URS Corporation
11832 Rock Landing Drive Suite 306 Newport News, Virginia 23606 (757) 873-0559

Letter of Transmittal

To: ***SCDOT***
955 Park Street
Columbia, SC 29201

Date: ***1 September 2005*** Job No.***11655892***

Subject:
2-D (FESWMS) Hydraulic Model & Scour Analysis
S-22 Bridge Replacements over South Fork Edisto River

File. No. 2.152B, PIN 29621

Attention: ***Randall Mungo, PE***

Project Mgr.: ***John Paine***

We are sending you ✔ Attached ☐ Under Separate Cover via _____ the following items:
☐ Shop Drawings ☐ Drawings (Prints) ☐ Proposal Request ☐ Copy of Letter
☐ Product Data ☐ Project Manual ☐ Change Order ✔ ***Project Documents***
☐ Samples ☐ Tracings ☐ Technical Specifications

COPIES	DRAWING NUMBER	DATE	DESCRIPTION	DISP.
2	***N/A***	***1 September 2005***	***Revised Bridge Hydrology Data Sheets (One Sheet Each for Main Span and Relief Span)***	***2,3***

These are transmitted for the following disposition:

1. For Your Approval
2. For Your Use and Information
3. As Requested
4. For Review and Comment
5. For Bidding
6. For Construction
7. Conforms As Is
8. Conforms As Noted
9. Does Not Conform

Note: Drawings and Specifications shall not be used for construction unless noted: "For Construction"

Remarks: Randall: Here are the revised Bridge Hydrology Data Sheets.

As we discussed, the concept of 'backwater' in a 2-D model is not straightforward because the water surface elevations vary along every cross section, and we do not have a "natural" or "full valley" 2-D analysis.

The backwater heights listed here are simply the computed (representative) 2-D water surface elevation slightly upstream of the bridge minus the representative 2-D water surface elevation just downstream from the bridge.

Both of these proposed bridges are longer than the existing bridges. Thanks, John

Revised 1 September 2005 DATE: November 30, 2004

Hydrology Data for Bridge

MEMORANDUM TO: ROAD DESIGN GROUP LEADER: Larry Price

FROM: HYDRAULIC DESIGN ENGINEER Randall Mungo

SUBJECT: Hydrologic Data for Bridge over South Fork Edisto River - Main Span

Rd./Rte.: S-22 County Aiken Construction PIN: 29621

Bridge Length 140 Bridge Roadway Width 34 ft.

Beg. Station 449+45 End Station 450+85 Skew Angle None

Bridge Span Configuration 40'-60'-40' Spans

Minimum F.G. Elev. 228.00 Minimum Low Steel Elev. 225.50 Based on:

Riprap Req'd Yes X No To Elevation 225.50

COMMENTS: Minimum finished grade based on 25-year high water (223.50) + freeboard (2.0) + Superstructure (2.50).
Place Class B riprap on geotextile for erosion control (Class 2, Type B) according to SCDOT Std. 804a.
Abutment riprap to have a 10-foot toe extension.

HIGH WATER DATA (N/A)

25 - Year H.W. Elev. = 223.50 including 0.5 ft. backwater

100 - Year H.W. Elev. = 224.30 including 0.7 ft. backwater

Highwater Elev. =

Highwater Elev. =

HYDROLOGY DATA:

D.A. = 439.2 sq. mi.
Q(*25*) = 3,802 cfs
Area furnished under
Elev. = 802 sq. ft.
Vel. = 4.74 ft./sec.
Q100 = 5,150 cfs
Area furnished under
Elev. = 925 sq. ft.
Vel. = 6.65 ft./sec.

OVERTOPPING FLOOD:

Q = > 6,827 cfs
Probability < 0.002 (500-year)

Hydraulic Design Engineer URS for Randall Mungo

cc: Bridge Design Squad Leader Glenn Patterson
Program Manager Michelle Sheperd

Revised 1 September 2005 DATE: November 30, 2004

Hydrology Data for Bridge

MEMORANDUM TO: ROAD DESIGN GROUP LEADER: Larry Price

FROM: HYDRAULIC DESIGN ENGINEER Randall Mungo

SUBJECT: Hydrologic Data for Bridge over South Fork Edisto River - Overflow Bridge

Rd./Rte.: S-22 County Aiken Construction PIN: 29621

Bridge Length 80 Bridge Roadway Width 34 ft.

Beg. Station 456+41 End Station 457+21 Skew Angle None

Bridge Span Configuration 40'-40' Spans

Minimum F.G. Elev. 228.20 Minimum Low Steel Elev. 225.70 Based on:

Riprap Req'd Yes X No To Elevation 225.70

COMMENTS: Minimum finshed grade based on 25-year high water (223.70) + freeboard (2.0) + superstructure (2.50).
Place Class B riprap on geotextile for erosion control (Class 2, Type B) according to SCDOT Std. 804a.
Abutment riprap to have a 10-foot toe extension.

HIGH WATER DATA (N/A)

25 - Year H.W. Elev. = 223.70 including 0.7 ft. backwater

100 - Year H.W. Elev. = 224.70 including 0.9 ft. backwater

Highwater Elev. =

Highwater Elev. =

HYDROLOGY DATA:

D.A. = 439.2 sq. mi.
Q(*25*) = 1,205 cfs
Area furnished under
Elev. = 258 sq. ft.
Vel. = 4.67 ft./sec.
Q100 = 1,715 cfs
Area furnished under
Elev. = 321 sq. ft.
Vel. = 5.34 ft./sec.

OVERTOPPING FLOOD:

Q = 2,567 cfs
Probability < 0.002 (500-year)

Hydraulic Design Engineer URS for Randall Mungo

cc: Bridge Design Squad Leader Glenn Patterson
Program Manager Michelle Sheperd