BUILDING MECHANICAL NOTES:

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1. MOUNT CONDENSING UNITS SO AS TO ALLOW 30" ON THE SERVICE SIDE OF THE UNIT, 48" CLEAR ABOVE, 6" ON ONE SIDE, 12" ON REMAINING SIDES AND ALLOW 24" BETWEEN UNITS FOR PROPER AIR CIRCULATION.

CLEAN OUT

WALL CLEAN OUT

2. CONTRACTOR TO PROVIDE PERMANENT CONCRETE CONDENSER UNIT PADS FOR CONDENSING UNITS LOCATED ON ON GRADE UNLESS NOTED OTHERWISE. PADS SHALL EXTEND A MINIMUM OF 3" BEYOND CONDENSING UNITS AND SHALL BE A MINIMUM OF 3" ABOVE FINISHED GRADE. LOCATIONS MAY BE ADJUSTED IN THE FIELD DUE TO SITE CONDITIONS.

CONTRACTOR TO PROVIDE VIBRATION ISOLATING CONDENSING UNIT PADS ON ALL ROOF TOP MOUNTED CONDENSING UNITS UNLESS NOTED

4. CONTRACTOR ARRANGE CONDENSING UNITS TO MINIMIZE THE LENGTH REFRIGERANT PIPE RUNS. CONTRACTOR SHALL COORDINATE REFRIGERANT PIPE SIZE WITH CONDENSING UNIT MANUFACTURES FOR INSTALL LENGTH AND INSTALL PER MANUFACTURERS RECOMMENDATIONS AND CODE REQUIREMENTS.

BUILDING PLUMBING NOTES:

6x8

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE UTILITIES WITHIN THE BUILDINGS AND WITHIN 5'-0" OF THEIR EXTERIOR WALLS. 2. HORIZONTAL DOMESTIC WATER SHALL BE ROUTED THROUGH SPACE IN CEILING ABOVE 2ND FLOOR UNLESS OTHERWISE NOTED. 3. ALL PENETRATIONS OF THE 1-HOUR RATED PLUMBING CHASE SHALL

DUCT SIZE — 1ST FIGURE IS SIDE SHOWN

BE PROPERLY FIRESTOPPED.

4. ALL DOMESTIC WATER EXPOSED TO FREEZING CONDITIONS (WITHIN EXTERIOR WALLS, ETC.) SHALL HAVE 1" THICK INSULATION.

GENERAL MECHANICAL AND PLUMBING SPECIFICATIONS:

- 1.1 SUMMARY A. THE WORK INCLUDED UNDER THIS SPECIFICATION CONSISTS OF THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, ETC. WHICH ARE APPLICABLE AND NECESSARY TO COMPLETE THE INSTALLATION OF THE SYSTEMS SPECIFIED IN THE MECHANICAL SPECIFICATIONS, ALL AS DESCRIBED IN THESE SPECIFICATIONS, AS ILLUSTRATED ON THE ACCOMPANYING DRAWINGS B. IN GENERAL, THE VARIOUS LINES AND DUCTS SHALL BE RUN AS INDICATED, AS SPECIFIED HEREIN AS REQUIRED BY PARTICULAR CONDITIONS AT THE SITE, AND AS REQUIRED TO CONFORM TO THE GENERALLY ACCEPTED STANDARDS SO AS TO COMPLETE THE WORK IN A NEAT AND SATISFACTORILY WORKABLE MANNER. RUN WORK PARALLEL OR PERPENDICULAR TO THE LINES OF THE BUILDING UNLESS C. THE CONSTRUCTION DETAILS OF THE BUILDING ARE ILLUSTRATED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE DETAILS BEFORE SUBMITTING HIS BID AS NO ALLOWANCE WILL BE MADE BECAUSE OF THE CONTRACTOR'S UNFAMILIARITY WITH THESE DETAILS. THE CONTRACTOR SHALL PLACE ALL INSERTS TO ACCOMMODATE THE
- ULTIMATE INSTALLATION OF PIPE HANGERS IN THE FORMS BEFORE CONCRETE IS POURED. SET SLEEVES IN PLACE IN FORMS BEFORE CONCRETE IS POURED, AND IN MASONRY WALLS WHILE THEY ARE UNDER CONSTRUCTION. ALL CONCEALED LINES SHALL BE INSTALLED AS REQUIRED BY THE PACE OF THE GENERAL CONSTRUCTION TO PRECEDE THAT GENERAL CONSTRUCTION.
- 1.2 UTILITIES, LOCATIONS AND ELEVATIONS A. LOCATIONS AND ELEVATIONS OF THE VARIOUS UTILITIES INCLUDED WITHIN THE SCOPE OF THIS WORK HAVE BEEN OBTAINED FROM CITY OR OTHER SUBSTANTIALLY RELIABLE SOURCES AND ARE OFFERED SEPARATELY FROM THE CONTRACT DOCUMENTS, AS A GENERAL GUIDE ONLY, WITHOUT GUARANTEE AS TO ACCURACY. CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND AVAILABILITY OF ALL UTILITIES AND SERVICES REQUIRED.
- 1.3 PROJECT RECORD DOCUMENTS A. REFER TO SPECIFICATIONS
- 1.4 MATERIALS AND WORKMANSHIP A. REFER TO SPECIFICATIONS.
- 1.5 SCHEDULE OF MATERIAL AND EQUIPMENT A. THE CONTRACTOR SHALL SUBMIT FOR THE OWNER/ARCHITECT'S APPROVAL A COMPLETE SCHEDULE OF MATERIAL AND EQUIPMENT WHICH IS TO BE INSTALLED UNDER THIS CONTRACT. THE SCHEDULE SHALL BE SUBMITTED WITHIN 30 DAYS AFTER THE AWARD OF THIS CONTRACT AND PRIOR TO THE INSTALLATION OR FABRICATION OF ANY OF THE MATERIAL INVOLVED. THE SCHEDULE SHALL INCLUDE FOR MATERIALS THE MANUFACTURER'S NAME, CATALOGUE NUMBER, TYPE AND TRADE NAME; IN ADDITION, FOR EQUIPMENT ATTACH MANUFACTURER'S ENGINEERING
- 1.6 SHOP DRAWINGS: A. REFER TO SPECIFICATIONS.

DATA AND SPECIFICATION SHEET.

- 1.7 DRAWINGS AND SPECIFICATIONS A. THE DRAWINGS SHOW DIAGRAMMATICALLY THE LOCATIONS OF THE VARIOUS LINES, DUCTS, CONDUITS, FIXTURES, AND EQUIPMENT AND THE METHOD OF CONNECTING AND CONTROLLING THEM. IT IS NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL AND ALL FITTINGS REQUIRED FOR A COMPLETE SYSTEM. THE SYSTEMS SHALL INCLUDE BUT ARE NOT LIMITED TO THE ITEMS SHOWN ON THE DRAWINGS. EXACT LOCATIONS OF THESE ITEMS SHALL BE DETERMINED BY REFERENCE TO THE GENERAL PLANS AND MEASUREMENTS AT THE BUILDING AND IN COOPERATION WITH OTHER SUB-CONTRACTORS, AND IN ALL CASES, SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER/ARCHITECT. B. SHOULD ANY CHANGES BE DEEMED NECESSARY BY THE CONTRACTOR IN ITEMS SHOWN ON THE CONTRACT DRAWINGS, THE SHOP DRAWINGS, DESCRIPTIONS, AND THE REASON FOR THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE OWNER/ARCHITECT FOR APPROVAL. C. THE CONTRACTOR SHALL LAY OUT HIS WORK MAINTAINING ALL LINES, GRADES AND DIMENSIONS ACCORDING TO THESE DRAWINGS WITH DUE CONSIDERATION FOR OTHER TRADES AND VERIFY ALL DIMENSIONS AT THE SITE PRIOR TO ANY FABRICATION OR INSTALLATION. SHOULD THE LAYOUT BE IMPRACTICAL, THE OWNER SHALL BE NOTIFIED BEFORE ANY INSTALLATION OR FABRICATION, AND THE EXISTING CONDITIONS SHALL BE INVESTIGATED AND PROPER CHANGES EFFECTED WITHOUT ANY ADDITIONAL COST. D. THE OWNER AND ARCHITECT RESERVE THE RIGHT TO MAKE MINOR CHANGES IN THE WORK WHICH DO NOT AFFECT EITHER PROJECT COST
- 1.8 ELECTRICAL WIRING A. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MOTORS, STARTERS, DISCONNECT SWITCHES, WIRING DIAGRAMS, AND CONTROL WIRING REQUIREMENTS TO PROVIDE FUNCTIONAL SYSTEMS AS CALLED FOR IN THE SUMMARY OF WORK.
- 1.9 STERILIZATION A. THE ENTIRE HOT AND COLD DOMESTIC WATER SYSTEMS SHALL BE THOROUGHLY STERILIZED AFTER FABRICATION PER THE REQUIREMENTS OF THE LOCAL HEALTH AND BUILDING CODES.
- 1.10 CROSS CONNECTION AND INTERCONNECTIONS. A. NO PLUMBING FIXTURE, DEVICE, OR PIPING SHALL BE INSTALLED WHICH WILL PROVIDE A CROSS CONNECTION OR INTERCONNECTION BETWEEN A DISTRIBUTING SUPPLY FOR DRINKING OR DOMESTIC PURPOSES AND A POLLUTED SUPPLY SUCH AS DRAINAGE SYSTEM OR A SOIL OR WASTE PIPE WHICH WILL PERMIT OR MAKE POSSIBLE THE BACKFLOW OF SEWAGE, POLLUTED WATER, OR WASTE INTO THE WATER SUPPLY SYSTEM.
- 1.11 CLEAN UP A. REFER TO SPECIFICATIONS

1.12 EXCAVATION AND BACKFILLING

OR TIME.

A. PROVIDE NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK. TRENCHES FOR UNDERGROUND PIPING AND CONDUIT SHALL BE EXCAVATED TO REQUIRED DEPTHS WITH BELL HOLES PROVIDED AS NECESSARY TO INSURE UNIFORM BEARING. CARE SHOULD BE TAKEN NOT TO EXCAVATE BELOW DEPTH, AND ANY EXCAVATION BELOW DEPTH SHALL BE REFILLED WITH SAND OR GRAVEL FIRMLY COMPACTED. WHERE ROCK OR HARD OBJECTS ARE ENCOUNTERED, THEY SHALL BE EXCAVATED TO A GRADE SIX INCHES (6") BELOW THE LOWERMOST PART OF THE PIPE AND REFULED TO THÉ PIPE GRADE AS SPECIFIED. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED TO GRADE WITH APPROVED MATERIAL, WELL TAMPED AND COMPACTLY IN PLACE. WATER MAY BE ADDED TO AID IN COMPACTION EFFORTS. DO NOT PROCEED WITH BACKFILL OPERATIONS UNTIL PIPING HAS BEEN INSPECTED. ALL PIPING OUTSIDE THE BUILDING SHALL BE INSTALLED BELOW THE FROST LINE. WHERE STREETS, SIDEWALKS, ETC ARE DISTURBED, CUT, OR DAMAGED BY THIS WORK, THE EXPENSE OF

REPAIRING SAME IN A MANNER APPROVED BY THE DEVELOPER SHALL

BE A PART OF THIS CONTRACT. REFER TO DIVISION 2.

- 1.13 SLEEVES AND ESCUTCHEONS A. ALL PIPING OTHER THAN SANITARY SEWER LINES AND PVC OR POLYBUTAL PASSING THROUGH CONCRETE FLOOR SLABS SHALL BE COMPLETELY ISOLATED IN 1/2" THICK FLEXIBLE FOAM PLASTIC INSULATION FROM 6" BELOW THE SLAB TO 2" ABOVE THE SLAB. IF PIPES PASS THROUGH GRADE BEAMS, THE INSULATION THICKNESS SHALL BE 3/8". SANITARY SEWER LINES PASSING GRADE BEAMS SHALL BE WRAPPED WITH TWO (2) PLYS OF 15# FELT TO ISOLATE THE PIPE FROM THE CONCRETE. B. ESCUTCHEONS EXCEPT FOR SPECIFICALLY NOTED OR SPECIFIED SHALL BE INSTALLED ON ALL PIPES PASSING EXPOSED THROUGH THE FLOORS, WALLS, OR CEILINGS. ESCUTCHEONS SHALL BE CHROME PLATED SECTIONAL FLOOR AND CEILING PLATES AND SHALL FIT SNUGLY AND NEATLY AROUND PIPE OR PIPE INSULATION OR INSULATED LINES. SOLID CHROME PLATES WITH SET SCREWS SHALL BE USED IF SECTIONAL PLATES DO NOT FIT PROPERLY OR STAY IN PLACE.
- 1.14 FLASHINGS A. FLASH AROUND ALL PIPES PASSING THROUGH THE ROOF IN CONNECTION WITH THIS CONTRACT, WITH STANDARD MANUFACTURED FLASHINGS. FLASHINGS SHALL BE SHEET METAL WITH RUBBER GASKETS. FLASHINGS SHALL EXTEND INTO ROOFING AND UP PIPE DISTANCES IN ACCORDANCE WITH THE LOCAL CODE.
- 1.15 EXPANSION OF PIPING A. PROVIDE ALL DEVICES REQUIRED TO PERMIT THE EXPANSION AND CONTRACTION OF ALL PIPE WORK, PARTICULARLY IN WATER SUPPLY AND CIRCULATING SYSTEMS. IN THE MAIN WATER AND CIRCULATING LINES, EMPLOY EXPANSION JOINTS AS REQUIRED OR WHERE DIRECTED. B. SHOULD THE INSTALLATION OF MECHANICAL EXPANSION JOINTS BECOME NECESSARY IN THE OPINION OF THE OWNER/ARCHITECT, JOINTS 1 1/2" AND SMALLER SHALL BE FULTON SYLPHON NO. 111 PACKLESS EXPANSION JOINTS. JOINTS ON 2" AND LARGER LINES SHALL BE ADSCO, FLEXONES, OR TUBE TURN, BELLOWS TYPE EXPANSION JOINTS WITH THE PROPER NUMBER OF BELLOWS SECTIONS OF STAINLESS STEEL.
- C. ANCHOR ALL LINES HAVING EXPANSION JOINTS SO THAT EXPANSION AND CONTRACTION EFFECT IS EQUALLY DISTRIBUTED. VERIFY EXACT LOCATIONS OF ANCHORS WITH THE OWNER/ARCHITECT PRIOR TO MAKING INSTALLATION. THE LINES HAVING EXPANSION JOINTS SHALL BE ACCURATELY GUIDED ON BOTH SIDES OF EACH JOINT. THESE GUIDES SHALL CONSIST OF SADDLES AND "U" CLAMPS PROPERLY ARRANGED AND SUPPORTED. SUBMIT COMPLETE DETAILS FOR APPROVAL. D. IN INSTALLING EXPANSION MEMBERS, EXERCISE CARE TO PRESERVE PROPER PITCH ON LINES. FURNISH AND INSTALL ALL SPECIAL FITTINGS. CONNECTORS, ETC. AS REQUIRED. E. ABOVE EACH HOT AND COLD WATER SUPPLY PIPE SERVING A FIXTURE, PROVIDE A 12" TALL EXPANSION PIPE TO SERVE AS A WATER HAMMER ARRESTOR.
- 1.16 DIELECTRIC ISOLATION A. WHEREVER COPPER. BRASS OR BRONZE PIPING SYSTEMS ARE CONNECTED TO STEEL OR IRON PIPING SYSTEMS, THIS CONNECTION SHALL BE MADE WITH DIELECTRIC ISOLATORS. THE DIELECTRIC ISOLATORS SHALL BE SO DESIGNED THAT NONFERROUS PIPING MATERIALS SHALL BE ISOLATED BY THE USE OF TEFLON OR NYLON ISOLATING MATERIALS MADE UP IN THE FORM OF SCREWED TYPE UNIONS OR INSULATING GASKETS AND BOLT SLEEVES AND WASHERS FOR STANDARD FLANGED CONNECTION. ALL DIELECTRIC ISOLATORS SHALL BE SELECTED FOR PRESSURES OF THE SYSTEMS INVOLVED. B. DIELECTRIC ISOLATORS SHALL BE EPCO, CRANE OR EQUAL.
- A. UPON COMPLETION, CLEAN ALL PIPES AND EQUIPMENT BEFORE PAINTING. PAINTING OF NON-PREFINISHED MECHANICAL EQUIPMENT AND PIPING AS REQUIRED.
- 1.18 ACCESS DOORS A. ACCESS DOORS SHALL BE AS SPECIFIED BY ARCHITECT. COORDINATE PLACEMENT OF VALVES, ETC. IN ORDER TO HAVE ACCESS TO ALL CONCEALED PORTIONS OF THE SYSTEM REQUIRED PERIODIC SERVICE. PROVIDE SHOP DRAWINGS FOR COORDINATION OF ALL ACCESS DOOR LOCATIONS. ACCESS DOOR LOCATIONS SHALL BE APPROVED BY OWNER BEFORE INSTALLATION.
- 1.19 FLAME SPREAD PROPERTIES OF MATERIALS A. ALL MATERIALS AND ADHESIVES USED FOR ACOUSTICAL LININGS AND INSULATION, JACKETS, TAPES, ETC. SHALL CONFORM TO INTERIM FEDERAL STANDARD FLAMESPREAD PROPERTIES OF MATERIALS, INC. FED. STD. NO. 00336A (COMM. NBS). THE CLASSIFICATION SHALL NOT EXCEED NO. 2, WITH THE RANGE OF INDICES BETWEEN 0 AND 25 FOR THESE CLASSIFICATIONS AS LISTED IN THE FEDERAL SPECIFICATIONS FOR THE BASIC MATERIALS, THE FINISHES, ADHESIVES, ETC. SPECIFIED FOR EACH SYSTEM, AND SHALL BE SUCH THAT WHEN COMPLETELY ASSEMBLED THE TOTAL WILL NOT EXCEED AN INDEX OF 50 IN CLASSIFICATION 111 AS LISTED IN THE FEDERAL SPECIFICATIONS. MODIFICATIONS SHALL BE MADE TO INSULATING MATERIALS, ETC. AS REQUIRED TO COMPLY WITH THE FEDERAL SPECIFICATIONS.
- 1.20 RECORDS FOR THE OWNER A. EACH CONTRACTOR SHALL OBTAIN AT HIS OWN EXPENSE A COMPLETE SET OF BLUE LINE PRINTS ON WHICH HE SHALL KEEP AN ACCURATE RECORD OF THE INSTALLATION OF ALL MATERIALS AND SYSTEMS COVERED BY HIS CONTRACTUAL AGREEMENT. THE RECORD SHALL INDICATE THE LOCATION OF ALL EQUIPMENT AND THE ROUTING OF ALL SYSTEMS. ALL PIPING BURIED IN CONCRETE SLABS, WALLS, AND BELOW GRADE SHALL BE LOCATED BY DIMENSION UNLESS A SURFACE-MOUNTED DEVICE IN EACH SPACE INDICATES THE EXACT LOCATION. HE SHALL THEN OBTAIN AT HIS EXPENSE ONE COMPLETE REPRODUCIBLE SET OF THE ORIGINAL DRAWINGS ON WHICH HE SHALL NEATLY TRANSFER HIS NOTATIONS AND DELIVER THESE DRAWINGS TO THE ENGINEER AT A JOB COMPLETION BEFORE FINAL PAYMENT FOR DELIVERY TO THE OWNER. B. IN ADDITION TO THE ABOVE, EACH CONTRACTOR SHALL ACCUMULATE DURING THE JOB PROGRESS THE FOLLOWING DATA IN DUPLICATE PREPARED IN A NEAT BROCHURE OR PACKET FOLDER AND TURN OVER TO THE ENGINEER AND OWNER FOR CHECKING, BINDING AND SUBSEQUENT DELIVERY TO THE OWNER. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF BINDING INTO A BOOK:
 - DIRECTIONS ON EQUIPMENT AND MATERIAL COVERED BY THE CONTRACT. 2. COPIES OF APPROVED SHOP DRAWINGS.

LEGEND:

ELECTRIC UNIT HEATER (EUH) LOCATED WITHIN FIRE SPRINKLER ROOM (SEE MECHANICAL SCHEDULE SHEET FOR SPECIFICATIONS)

1. ALL WARRANTIES AND GUARANTEE AND MANUFACTURERS'

- WATER SHUT−OFF VALVE
- NON FREEZE WALL HYDRANT (N.F.W.H.)
- PLUMBING RISER # 'X' (SEE BUILDING PLUMBING PLAN &

PLUMBING RISERS SHEET)

- 2. SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY CALCULATED. SUBMIT COMPLETE CALCULATIONS AND SHOP DRAWINGS FOR APPROVAL. CONTRACTOR SHALL NOT BEGIN THE INSTALLATION OF THE SPRINKLER SYSTEM UNTIL APPROVAL OF THE SHOP DRAWINGS AND CALCULATIONS HAS BEEN OBTAINED BY THE CONTRACTOR FROM THE OWNER'S FIRE INSURANCE COMPANY, THE AUTHORITY HAVING JURISDICTION, AND THE ENGINEER.
- 3. CONTRACTOR SHALL CONDUCT FLOW TEST TO ESTABLISH EXACT FLOW AND PRESSURE AVAILABLE ON THE SITE FOR PREPARATION OF
- 4. COORDINATE LOCATION OF SPRINKLER HEADS WITH LIGHT FIXTURES, CEILING DIFFUSERS, GRILLES, AND CEILING GRID. CENTER SPRINKLER HEADS IN TWO DIRECTIONS IN CEILING TILE; PROVIDE PIPING OFFSETS AS REQUIRED.
- 5. SPRINKLER CONTROL VALVES SHALL BE 175 PSI, UL APPROVED,
- 6. CONTROL VALVES MORE THAN 7'-0" ABOVE FLOOR SHALL BE
- 7. ALL SPRINKLER SYSTEM COMPONENTS AND MATERIALS SHALL BE OF LISTED AND APPROVED TYPE.
- 9. PIPING SHALL BE HUNG FROM STRUCTURAL ELEMENTS. PIPING
- 10. CONTRACTOR SHALL RUN AND PAY FOR ALL TEST REQUIRED TO ENSURE THAT THE SYSTEM HAS ADEQUATE FLOW AND PRESSURE.
- 11. CONTRACTOR SHALL FURNISH AS-BUILT DRAWINGS. 12. CONTRACTOR SHALL BE RESPONSIBLE DURING INSTALLATION AND

FIRE SPRINKLER NOTES:

1. A CERTIFIED FIRE SPRINKLER CONTRACTOR SHALL DESIGN AND INSTALL A COMPLETE SPRINKLER SYSTEM IN STRICT CONFORMITY WITH ALL LATEST REQUIREMENTS OF THE APPLICABLE BUILDING CODE, THE LOCAL FIRE DEPARTMENT, NFPA 13 AND NFPA 13R - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS. DRAWINGS DO NOT SHOW A COMPLETE SPRINKLER SYSTEM FOR THE BUILDINGS.

THEIR HYDRAULIC CALCULATIONS.

OS&Y GATE VALVES.

ACCESSIBLE BY MEANS OF A PERMANENT IRON LADDER AS PER NFPA

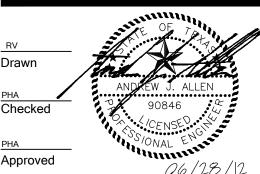
8. ALL HANGER COMPONENTS SHALL BE BE OF LISTED AND APPROVED

- SHALL NOT BE HUNG FROM DUCTWORK OR FROM BOTTOM CHORD OF OPEN WEB STEEL BAR JOIST.
- TESTING FOR ANY DAMAGE CAUSED BY LEAKS.

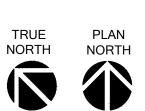
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2 02/08/2012	PR # 2

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Notes



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