LEGEND

- DIRECTION OF FLOW IN PIPE
- PITCH PIPE DOWN IN DIRECTION OF ARROW
- PIPE UP
- PIPE DOWN
- EJ — EXPANSION JOINT
- FLEXIBLE PIPE CONNECTOR
- BALL VALVE
- CHECK VALVE, HORIZONTAL SWING
- GATE VALVE
- BUTTERFLY VALVE
- GLOBE VALVE
- BALANCING VALVE
- BC — BALANCING COCK
- STRAINER, Y-TYPE AND BLOWOFF VALVE
- RV — PRESSURE RELIEF VALVE (WATER)
- PRV — PRESSURE REDUCING VALVE
- MAV — MANUAL AIR VENT
- S — SOLENOID VALVE
- VALVE OS & Y
- CAPPED LINE
- SAN — SANITARY SEWER (ABOVE GRADE)
- SAN — SANITARY SEWER (BELOW GRADE)
- DOMESTIC COLD WATER
- BP — BOOSTED PRESSURE DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC HOT WATER RETURN
- CD — CONDENSATE DRAIN (BELOW GRADE)
- CD — CONDENSATE DRAIN (ABOVE GRADE)
- ST — STORM SEWER (BELOW GRADE)
- ST — STORM SEWER (ABOVE GRADE)
- EO — STORM EMERGENCY OVERFLOW PIPING
- GR — GREASE SEWER (BELOW GRADE)
- GR — GREASE SEWER (ABOVE GRADE)
- SCW — SOFT COLD WATER
- VENT
- G — GAS LINE (BELOW GRADE)
- G — GAS LINE (ABOVE GRADE)
- POINT OF CONNECTION NEW TO EXISTING
- POINT OF REMOVAL FOR DEMOLITION
- △T — DELTA T (TEMPERATURE DIFFERENCE)
- A/1 — PHOTO DETAIL OR SECTION IDENTIFICATION TARGET
  A = DETAIL NUMBER.
  B = SHEET NUMBER ON WHICH DETAIL IS LOCATED.
- HB — HOSE BIBB
- FD — FLOOR DRAIN
- HD — HUB DRAIN
- TD — TRENCH DRAIN
- A — COMPRESSED AIR (BELOW GRADE)
- A — COMPRESSED AIR (ABOVE GRADE)
- FLOOR CLEANOUT
- CLEANOUT
- EXTERIOR CLEANOUT
- HORIZONTAL CLEANOUT
- ITEMS TO BE REMOVED (DEMOLITION)
- FW — COLD FILTERED WATER
- SHOCK ABSORBER

NOTE:

SYMBOLS SHOWN ON THIS PLUMBING LEGEND ARE FOR REFERENCE PURPOSES ONLY. ALL OF THESE SYMBOLS MAY NOT BE USED FOR THIS PROJECT.

SPECIFICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. GENERAL PROVISIONS SPECIFICALLY APPLICABLE TO DIVISION 15 SECTIONS, IN ADDITION TO DIVISION 1 – GENERAL REQUIREMENTS.

1.2 SCOPE

A. THE WORK SHALL INCLUDE THE PROVISIONS OF SYSTEMS, EQUIPMENT AND MATERIALS SPECIFIED IN THIS DIVISION AND AS CALLED FOR ON THE DRAWINGS. WORK SHALL ALSO INCLUDE SUPERVISION, OPERATION, METHODS AND LABOR FOR THE FABRICATION, START-UP AND TESTS FOR A COMPLETE OPERATIONAL PLUMBING INSTALLATION.

B. DRAWINGS FOR THE WORK ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO CONVEY THE SCOPE OF THE INSTALLATION AND TO INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE WORK. BECAUSE OF THE SCALE OF THE DRAWINGS, CERTAIN BASIC ITEMS SUCH AS PIPE FITTINGS, ACCESS PANELS, AND SLEEVES MAY NOT BE SHOWN. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE EQUIPMENT TO FIT THE SPACE PROVIDED. THE LOCATION AND SIZES FOR PIPE FITTINGS, SLEEVES, INSERTS, FIRE AND/OR SMOKE DAMPERS, AND OTHER BASIC ITEMS REQUIRED BY CODE AND OTHER SECTIONS SHALL BE COORDINATED AND INCLUDED FOR THE PROPER INSTALLATION OF THE WORK.

C. EQUIPMENT SPECIFICATIONS MAY NOT DEAL INDIVIDUALLY WITH MINUTE ITEMS REQUIRED SUCH AS COMPONENTS, PARTS, CONTROLS AND DEVICES WHICH MAY BE REQUIRED TO PRODUCE THE EQUIPMENT PERFORMANCE SPECIFIED OR AS REQUIRED TO MEET THE EQUIPMENT WARRANTIES. WHERE SUCH ITEMS ARE REQUIRED, THEY SHALL BE INCLUDED BY THE INSTALLER OF THE EQUIPMENT, WHETHER OR NOT SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS WITH NO ADDITIONAL COST INCURRED.

D. WHERE NOTED ON THE DRAWINGS OR INDICATED IN OTHER SECTIONS OF THE SPECIFICATION, THE CONTRACTOR FOR THIS DIVISION SHALL INSTALL PLUMBING EQUIPMENT FURNISHED BY OTHERS, AND SHALL MAKE ALL FINAL CONNECTIONS. CONTRACTOR SHALL INSTALL EQUIPMENT AND SYSTEMS IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

E. COORDINATE WITH ALL TRADES IN SUBMITTAL OF SHOP DRAWINGS. TIGHT SPACE CONDITIONS SHALL BE DETAILED TO THE SATISFACTION OF ALL TRADES, SUBJECT TO THE REVIEW AND FINAL ACCEPTANCE OF THE ARCHITECT/ENGINEER. IN THE EVENT THAT THE CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATING WITH OTHER TRADES OR SO AS TO CAUSE ANY INTERFERENCE WITH THE WORK OF THE OTHER TRADES THIS CONTRACTOR SHALL MAKE ALL REQUIRED CHANGES TO CORRECT THE CONDITION AT NO ADDITIONAL COST TO THE PROJECT.

F. EXAMINATION OF BIDDING DOCUMENTS:

1. EACH BIDDER SHALL EXAMINE THE BIDDING DOCUMENTS CAREFULLY AND NOT LATER THAN TEN (10) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS, SHALL MAKE WRITTEN REQUEST TO THE ENGINEER FOR INTERPRETATION OR CORRECTION OF ANY AMBIGUITY, INCONSISTENCY OR ERROR THEREIN. ANY INTERPRETATION OR CORRECTION WILL BE ISSUED AS AN ADDENDUM BY THE ENGINEER. ONLY A WRITTEN INTERPRETATION OR CORRECTION TO BID DOCUMENTS BY ADDENDUM SHALL BE BINDING. NO BIDDER SHALL RELY UPON ANY INTERPRETATION OR CORRECTION GIVEN BY ANY OTHER METHOD.

G. FIRE PROTECTION:

THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, TRUCKING, HOISTING, ENGINEERING, SCAFFOLDING, SHOP DRAWINGS, INSURANCE, PERMITS, FEE'S, ETC. NECESSARY FOR THE FURNISHING AND INSTALLATION OF ALL RELATED WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS.

FIRE PROTECTION CONTRACTOR TO SUBMIT SIGNED AND SEALED DRAWINGS AND HYDRAULIC CALCULATIONS TO THE AUTHORITY HAVING JURISDICTION AS DEFINED IN 61G15 AND NFPA 13, SECTION 14-1.

H. SUBSTITUTIONS

1. EXCEPT AS PROVIDED BELOW, EACH BIDDER REPRESENTS THAT HIS BID IS BASED UPON THE MATERIALS AND EQUIPMENT DESCRIBED IN THE BIDDING DOCUMENTS.

2. NO SUBSTITUTIONS FOR OTHER MATERIALS AND EQUIPMENT WILL BE CONSIDERED UNLESS WRITTEN REQUEST HAS BEEN SUBMITTED TO THE ENGINEER FOR APPROVAL AT LEAST TEN (10) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. EACH SUCH REQUEST SHALL INCLUDE A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE, THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED, DRAWINGS, CUTS, PERFORMANCE AND TEST DATA OR INFORMATION NECESSARY FOR A COMPLETE EVALUATION.

3. IF THE ENGINEER APPROVES ANY PROPOSED SUBSTITUTION, SUCH APPROVAL WILL BE ISSUED AS AN ADDENDUM FORWARDED TO ALL PARTICIPATING BIDDERS.

4. IF ANY BIDDER IS UNABLE TO PROCURE WRITTEN APPROVAL OF ANY SUBSTITUTION FROM THE ENGINEER PRIOR TO THE OPENING OF BIDS, THEN HE SHALL BASE HIS BID ON ITEMS AND SYSTEMS AS SPECIFIED IN BID DOCUMENTS.

5. SUBSTITUTIONS REQUESTED ON THE BID PROPOSAL FORM WHICH ARE PRIOR APPROVED BY THE ENGINEER WILL BE INCORPORATED INTO THE CONTRACT WITH THE SUCCESSFUL BIDDER.

6. REQUESTS FOR ANY SUBSTITUTIONS NOT SUBMITTED AND APPROVED IN ACCORDANCE WITH THE ABOVE INSTRUCTIONS WILL BE DENIED BY THE ENGINEER.

1.3 REGULATORY REQUIREMENTS

A. ALL INSTALLATIONS AND EQUIPMENT SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE STATUTES, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION.
B. CONFORM TO 2017 FLORIDA BUILDING CODE.
C. CONFORM TO 2017 FLORIDA PLUMBING CODE.
D. CONFORM TO 2017 FLORIDA FIRE PREVENTION CODE.

1.4 CUTTING AND PATCHING

A. SUBMIT WRITTEN REQUEST IN ADVANCE OF CUTTING OR ALTERING ELEMENTS.
B. EMPLOY SKILLED AND EXPERIENCED INSTALLER TO PERFORM CUTTING AND PATCHING WHICH EFFECT:

1. STRUCTURAL INTEGRITY OF ELEMENT.
2. INTEGRITY OF WEATHER.
3. EFFICIENCY, MAINTENANCE, OR SAFETY OF ELEMENT.
4. VISUAL QUALITIES OF SIGHT.
5. WORK OF OWNER OR SEPERATE CONTRACTOR.

PART 2 PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

A. MANUFACTURERS:
1. B-LINE.
2. OTHER ACCEPTABLE MANUFACTURERS OFFERING EQUIVALENT PRODUCTS.
A) MICHIGAN HANGER.
B) PHD.

2.2 PIPING INSULATION: HOT WATER, HOT WATER RETURN, STORM PIPING
A. MANUFACTURERS:
1. OWENS-CORNING
2. JOHNS-MANVILLE
3. KNAUF
B. ASTM C547, RIGID MOLDED NON-COMBUSTIBLE FIBERGLASS INSULATION. 'K' VALUE .024 @ 75 DEGREES F.
C. VAPOR BARRIER JACKET, KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINUM FILM. CLOSURE SYSTEM SHALL BE UL 181.
D. INSULATION THICKNESS 1-1/2"

2.3 PIPING: DRAINAGE WASTE, VENT, CONDENSATE AND STORM PIPING
A. PVC: ASTM D2665 SCHEDULE 40 PVC PIPING.
1. FITTINGS: ASTM D2665 SCHEDULE 40 PVC DWV FITTINGS.
2. JOINTS: ASTM D2564 SOLVENT CEMENT. JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2855.

2.4 PIPING: WATER PIPING

A. CPVC PIPING & FITTINGS: ASTM D1784 PIPE COMPOUND CELL CLASS 24448.

1. JOINTS: ASTM F493 SOCKET TYPE WITH SOLVENT CEMENT ASTM F402 NSF INTERNATIONAL APPROVED MFG. COMPATIBLE.

2. FLOWGUARD GOLD CPVC PIPE AS MFG. BY NOVEON INC. OR SPEARS EVERTUFF CPVC CTS PLUMBING SYSTEM.

PART 3 INSTALLATION

A. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.

C. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT.

D. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE.

E. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

F. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

G. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.

H. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. COORDINATE SIZE AND LOCATION OF ACCESS DOORS WITH APPROPRIATE ARCHITECTURAL SECTION.

I. ESTABLISH ELEVATIONS OF BURIED PIPING OUTSIDE THE BUILDING TO ENSURE PROPER SLOPE AND COVER.

J. ESTABLISH ELEVATIONS OF EXISTING BURIED PIPING FOR CONNECTION TO NEW WORK TO ENSURE PROPER SLOPE AND COVER.

K. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH PRIMER TO WELDING.

L. INSTALL WATER HAMMER SHOCK ARRESTORS AT EACH FIXTURE OR BATTERY OF FIXTURES WHERE REQUIRED. ARRESTORS SHALL BE FACTORY FABRICATED. INSTALL ARRESTORS AND SIZE PER PLUMBING AND DRAINAGE INSTITUTE STANDARD P.D.I. WH-201. ACCEPTABLE MANUFACTURERS ZURN, JOSAM, SIOUX CHIEF. PPP INC. FOR 1-11 FU'S PROVIDE PDI-A, FOR 12-32 FU'S PDI-B, 33-60 FU'S PDI-C, 61-113 FU'S PDI-D.

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FITTINGS AS REQUIRED BY ALL APPLICABLE CODES AND GOVERNING AUTHORITIES.

2. CONTRACTOR SHALL VERIFY AND CORRECT AS REQUIRED TO MEET ALL CODES AND REGULATIONS ANY POSSIBLE DISCREPANCIES BETWEEN TYPE AND SIZE OF CONNECTION SPECIFIED IN PLUMBING FIXTURE SCHEDULE AND FIXTURES ACTUALLY INSTALLED ON THE SITE.

3. ALL DRAINAGE PIPING 3" AND LARGER SHALL HAVE AN 1/8" PER FOOT SLOPE. ALL DRAINAGE PIPING 2-1/2" AND LESS SHALL HAVE A 1/4" PER FOOT SLOPE.

4. PROVIDE ACCESS PANELS FOR ALL VALVES LACATED WITHIN NON ACCESSIBLE CEILING AND WALLS. PROVIDE FIRE RATED PANEL IN RATED WALLS.

5. VALVES AND FITTINGS SHALL BE OF SAME SIZE OF LINE ON WHICH THEY ARE LOCATED, UNLESS OTHERWISE INDICATED ON DRAWINGS.

6. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES.

7. CONTRACTOR SHALL FIELD VERIFY ALL GIVEN MEASUREMENTS PRIOR TO LAYING AND CONNECTING ALL SANITARY AND WASTE PIPING AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.

8. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER ARRESTORS AS SPECIFIED.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FIRE RATING AND WEATHERPROOFING INTEGRITY OF ALL PIPING AND PENETRATIONS.

10. ALL WATER SUPPLY AND SANITARY LINES SHALL BE RUN AS CLOSE TO PLANS AS POSSIBLE WITH NO CHANGES IN SIZING. PROVIDE FIRE RATED PANELS/BOXES FOR ALL PLUMBING DEVICES LOCATED IN RATED WALLS.

11. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES FOR ALL FIXTURES INCLUDED IN CONTRACT OR HEREIN SPECIFIED OR OTHERWISE.

12. INSULATE ALL HOT WATER AND HOT WATER RETURN PIPING.

13. ALL DRAINAGE PIPING SHALL BE MARKED WITH THE SEAL OF APPROVAL OF THE NATIONAL SANITATION FOUNDATION.

14. DO NOT PENETRATE FOUNDATIONS WITH PIPING, COORDINATE WITH GENERAL CONTRACTOR TO DROP FOUNDATIONS AS REQUIRED TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY. ALL PIPING PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER.

15. ROUTE ALL PIPING CONCEALED ABOVE CEILINGS, WITHIN WALLS, OR IN CHASES. PIPING EXPOSED SHALL BE SLOPED AND PAINTED TO MATCH ARCHITECTURAL FINISHES. PIPING IN MECHANICAL ROOMS MAY BE EXPOSED.

16. PROVIDE ACCESS PANELS TO ALL VALVES WITHIN CHASES OR ABOVE NON-ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

17. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PLUMBING FIXTURE MOUNTING HEIGHTS, AND DIMENSIONS.

18. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW SEWER LINES ARE TO BE CONNECTED BEFORE INSTALLATION OF NEW SEWER LINE.

19. ALL VENTS THROUGH ROOF SHALL BE MIN. 10'-0" FROM ANY AIR INTAKES.

20. CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.

21. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (INCLUDING PIPE ROUTING AND EQUIPMENT LOCATIONS) TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE INSTALLATION OR PURCHASING OF ANY PIPING AND/OR EQUIPMENT.

22. ALL WATER PIPING INSTALLED IN EXTERIOR WALLS SHALL BE PLACED ON THE INTERIOR SIDE OF THE WALL, SO THAT WALL INSULATION CAN BE PLACED ON THE EXTERIOR SIDE OF THE PIPING.

23. IT IS THE PLUMBING CONTRACTORS RESPONSIBILITY TO PROVIDE A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE ON THE MAIN DOMESTIC WATER SERVICE PROVIDED TO THE BUILDING/SPACE UNDER CONSTRUCTION AS PER THE LATEST ADOPTED VERSION OF THE PLUMBING CODE.

24. ALL PLUMBING SYSTEMS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE PERMITTED PLUMBING PLANS. ANY DEVIATION IN DESIGN AND ROUTING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION OF ANY WORK. THIS INCLUDES ANY REDESIGNS, VALUE ENGINEERING ITEMS AND ROUTING METHODS NEGOTIATED IN THE BIDDING PROCESS WITH THE GC IN ORDER TO OBTAIN THE LOWEST BID.

25. DOMESTIC WATER PIPING IS NOT PERMITTED BELOW THE BUILDING SLAB WITH THE EXCEPTION OF THE FEW FEET REQUIRED TO ENTER THE BUILDING CHASE WALL.

26. PLUMBING CONTRACTOR SHALL COMPLY WITH THE FBC CHAPTER 23 REGARDING STUD OPENINGS FOR ALL PIPE ROUTING, IN NO CASE SHALL MAX. OPENING FALL WITHIN 8" FROM EITHER SIDE OF STUD WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER, IE: 3⅛" NON BEARING STUD, 2⅛" MAX. OPENING – 5⅛" NON-BEARING STUD, 4⅛" MAX. OPENING.

27. 3" PIPE NOT PERMITTED TO PENETRATE 3" STUDS WITHOUT ADITIONAL REINFORCEMENT AND APPROVAL FROM THE STRUCTURAL ENGINEER. 5⅛" STUDS ARE APPROVED FOR 2" & 3" PIPE UP TO 4⅛" MAX. OPENING WITHOUT ADDITIONAL REINFORCEMENT.

ADAM J BARNEY
LICENSE
No. 69124
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Adam Barney
Jan 17 2018 3:10 PM

PERMIT REVIEW STAMP

ISSUE HISTORY

No.	Date	Description
1	1/18/2018	ISSUE FOR PERMIT

REVISION HISTORY

No.	Date	Description

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SUMMER BAY APTS. II

LAKE COUNTY, FL

Drawn:	MJR/KCM
Checked:	BLS/AJB
Approval:	BLS/AJB
Date:	11/10/2017
Project #:	5389

SYMBOL LEGEND & NOTES PLUMBING

P0.01

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