TECHNICAL SPECIFICATION

ITEM 03350
GROUTING

1.0 GENERAL

1.1 SCOPE

This section covers grouting of pump, motor, and equipment baseplates and column baseplates. Epoxy Grout and grout applied as concrete fill in structures or for use in concrete masonry are also covered under this section.

2.0 MATERIALS

a. Nonshrinking Grout. SUPREME Grout as manufactured by Gifford Hill & Co., Inc., or approved equal according to Corps. of Engineers Specification CRD-C62l.

b. Epoxy Grout.

Adhesive	Sika "Sikadur Hi-Mod" or "Sikadur Hi-Mod Gel" or approved equal.
Aggregate	Suitable for application as recommended by the epoxy grout manufacturer.

c. Grout for Concrete Fill. Portland Type 1 Cement and Aggregate according to ASTM C-476.

d. Water. Clean and free from all deleterious substances.

3.0 EXECUTION

3.1 NONSHRINKING GROUT

Nonshrinking grout shall be provided at all baseplates and in locations indicated on the drawings.

Nonshrinking grout shall be furnished factory premixed so only water is added at the jobsite. Grout shall be mixed in a mechanical mixer. No more water shall be used than is necessary to produce a flowable grout.

a. Preparation. The concrete foundation to receive nonshrinking grout shall be saturated with water for 24-hours prior to grouting.

b. Placement. Grout shall be placed in strict accordance with the directions of the manufacturer so all spaces and cavities below the top of baseplates are completely filled

without voids. Forms shall be provided where structural components of baseplates will not confine the grout.

c. Edge Finishing. The grout shall be finished smooth in all locations where the edge of the grout will be exposed to view after it has reached its initial set. Edges of grout shall be cut flush at the baseplate of structural member or piece of equipment unless drawings indicate otherwise.

d. Curing. Nonshrinking grout shall be protected against rapid loss of moisture by covering with wet rags or polyethylene sheets. After edge finishing is completed, the grout shall be wet cured for at least seven (7) days.

3.2 EPOXY GROUT

Epoxy grout shall be provided for all anchor bolts and reinforcing bars installed in hardened concrete.

Epoxy resin, 50% hardener and 50% resin by volume, shall be provided in equal parts containers. Contractor shall not exceed manufacturer's recommendation for pot life.

a. Preparation. Where indicated on the drawings, anchor bolts and reinforcing bars shall be epoxy grouted in holes drilled into hardened concrete. Diameters of holes shall be ¼-inch (¼") larger than the maximum dimension of the bolt head, and ½-inch (½") larger than the bar diameter. The embedment depth for epoxy grouted anchor bolts and reinforcing bars shall not be less than 10 bolt or bar diameters unless indicated otherwise on the drawings.

Holes shall be prepared for grouting as recommended by the grout manufacturer.

b. Installation. Anchor bolts and reinforcing bars shall be clean, dry and free of grease and other foreign matter at time of installation. The bolts and bars shall be set and positioned and the epoxy grout shall be placed and finished in accordance with the recommendations of the grout manufacturer. Particular care shall be taken to ensure that all spaces and cavities are filled with epoxy grout, without voids.

c. Grout for Concrete Fill. Grout for concrete fill in structures or for use in concrete masonry should comply with ASTM C-476. Fine or coarse grout may be used depending upon the horizontal dimension of the grout space. Fine grout shall be used when the minimal dimension is two-inches (2") and coarse grout shall be used when the minimal dimension is four-inches (4").

Grout Proportions by volume shall be supplied as follows:

(1) Fine Grout. 1 part Portland cement; 2¼ to 3 parts fine aggregate

(2) Coarse Grout. 1 part Portland cement; 2¼ to 3 parts fine aggregate; 1 to 2 parts coarse aggregate

All grout should be of fluid consistency; the desired slump is eight-inches (8").

Whenever possible, grout should be batched, mixed, and delivered in accordance with ASTM C-94, requirements for transit mixed concrete. When a batch mixer is used on the job site, all materials should be mixed thoroughly for at least five (5) minutes. Grout which has not been placed l½ hours after water is first added should be discarded.

3.3 GROUT FOR CONRETE FILL

Refer to Cast-in-Place Concrete Specification.