



DATE: 7-20-2010

DRAWN: TA

CHECKED:

REVISIONS:

H.V.A.C. LEGEND

EXISTING FIBERGLASS DUCTWORK

NEW FIBERGLASS DUCTWORK

EXISTING FLEX

EXISTING FLEX TO BE REMOVED

NEW FLEX TO MATCH EXISTING WITH SPIN IN COLLARS/M.V.D.

NEW OR RELOCATED DIFFUSER

EXISTING DIFFUSER

NEW OR RELOCATED RETURN AIR GRILLE

EXISTING RETURN AIR GRILLE

DIFFUSER TO BE RELOCATED/REMOVED

RETURN TO BE REMOVED/RELOCATED

LINEAR DIFFUSER

.

SPIN IN COLLAR W/M.V.D.

SMOKE DETECTOR
THERMOSTAT

FIRE DAMPER

RETURN AIR GRILLE R.A.G.

EXHAUST FAN EF

EXHAUST FAN EF
LINEAR DIFFUSER LD

MITECT
FIELD BEACH, FL.

S. 954-480-6191

GOLUB ASSOCIATES
CHASE BLDG - 3RD FLOOR
vd. Suite 360 Palm Bach Gardens 33410

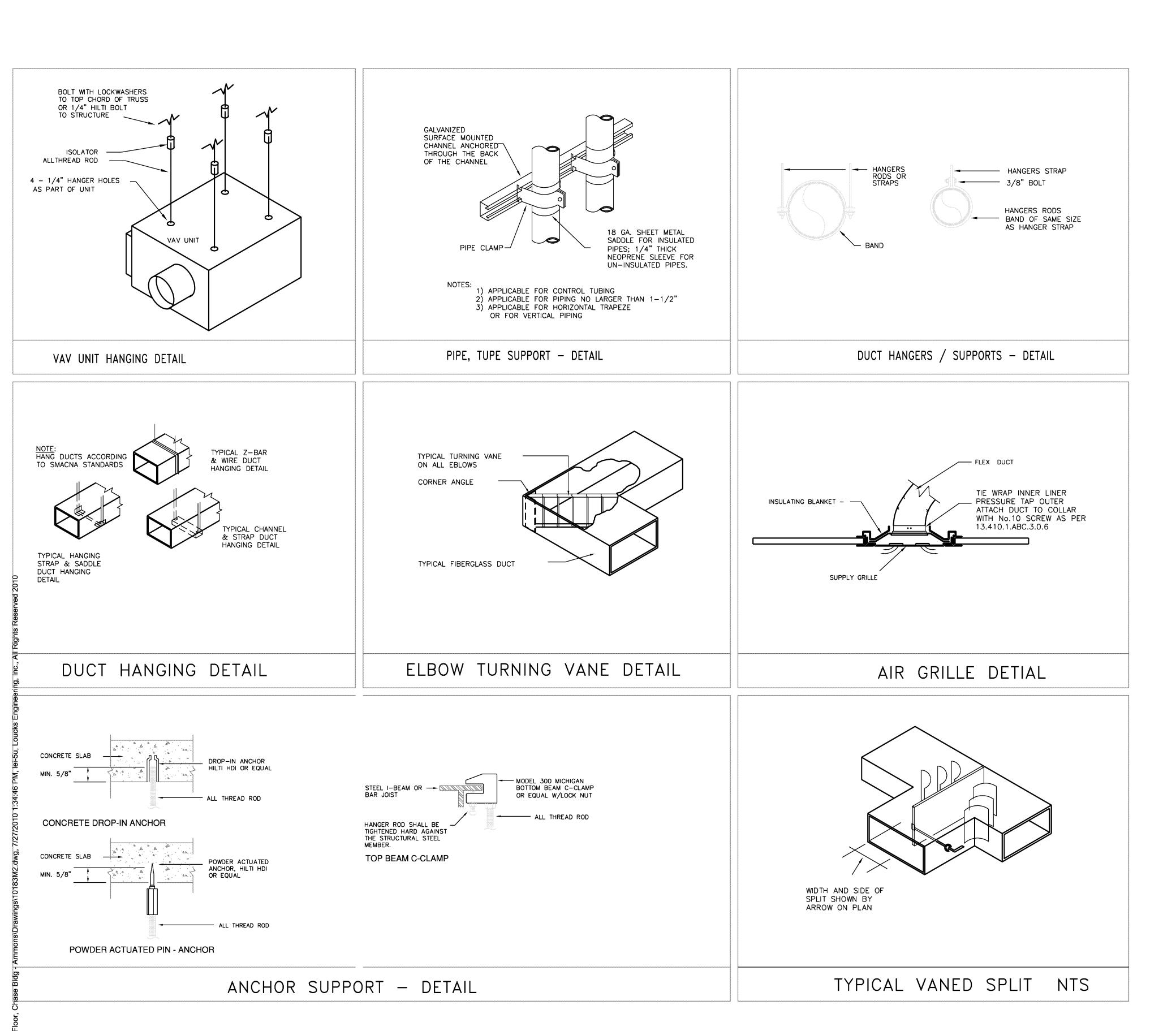
ISSUE

ISSUE FOR CONSTRUCTION

SHEET NO.

OF.

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consulting engineers
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GENERAL MECHANICAL NOTES

- 1- ALL WORK EXECUTED UNDER THIS OFFICIAL DOCUMENTS SHOULD BE PERFORMED BY A LICENSED AND INSURED MECHANICAL CONTRACTOR AND BE IN COMPLIANCE WITH THE LATEST FLORIDA BUILDING CODE (FBC), SHEET METAL & AIR CONDITIONING CONTRACTOR'S ASSOCIATION (SMACNA) STANDARDS, AND ALL OTHER APPLICABLE STATE AND LOCAL CODE
- 2- ALL WORK SHALL BE PERFORMED IN A FIRST CLASS WORKMANSHIP MANNER TO PRODUCE A COMPLETE SYSTEM THAT IS FULLY BALANCED, AND ADHERED TO ALL APPLICABLE CODE AND REGULATIONS.
- 3- MECHANICAL CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT THE COMPLETE SYSTEM INSTALLED IS FREE OF DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF A YEAR AFTER THE WORK IS COMPLETE AND TURNED TO THE OWNER.
- 4- THE MECHANICAL CONTRACTOR IS RESPONSIBLE TO OBTAIN HIS OWN PERMIT AND PAY ALL PERMIT AND INSPECTION FEES.
- 5- AT THE COMPLETION OF THE PROJECT THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A SET OF PRINTS CLEARLY MARKED AND DEPICTED ALL AS-BUILT CONDITIONS TO THE ENGINEER FOR RECORD.
- 6- CONTRACTOR SHALL PAY SPECIAL ATTENTION TO OWNER EQUIPMENT, FURNITURE, AND CARPETING TO PREVENT CONTAMINATION BY COVERING AND WRAPPING FURNITURE AND EQUIPMENT. ALL WASTE AND DEBRIS SHALL BE REMOVE AT THE END OF EACH DAY TO MAINTAIN ACCEPTABLE INDOOR AIR QUALITY LEVEL DURING THE CONSTRUCTION.
- 7- ANY PORTION OF EXISTING BUILDING (FLOOR, WALL, CEILING, OR ROOF) THAT IS AFFECTED BY EITHER REMOVAL, RELOCATION OR INSTALLATION OF A NEW EQUIPMENT SHALL BE REPAIRED AND MATCHED FINISHED EXISTING CONDITIONS ACCORDING TO ARCHITECTURAL DRAWINGS OR SPECIFICATIONS.
- 8- WHEREVER DUCT RUNS THROUGH STRUCTURAL ELEMENT SUCH AS BEAM PRECAUTION SHALL BE TAKEN TO COORDINATE WITH OTHER TRADES TO RELOCATE OR TO PROVIDE NECESSARY SLEEVE BEFORE CONCRETE IS BEING POURED.
- 9- SUPPLY 6 COPIES OF SHOP DRAWINGS FOR REVIEW TO ARCHITECT. NO EQUIPMENT IS TO BE ORDERED PRIOR TO THEIR APPROVAL.
- 10-MECHANICAL CONTRACTOR TO PROVIDE TWO (2) COMFORT BALANCE VISITS TO SUIT THE NEEDS OF THE CLIENTS.
- 11- OPENING AND DUCT TRAVELING THROUGH FIRE RATED WALL, TENANT DEMISING WALL, MECHANICAL AND ELECTRICAL ROOM, WALL AND FLOOR PARTITION, FLOOR AND ROOF SLAB SHALL BE INSTALLED WITH "B"-FIRE
- 12- DIFFUSERS, SUPPLY AND RETURN GRILLES, CEILING EXHAUST FAN, INSTALLED IN FIRE RATED CEILING SHALL BE PROVIDED WITH RADIATION DAMPER. SUPPLY AND RETURN DIFFUSER SHALL BE METAL*AIRE BZZU FIRE RATED.
- 13- H.V.A.C. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULLY OPERATIONAL AND BALANCED SYSTEM THAT ADHERES TO ALL APPLICABLE CODES AND
- 14-CONTRACTOR TO PROVIDE TEST AND BALANCE OF ALL SYTEMS, INCLUDING BUT LIMITED TO HOODS SUPPLIES AND EXHAUST.

SITE VISIT

- 1- MECHANICAL CONTRACTOR IS DULY REQUIRED TO VISIT PROJECT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. HE OR SHE SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY AT ONCE. FAILURE TO DO SO, THE MECHANICAL CONTRACTOR IS PROCEEDING AT HIS OWN RISK.
- 2- DESIGN THAT IS CALLED FOR NEW DUCT OR PIPING TO BE CONNECTED TO EXISTING SYSTEM REQUIRES THE CONTRACTOR TO VERIFY EXISTING DUCT & PIPING SIZE BEFORE FABRICATION AND INSTALLATION.
- 3- WHENEVER INTERFERENCE OR CONFLICT OCCURS WITH THE PROPOSED DESIGN, BEFORE PROCEEDING TO ANY CHANGE OR DEVIATION FROM THE EXISTING BID, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR THE CHANGE INCLUDED A DETAILED DRAWING FOR APPROVAL FROM ARCHITECT/ ENGINEER.
- 4- CONTRACTOR SHALL CONSULT WITH STRUCTURAL ENGINEER WHEN CUTTING OR MAKING OPENING IN ANY BUILDING COMPONENT. CONTRACTOR SHALL VERIFY THAT STRUCTURAL INTEGRITY OF THE BUILDING IS NOT BEING COMPROMISED.
- 5- POST TENSION STRUCTURAL SLAB: NO CUTTING OR DRILLING SHALL BE TAKEN PLACE WITHOUT THE X-RAY OF THE SLAB OR THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF THE BUILDING.

EXISTING HVAC SYSTEM

- 1- MECHANICAL CONTRACTOR MUST CHANGE THE AIR FILTER IN ALL WORKING AIR CONDITIONING UNIT DURING CONSTRUCTION EVERY 21 DAYS OR LESS DEPENDING ON THE AMBIENT ENVIRONMENT TO PREVENT AIR CONTAMINATION, EQUIPMENT FAILURE SUCH AS BEARING FAILURE, DAMPER MALFUNCTION, ETC...
- 2- AFTER CONSTRUCTION MECHANICAL CONTRACTOR IS TO VACUUM THOROUGHLY THE MECHANICAL ROOM TO REMOVE ALL DUSTY PARTICLES, INSPECT AND REPLACE AIR FILTERS, BEARINGS OR BELTS FOR OPTIMAL UNIT OPERATION.
- 3- WHEN REUSE EXISTING AIR CONDITIONING THE CONTRACTOR MUST CLEAN THE COOLING AND THE CONDENSER COILS, CHECK AND ADJUST REFRIGERANT CHARGE TO ENSURE PROPER UNIT FUNCTION, VERIFY THE EXISTING CONDENSATE PIPING IS IN GOOD WORKING CONDITION, AND MAKE NECESSARY REPAIR. CONTRACTOR SHALL CHECK ALL ELECTRICAL COMPONENTS, TIGHTEN ALL ELECTRICAL CONNECTIONS FOR PROPER OPERATION. DETERIORATED DUCTWORK AND CEILING INSULATION SHALL BE REPLACED.
- 4- ALL EXISTING DUCTWORK SHALL BE THOROUGHLY INSPECTED AND REPAIRED REMOVED EQUIPMENT THAT IS NOT BEING USED SHALL BE RETURNED TO
- 5- TO ENSURE AIRTIGHT SYSTEM AND COMPLIANCE WITH SMACNA. DECAYED AND 6- ANY EQUIPMENT THAT WAS TEMPORARY DISCONNECTED WITH RESPECT TO A REMOVAL OF ANY OTHER DEVICE SHALL BE RECONNECTED TO THE EXISTING SYSTEM AND VERIFIED THAT IT IS FULLY OPERATED.
- 7- CONTRACTOR SHALL VERIFY EXISTING AIR CONDITIONING AND HEATING SYSTEM ITS PERFORMANCE RANGE WITH RESPECT TO ITS VOLUME CAPACITY.

H.V.A.C. NOTES:

<u>DUCTWORK:</u>
S.M.A.C.N.A. MEDIUM PRESSURE GALVANIZED DUCT, PROVIDE 1.5" R=6 INNER LINER. 48" O.C. ALL TURNS AND TRANSITIONS MASTIC SEAL ALL SEAMS AND JOINTS.

RIGID - FOIL FACED BACKED FIBERGLASS R=6 AT 1.5", SUPPORTED 48" O.C., AT ALL TURNS, TURNS AND TRANSITIONS. TAPED AND MASTIC SEALED ALL SEAMS. FLEX- U.L. CLASS ONE AIR DUCT. R6 SUPPORT 48" O.C. PROVIDE SPIN IN COLLARS WITH M.V.D. WHEN ACCESSIBLE

OR WITH SCOOP WHEN NOT ACCESSIBLE. TIE WRAP INNER LINER TWICE AND TAPE AND MASTIC SEAL OUTER LINER TAKING CARE NOT TO COMPRESS INSULATION.

TYPICAL SUPPLY BRANCH WITH CONICAL TAP, ROUND TO RECTANGULAR TRANSITION TO RECTANGULAR DIFFUSER.

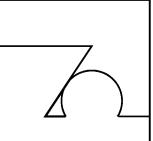
EXHAUST:
GALVANIZED RECTANGLE DUCT OR ROUND SNAP LOCK METAL
DUCT WILL BE INSTALLED WITH DUCT SUPPORTS AT 48
INCHES ON CENTER, INSULATE WITH R=6 FOIL FACED INSULATION WRAP U.L. AS REQUIRED. NOTE: ALL FRESH AIR, OUTSIDE MAKE AIR TO BE INSULATED WITH 1.5" DUCT WRAP, PROVIDE COLLARS AT BRANCH TAKE

DIFFUSERS: MATCH BUILING STANDARDS. RETURN GRILLES: MATCH BLDG, STANDARD. THERMOSTAT: MATCHES EXISTING EQUIPMENT

FRSH AIR CALCULATION

OFFFICE: 2009 SQ.FT

2009 SQ.FTx7P/1000SQ.FTx 20 CFM/P = 281 CFM TOTAL OUTSIDE AIR REQUIRED IS 280 CFM CONTRACTOR TO ADJUST THE EXISTING SYSTEM TO SATISFY THIS REQUIREMENT.

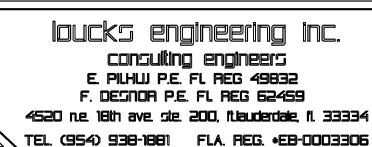


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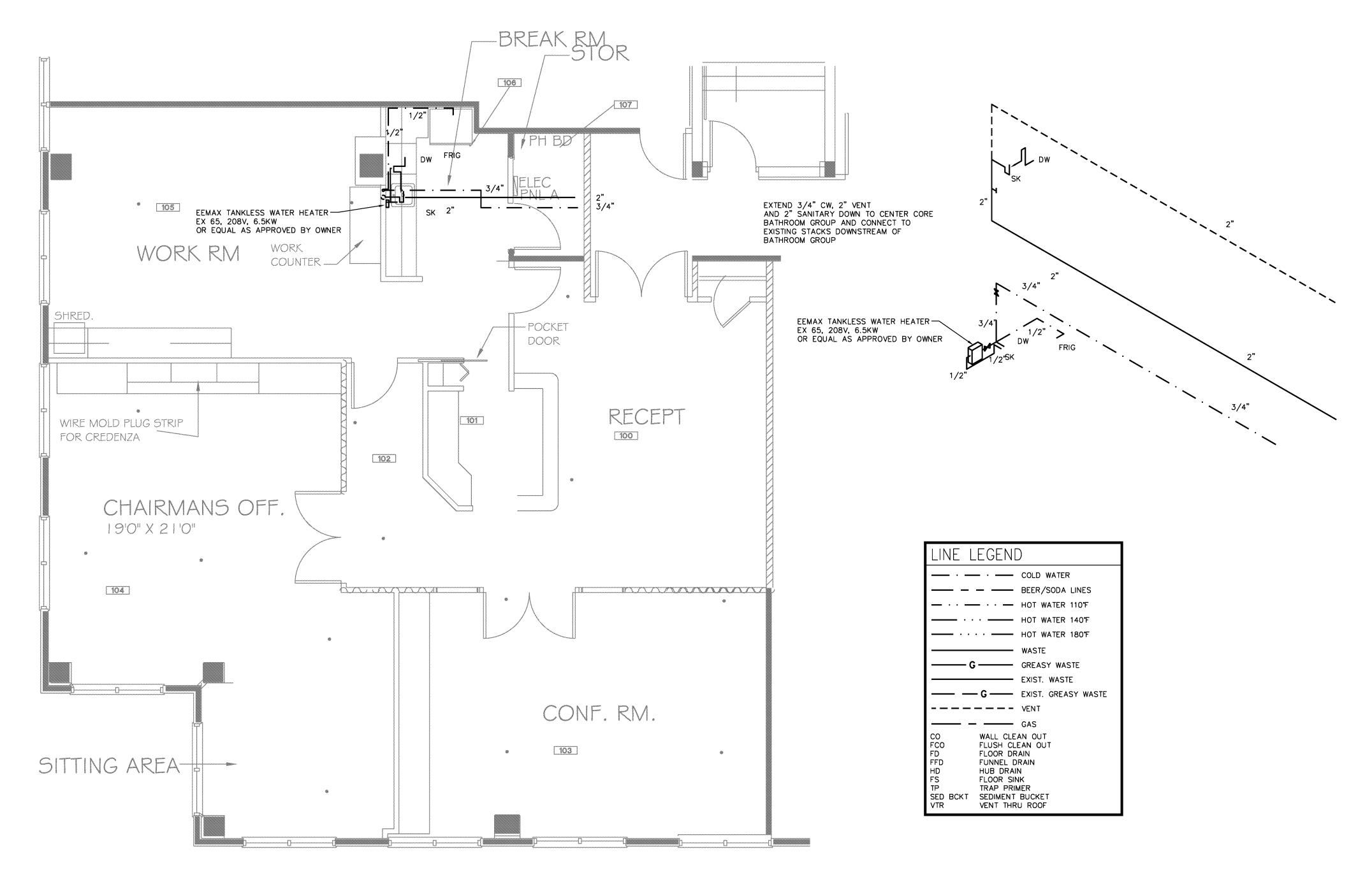


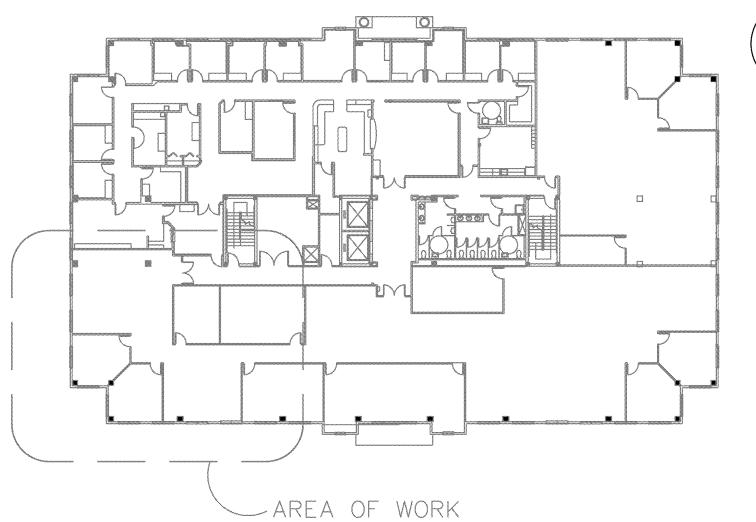
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ASSOCIATES GOLUB

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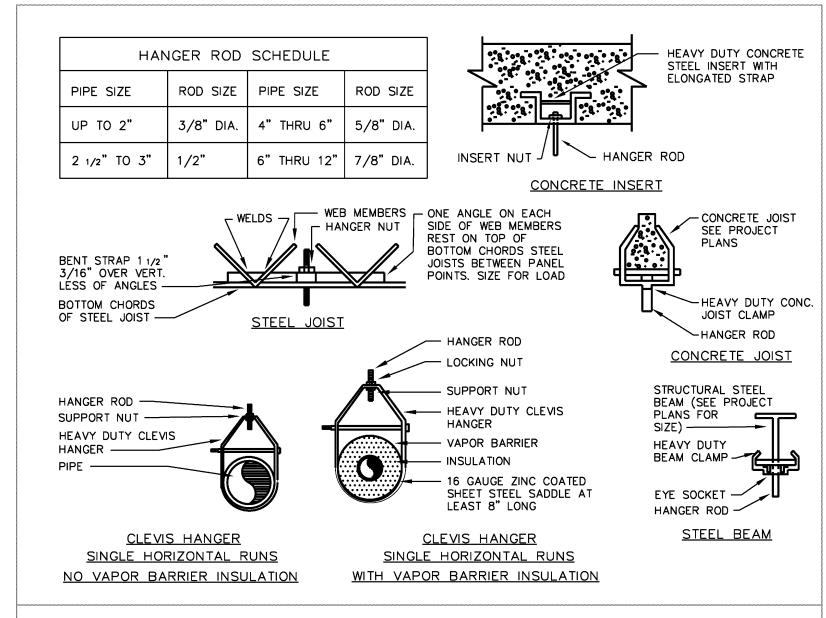
PLUMBING PLAN
SCALE: 1/4" = 1'-0"

loucks engineering inc. consulting engineers E. PILHUJ P.E. FL REG 49832 F. DESNOR P.E. FL REG 62459 4520 n.e. 18th ave. ste. 200, filauderdale, fl. 33334 TEL. (954) 938-1881 FLA. REG. +EB-0003306

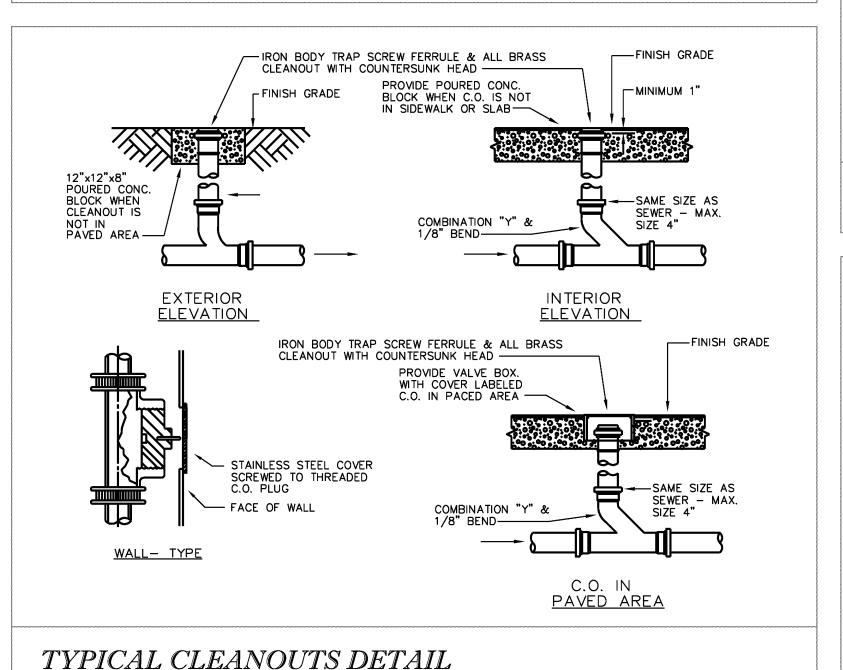
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCE. ALL MATERIALS SHALL BE NEW, FREE OF DEFECTS, AND OF AMERICAN MANUFACTURE. ALL REQUIREMENTS AND MATERIALS SHALL BE AS PROVIDED FOR ORIGINAL BUILDING AND AS INDICATED IN THESE DRAWINGS AND SPECIFICATIONS.
- SANITARY, WASTE, VENT, AND STORM PIPING SHALL BE CENTRIFIGAL CAST IRON BELL AND SPIGOT BELOW GRADE AND NO-HUB SYSTEM WITH STAINLESS STEEL COUPLINGS ABOVE GRADE EXCEPT VENTS ABOVE GRADE MAY BE SCHEDULE 40 GALVANIZED IRON. WHERE ALLOWED BY LOCAL AUTHORITIES DWV PVC MAY BE USED INSTEAD OF CAST IRON AND
- CONDENSATE DRAINS ABOVE GROUND SHALL BE INSULATED COPPER TYPE "M" OR DWV BELOW GROUND AS SPECIFIED FOR SANITARY PIPING.
- POTABLE WATER PIPING BELOW GROUND SHALL BE TYPE "K" SOFT TEMPER AND HOT AND COLD WATER PIPING ABOVE GROUND SHALL BE TYPE "L" OR HARD TEMPER COPPER TUBING WITH WROUGHT COPPER FITTINGS AND SOLDER-FREE JOINTS, POTABLE WATER PIPING SHALL NOT BE INSTALLED BELOW ANY FLOOR ON GRADE OR FILL. TYPE "M" COPPER IS ACCEPTABLE.
- PIPE SUPPORTS SHALL BE PROVIDED TO BE COMPATIBLE WITH PIPING, INSULATION, STRUCTURE, AND COMPENSATE FOR CONTRACTION AND EXPANSION.
- THE CONTRACTOR SHALL CONNECT TO ALL EQUIPMENT FURNISHED BY THE OWNER.
- EACH NEW FIXTURE AND EQUIPMENT SUPPLY SHALL BE PROVIDED WITH A SUPPLY STOP OR SHUT-OFF VALVE AS APPLICABLE.
- WATER HAMMER ARRESTORS SHALL BE PROVIDE AND INSTALLED INSTALLED AS PER PDI-WH 201 & FPC 604.9. WATER HAMMER ARRESTORS MAY BE PROVIDED AT EACH FIXTURE SUPPLY AT CONTRACTOR'S OPTION AND AT NO ADDITIONAL COST TO OWNER.
- PROVIDE DIELECTRIC FITTINGS IN ALL PIPING SYSTEMS WHERE CONNECTING DISSIMILAR MATERIALS AND PROTECT AGAINST CONTACT OF DISSIMILAR THRU-OUT THE INSTALLATION.
- 10. INSULATE ALL HOT WATER, CONDENSATE DRAINS, AND WATER COOLER WASTES PROVIDED.
- 11. INSULATE HOT WATER PIPING WITH 1" ARMAFLEX INSULATION.
- 12. INSULATE ALL AIR CONDITIONING AND REFRIGERATION CONDENSATE DRAINS IN PLENUM AREAS. FINISH WHERE EXPOSED WITH 2 COATS OF WHITE LATEX PAINT ALL AS PER THE MANUFACTURER'S INSTRUCTIONS.
- 13. ALL HOSE BIBBS AND HOSE CONNECTIONS THIS PROJECT SHALL BE PROVIDED WITH VACUUM BREAKERS.
- 14. ALL WATER PIPING PROVIDED SHALL BE TESTED AT 100 PSIG MINIMUM HYDROSTATIC PRESSURE FOR A MINIMUM OF 4 HOURS AND SANITIZED AS PER FPC 610.1.
- 15. ALL SOIL, WASTE, VENT, AND STORM PIPING PROVIDED SHALL BE TESTED WITH A 10 FOOT HEAD OF WATER, WATER LEVEL POINT OR HYDROSTATIC PRESSURE GAUGE, WHERE ALLOWED BY LOCAL AUTHORITIES, SHALL REMAIN UNCHANGED FOR A MINIMUM OF 4
- 16. CONTRACTOR SHALL OBTAIN APPROVED MANUFACTURER'S INSTALLATION DRAWINGS FOR ALL EQUIPMENT AND CASEWORK AND CASEWORK DIMENSIONED ROUGH-IN LAYOUT PRIOR TO PROCEEDING WITH ANY WORK.
- 17. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIXTURE, CASEWORK, AND EQUIPMENT ROUGH-IN DIMENSIONS AND CORRECT FLOOR AND WALL PENETRATION.
- 18. SUBMIT SHOP DRAWINGS OF ALL MATERIALS AND EQUIPMENT TO ARCHITECT FOR APPROVAL PRIOR TO PURCHASE.
- 19. CONTRACTOR SHALL PROVIDE ALL SYSTEMS INDICATED IN THESE SPECIFICATIONS ON THE DRAWINGS AND AS REQUIRED TO COMPLY WITH LOCAL CODES AND ORDINANCES AS APPLICABLE TO COMPLETING WORK FOR INTENDED OCCUPANCY. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS FOR CONTRACTOR TO PROVIDE A COMPLETE AND OPERATING INSTALLATION INCLUDING ALL OBVIOUSLY NECESSARY ITEMS EVEN THOUGH ITEMS ARE NOT INCLUDED ON THE DRAWINGS OR IN THE SPECIFICATIONS.
- 20. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID AND COMPLETELY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS BEFORE PROCEEDING WITH THE
- 21. PROVIDE TEMPORARY POTABLE WATER SERVICE AS REQUIRED ON SITE FOR ALL TRADES.
- 22. VERIFY ALL DIMENSIONS WITH STRUCTURE PRIOR TO ANY FABRICATION OR INSTALLATION.
- 23. CUT ALL OPENINGS AND CHASES REQUIRED TO ACCOMMODATE THE WORK BY THIS CONTRACTOR, AND REPAIR ALL FLOORS, WALLS, ETC. DAMAGED BY SUCH CUTTINGS. ALL WORK DONE UNDER THIS HEADING MUST CONFORM IN EVERY RESPECT TO LANDLORD AND STRUCTURAL REQUIREMENTS, AND FINISH AND QUALITY OF MATERIALS AND WORKMANSHIP REQUIRED OF APPLICABLE TRADES FOR THE BUILDING.
- 24. PROVIDE AN ACCURATE LAYOUT, GRADES, AND ELEVATIONS; SET SLEEVES AND OPENINGS IN AMPLE TIME; TAKE PROPER PRECAUTIONS TO PROTECT ALL WORK AND EQUIPMENT FROM DAMAGE INCLUDING EXISTING.
- 25. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCES WITH THE PROGRESS OF CONSTRUCTION AND IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND STANDARDS.
- 26. PROVIDE FIXTURES AND WATER HEATERS AS INDICATED ON DRAWINGS.
- 27. CONTRACTOR SHALL PERFORM AND/OR PAY FOR ALL TESTS INDICATED AND REQUIRED FOR ALL SYSTEMS PROVIDED.
- 28. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TAXES REQUIRED TO INSTALL AND COMPLETE SYSTEMS INDICATED ON THE DRAWINGS AND
- 29. AT COMPLETION OF WORK REMOVE ALL RUBBISH AND DEBRIS CAUSED BY THIS WORK AND THOROUGHLY CLEAN ALL RELATED FIXTURES AND EQUIPMENT.
- 30. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS

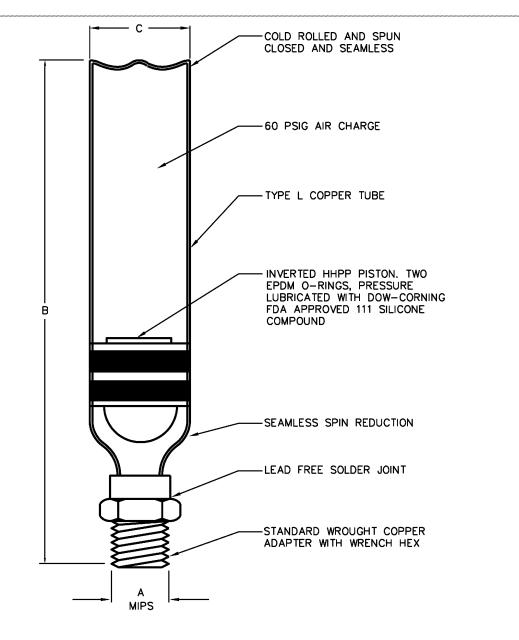
FOR A PERIOD OF NOT LESS THAN 1 (ONE) YEAR FROM DATE OF ACCEPTANCE.

- CONTRACTOR TO KEEP ACCURATE AS-BUILTS AND SHALL SUBMIT THREE (3) COPIES TO
- ARCHITECT/ENGINEER SEVENTY TWO (72) HOURS PRIOR TO FINAL INSPECTION. 32. CONTRACTOR TO NOTIFY ARCHITECT/ENGINEER IMMEDIATELY UPON ANY DISCREPANCIES, IF
- 33. ALL PLUMBING FIXTURES TO COMPLY WITH FPC TABLE 604.4
- 34. THE FIRST 8'-0" OF OUTLET PIPING FOR A CONSTANT TEMPERATURE NONRECIRCULATING STORAGE SYSTEM, AND THE INLET PIPE BETWEEN THE STORAGE TANK AND A HEAT TRAP IN A NONRECIRCULATING STORAGE SYSTEM SHALL BE INSULATED TO LEVELS SHOWN IN THE FBC 13-412.1.ABC.4
- 35. NO DEAD ENDS SHALL BE PERMITTED. THE REMOVAL OF PLUMBING FIXTURES SHALL COMPLY WITH FPC 704.5.
- 36. ALL EQUIPMENT CONNECT FOR CONSUMPTION TO HAVE BACKFLOW PREVENTER.
- 37. ALL EXPOSED PIPING UNDER LAVATORIES SHALL BE INSULATED AS PER FPC 404.6.4.
- 38. ALL VALVES SHALL BE IDENTIFIED AS PER FPC 606.4.
- 39. ALL HOSE BIBBS ARE TO BE SEPARATELY VALVED AS PER FPC 606.2.
- 40. ALL PIPING TO BE IDENTIFIED AS PER FPC 608.8.
- 41. ALL INDIRECT WASTE PIPING TO BE TRAPPED AS PER FPC 802.2.
- 42. PROVIDE CLEANOUTS AT 75'-0" ON CENTER AND AT ALL TURNS.
- 43. ALL MATERIALS LOCATED IN PLEMUNS TO BE PLEMUN RATED.



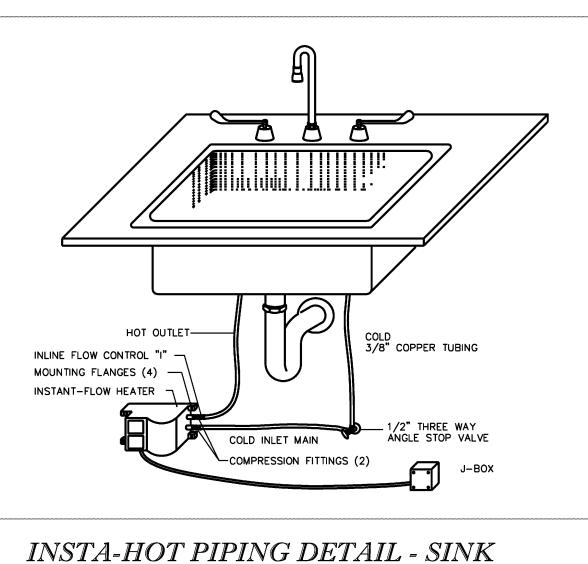
PIPE SUPPORT DETAIL





JOSAM SIZING CHART			DIMENSIONS		
TYPE NO.	PDI SYMBOLS	FIXT. UNITS	Α	В	С
75001-S	Α	1 TO 11	1/2	6-1/2	1-3/8
75002-S	В	12 TO 32	3/4	8-3/4	1-3/8
75003-S	С	33 TO 60	1	11	1-3/8
75004-S	D	61 TO 113	1	10-1/8	2-1/8
75005-S	E	114 TO 154	1	12-5/8	2-1/8
75006-S	F	155 TO 330	1	15-1/8	2-1/8

WATER HAMMER ARRESTOR DETAIL SCALE: NTS



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