





CITY of NOVI CITY COUNCIL

Agenda Item E
June 27, 2016

SUBJECT: Approval to purchase a Shortstop 2 Mini Concrete Mixer and Shortstop 3.5 Loading System from Ernest Industries Inc., the lowest responsive bidder, in the amount of \$67,500.

SUBMITTING DEPARTMENT: Department of Public Services – Field Operations Division  

CITY MANAGER APPROVAL: 

EXPENDITURE REQUIRED	\$67,500 (\$31,000 Base Bid Concrete Mixer, plus Alternate Loading System \$36,500)
AMOUNT BUDGETED	\$326,700 (101-442.20-982.000 – Miscellaneous Equipment)
APPROPRIATION REQUIRED	N/A
LINE ITEM NUMBER	101-442.20-982.000 (Miscellaneous Equipment)

BACKGROUND INFORMATION:

In FY 15/16 the Novi City Council appropriated \$38,000 for the purchase of a mini concrete mixer to be placed on the chassis of an F-550 truck equipped with a swap loader system. This truck is currently in operation at DPS and provides operators the ability to swap specialty pieces of equipment, like the concrete mini mixer, onto the same chassis within minutes. This truck system saves the City time in labor, and reduces the requirement to purchase multiple vehicles outfitted with specialty equipment.

In addition to bidding for the concrete mixer, an alternate bid was also solicited to procure a material loading system. This loading system allows operators to blend a calculated amount of sand, gravel, and Portland Cement directly into the truck's mini-mixing drum to be mixed with water, and then delivered to the jobsite for use. Because DPS currently stores bulk amounts of sand and gravel on the grounds, it is cheaper to blend materials on site at the Field Services Complex and deliver the concrete directly to the jobsite, rather than have this done by a private company – which is DPS's current practice.

Each year the City of Novi performs approximately 50 jobs that require crews to wait for private concrete trucks to arrive at jobsites. Because the delivery time of concrete often is unknown, a work leader is tasked with finding the crew "busy work" in that idle time. Crew sizes range from 5-10 staff members. Based off of 50 jobs a year, we estimate crews wait an average of ½ hour for each delivery, or for a total average of 3.5 hours of lost productivity. This can mean approximately 175 hours per year; totaling nearly \$8,000 in labor.

In addition, it is estimated that the Department uses at least 250 yards of concrete each season to perform routine non-motorized, roadway, and storm system maintenance on City assets. The average cost per yard of delivered concrete is \$110, with a minimum load requirement of three yards, or cost of \$330. Because minimum load fees result in high delivery costs, we estimate delivered material expenditures of \$27,500 annually.

The total cost for the truck mounted 2 yard concrete mini mixer (base bid), and the 3.5 yard loading system (alternate bid), is \$67,500. This cost is \$29,500 higher than the original budgeted amount of \$38,000. The overage is justified because of the efficiencies that would be realized by the City owning and operating its own a loading system instead of relying on concrete deliveries by private haulers. In addition, local suppliers have been reluctant to load small trucks because of safety concerns that could be caused at the plant.

Following a public bid solicitation period, two bids were received on May 17, 2016. Upon a thorough evaluation, DPS staff determined that Ernest Industries, Inc. met all specifications by providing a responsive bid.

A second bid that was received from Right Manufacturing Systems in the amount of \$60,800 (\$26,500 base bid mini-mixer, and \$34,300 loading equipment) was determined to be non-responsive. Staff reviewed this proposal and found that Right's proposed equipment did not meet the required specifications of the bid documents. Some examples are as follows:

<u>Specifications</u>	<u>Right Manufacturing</u>
20 HP Drive Motor	15 HP Drive Motor
Hydraulic Drive	Chain Drive
24" Wide Discharge Chute	15" Wide Discharge Chute
7' Long Discharge Chute	4' Long Discharge Chute

The \$29,500 overage is covered via an intra-category transfer resulting from savings associated with previously procured winter maintenance equipment, such as V-box inserts, wing plows, and operator controllers.

It is anticipated that the department will take delivery of the equipment by October.

RECOMMENDED ACTION: Approval to purchase a Shortstop 2 Mini Concrete Mixer and Shortstop 3.5 Loading System from Ernest Industries Inc., the lowest responsive bidder, in the amount of \$67,500.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Burke				
Council Member Casey				

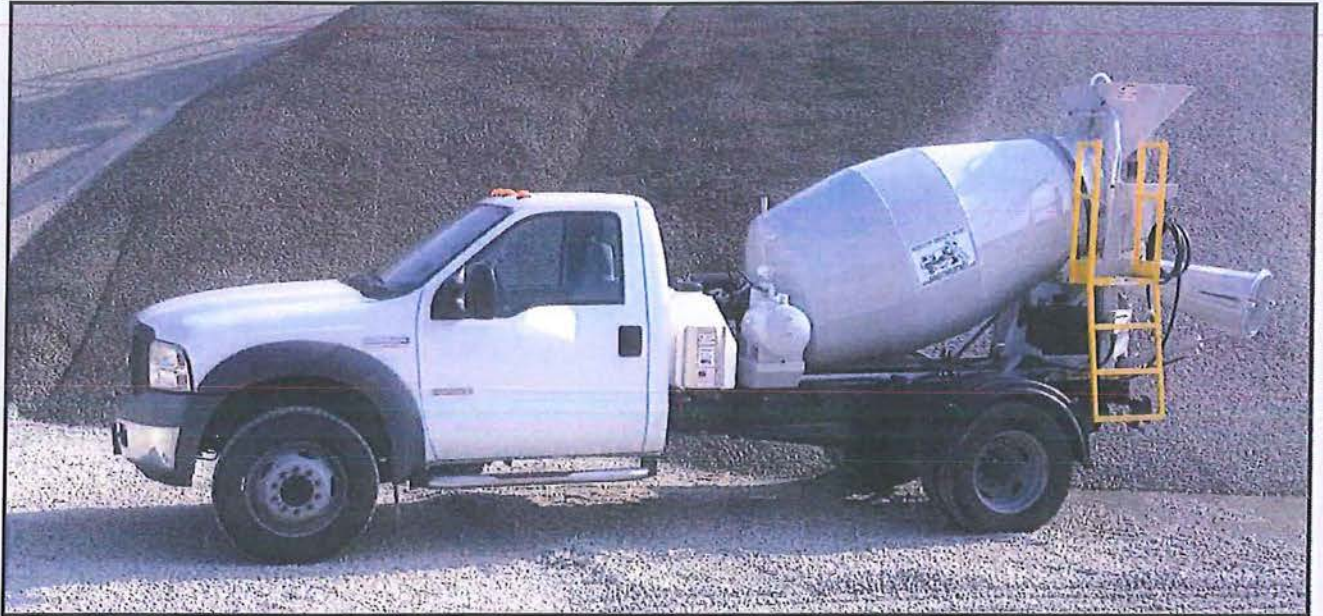
	1	2	Y	N
Council Member Markham				
Council Member Mutch				
Council Member Wrobel				

CITY OF NOVI
2 Yard Concrete Mixer
Tuesday, May 17, 2016 2:00 P.M.

Company	Ernest Industries	Right Manufacturing Systems
BASE BID		
2 Yard Concrete Mixer	\$ 31,000.00	\$ 26,500.00
Make/Model	ShortStop 2	2DH-2 (Equal)
Delivery after receipt of order	120-150 days ARO	6-8 weeks
ALTERNATE #1		
Loading Equipment	\$ 36,500.00	\$ 34,300.00
Make/Model	ShortStop 3.5 Loading System	2CL-3EX (Equal)
Delivery after receipt of order	120-150 days ARO	6-8 weeks
Acknowledged addenda	NA	NA
Comments	Delivery is estimate based on current work load & back log.	Hopper on Alternate is a 3.2 yard hopper (exceeds 2.5)

SHORTSTOP®

2 CONCRETE MIXER



Small In Size – Big In Profits And Big On Features

- 2 Yard Capacity
- No CDL Required
- Self Contained (Gasoline/Diesel)
- 19,000 GVW Chassis Required
- Easy Installation
- Extremely Maneuverable
- Fuel Efficient
- Charge Chute Extension
- 80 Gallon Water Tank
- Fully Assembled & Tested

Ready mix producers, contractors and municipalities will all benefit from the cost savings of the Shortstop® for delivery and placement of small loads.

Our customers like the convenience of its low-clearance height, low-curb weight and maneuverability.

The Shortstop® is constructed using only the highest-quality components to insure you many years of reliable service. For your short-load concrete equipment needs, count on Ernest Industries - since 1967



ADD A SHORTSTOP® TO YOUR LINEUP

SHORTSTOP®

3.5 LOADING SYSTEM



- **DESIGNED SPECIFICALLY FOR LOADING SMALL READY MIX TRUCKS**
- **COMPLETELY SELF-CONTAINED AND PORTABLE**
- **LOW-COST, SIMPLE TO OPERATE, AND NO CLEANUP AFTER LOADING**
- **YOU CAN ENTER THE PROFITABLE SHORT-LOAD CONCRETE BUSINESS WITH A SMALL INVESTMENT**



ADD A SHORTSTOP® TO YOUR LINEUP



ERNEST INDUSTRIES, INC.

1221 Groop Road
Springfield, Ohio 45504

Phone (937) 325-9851

Fax (937) 324-8992

E-mail: sales@ernestindustries.com

Web: www.ernestindustries.com

Welding and Fabricating Since 1967

May 10, 2016

Ms. Sue Morianti
Purchasing Manager
City of Novi
City Clerk's Office
45175 Ten Mile Road
Novi, MI 48375-3024

RE: 2 Yard Concrete Mixer Bid

Dear Ms. Sue Morianti:

We are in receipt of your invitation to bid on a 2 Yard Concrete Mixer for which we thank you very much.

We are pleased to enclose our completed bid package along with a color brochure for both the Shortstop 2 Mixer and Shortstop 3.5 Loading System. Our bid is in complete compliance with the specifications, no exceptions or deviations.

Delivery on the unit will be approximately 120-150 days ARO. In compliance with the specifications our proposal includes a factory direct technician for a period of two working days to instruct Novi personnel in the operation and maintenance of the equipment.

Shortstop equipment carries a one year warranty against defective parts and workmanship. In addition, Ernest Industries maintains a complete inventory of parts for immediate shipment.

We are confident with our 50 plus years' experience, we can provide the City of Novi a quality concrete mixer and loading system insuring you many years of reliable service.

Thank you for the opportunity to bid and if you have any questions, please contact our office at (937) 325-9851.

Sincerely,

Michael T. Stute
Ernest Industries, Inc.



CITY OF NOVI

2 YARD CONCRETE MIXER

SPECIFICATIONS

OVERVIEW

The City of Novi is requesting bids on a Shortstop 2 Yard Concrete Mixer or equivalent. The unit must be mounted to a primed and painted commercial quality flatbed skid; meeting the specifications of the Swap Loader SL-105 system, and 100 series sub-frame. The equipment will be transported on a Ford F-550 truck to make non-motorized and roadway repairs.

GENERAL

Materials furnished shall be new and at least of standard quality currently used commercially, conforming to current engineering and manufacturing practices. Materials shall be free from defects that adversely affect the function or appearance of the finished unit. The Concrete Mixer furnished under this specification shall be assembled to the manufacturer's latest current design and conform to all applicable OSHA safety regulations.

BASE BID SPECIFICATIONS:

Shortstop® 2 Concrete Mixer or Equivalent

General: The unit is a self-contained transit-type drum mixer complete with planetary gear reduced drive, hydraulic drive system powered by self-contained gasoline engine, self-contained water system for slump control and wash down. Equipped with discharge chutes for placing wet concrete and the unit is capable of agitating and transporting 2.00 cubic yards (1.5 cubic meters) of concrete at a reasonable slump. Operator controls are all electronic situated on the rear of the unit and in chassis cab including; drum speed and direction, water pump and optional hydraulic discharge chute control. The drum is capable of 18 RPM at 2500 engine RPM in both directions.

Mixer body installed on a customer defined hook lift frame with rear roller assemblies. Factory direct hook lift frame to insure compatibility with customer system. The mixer body will be equipped with a 12VDC automotive type battery for self-contained operation of auxiliary engine less truck chassis. The ladder platform assemble on the mixer will feature a hinged ladder for clearance when loading and unloading the mixer. In cab control box eliminated with HLC option.

Dimensions: The mixer body has the following dimensions:

OAL: 152" (excluding chutes)

OAW: 81"

OAH: 74"

Weight: Approximately 3,000 lbs less water and concrete

Drive: **22:1 planetary drive**, designed specifically for a transit concrete mixer. The drive unit is heavy-duty cast iron case with hardened planetary gears and ball bearings. The drive is mounted on a gimbal (pivot) allowing the drive to move freely, compensating for misalignment and movement. The drive features 10 bolt mounting flange for the drum and a spline input shaft for hydraulic motor input (keyed input or output shafts are not permitted). The drive features splash lubrication of the planetary section and pressurized case drain oil in the spline motor/gear box interface.

Hydraulic motor, direct spline coupled to planetary drive with oscillating mount, 5000 psi maximum operating pressure. The motor is equipped with a case drain and SAE O-ring style ports.

Hydraulic pump, pressure compensated pump, capable of generating 3000 psi with a directional servo valve mounted on the pump to control speed and direction of the drum. Separate hydraulic control valves for drum speed and direction are not permitted. Pump is a closed-loop system with charge pump and replaceable high pressure charge filter. The pump is further equipped with a separate implement circuit to power optional hydraulic powered rear chute & hydraulic powered charge chute extension. Implement circuit shall work independently of the main circuit without effecting speed or direction of the drum. Pump is directly coupled to gasoline engine, belt and pulley drives prohibited.

Hydraulic reservoir is fabricated from 1/8" carbon steel plate and features one 4" diameter inspection/cleanout cover. The reservoir is equipped with a return 1" NPT canister type filter and a stainless steel suction strainer with bypass. Two sight level gauges and vented fill cap are provided. All high pressure hose and fittings are rated at 2,500 psi and equipped with JIC type fittings. The reservoir is round in construction for maximum cooling surface area with a 6 gallon capacity.

Power Unit: The unit is equipped with a Honda GX-630 (or equal) four cycle gasoline engine with a rated gross horsepower of 20.8. The engine shall be equipped electric start including a key switch, digital hour meter, manual choke and manual throttle control. The engine requires 12VDC electrical power from the chassis or installation of a separate battery. The engine is equipped with a 6 gallon EPA/CARB approved fuel tank a canister style muffler with vertical exhaust pipe. The engine is 50 state CARB and EPA certified. The engine is equipped with forced oil lubrication and replaceable canister style oil filter. The hydraulic pump powering the mixer drum shall be directly coupled to the output shaft of the gasoline engine. Belt and pulley drives are not permitted.

Drum: Drum head is ¼" thick spun carbon steel with reinforced machined flange to that mates to the planetary gear drive. Flange features and machined pilot with 10 each 5/8-11 tapped holes for attaching the gear drive. The drum and fins are fabricated from 3/16 high-strength carbon steel welded 100% inside and out. A trunnion support ring of 1" thick X 2" wide carbon steel is welded to the aft cone. Charging/discharge fins are two separate helix, rotating 2.5 revolutions each over length of drum fabricated from 3/16" high strength carbon steel. In the belly of the drum, the fins are 12" tapering to 7" at the discharge end. The fins feature hardened steel rebar welded to the tips and fold over fins at discharge end. The fins are fully welded to drum and equipped with large wash holes approximately 12" apart. Two each bolt on surge fins are provided for even discharge of ready-mix concrete. A manway (22" X 28" oval) is located on front of drum for access interior and features 22 each ½ bolts to secure. The rear of the drum is supported by two carrier bearings, mounted on an adjustable pedestal. The bearings feature a hardened exterior with tapered roller bearings and lip seals for long life. The bearings are further protected by a felt disk on each side to prevent direct water spray. Each bearing features a grease zerk.

Frame: Heavy-duty structural and plate steel frame electrically welded at all joints. The front pedestal is fabricated from ¼" carbon steel formed to a rigid rectangle 12" wide x 72". The pedestal is reinforced with a ½" carbon steel plate 18" X 11" with holes to accept the planetary drive unit. Additional gussets are installed and the entire unit fully welded. The rear tower is fabricated from formed steel plates creating two rigid steel columns connected by a common top plate. The entire structure is welded to a tubular steel frame and gusseted to the main frame with two each 2.5" X 1.5" structural steel tubes. The rear tower is equipped with a heavy-duty tubular steel bearing hoop with adjustable drum stop. The rear tower is further equipped with a removable discharge funnel complete with replaceable gum rubber bib. The mixer is attached to the chassis with eight (8) U-bolts minimum 5/8" diameter with cap plates. A treated wood crush plate is installed between the mixer body frame and truck chassis frame.

Discharge Chute:

A 24" wide discharge chute at drum, tapering to 12" wide on a rotating pedestal is provided. One each permanent mounted fold over extension chute 34" long is provided for a total reach of over 7' (2.1 meters). The pedestal is equipped with two each 2" diameter replaceable oil impregnated bushing with grease zerk. The discharge chute shall pivot approximately 160 degrees and is equipped with a manual lock operable from either side of the unit. The lock is further equipped with a transport lock to insure the chute stays locked during over the road transit.

A power discharge chute control, double acting hydraulic cylinder, additional hydraulic circuit, toggle switches in rear and cab control boxes to automatically raise and lower discharge chute.

Additional (1) clip on discharge chute (34") with frame mounted storage stand.

Access Platform:

Structural steel tube ladder leads to a non-skid metal platform enclosed on two sides with square tube railing. The ladder rungs are fabricated from perforated non-skid material. The ladder assembly is held to the main frame with ½" & 3/8" fasteners, permanent welded ladders not permitted. The ladder/platform assembly is powder coated safety yellow.

Water system:

The mixer is equipped with an 80 U.S. gallon zero pressure water tank is locate on the front of the mixer frame. Sight gauges and fill ports are provided on both sides of tank. A 12VDC powered diaphragm pump delivers water at a rate of 4 GPM at a maximum pressure of 45 psi. System includes: 25' hose, water nozzle, hose hook, water filter and tank drain. Plumbing is provided to inject water into rotating drum from the rear operations station for slump control.

Fenders: Heavy-duty polyethylene fenders with structural steel brackets.

Controls: Electronic controls for speed and direction of drum, water pump (on/off) and optional power discharge chute control are located in the chassis cab and rear operators station. The controls are mounted in a waterproof aluminum box and feature MIL spec waterproof switches. The electrical system is equipped with a re-settable 30 amp circuit breaker.

Finish: Unit is completely coated with self-etching primer and finished coated with a two component urethane white finish.

Parts and Service:

A complete inventory of parts available for shipment within 24 hours.

Warranty: Mixer body shall carry a one year warranty against defective parts and workmanship.

Operators Manual and Training:

One complete operators & parts manual will be supplied with the unit. In addition, a factory technician shall train City Personnel in the operation and maintenance of the unit for no less than six (6) regular business hours.

ALTERNATE #1

Loading Equipment Specifications:

Shortstop® 3.5 Loading System or Equivalent

- General:** Self-contained loading system designed specifically for loading small load concrete mixers. The unit is equipped with a 2.5 cubic yard aggregate hopper and water metering system.
- Dimensions:** Approximately 24' long, 7' 6" wide and 12' 3" tall.
- Weight:** Shipping weight, approximately 4,000 lbs.
- Production:** The unit shall be capable of delivering aggregate & cement at a rate of one cubic yard every 2-3 minutes.
- Hopper:** The unit shall feature an aggregate hopper fabricated from ¼" steel electrically welded at all joints. The hopper will have a volume of approximately (2.5) cubic yards. An adjustable dam gate to regulate material discharge speed will be provided. The hopper will be equipped with wing walls on three sides to prevent material spillage when loading. Welded graduations of ¼, ½, ¾, 1 & 1-¼, 1-½ cubic yards will be provided for calibrating recipes.
- Frame:** The main frame of the Loading System is fabricated from heavy duty structural steel H beam and steel tubing, rigidly reinforced and electrically welded at all joints. Two each 4" X 8" X ¼" rectangular tube forklift staves will be provided to easily move the unit with a standard forklift. The main H frame structure shall be elevated approximately 6" at eight places for easy cleaning under the unit. Each elevated leg will be equipped with a heavy-duty ½" A-36 plate with mounting hole.
- Conveyor:** The conveyor will be a high capacity troughing style roller type conveyor fabricated from structural steel channel and equipped with replaceable trough type rollers and idler rollers. An 18" wide, 220 lb, 2 ply 5/16" rubber belt designed specifically for aggregate environment and equipped with snag free lacing is provided. A hydraulic motor directly coupled to the drive pulley will power the conveyor belt. The conveyor will feature a lagged head pulley and self-cleaning winged tail pulley. A spring loaded belt scraper shall be provided with replaceable UHMW scraper blade. The conveyor shall be equipped with removable sheet metal guarding top & bottom. The discharge of the conveyor shall be equipped with a boot style discharge transitioning to 12" lay flat hose. The approximate loading height of the conveyor is 120-123"
- Operators Platform:** A platform and ladder assembly shall be provided for the purpose of inspecting contents of hopper and loading cement via 94# bags. The

ladder/platform shall be removable and feature non-skid ladder rungs and an open steel grate platform approximately 33" X 54". The platform will be equipped with OSHA approved Hand rail with an open section for access to cement bags.

Water Meter: The Loading System shall feature a digital re-settable water meter. When activated, water is delivered to the mouth of the rotating drum trailer. The water system will also feature a wash down hose located near the conveyor discharge for cleanup of mixers and slump control. The water system features a single garden hose connection for operation and Y type strainer to filter water.

Engine & Power System:

The Loading System is completely self-contained, powered by a Honda GX 390 four stroke gasoline engine and integral hydraulic system. A gear type hydraulic pump shall be directly coupled to the engine and have a 15 gallon hydraulic reservoir with return filter and filler/breather/strainer assembly. The engine will be equipped with a cyclone type air cleaner for added protection in dusty environment. The hydraulic system will include a spool type on/off valve for conveyor, pressure relief valve and hydraulic hoses rated at 2,500 psi operating pressure. All hoses will be supported in vibration proof clamp assemblies to prevent rubbing on frame work

Controls: A single control panel shall be located on the frame near the conveyor discharge and engine recoil. The controls shall consist of conveyor (on/off), water meter and water valve. All controls will be marked for function.

Cement Bag Breaker:

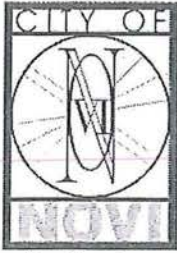
A cement bag breaker shall be provided, and must be accessible from the platform on the rear of the unit. The bag breaker shall pivot away from aggregate hopper for loading.

Shipping: The unit must fit on a single drop trailer, and set up quickly on site for easy operation.

Warranty: Must carry a one year warranty against defective parts and workmanship.

Operators Manual and Training:

One complete operators & parts manual will be supplied with the unit. In addition, a factory technician shall train City Personnel in the operation and maintenance of the unit for no less than six (6) regular business hours.



cityofnovi.org

CITY OF NOVI
2 YARD CONCRETE MIXER

BID FORM

We, the undersigned as bidder, propose to furnish to the City of Novi, according to the specifications, terms, conditions and instructions attached hereto and made a part thereof:

BASE BID:

2 Yard Concrete Mixer \$ 31,000.00 Lump Sum (Delivered)

Make/Model SHORTSTOP 2

Delivery after receipt of order 120-150 DAYS ARO

ALTERNATE #1:

Loading Equipment \$ 36,500.00 Lump Sum (Delivered)

Make/Model SHORTSTOP 3.5 LOADING SYSTEM

Delivery after receipt of order 120-150 DAYS ARO

We acknowledge receipt of the following Addenda: N/A
(please indicate numbers)

EXCEPTIONS TO SPECIFICATIONS:

Please provide exceptions on separate sheet. Clearly specify the "Item" your exception(s) refer to, in the order in which they are listed in the table.

COMMENTS: DELIVERY IS ESTIMATE BASED ON
CURRENT WORK LOAD AND BACK LOG.

NON-IRAN LINKED BUSINESS

By signing below, I certify and agree on behalf of myself and the company submitting this proposal the following: (1) that I am duly authorized to legally bind the company

submitting this proposal; and (2) that the company submitting this proposal is not an "Iran linked business," as that term is defined in Section 2(e) of the Iran Economic Sanctions Act, being Michigan Public Act No. 517 of 2012; and (3) That I and the company submitting this proposal will immediately comply with any further certifications or information submissions requested by the City in this regard.

THIS BID SUBMITTED BY:

Company (Legal Registration) ERNEST INDUSTRIES, INC.

Address 1221 GROOP ROAD

City SPRINGFIELD State OH Zip 45504

Telephone (937) 325-9851 Fax (937) 324-8992

Representative's Name MICHAEL T. STUTE

Representative's Title PRESIDENT

Authorized Signature Michael T. Stute

E-mail MIKE@ERNESTINDUSTRIES.COM

Date MAY 9, 2016