

**FIRST FLOOR OUTPATIENT CLINIC ALTERATIONS
LEVEL 2 ALTERATIONS
350 South Main Street, New City, New York 10956**

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220500 GENERAL DESCRIPTION AND SCOPE - PLUMBING

- 1.0 General Description - These plans and specifications cover furnishing all labor, materials, transportation and equipment to provide a complete and operative plumbing system for 350 South Main Street, New City, NY 10956.

- 2.0 Scope - These plans and specifications include but are not limited to the following:
 1. Water supply piping, hot and cold, including piping insulation.
 2. Fixtures including supply and drainage fittings.
 3. Sanitary Drainage, waste and vent piping.
 4. Storm drain piping, roof drains, including pipe insulation.
 5. Cutting and patching.
 6. Removal of existing systems.
 7. Condensate drains from new HVAC unit.
 8. New natural gas-fired water heater.
 9. Testing and rendering operative of all new systems.
 10. Meeting of all codes and ordinances.

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220505 GENERAL CONDITIONS - PLUMBING

- 1.0 Governing Conditions - General Conditions of the Plumbing Contract shall be in accordance with:
1. "Standard General Conditions of the Construction Contract per AIA 201" - latest edition.
 2. "Instructions to Bidders - AIA" - latest edition.
 3. Special conditions of the contract as included in general construction documents.

2.0 Drawings - Plumbing installation shown in drawings and on supplementary drawings supplied.

3.0 Shop Drawings and Approvals - Furnish shop drawings for approval, six copies on all major items of equipment. Items requiring shop drawings are:

All equipment show on drawing legend and schedule

The materials, workmanship, design and arrangement of all work installed under the contract shall be subject to the approval of the engineer.

If material or equipment is installed before it is approved, the contractor shall be liable for the removal and replacement at no extra charge to the owner if, in the opinion of the engineer, the material or equipment does not meet the intent of the drawings and specifications.

The words "or approved equal" shall be understood to follow the name of all manufacturers stated herein.

4.0 Workmanship - Provide neat mechanical appearance. Provide minor alterations to accomplish. Conceal all piping in all finished areas.

With submission of bid, the contractor shall give written notice to the engineer of any materials, apparatus, or omissions believed to be in violation of laws, ordinances, rules or regulations of authorities having jurisdiction. In the absence of such written notice, it is mutually agreed that the contractor shall include the cost of providing all systems in accordance with applicable regulations without extra compensation.

5.0 Materials - Provide the best-accepted industry standard equipment and materials. Entire installation shall conform to principles and practices of National Plumbing Code and shall meet New York State Plumbing Code requirements.

Substitutions of equipment or materials other than those indicated on the drawings may be made only upon written approval from the engineer. The contractor shall submit his substitution for approval before releasing order for fabrication and/or shipment. Engineer reserves the right to disapprove such substitutions provided, in his opinion, the item offered is not equal to the item specified.

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Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring, conduit and equipment from that specified or indicated on the drawings, subject to approval of the engineer, the contractor shall provide any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system, at no additional cost to the owner.

- 6.0 Guarantee - Contractor shall guarantee all workmanship, materials and performance for a period of one year from the date of the certificate of completion and acceptance of his work. The contractor shall promptly correct, without cost to the owner, such defects upon notice from the owner to do so.
- 7.0 Codes, Permits, Inspections - Comply with plumbing code requirements of the municipality in which located, NYS Building Code and National Plumbing Code. Materials per code hereinbefore mentioned. Furnish permit and certificate of final inspection from municipality. Contractor shall pay all fees and inspections and same shall be included in the contract amount.
- 8.0 Roof Penetrations - All roof penetrations and expansion joints with proper anchors and guides shall be provided by the contractor where necessary, and/or when shown on drawings. Anchors and guides shall be complete with counter flashings.

Plumbing contractor shall do all cutting, fitting and patching necessary as a part of his contract to provide for his piping equipment.

Contractor shall layout all plumbing facilities in advance of pouring or laying walls for all chases, sleeves, etc. He shall be responsible for locations of same.

- 9.0 Tests - Labor, material, instruments and power required for testing shall be furnished by this contractor.

Tests shall be performed in the presence and to the satisfaction of the engineer and such other parties as may have legal jurisdiction.

Pressure tests shall be applied to piping only before connection of equipment. In no case shall piping, equipment or accessories be subject to pressure exceeding their rating.

All defective work shall be promptly repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the engineer.

Any damages resulting from tests shall be repaired, and damaged materials replaced, all to the satisfaction of the engineer.

The duration of tests shall be as determined by all authorities having jurisdiction, but in no case less than the time prescribed in the specification.

Equipment and systems which normally operate during certain seasons of the year shall be tested during the appropriate season. Tests shall be performed on individual equipment, system and

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their controls. Whenever the equipment or system under test is interrelated with and depends upon the operation of other equipment, systems and their controls, for proper operation, functioning and performance, the latter shall be operated simultaneously with the equipment of system tested.

No piping in any location shall be closed up, furred in or covered before testing.

The entire drainage and vent system shall have all openings plugged to permit the entire system to be filled with water to the upper level of the highest vent stack above the roof. When a portion of the system is being tested, a vertical stack ten feet above the highest horizontal line to be tested may be installed and that portion of the system filled with water. The water shall remain in the system for a four-hour period minimum, without any lowering of the water level at the overflow.

After setting of fixtures and/or equipment, the entire waste and vent system shall be subjected to a smoke test as follows: Fill all trap seals with water. Introduce into the system through a suitable opening, a thick penetrating smoke which is produced in openings above roof, close the vent openings and continue introducing smoke until a pressure of one inch of water has been built up. Maintain pressure for fifteen minutes minimum before starting inspection. Smoke shall not be visible from any joint, fixture connections and/or fixture.

- 10.0 Job Conditions - Contractor shall inform himself of all job conditions, entrance clearances, etc. for his equipment and material. He shall so consider in his estimates. No extras shall be allowed in his failure to do so.
- 11.0 Slopes - All horizontal soil, waste, or storm piping of 3 inch diameter or less shall be run in a uniform grade at not less than 1/4" per foot unless otherwise indicated. All horizontal soil waste, or storm piping larger than 3 inches in diameter shall be run in a uniform ratio at not less than 1/8" per foot. All vent piping shall be so graded as to free itself quickly of any condensation.
- 12.0 Piping - General - Pipe Expansion - All pipe connections shall be installed to allow for freedom of movement of the piping during expansion and contraction without springing. Swing joints, expansion loops and expansion joints with proper anchors and guides shall be provided by the contractor where necessary, and/or when shown on drawings. Anchors and guides shall be subject to approval of the engineer.

Bases and Supports - The contractor shall provide all bases and supports not part of the building structure, of required size, type and strength as approved by the engineer, for all equipment and materials furnished by him.

All equipment, bases and supports shall be adequately anchored to the building structure to prevent shifting of position under operating conditions.

Sleeves, Inserts and Anchor Bolts - The contractor shall provide and will be held responsible for the location of, and maintaining in proper position all sleeves, inserts and anchor bolts required for his work. In the event that failure to do so requires cutting and patching of finished work, it shall be done at the contractor's expense.

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Escutcheons - Contractor shall provide escutcheons on pipes wherever they pass through the floors, ceilings, walls or partitions.

Escutcheons for pipes passing through outside walls shall be solid, cast brass, flat type secured to pipe with a setscrew.

Escutcheons for pipes passing through floors shall be split-hinged, case brass type designed to fit pipe on one end and cover sleeve projecting through floor on the other end.

Escutcheons for pipes through interior walls, partitions and ceiling shall be split hinged, cast brass, chromium plated type.

- 13.0 Painting - The contractor shall paint all unpainted, noninsulated, non-galvanized ferrous metal surfaces of pipes, equipment, fixtures, hangers, supports and accessories as follows:

Exposed - One prime coat of gray lead and oil paint.

Concealed - One coat of black asphaltum paint.

Underground - Two coats of black asphaltum paint.

Uncoated or otherwise unfinished canvas jackets or insulation shall be painted with one coat of glue sizing as soon as possible after installation.

- 14.0 Cleaning Piping - This contractor shall thoroughly clean all piping, ducts, and equipment of all foreign substances inside and out before being placed in operation.

If any part of the system should be stopped by any foreign matter after being placed in operation, the system shall be disconnected, cleaned and reconnected wherever necessary to locate and remove obstructions. Any work damaged in the course of the removal of obstruction shall be repaired or replaced when the system is reconnected at no additional cost to the owner.

During the course of construction all ducts and pipes shall be capped in an approved manner to insure adequate protection against the entrance of foreign substances.

- 15.0 Access Doors and Panels - Furnish and install flush type access doors or panel with metal frame for all valves or apparatus located in chases, walls or floors. Finish shall be prime coated.

- 16.0 Sleeves and Inserts - This contractor shall be held responsible for the location of and maintaining in proper position, sleeves, inserts and anchor bolts supplied and/or set in place by him. In the event that failure to do so requires cutting and patching of finished work, it shall be done at this contractor's expense by the concrete and/or masonry contractor.

All pipes passing through floors, walls or partitions shall be provided with sleeves having an internal diameter of 1" larger than the outside diameter of the pipe or insulation on covered lines.

Sleeves passing through lightproof or soundproof walls, floors and partitions and through firewalls shall be made tight using approved caulking materials.

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Sleeves through floors and all other walls shall be Schedule 40, black steel pipe, set flush with finished wall or ceiling surfaces, but extending ½" above finished floors.

Sleeves through outside walls shall be Schedule 40 black steel pipe with 150 lb. black steel slip-on welding flange welded at the center of the sleeve and shall be painted with one coat of bitmastic paint inside and outside. The space between sleeve and pipe shall be packed with

oakum to within 2" of each face of the wall. The remaining space shall be packed and made water tight with a waterproof compound.

Sleeves through masonry floors or interior masonry walls shall be Schedule 40 black steel pipe, set flush with finished wall or floor surfaces.

Sleeves through interior partitions shall be 22- gauge galvanized sheet steel, set flush with finished surfaces of the partitions.

Inserts shall be individual or strip type of pressed steel construction with accommodation for removable nuts and threaded rods up to ¾" diameter, permitting lateral adjustment. Individual inserts shall have an opening at the top to allow reinforcing rods up to ½" diameter to be passed through the insert body. Strip inserts shall have attached rods with hooked ends to allow fastening to reinforcing rods

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220510 SUPPLEMENTAL GENERAL CONDITIONS (P)

1.0 Contractual Relationship with Owner - Upon award of this contract, the contractor shall save harmless the owner and his agents from any or all causes of action arising out of the contractor's negligence.

2.0 O.S.H.A. - All work on this project shall be accomplished in accordance with Federal Statutes such as the Occupational Safety and Health Act (1970).

3.0 Other General Conditions -

1. Intent - It is the intent of these plans and specifications to provide alterations and/or new construction as indicated on the drawings and in the specifications to provide complete new systems in every respect, capable of operating as designed. It is not intended that every fitting, minor detail or feature be shown on drawings.

The contractor shall be responsible for any detail necessary for completion of these systems in accordance with good practice.

Installation shall be executed so as to contribute to efficiency of operation, minimum maintenance, accessibility and sightliness. The installation shall conform and accommodate itself to the building structure, its equipment and its usage. No piping or equipment shall be installed in such a manner as to interfere with the operation of any doors or windows.

Requirements specified herein shall govern applicable portions of mechanical and electrical sections whether so stated herein or not.

2. Regulations and Certificates - All work shall be done in strict accordance with rules and regulations of local and state authorities having jurisdiction over such work, utility companies operating where apparatus is being installed, National Fire Protection Association, IEEE and insurance companies. Where discrepancies occur between above regulations and these plans and specifications, requirements of the regulations shall take precedence, except that these specifications shall be minimum requirements and that no changes shall be made without approval of the engineer.

Complete approval of all above mentioned authorities shall be secured and their certificates of approval shall be delivered to the owner before final acceptance. Any and all drawings or documents required (in addition to contract drawings) shall be furnished in order to secure above-mentioned approvals.

3. Drawings and Measurements - Contract drawings for mechanical and electrical work are in part diagrammatic, intended to cover the general design and extent of the systems and indicate general arrangement of equipment, ducts, conduits, piping and approximate sizes and locations of equipment and outlets.

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Drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. Where drawings are required for these purposes or have to be made from field measurements, they shall be prepared by the various trades and coordinated by the contractor.

Where job conditions require reasonable changes from indicated locations and arrangements, such changes shall be made without cost to the owner.

Exact locations of all grilles, registers, plumbing fixtures, electrical fixtures, panelboards, etc., shall be governed by plans, elevations and details.

4. Record Drawings - During the course of construction the respective contractor shall keep a careful record (in drawing form) of all deviations from the work as shown on the contract drawings on the installation of pipes, ducts, electric outlets, equipment, invert elevations, etc. These drawings shall be delivered to the engineer before the final certificate of payment is issued.
5. Accessibility - Locate all equipment which must be serviced, operated or maintained, in fully accessible position. Equipment shall include but not be limited to valves, traps, cleanouts, motors, controllers, drain points, etc. Furnish access doors where required. Minor deviations from the drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval.
6. Access Doors and Panels - Furnish flush type door or panel with metal frame for all dampers, valves, cleanouts or apparatus located in chases, walls or floors. Finish shall be prime coat.
7. Quiet Operation - All equipment shall operate under all conditions of load without any sound or vibration which is objectionable to the opinion of the engineer. In case of moving machinery, sound or vibration noticeable outside of room in which it is installed or annoyingly noticeable inside its own room will be considered objectionable. Sound or vibration conditions considered objectionable by the engineer shall be corrected in approved manner by the contractor at the latter's expense.
8. Covering of Work - No pipe fittings or other work of any kind shall be covered up or hidden from view before it has been examined or approved by the engineer or other authority having jurisdiction. Any unfaithful or imperfect work or material which may be discovered shall be removed and corrected immediately before being condemned, and other work and materials shall be furnished which shall be satisfactory to the engineer.
9. Waterproofing - Where any work pierces waterproofing, the installation shall be as approved by the engineer. Contractor shall furnish all necessary sleeves, caulking and flashing as required to make the openings absolutely watertight.
10. Excavation and Backfill - All excavation and backfill shall be by the contractor who is furnishing and installing the respective equipment. Cleanup, resurface and resod all disturbed areas.

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11. Site Conditions-Prior to bid submission, this contractor shall familiarize himself with the site and understand all the conditions under which he will be obligated to operate in performing his part of the contract. No allowance will be subsequently made in this connection to this contract or for any errors through omission or negligence on his part.

- 4.0 Firestopping-All penetrations through fire and smoke rated walls, floors, and ceilings shall be thoroughly sealed with 3M Brand Fire Barrier CP25WB latex based caulk, or approved equal. Install in accordance with manufacturer's instructions.

- 5.0 Equipment Returns-As part of this contract, contractors shall ensure that suppliers of any and all equipment supplied for this project agree to accept the return of any equipment on this project that is in undamaged condition and has not been put into service with a maximum restocking fee of 25%, up until the date of certified substantial completion of the project.

- 6.0 Coordination of Trades – It is understood that coordination between all of the trades on this project is the responsibility of the construction manager (if any), the general contractor (if any) and the trades themselves. This coordination will include meetings and discussions as needed among the parties noted above, and preparation of coordination drawings as needed. The cost of this coordination work shall be included in the contractors' bids. It is not the responsibility of the engineer to perform this coordination. No extra charges will be paid to any contractor that is due to additional work being performed due to lack of coordination between the trades.

- 7.0 Building Services Shutdowns – All building services shutdowns, including electric, gas, water, and telephone utilities, and HVAC, sprinkler, and plumbing systems in existing buildings, for the purpose of performing cutovers and tie-ins of new systems, shall be strictly coordinated with the appropriate utility companies and the building owner. For work in existing buildings, it will be required to perform this work outside of normal building operation hours and the cost for this is to be included in the bids.

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221116 WATER SUPPLY SYSTEM

1.0 Piping and Supply - All piping supply shall be Type "L" copper above grade inside of building. Use Type "K" for all other supply piping. No Type "M" shall be permitted. All fittings shall be wrought copper. Clean all areas to be connected using fine sand cloth. Solder using paste type non-corrosive flux of petrolatum base. Joints shall be soldered within an hour of flux applications. All copper shall be tempered type and shall not be bent. Furnish proper mechanical support before soldering. All solder for Type "L" shall be 95-05 or approved equal. Type "K" underground copper shall be silver soldered.

All fixtures shall be provided with separate valves. Furnish and install at accessible locations at all fixtures.

2.0 Hangers - Furnish and install pipe hangers in accordance with the following spacing schedule:

Size Pipe	Ctr to Ctr Spacing
½"	6'
¾" - 1"	8'
1 ¼" - 2"	10'
2 ½" - 5"	12'

3.0 Air Chambers - Furnish and install full size air chambers as follows:

Locations	Height
Top of all main risers	2'-0"
Each fixture	1'-0"

The above applies to all hot and cold pipes and fixtures.

4.0 Piping Insulation - All domestic cold, hot water supply, and recirculation piping shall be insulated with Certain Teed 500 degree Snap-on Heavy Density Pipe insulation, or approved equal. The insulation shall have an average thermal resistance of at least 4.0 (square foot) (degrees F)/BTUH per inch of thickness on a flat surface at a mean temperature of 75 degrees F.

Application - Insulation shall be applied over clean dry pipe with all joints butted firmly together.

Do not install insulation when air temperature is lower than 35 degrees or higher than 120 degrees. Do not leave adhesive strip exposed to air. Adhere self-sealing lap immediately after removing paper backing.

Fittings and valves shall be insulated and fitted with Manville Zeston PVC pipe fitting covers and Hi-Lo Temp Insulation Inserts, or approved equal. Insulation thickness shall be as per New York State Energy Code.

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All piping insulation shall comply with New York State Energy Code Requirements.

INSULATION SCHEDULE (DOMESTIC WATER PIPING 140° AND BELOW)

<u>RUNOUTS</u>	<u>≤1</u>	<u>1 1/4"-4"</u>	<u>5" AND LARGER</u>
Cold Water	1/2"	1/2"	1"1"
Hot Water	1/2"	3/4"1"	1 1/2"
Hot Water Recirc	3/4"	1"	1/2"

All piping shall be marked with pipe identification by Seton, or similar.

- 5.0 Sterilization of Water Piping - Water piping shall be sterilized by introducing into the system a solution of liquid chlorine or sodium chlorine. Chlorine content of solution shall not be less than 50 ppm. Solution shall remain the system not less than eight hours during which time all faucets, valves, etc., shall be opened and closed not less than three times each, at intervals of not less than 30 minutes.

At conclusion of eight-hour period, flush sterilizing solution from system. Reflush, as many as may be required with fresh water until residual chlorine content in any part does not exceed 0.05 ppm.

- 6.0 Valves - The entire plumbing system shall be provided with valves so located that they can be operated, replaced and repaired and afford complete control of the water to each group of fixtures, each riser and wherever else required.

Each fixture shall have supply stops. Exposed supply stops shall be polished chrome finish.

All valves shall be 150 lb. type that can be repacked under pressure when wide open. Where possible one make of valve shall be used throughout (NIBCO, Jenkins, Crane or Walworth).

Provide 125# sweat globe valves for drains and blow-offs.

Valves 3/4" and smaller shall be ball or globe valves, larger size shall be solid wedge type gate valves. Valves two inch and smaller shall be all bronze with screwed or sweat type ends. Valves 2-1/2" and larger shall be iron body bronze-mounted gate valves with screwed or flanged ends.

- 7.0 Pressure Reducing Valves and Backflow Preventors - Furnish and install pressure reducing valves and/or backflow preventors as shown on drawings and as required by local municipality.

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221316 DRAINAGE, WASTE AND VENT SYSTEM (P)

- 1.0 Drainage, Waste and Vent - All piping above grade shall be Type DWV copper or no-hub cast iron down to 6" above grade. All piping below this point, in slab and below grade shall be service weight cast iron. All copper piping connections shall be soldered using standards hereinbefore described. All cast iron piping shall be no-hub above grade bell and spigot type below grade and shall have neoprene insert joints.

All lines shall be sloped 1/8" per foot minimum. All horizontal changes of direction shall be 1/8 bend (45 degree maximum). Vertical changes shall be "TY".

- 2.0 Cleanouts - All cleanouts shall be closed gas tight by heavy cast bronze screw type plugs with raised hex heads. Plugs shall be full size up to and including 4".

All cleanouts in finished floors shall have a heavy cast bronze plug with straight thread and tapered shroud that seals against caulk lead seat in body, coated cast-iron extension body with cut off serrations and polished brass access cover and frame with integral lugs for adjustment to level of finished floor. (Zurn, Smith, Wade)

Wall cleanouts shall be covered with 6" nickel bronze cover set flush with finished wall and held in place by means of integral anchoring lugs. (Zurn, Smith, Wade)

All cleanouts in finished floors to be covered with linoleum or other applied composition flooring materials shall have recessed inlay type nickel cover.

Soil, waste and storm drains shall be provided with cleanouts at the base of each stack, at every change or direction greater than 45 degrees and at least every 50 feet (maximum) on all horizontal runs.

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224000 FIXTURES AND INSTALLATION

1.0 Schedules of Equipment Connections - Furnish and install all fixture connections as follows:

	SUPPLIES		DRAIN	VENT	TRAP CONNECTION
	H	C			
LAVATORIES	½	½	1 1/2"	1 1/4"	1 1/4"
SINKS	½	½	2"	1 1/2"	1 1/2"
WATER CLOSETS (FLUSH VALVE)	—	1"	4"	3"	—

All supply piping shall be hard drawn type 'L' copper only. All sanitary and vent piping shall be type DWV Copper or service weight, no hub cast-iron above grade and Bell & Spigot service weight cast iron below grade.

2.0 Schedule of Equipment - Shown on drawings.

3.0 Fixture Installation - Fixture trim, faucets, stop valves, escutcheons and waste pipe exposed to view in finished areas shall be brass with polished chromium plating over nickel finish, guaranteed not to strip or peel.

Faucet locations shall be uniform with the cold water faucet on the right side of the fixture and hot water on the left.

This contractor shall be responsible for providing these portions of the fixture trim which are not supplied with the fixture, but are required for the complete installation. All fixtures shall be carefully checked to determine the portion which must be provided to complete the installation.

All fixtures shall be provided with separate stop valves for hot and cold water so that each fixture may be separately controlled without effecting any other fixture.

Provide a capped air chamber 18" long with one size larger than the branch on each hot and cold-water riser to each fixtures.

4.0 Carriers - Furnish and install fixture carriers on all lavatories. See legend and schedule for type and size.

5.0 Equipment by Others - All fixtures, equipment or apparatus furnished by others or indicated on the drawings as N.I.C. (Not in Plumbing Contract) will be furnished complete with faucets, strainers and tail pieces. This contractor shall provide all traps, supply risers, etc. required and shall also provide a valve or stop in each individual supply riser to each piece of equipment, fixture or apparatus. All final connections and all indirect waste piping shall be under this section of the specifications.

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Where not supplied with the equipment, fixtures or apparatus, this contractor shall furnish all necessary valves, gauges, piping, traps, etc. required to provide a complete installation complying with all applicable codes and regulations.

Before installation of any drains, sleeves or piping, this contractor shall coordinate his work with the equipment supplier and shall make any changes in the location of the drains, piping, etc., as shown on the plans that may be required by the type of equipment being installed. Any changes resulting from the failure of this contractor to coordinate his work before installation shall be made at no expense to the owner.

Where fixtures or equipment are not installed at completion of the contract, all services shall be plugged or capped ready for installations.

Where final connections are noted as being N.I.C., this contractor shall provide valved, capped connections terminating not more than 5'-0" from piping or equipment to be serviced.

6.0 Fixture Installation Heights-

Lavatories- 32" to top of basin rim. For ADA compliant fixtures, install offset piping under sink in compliance with ADA and install TRUEBRO-LAVGUARD protective cover.

Water Closets- Standard - 15" to top of rim
H.C. - 18" to top of seat

Flush Valves- Recessed - 10" above bowl rim