



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, Florida 32399-0450


THOMAS F. BARRY, JR.
SECRETARY

May 24, 1999

THIS MEMO IS EXPIRED

MEMORANDUM NO. 16-99

TO: DISTRICT CONSTRUCTION ENGINEERS
DISTRICT STRUCTURES DESIGN ENGINEERS

FROM: Steven Plotkin, State Construction Structures Engineer 

COPIES: W. Nickas, C. Jones, W. Domico, O. Cordero

SUBJECT: WELDING WORKSHOP, AUGUST 24 - 26

The Florida Department of Transportation (FDOT) and the Florida Division of the Federal Highway Administration (FHWA) will host the FHWA workshop on Narrow-Gap Improved Electroslag Welding (NGI-ESW) For Bridges at the FDOT Gainesville Maintenance Yard. The objective of the workshop is to introduce a modified version of a productive welding process for joining thick plates. The workshop will be of interest to steel bridge fabricators, bridge designers, steel fabrication inspectors, weld test agencies, and academic researchers.

The Narrow Gap Improved Electroslag Welding procedure was developed from comprehensive research begun in the 1980's which was subsequently backed up by extensive field trials. The workshop will include classroom slide and hands-on demonstrations of the weld procedure. Each participant will receive the following materials:

- Workshop Workbook
- D1.5 Bridge Welding Code, prepared revisions to include NGI-ESW procedures
- Training Manual
- Process Operational Guide
- Technical Information Guide

Attached, are a course background sheet, workshop agenda, registration form and maps to the Gainesville Maintenance Facility. For additional information on this workshop, visit the following website: <http://www.fhwa.dot.gov/bridge/florida.htm> or contact Doug Edwards, Florida Division @ 850-942-9588, Krishna Verma, Office of Bridge Technology, Washington ,D.C. @ 202-366-4601 or Steven Plotkin, FDOT, State Construction Office @ 850-414-4155.

SIP/mw
Attachments



U.S. Department
of Transportation
Federal Highway
Administration

Office of Technology Applications
Office of Engineering/Bridge Division

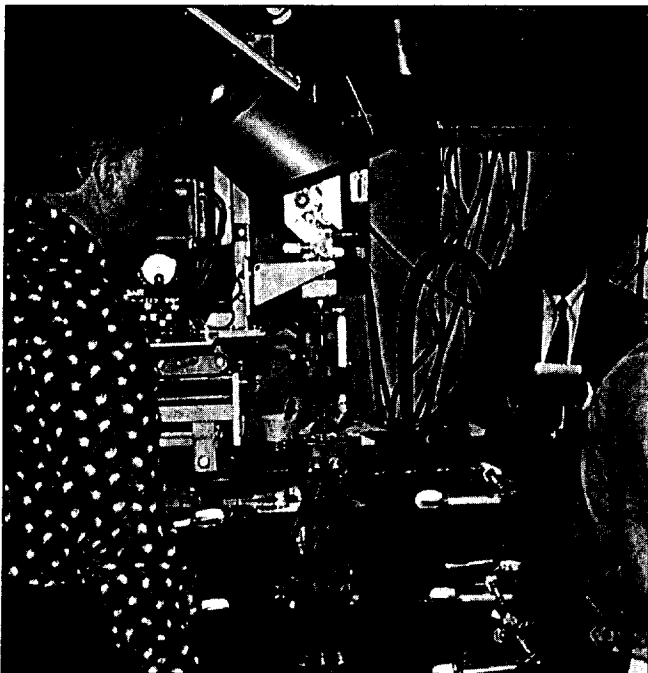
NARROW-GAP IMPROVED ELECTROSLAG WELDING FOR BRIDGES

DEMONSTRATION PROJECT NO. DP-102

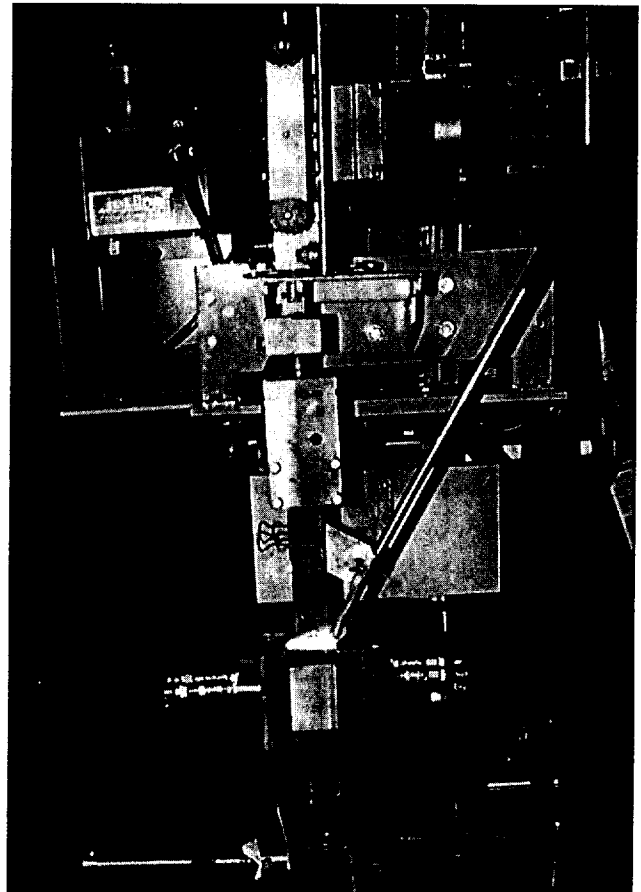
The objective of the Federal Highway Administration's (FHWA's) Demonstration Project 102 (DP-102) *Narrow-Gap Improved Electroslag Welding for Bridges* is to introduce a modified version of a productive welding process for joining thick plates or other thick wall components. The expected audience will include State Department of Transportation (DOT) bridge engineers, welding engineers, welding inspectors, operators, steel bridge fabricators, consultants, FHWA representatives, and others.

In the 1980s, the FHWA launched a comprehensive research program that developed a modified electroslag welding (ESW) process

called the Narrow-Gap Improved Electroslag Welding (NGI ESW) technique. This new technique significantly improved the properties of the electroslag welds. Upon completion of the research, extensive field trials were made to confirm research findings of the new ESW technology.



*Narrow-Gap Improved Electroslag Welding Process
(front view).*



*Narrow-Gap Improved Electroslag Welding Process
(side view).*

Workshop Agenda

DAY 1 (Afternoon)

Welcome
DEMONSTRATION WELD #1
Executive Summary
Introduction to Electro slag Welding
Development of NGI ESW Process

DAY 2 (Morning and Afternoon)

Equipment and Consumable Requirements
Setup and Operation
DEMONSTRATION WELD #2
NDE and Quality Assurance
Operator Controls and Adjustments
Weld Repair
DEMONSTRATION HON WELD #3
Impact Toughness and Fatigue Properties

DAY 3 (Morning)

DEMONSTRATION WELD #4
Distortion
RECAP: Factors Affecting Quality
Cost Comparison
Vendor List: ESW Equipment Handout
Specifications: NGI ESW
Workshop Summary
Questions / Discussion
Pass out/complete Questionnaire
Acknowledgments

REGISTRATION FORM
Narrow-Gap Improved Electroslag Welding for Bridges
FHWA Demonstration Project DP-102

Florida Department of Transportation, Gainesville Maintenance Yard
5301 N.E. 39 Ave.
Gainesville, Florida 32609

Name: _____

Job Title: _____

Organization: _____

Address: _____

Telephone: _____

Fax: _____

E-mail: _____

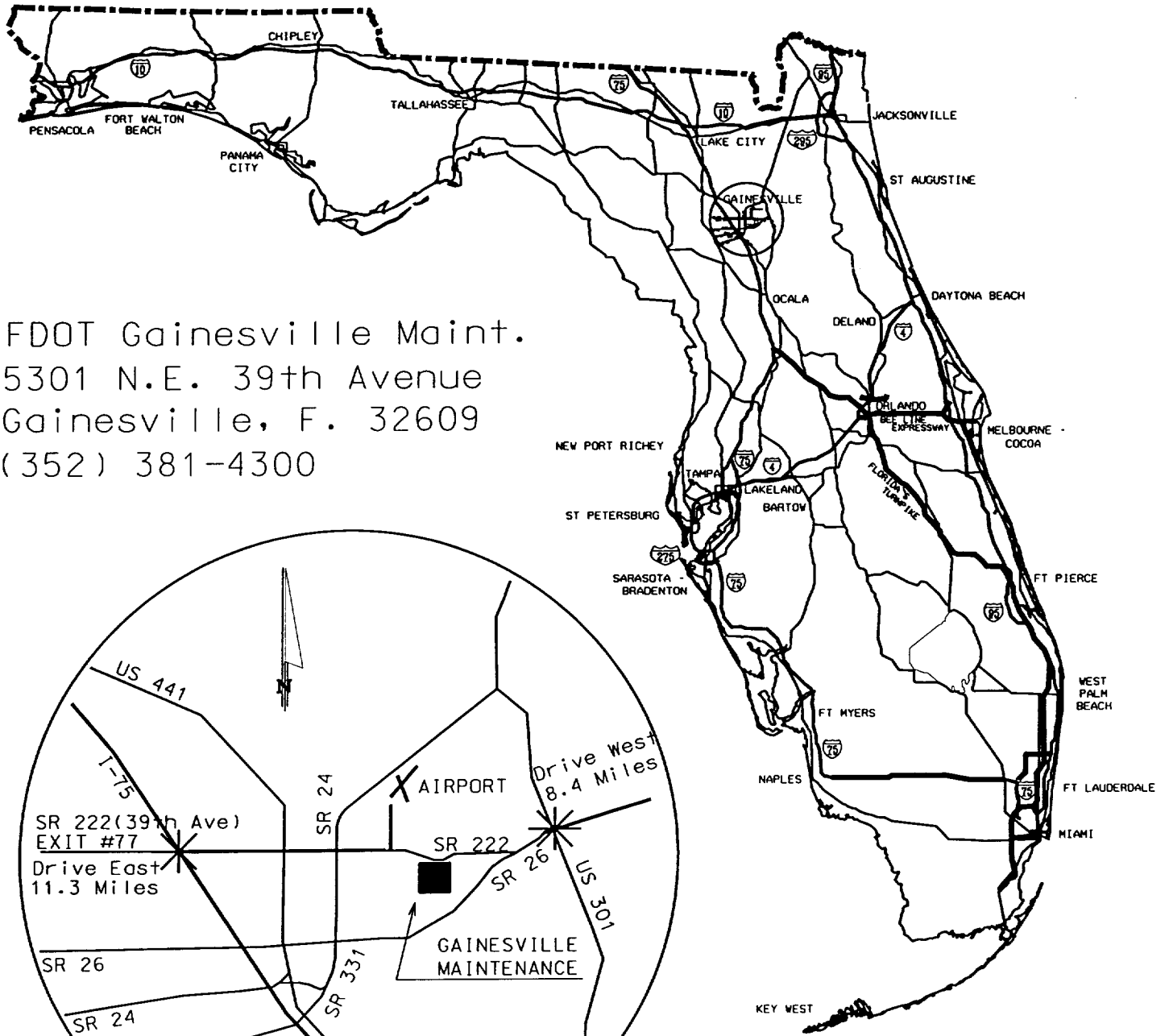
Please send, fax, or email your completed registration to:

Douglas L. Edwards
Florida Division Office
227 North Bronough Street, Room 2015
Tallahassee, Florida 32301

Phone: (850) 942-9588, Fax (850) 942-9691
E-mail: douglas.l.edwards@fhwa.dot.gov
Office Hours EST 7:00 am - 3:30 pm

Sponsored by:

National Bridge Research Organization - A Division of the Mid-America Transportation Center and the Federal Highway Administration



FDOT Gainesville Maint.
 5301 N.E. 39th Avenue
 Gainesville, F. 32609
 (352) 381-4300

2044.40'
S 8 63' 29" E

EXISTING 6' CHAIN LINK FENCE

LIFT STATION

WELDING SHOP

MAN. LT.

3000 GAL. FUEL TANK

D.A.A. #2

WELDING SHOP

AUTO SHOP

OVERFLOW PARKING

STORAGE

FOOT BRIDGE ISLAND

D.A.A. #1

BLDG. A

WAREHOUSE

CONCRETE FLUME

BLDG. #1
CARPENTRY SHOP

CREW SHED

CREW OFFICES

CREW CONFERENCE

D.A.A. #3

EQUIP. STORAGE

PARKING

C.A. FOUND

E.P. SET

S.R. 222

DATE
N. 45' 45" S
8 63' 45" E

N.E. 39th Ave

FLORIDA DEPARTMENT OF TRANSPORTATION
GAINESVILLE MAINTENANCE

5381 N.E. 39th AVENUE
GAINESVILLE, FL 32609
Phone (352) 381-4388

GAINESVILLE MAINTENANCE
YARD

ASBUILT PLAN

DATE : December 8, 1997

DRAWN BY: SJA

REVISED:

APPROVED BY: