



CITY OF TAMPA

Bob Buckhorn, Mayor

CONTRACT ADMINISTRATION DEPARTMENT

Michael W. Chucran, Director

ADDENDUM 2

July 13, 2017

Contract 17-C-00030; David L. Tippin Water Treatment Facility Lime Slaker Replacement

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

- Item 1: Specifications: Insert, after Section 40 05 18 Miscellaneous Pipe and Fittings, the attached Section 40 05 20 Valves.
- Item 2: Replace Drawing M1 "Lime Slaker System Schematic" with the attached three Supplemental Drawings SD-1 "P&ID Legend", SD-2 "Lime Slaking P&ID" and SD-3 "Lime Slaking P&ID".
- Item 3: In Specification Section 46 30 40 "Lime Slaking and Feed Equipment", Subsection 2.03 B, replace the third sentence with the following: "Rigidly construct it of carbon steel."

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to Contract Administration@tampagov.net.

Jim Greiner

Jim Greiner, P.E., Contract Management Supervisor

SECTION 40 05 20 VALVES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Requirements for furnishing and installing all valves and operators, except for those specified in Specification Section 46 30 40.
- B. Related work specified in other sections includes, but is not limited to, the following:
 - 1. Section 05 05 13 - Galvanizing
 - 2. Section 09 96 00 - High Performance Coatings
 - 3. Division 26 - Electrical

1.02 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
 - 1. American Society of Mechanical Engineers (ASME):
 - a. B16.1, Gray Iron Pipe Flanges and Flanged Fittings (Classes 25, 125, and 250).
 - 2. American Water Works Association (AWWA):
 - a. C111/A21.11, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - b. C504, Rubber-Seated Butterfly Valves.
 - c. C508, Swing-Check Valves for Waterworks Service, 2-in. through 24-in. (50 mm Through 600 mm) NPS.
 - d. C509, Resilient-Seated Gate Valves for Water Supply Service.
 - e. C511, Reduced-Pressure Principle Backflow Prevention Assembly.
 - f. C542, Electric Motor Actuators for Valves and Slide Gates
 - g. C550, Protective Interior Coatings for Valves and Hydrants.
 - h. C606, Grooved and Shouldered Joints.
 - i. C800, Underground Service Line Valves and Fittings.
 - 3. ASTM International (ASTM):
 - a. A276, Standard Specification for Stainless Steel Bars and Shapes.
 - b. A351/A351M, Standard Specification for Castings, Austenitic, for Pressure-Containing Parts.
 - c. A564/A564M, Standard Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes.
 - d. B61, Standard Specification for Steam or Valve Bronze Castings.
 - e. B62, Standard Specification for Composition Bronze or Ounce Metal Castings.
 - f. B98/B98M, Standard Specification for Copper-Silicon Alloy Rod, Bar, and Shapes.

- g. B127, Standard Specification for Nickel-Copper Alloy (UNS N04400) Plate, Sheet, and Strip.
 - h. B139, Standard Specification for Phosphor Bronze Rod, Bar and Shapes.
 - i. B164, Standard Specification for Nickel-Copper Alloy Rod, Bar, and Wire.
 - j. B194, Standard Specification for Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar.
 - k. B584, Standard Specification for Copper Alloy Sand Castings for General Applications.
 - l. D429, Standard Test Methods for Rubber Property-Adhesion to Rigid Substrates.
 - m. D1784, Standard Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds.
- 4. FM Global (FM).
 - 5. Food and Drug Administration (FDA).
 - 6. International Association of Plumbing and Mechanical Officials (IAPMO).
 - 7. Manufacturers Standardization Society (MSS):
 - a. SP-80, Bronze Gate, Globe, Angle and Check Valves.
 - b. SP-81, Stainless Steel, Bonnetless, Flanged Knife Gate Valves.
 - c. SP-85, Gray Iron Globe & Angle Valves, Flanged and Threaded Ends.
 - d. SP-88, Diaphragm Valves.
 - e. SP-110, Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends
 - 8. NSF International (NSF): 61, Drinking Water System Components—Health Effects.
 - 9. Underwriters Laboratories (UL).
 - 10. USC Foundation for Cross-Connection Control and Hydraulic Research.

1.03 SUBMITTALS

A. Action Submittals:

- 1. Shop Drawings:
 - a. Product data sheets for each make and model.
 - b. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
 - c. Power and control wiring diagrams, including terminals and numbers.

B. Informational Submittals:

- 1. Certification for compliance to NSF 61 for valves used for drinking water service.

2. Tests and inspection data.
3. Operation and Maintenance Data as specified.

PART 2 PRODUCTS

2.01 GENERAL

- A. Valves to include operator, actuator, handwheel, chain wheel, extension stem, floor stand, operating nut, chain, wrench, and accessories to allow a complete operation from the intended operating level.
- B. Valve to be suitable for intended service. Renewable parts not to be of a lower quality than specified.
- C. Valve same size as adjoining pipe, unless otherwise called out on Drawings or in Supplements.
- D. Valve ends to suit adjacent piping.
- E. Resilient seated valves shall have no leakage (drip-tight) in either direction at valve rated design pressure. All other valves shall have no leakage (drip-tight) in either direction at valve rated design pressure, unless otherwise allowed for in this section or in stated valve standard.
- F. Size operators and actuators to operate valve for the full range of pressures and velocities.
- G. Valve to open by turning counterclockwise, unless otherwise specified.
- H. Factory mount operator, actuator, and accessories.

2.02 MATERIALS

- A. Bronze and brass valve components and accessories that have surfaces in contact with water to be alloys containing less than 16 percent zinc and 2 percent aluminum.
 1. Approved alloys are of the following ASTM designations: B61, B62, B98/B98M (Alloy UNS No. C65100, C65500, or C66100), B139 (Alloy UNS No. C51000), B584 (Alloy UNS No. C90300 or C94700), B164, B194, and B127.
 2. Stainless steel Alloy 18-8 may be substituted for bronze.
- B. Valve materials in contact with or intended for drinking water service to meet the following requirements:
 1. Comply with requirements of the Safe Drinking Water Act and other applicable federal, state, and local requirements.
 2. Coatings materials to be formulated from materials deemed acceptable to NSF61.

3. Furnish certification that product is certified as suitable for contact with drinking water by an accredited certification organization in accordance with NSF 61. Provide certification for each valve type used for drinking water service.

2.03 FACTORY FINISHING

A. Epoxy Lining and Coating:

1. Use where specified for individual valves described herein.
2. In accordance with AWWA C550 unless otherwise specified.
3. Either two-part liquid material or heat-activated (fusion) material except only heat-activated material if specified as “fusion” or “fusion bonded” epoxy.
4. Minimum 7-mil dry film thickness except where limited by valve operating tolerances.

B. Exposed Valves:

1. In accordance with Section 09 96 00, High Performance Coatings.

2.04 VALVES

A. Gate Valves:

1. Gate Valve 3 Inches and Smaller:
 - a. All-bronze, screwed bonnet, packed gland, single solid wedge gate, non-rising stem, Class 125 rated 200 psi CWP, complies with MSS SP-80 Type 1.
 - b. Manufacturers and Products:
 - 1) Crane; Figure 438, NPT threaded ends.
 - 2) Stockham; Figure B103, NPT threaded ends.
 - 3) Crane; Figure 1324, soldered ends.
 - 4) Stockham; Figure B104, soldered ends.

B. Globe Valves:

1. Globe valve 3” and Smaller:
 - a. All bronze, union bonnet, packed gland, inside screw, rising stem, TFE disc, Class 150 rated 150 psi SWP/200 psi CWP, complied with MSS SP 80 Type 2.
 - b. Manufacturers and Products:
 - 1) Stockham: Figure B-22T, NPT threaded ends.
 - 2) Crane Company: Figure 7TF, NPT threaded ends.
 - 3) Milwaukee: Model 1590T, soldered ends.
 - 4) Nibco: Figure S-235-Y, soldered ends.

C. Ball Valves:

1. Ball Valve 2 Inches and Smaller for General Water and Air Service:
 - a. Two-piece, full port, NPT threaded ends, bronze body and end piece, hard chrome-plated solid bronze or brass ball, RTFE seats and packing, blowout-proof stem, adjustable packing gland, zinc-coated steel hand lever operator with vinyl grip, rated 600-pound WOG, 150-pound SWP, complies with MSS SP-110.
 - b. Manufacturers and Products:
 - 1) Threaded:
 - a) Conbraco Apollo; 77-100.
 - b) Nibco; T-585-70.
 - 2) Soldered:
 - a) Conbraco Apollo; 77-200.
 - b) Nibco; S-585-70.
2. Ball Valve 2 Inches and Smaller for Equipment Air System Shutoff:
 - a. Two-piece, NPT threaded ends, bronze body and end piece, hard chrome-plated solid bronze or brass ball, RTFE seats and packing, blowout-proof stem, adjustable packing gland, 125 psig rated, safety exhaust port to exhaust downstream side when valve is in closed position, zinc-coated steel locking handle with vinyl grip.
 - b. Meets OSHA Regulation 29 CFR Part 1910.147 requirements.
 - c. Manufacturers and Products:
 - 1) Conbraco Apollo; 75-100-41.
 - 2) Nibco; T-580-70-SV/T-585-70-SV.
3. Stainless Steel Ball Valve 3 Inches and Smaller:
 - a. Two-piece, full port, ASTM A276 GR 316 or ASTM A351/A351M GR CF8M stainless steel body and end piece, NPT threaded ends, ASTM A276 Type 316 stainless steel ball, reinforced PTFE seats, seals, and packing, adjustable packing gland, blowout proof stainless steel stem, stainless steel lever operator with vinyl grip, rated 1,000 psig CWP, complies with MSS SP-110.
 - b. Manufacturers and Products:
 - 1) Conbraco Apollo; 76F-100-A Series.
4. PVC Ball Valve 2 Inches and Smaller:
 - a. Rated 150 psi at 73 degrees F, with ASTM D1784, Type I, Grade 1 polyvinyl chloride body, ball, and stem, end entry, double union design, solvent-weld socket ends, elastomer seat, Viton or Teflon O-ring stem seals, to block flow in both directions.
 - b. Manufacturers and Products:
 - 1) Nibco: Chemtrol Tru-Bloc
 - 2) ASAHI/America: Type 21

D. Miscellaneous Valves:

1. Pressure Reducing Valve, 2 Inches and Smaller:
 - a. Direct diaphragm, spring controlled, bronze body, NPT threaded ends, 200 psig rated minimum.
 - b. Manufacturers and Products:

- 1) Fisher: Type 75A.
- 2) Watts: Series 223.

2.05 OPERATORS AND ACTUATORS

A. Manual Operators:

1. General:
 - a. For AWWA valves, operator force not to exceed requirements of the applicable valve standard. Provide gear reduction operator when force exceeds requirements.
 - b. For non-AWWA valves, operator force not to exceed applicable industry standard or 80 pounds, whichever is less, under any operating condition, including initial breakaway. Provide gear reduction operator when force exceeds requirements.
2. Exposed Operator:
 - a. Galvanized and painted handwheel.

PART 3 EXECUTION

3.01 INSTALLATION

A. Screwed Ends:

1. Clean threads by wire brushing or swabbing.
2. Apply joint compound.

B. PVC and CPVC Valves: Install using solvents approved for valve service conditions.

C. Valve Installation and Orientation:

1. General:
 - a. Install valves so handles operate from fully open to fully closed without encountering obstructions.
 - b. Install valves in location for easy access for routine operation and maintenance.
 - c. Install valves per manufacturer's recommendations.
2. Gate, Globe, and Ball Valves:
 - a. Install operating stem vertical when valve is installed in horizontal runs of pipe having centerline elevations 4 feet 6 inches or less above finished floor, unless otherwise shown.
 - b. Install operating stem horizontal in horizontal runs of pipe having centerline elevations greater than 4 feet 6 inches above finish floor, unless otherwise shown.

D. Locate valve to provide accessibility for control and maintenance.

3.02 TESTS AND INSPECTION

- A. Test valve while testing pipelines.
- B. Test that valves open and close smoothly under operating pressure conditions. Test that two-way valves open and close smoothly under operating pressure conditions from both directions.
- C. Set, verify, and record set pressures for relief and regulating valves.
- D.

END OF SECTION

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




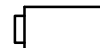

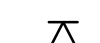
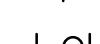


INSTRUMENT SYMBOLS

 MOTOR, 480 VAC, 3 PHASE








ABBREVIATIONS

FE FLOW METER
 FI FLOW INDICATOR
 FIT FLOW INDICATING TRANSMITTER
 LS LIMIT SWITCH
 PS PRESSURE SWITCH
 SOL SOLENOID
 TC TEMPERATURE PROBE
 V# VALVE NUMBER
 WE LOAD CELL WEIGHT SENSOR
 LSCB LOAD CELL SUMMING BOX

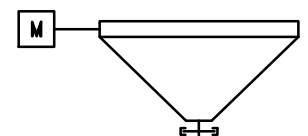
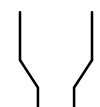
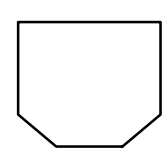

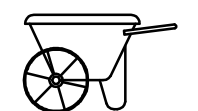
PRIMARY ELEMENT & FITTING SYMBOLS

 SPRAY NOZZLE
 WYE STRAINER
 QUICK DISCONNECT
 FLOOR DRAIN
 AIR GAP
 REDUCER
 FLOW METER
 PRESSURE SENSOR
 LOAD CELL
 FLEX CONNECTOR, RUBBER HOSE
 FLEX CONNECTOR, STEEL BRAIDED
 PRESSURE GAUGE

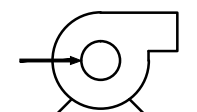
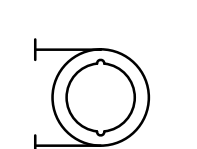

VALVE SYMBOLS

 BUTTERFLY VALVE
 GATE VALVE
 PINCH VALVE
 BALL VALVE
 GLOBE VALVE
 PLUG VALVE
 PRESSURE REGULATING VALVE






MATERIAL HANDLING EQUIPMENT SYMBOLS

 BIN ACTIVATOR W/ MAINTENANCE GATE
 COLLECTION BIN
 TANK
 SCREW CONVEYOR
 GRIT CART



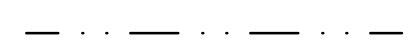



MECHANICAL EQUIPMENT SYMBOLS

 CENTRIFUGAL PUMP
 HOSE PUMP
 MIXER

VALVE ACTUATORS

 MANUAL
 LEVER
 ELECTRIC MOTOR
 PNEUMATIC
 SOLENOID

P & ID LINE LEGEND

 PRIMARY PROCESS FLOW
 SECONDARY PROCESS FLOW
 480 VAC, 3 PHASE, 60 HZ POWER WIRING
 120 VAC CONTROL
 ANALOG SIGNAL WIRING
 K-TYPE SHIELDED THERMOCOUPLE EXTENSION CABLE CONSISTING OF INDIVIDUAL RED AND YELLOW #16 CONDUCTORS SHIELDED W/ YELLOW PVC JACKET



GREELEY AND HANSEN

1715 N. WESTSHORE BLVD., STE. 464
 TAMPA, FLORIDA 33607
 CERTIFICATE OF AUTHORIZATION NO. 37

NOT TO SCALE

DESIGNED NMN
 DRAWN RAM
 CHECKED CMP

NO.	DATE	APPD	REVISION
P.E. NAME: CHARLES M. PEKKALA		P.E. NO. 37996	
P.E. NAME:		DATE:	

DAVID L. TIPPIN WATER TREATMENT FACILITY
 LIME SLAKER REPLACEMENT PROJECT WO#103

INSTRUMENTATION AND CONTROL

P&ID LEGEND

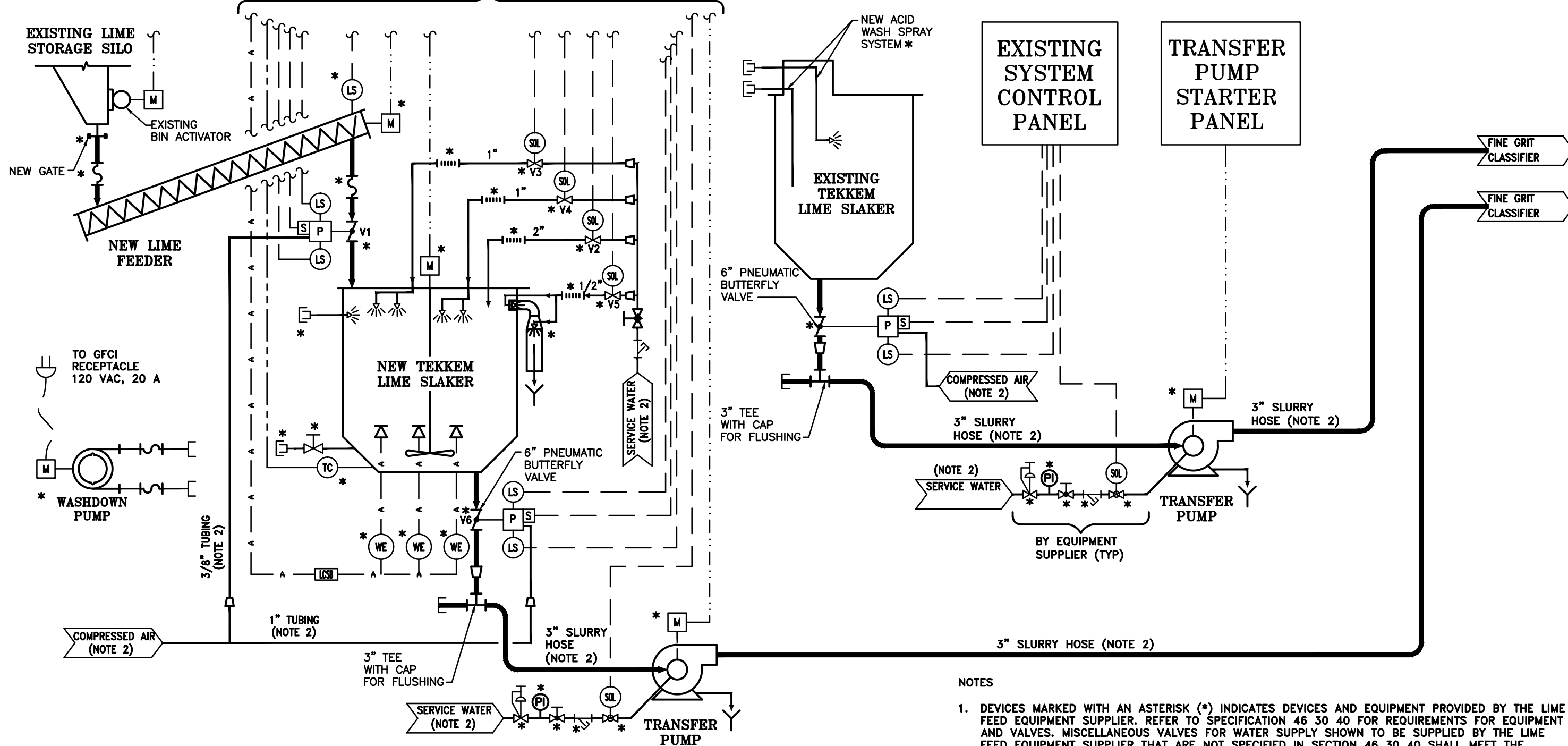
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DWG. SD-1
 NO. 1 OF 3

DATE JULY 2017

TO SLAKING SYSTEM CONTROL PANEL, TYP



NOTES

1. DEVICES MARKED WITH AN ASTERISK (*) INDICATES DEVICES AND EQUIPMENT PROVIDED BY THE LIME FEED EQUIPMENT SUPPLIER. REFER TO SPECIFICATION 46 30 40 FOR REQUIREMENTS FOR EQUIPMENT AND VALVES. MISCELLANEOUS VALVES FOR WATER SUPPLY SHOWN TO BE SUPPLIED BY THE LIME FEED EQUIPMENT SUPPLIER THAT ARE NOT SPECIFIED IN SECTION 46 30 40 SHALL MEET THE REQUIREMENTS SPECIFIED IN SECTION 40 05 20 VALVES.
2. AIR PIPING, WATER PIPING OR NEW SLURRY HOSE NOT PROVIDED BY LIME FEED EQUIPMENT SUPPLIER. PROVIDE ALL CONNECTIONS TO EXISTING COMPRESSED AIR AND WATER SUPPLY AS REQUIRED AND FIELD ROUTE NEW AIR PIPING, WATER PIPING AND SLURRY HOSE AS REQUIRED. SEE DRAWING M5. WHERE SIZES ARE NOT INDICATED, COORDINATE WITH EQUIPMENT SUPPLIER.
3. PROVIDE SUFFICIENT SUCTION AND DISCHARGE HOSE LENGTH ON THE SLURRY LOOP PUMP TO CONNECT TO THE DUTY PUMP OR THE STANDBY PUMP.
4. THE INTENT OF THIS DRAWING IS TO SHOW THE OVERALL SYSTEM FLOW DIAGRAM. UTILIZE THIS DRAWING IN CONJUNCTION WITH OTHER DRAWINGS AND SPECIFICATIONS.

GREELEY AND HANSEN
 1715 N. WESTSHORE BLVD., STE. 464
 TAMPA, FLORIDA 33607
 CERTIFICATE OF AUTHORIZATION NO. 37

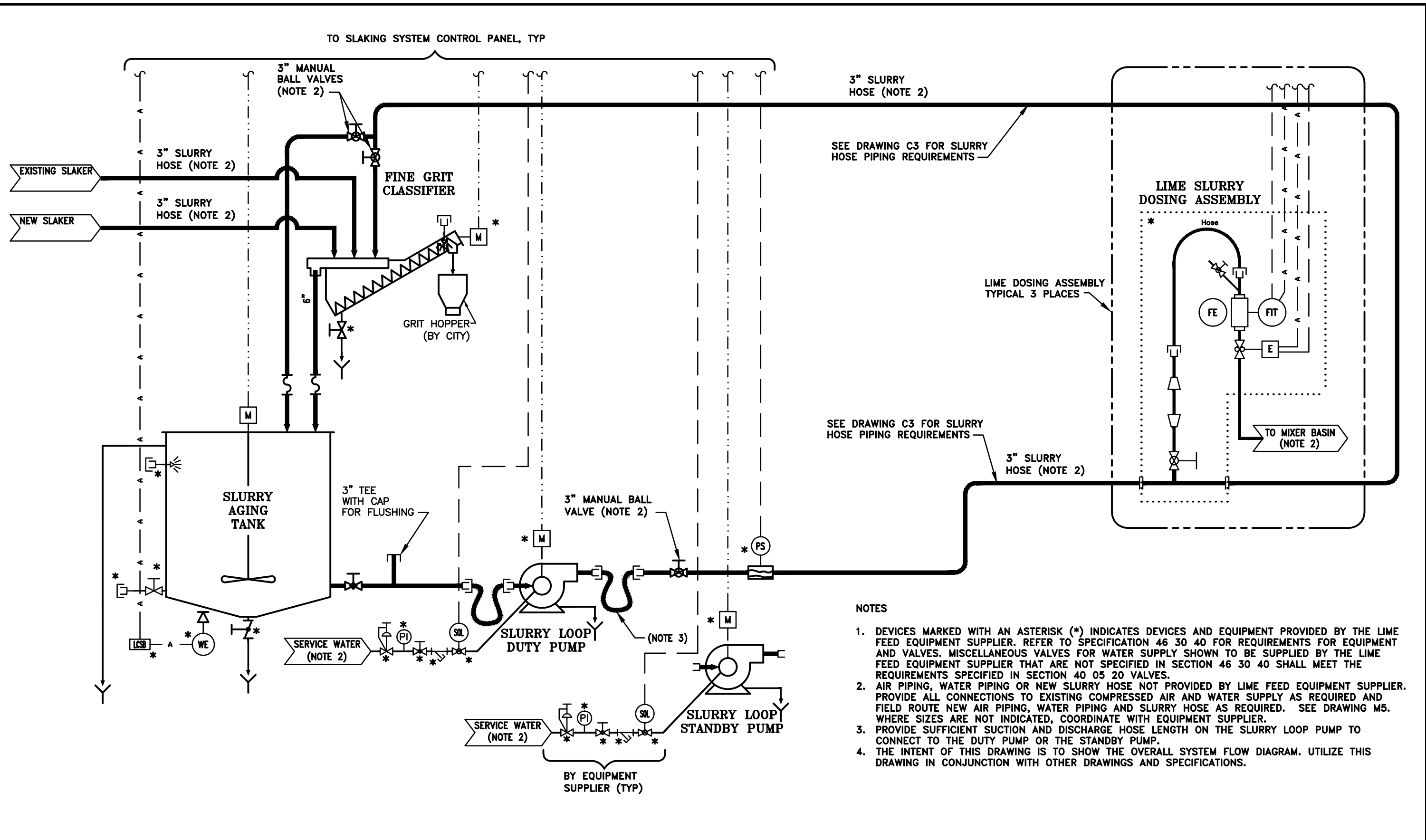
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DRAWN	RAM
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P.E. NAME:			
DATE:			

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 LIME SLAKER REPLACEMENT PROJECT WO#103
 INSTRUMENTATION AND CONTROL
LIME SLAKING SYSTEM P&ID

W.O. NO. 103
 FILE: 0202U.06-SD2
DWG. SD-2
 NO. 2 OF 3
 DATE JULY 2017



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NOT TO SCALE

DESIGNED	NMN
DRAWN	RAM
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P.E. NAME: CHARLES M. PEKKALA		P.E. NO. 37996	
P.E. NAME: _____		DATE: _____	

DAVID L. TIPPIN WATER TREATMENT FACILITY
 LIME SLAKER REPLACEMENT PROJECT WO#103

INSTRUMENTATION AND CONTROL

LIME SLAKING SYSTEM P&ID

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 FILE: 0202U.06-SD3
DWG. SD-3
 NO. 3 OF 3
 DATE JULY 2017