

PLUMBING SPECIFICATIONS

GENERAL

1. PRINCIPAL ITEMS OF WORK INCLUDED:
- a. SANITARY SEWER.
  - b. INDIRECT WASTE PIPING.
  - c. HOT AND COLD DOMESTIC WATER SYSTEM.
  - d. BACKFLOW PREVENTER.
  - e. VALVES AND ACCESSORIES.
  - f. FUEL GAS SYSTEM.
  - g. ROOF AND OVERFLOW DRAINS, ROOF LEADERS, AND STORM DRAIN PIPING.
  - h. UTILITY CONNECTION REQUIREMENTS
  - i. POTABLE WATER SYSTEM DISINFECTION.
  - j. PLUMBING FIXTURES AND WATER HEATER(S) PER DRAWINGS.
  - k. GAS WATER HEATER VENTS (AS APPLICABLE).
2. RELATED WORK SPECIFIED ELSEWHERE:
- a. TRENCHING AND BACKFILL: SECTION EARTHWORK.
  - b. FIXTURES AND EQUIPMENT: SEE PLUMBING FIXTURE SCHEDULE ON DRAWINGS.
  - c. PAINTING: SECTION PAINTING
3. REQUIREMENTS:
- a. CODES:
    - a.a. INTERNATIONAL PLUMBING CODE (IPC) OR UNIFORM PLUMBING CODE (UPC) WHERE APPLICABLE
    - a.b. INTERNATIONAL MECHANICAL CODE (IMC)
    - a.c. INTERNATIONAL FUEL GAS CODE (FGC)
    - a.d. INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
    - a.e. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    - a.f. ENVIRONMENTAL PROTECTION AGENCY (EPA) – LEAD–FREE FINAL RULE
    - a.g. AMERICANS WITH DISABILITIES ACT (ADA)
    - a.h. NATIONAL ELECTRICAL CODE (NEC)
    - a.i. APPLICABLE LOCAL CODES
    - a.j. APPLICABLE SAFETY CODES
  - b. STANDARDS:
    - b.a. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
      - b.a.a. Z21.22 AMERICAN NATIONAL STANDARD FOR RELIEF VALVES AND AUTOMATIC GAS SHUTOFF DEVICES FOR HOT WATER SUPPLY SYSTEMS
    - b.b. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
      - b.b.a. B16.1 GRAY IRON PIPE FLANGES AND FLANGED FITTINGS.
      - b.b.b. B16.3 MALLEABLE IRON THREADED FITTINGS.
      - b.b.c. B16.4 GRAY IRON THREADED FITTINGS.
      - b.b.d. B16.18 CAST COPPER ALLOY SOLDER–JOINT PRESSURE FITTINGS.
      - b.b.e. B16.22 WROUGHT COPPER AND COPPER ALLOY SOLDER–JOINT PRESSURE FITTINGS.
      - b.b.f. B16.23 CAST COPPER ALLOY SOLDER–JOINT PRESSURE FITTINGS.
      - b.b.g. B16.26 CAST COPPER ALLOY FITTINGS FOR FLARED COPPER TUBES.
      - b.b.h. B16.29 WROUGHT COPPER AND WROUGHT COPPER ALLOY SOLDER–JOINT DRAINING FITTINGS–DWV.
      - b.b.i. B16.51 COPPER AND COPPER ALLOY PRESS–CONNECT PRESSURE FITTINGS
      - b.b.j. B31.2 FUEL GAS PIPING.
      - b.b.k. B31.9 BUILDING SERVICES PIPING.
    - b.c. AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL (ASTM)
      - b.c.a. B32 SOLDER METAL.
      - b.c.b. B88 SEAMLESS COPPER WATER TUBE.
      - b.c.c. D1785 POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE, SCHEDULES 40, 80, AND 120.
      - b.c.d. D2466 POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE FITTINGS, SCHEDULE 40.
      - b.c.e. D2564 SOLVENT CEMENTS FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPING SYSTEMS.
      - b.c.f. D2661 ACRYLONITRILE–BUTADIENE–STYRENE (ABS) SCHEDULE 40 PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS.
      - b.c.g. D2665 POLY (VINYL CHLORIDE) (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS.
      - b.c.h. 876 CROSSLINKED POLYETHYLENE (PEX) TUBING.
      - b.c.i. 877 CROSSLINKED POLYETHYLENE (PEX) PLASTIC HOT AND COLD WATER DISTRIBUTION SYSTEMS.
      - b.c.j. F1970 SPECIAL ENGINEERED FITTINGS, APPURTENANCES OR VALVES FOR USE IN POLY (VINYL CHLORIDE) (PVC) OR CHLORINATED POLY (VINYL CHLORIDE) (CPVC) SYSTEMS
  - c. SUBMITTALS:
    - c.a. ELECTRONIC (PDF) MATERIALS LIST, SHOP DRAWINGS, AND DATA SHEETS SHALL BE SUBMITTED TO OWNER’S CONSTRUCTION MANAGER FOR REVIEW. SUBMITTALS SHALL BE MADE, AND FAVORABLE REVIEW SECURED BEFORE MATERIAL AND EQUIPMENT IS INSTALLED. SUBMIT CATALOG DATA SHEETS FOR:
      - c.a.a. VALVES AND ACCESSORIES.
      - c.a.b. HANGERS AND SUPPORTS.
      - c.a.c. CLEAN OUTS.
      - c.a.d. DIELECTRIC CONNECTIONS.
      - c.a.e. WATER HAMMER ARRESTORS.
      - c.a.f. FLOOR SINKS AND FLOOR DRAINS.
      - c.a.g. WATER HEATER AND ACCESSORIES.
      - c.a.h. PLUMBING FIXTURES.
      - c.a.i. BACK FLOW PREVENTER.
- PRODUCTS
1. MATERIALS:
- FOR MATERIAL APPLICATIONS SEE “MATERIAL SPECIFICATIONS” LATER IN THESE NOTES
- a. CAST IRON PIPING SYSTEMS
    - a.a. SOIL PIPE AND FITTINGS: ASTM A74.
  - b. COPPER PRESSURE PIPING SYSTEMS:
    - b.a. PIPING: TYPES ‘K’ AND ‘L’ COPPER PER ASTM B88.
    - b.b. FITTINGS: CAST COPPER ALLOY SOLDER–JOINT PRESSURE FITTINGS PER ASME B16.18 OR WROUGHT COPPER PER ANSI B16.22.
    - b.c. FLANGES: CLASS 150 POUND BRONZE: NIBCO, CHASE, OR APPROVED ALTERNATIVE.
    - b.d. UNIONS: SOLDER–END COPPER ALLOY: NIBCO, CHASE, OR APPROVED ALTERNATIVE.
    - b.e. WATER VALVES:
      - b.e.a. BALL, 2–INCH AND SMALLER: 125 PSI WSP BRASS, SWEAT JOINTS: WATTS #MBVS OR APPROVED ALTERNATIVE.
      - b.e.b. CHECK VALVES: 150 PSI WSP, BRONZE BODY, SWEAT OR THREADED JOINTS: WATTS #CV OR CVS OR APPROVED ALTERNATIVE.
    - b.f. AIR VALVES: BRONZE, SCREWED END, 150 SWP, CRANE #431–UB, STOCKHAM #120, OR APPROVED ALTERNATIVE.
    - b.g. QUICK CONNECT COUPLING: 1/2–INCH SIZE BRASS CONSTRUCTION, PARKER HANFFIN, AMFLO, OR APPROVED ALTERNATIVE.
  - c. PVC PIPING SYSTEMS:
    - c.a. PIPING: SCHEDULE 40 PVC PER ASTM D1785 OR SCHEDULE 80 PVC PER ASTM 1785.
    - c.b. FITTINGS AND FLANGES: PVC SCHEDULE 80 SOCKET WELDS PER ASTM D2466.
    - c.c. WATER VALVES: BALL VALVES PER ASTM F1970.
  - d. PEX PIPING SYSTEMS:
    - d.a. TUBING: ASTM F876
    - d.b. DISTRIBUTION SYSTEMS: ASTM F877
  - e. JOINTS IN PIPING:
    - e.a. COPPER: SOLDER–JOINT OR PRESS FITTINGS.
    - e.b. PLASTIC: SOCKET WELD AND FUSION WELD.
    - e.c. CAST IRON: COMPRESSION, OR NO–HUB JOINT.
2. FIXTURES:
- SEE PLUMBING FIXTURE SCHEDULE ON PLANS.
3. EQUIPMENT:
- a. HANGERS AND SUPPORTS:
    - a.a. SPLIT–RING TYPE, GALVANIZED: ANVIL, SUPERSTRUT, OR APPROVED ALTERNATIVE.
    - a.b. TRAPEZE TYPE, GALVANIZED: UNISTRUT, KINDORF, OR APPROVE ALTERNATIVE.
    - a.c. BOLTED STEEL CLAMPS, GALVANIZED: GRINNELL, SUPERSTRUT, OR APPROVED ALTERNATIVE.
    - a.d. VERTICAL STRUT TYPE: UNISTRUT, KINDORF, OR APPROVED ALTERNATIVE.
  - b. PIPING ISOLATORS: METAL–CLAD FELT TYPE SPECIFICALLY MADE FOR ISOLATING PIPE FROM HANGER: SEMCO TRISOLATORS, SUPERSTRUT TYPE C715 ISOLATOR, OR APPROVED ALTERNATIVE.
  - c. WATER HAMMER ARRESTORS: JR SMITH HYDROTROL, ZURN SHOCKTROL, OR APPROVED ALTERNATIVE.
  - d. BACKFLOW PREVENTER: REDUCED PRESSURE TYPE, BRONZE CONSTRUCTION, THREE–YEAR APPROVAL BY THE FOUNDATION FOR CROSS–CONNECTION CONTROL RESEARCH, UNIVERSITY OF SOUTHERN CALIFORNIA: FEBCO MODEL 835B, WATTS LF009, BREGO FRP, OR APPROVED ALTERNATIVE.
  - e. DIELECTRIC CONNECTIONS, INSULATING UNIONS: CAPITOL, CLAYTON–MARK (PETRO), OR APPROVED ALTERNATIVE. FOR COLD WATER ONLY, SCHEDULE 80 PENTON, OR CPVC NIPPLES, 4–INCH LONG, MAY BE USED.

4. MISCELLANEOUS MATERIALS
- a. FLASHING FOR PIPING PROTRUDING THROUGH EXTERIOR WALLS OR ROOF: 16–OUNCE PER SQUARE FOOT COPPER, OR 4–POUND PER SQUARE FOOT LEAD.
  - b. SOLDER: 95/5 (TIN ANTIMONY) PER ASTM B32.
  - c. CAULKING LEAD: 99.7 PERCENT PURE LEAD.
  - d. PIPE SLEEVES: STEEL, CAST IRON, OR PLASTIC.
  - e. ESCUTCHEONS: CAST IRON, MALLEABLE IRON, PAINTED OR CHROME PLATED.
  - f. INSULATION: FIBERGLASS, CELLULAR FOAM, PLASTIC JACKET, OR APPROVED ALTERNATIVE.
5. SUBSTITUTIONS:
- a. SUBSTITUTIONS MAY BE CONSIDERED IN LIEU OF SPECIFIED FIXTURES AS FOLLOWS:
    - a.a. FLOOR INSTALLED FIXTURES AND CLEAN OUTS – J.R. SMITH, JOSAM, ZURN.
    - a.b. WATER CLOSETS, LAVATORIES, URINALS – KOHLER, AMERICAN STANDARD, CANE.
    - a.c. ROOF DRAINS: J.R. SMITH, JOSAM, ZURN.
    - a.d. WATER HEATER – STATE, A.O. SMITH, RHEEM, LOCHINVAR.

THESE AND OTHER EQUIVALENT ALTERNATIVES SHALL BE PRESENTED TO THE OWNER’S CONSTRUCTION MANAGER FOR CONSIDERATION PER THE ‘SUBMITTALS’ SECTION.

EXECUTION:

1. INSTALLATION – GENERAL:
- b. PIPING SHALL INCLUDE ALL PIPING, FITTINGS AND VALVES: CONNECT TO EXISTING PIPING UTILITIES AS INDICATED ON DRAWINGS.
  - c. CONCEAL ALL INTERIOR PIPING IN WALLS OR ABOVE CEILINGS, EXCEPT WHERE SHOWN TO BE EXPOSED.
  - d. PROVIDE FOR EXPANSION AND CONTRACTION OF ALL PIPES.
  - e. PROVIDE REDUCING FITTINGS FOR ALL CHANGES IN PIPE SIZE – DO NOT USE BUSHINGS.
  - f. PROVIDE DIELECTRIC ISOLATION BETWEEN DISSIMILAR METALS AND WHERE REQUIRED AT EQUIPMENT CONNECTIONS.
  - g. PROVIDE FITTINGS FOR ALL CHANGES IN PIPE DIRECTION.
  - h. CONTAMINATION PRECAUTIONS: DO NOT CROSS–CONNECT OR INTERCONNECT BETWEEN POTABLE WATER PIPING AND DRAIN, SOIL, OR WASTE PIPING.
2. INSTALLATION – SYSTEMS:
- a. WATER PIPING:
    - a.a. PEX OR COPPER TYPE ‘L’.
    - a.b. PROVIDE SHUTOFF VALVES AS INDICATED OR REQUIRED.
    - a.c. PROVIDE DRAIN VALVES WHERE REQUIRED FOR COMPLETE SYSTEM DRAINAGE.
    - a.d. PROVIDE WATER HAMMER ARRESTORS SIZED AND LOCATED PER TABLE V, WH–201 OR AS SHOWN.
    - a.e. PROVIDE BACK FLOW PREVENTER WHERE SHOWN.
  - b. SANITARY PIPING:
    - b.a. PVC OR CAST IRON.
    - b.b. GRADING: SLOPE HORIZONTAL SOIL AND WASTE PIPING 1/4–INCH PER FOOT WHERE POSSIBLE, BUT IN NO CASE LESS THAN 1/8–INCH PER FOOT.
3. INSTALLATION – TESTING:
- a. ALL HOT AND COLD WATER SUPPLY, DRAINAGE, AND VENT PIPING SHALL BE TESTED AS INDICATED BELOW OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS MORE STRINGENT. NO PIPING SYSTEM SHALL BE COVERED UP OR BURIED UNTIL SUCCESSFULLY TESTED AND APPROVED BY THE OWNER AND THE LOCAL PLUMBING INSPECTOR.
  - a. WATER PIPING: UPON COMPLETION OF A SECTION, OR OF THE ENTIRE HOT AND COLD WATER SUPPLY SYSTEM, IT SHALL BE TESTED AND PROVED WATERTIGHT UNDER A WATER PRESSURE NOT LESS THAN THE WORKING PRESSURE UNDER WHICH IT IS TO BE USED, OR EIGHTY (80) PSIG, WHICHEVER IS HIGHER (VERIFY WITH THE LOCAL WATER COMPANY). THE WATER USED FOR TESTING SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY. THE PIPING UNDER TEST SHALL WITHSTAND THE TEST WITHOUT LEAKING FOR A PERIOD OF NOT LESS THAN FIFTEEN (15) MINUTES. ANY SECTION OF PIPING FAILING THE TEST SHALL BE REPAIRED AND RETESTED, AS INDICATED ABOVE UNTIL SUCCESSFUL, HOLDING THE APPLIED PRESSURE FOR AT LEAST THE SPECIFIED TIME PERIOD.
  - b. DRAINAGE PIPING: UPON COMPLETION OF A SECTION, OR OF THE ENTIRE DRAINAGE AND VENTING SYSTEMS, THEY SHALL BE TESTED AND PROVED WATERTIGHT UNDER A WATER PRESSURE NOT LESS THAN A TEN (10) FOOT HEAD. IF THE SYSTEM IS TESTED IN SECTIONS, EACH OPENING SHALL BE TIGHTLY PLUGGED EXCEPT AT THE HIGHEST OPENING OF THE SECTION UNDER TEST, AND EACH SECTION SHALL BE FILLED WITH WATER TO A TEN (10) FOOT HEAD. IN TESTING SUCCESSIVE SECTIONS AT LEAST THE UPPER TEN (10) FEET OF THE NEXT PROCEEDING SECTION SHALL BE TESTED, SO THAT NO JOINT OR PIPE IN THE BUILDING SHALL HAVE BEEN TESTED TO LESS THAN TEN (10) FOOT HEAD OF WATER. THE WATER SHALL BE KEPT IN THE SYSTEM, OR IN THE SECTION UNDER TEST, FOR AT LEAST THIRTY (30) MINUTES AND MAINTAIN THE APPLIED PRESSURE WITHOUT LEAKING. ANY SECTION OF THE DRAINAGE OR VENT PIPING FAILING THE TEST SHALL BE REPAIRED AND RETESTED AS INDICATED ABOVE UNTIL SUCCESSFULLY HOLDING THE APPLIED PRESSURE FOR AT LEAST THE SPECIFIED TIME PERIOD.
4. GUARANTEE:
- a. ALL WORK SHALL BE GUARANTEED FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. THE GUARANTEE PERIOD FOR CERTAIN ITEMS SHALL BE LONGER, AS INDICATED IN THE SPECIFICATIONS FOR THOSE ITEMS.
  - b. SHOULD ANY MALFUNCTION DEVELOP DURING THE GUARANTEE TIME PERIOD DUE TO DEFECTIVE MATERIAL, FAULTY WORKMANSHIP, OR NONCOMPLIANCE WITH PLANS, SPECIFICATIONS, CODES, OR DIRECTIONS OF THE OWNER, ARCHITECT, ENGINEER, OR INSPECTOR, THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO CORRECT THE MALFUNCTION WITHOUT ADDITIONAL CHARGES.
5. CLEANING:
- a. THE PLUMBING CONTRACTOR SHALL REMOVE ALL WASTE GENERATED BY THE PLUMBING WORKS ON A DAILY BASIS, AND KEEP THE JOB SITE CLEAR AND SAFE FROM ANY DEBRIS AND/OR ITEMS THAT FALL UNDER HIS RESPONSIBILITY. UPON COMPLETION OF THE PROJECT, THE PLUMBING WORKS SHALL BE CLEANED INCLUDING PLUMBING FIXTURES, WASTE LINES, WATER HEATERS, AND ANY OTHER PLUMBING DEVICES. THIS SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER OR THE OWNER’S REPRESENTATIVE AND SHALL OCCUR BEFORE FINAL ACCEPTANCE OF THE PROJECT. ALL DEBRIS AND WASTE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A SAFE MANNER AS REQUIRED BY LOCAL AND STATE AUTHORITIES.
6. MATERIALS SPECIFICATION:
- a. SANITARY SOIL, WASTE, AND VENT SYSTEMS: SOIL, WASTE, AND VENT PIPING SHALL BE SCHEDULE 40 PVC OR CAST IRON. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY THAT PIPE TO BE INSTALLED COMPLIES WITH LOCAL CODES AND WILL BE ACCEPTABLE TO LOCAL BUILDING INSPECTORS. CONTRACTOR SHALL BEAR ALL COSTS FOR REMOVAL AND REPLACEMENT OF ANY UNACCEPTABLE PIPE. WHERE PVC IS UNACCEPTABLE, SOIL AND WASTE PIPING BELOW SLAB AND INCLUDING YARD PIPING SHALL BE STANDARD WEIGHT CAST IRON SOIL PIPE AND FITTINGS (NO HUB). THE COUPLINGS SHALL BE STAINLESS STEEL SHIELDS AND CLAMP WITH NEOPRENE GASKETS. VENT PIPING ABOVE FLOOR SHALL BE SCHEDULE 40 GALVANIZED STEEL WITH CAST IRON DRAINAGE PATTERN SCREW FITTINGS.
  - b. WATER PIPING ABOVE AND BELOW SLAB: TYPE ‘K’ OR ‘L’; HARD DRAWN COPPER TUBING WITH 95–5 TIN/ANTIMONY SOLDER OR APPROVED ‘LEAD–LESS’ JOINT FITTINGS OR PEX TUBING.
  - c. WATER PIPING BELOW GRADE OUTSIDE BUILDING: SCHEDULE 40 PVC, IF PVC IS UNACCEPTABLE TO LOCAL AUTHORITIES OR IF SOIL IS CONTAMINATED USE TYPE ‘K’; HARD DRAWN COPPER TUBING WITH 95–5 TIN/ANTIMONY SOLDER OR APPROVED ‘LEAD–LESS’ JOINT FITTINGS. WHERE STREET PRESSURE EXCEEDS 80 PSI PROVIDE PRESSURE REDUCING VALVE ASSEMBLY COMPLETE WITH RELIEF VALVE. NO JOINTS WILL BE ALLOWED UNDER BUILDING SLAB.
  - d. INDIRECT & CONDENSATE DRAINS: COPPER, TYPE ‘M’ WITH 95–5 TIN/ANTIMONY SOLDER JOINT FITTINGS. NO JOINTS WILL BE ALLOWED UNDER BUILDING SLAB.
  - e. INSULATION: ALL COLD WATER LINES WITHIN THE BUILDING (IN AREAS WITH HIGH OUTDOOR HUMIDITY AND/OR TEMPERATURE OR LOW OUTDOOR TEMPERATURE ONLY) SHALL BE INSULATED WITH ‘PPG’ INDUSTRIES, CERTAIN TEED SAINT GOBAIN SNAP–ON OR JOHN MANSINSULATION. ALL HOT WATER LINES WITHIN THE BUILDING SHALL BE INSULATED WITH ‘PPG’ INDUSTRIES, CERTAIN TEED SAINT GOBAIN SNAP–ON OR JOHN MANSVILLE MICRO–LOC, EXCEPT IN THE CEILING SPACE WHICH SHALL BE JOHN MANSVILLE AEROTUBE FOAM PLASTIC PIPE INSULATION. HOT AND COLD WATER INSULATION SHALL BE 1” THICK OR PER LOCAL CODES. EXPOSED HOT AND COLD WATER PIPES, AND TRAPS BELOW RESTROOM LAVATORIES SHALL BE INSULATED WITH ‘TRUEBRO’ INSULATION KIT, SEE PLUMBING SCHEDULE. ALL HVAC CONDENSATE DRAINS INCLUDING WASTE LINES FROM EVAPORATIVE COOLERS SHALL BE INSULATED WITH 1/2” THICK JOHN MANSVILLE AEROTUBE FOAM PLASTIC PIPE INSULATION.
  - f. WATER HAMMER ARRESTORS: ALL STAINLESS STEEL CONSTRUCTION BELLOW–TYPE, PDI APPROVED AND CERTIFIED SIZING AND PLACEMENT CONFORMING TO PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI–WH 201 LATEST EDITION AND AS MANUFACTURED BY J.R. SMITH, ZURN, OR PFF, INC.



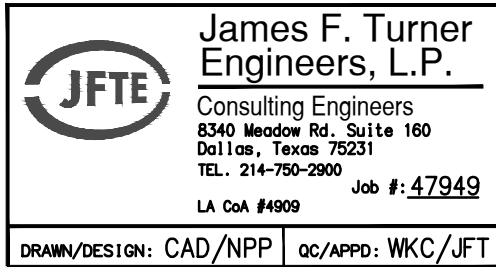
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Issue	Date:
	FOR LANDLORD REVIEW XX-XX-21



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CFT - MONROE  
SLEEP NUMBER

4351 PECANLAND MALL DR.  
MONROE, LA 71203

Project Number: 17106-004	Checked By: EA
Date Plotted: MAY 20, 2021	
Drawn By: RM	
File Name: CONSTRUCTION DOCUMENTS	

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