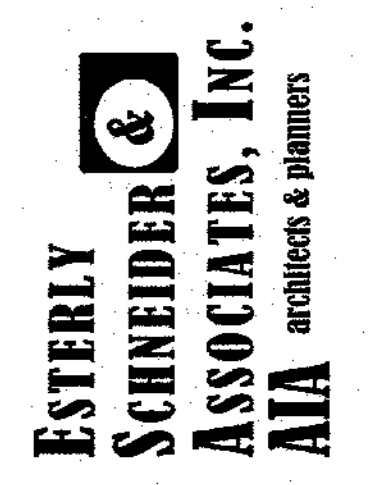


Missouri State Certificate of Authority #010705
PROFESSIONAL SEAL

1736 East Sunshine, Suite 417
Springfield, Missouri 65804
417.862.0558



OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
PUBLIC SAFETY,
MISSOURI VETERANS
COMMISSION

HVAC REPLACEMENT
PROJECT

MISSOURI VETERANS
HOME

620 N. JEFFERSON
ST. JAMES, MO 65559

PROJECT # U1503-03
FAI # 29-051
SITE # 4700
FACILITY # 55019

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 10-27-17

CAD DWG FILE: M-112.DWG
DRAWN BY: JMO
CHECKED BY: CKC
DESIGNED BY: JMO

SHEET TITLE:
**HYDRONIC
PLANS**

SHEET NUMBER:

M-112

16 OF 41 SHEETS

10-27-17

Consulting Engineers
3333 East Battlefield, Suite 1000
Springfield, Missouri 65804
Phone: 417.881.0033
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info.com

mfec
Malone Finkle & Schmidt & Collins, Inc.

NOTES:

- 1 EXISTING HOT WATER STORAGE TANK TO REMAIN.
- 2 EXISTING DOMESTIC WATER HEATER TO REMAIN.
- 3 EXISTING UNIT HEATER TO REMAIN.
- 4 UNDER ALTERNATE BID #2, PROVIDE COMBINATION AIR ELIMINATOR/DIRT SEPARATOR. PROVIDE TRANSITION IN EXISTING PIPING TO ACCOMMODATE PIPE CONNECTIONS. ROUTE 1" DRAIN DOWN EXTERIOR WALL TO FLOOR DRAIN.
- 5 UNDER ALTERNATE BID #3, REFER TO DETAIL 2/A-403 FOR CONTINUATION OF HOT WATER SUPPLY TO BOILERS.
- 6 EXISTING UNIT HEATER TO REMAIN.
- 7 NEW AIR HANDLING UNIT. REMOVE AND REPLACE PIPING, VALVING AND PUMPS. REMOVE AND REPLACE 1" HWS, 1" HRS, 1.5" CWS AND 1.5" CWS BRANCH PIPING BACK TO MAIN CONNECTION AND REPLACE ALL DIELECTRIC FITTINGS. PROVIDE NEW SHUT-OFF VALVES AT MAIN PIPING CONNECTION AND RECONNECT TO MAIN PIPING. FIELD VERIFY EXISTING CONDITIONS, AND LOCATION OF CONNECTIONS TO ALL EXISTING PIPING CONNECTIONS PRIOR TO SUBMITTAL OF AIR HANDLING UNIT. PROVIDE ALL REQUIRED ADJUSTMENTS TO EXISTING PIPING TO ACCOMMODATE NEW AIR HANDLING UNIT. PROVIDE 1" CONDENSATE DRAIN PIPING AND TERMINATE WITH AIR GAP OVER EXISTING FLOOR DRAIN.
- 8 NEW MAKE-UP AIR UNIT "MAU2". REMOVE AND REPLACE BRANCH HOT WATER PIPING, VALVING AND PUMPS. REMOVE AND REPLACE 2" HWS AND 2" HRS BRANCH PIPING BACK TO DIELECTRIC FITTINGS. REPLACE ALL DIELECTRIC FITTINGS. PROVIDE NEW SHUT-OFF VALVES AND RECONNECT TO EXISTING PIPING. FIELD VERIFY EXISTING CONDITIONS, AND LOCATION OF CONNECTIONS TO ALL EXISTING PIPING CONNECTIONS PRIOR TO SUBMITTAL OF MAKE-UP AIR UNIT. PROVIDE ALL REQUIRED ADJUSTMENTS TO EXISTING PIPING TO ACCOMMODATE NEW MAKE-UP AIR UNIT.
- 9 CONNECT NEW CWS/COR AND HWS/HRS PIPING TO EXISTING PIPING. ROUTE NEW CWS/COR AND HWS/HRS PIPING TO NEW "FOU-003". FIELD VERIFY EXISTING SIZES FOR CWS/COR AND HWS/HRS PIPING.
- 10 UNDER ALTERNATE BID #3, CONNECT TO EXISTING GAS PIPING. FIELD VERIFY EXACT SIZE.
- 11 EXISTING GAS TO FLOOR ABOVE TO REMAIN.
- 12 EXISTING FLOOR DRAIN TO REMAIN.
- 13 EXISTING CHILLED WATER SUPPLY AND RETURN PIPING TO UPPER FLOOR SHALL REMAIN.
- 14 UNDER ALTERNATE BID #3, PROVIDE COMBINATION AIR ELIMINATOR/DIRT SEPARATOR. PROVIDE TRANSITION IN EXISTING HW PIPING TO ACCOMMODATE PIPE CONNECTIONS. ROUTE 1" DRAIN DOWN EXTERIOR WALL TO FLOOR DRAIN.
- 15 EXISTING HOT WATER SUPPLY AND RETURN PIPING TO UPPER FLOOR SHALL REMAIN.
- 16 UNDER ALTERNATE BID #3, CONNECT NEW 4" HWS TO EXISTING 4" HWS. FIELD VERIFY EXACT LOCATION.
- 17 UNDER ALTERNATE BID #1, 1.25" GAS DOWN TO WATER HEATER BOILER. REFER TO DETAIL B/A-501.
- 18 UNDER ALTERNATE BID #1, CONNECT TO EXISTING 2" HOT WATER RETURN PIPING. FIELD VERIFY EXACT LOCATION.
- 19 UNDER ALTERNATE BID #1, CONNECT TO EXISTING 2" HOT WATER SUPPLY PIPING. FIELD VERIFY EXACT LOCATION.
- 20 UNDER ALTERNATE BID #1, 1.5" HOT WATER SUPPLY AND RETURN PIPING DOWN TO WATER HEATER BOILER.
- 21 UNDER ALTERNATE BID #1, CONNECT EXISTING 2" COLD WATER TO NEW "OHWP1".
- 22 UNDER ALTERNATE BID #1, CONNECT TO EXISTING GAS PIPING. FIELD VERIFY EXACT SIZE.

GENERAL NOTES:

1. FOR ALL MECHANICAL QUESTIONS DURING BIDDING OR DURING CONSTRUCTION, CONTACT SCOTT VANDOREN AT MALONE FINKLE SCHNEIDER & COLLINS, INC. (417-881-0020).
2. MECHANICAL HOT WATER HEATING SYSTEM SHALL BE DRAINED DOWN DURING THE COOLING SEASON. BOILER SYSTEM, HOT WATER PUMPS, AND ALL HOT WATER PIPING CHANGES SHALL BE PERFORMED DURING THE COOLING SEASON. ALL WORK SHALL BE PERFORMED, STARTING JUNE 1, 2018 AND SUBSTANTIALLY COMPLETE BY AUGUST 31, 2018.
3. MECHANICAL CHILLED WATER AND CONDENSER WATER SYSTEMS SHALL BE DRAINED DOWN DURING THE HEATING SEASON. CHILLED WATER PUMPS, CONDENSER WATER PUMPS AND ALL CHILLED WATER PIPING CHANGES SHALL BE PERFORMED DURING THE HEATING SEASON. ALL WORK SHALL BE PERFORMED, STARTING DECEMBER 1, 2017 AND SUBSTANTIALLY COMPLETE BY FEBRUARY 28, 2018.
4. CONTRACTOR SHALL COORDINATE WITH THE HVAC WATER TREATMENT CONTRACTOR PER SPECIFICATIONS SECTION 232200. ALL WATER TREATMENT SHALL BE COMPLETED BY THE SYSTEM SUBSTANTIAL COMPLETION DATE. SYSTEM, ADJUST AND BALANCE REPORT FOR THE WATER SYSTEMS SHALL BE COMPLETE AND APPROVED BY THE ENGINEER. PRIOR TO THE SUBSTANTIAL COMPLETION DATE OF EACH WATER SYSTEM.

ALTERNATE BID NO. 1: REMOVE AND REPLACE EXISTING DOMESTIC HOT WATER HEATER WITH TWO NEW HOT WATER HEATERS. PROVIDE ALL ASSOCIATED POWER, PUMPS, PIPING VALVING, FLUE CHANGES AND CONTROLS FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM. REFER TO SHEETS C-100, E-100, M-100, M-101, M-112, M-201, M-202, M-203 & M-204. REFER TO SPECIFICATIONS.

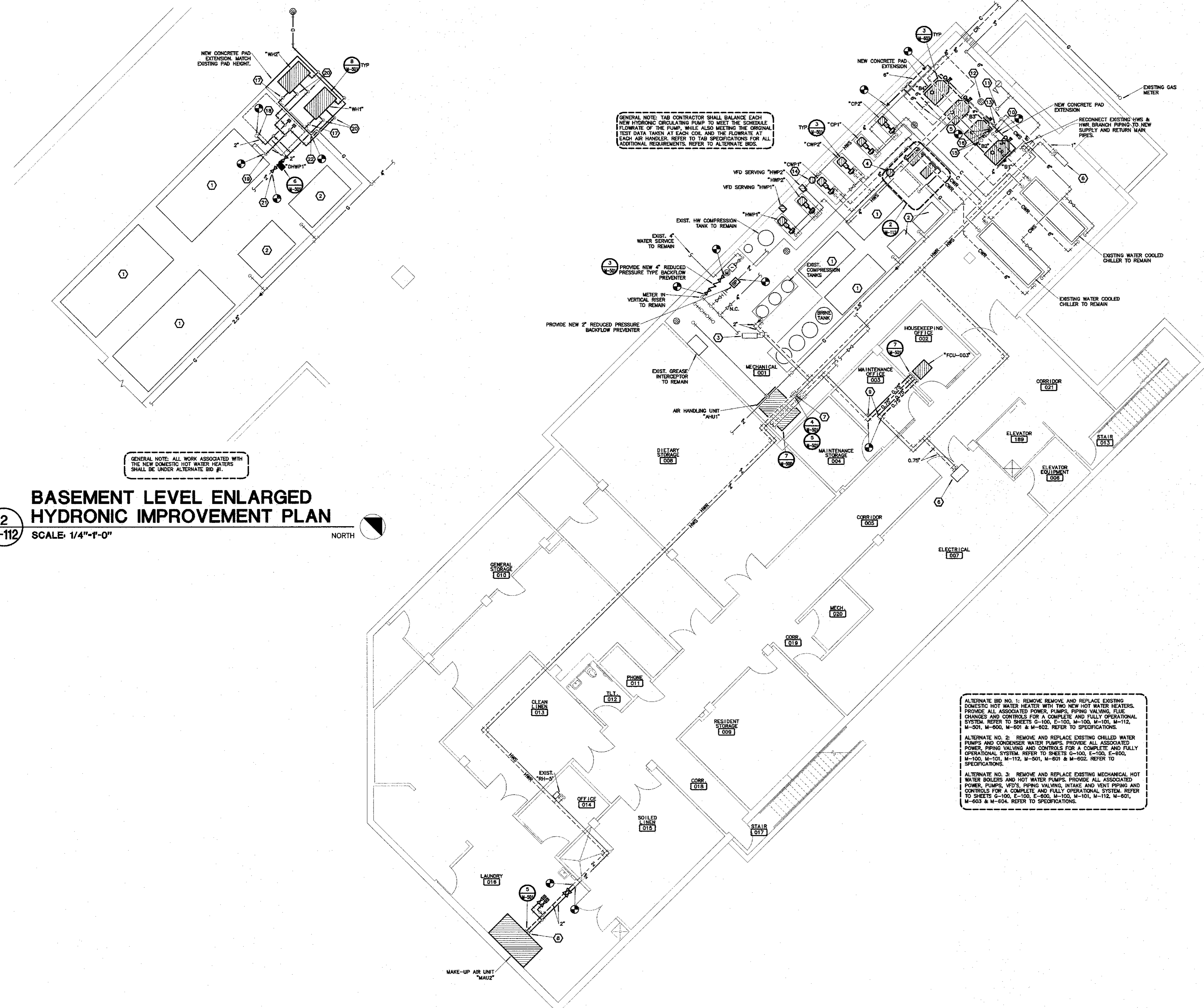
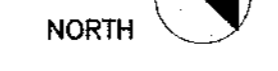
ALTERNATE NO. 2: REMOVE AND REPLACE EXISTING CHILLED WATER PUMPS AND CONDENSER WATER PUMPS. PROVIDE ALL ASSOCIATED POWER, PIPING VALVING AND CONTROLS FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM. REFER TO SHEETS C-100, E-100, E-200, M-100, M-101, M-112, M-201, M-202, M-203 & M-204. REFER TO SPECIFICATIONS.

ALTERNATE NO. 3: REMOVE AND REPLACE EXISTING MECHANICAL HOT WATER BOILERS AND HOT WATER PUMPS. PROVIDE ALL ASSOCIATED POWER, PUMPS, VFD'S, PIPING VALVING, INTAKE AND VENT PIPING AND CONTROLS FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM. REFER TO SHEETS C-100, E-100, E-200, M-100, M-101, M-112, M-201, M-202, M-203 & M-204. REFER TO SPECIFICATIONS.

GENERAL NOTE: TAB CONTRACTOR SHALL BALANCE EACH NEW HYDRONIC CIRCULATING PUMP TO MEET THE SCHEDULED FLOWRATE OF THE PUMP, WHILE ALSO MEETING THE ORIGINAL TEST DATA TAKEN AT EACH COIL AND THE FLOWRATE AT EACH AIR HANDLER. REFER TO TAB SPECIFICATIONS FOR ALL ADDITIONAL REQUIREMENTS. REFER TO ALTERNATE BIDS.

GENERAL NOTE: ALL WORK ASSOCIATED WITH THE NEW DOMESTIC HOT WATER HEATERS SHALL BE UNDER ALTERNATE BID #1.

2
M-112
BASEMENT LEVEL ENLARGED HYDRONIC IMPROVEMENT PLAN
SCALE: 1/4"=1'-0"



ALTERNATE BID NO. 1: REMOVE AND REPLACE EXISTING DOMESTIC HOT WATER HEATER WITH TWO NEW HOT WATER HEATERS. PROVIDE ALL ASSOCIATED POWER, PUMPS, PIPING VALVING, FLUE CHANGES AND CONTROLS FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM. REFER TO SHEETS C-100, E-100, M-100, M-101, M-112, M-201, M-202, M-203 & M-204. REFER TO SPECIFICATIONS.

ALTERNATE NO. 2: REMOVE AND REPLACE EXISTING CHILLED WATER PUMPS AND CONDENSER WATER PUMPS. PROVIDE ALL ASSOCIATED POWER, PIPING VALVING AND CONTROLS FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM. REFER TO SHEETS C-100, E-100, E-200, M-100, M-101, M-112, M-201, M-202, M-203 & M-204. REFER TO SPECIFICATIONS.

ALTERNATE NO. 3: REMOVE AND REPLACE EXISTING MECHANICAL HOT WATER BOILERS AND HOT WATER PUMPS. PROVIDE ALL ASSOCIATED POWER, PUMPS, VFD'S, PIPING VALVING, INTAKE AND VENT PIPING AND CONTROLS FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM. REFER TO SHEETS C-100, E-100, E-200, M-100, M-101, M-112, M-201, M-202, M-203 & M-204. REFER TO SPECIFICATIONS.

1
M-112
BASEMENT LEVEL HYDRONIC IMPROVEMENT PLAN
SCALE: 1/8"=1'-0"

