



*R-513 A/BA*  
*I-74 in*  
*Robeson*  
*Co.*

# R-513

# ROBESON COUNTY

## US 74 Relocation

PROJ.  
BREAK  
MA



	LET R-513 A 6,469,002T LOWERING	LET R-513 BA 6,469,002T LOWERING	LET R-513 BB 6,469,002T LOWERING	LET R-513 C 6,469,002T C. HOUSER
PROJECT DESCRIPTION	MAXTON BYPASS TO EAST OF SR 1166	EAST OF SR 1166 TO WEST OF SR 1157	WEST OF SR 1157 TO WEST OF SR 1164	WEST OF SR 1164 TO NC 41
COUNTY / DIVISION	ROBESON / DIV. 06	ROBESON / DIV. 06	ROBESON / DIV. 06	ROBESON / DIV. 06
LENGTH	4.0 MI	4.2 MI	5.2 MI	6.1 MI
TYPE OF CONTRACT	TURKEY	TURKEY	TURKEY	TURKEY
REMARKS	SEGMENTS 'A' AND 'BA' COMBINED LET	SEGMENTS 'A' AND 'BA' COMBINED LET	SEGMENTS 'BB' AND 'C' COMBINED LET	SEGMENTS 'BB' AND 'C' COMBINED LET
BEGIN R/W ACQUISITION (T.J.P.)	7-02	12-02	12-02	3-00
BEGIN R/W ACQUISITION (PRODUCTION)				
PROPOSED LETTING (T.J.P.)		11-04		10-04
PROPOSED LETTING (PRODUCTION)				
EST. COMP. DATE (T.J.P.)		12-08		12-08
ESTIMATED R/W COST	\$ 5,506,000	\$ 2,165,000	\$ 3,255,000	\$ 6,882,000
ESTIMATED CONSTRUCTION COST		\$83,915,000		\$ 109,517,000



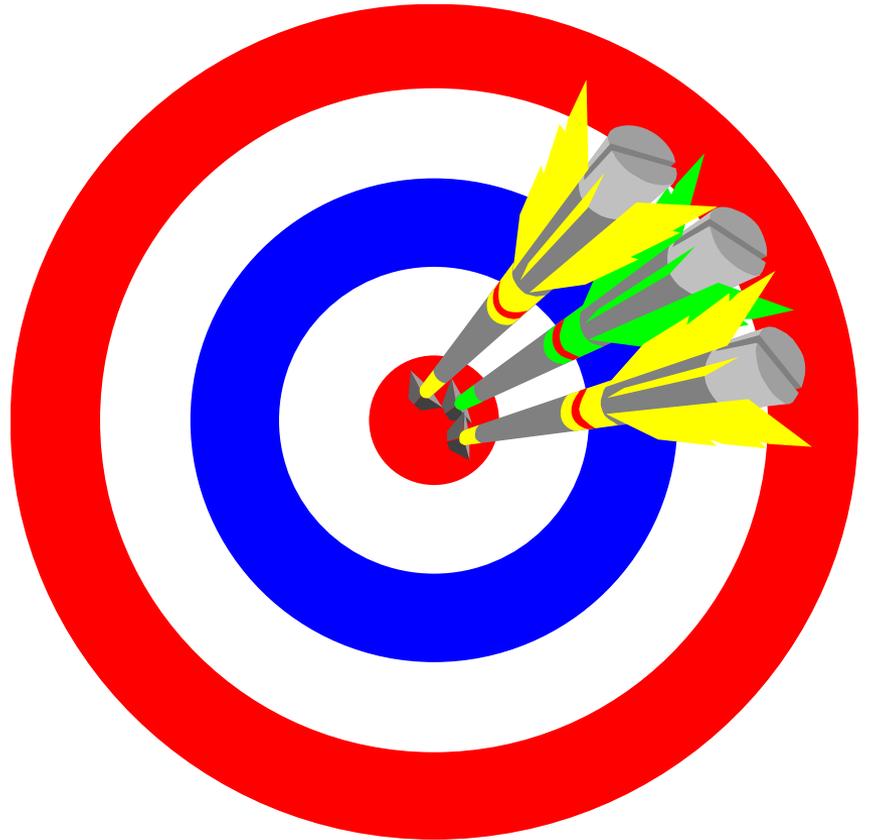
# Project Details R-513 A/BA

- ⌘ \$80 million contract
- ⌘ 5 million cubic meters of borrow
- ⌘ over quarter million Mtons asphalt
- ⌘ ## Acres of wetlands impacted
- ⌘ Similar quantities on BB/C. BB/C cost \$100 million. *Cost difference due to interchange with I-95*
- ⌘ 5 Bridges
- ⌘ 312,200 Mtons ABC
- ⌘ Mostly new location!

# Key Players

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- ⌘ NCDOT, Resident Engineers Office - Lumberton
- ⌘ R. E. Goodson Construction
- ⌘ HNTB - Summit, Sepi & Simpson



# First Problem

## *Inspection??*



- ⌘ Lumberton RE Office Staff is 20 people total.
- ⌘ Typical year - Widening project, 3 or 4 bridges and resurfacing. Typical year \$10-\$20 million
- ⌘ 2004 Letting - R-513 A/BA (\$80 million) and BB/C (\$100 million) on 20 miles new location interstate.
- ⌘ Also looking at I-95 Resurfacing
- ⌘ Also NC Moving Ahead - Division Selected larger projects for this county
- ⌘ Also Wetland Mitigation
- ⌘ Previous CEI, went so so.

# CEI Inspection

## *A Different Way*



- ⌘ Contract set-up with Multiple Projects, including basically everything but Resurfacing.
- ⌘ Lead Inspection with A/BA Project DoT, BB/C Project, (Archie Brooks, HNTB and O.T. Anderson, Summit)
- ⌘ Remainder of DoT and CEI Staff, placed as needed -  
*A/BA - 75% NCDOT, BB/C 75% CEI*
- ⌘ Everyone housed in RE Office - Project only 5 miles from office location
- ⌘ Project Engineers allowed to move people as needed

# Project Letting

## *Surprise!*



- ⌘ Low Bidder - R. E. Goodson Const. Co. Inc., beating out Wooten, English, Barnhill, BMCO, Lindsey and Rea
- ⌘ Family owned Co. in Darlington SC
- ⌘ First Job in NC
- ⌘ Previous Experience with SCDoT, Borrow pit with no rules

# Co-operation with Agencies

- ⌘ Truly Key component was the direct involvement with both Corps (Richard Spencer) and Water Quality (Ken Averitt) coordinated through DEO Jim Rerko
- ⌘ Kept appraised of progress and mistakes
- ⌘ Result - Worked with Contractor to find solutions



# *Inspections by Everyone*

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- ⌘ Annual Land Quality Review
- ⌘ Water Quality
- ⌘ Corps of Engineers
- ⌘ E.P.A. (pick one project in the SE USA)

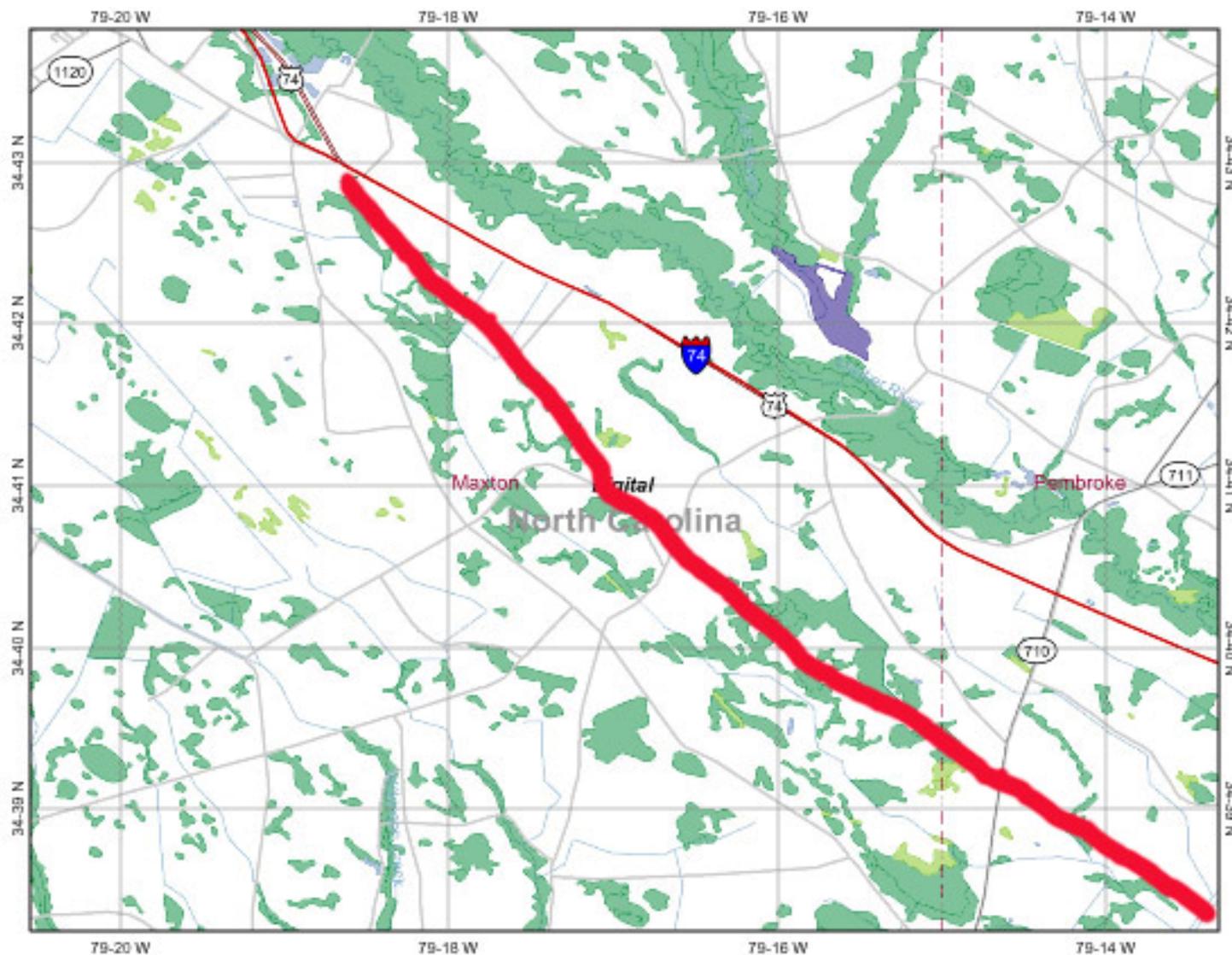


# *SKAGGS*



- ⌘ First Special Provision written in Oct. 2004
- ⌘ Project Let Nov. 2004 (New Territory)
- ⌘ Required 400' set-back
- ⌘ No approved formulas and data tables at this time.

# R513A Wetlands



## Legend

### CONUS\_wet\_scan

- 0
- 1
- Out of range
- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

Map center: 34° 41' 2" N, 79° 16' 56" W



Scale: 1:72,320

This map is a user generated static output from an internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

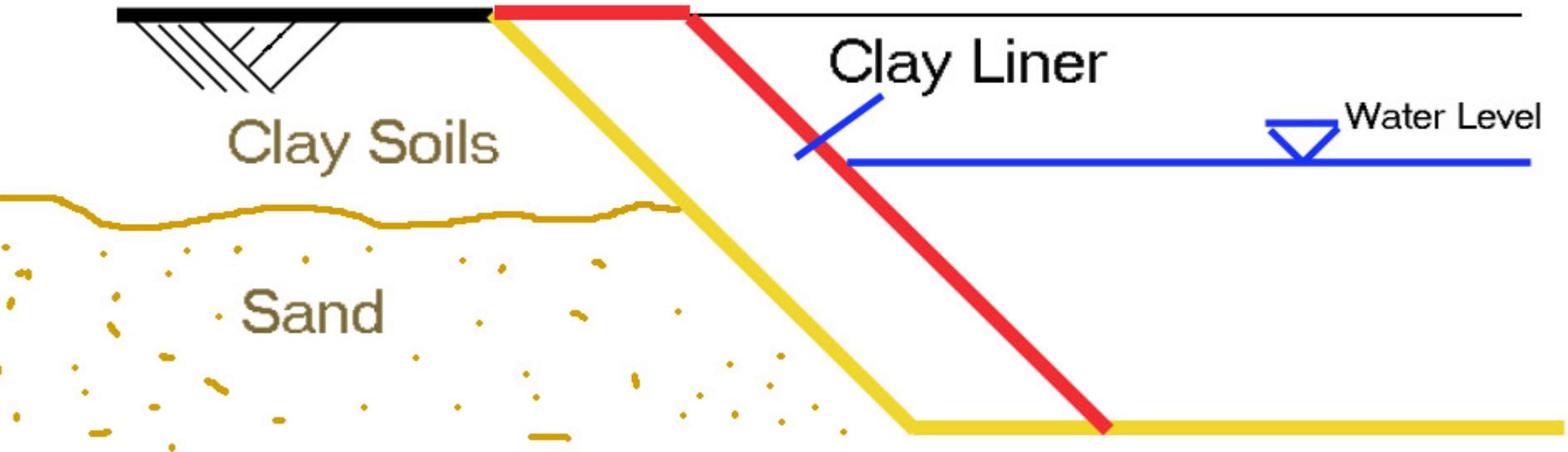






# Modified Skaggs Method

Using Clay Liner



400' set back changed to 75'

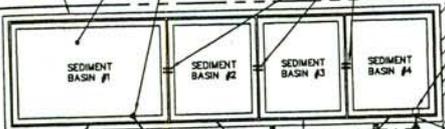
PROPOSED HWY 74 R/W

PROPOSED HWY 74

R/W

WETLANDS

SEE SEDIMENT BASIN CALCULATIONS FOR DETAILS.  
3'-6" x 12" THICK RIP RAP APRON CLASS A STONE ON FILTER FABRIC  
2-12" PVC OVERFLOW PIPES @ 0.50%  
50' WIDE ACCESS ROAD

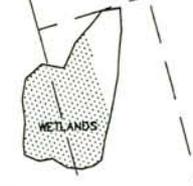


WATER LEVEL CONTROL STRUCTURE (SEE DETAIL SHEET C-2)  
10' PROPERTY LINE SETBACK  
25' x 12" PVC @ 0.50%  
4' x 7' x 22" THICK RIP RAP APRON CLASS B STONE ON FILTER FABRIC (SEE SHEET C-2 FOR DETAILS)

5' PVC @ 0.50%  
5' RIPRAP EMERGENCY SPILLWAY  
5' RIPRAP EMERGENCY SPILLWAY  
GRASS-LINED INTERCEPTOR SWALE WITH 3' BOTTOM AND 3:1 SIDE SLOPES. CONTRACTOR TO ENSURE THAT POSITIVE SLOPE IS MAINTAINED FROM BASIN TO DITCH.  
CHECK DAM (TYP) (SEE DETAIL SHEET C-2)  
OUTFALL (SEE DETAIL SHEET C-2)

BACKFILL DITCH OUTSIDE OF AREA DETERMINED TO BE JURISDICTIONAL AS FLAGGED BY THE U.S. ARMY CORPS OF ENGINEERS.  
CONTRACTOR TO LEAVE 50' GAP BETWEEN JURISDICTIONAL CANAL AND BACKFILLING OF NON-JURISDICTIONAL CANAL.

PIT #6  
PROPOSED MINING LIMITS  
93.36 AC.



70' PROTECTIVE U.S. WATERS SETBACK

WATERS OF THE U.S.  
WETLANDS

70' PROTECTIVE U.S. WATERS SETBACK

PROPERTY LINE

**Pit 6 - With 75' buffer to wetlands.**

**94 acres, previously 44 acres**



**Pit 1 - 22.3 Acres - 275,000CM**



**Pit 3 - 11 Acres - 106,000CM**



**Pit 4 - 18 Acres - 174,000CM**



**Pit 5 - 8 Acres - 64,000CM**



**Pit 5A - 10 Acres - 98,000CM**



**Pit 6 - 94 Acres - 965,000CM**



**Pit 7 - 14 Acres - 185,000CM**



**Pit 8 - 8 Acres - 86,000CM**



**Pit 11 - 27 Acres - 150,000CM**



**Pit 13 - 57 Acres - 763,000CM**



**Pit 14 - 36 Acres - 460,000CM**



**Pit 15 - 64 Acres - 693,000CM**



**Pit 16 - 18 Acres - 211,000CM**

Water ! Water !



Everywhere !!!

# NTU's

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- ⌘ 50 ntu's or background
- ⌘ Measured several times daily when pumping and discharging





**Most pits, sands kept  
water clean, even  
while digging**

*But*



Not Always !

# Pit 6, Milky Water



⌘ Largest Pit

⌘ Got into soils which would **NOT** settle, including sitting months in a jar undisturbed

⌘ Water turned milky white

⌘ Tried flocculents, lime and several other remedies

⌘ **Solution !**

**Pit 8**

**Pit 7**



**Use Mother Nature and Pits 7 & 8**

Pit 8  
8.07 acres

Pit 7  
13.5 acres

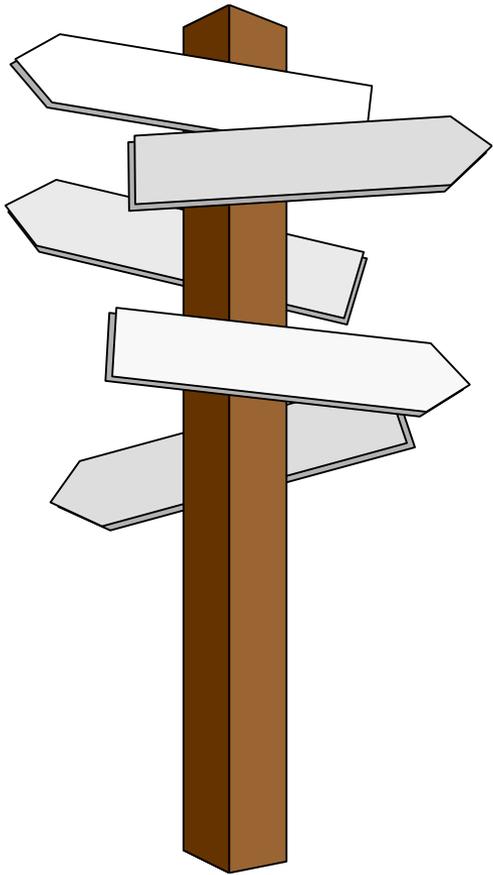
Pit 6  
76.50 acres



# *GPS Guided Machines*



# GPS Grading



⌘ Resolving issues around :

- ☑ Required Staking
- ☑ Payment
- ☑ Electronic Files

# Teamwork!

- ⌘ Built an excellent working relationship with Contractor
- ⌘ We both sought to help each other out
- ⌘ They understood our issues and we listened to theirs



Note Perm. Seeding already begun



# Ever had this Happen?



⌘ During dry summer,  
mentioned to  
contractor how much  
our grass needed  
water

⌘ Response - Water  
Truck



Yes, that's a water truck watering newly seeded areas

# Argue About Clearing? Quantities? Traffic Control?

- ⌘ Contractor only cleared what he could build that season
- ⌘ Contractor requested, we withhold paying for clearing until later in the project, 'Gravy at the End'
- ⌘ TCP Unit was surprised, when Contractor asked to use more signs than was required. Late in the project, we were however, no longer surprised

# Need to Establish Grass



Before turning  
water into  
new canal?



**Use Sod**

# SA's



⌘ Lump Sum Unclassified

⌘ Deleted CPM

# Ribbon Cutting

