

J. A. JONES CONSTRUCTION COMPANY

SPECIAL PROCESS PROCEDURE

FOR

BENDING AND STRAIGHTENING OF REINFORCING
BARS PARTIALLY EMBEDDED IN CONCRETE AND
PLACING OF BARS IN HARDENED-CONCRETE

WATERFORD SES UNIT NO.3
CONTRACT NO. W3-NY-4

REV.	DATE	ENGINEERING APPROVED BY	DATE	QUALITY ASSURANCE APPROVED BY	DATE	CONSTRUCTION APPROVED BY	DATE
0	4/26/76	P. Gault	4/27/76	W. H. H.	4/27/76	L. J. Ferry	4/27/76
1	5/13/76	al P. P.	5/13/76	W. H. H.	5/13/76	L. J. Ferry	
2	10/13/76	al P. P.	10/13/76	W. H. H.	10/13/76	R. B. M. M.	10/14/76
3	6/7/77	C. Long	6/7/77	W. H. H.	6-8-77	P. T. H.	6-8-77

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LETTER OF INFORMATION
ACT REQUEST
84-455
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SPECIAL PROCESS PROCEDURE		PROCEDURE NO. W-SP-6
TITLE: BENDING AND STRAIGHTENING OF REINFORCING BARS PARTIALLY EMBEDDED IN CONCRETE AND PLACING OF BARS IN HARDENED CONCRETE		REV. NO. 3 & DATE 6/7/77
PROJECT TITLE: WATERFORD SES UNIT NO. 3 CONTRACT NO. W3-NY-4		
<p>1.0 <u>PURPOSE</u></p> <p>To specify methods to be used by J. A. Jones Construction Company and its' subcontractors to straighten reinforcing steel after concrete has been placed.</p> <p>2.0 <u>SCOPE</u></p> <p>This procedure defines the methods to be used to straighten reinforcing steel after concrete has been placed.</p> <p>3.0 <u>REFERENCES</u></p> <p>3.1 ACI 318-71.</p> <p>3.2 ACI 318-71 - Commentary.</p> <p>R-1 3.3 1975 Supplement to ACI 318-71 and its Commentary.</p> <p>4.0 <u>DEFINITIONS</u></p> <p>None.</p> <p>5.0 <u>RESPONSIBILITY</u></p> <p>R-1 5.1 J. A. Jones is to assure proper preparation of reinforcing steel for bending, proper bending of reinforcing steel, and proper protection of concrete surfaces against damage by heating.</p> <p>R-1 6.0 <u>BENDING AND STRAIGHTENING OF REINFORCING DOWELS</u></p> <p>6.1 Reinforcing bars projecting from existing concrete at an angle may be brought to their plumb position, and bars that have been bent may be straightened providing that it is performed in accordance with ACI 318-71 and the requirements below.</p> <p>6.2 The minimum distance from the center of the bend to an existing concrete surface shall be 6 inches or 5 bar diameters whichever is greater.</p> <p>R-2 6.3 The preheat shall be applied to a length of bar equal to 5 bar diameters each way from the center of the bend except that preheat shall not extend below the surface of the concrete and in accordance with the following:</p>		

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- R-2 6.3.1 Heat the bar to between 1100° and 1200° F slowly (approx. 1 hr.).
- R-2 6.3.2 Hold between 1100° and 1200° F for approximately 10 minutes.
- R-2 6.3.3 Bend bar while between 1100° and 1200° F.
- R-2 6.3.4 Hold between 1100° and 1200° for 1/2 hour after bending.
- R-2 6.3.5 Slowly cool for 1/2 hour to 600° F.
- R-2 6.3.6 Use acetylene or propane for heating.

The temperature of the bar at the concrete interface shall not exceed 500° F. The heated bars shall not be artificially cooled (such as by water or forced air) until after cooling to at least 600° F.

- 6.4 Temperature - Measuring crayons shall be used to determine the temperature. Heat shall be applied in such a way as to avoid damage to the concrete. Care shall be taken to prevent quenching of heated bar either by application of water or by exposure to sudden down pour of rain.

R-1 7.0 MINIMUM BEND DIAMETER

- 7.1 In the case of bending of reinforcing bars, the following minimum diameters of bend shall apply:

Bar Sizes 3-8	-	6 bar diameter
Bar Sizes 9-11	-	8 bar diameter
Bar Sizes 14 & 18	-	10 bar diameter

8.0 ACCEPTABILITY OF BARS

- R-2 8.1 Straightened bars shall be visually inspected to determine whether they are cracked, reduced in cross section, or otherwise damaged. Any damaged portions will be cause for rejection and where feasible, rejected portion of bar shall be cut out and replaced by cadwelding or if entire bar is rejected, a new bar shall be grouted in place.

R-1 9.0 PLACING DOWELS IN HARDENED CONCRETE

- R-1 9.1 Dowels that are to be placed in hardened concrete shall be drilled and epoxy grouted in place in accordance with the following conditions.
- 9.2 Holes for various size dowels will be drilled as close as possible to design location and in accordance with the charts below:

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CHART "A"

Hole Size

Bar Size	4	5	6	7	8	9	10	11	14	18
Minimum Hole Size	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 7/8"	2 1/4"	2 3/4"

- R-2 9.3 The embedment length of the new bar shall be equal to the embedment length of the bar it is replacing.
- 9.4 Bars will be requisitioned and/or fabricated according to the reinforcing steel design drawings.
- R-3 9.5 The hole will be coated with neat coat of Sika-Dur-Hi-Mod Epoxy mixed and applied in accordance with manufacturer's recommendations.
- R-3 9.6 The hole will be filled half full with Type "F" Mortar prior to inserting dowel. The dowel will be inserted in hole, being careful to insure that the dowel is completely bottomed out. If necessary, add more Type "F" Mortar to completely fill hole.
- R-3 9.7 Bar will be adequately braced during set time of Mortar in order to insure dowel is plumb.

10.0 ATTACHMENTS

None.