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June 23, 2014

NOTICE OF ADDENDUM NO. 1

CONTRACT NO. 7343

Revise and amend the contract document(s) for the above project as stated in this addendum, otherwise, the original document shall remain in effect.

1. Add drawing sheets A201, P001, M001, M100, M800, and M900.

2. Spec Section 08 11 00 Steel Doors and Frames, Part 2 – Products, 2.01 Manufactures: ADD item "3. Ceco Door, Milan TN"

3. Spec Section 08 71 00 Door Hardware, Part 2 – Products, 2.01 manufactures: Delete item A in its entirety and replace with "A. In addition to compliance with the requirements of these specifications; Exterior doors and window shutter assemblies must meet the requirements of ICC/NSSA Standard for the Design and Construction of Storm Shelters – ICC 500, Section 306 Component Design and Testing, and Chapter 8 for testing in accordance with missile impact and pressure test procedures by a certified testing agency.

4. Spec Section 08 71 00 Door Hardware, Part 2 – Products, 2.01 manufactures: ADD to part B "ASSA ABLOY and related companies is an acceptable manufacturer."

Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on the Bid Express web site at:

http://www.bidexpress.com

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 receive the material by another route.

Robert F. Phillips, P.E., City Engineer

A. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices and recessed items.

B. Coordinate work with frame opening construction, door and hardware installation.

C. Sequence installation to accommodate required door hardware.

D. Verify field dimensions for factory assembled frames prior to fabrication.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturers for doors and frames specified are listed below. Only the products of the listed manufacturers will be accepted. No alternates will be accepted.

1. Steelcraft, Cincinnati, Ohio
2. Curries, Mason City, Iowa
3. ***Ceco Door, Milan TN***

B. Provide steel doors and frames from a single manufacturer.

2.02 DOORS:

A. Construct exterior/interior doors to these designs and gages:

1. Exterior Doors: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60, or 14 gage [0.067" (1.7mm)] Zinc-Iron Alloy-Coated galvannealed steel, with closed tops.

    a. Include galvannealed components and internal reinforcements with galvannealed doors.

    b. Close tops of exterior swing-out doors to eliminate moisture penetration. Galvannealed steel top caps are permitted.

2. Interior Doors: Cold-rolled steel, A 1008, 18 gage [0.042" (1mm)] cold rolled steel.

    a. Include galvannealed components and internal reinforcements with galvannealed doors.

3. Factory prime painted doors indicated on door schedule as HM.

4. Hardware Reinforcements:

a. Closers:
   1) Mechanical: 10 years.
   2) Electrified: 2 years.

b. Exit Devices:
   1) Mechanical: 3 years.
   2) Electrified: 1 year.

c. Locksets:
   1) Mechanical: 3 years.
   2) Electrified: 1 year.

d. Continuous Hinges: 10 years.
e. Key Blanks: Lifetime

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.9 MAINTENANCE

A. Maintenance Tools:

1. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

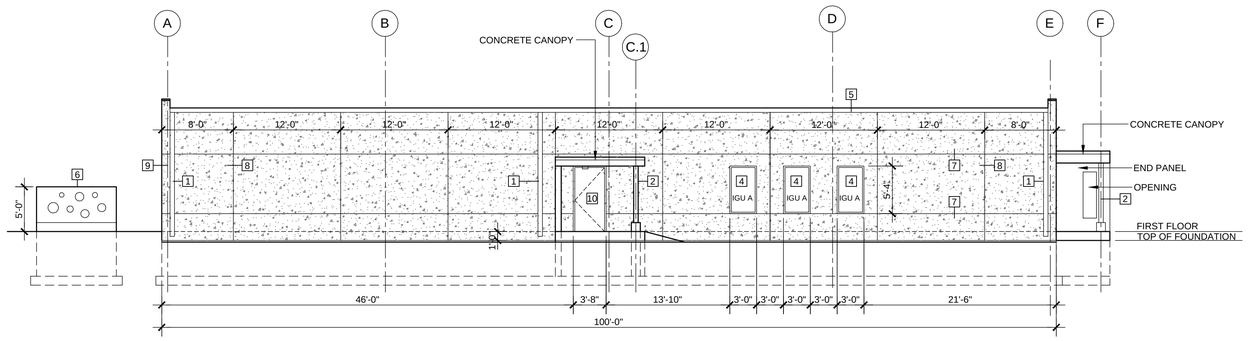
PART 2 - PRODUCTS

2.1 MANUFACTURERS

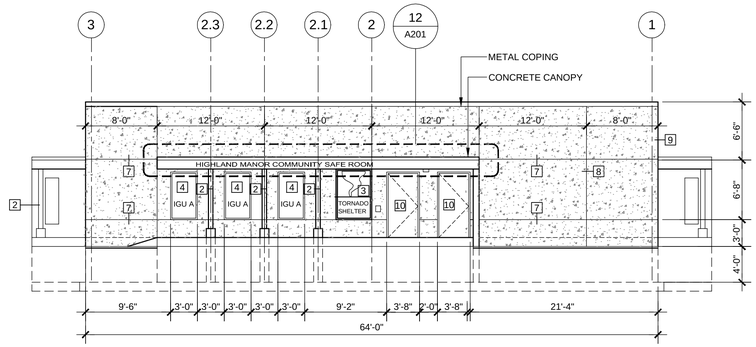
A. ~~Approval of manufacturers other than those listed shall be in accordance with QUALITY ASSURANCE article, herein~~. ***In addition to compliance with the requirements of these specifications; Exterior doors, windows shutter assemblies must meet the requirements of ICC/NSSA Standard for the Design and Construction of Storm Shelters – ICC 500, Section 306 Component Design and Testing, and Chapter 8 for testing in accordance with missile impact and pressure test procedures by a certified testing agency.***

B. Approval of products from manufacturers indicated as "Acceptable Manufacturer" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product. ***ASSA ABLOY and related companies is an acceptable manufacture.***

Item	Scheduled Manufacturer	Acceptable Manufacturer
Hinges	Ives (IVE)	McKinney
Continuous Hinges	Ives (IVE)	McKinney
Electric Door Cord	Schlage – Electronic (SCE)	Sargent
Flush Bolts & Coordinators	Ives (IVE)	Mckinney
Locksets & Deadlocks	Schlage (SCH)	Sargent
Three Point Lock	Schlage (SCH)	Sargent
Wind Storm Exit Devices	Von Duprin (VON)	Sargent
Cylinders & Keying	Schlage (SCH)	Sargent
Door Closers	LCN (LCN)	Sargent



1 BUILDING ELEVATION
1/8"= 1'-0"

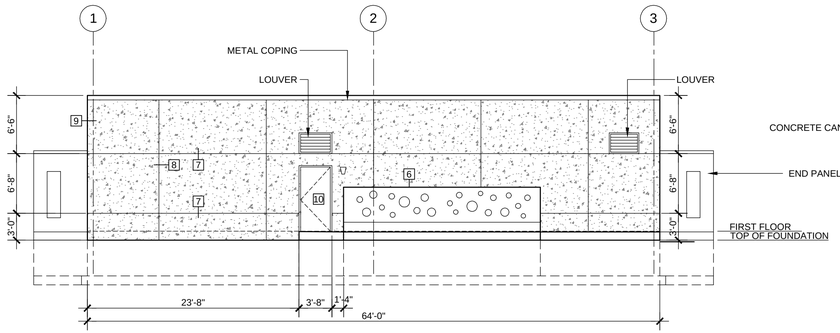


2 BUILDING ELEVATION
1/8"= 1'-0"

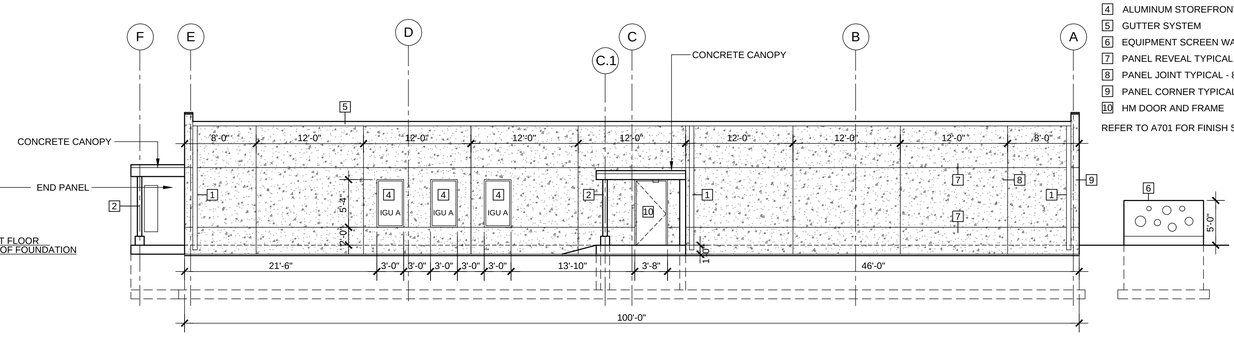
SPECIFIC ELEVATION NOTES

1. DOWNSPOUT
2. PAINTED STEEL COLUMN
3. CAST SIGN IN PRECAST PANEL
4. ALUMINUM STOREFRONT SYSTEM
5. GUTTER SYSTEM
6. EQUIPMENT SCREEN WALL, REFER TO A201
7. PANEL REVEAL TYPICAL - 7/A201
8. PANEL JOINT TYPICAL - 8/A201
9. PANEL CORNER TYPICAL - 9/A201
10. HM DOOR AND FRAME

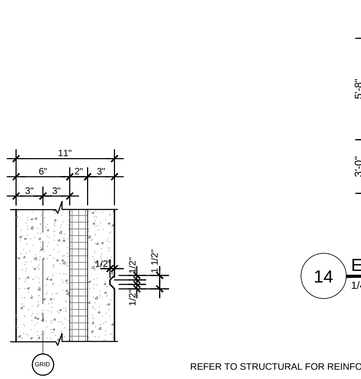
REFER TO A701 FOR FINISH SELECTIONS



4 BUILDING ELEVATION
1/8"= 1'-0"

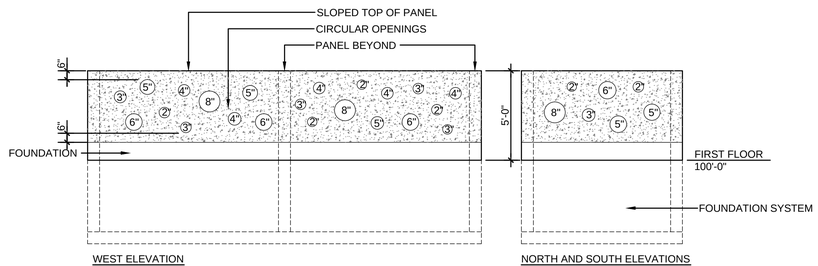


5 BUILDING ELEVATION
1/8"= 1'-0"



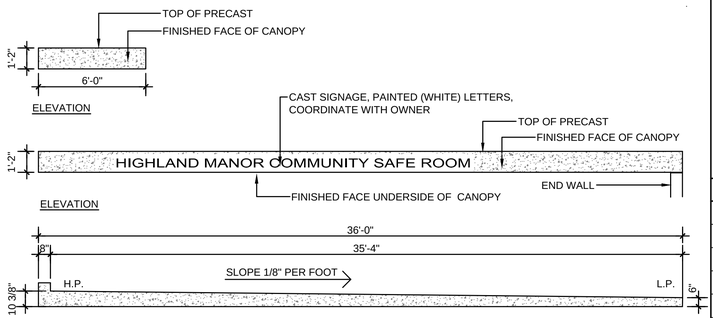
CAST SIGN INTO PRECAST CONCRETE PANEL - TEXT AND SYMBOL TO MEET ICC 500 AND FEMA REQUIREMENTS

14 ELEVATION - SIGN
1/4"= 1'-0"



13 ELEVATION -SCREEN WALL
1/4"= 1'-0"

PREP, BLOCK FILL AND PAINT SCREEN WALL AND OPENINGS, REFER TO A701 FOR FINISH SCHEDULE

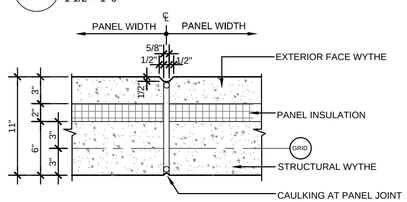


PREP, BLOCK FILL AND PAINT CANOPY, REFER TO A701 FOR FINISH SCHEDULE

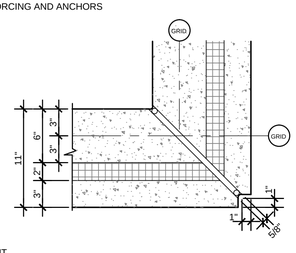
12 ENTRANCE CANOPY
1/4"= 1'-0"

REFER TO STRUCTURAL FOR REINFORCING AND ANCHORS

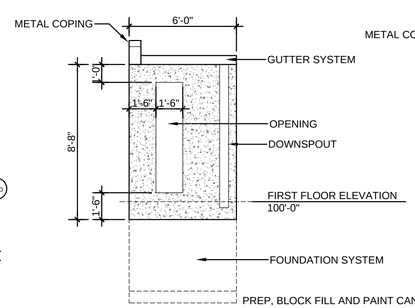
7 PANEL DETAIL - REVEAL
1 1/2"= 1'-0"



8 PANEL DETAIL
1 1/2"= 1'-0"



9 PANEL DETAIL - MITER CORNER
1 1/2"= 1'-0"



PREP, BLOCK FILL AND PAINT CANOPY END PANELS , REFER TO A701 FOR FINISH SCHEDULE

10 ELEVATION -END PANEL
1/4"= 1'-0"

11 ELEVATION -END PANEL
1/4"= 1'-0"

assemblage
ARCHITECTS

7427 Elmwood Avenue
Middleton, WI 53562
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PROJECT
HIGHLAND MANOR COMMUNITY SAFE ROOM
CITY OF MADISON - CONTRACT NO. 7343
10 MANOR DRIVE
MADISON, WISCONSIN

SHEET NAME
BUILDING ELEVATIONS

Madison
CITY OF MADISON
Contract: 7343

REVISION	DATE

PROJECT NO	1307
SET TYPE	BID DOCUMENTS
DATE	05-30-2014

SHEET NUMBER

A201

PLUMBING SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED NECESSARILY APPLY TO THIS PROJECT.

PLUMBING SYSTEMS

ABBREVIATION	DESCRIPTION	SYMBOL
A	COMPRESSED AIR	A
AV	ACID VENT PIPING	AV
AW	ACID WASTE PIPING	AW
CO2	CARBON DIOXIDE	CO2
CW	COLD WATER	CW
CLV	CLEAR WATER VENT	CLV
CLW	CLEAR WATER WASTE	CLW
DE	DEIONIZED WATER	DE
DI	DISTILLED WATER	DI
G	NATURAL GAS (LESS THAN 0.5 PSIG)	G
GW	GREASE WASTE PIPING	GW
HT	HOT WATER WITH HEAT TRACE	HT
HW	HOT WATER	HW
HWR	HOT WATER RECIRCULATION	HWR
IW	INDIRECT WASTE	IW
LA	LAB COMPRESSED AIR	LA
LV	LAB VACUUM	LV
LW	LOCAL WASTE	LW
MA	MEDICAL COMPRESSED AIR	MA
MV	MEDICAL VACUUM	MV
N	NITROGEN	N
NO	NITROUS OXIDE	NO
NP	NON-POTABLE WATER (LINE TYPE DESIGNATES SERVICE)	NP
OD	OVERFLOW STORM DRAIN	OD
OX	OXYGEN	OX
PWR	PURE WATER RETURN	PWR
PWS	PURE WATER SUPPLY	PWS
RO	REVERSE OSMOSIS	RO
S	SOFT WATER	S
SAN OR W	SANITARY DRAIN, WASTE OR SEWER	
SSD	SUBSOIL DRAIN (FOOTING DRAIN)	SSD
ST	STORM DRAIN CONDUCTOR OR SEWER	ST
T	TEMPERED WATER	T
V	VENT	
VAC	VACUUM	VAC
W	DOMESTIC WATER SERVICE	W
WASD	WASTE ANESTHETIC GAS DISPOSAL	WASD
XSAN	EXISTING PIPING (SERVICE DESIGNATED)	XSAN
XSAN	EXISTING PIPING TO BE REMOVED/ ABANDONED (SERVICE DESIGNATED)	XSAN

SYMBOLS

ABBREVIATION	DESCRIPTION	SYMBOL
-	TEE (BRANCH TO SIDE)	
-	TEE (BRANCH DOWN)	
UP	RISER UP	
DN	RISER DOWN	
CO	CLEANOUT	
WCO	WALL CLEANOUT	
FCO	FLOOR CLEANOUT	
YCO	YARD CLEANOUT	
DSN	DOWNSPOUT NOZZLE	
-	UNION	
-	FLANGE	
-	FLOW	
-	CHECK VALVE	
PRV	PRESSURE REGULATING VALVE	
-	SOLENOID VALVE	
HB	HOSE BIBB	
WH	WALL HYDRANT	
YH	YARD HYDRANT	
POC	POINT OF CONNECTION	OR
-	CAP	
BV	BALANCING VALVE	
-	SHUT-OFF VALVE	
CP	CIRCULATING PUMP	
-	PIPE STRAINER	
-	WATER METER	
EEW	EMERGENCY EYEWASH	
ESH	EMERGENCY SHOWER	
ESH/EW	COMBINATION EMERGENCY SHOWER/EYEWASH	
-	FIXTURE STOP	
-	VALVE IN RISER	
-	THERMOMETER	
-	PRESSURE GAUGE	
WHA	WATER HAMMER ARRESTOR	
-	RELIEF VALVE	
BP	BACKFLOW PREVENTER	
RPBP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER	
DDCV	DOUBLE DETECTOR CHECK VALVE ASSEMBLY	
DCVA	DOUBLE CHECK VALVE ASSEMBLY	
-	CONTINUATION	
-	PIPE SLOPE SYMBOL	
FD	FLOOR DRAIN	
HD	HUB DRAIN	
AD	AREA DRAIN	
RD	ROOF DRAIN	
OD	OVERFLOW DRAIN	
FS	FLOOR SINK	
FFE	FINISHED FLOOR ELEVATION	
DFU	DRAINAGE FIXTURE UNITS	XX
SFU	SUPPLY FIXTURE UNITS	XX
-	EQUIPMENT IDENTIFICATION	A
-	KEYED NOTE	
-	DRAWING REVISION	
-	HEAT TRACE POWER CONNECTION	
-	HEAT TRACE END CONNECTION	
TMV	THERMOSTATIC MIXING VALVE	
-	BRANCH VALVE/ ROAD BOX	
-	MEDICAL GAS OUTLET	
NCP	NITROGEN CONTROL PANEL	
ZVB	ZONE VALVE BOX	
-	TAG FOR CONTINUATION MATCH POINTS AND/OR DETAIL REFERENCE	X (DETAIL NUMBER) / PX (SHEET NUMBER)

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
BT	BATHTUB
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CI	CAST IRON
CL	CENTER LINE
CS	CUP SINK
CSS	CLINICAL SERVICE SINK/FLUSHING RIM SINK
CUS	CUSPIDOR
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EJ	EXPANSION JOINT
EQUIP	EQUIPMENT
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
°F	DEGREES FAHRENHEIT
FEC	FOOD EQUIPMENT CONTRACTOR
FPC	FIRE PROTECTION CONTRACTOR
FT	FOOT OR FEET
GAL	GALLON
GC	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GPM	GALLON PER MINUTE
HC	HVAC CONTRACTOR
HG	MERCURY
HP	HORSEPOWER
HTR	HEATER
IE	INVERT ELEVATION
JS	JANITOR SINK
L	LAVATORY
LBS	POUNDS
LT	LAUNDRY TRAY
MAX	MAXIMUM
MB	MOP BASIN
MBH	1000 BRITISH THERMAL UNITS/HOUR
MECH	MECHANICAL
MEZZ	MEZZANINE
MH	MANHOLE
MIN	MINIMUM
MTR	METER
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PC	PLUMBING CONTRACTOR
PF	PENAL FIXTURE
PRELIM	PRELIMINARY
PRESS	PRESSURE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSH	PENAL SHOWER
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RI	ROUGH-IN
RPM	REVOLUTIONS PER MINUTE
S	SINK
SF	SQUARE FEET
SH	SHOWER
SS	SOIL STACK/ SERVICE SINK
STRUCT	STRUCTURAL/STRUCTURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TS	TAMPER SWITCH
UR	URINAL
VAC	VACUUM
VB	VACUUM BREAKER
VS	VENT STACK
VTR	VENT THRU ROOF
WC	WATER CLOSET, WATER COLUMN
WF	WASH FOUNTAIN
WM	WASHING MACHINE
WHTR	WATER HEATER
WS	WASTE STACK
XWC	EXISTING FIXTURE TO REMAIN (FIXTURE TYPE DESIGNATED)

PLENUM NOTE:

RETURN AIR CEILING PLENUMS ARE UTILIZED ON THIS PROJECT. PIPING SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO BLOCK THE RETURN AIR PATH. ALL MATERIALS IN PLENUMS SHALL BE PLENUM RATED NON-COMBUSTIBLE MATERIALS.

PLUMBING SHEET INDEX

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ARNOLD & O'SHERIDAN, INC.
726 HEARTLAND TRAIL
MADISON, WI 53717
T/ 608 821 8500
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A&O PROJECT #130158

PROJECT: HIGHLAND MANOR COMMUNITY SAFE ROOM
CITY OF MADISON - CONTRACT NO. 7343
10 MANOR DRIVE
MADISON, WISCONSIN

SHEET NAME: SYMBOLS & ABBREVIATIONS

Madison
CITY OF MADISON
Contract: 7343

REVISION	DATE

PROJECT NO	1307
SET TYPE	BID DOCUMENTS
DATE	05-30-2014
SHEET NUMBER	P001

DUCTWORK SYSTEMS

- 20x12 — DUCT SIZE, (FIRST FIGURE IS SIDE SHOWN)
- 12" ø — ROUND DUCT
- 20x12 ø — OVAL DUCT
- UP/DN — CHANGE OF ELEVATION IN DIRECTION OF AIR FLOW
- AD — ACCESS DOOR, VERTICAL OR HORIZONTAL
- ACOUSTICAL DUCT LINER
- FLEXIBLE CONNECTION
- DUCT TRANSITION (DOUBLE LINE)
- DUCT TRANSITION (RECT. TO ROUND)
- HIDDEN DUCTWORK
- MANUAL VOLUME DAMPER
- S — SMOKE DETECTOR
- STANDARD BRANCH, SUPPLY, RETURN, OR EXHAUST, NO SPLITTER
- DUCT CAP
- EXISTING / EXISTING / NEW / NEW — POSITIVE PRESSURE DUCT SECTION
- POSITIVE PRESSURE DUCT (DOWN OR AWAY)
- EXISTING / EXISTING / NEW / NEW — NEGATIVE PRESSURE DUCT SECTION
- NEGATIVE PRESSURE DUCT (DOWN OR AWAY)
- SIDEWALL AIR DEVICE — SIZE
- TRANSFER GRILLE ASSEMBLY
- ELBOW WITH TURNING VANES
- AIR FLOW
- EXISTING / NEW — POINT OF NEW CONNECTION (PIPE OR DUCT)

PLENUM NOTE:

RETURN AIR CEILING PLENUMS ARE UTILIZED ON THIS PROJECT. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL ASCERTAIN THAT ALL ROOMS TO WHICH AIR IS SUPPLIED, HAVE RETURN AIR PATHS BACK TO AND THRU THE CEILING PLENUM. ANY SPACES OBSERVED WHICH DO NOT HAVE SUCH OPENINGS SHALL BE REPORTED TO A/E IMMEDIATELY FOR RESOLUTION. PIPING AND DUCTWORK SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO BLOCK THE RETURN AIR PATH, RETURN AIR OPENINGS TO SHAFTS & INTAKE DUCTWORK. ALL MATERIALS IN PLENUMS SHALL BE PLENUM RATED NON-COMBUSTIBLE MATERIALS.

PIPING SYSTEMS

- GENERAL SHUTOFF VALVE SEE SPECIFICATIONS FOR TYPE
- PRESSURE REDUCING VALVE
- CAP
- CONNECTION, BOTTOM
- CONNECTION, TOP
- ELBOW, TURNED UP
- ELBOW, TURNED DOWN
- P — PRESSURE GAUGE AND COCK
- UNION
- PIPE FLANGE
- G — GAS
- D — DRAIN

GENERAL SYMBOLS

- T — THERMOSTAT OR TEMPERATURE SENSOR
- THERMOSTAT OR TEMPERATURE SENSOR WITH SECURITY COVER
- MOTOR STARTER
- $ — START/STOP SWITCH
- EXISTING TO REMAIN (DUCTWORK, PIPING, & EQUIPMENT)
- EXISTING TO BE REMOVED (DUCTWORK, PIPING, & EQUIPMENT)
- NEW DUCTWORK/PIPING
- NEW EQUIPMENT

ABBREVIATIONS

A	COMPRESSED AIR
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
ADJ	ADJUSTABLE
A/E	ARCHITECT/ENGINEER
AFF	ABOVE FINISHED FLOOR
AMP	AMPERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ASC	ABOVE SUSPENDED CEILING
AUTO	AUTOMATIC
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
BRG	BEARING
BTU	BRITISH THERMAL UNIT
C	CONVECTOR
CA	COMBUSTION AIR
CAB	CABINET
CCC	COOLING COIL CONDENSATE
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CFH	CUBIC FEET PER HOUR
CI	CUBIC INCH
℄	CENTERLINE
CLG	CEILING
CMU	CONCRETE MASONARY UNIT
COMB	COMBINATION OR COMBUSTION
CONC	CONCRETE
COND	CONDENSATE
CONTR	CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE
CU	COPPER
CUH	CABINET UNIT HEATER
D	DRAIN
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEPT	DEPARTMENT
DIA	DIAMETER
DN	DOWN
DWDI	DOUBLE WIDTH DOUBLE INLET
DWG	DRAWING
E	EXHAUST
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EER	ENERGY EFFICIENCY RATIO
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRICAL
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
EXH	EXHAUST
EXT	EXTERIOR OR EXTERNAL
F	FILTER OR FURNACE
°F	DEGREES FAHRENHEIT
FA	FREE AREA
FCU	FAN COIL UNIT
FD	FLOOR DRAIN OR FIRE DAMPER
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FM	FLOW METER
FPC	FIRE PROTECTION CONTRACTOR
FPM	FEET PER MINUTE
FS	FLOW SWITCH
FT	FOOT OR FEET
G	GAS
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GUH	GAS FIRED UNIT HEATER
GV	GAS VENT
HC	HEATING CONTRACTOR
HD	HUB DRAIN
HG	MERCURY
HGT	HEIGHT
HP	HORSEPOWER
HR	HOUR
HRV	HEAT RECOVERY VENTILATOR
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HZ	HERTZ
IN	INCH
INV	INVERT
IPLV	INTEGRATED PART LOAD VALUE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
M	MOTOR OPERATED DAMPER
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS/HOUR
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
MUA	MAKE-UP AIR UNIT
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPLV	NOMINAL PART LOAD VALUE
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OAT	OUTDOOR AIR TEMPERATURE
OC	ON CENTER
ΔP	DIFFERENTIAL PRESSURE SENSOR
PC	PLUMBING CONTRACTOR
PLBG	PLUMBING
POC	POINT OF CONNECTION
PRELIM	PRELIMINARY
PRESS	PRESSURE
PS	PRESSURE SWITCH
PSD	PUMP SUCTION DIFFUSER
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	REFRIGERANT/RETURN
RA	RETURN AIR
RD	ROOF DRAIN
REQD	REQUIRED
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RR	RETURN REGISTER
S	SUPPLY
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SM	SHEET METAL
SQ FT	SQUARE FEET
SR	SUPPLY REGISTER
SWD	SINGLE WALL DUCTWORK
T	THERMOSTAT/TEMPERATURE SENSOR/TRANSFER
TA	THROWAWAY
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
TEMP	TEMPORARY
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TG	TRANSFER GRILLE
TO	TEST OPENINGS
TS	TIP SPEED
TXV	THERMOSTATIC EXPANSION VALVE
TYP	TYPICAL
UH	UNIT HEATER
UNEX	UNEXCAVATED
V	VENT
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
W TO W	WALL TO WALL
WB	WET BULB
WC	WATER COLUMN

GENERAL NOTES:

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
3. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECCOMENDATIONS, CONTRACT DUCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
4. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
5. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
6. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTFIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
7. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
8. LOCATE ALL MECHANICAL EQUIPMENT (SINGLE DUCT, DUAL DUCT, VARIABLE VOLUME, CONSTANT VOLUME, AND FAN-POWERED BOXES, FAN COIL UNITS, CABINET HEATERS, UNIT HEATERS, UNIT VENTILATORS, COILS, STEAM HUMIDIFIERS, ETC.) FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
9. UNLESS OTHERWISE NOTED, ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF REQUIRED.
10. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS, AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
11. PROVIDE ACCESS DOORS TO MVD IF THEY ARE LOCATED WHERE ACCESS FOR ADJUSTMENT IS NOT AVAILABLE.
12. PROVIDE DIFFUSERS WITH A MAXIMUM OF 5'-0" OF FLEXIBLE DUCT.
13. DUCT SIZES TO DIFFUSERS SHALL BE THE SAME SIZE AS THE DIFFUSER NECK SIZE.

SHEET INDEX

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A&O PROJECT #130158

PROJECT
HIGHLAND MANOR COMMUNITY SAFE ROOM |
CITY OF MADISON - CONTRACT NO. 7343
10 MANOR DRIVE
MADISON, WISCONSIN

SHEET NAME
MECHANICAL TITLE SHEET

Madison

CITY OF MADISON
Contract: 7343

REVISION	DATE

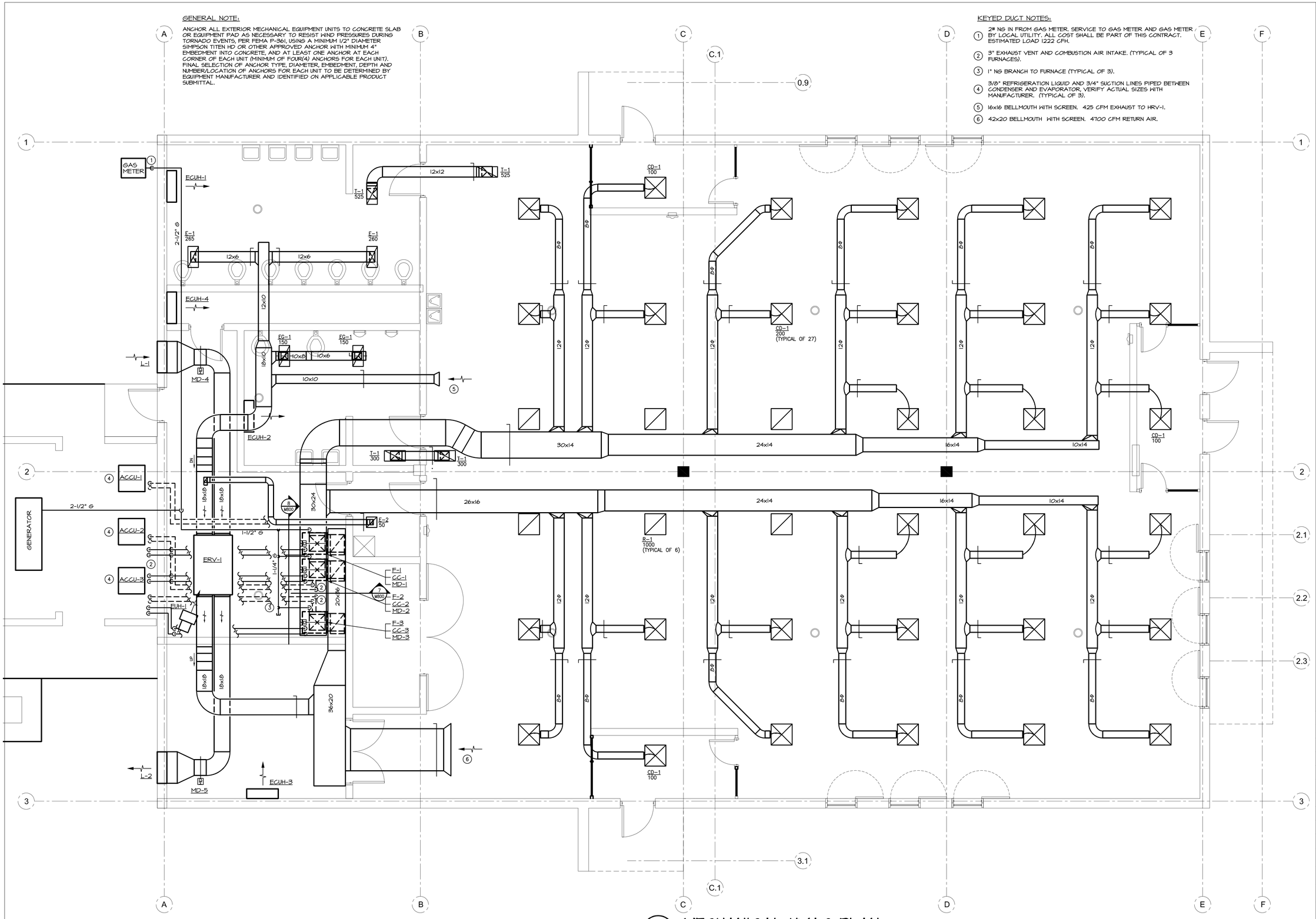
PROJECT NO	1307
SET TYPE	BID DOCUMENTS
DATE	05-30-2014
SHEET NUMBER	M001

GENERAL NOTE:

ANCHOR ALL EXTERIOR MECHANICAL EQUIPMENT UNITS TO CONCRETE SLAB OR EQUIPMENT PAD AS NECESSARY TO RESIST WIND PRESSURES DURING TORNADO EVENTS, PER FEMA P-361, USING A MINIMUM 1/2" DIAMETER SIMPSON TITEN HD OR OTHER APPROVED ANCHOR WITH MINIMUM 4" EMBEDMENT INTO CONCRETE, AND AT LEAST ONE ANCHOR AT EACH CORNER OF EACH UNIT (MINIMUM OF FOUR(4) ANCHORS FOR EACH UNIT). FINAL SELECTION OF ANCHOR TYPE, DIAMETER, EMBEDMENT, DEPTH AND NUMBER/LOCATION OF ANCHORS FOR EACH UNIT TO BE DETERMINED BY EQUIPMENT MANUFACTURER AND IDENTIFIED ON APPLICABLE PRODUCT SUBMITTAL.

KEYED DUCT NOTES:

1. 2# NG IN FROM GAS METER. SERVICE TO GAS METER AND GAS METER BY LOCAL UTILITY. ALL COST SHALL BE PART OF THIS CONTRACT. ESTIMATED LOAD 1222 CFH.
2. 3" EXHAUST VENT AND COMBUSTION AIR INTAKE. (TYPICAL OF 3 FURNACES).
3. 1" NG BRANCH TO FURNACE (TYPICAL OF 3).
4. 3/8" REFRIGERATION LIQUID AND 3/4" SUCTION LINES PIPED BETWEEN CONDENSER AND EVAPORATOR, VERIFY ACTUAL SIZES WITH MANUFACTURER. (TYPICAL OF 3).
5. 16x16 BELLMOUTH WITH SCREEN. 425 CFM EXHAUST TO HRV-1.
6. 42x20 BELLMOUTH WITH SCREEN. 4700 CFM RETURN AIR.



1 M100 MECHANICAL HVAC PLAN

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

assemblage ARCHITECTS

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PROJECT
HIGHLAND MANOR COMMUNITY SAFE ROOM
CITY OF MADISON - CONTRACT NO. 7343
10 MANOR DRIVE
MADISON, WISCONSIN

SHEET NAME
MECHANICAL LAYOUT

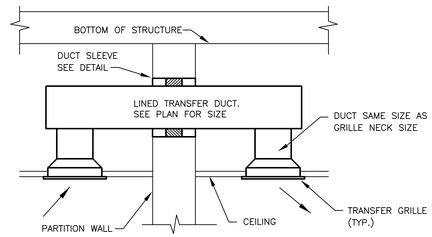
CITY OF MADISON
Contract: 7343

REVISION	DATE

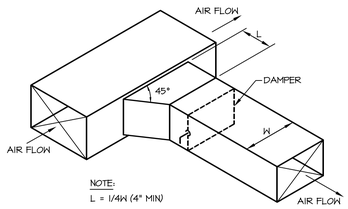
PROJECT NO	1307
SET TYPE	BID DOCUMENTS
DATE	05-30-2014

SHEET NUMBER

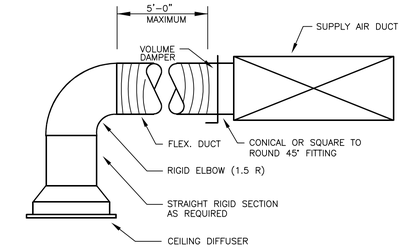
M100



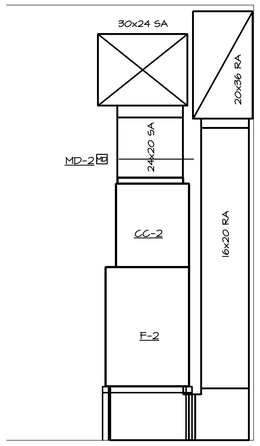
3 M800 TRANSFER DUCT DETAIL
SCALE: NONE



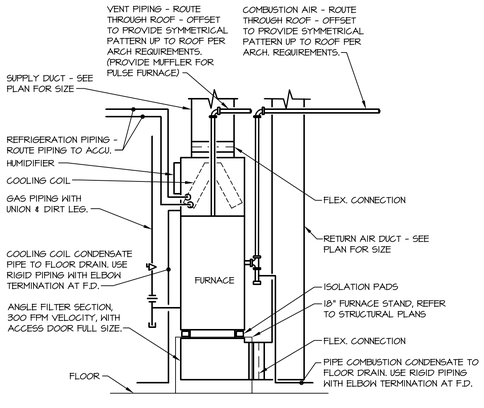
2 M800 BRANCH DUCT TAKEOFF
SCALE: NONE
(REVERSE FLOW ARROWS FOR EXHAUST AND RETURN)



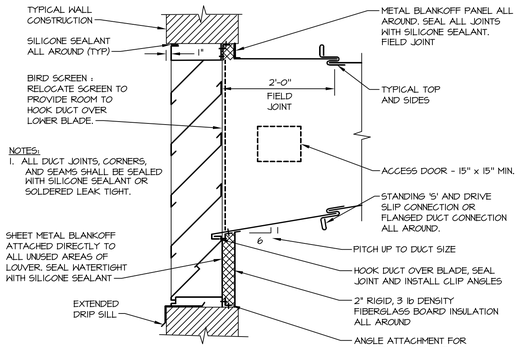
1 M800 CEILING DIFFUSER CONNECTION DETAIL
SCALE: NONE



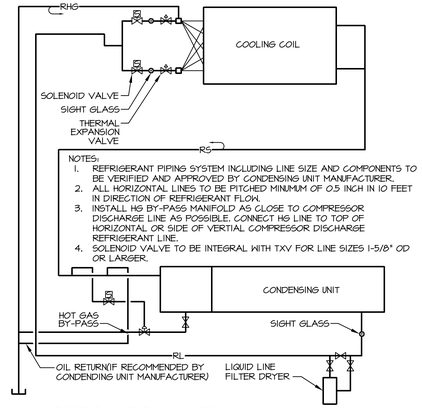
7 M800 MECHANICAL ROOM DUCT SECTION
SCALE: 1/2"=1'-0"



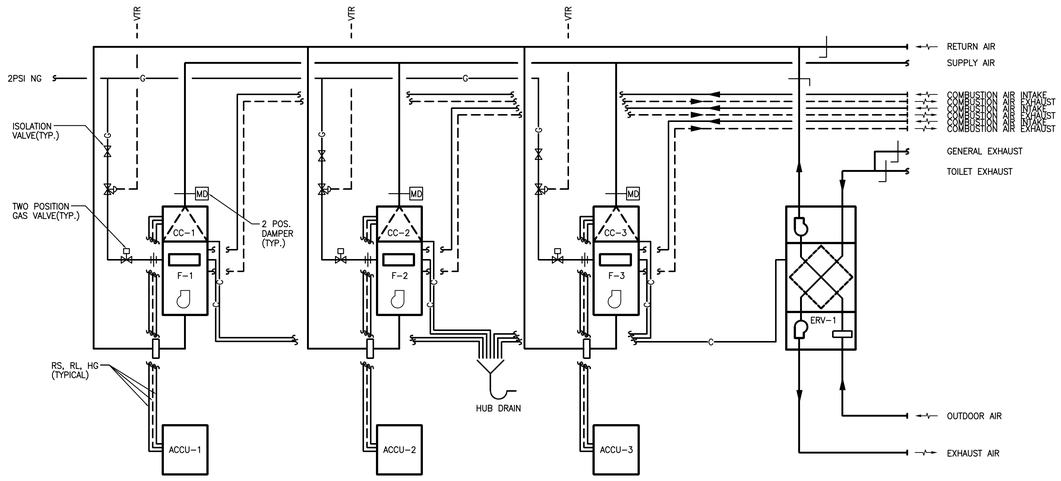
6 M800 SEALED COMBUSTION FURNACE
SCALE: NONE



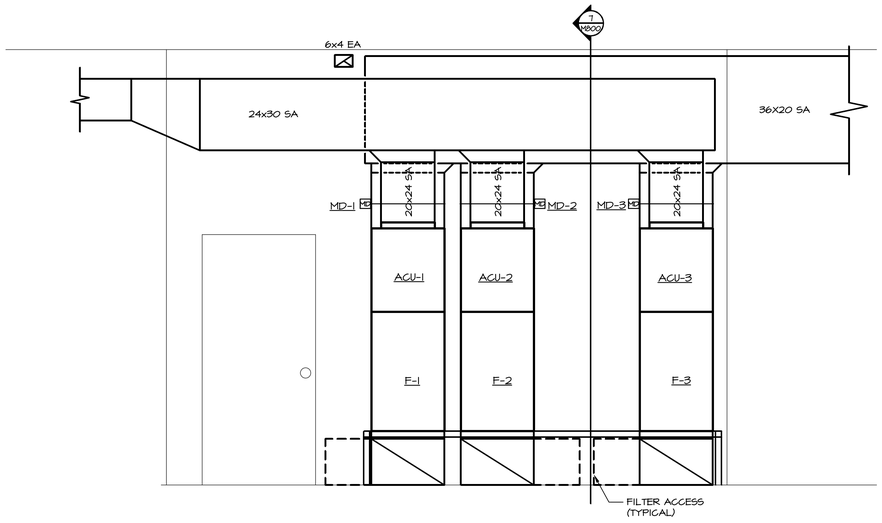
5 M800 LOUVER INSTALLATION DETAIL
SCALE: NONE



4 M800 REFRIGERANT FLOW DIAGRAM
SCALE: NONE



9 M800 MECHANICAL SYSTEM FLOW DIAGRAM
SCALE: NONE



8 M800 MECHANICAL ROOM DUCT SECTION
SCALE: 1/2"=1'-0"

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PROJECT
HIGHLAND MANOR COMMUNITY SAFE ROOM 1
CITY OF MADISON - CONTRACT NO. 7343
10 MANOR DRIVE
MADISON, WISCONSIN

SHEET NAME
MECHANICAL DETAILS, SECTIONS, AND CONTROLS DIAGRAM

Madison
CITY OF MADISON
Contract: 7343

REVISION	DATE

PROJECT NO	1307
SET TYPE	BID DOCUMENTS
DATE	05-30-2014

SHEET NUMBER
M800

HVAC EQUIPMENT ELECTRICAL DATA & STARTER SCHEDULE

EQUIPMENT			ELECTRICAL DATA							STARTER																STARTER/ UNIT CONTROL				CYCLE OF OPERATION						DISCONNECT								
										TYPE								FURNISHED BY			ACCESSORIES									OCCUPIED			UNOCCUPIED			TYPE				FURNISHED BY				
UNIT TAG	UNIT LOCATION	STARTER LOCATION	HORSEPOWER	KW	FLA	MCA	MOCP	VOLTAGE	PHASE	INTEGRAL	MANUAL	MAGNETIC	COMBINATION	VFD	VFD BYPASS	REDUCED VOLTAGE	TWO SPEED	EQUIPMENT MANUFACTURER	MECHANICAL CONTRACTOR	ELECTRICAL CONTRACTOR	ON-OFF	HAND-OFF-AUTO	PILOT LIGHT	PUSH BUTTON	PHASE LOSS PROTECTION	TEMP. CONTROL	MANUAL	INTEGRAL	INTERLOCK WITH	ON	OFF	INTERMITTENT	ON	OFF	INTERMITTENT	NOT REQUIRED	WEATHERPROOF	PREWIRED	FUSIBLE	EQUIPMENT MANUFACTURER	MECHANICAL CONTRACTOR	ELECTRICAL CONTRACTOR	STANDBY POWER	REMARKS
F-1	MECH ROOM	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
F-2	MECH ROOM	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
F-3	MECH ROOM	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
ACCU-1	OUTSIDE	OUTSIDE	-	-	-	-	-	-	-	●								●							●	●			-			●			●		●		●		●			①
ACCU-2	OUTSIDE	OUTSIDE	-	-	-	-	-	-	-	●								●							●	●			-			●			●		●		●		●			①
ACCU-3	OUTSIDE	OUTSIDE	-	-	-	-	-	-	-	●								●							●	●			-			●			●		●		●		●			①
ERV-1 SUPPLY ERV-1 EXHAUST	MECH ROOM	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-	●				●		●								
ECUH-1	WOMENS TOILET	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
ECUH-2	MENS TOILET	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
ECUH-3	STORAGE	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
ECUH-4	PBG. CHASE	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								
EUH-1	MECH ROOM	INTEGRAL	-	-	-	-	-	-	-	●								●							●	●			-			●			●	●								

GENERAL NOTES:

1. REFER TO HVAC EQUIPMENT SCHEDULES FOR ADDITIONAL POWERED EQUIPMENT COMPONENTS THAT REQUIRE ELECTRICAL CONNECTIONS.

KEYED NOTES:

① PROVIDE STAND-ALONE DISCONNECT FOR THIS UNIT.

LOUVERS

L-X

TAG	SERVICE	AIRFLOW (CFM)	SIZE WxH (IN)	FREE AREA (SQ FT.)	FREE AREA VEL. (FPM)	STATIC PRESSURE IN W.C.	REMARKS
1	HRV-1 EXHAUST	1300	36x24	6	500	X	
2	HRV-1 INTAKE	1300	36x24	6	500	X	

FURNACE SCHEDULE

F-X

UNIT NO.	SERVICE	LOCATION	MANUFACTURER	MODEL	SUPPLY FAN					COOLING COIL								GAS-FIRED HEATING DATA		MIN. - MAX. GAS INPUT PRESSURE	VOLTS	PHASE	REMARKS
					SUPPLY CFM	MIN. O.A. CFM	EXT. S.P. (IN. WC)	SUPPLY FAN HP	SUPPLY FAN SIZE	TOTAL CAP. (MBH)	SENSIBLE CAP. (MBH)	EAT (°F) DB	EAT (°F) WB	LAT (°F) DB	LAT (°F) WB	FACE VEL. FPM MAX.	MAX. AIR PD. (IN W.G.)	MBH INPUT	MBH OUTPUT				
1	COMMUNITY ROOM	MECH ROOM	YORK	TM9X	2000	435	.5	3/4	11"x11"	55.5	38.1	84.2	69.0	47.6	47.0			120	114	N/A	120	1	
2	COMMUNITY ROOM	MECH ROOM	YORK	TM9X	2000	435	.5	3/4	11"x11"	55.5	38.1	84.2	69.0	47.6	47.0			120	114	N/A	120	1	
3	COMMUNITY ROOM	MECH ROOM	YORK	TM9X	2000	435	.5	3/4	11"x11"	55.5	38.1	84.2	69.0	47.6	47.0			120	114	N/A	120	1	

AIR DEVICE SCHEDULE

KEY

E - 1 (3) — THROW (IF USED FOR DIFFUSERS ONLY)
300 — UNIT NUMBER — CFM

KEY
S = SUPPLY
R = RETURN
E = EXHAUST
T = TRANSFER
SD = SLOT DIFFUSER (SUPPLY)
CD = CEILING DIFFUSER (SUPPLY)

UNIT NO.	MANUFACTURER / MODEL NO.	TYPE	SIZE (FACE / NECK)	CFM RANGE	MATERIAL	MOUNTING LAY-IN	MOUNTING SURFACE	MOUNTING SIDEWALL	DAMPER	REMARKS
CD-1	TITUS / TDCA	SQUARE / LOUVERED	12"x12" / 8"Φ	151 - 270	STEEL	●				①
R-1	TITUS / PAR	EGG CRATE	24"x24"	451 - 1000	STEEL	●				
E-1	TITUS / 350RL	LOUVERED GRILLE	24"x12" / 22"x10"	200 - 450	STEEL	●				
E-2	TITUS / 350RL	LOUVERED GRILLE	12"x12" / 10"x10"	0 - 150	STEEL	●				
T-1	TITUS / 350RL	LOUVERED GRILLE	24"x12" / 22"x10"	200 - 550	STEEL	●				

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY MOUNTING SURFACE / FRAME REQUIREMENTS
2. BRANCH DUCT SIZE TO DIFFUSER SHALL BE THE SAME AS THE NECK SIZE OF THE DIFFUSER UNLESS NOTED OTHERWISE.
3. SEE SPECIFICATION SECTION 23 37 13 FOR GRILLE, REGISTER, AND DIFFUSER FINISHES.
4. MAXIMUM STATIC PRESSURE DROP THROUGH GRILLE, REGISTER, OR DIFFUSER SHALL NOT EXCEED 0.1".
5. MAXIMUM NC LEVELS FOR GRILLES, REGISTERS, OR DIFFUSERS SHALL NOT EXCEED 25.
6. UNLESS THROW IS NOTED OTHERWISE, ALL DIFFUSERS SHALL BE 4-WAY THROW.

ELECTRIC UNIT HEATER SCHEDULE

EUH-XX

UNIT NO.	SERVICE/LOCATION	CFM OF STD AIR	KW INPUT	CAPACITY BTU/HR	CONTROL STEPS	FAN MOTOR HP	VOLTS	PHASE	AIR FLOW DISCHARGE	REMARKS
1	MECH ROOM	350	3	10,200	X	1/100	240	1Φ	350	

AIR COOLED CONDENSING UNIT SCHEDULE

ACCU-X AIR COOLED CONDENSING UNIT (OUTDOOR UNIT)

UNIT NO.	YORK MODEL NO.	NOMINAL CAPACITY (BTU/HR)	SEER	UNIT ELECTRICAL DATA VOLTS	PHASE	MCA	MOCP	SERVES	REMARKS
1	YCJF18	60000	14.5	220	1	35	50	CC-1, F-1	
2	YCJF18	60000	14.5	220	1	35	50	CC-2, F-2	
3	YCJF18	60000	14.5	220	1	35	50	CC-3, F-3	

ENERGY RECOVERY VENTILATOR SCHEDULE

ERV-X

UNIT NO.	SERVICE	LOCATION	RENEW-AIRE MODEL NO.	SUPPLY AIR DATA					EXHAUST AIR DATA				VOLTAGE / PHASE	MCA	HP	FILTERS		UNIT WEIGHT (LBS.)	REMARKS
				CFM OF STD AIR	EAT (°F)	LAT (°F)	MIN. SENS. EFFICIENCY	SA EXT. S.P. (" WC)	CFM OF STD AIR	EAT (°F)	LAT (°F)	EA EXT. S.P. (" WC)				EXHAUST AIR	SUPPLY AIR		
1	F-1, F-2, F-3	MECH ROOM	HE2XINH	1600	90	79	73	0.5	1300	75	85	0.5	220/1	18.5	1.5	N/A	N/A	414	

ELECTRIC CABINET UNIT HEATER SCHEDULE

ECUH-XX

UNIT NO.	SERVICE	LOCATION	CABINET SIZE (INCHES) LENGTH	HEIGHT	DEPTH	RECESS	KW INPUT	MBH	CFM	SPEEDS	FAN HP	VOLTS	PHASE	BOTTOM ABOVE FLR (IN.)	REMARKS
1	SUPPLEMENTAL HEAT	WOMENS RESTROOM	10.5	12.5	3.75	0	1.5	5120	65	-	-	120	1Φ	36	1
2	SUPPLEMENTAL HEAT	MENS RESTROOM	10.5	12.5	3.75	0	1.5	5120	65	-	-	120	1Φ	36	1
3	SUPPLEMENTAL HEAT	STORAGE	10.5	12.5	3.75	0	1.5	5120	65	-	-	120	1Φ	36	1
4	SUPPLEMENTAL HEAT	PLUMBING CHASE	10.5	12.5	3.75	0	1.5	5120	65	-	-	120	1Φ	36	1

KEYED NOTES:

① SURFACE MOUNTING FRAME TO BE SUPPLIED BY MANUFACTURER.

CONTROL DAMPERS AND SMOKE DAMPERS

TAG	SERVICE	BLADE TYPE OPPOSED	BLADE TYPE PARALLEL	FAIL POSITION FC	FAIL POSITION FO	SIZE (IN) W	SIZE (IN) H	ACTUAL TYPE (ELECT./ PNEUMATIC)	REMARKS
1	F-1	X			X	24	20	ELEC	
2	F-2	X			X	24	20	ELEC	
3	F-3	X			X	24	20	ELEC	
4	L-1	X			X	18	18	ELEC	
5	L-2	X			X	18	18	ELEC	

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A&O PROJECT #130158

PROJECT
HIGHLAND MANOR COMMUNITY SAFE ROOM 1
CITY OF MADISON - CONTRACT NO. 7343
10 MANOR DRIVE
MADISON, WISCONSIN

SHEET NAME
MECHANICAL SCHEDULES

Madison
CITY OF MADISON
Contract: 7343

REVISION	DATE

PROJECT NO 1307

SET TYPE BID DOCUMENTS

DATE 05-30-2014

SHEET NUMBER

M900