748 DEERWOOD PARK BLVD. SOUTH
JACKSONVILLE, FLORIDA 32256
(904) 256-2500

CONTRACT NO. C-4B05
VENDOR ID NO. F59-2986466-002
CERTIFICATE OF AUTHORIZATION NO. EB0005630

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS FISCAL YEAR 2012/2013,
AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2010
AS AMENDED BY CONTRACT DOCUMENTS

APPLICABLE DESIGN STANDARDS REVISIONS: MM/DD/YY
For Design Standards revisions click on "Design Standards" at the following web site:
http://www.dot.state.fl.us/rddesign/

PHASE I SUBMITTAL
JUNE 21, 2012

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	17,854.08	3.381
BRIDGES	0.00	0.000
NET LENGTH OF PROJECT	17,854.08	3.381
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJECT	17,854.08	3.381

FDOT PROJECT MANAGER: JOHN THRASHER

KEY SHEET REVISIONS	
DATE	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD: WAYNE STOKES, P.E.

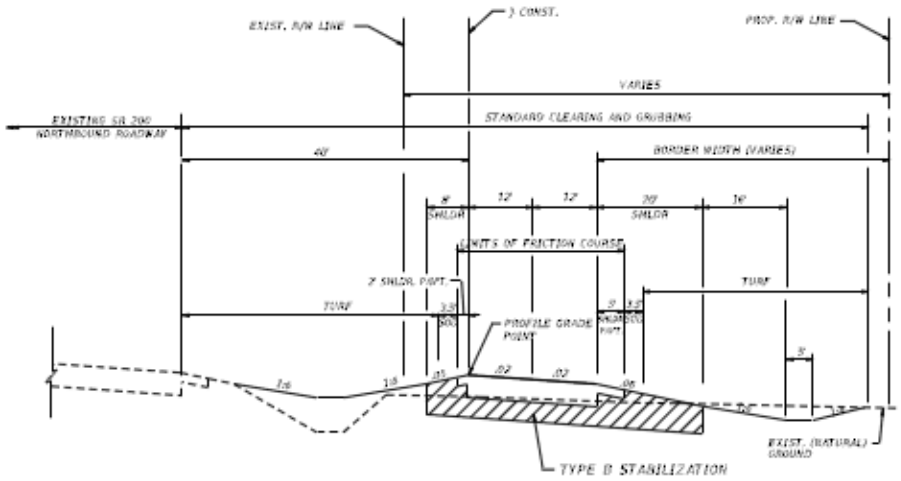
P.E. NO.: 58636

FISCAL YEAR	SHEET NO.
15	1

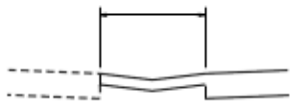
NOTICE: THE ORIGINAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED USING RSA KEY(S) 23.0.0, A.A.C.

Aerial of US 301 Test Road Area

Proposed Typical Section



TYPICAL SECTION NO. 2
SR 200
STA. 148+38.72 TO STA. 274+86.88



STA. 148+38.72 TO STA. 159+22.95
PAVE FULL MEDIAN WIDTH USING
SHOULDER PAVEMENT SECTION

NEW CONSTRUCTION

MILLING

RESURFACING

TRAFFIC DATA

CURRENT YEAR = 2012 AADT = 14,500
ESTIMATED OPENING YEAR = 2017 AADT = 19,200
ESTIMATED DESIGN YEAR = 2037 AADT = 28,700
K = 9.5% D = 55% T = 31% (24 HOUR)
DESIGN HOUR T = 15.5%
DESIGN SPEED = 70 MPH
POSTED SPEED = 65 MPH

TYPICAL SECTION NOTES:

1. COMPACTION OF ALL MATERIALS SHALL BE PERFORMED WITH ROLLERS OPERATING IN STATIC MODE UNLESS DIRECTED BY THE ENGINEER.
2. ALL LONGITUDINAL PAVEMENT THICKNESS TRANSITIONS SHALL BE MADE ON A 1:600 RATIO.
3. PLACE ALL ASPHALT COURSES WITH A MECHANICAL SPREADER USING ELECTRONIC TRANSVERSE & AUTOMATIC LONGITUDINAL SCREED CONTROLS.
4. PLACE FC-12.5 FRICTION COURSE (1.5") OVER ROADWAY, SHOULDERS AND ALL PAVED SIDE STREETS TO A POINT FOR A SMOOTH AND PROPER TIE IN.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Raynolds, Smith and Hills, Inc.
8615 Baymeadows Park Blvd., Suite
Jacksonville, Florida 32256
904-256-2500
FL Cert. No. EB0000650
Engineer of Record: Wayne Stokes P.E. No. 59435

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
200	CLAY	430352-1-32-01

TYPICAL SECTION

SHEET NO. 6

Close Up Aerial – Pavement Goes Between 4-Lane and Railroad Track

301 Test Road Plan

NORTH →

Structural Factorial Sections (4400 Ft)

BEGIN	8 inch slabs										12 inch slabs									
	5 TPB/RAP	2 BB/no RAP	1 BB/RAP	6 TPB/no RAP	4 CB/no RAP	3 CB/RAP	2	4	3	1	5 TPB/RAP	6 TPB/no RAP	4 CB/no RAP	1 BB/RAP	2 BB/no RAP	3 CB/RAP	1	4	2	3 125 ft
	Replicates										Replicates									

Drainage Factorial Sections (3600 Ft)

All 10 inch slabs

Asphalt Treated Permeable Base Sections								Black Base Sections							
1 ED/WS	4 no ED/PS	3 no ED/WS	2 ED/PS	3	4	2	1	2 ED/PS	1 ED/WS	4 no ED/PS	3 no ED/WS	1	3	2	4
Replicates								Replicates							

Calibration Factorial Sections (3600 Ft)

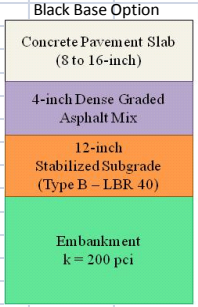
All Black Base

12 inch slabs								8 inch slabs								
2 12'JS/<1°	4 12'JS/>3°	1 18'JS/<1°	3 18'JS/>3°	4	3	2	1	4 12'JS/>3°	1 18'JS/<1°	3 18'JS/>3°	2 12'JS/<1°	4	1	2	3	END
Replicates								Replicates								

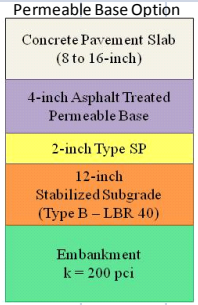
Notes:

Number in box reprsesents factorial design
All Sections 225 ft except where noted; 11,600 ft total length.
TPB - Asphalt Treated Permeable Base
BB - Black Base
CB - Composite Base
ED - Edge Drain
JS - Joint Spacing
WS - Well Sealed
PS - Poorly Sealed
1° or 3° denotes set gradient

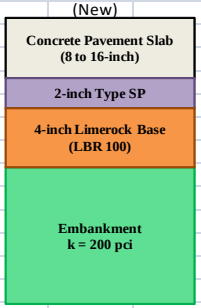
Black Base Option



Asphalt Treated Permeable Base Option



Composite Base Option (New)



Structural Factorial

(8 replicated sections 225 ft ea; 3 unreplicated sections 225 ft ea;
1 unreplicated section 125 ft; yields 4400 ft)

w/RAP Blk Base 1	w/o RAP Blk Base 2	w RAP Comp Base 3	w/o RAP Comp Base 4	w RAP Trt Perm 5	w/o RAP Trt Perm 6
Order of Concstruction					
3	2	6	5	1	4
4	1	3	2		

w/RAP Blk Base 1	w/o RAP Blk Base 2	w RAP Comp Base 3	w/o RAP Comp Base 4	w RAP Trt Perm 5	w/o RAP Trt Perm 6
Order of Concstruction					
4	5	6	3	1	2
1	3	4	2		

12 in thickness 8 in thickness

Drainage Factorial

(8 -10” sections of well sealed/poorly sealed joint combinations with section lengths of 225 ft ea; 2 replications yields 3600 ft)

w/Edge Drains Well Sealed 1	w/Edge Drains Poorly Sealed 2	w/o Edge Drains Well Sealed 3	w/o Edge Drains Poorly Sealed 4

Order of Concstruction			
1	4	3	2
4	3	1	2

w/Edge Drains Well Sealed 1	w/Edge Drains Poorly Sealed 2	w/o Edge Drains Well Sealed 3	w/o Edge Drains Poorly Sealed 4

Black Base Trt Perm Base

Order of Concstruction			
2	1	4	3
1	3	2	4

Calibration Factorial

(8 sections of 12/18 ft slab combinations in lengths of 225 ft ea;
2 replications yields 3600 ft)

18 ft js Set grad <1°F 1	12 ft js Set grad <1°F 2	18 ft js Set grad >3°F 3	12 ft js Set grad >3°F 4

Order of Concstruction			
3	1	4	2
4	3	2	1

18 ft js Set grad <1°F 1	12 ft js Set grad <1°F 2	18 ft js Set grad >3°F 3	12 ft js Set grad >3°F 4

8 inches 12 inches

Order of Concstruction			
2	4	3	1
2	3	4	1

Rigid Pavement Committee

- **Unit Costs for Concrete:**
  - limited information on concrete unit costs – all over the place
  - suggested a standard chart for unit costs for concrete
  - Benefit = lower LCCA's for concrete pavement
- **Rehabilitation Cycles:**
  - historical cycles are closer to 25 years for the first rehabilitation and another 20 years to the second
  - standard from FDOT is 20 and 30 year rehabilitations without salvage; using 1,025 lane miles of failed pavement on I-10 and I-75 to establish rehabilitation cycles
  - Benefit = lower LCCA's for concrete pavement, about 3% reduction in LCCA costs
- **Concrete Pavement Thickness:**
  - FDOT requires use of the Tables in the 2009 Rigid Pavement Manual, either AASHTO '93 or MEPDG with Florida Calibrations
  - thickness will consistently be 1 to 2 inches thicker than an MEPDG analysis with the national calibrations
  - FDOT should use the national calibration constants for C1 and C2 for transverse cracking
  - Benefit: 1" drop in thickness is about a 5% reduction in LCCA costs
- Other issues:
  - Need for edgedrains (adds 9% to LCCA costs), need for 4" asphalt base (adds about 9% to LCCA costs), including initial grinding and friction course costs in the LCCA (minimal concrete costs, high asphalt costs), asphalt rehabilitation cycles (use 14, 28, 42 w salvage – more like 12, 24, 36 in history).

350 Specification Committee

- Developmental Specification @:
  - http://www.dot.state.fl.us/specificationsoffice/OtherFDOTLinks/Developmental/Files/Dev350-113.pdf
- Three Pilot Projects Under Way
  - I-4 Volusia County
  - I-275 Hillsborough County
  - 9B Duval County