

December 30, 1963

To: Mr. C. M. Knepshield, Buyer
From: H. L. Osborne, Sr. Mechanical Engineer
**Subject: CARBON BRICK AND BLOCK - MIDDLETOWN BLAST FURNACE
RELINE - HLO**

Please submit the enclosed drawings (BC-816, BC-825 and BC-3618) to the National Carbon Company, 230 North Michigan Avenue, Chicago 1, Illinois, Attention Mr. R. E. Shea, for quotations based on the following:

1. Sub Hearth Cooler Zone:

- (a) Pipe Sleeves - Vertically split, - Twenty-four tubes.
- (b) Wedges - Split as required for manufacturing, - Twenty-four spaces between tubes.
- (c) Carbonaceous cement, - Updated C-12.

2. Bottom Block:

- (a) $22\frac{1}{2}$ " thick - Two courses
- (b) $28\frac{1}{2}$ " " - Two courses
- (c) Keys
- (d) Wedge brick
- (e) Brick to Form 9" fill ring below hearth stoves
- (f) Carbonaceous paste

3. Hearth Wall:

- (a) All key brick - $4\frac{1}{2}$ "
- (b) Two tap hole blocks, machined as indicated
- (c) Two cinder notch blocks, machined to suit cooler
- (d) Plug for one cinder notch cooler as indicated
- (e) Carbonaceous paste

4. Tuyere Wall:

- (a) All key brick - $4\frac{1}{2}$ "
- (b) Tuyere blocks - Horizontally split, machined as indicated
- (c) Carbonaceous paste

Page #2
December 30, 1963

Request quotations broken down to the above four zones, with the carbonaceous paste and/or cement separate in each. The above shapes are to be blast furnace carbon block and brick material composition.

H. L. Osborne

HLO:BVM
cc: H. Holiday - Attention: K. Haley