



DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 45704

**PLUMBING WORK
PROVIDE NATURAL GAS, UPGRADE WATER SYSTEM,
& REPLACE STERILIZER, BUILDING NO. 4
NEW YORK PSYCHIATRIC INSTITUTE
1051 RIVERSIDE DRIVE
NEW YORK, NY 10032**

March 1, 2019

<p>NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.</p>
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SPECIFICATIONS

1. SECTION 221100 PLUMBING PIPING: Discard the Section bound in the Project Manual and substitute the attached Section 221100 marked, 'Rev. 01 – 2/26/19'.

APPENDIX

2. REVERSE OSMOSIS EQUIPMENT RELOCATION PROPOSAL: Add attached document to the Project Manual Appendix outlining the scope of work for the Specific Allowance identified in Section 012100 1.04.

DRAWINGS

3. Drawing No. G-002:
 - a. Change Note for Detail 1 to Read:

“PROVIDE THE SPRINKLER SYSTEM WORK SHOWN. COORDINATE WITH THE DIRECTOR’S REPRESENTATIVE FOR ISOLATION, SHUT-DOWN, DRAIN, AND REFILL OF THE SPRINKLER SYSTEM BY THE FACILITY AS NECESSARY TO PERFORM THE WORK. SEE SPECIFICATION SECTION 211313 FOR ADDITIONAL INFORMATION.”
4. Drawing No. G-002:
 - a. Change GENERAL PROJECT NOTES Note #27 to Read:

“CON EDISON COMPANY OF NEW YORK (CON ED) WILL PROVIDE THE UNDERGROUND PIPING WORK AND THE GAS METER. PAY THE UTILITY

ADDENDUM NO. 1 TO PROJECT NO. 45704-P

March 1, 2019

COMPANY'S CHARGES IN CONNECTION WITH THE INSTALLATION AND INSPECTION OF THE INCOMING SERVICE. THE CON ED CASE NUMBER IS MC-221704 AND THE CON ED CONTACT IS JOSE RODRIGUEZ; CUSTOMER PROJECT MANAGER A, MAJORS; PH: 212-460-2418; EMAIL: rodriguezjose4@coned.com."

5. Drawing No. P-103:

- a. Change Keyed Note #6 for Detail 4 and Keyed Note #8 for Detail 5 to Read:

"UTILIZE THE FACILITY REVERSE OSMOSIS VENDOR, THROUGH A SPECIFIC ALLOWANCE AS NOTED IN SECTION 012100 1.04, TO RELOCATE AND UPGRADE REVERSE OSMOSIS EQUIPMENT AS REQUIRED TO PERFORM THE WORK. SCHEDULE AND COORDINATE WORK WITH REVERSE OSMOSIS VENDOR. CONTACT DOUGLAS B. SNOWBERGER AT 716-743-8577, EXT 206."

END OF ADDENDUM

Erik T. Deyoe, P.E.
Director, Division of Design
Design & Construction

SECTION 221100
PLUMBING PIPING

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Through Penetration Firestops: Section 078400.
- B. Sealants: Section 079200.

1.02 SUBMITTALS

- A. Product Data:
 - 1. Catalog sheets and specifications indicating manufacturer name, type, applicable reference standard, schedule, or class for specified pipe and fittings.
 - 2. Material Schedule: Itemize pipe and fitting materials for each specified application in Pipe and Fittings Schedule in Part 3 of this Section. Where optional materials are specified indicate option selected.
- B. Quality Control Submittals
 - 1. Installers Qualification Data:
 - a. Welder Qualification Data: Copies of certification; include names, home addresses.
 - b. Welding Procedures:
 - 1) Copy of QW-482 "Suggested Format for Welding Procedure Specification (WPS)" for all welders for all weld types.
 - 2) Copy of QW-483 "Suggested Format for Procedure Qualification Record (PQR)" as specified in Welding Quality Assurance below for all weld types.
 - c. Welders' Certificates:
 - 1) Copy of QW-484 "Suggested Format for Manufacturer's Record of Welder or Welding Operator Qualification Tests (WPQ)" for all welders for all weld types.
 - d. Brazer Qualification Data for Refrigerant Piping: State refrigerant piping brazing experience; include names, home addresses and social security numbers of brazers.
 - 2. Quality Control Submittals (for Hydraulic Press Joints, if used): Copy of hydraulic press fitting manufacturer's printed field inspection procedures for hydraulic press joints in copper tubing.
 - 3. Welding Procedure Submittals: Submit the following:
 - a. Welding Procedure Specifications: Provide for each weld type.
 - 1) Recommended to use ASME Form E00006, QW-482 "Suggested Format for Welding Procedure Specification (WPS)".
 - b. Procedure Qualification Records: Provide for each weld type.

- 1) Recommended to use ASME Form E00007, QW-483 “Suggested Format for Procedure Qualification Record (PQR)”.

1.04 QUALITY ASSURANCE

- A. Qualifications of Welders shall comply with the American Welding Society Standard AWS B 2.1.
- B. Welder Qualification:
 1. WPQs:
 - a. Provide welder qualifications for each welder for each weld type.
 - b. Recommended to use ASME Form E00008, QW-484 “Suggested Format for Manufacturer’s Record of Welder or Welding Procedure Qualification Tests (WPQ).”
 2. Evidence of Continuity: Welder qualifications must be current.
 - a. If the qualification test is more than 6 months old, provide record of welding continuity for each welder.
 - b. Record of welding continuity shall show that the welder in question has performed welding to the procedure in question without a 6 month continuous span of inactivity since the date that the welder qualification test was passed for the submitted welding procedure.
 - c. Record of welding continuity shall include, at a minimum, the welder’s employer name and address, the date the welder qualification test was passed, and the dates indicating welding continuity including welding procedure for each date.
- C. Qualifications of Brazers: Comply with the following:
 1. Certification of brazing operators by recognized authorities which require a qualification test.

PART 2 PRODUCTS

2.01 STEEL PIPE AND FITTINGS

- A. Steel Pipe for Threading: Standard weight, Schedule 40, black or galvanized; ASTM A 53 or ASTM A 135.
- B. Malleable Iron Threaded Fittings:
 1. 150 lb Class: ASME B16.3.
- C. Unions: Malleable iron, 250 lb class, brass to iron or brass to brass seats.
- D. Couplings: Same material and pressure rating as adjoining pipe, conforming to standards for fittings in such pipe. Use taper tapped threaded type in screwed pipe systems operating in excess of 15 psig.
- E. Nipples: Same material and strength as adjoining pipe, except nipples having a length of less than one inch between threads shall be extra heavy.

2.02 COPPER AND BRASS PIPE, TUBING AND FITTINGS

- A. Copper Tube, Types L: ASTM B 88.
- B. Wrot Copper Tube Fittings, Solder Joint: ASME B16.22.
- C. Cast Copper Alloy Tube Fittings, Solder Joint: ASME B16.18.
- D. Unions: Cast bronze, 150 lb Class, bronze to bronze seats, threaded or solder joint.
- E. Flanges: Conform to the Standards for fittings used in systems.
 - 1. Brazing Flanges: ASME B16.24, hubs modified for brazing ends.

2.03 HYDRAULIC PRESS FITTINGS FOR COPPER TUBING

- A. Acceptable Fittings:
 - 1. ProPress by Viega, 301 N. Main, Wichita, KS 67202, (877) 843-4262, www.viega.com.
- B. Operating Conditions:
 - 1. Maximum Operating Pressure: 200 psi.
 - 2. Operating Temperature Range: 0-250 degrees F.
 - 3. Maximum Test Pressure: 600 psi.
 - 4. Maximum Vacuum: 29.2 inches hg @ 68 degrees F.
- C. Features:
 - 1. Fittings: Copper and copper alloy conforming to material requirements of ASME B16.18 or ASME B16.22.
 - a. Stainless Steel Grip Ring: Adds strength to the joint without collapsing the interior passageway
 - 2. No flame for soldering required for installation of fittings and valves.
 - 3. Unpressed connections identified during pressure testing when water flows past sealing element.
 - 4. Sealing Elements: Factory installed, EPDM.
 - 5. Fittings that have been pressed can be rotated. If rotated more than 5 degrees, the fitting must be repressed to restore its resistance to rotational movement.
 - 6. Extended fitting end lead allows for twice the retention grip surface, and assists with proper tube alignment.
 - 7. Soldered adapter fittings are not allowed.

2.04 CAST IRON PIPE AND FITTINGS

- A. Hubless Pipe: Bitumin coated; Cast Iron Soil Pipe Institute Standard No. 301.
- B. Hubless Pipe Fittings: Drainage Pattern, Bitumin coated; Cast Iron Soil Pipe Institute Standard No. 301.

- C. Hubless Joint Couplings: Stainless steel shield and clamp assembly, and elastomer sealing sleeve; CISPI-310.
- D. Water Pipe Fittings: Bitumin coated, cement-mortar lined; AWWA C110.

2.05 JOINING AND SEALANT MATERIALS

- A. Thread Sealant (Natural Gas Piping): Rectorseal Corp.'s T Plus 2 non-hardening pipe dope with teflon.
- B. Solder: Solid wire type conforming to the following:
 - 1. Type 3: Lead-free tin-silver solder (ASTM B 32 Alloy Grade E, AC, or HB); Engelhard Corp.'s Silvacrite 100, Federated Fry Metals' Aqua Clean, or J.W. Harris Co. Inc.'s Stay-Safe Bridgit.
- C. Soldering Flux for Soldered Joints: All-State Welding Products Inc.'s Duzall, Engelhard Corp.'s General Purpose Liquid or Paste, Federated Fry Metals' Water Flow 2000, or J.W. Harris Co. Inc.'s Stay-Clean.
- D. Joint Packing:
 - 1. Oiled Oakum: Manufactured by Nupak of New Orleans, Inc., 931 Daniel St., Kenner, LA 70062, (504) 466-1484.
 - 2. Acid Resistant Joint Packing: Sealite Inc.'s Red Stripe, Asbestos-Free Acid-Resistant White Oakum, No. 312.
- E. Flange Gasket Material:
 - 1. For Use with Cold Water: 1/16 inch thick rubber.
 - 2. For Use with Hot Water: Waterproofed non-asbestos ceramic or mineral fiber, or a combination of metal and water-proofed non-asbestos ceramic or mineral fiber, designed for the temperatures and pressures of the piping systems in which installed.
- F. Anti-Seize Lubricant: Bostik Inc.'s Never Seez or Dow Corning Corp.'s Molykote 1000.

2.06 PACKING MATERIALS FOR BUILDING CONSTRUCTION PENETRATIONS

- A. Oiled Oakum: Manufactured by Nupak of New Orleans, Inc., 931 Daniel St., Kenner, LA 70062, (504)466-1484.
- B. Mechanical Modular Seals: Thunderline Corp.'s Link Seal wall and floor seals designed for the service of piping system in which installed.

2.07 PIPE SLEEVES

- A. Type A: Schedule 40 steel pipe.
- B. Type B: No. 16 gage galvanized sheet steel.

- D. Type D: No. 16 gage galvanized sheet steel with 16 gage sheet steel metal collar rigidly secured to sleeve. Size metal collars as required to span a minimum of one cell or corrugation, on all sides of the rough opening thru the metal deck.

2.08 FLOOR, WALL AND CEILING PLATES

- A. Cast Iron or Malleable Iron: Solid type, galvanized finish, with set screw:
1. Model 395 by Anvil International, Portsmouth, NH 03802, (603) 422-8000.
 2. Model 900-016XX by Landsdale International, Westville, NJ 08093, (800) 908-0523.

2.09 FLOW METERS

- A. Gas Flow Meters:
1. Sensing method: Thermal mass flow with factory installed flow conditioner and utilizing direct digital control sensing circuitry.
 2. Input power: 12-28 VDC, 6W minimum power
 3. Fluid Temperature Range: -40°F to 250°F
 4. Ambient Temperature Range: -40°F to 158°F
 5. Pipe Size and End Connection: 3" flanged; ANSI 150.
 6. Programming Memory: Factory programmed for specific application. Field programming available through mini-USB interface and utility program. Non-volatile memory retains all program parameters and totalized values in the event of power loss.
 7. Output Signals Provided:
 - a. Analog Output: 4-20mA
 - b. Pulse Output: scaled pulse or alarm (Isolated open collector output)
 8. Materials:
 - a. Wetted metal components: 316 stainless steel
 - b. Weather-tight NEMA 4 aluminum enclosure
 9. Electrical connections: Enclosed terminal blocks, cable access through two ¾" NPT conduit fittings.
 10. Remote Flow Display with Network Interface:
 - a. Accuracy:
 - 1) Analog inputs: 0.1% of full scale
 - 2) Analog outputs: 0.1% of full scale
 - b. Electronics Enclosure: Steel NEMA 13 wall mount
 - c. Input Power: 120VAC 60Hz, 250mA max
 - d. Internal power supply: Provides 24VDC, 250mA maximum to electronics and sensors
 - e. Display: 2-line Alphanumeric LCD displays flow rate and flow total.
 - f. Programming: Factory programmed for specific application; Field programmable via front panel interface.
 - g. Memory: Non-volatile EEPROM memory retains all program parameters and totalized values in the event of power loss.
 - h. Input Signals: (1) totalizing flow input 4-20mA, contact closure or pulse; (1) contact closure input for flow direction.

- i. Output Signals:
 - 1) Pulse Outputs: (2) isolated contact closure outputs for separately totalizing forward and reverse flow from the standard input
 - 2) Single isolated analog output: 4-20mA, 0-10V or 0-5V outputs
 - 3) Serial Communications: Siemens P1 FLN
- j. Ambient Temperature Range: -20°F to 140°F

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install piping at approximate locations indicated, and at maximum height.
- B. Install piping clear of door swings, and above sash heads.
- C. Make allowances for expansion and contraction.
- D. Allow for a minimum of one inch free air space around pipe or pipe covering, unless otherwise specified.
- E. Install horizontal piping with a constant pitch, and without sags or humps.
 - 1. Water Piping: Pitch 1/4 inch per 10 feet upward in direction of flow, unless otherwise noted. If it is not possible to maintain constant pitch, establish a new low point and continue. At the low point, provide a 1/2 inch drip leg and gate valve with a hose bibb end. Provide an air vent at the high point.
- F. Install vertical piping plumb.
- G. Use fittings for offsets and direction changes.
- H. Cut pipe and tubing ends square; ream before joining.
- I. Threading: Use American Standard Taper Pipe Thread Dies.
 - 1. Thread brass pipe with special brass threading dies.

3.02 DRAINAGE SYSTEMS

- A. Fittings:
 - 1. Use long turn drainage pattern fittings, unless space conditions prohibit their use; in such cases, short turn pattern fittings may be used.
 - 2. Vertical Offsets: Make vertical offsets with 45 degree elbows, or 1/8 bends.
 - 3. Tucker Fittings: Tucker fittings may only be installed in vertical piping.
- B. Cleanouts:

1. Install cleanouts with sufficient side and end clearance to allow for the removal of the cleanout plug, and the use of cleaning tools.
2. Lubricate cleanout plugs with anti-seize lubricant.

3.02 DOMESTIC WATER PIPING SYSTEM

- A. Connect runouts to the upper quadrant of the main, and run upward at not less than 45 degrees before extending laterally.
- B. Make final connections to plumbing fixtures and equipment with unions, or flanges:
 1. Do not use unions in ferrous piping larger than 3 inches.
 2. Do not use unions in brass or copper piping larger than 2 inches.

3.03 NATURAL GAS PIPING SYSTEM

- A. Install gas piping system in conformance with the National Fuel Gas Code, NFPA 54, or as required by the serving gas supplier.
- B. Use non-hardening pipe dope on threads. Do not use thread seal tape.

3.04 PIPE JOINT MAKE-UP

- A. Threaded Joint: Make up joint with a pipe thread compound applied in accordance with manufacturer's printed application instructions for the intended service.
- B. Soldered Joint: Thoroughly clean tube end and inside of fitting with emery cloth, sand cloth, or wire brush. Apply flux to the pre-cleaned surfaces. Install fitting, heat to soldering temperature, and join the metals with type solder specified. Remove residue.
- C. Flanged Pipe Joint:
 1. Install threaded companion flanges on steel pipe; flanges on galvanized pipe are not required to be galvanized.
 2. Provide a gasket for each joint.
 - a. Hot Water Pipe Gasket: Coat with a thin film of oil before making up joint.
 - b. Air Pipe Gasket: Coat with a thin film of oil before making up joint.
 3. Coat bolt threads and nuts with anti-seize lubricant before making up joint.
- D. Hubless CI Pipe Joint: Make up joint with hubless fitting and couplings, in conformance with the manufacturer's printed installation instructions.
- E. Mechanical Joint: Make up joint in conformance with the manufacturer's printed installation instructions, with particular reference to tightening of bolts.
- F. Hydraulic Pressed Joint: Follow manufacturer's printed installation instructions.

G. Welded Pipe Joint:

1. General:

- a. Weld pipe joints only when ambient temperature is above 0 degree F where possible.
- b. Bevel pipe ends at a 37.5 degree angle where possible, smooth rough cuts, and clean to remove slag, metal particles, and dirt.
- c. Use pipe clamps or tack-weld joints with 1 inch long welds; 4 welds for pipe sizes to 10 inches, 8 welds for pipe sizes 12 inches to 20 inches.
- d. Build up welds with stringer-bead pass, followed by hot pass, followed by cover or filler pass.
- e. Eliminate valleys at center and edges of each weld.
- f. Weld by procedures which will ensure elimination of unsound or unfused metal, cracks, oxidation, blow-holes, and non-metallic inclusions.
- g. Do not weld-out piping system imperfections by tack-welding procedures. Refabricate as required to comply with requirements.
- h. If piping component ends are bored, such boring shall not result in the finished wall thickness after welding less than the minimum design thickness.
- i. Align the inside diameters of piping components to be butt-welded as accurately as is practicable within existing commercial tolerances on diameters, wall thickness and out of roundness.
- j. Preserve alignment during welding. The internal misalignment of the ends to be joined shall not exceed 0.05 inch.

2. Welding Processes:

- a. All welding on metal piping systems shall be performed using qualified welding procedures and qualified welders and welding operators in accordance with Section IX of the ASME Boiler and Pressure Vessel Code.
- b. All welding shall be performed by a process that is compatible with the work being welded and the working conditions. Shielded metal-arc welding (SMAW) shall not be used on work less than 3/16 inch thick.
- c. Welding shall be performed by using only one of the following processes:
 - 1) Shielded Metal Arc Welding (SMAW), also know as "Stick" Welding.
 - 2) Gas Tungsten Arc Welding (GTAW), also known as TIG and Heliarc Welding.
 - 3) Submerged Arc Welding (SAW).
- d. Where a specific welding process is called for in the piping group, it shall govern.

3. Welding Grooves:

- a. Bevel the ends of steel pipe and fittings to be erected with butt welded joints to form welding grooves in accordance with ANSI B16.25, except where otherwise noted herein, or on the Contract Drawings.

- b. Bevel welding grooves for butt welded joints in pipe of unequal wall thickness in accordance with ASME Code for Pressure Piping B31.1 - latest edition, latest revision and section that is applicable.
- 4. Backing Rings: Backing rings or consumable inserts are not acceptable.
- 5. Cleaning of Welding: Completely remove all slag or flux remaining on the bead of welding before laying down the next successive bead and at the completion of the weld.
 - a. Wire brush all completed welds a minimum of 2 inches on both sides and coated with one coat of high temperature (minimum rated 500 deg. F) primer prior to being insulated.
- 6. Preheating of Welded Joints: Pipe adjacent to joints before and during welding shall be preheated by any suitable method in accordance with the qualified welding procedure, and in all cases shall be in accordance with ASME B31.1, Paragraph 131.
- 7. Weld Quality:
 - a. All welds shall have full penetration and complete fusion with a minimum of weld metal protruding on the inside of the pipe.
 - b. The finished weld contour shall be uniform, with the toe or edge of the weld merging smoothly into the base material.
 - c. Butt welds shall have a slight reinforcement build-up gradually from the toe or edge toward the center of the weld.
 - d. The limitation on butt weld reinforcement shall be in accordance with ASME B31.1, Table 127.4.2 and shall apply separately to both inside and outside surfaces of the joint.
 - e. Fillet welds may be slightly concave on the furnished surface.
- 8. Socket Welding Joints:
 - a. Where socket welding valves or fittings are used, space pipe with a minimum of 1/16 inch clearance between the end of the pipe and the socket so that no stresses will be imparted to the weld due to "bottoming" of the pipe in the socket.
 - b. The fit between the socket and the pipe shall conform to applicable standards for socket weld fittings and in no case shall the inside diameter of the socket exceed the outside diameter of the pipe by more than 0.075 inches.

3.05 PIPING PENETRATIONS

- A. Sleeve Schedule: Unless otherwise shown, comply with the following schedule for the type of sleeve to be used where piping penetrates wall or floor construction:

	CONSTRUCTION	SLEEVE TYPE
1.	Frame construction.	None Required
2.	Non-waterproof interior walls.	B*
3.	Non-waterproof interior floors on metal decks.	D*
4.	Floors finished or to be finished with latex composition or terrazzo, and not	A

- on metal decks.
5. Waterproof walls. A

*Core drilling is permissible in lieu of sleeves where marked with asterisks.

- B. Diameter of Sleeves and Core Drilled Holes:
1. Unless otherwise specified, size holes thru floors and walls in accordance with the through penetration fire stopping system being used.
 2. Size holes thru exterior walls or waterproofed walls above inside earth or finished floors, and exterior concrete slabs in accordance with the following:
 - a. Uninsulated (Bare) Pipe: Inside diameter of sleeve or core drilled hole 1/2 inch greater than outside diameter of pipe, unless otherwise specified.
 - b. Mechanical Modular Seals: Size holes in accordance with the manufacturer's recommendations.
- C. Length of Sleeves (except as shown otherwise on Drawings):
1. Walls and Partitions: Equal in length to total finished thickness of wall or partition.
 2. Floors with Finish: Equal in length to total finished thickness of floor and extending 1/2 inch above the finished floor level, except as follows:
 - a. In furred spaces at exterior walls, extend sleeve one inch above the finished floor level.
- D. Packing of Sleeves and Core Drilled Holes:
1. Unless otherwise specified, pack sleeves or cored drilled holes in accordance with Section 078400 - FIRESTOPPING.
 2. Pack sleeves in exterior walls or waterproofed walls above inside earth or finished floors with oakum to within 1/2 inch of each wall face, and finish both sides with Type 1C (one part) sealant. See Section 079200.
 - a. Mechanical modular seals may be used in lieu of packing and sealant for sleeves and core drilled holes.

3.06 FLOOR, WALL AND CEILING PLATES

- A. Install plates for exposed uninsulated piping passing thru floors, walls, ceilings, and exterior concrete slabs as follows:
1. Unfinished Spaces (Including Exterior Concrete Slabs): Solid, unplated cast iron.
 2. Fasten plates with set screws.
 3. Plates are not required in pipe shafts or furred spaces.

3.07 PIPE AND FITTING SCHEDULE

- A. Abbreviations: The following abbreviations are applicable to the Pipe and Fitting Schedule:

BS	Black steel.
CI	Cast iron.

MI	Malleable Iron
SE	Screwed end.
ST	Steel.
SW	Standard weight.
WE	Weld end.

- B. Where options are given, choose only one option for each piping service. No deviations from the selected option will be allowed.
- C. Domestic Water (Above Ground):
1. Domestic Cold Water (DCW) 125 psig and less: 3 inch and Under: Type L hard drawn copper tube, with cast copper alloy or wrought copper solder type fittings, and joints made up with Type 3 solder, or hydraulic press joints.
 2. Domestic Hot Water and Circulating (DHW & DHR) 125 psig and less:
 - a. 3 inch and less: Type L hard drawn copper tubing, with wrought copper or cast copper alloy solder fittings, and Type 3 solder, or hydraulic press joints.
 3. Steam (LPS & MPS) 125 psig and less: 4 inch and Less: SW BS pipe, with SE SW CI fittings, or WE SW ST fittings.
 4. Condensate Returns (LPR & MPR) 125 psig and less:
 - a. 1-1/2 inch and less: SW BS pipe, with SE SW CI fittings, or WE SW ST fittings.
 - b. 2 inch and above: XH BS pipe with WE XH ST fittings.
 5. Natural Gas (G) including associated vent, 125 psig and less:
 - a. 3 inch and Less: SW BS pipe, with SE 150 lb. MI fittings, or WE SW ST fittings.
 - b. above 3 inches: SW BS pipe with WE SW ST fittings
 6. Drainage (San): Hubless, coated, cast iron pipe, fittings, and joint couplings.

END OF SECTION

C.S. Kimeric, Inc. ▲

WATER TREATMENT PROPOSAL

COMPANY: FPM GROUP
PROJECT: NY PSYCH RO SYSTEM
UPGRADES
REFERENCE: BON 6779

ATTN: CHRISTOPHER M. SCHWARZ

DATE: 8/8/18



**One River Rock
Buffalo, New York 14207
PHONE 716-743-8577 FAX 716-743-1768
www.cskimeric.com**

“...to create better quality of life by purifying

Corporate Overview

Location – Buffalo, New York; Cleveland, Ohio; Houston, Texas,

Capabilities Buffalo – 120,000 SQ FT facility and a staff of 50 people for engineering, fabrication and ongoing services support.

Technology Tool Kit

1. Resins - IX, Brine purification, Organic removal,
2. Physical Chemical - Reactors, DAF, Clarifier, Sludge Filter press, various types of process filtration.
3. Membranes - RO, UF, Nano, Degas
4. Biological - ICB (Immobilized Cell Bioreactors), MBR (Membrane Bioreactors), Conventional activated sludge.
5. Process Technology Partners – Dow, LanXess, Honeywell UOP, Kubota.

SAMCO/CSK Facility at One River Rock, Buffalo NY 14207



One River Rock Dr.
PO Box 1047
Buffalo, NY 14207

The SAMCO / CS Kimeric Group is the largest locally owned water equipment supply and service company in western NY. We have a team of 50 people that consists of fabricators, Engineers, Service technicians and professionals. We service our customers out of our 120,000 FT office and factory in Buffalo NY.

CSK runs a fleet of fully stocked service and delivery trucks with 24/7 Service.
We are focused only on providing integrated water systems and associated service.

Some additional valued customers:

<u>Roswell Park</u>	<u>Buffalo Niagara Medical Campus</u>
<u>Kaleida health</u>	<u>University of NY at Buffalo, UB , Buffalo State</u>
<u>Cornell University</u>	<u>National Fuel</u>
<u>National Grid</u>	<u>Olin</u>
<u>Occidental Chemical</u>	<u>Praxair</u>
<u>Rich Products</u>	<u>Xerox</u>
<u>Cliffstar</u>	<u>DuPont</u>
<u>FMC</u>	<u>American Pharmaceutical</u>
<u>Bristol-Myers</u>	

Examples of Systems Designed, manufactured and serviced by CSK / SAMCO



8/8/18

BON 6779

FPM Group
909 Marconi Avenue
Ronkonkoma, NY 11779

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Attn: Chris Schwarz

Reference: NYS Psychiatric Institute RO system upgrade 11th Floor system

C.S. KIMERIC, INC. is pleased to provide the following quotation for the above mentioned project.

C.S. KIMERIC, INC. specializes in the manufacture of systems that bring value to customers through savings in installation and ongoing maintenance.

Our ultra-pure water products with customized options provide many excellent benefits:

- Quick supply and building of individual components in a cost-effective manner.
- The ability to marry these components into cost-effective systems.

We work hard to deliver:

- ✓ Speed
- ✓ Performance
- ✓ Satisfaction

Thank you for your time, consideration and interest in C.S. KIMERIC, INC. We take great pride in the performance of our equipment and the success of our customers. We will contact you to verify that you received this quotation and to answer any questions that you may have.

We respectfully ask for your continuing business and value the trust that it represents.

Sincerely,
C.S. Kimeric, Inc.
Douglas B. Snowberger
Business Development Manager

Following: Scope of Supply, Price Summary, Typical schedule and C.S. KIMERIC, INC. Terms and Conditions

Scope of Supply

- Reduce footprint of Reverse Osmosis system by:
 - Removing Sand filter and other items left of the RO skid
 - Eliminate cartridge filter and filter housing and install a new automatic backwashing Multimedia filter unit
 - Eliminate portable exchange Carbon tanks and install a new automatic backwashing Carbon filter unit
 - Eliminate the day tank in front of RO skid and feed system direct from city water feed line
 - Eliminate all unneeded piping and non-essential related items to allow all space left of and in front of RO skid for other uses

Pricing includes all piping and labor to accomplish these changes within the RO system smaller footprint.

Items not Included in this Proposal

- Feed, product, or waste tanks, pumps, instruments, and associated parts unless noted above
- Customer/contractor to disconnect power feeds to eliminated pumps and pump starters
- Power distribution or circuit protection equipment feeding the systems
- Insulation or heat tracing
- Taxes
- Freight

Pricing

All prices are in US Dollars

CS Kimeric (CSK)		Doug Snowbergere	716-743-8577		
Customer	FPM Group for NY Psych		8/8/2018		
Contact	Chris Schwarz 631-871-3964				
Project	Upgrade RO and reduce footprint on 11th floor		REV	-	
Telephone/fax					
Item	Part Number	Description	Quantity	Unit Price	Extended price
1	*ACA-12G-1	Single Automatic Carbon filter system with NXT timer	1		
2	*MD-12G-1	Single Automatic Multi media filter system with NXT timer	1		
3					
4	Misc	Piping, valves, fittings, pipe hanger and misc installaiton parts	1		
5				\$ -	\$ -
6		Plus Freight		\$ -	\$ -
		Sub total for the above items		\$ -	\$ 5,556.30
B		Project coordination and supervision	4		
E		Technical Assistance	56		
F		Sr. Technical services	24		
G		Truck/ Vehicle rental and use per day and / or mileage	2		
H		Dailey per deims	10		
I		Hotel per day	8		
		Total labor and expenses			\$ 9,650.00
		Total Material, labor and expenses			\$ 15,206.30
Tax rate		Sales Tax			\$ -
		Total with Sales tax			\$ 15,206.30
		Shipping to job site			\$ -
		Total price			\$ 15,206.30

For Capital Purchase - Terms based on credit approval:

- 10% down with purchase order
- 20% upon submittal of approval drawings
- 25% upon drawing approval & release for fabrication
- 40% upon notice of completion and readiness to ship
- 5% net 30 days after shipment

Applicable for customers outside of the United States and Canada: All payments by wire transfer on a US based bank. All charges are for the account of the consignee/customer. All taxes, customs duties, export fees etc are the responsibility of the customer and the customer is responsible for and will arrange all freight forwarding activities.

This proposal and attachment is contingent upon acceptance and award of a mutually agreeable Contract and schedule within 30 days. Lacking an award, CSK retains the option to modify this proposal any time after this period.

We respectfully ask for your business and value the trust that it represents. Please do not hesitate to contact us if you have any further questions or comments on our proposal. We look forward to the opportunity of working with you on this project.

COMMENTS AND CLARIFICATIONS:

- CSK provides nonunion services.
- Labor rates do not include any local, state or federal prevailing wages.
- No sales or use taxes are included unless specifically shown above and will be invoiced as an adder as applicable.
- Shipping is FOB Buffalo or drop ship from supplier prepay and add unless specifically shown above.
- CSK's Standard Conditions of Sale apply.
- This proposal is based upon the information provided from customer or customer's agent such as request for quote, drawings, water analysis, specifications and verbal communications.
- This page is only one part of our proposal. Please see our proposal for all the scope of work, comments, clarifications, exceptions and any other contractual information. Please note that CSK's Standard Conditions of Sale apply.

We reserve the right to take exception to some of the contract terms and conditions at this time. If you desire to move forward with CSK, any minor differences can be negotiated.

General Clarifications and Exceptions

Unless otherwise specified the following conditions and exceptions apply.

Customer Responsibilities if not specifically agreed to and made part of CSK's scope

1. All material & labor for interconnecting piping, wiring, controls and other conveyances to / from the battery limits of skids / systems and between skids or systems.
2. All receiving, offloading and rigging of skids and systems.
3. All Required Utilities to and from the battery limits of the system(s) such as 480V-60Hz & 120V-60Hz electrical power supply, 120 psi clean instrument air supply, chemical feeds, clean potable water supply, etc.
4. Supply of all required utilities during the installation, start-up and subsequent operation of the skids and systems such as 480V-60Hz & 120V-60Hz electrical power supply, 120 psi clean instrument air supply, clean potable water supply, etc.
5. Preparation of all foundations for housing of the equipment skids, civil/concrete work, etc.
6. Secondary containment of the complete system, individual tanks, equipment and or piping to meet local codes & standards.
7. All labor & materials associated with chemicals & consumables required for startup, testing and operations of the system.
8. All required regulatory or other government permits, of any nature, are the responsibility of others.
9. All labor and material required for storage of materials at site, if required.
10. Adequate ventilation facilities in the plant room.
11. Provide a safe environment for work.

General

1. The CSK hourly labor rate for T&M work will be determined as outlined on CSK's Terms and conditions.
2. Wage guidelines - All CSK labor is nonunion. If union labor is required, OWNER/CLIENT will be required to pay the additional costs for union wages, benefits and other associated cost overruns. CSK does not subscribe to any voluntary state or federal wage guidelines. If required, the Purchaser will be required to pay the additional costs associated for wage scales, benefits and other associated cost overruns.
3. CSK will provide its own labor force where applicable but reserves the right to subcontract when CSK management feels it is appropriate.
4. We have assumed a safety level D operation.
5. Should CSK through its performance of work under this contract, identify conditions or scope not previously known or specified in the contract documents; i.e. including but not limited to organics, surfactants, ammonia, etc., changes in the feed character, hidden or unknown conditions which would prevent CSK from meeting its contractual obligations or creates a cost impact for CSK then we shall have the right to negotiate a change order to alleviate such conditions.
6. CSK reserves the right to supply any equipment or components required to meet contractual performance requirements.
7. Any additional work required to achieve and maintain the performance of the system which is outside the scope outlined will be considered by CSK and OWNER/CLIENT to be a change condition and scope and price will be mutually agreed to between CSK and OWNER/CLIENT in writing. Where possible, estimated hours, expenses, and material costs will be provided to OWNER/CLIENT for approval before work is started. Where emergency situations require immediate response by CSK without time for pre-approval by OWNER/CLIENT, these emergency repairs will be provided according to the enclosed time and material rates. All travel expenses for work performed at the site will be billed to OWNER/CLIENT.
8. Back charges: CSK will not accept back charges without prior written authorization. Written notification must be provided to CSK of potential back charge condition and that notification must be in advance of any corrective action initiative.
9. Prices / Taxes: All prices quoted are payable in United States dollars and do not include taxes or duties. Sales, uses, federal, state, value added, occupational and excise taxes, import or export duties, and the like where applicable, will be the responsibility of the Purchaser. Appropriate exemption certificates or direct pay permits must be supplied by the Purchaser at the time of the purchase order issuance for tax exempt purchases. The collection and remittance of taxes are the responsibility of others.
10. CSK assumes no responsibility for work done, materials supplied or repairs made by others, or for damage to equipment due to inadequate supports, foundations, faulty related systems or controls.
11. CSK has not included heat tracing, insulation or winterization of equipment.
12. CSK has not included the connection or supply of utilities, phone, electric and office trailers during and after the onsite activities. Costs for the consumption of utilities and system operational supplies by others.
13. Rigging is not included in our scope of work unless specifically agreed to and made part of CSK's scope.
14. CSK has not included any mandatory reporting, Sampling, Testing, or Analytical Analysis of Influent or Effluent Water at the job-site. This will be the responsibility of others.
15. Equipment decontamination and associated sampling is the responsibility of others.
16. Secondary containment, if required, is by others.
17. If CSK has provided scope / pricing for installation, the installation of utilities, process piping, electrical and other conveyances to the battery of the system is the responsibility of others. This will include influent streams, effluent piping, electrical power, drains, chemicals etc.
18. CSK has not provided as part of this proposal PE stamped drawings or Seismic calculations nor does CSK make any claims to meeting any seismic design or equipment codes as the specification did not identify a seismic need. If special regulatory requirements are required please contact us.
19. Trade permits for mechanical/electrical installation are not included.
20. The design, supply of material, installation and management of the Collection, transfer, storage of water and wastewater before and after the supplied skids and systems is the responsibility of others.
21. CSK has not included any costs for the operations of the system.
22. We have included tag and labeling of scope supplied by us.
23. CSK packaging philosophy – The skid mounted equipment and any selected options are supplied pre-piped and pre-wired to the fullest extent possible (within shipping restrictions and or limitations) for ease of installation.

Unless otherwise specified these CS Kimeric Inc.'s Standard Conditions of Sale will apply.

Agreement: This proposal, when accepted by the Purchaser within the time specified, shall constitute the entire agreement between CS Kimeric Inc. and the Purchaser; no modifications or changes shall be binding on CSK unless they are in writing and approved by an officer or duly designated employee of CSK. Any subcontract or purchase order submitted by the Purchaser with respect to this proposal shall be subject to CSK's acceptance and shall be deemed to include these Conditions of Sale and all provisions of this proposal; any provisions of the purchase order inconsistent therewith shall be null and void.

Quoted Prices are firm for thirty (30) days from the date of this proposal and are subject to change after that time.

Payment terms are net thirty (30) days from the date of CSK invoice for invoice amounts \$10,000 and under based on credit approval. Purchaser shall incur interest for late payments at a rate of one and one-half percent (1.5%) per month or the highest rate permitted by applicable law, whichever is less, on amounts not paid in accordance with terms of sale.

Progress Payments (systems, custom products and PO amounts over \$10,000): Unless specified otherwise, based on credit approval, shall be subject to progressive payments as follows:

- 10% With order, Net 5 days from date of CSK invoice
- 20% Upon submittal of Drawings, Net 5 days from date of CSK invoice
- 25% Upon Drawing Approval & Release for procurement / fabrication, NET 5 days from date of CSK invoice
- 40% Before shipment, Net 5 days from date of CSK invoice
- 5% At completion of start-up or 90 days after shipment, whichever occurs first, Net 5 days from date of CSK invoice

Delays that occur through no fault of CS Kimeric, and which delay downstream event(s) or payments, shall be grounds for price adjustment.

Freight: Unless inclusion has been made in the proposal, all applicable freight charges have not been included in our pricing. Freight will be billed extra, either prepay and add, or collect. Freight is FOB supplier or our plant. Any special freight insurance must be supplied by the Purchaser.

Charges: Excess packaging, packing, shipping, transportation or other charges resulting from compliance with Purchaser's request, with respect to the use of any agency or method of transportation or any item routing other than that which would otherwise be designated by CSK, shall be for Purchaser's account.

Shipment and Delivery: Unless a firm delivery date is stated on the face hereof, shipment dates are approximate and delivery made within a reasonable time thereof shall be deemed full performance of this aspect of CSK's obligations hereunder. CSK will exert all possible effort to meet proposed shipping dates, but will not be liable for delay caused by reason of war, civil commotion, strike, fire, accident, Act of God, governmental order or regulation, shortage or curtailment of material, or any other contingency beyond its reasonable control, nor will any such delay be cause for cancellation. CSK shall not be liable for consequential damages as a result of any delay.

Prices / Taxes: All prices quoted are payable in United States dollars and do not include taxes or duties. Sales, use, federal, state, value added, occupational and excise taxes, import or export duties, and the like where applicable, will be the responsibility of the Purchaser. Appropriate exemption certificates or direct pay permits must be supplied by the Purchaser at the time of the purchase order issuance for tax exempt purchases. The collection and remittance of taxes are the responsibility of others.

Cancellation Charges: CSK will invoice the Purchaser at the following rates: 20% of the contract total price or time and materials, whichever is higher. The time and material charge will be calculated on net cost for materials, subcontractors, equipment and supplies less any allowance for returned goods (including freight, handling, storage, return costs and restocking charges) marked up by the factor of 1.33 to cover administration expenses, handling and reasonable anticipated profits. CSK direct labor (fabrication, engineering and trades) will be billed at our published rates for work completed through the date of cancellation.

Warranty: For a period of one (1) year from the date of installation, or 18 months from shipment, whichever occurs first, CSK will repair or replace at its sole discretion FOB shipping point any part of the equipment furnished by it which it finds to be defective due to faulty material or workmanship.

Performance – If the equipment furnished by CSK does not meet performance guarantees, the Purchaser agrees to advise CSK promptly and to permit CSK to make such inspections and tests as CSK deems necessary. If equipment is at fault, CSK reserves the right to make such alteration, changes or additions as it deems necessary to meet the guarantee.

If any equipment or performance failure is determined by CSK to be due to the Purchaser's incorrect installation or operation, the Purchaser agrees to pay CSK the then current daily rate for the time of the investigating technical field engineer, together with travel and living cost for the time required to make the inspection. If the problem is due to a change in the raw water or influent characteristics from those determined in the water analysis on which the proposal was based, or due to other operational conditions not attributable to CSK's fault, the Purchaser will purchase and install any additional or other equipment needed to meet such changed circumstances, otherwise the performance guarantees will be void.

The guarantees furnished with this proposal are in lieu of all other warranties, and guarantees express or implied including without limitation warranties of merchantability and fitness for a particular purpose, and in no event shall CSK be liable for consequential damages.

Drawings: Proposal pages, catalogs, illustrations, schematics and other preliminary drawings are submitted only to show general layout and approximate dimensions. CSK reserves the right to make such changes of design, construction or layout as it feels may represent improvements in practice over the specifications contained in this proposal. Fully dimensioned drawings of the equipment, certified if required, will be furnished after the Purchaser's acceptance of this proposal. The purchaser will furnish drawings of all foundations, supports, concrete reinforcements, and required housings or other drawings based upon CSK's equipment drawings. The Purchaser's drawings must be final and subject to CSK's approval. Drawings and all other information contained thereon is and shall remain the property of CSK as an instrument of professional service. All disclosed technology remains the property of CSK. This information shall not be used in whole or in part without the full knowledge and prior written consent of CSK.

Title: Title to equipment covered by this proposal shall not pass to the Purchaser upon delivery, but shall remain vested in CSK regardless of the manner in which it is attached to the realty until the entire purchase price is paid. However, the Purchaser agrees to take proper care of the equipment, and insure it for its full value against loss or damage, with loss payable to CSK as its interest may appear. The Purchaser assumes all risk of loss or damage from time of acceptance of shipment by transporting carrier unless otherwise expressly provided in this proposal.

Default: In the event of Purchaser's breach of his contract, or upon the Purchaser's failure to make payment of the purchase price or any part thereof when due, the entire unpaid balance, shall at CSK's option, become immediately due and payable without notice. CSK may thereupon, without process of law, enter upon the Purchaser's premises and take possession, disconnect and remove the equipment, and retain all previous payments as compensation for the use of the equipment, and CSK shall have no liability for damages arising out of repossession of the equipment. If CSK must use legal means to collect funds due CSK under this agreement, then Purchaser agrees to pay the cost of reasonable attorney fees.

Purchaser's Labor and Materials: Subject to any exceptions specified herein or in any supplemental written agreement between the Purchaser and CSK, the Purchaser will supply all labor, supervision, materials and interconnection piping except that which is integral with each unit from inlet to outlet. CSK assumes no responsibility for work done, materials supplied or repairs made by others, or for damage to equipment due to inadequate supports, foundations, faulty related systems or controls.

Installation / Start-up Supervision: When ordered separately or as part of this contract, CSK will furnish experienced supervision personnel to advise the Purchaser on installation and/or start up of the equipment. Unless expressly provided, the price for such service is not included in the purchase price. When quoted as part of this proposal or in a supplemental proposal, the quotation shall be made on the basis of the then current daily charge for such services, plus actual travel and living expenses from Buffalo, New York to the Purchaser's location and return. Supervision services preclude manual labor and all materials normally furnished as part of the installation and start-up activities and/or to remedy work performed (by others) deemed incomplete or defective.

The Purchaser agrees to have the equipment ready for the supervision service and to pay additional charges when the equipment or necessary labor is not ready or available. The Purchaser must give CSK at least two (2) weeks notice to have a technical engineer on the job site by a specific date.

The Purchaser agrees that this contract will be fully performed by CSK at the conclusion of a satisfactory starting date.

Shortages: All claims for shortages must be made by the Purchaser within five (5) days after receipt of shipment, otherwise such claims are deemed waived.

Indemnity: The products furnished by CSK hereunder are sold or supplied without warranty against property damage or injuries resulting from their use. The Purchaser indemnifies and holds CSK, its employees, licensees, franchisees, and agents harmless from and against any loss, cost, liability, claims, suits, damage or injury resulting from the design or use or misuse of the products.

Wage Guidelines – All CSK labor is non-union unless specifically written in contract form. If union labor is required, the Purchaser will be required to pay the additional costs associated with union wages, benefits and other associated cost overruns.

CSK does not subscribe to any state or federal wage guidelines. If required, the Purchaser will be required to pay the additional costs associated for wage scales, benefits and other associated cost overruns.

Tool Rental: CSK supplies all normal hand tools to complete normal water treatment jobs. If any tools or equipment are required outside the scope of our normal inventory, we will charge cost plus 25% plus tax.

Applicable Law: These terms and conditions shall be governed by and constructed in accordance with the laws of the State of New York, excluding rules relating to choice or confines of law.

Back Charges: CSK will not accept back charges without prior written authorization. Written notification must be provided to CSK of potential back charge condition and that notification must be in advance of any corrective action initiative.

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