

<u>APPL</u>	ICABLE CODES
CONTRACTOR SHALL COMPLY V	VITH APPLICABLE CODES AND LOCAL AMENDMENTS.
BUILDING CODE:	IBC 2015 EDITION
MECHANICAL CODE:	IMC 2015 EDITION
ELECTRICAL CODE:	NFPA 70 (NEC) 2017 EDITION
ENERGY CONSERVATION CODE:	IECC 2015
LOCAL BUILDING CODE:	CURRENT EDITION

	CONTRACTOR ABBREVIATION KEY
ABBR:	DESCRIPTION:
G.C. M.C.	GENERAL CONTRACTOR  MECHANICAL CONTRACTOR

CONTAC	CT PERSONS:
DESCRIPTION:	PERSON:
PROJECT MANAGER	DAVE INGHRAM
MECHANICAL	NOLAN HAGERTY

	MECHANICAL SYMBOL LIST
SYMBOL:	DESCRIPTION:
	FLEXIBLE DUCT
	MANUAL VOLUME DAMPER
	DUCT DOWN
	DUCT UP
$\boxtimes$	SUPPLY/OUTSIDE AIR DUCT SECTION
	RETURN AIR DUCT SECTION
	EXHAUST/RELIEF AIR DUCT SECTION
<u>CD-1</u> 6/115	AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM
<b>—</b>	PITCH IN DIRECTION

MECHANICAL ABBREVIATION KEY		
ABBR:	DESCRIPTION:	
EA	EXHAUST/RELIEF AIR	
EF	EXHAUST FAN	
NC	NEW CONNECTION	
RA	RETURN AIR	
SA	SUPPLY AIR	
TAB	TERMINAL AIR BOX	
TYP	TYPICAL	

### **MECHANICAL GENERAL NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, VENTILATION.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
- 2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR
- PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
- 4. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
- 5. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF
- 6. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND
- 7. SEAL ALL ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH ROOFS SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
- 8. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF DUCTWORK, ETC.
- 9. DO NOT BLOCK EQUIPMENT SERVICE CLEARANCES. 10. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR STARTERS, SWITCHES, AND DISCONNECTS.
- 11. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE.

#### **MECHANICAL RENOVATION NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED

- 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
- 2. COORDINATE ACCESS TO WORK AREA WITH OWNER. VERIFY NEED FOR OVERTIME HOURS. 3. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS
- BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 4. FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK BEFORE FABRICATION. RISES
- AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS. 5. EACH CONTRACTOR SHALL CUT AND PATCH ROOFS AND WALLS ASSOCIATED WITH HIS OR
- HER WORK. 6. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL
- CONTRACTORS. NOTIFY THE OWNER OF AFFECTED AREAS PRIOR TO BIDDING. 7. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO
- ALLOW FOR INSTALLATION OF NEW EQUIPMENT OR DUCTWORK. 8. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT REMAIN ACTIVE.
- 9. OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.

## **VENTILATION GENERAL NOTES:**

- 1. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT
- 2. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING DRAWINGS, AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL USE PRE-BALANCE VALUES, AND NOT EXISTING CFM SHOWN ON DRAWINGS.

### **TAB POST-CONSTRUCTION NOTES:**

1. AFTER CONSTRUCTION ACTIVITIES ARE COMPLETE, TESTING, ADJUSTING (TAB) AND BALANCING CONTRACTOR SHALL REBALANCE EXHAUST FANS AS REQUIRED TO ACHIEVE THE NEW AIRFLOW VALUES SHOWN ON THE CONSTRUCTION DRAWINGS.

3. THE FINAL POST CONSTRUCTION REPORT SHALL INCLUDE AIRFLOWS OF ALL AIR INLETS,

- 2. TAB CONTRACTOR SHALL COMPILE AND SUBMIT COPIES OF THE FINAL POST-
- CONSTRUCTION TAB REPORT.
- AIR OUTLETS, AND EQUIPMENT AFFECTED BY CONSTRUCTION. 4. THE FINAL POST CONSTRUCTION REPORT SHALL INCLUDE THE FOLLOWING FOR KEF-2: FLOW RATE, TOTAL STATIC PRESSURE, INLET PRESSURE, DISCHARGE PRESSURE, AND FAN
- 5. AIR INLETS AND OUTLETS SHALL BE ADJUSTED TO +/- 10% OF THE SCHEDULED VALUES.

## **MECHANICAL SHEET INDEX**

MECHANICAL COVERSHEET M101 FLOOR PLAN - MECHANICAL M102 **ROOF PLAN - MECHANICAL** M501 MECHANICAL DETAILS AND SCHEDULES

# DOC MPCF-Kitchen Dishwasher-Vent Replacement

Mt. Pleasant, Iowa DAS#9067.00 RFQ0919335104

## Mt. Pleasant Correctional Facility



DES MOINES, IA

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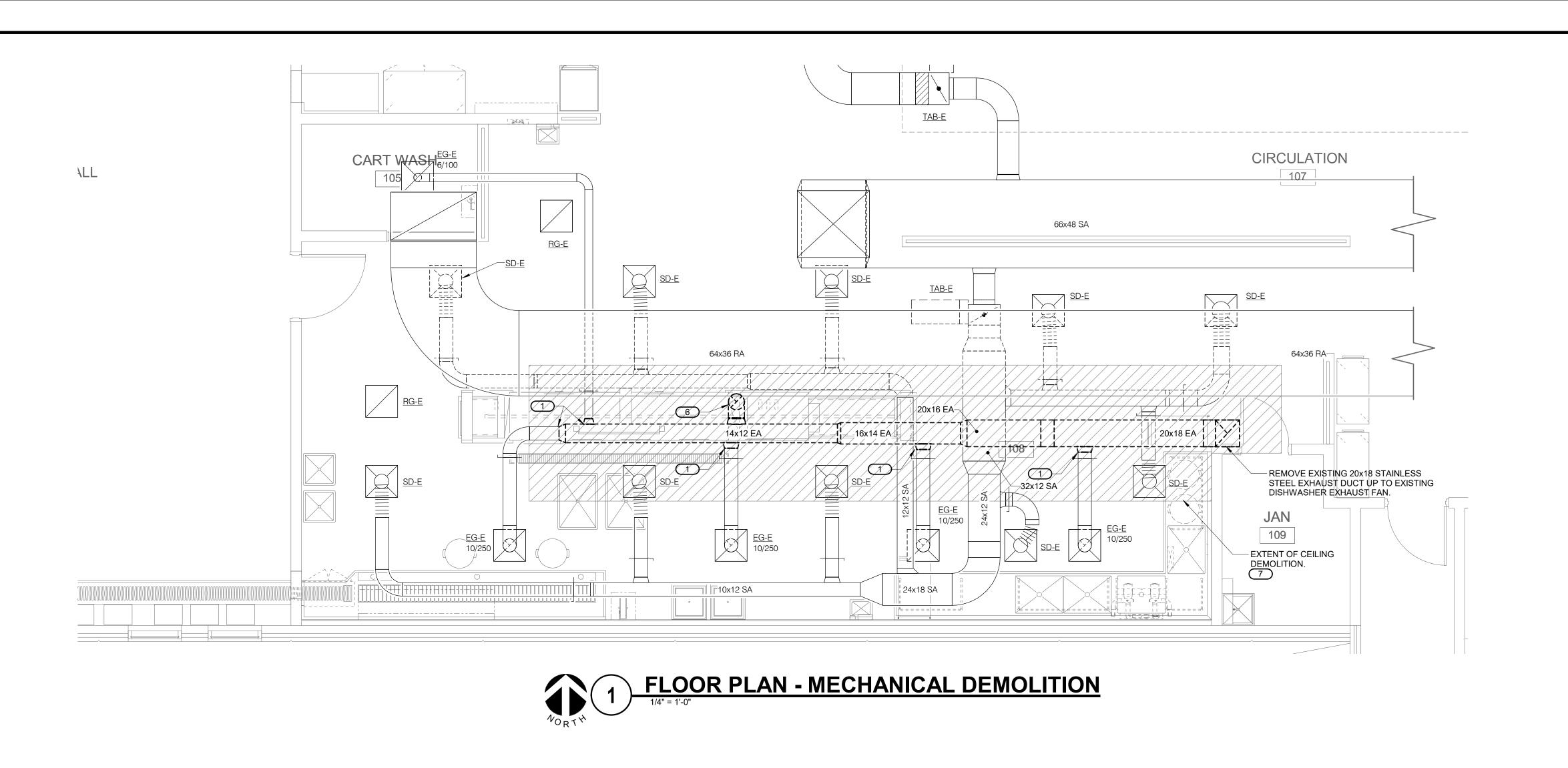
Revision / Issue

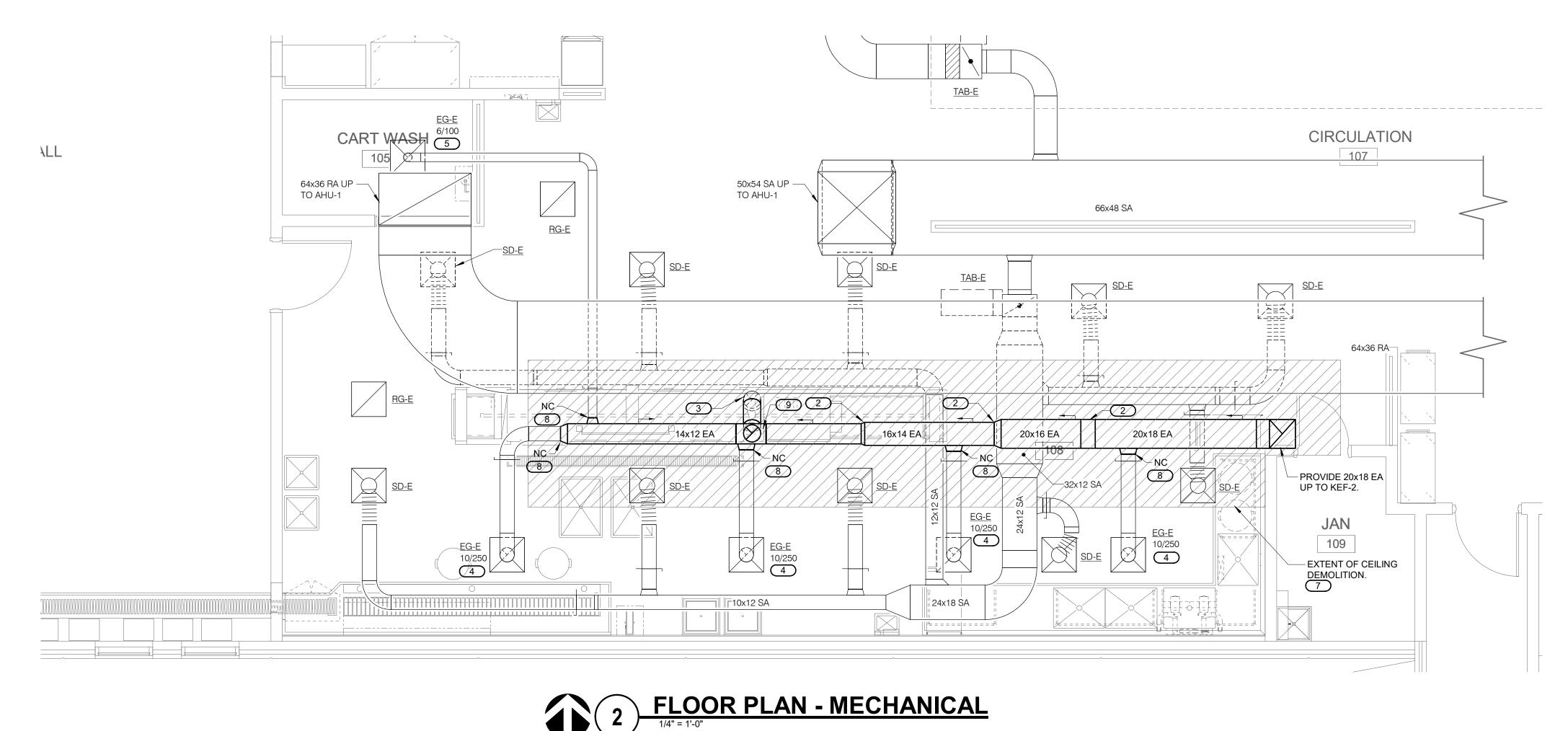
SHEET INFORMATION 100% BID DOCUMENTS 02-22-19 Job Number

> SHEET TITLE MECHANICAL COVERSHEET

SHEET NUMBER

As indicated





#### **GENERAL NOTES**:

- . ALL ELBOWS SHALL BE RADIUS TYPE RE1 WITHOUT VANES (CENTER RADIUS R/W=1.0). REFER TO 2/M501 FOR ELBOW CONSTRUCTION
- NEW DUCTWORK SHALL BE ALL WELDED, 16 GAUGE, TYPE 304L STAINLESS STEEL. DUCTWORK SHALL HAVE A CONTINUOUS SLOPE BACK TOWARD THE DISHWASHER. PROVIDE ALL NEW DUCTWORK WITH 1 1/2" THICK FIBERGLASS DUCT WRAP INSULATION. INSULATION SHALL HAVE A MINIMUM R-VALUE OF 6.5. PROVIDE WITH KRAFT REINFORCED
- FOIL SCRIM VAPOR BARRIER WITH SELF-SEALING ADHESIVE JOINTS. SUPPORT ALL DUCTWORK PER SMACNA STANDARDS.

#### KEYNOTES: #

- REMOVE DUCTWORK AND INSULATION BACK TO THIS LOCATION AND PREPARE FOR NEW CONNECTION.
- TRANSITION SHALL BE FLAT ON BOTTOM TO ALLOW FOR CONDENSATE DRAINAGE BACK TO DISHWASHER.
- PROVIDE 12"ø EA DN TO DISHWASHER. REBALANCE AIRFLOW TO 1,000 CFM. REBALANCE EXHAUST GRILLE TO 250 CFM. REBALANCE EXHAUST GRILLE TO 100 CFM. REMOVE EXISTING 12"Ø DISHWASHER
- PREPARE FOR NEW WORK. MECHANICAL CONTRACTOR SHALL REMOVE EXISTING CEILING TILES AND GRID AS REQUIRED FOR NEW ABOVE-CEILING WORK. SALVAGE AND REINSTALL WHEN ABOVE-CEILING WORK IS COMPLETE. CONFIRM IF ANY ATTIC STOCK

EXHAUST DOWN TO DISHWASHER AND

- EXISTS WITH OWNER PRIOR TO REINSTALLATION AND REPLACE WORST UNITS WITH ATTIC STOCK WHERE POSSIBLE. VERIFY CONDITION OF EXISTING BRANCH DUCTWORK. PORTIONS OF EXISTING BRANCH DUCT MAY NEED REPLACED FOR CONNECTION
- TO NEW STAINLESS STEEL DUCTWORK. PROVIDE LOW POINT IN DUCTWORK FOR CONDENSATE TO DRAIN BACK TO DISHWASHER.

# DOC MPCF-Kitchen Dishwasher-Vent Replacement

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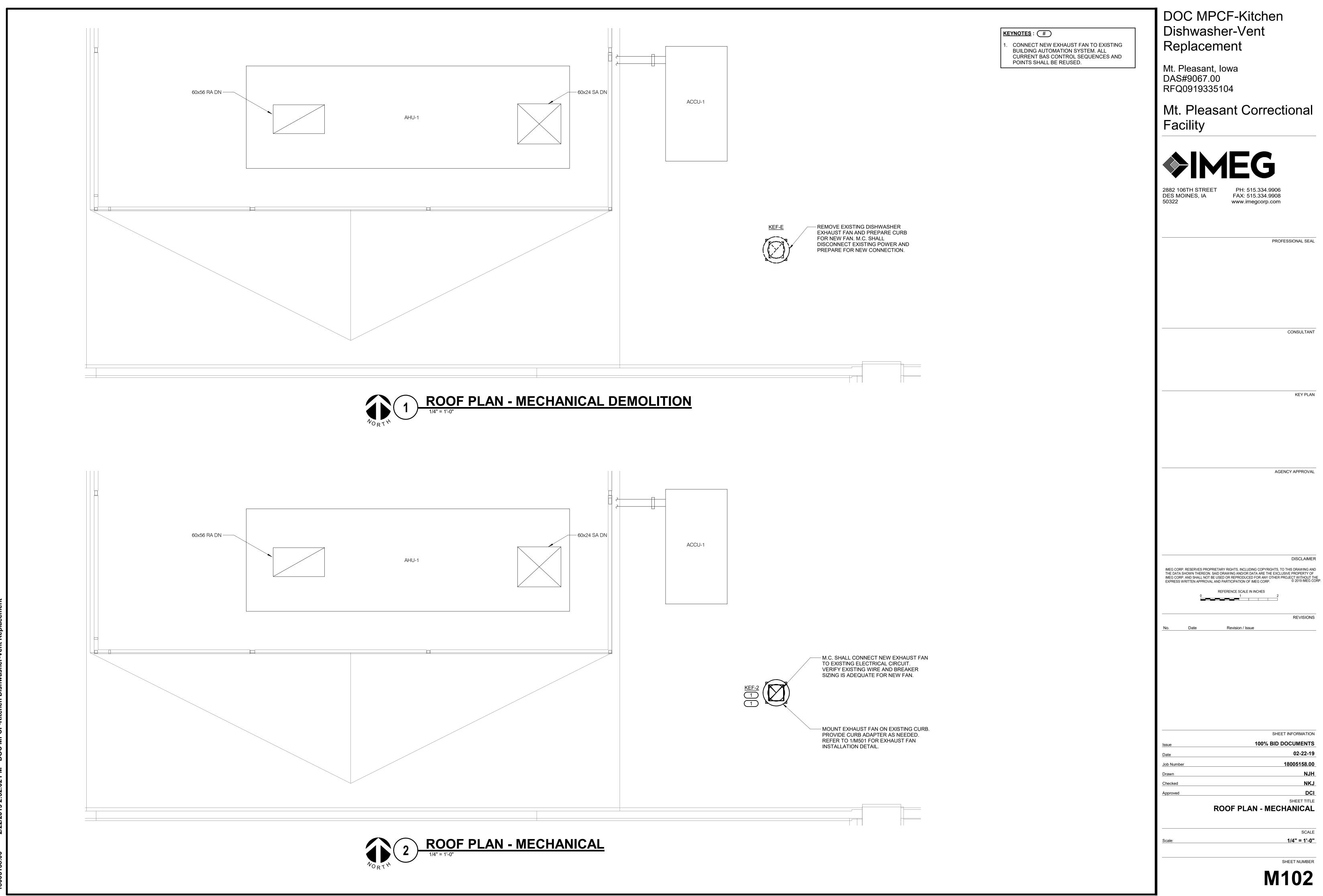
SHEET INFORMATION

SHEET TITLE FLOOR PLAN - MECHANICAL

1/4" = 1'-0"

M101

SHEET NUMBER



DOC MPCF-Kitchen Dishwasher-Vent Replacement

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REFERENCE SCALE IN INCHES

SHEET INFORMATION 100% BID DOCUMENTS

> SHEET TITLE **ROOF PLAN - MECHANICAL**

1/4" = 1'-0"

M102

M.C. SHALL CONNECT NEW EXHAUST FAN TO EXISTING 120 VOLT CIRCUIT.

FAN SHALL HAVE ALL ALUMINUM CONSTRUCTION, SUITABLE FOR CONVEYING AIR WITH HIGH MOISTURE CONTENT.

FAN WHEEL SHALL BE CENTRIFUGAL TYPE, ALUMINUM HUB AND WHEEL WITH BACKWARD INCLINED BLADES, STATICALLY AND DYNAMICALLY BALANCED.

FAN HOUSING SHALL BE REMOVABLE, SPUN ALUMINUM DOME OR RECTANGULAR TOP, WITH SQUARE, ONE PIECE, ALUMINUM BASE AND CURB CAP WITH VENTURI INLET CONE.

FAN SHAFT SHALL BE TURNED, GROUND AND POLISHED STEEL; KEYED TO WHEEL HUB.

ALL STEEL PARTS EPOXY COATED WITH NON CORROSIVE FASTENERS. V BELT DRIVE WITH ADJUSTABLE PITCH DRIVE SHEAVE AND ADJUSTABLE MOTOR MOUNTINGS FOR BELT TENSIONING.

MOTOR MOUNTED OUTSIDE OF AIR STREAM AND VENTILATED WITH OUTSIDE AIR.

ALUMINUM OR BRASS BIRD SCREEN.

DAMPERS SHALL BE ALUMINUM WITH BRASS BUSHINGS, BLADE SEALS AND BLADE TIE RODS. LEAKAGE SHALL NOT EXCEED 4 CFM/SQ.FT @1" SP (OR SHALL BE AMCA CLASS 1 CERTIFIED).

KEF-2 DISHWASHER 2100 1.20 1575 BELT 16.5 GRAVITY NOTE 13 0.9 1 120 1 MFR NF MFR FV

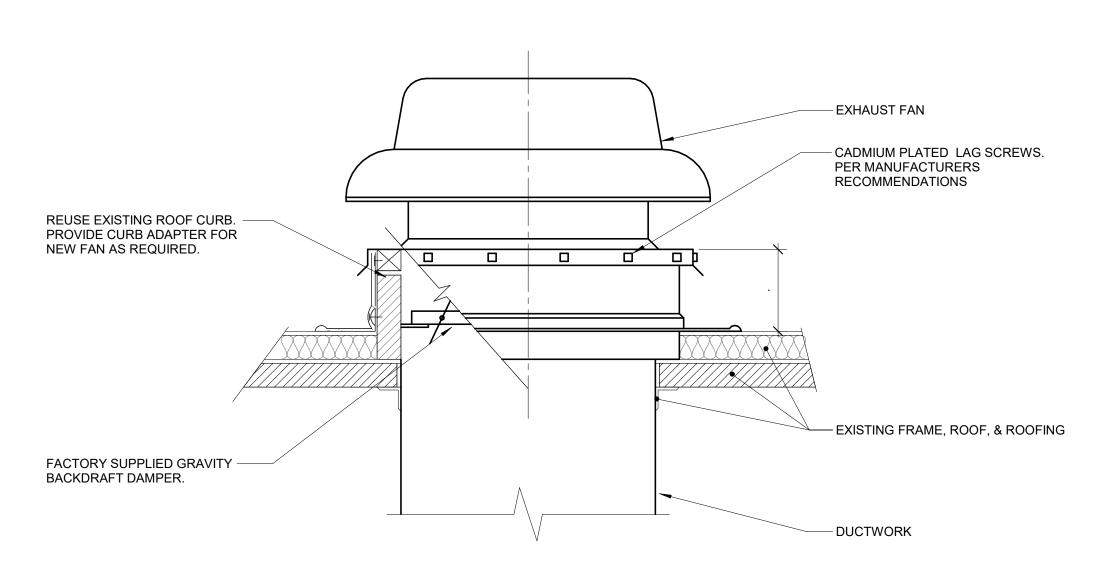
PROVIDE WITH MILL ALUMINUM FINISH.

PERMANENTLY LUBRICATED, PERMANENTLY SEALED, SELF-ALIGNING BALL BEARINGS.

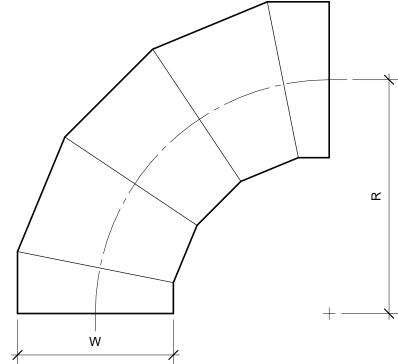
PROVIDE UNITED ENERTECH CURB ADAPTER, OR APPROVED EQUAL, TO CONNECT NEW EXHAUST FAN TO EXISTING CURB.

ELECTRICAL (NOTE 1) DISCONNECT CONTROLLER/ STARTER TAG NAME AREA SERVED CFM S.P. IN. FAN RPM (NOTE D & F) TYPE SONES BACKDRAFT CURB TYPE CURB TYPE CURB TYPE CURB TYPE CURB TYPE CURB TYPE NOTE C)

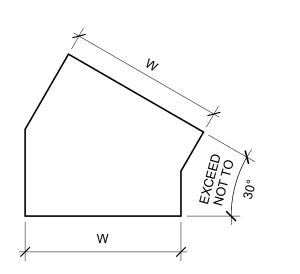
KEY NAME	SCHEDULE GENERAL NOTES
A.	DISCONNECT AND CONTROLLER STARTER FURNISHED AND
	INSTALLED BY:
	MFR = MANUFACTURER
B.	DISCONNECT TYPE:
	NF = NON-FUSED
C.	CONTROLLER STARTER TYPE:
	FV = FULL VOLTAGE
D.	FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE,
E.	NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR
	NAME PLATE RATING.
F.	MUST BE WITHIN +/- 10% OF SCHEDULED RPM.





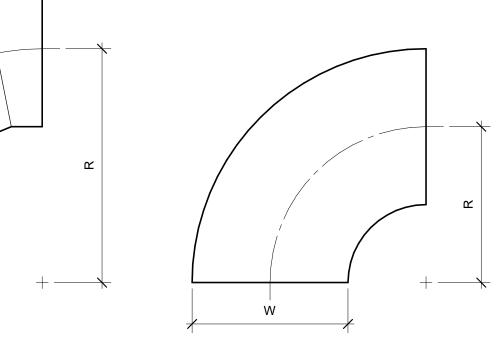


OVAL / ROUND **RADIUS ELBOW** SMOOTH OR 5 GORE (MINIMUM) R/W = 1.5 (MINIMUM)



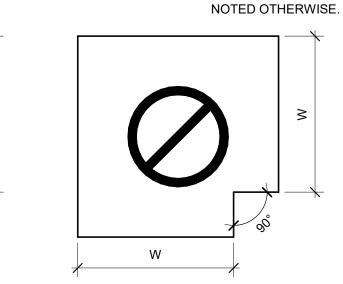
RECTANGULAR MITERED ELBOW TYPE RE6

USE ONLY AS PART OF OFFSETS AND TRANSITIONS PER FIGURE 4-7 TYPE 2 OR AS SHOWN ON DRAWINGS. OFFSETS ABOVE 30° SHALL BE TYPE RE1.

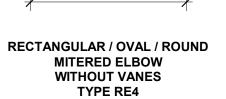


DX NOTES 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

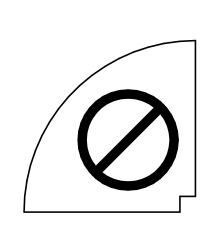
RECTANGULAR **RADIUS ELBOW** TYPE RE1 R/W = 1.0 (MINIMUM)R/W < 1.0 SHALL BE TYPE



RECTANGULAR **MITERED ELBOW** WITH VANES TYPE RE2



NOT ALLOWED



RECTANGULAR

RADIUS ELBOW WITH VANES

TYPE RE3

FOURTH EDITION, SECTION 5.14 "SPLITTER VANES" AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS, THIRD EDITION,

FIGURES 4-2 AND 4-9 AND CHARTS 4-1 AND 4-1M. ELBOW SHALL HAVE THREE SPLITTER VANES AND r/W = 0.10 (R/W = 0.60) UNLESS

REFER TO SMACNA HVAC SYSTEMS DUCT DESIGN MANUAL,

RECTANGULAR RADIUS ELBOW WITH SQUARE THROAT **NOT ALLOWED** 



- 1. BEAD, CROSSBREAK, AND REINFORCE FLAT SURFACES AS IN
- STRAIGHT DUCT. 2. DEFAULT ELBOW SHALL BE TYPE "RE1".
- 3. ELBOW TYPES SHALL BE INSTALLED AS SHOWN AND NOT BE SUBSTITUTED WITHOUT PERMISSION. EXCEPTION: RE1 OR RE3 MAY BE SUBSTITUTED FOR RE2.

COLIEDIUE CENIEDAL NOTEC

Mt. Pleasant Correctional

DOC MPCF-Kitchen

Dishwasher-Vent

Replacement

Mt. Pleasant, Iowa

RFQ0919335104

DAS#9067.00

Facility

DES MOINES, IA 50322

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SHEET INFORMATION 100% BID DOCUMENTS 02-22-19 Job Number SHEET TITLE

**MECHANICAL DETAILS AND SCHEDULES** 

M501

12" = 1'-0"

SHEET NUMBER