MECHANICAL NOTES

GENERAL: ALL WORK SHALL BE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, AND LOCAL CODES (ed 2014) AND ORDINANCES. INSTALLATION SHALL COMPLY WITH THE STANDARDS SET BY NFPA, ASHRAE, SMACNA, NEC AND UL.

THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS BEFORE SUBMITTING A PROPOSAL. THE INFORMATION GIVEN HEREIN AND ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED, BUT ITS EXTREME ACCURACY IS NOT GUARANTEED. CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION GIVEN AS EXISTING CONDITIONS.

THE DRAWINGS ARE DIAGRAMMATIC, INTENDED TO SHOW GENERAL ARRANGEMENT, CAPACITY AND LOCATION OF VARIOUS COMPONENTS, EQUIPMENT, AND DEVICES.

THE SYSTEMS, EQUIPMENT, DEVICES AND ACCESSORIES SHALL BE INSTALLED, FINISHED, TESTED AND ADJUSTED FOR CONTINUOUS AND PROPER OPERATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK FITTING IN PLACE AND SHALL COORDINATE WITH OTHER TRADES TO AVOID INTERFERENCE WITH THEIR WORK.

IF WORK IS REQUIRED IN A MANNER TO MAKE IT IMPOSSIBLE TO PRODUCE FIRST CLASS WORK, OR SHOULD DISCREPANCIES APPEAR AMONG THE CONTRACT DOCUMENTS, OR BETWEEN THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S RECOMMENDATIONS, OR DISCREPANCIES OCCUR BETWEEN ACTURAL CONDITIONS AND CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REQUEST INTERPRETATION BEFORE PROCEEDING WITH WORK.

CONTRACTOR SHALL FURNISH AND INSTALL ALL MINOR ITEMS WHICH ARE OBVIOUSLY AND REASONABLY NECESSARY TO COMPLETE THE INSTALLATION WHETHER OR NOT SPECIFIED IN THE DOCUMENTS.

REFER TO ARCHITECTURAL EXTERIOR BUILDING ELEVATIONS FOR LOCATION OF LOUVERS AND WALL CAPS ON EXTERIOR FACADES.

CONTRACTOR SHALL CLEAN COILS AND REPLACE FILTERS AT SUBSTANTIAL COMPLETION.

<u>OPERATING AND MAINTENANCE DATA:</u> SUBMIT THREE COPIES OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS AND SPARE PARTS LIST FOR EACH PIECE

GUARANTEE: THE ONE-YEAR GUARANTEE PERIOD SHALL NOT START UNTIL THE PROJECT IS FULLY COMPLETED AND THE CONTRACTOR HAS RECEIVED THE FINAL PAYMENT AND CERTIFICATION OF COMPLETION. ALL EQUIPMENT AND ALL WORK SHALI BE FULLY GUARANTEED, PARTS AND LABOR, FOR ONE YEAR FROM THE DATE OF THE CERTIFICATE OF COMPLETION. REPAIRS MADE DURING THIS PERIOD MUST BE FULLY GUARANTEED FOR AN ADDITIONAL ONE YEAR PERIOD FROM THE DATE OF REPAIRS. IN ADDITION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO THE BUILDING, AND ITS CONTENTS OR OTHER EQUIPMENT, CAUSED BY DEFECTS OR IMPROPER INSTALLATION OF EQUIPMENT OR MATERIAL INSTALLED. ALL HAVC UNITS SHALL HAVE A FIVE (5) YEAR WARRANTY ON COMPRESSORS.

SHOP DRAWINGS: THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH PROCEDURES OUTLINED IN DIVISION 1. RESPONSIBILITY FOR ERRORS OR OMISSIONS IN THE SUBMITTALS SHALL NOT BE RELIEVED BY THE ARCHITECT'S OR ENGINEER'S REVIEW. ENGINEER'S PROCESSING WILL NOT CONSTITUTE A COMPLETE CHECK BUT WILL INDICATE ONLY THAT A GENERAL METHOD OF CONSTRUCTION AND DETAILING IS SATISFACTORY.

AS-BUILT DRAWINGS: THE CONTRACTOR SHALL KEEP A RUNNING SET OF DRAWINGS SHOWING ALL FIELD MODIFICATIONS FROM THE PERMIT SET IN A CLEAR, CONCISE MANNOR. THESE DRAWINGS SHALL BE MARKED AS "AS BUILT DRAWINGS" AND HANDED OVER TO THE OWNER AT THE COMPLETION OF THE PROJECT.

EQUIPMENT LABELS: ALL MECHANICAL EQUIPMENT SHALL BE LABELED WITH EQUIPMENT TAG AS DESIGNATED ON THE DRAWINGS.

SUBSTITUTIONS: EQUIPMENT AND MATERIALS SPECIFIED SHALL ESTABLISH QUALITY. CAPACITY, TYPE AND DIMENSIONS TO BE INCLUDED IN BASE BID. SUBSTITUTIONS MAY BE CONSIDERED. APPROVAL OF SUCH SUBSTITUTIONS WILL BE BASED ON ABILITY AND CAPACITY TO PERFORM FUNCTION SERVED, QUALITY AND AVAILABILITY OF PARTS AND SERVICE, QUALITY OF EQUIPMENT, MANUFACTURER WARRANTY AND HISTORY OF SERVICE, ETC. THE ENGINEER SHALL REVIEW ALL REQUESTS BUT RESERVES THE RIGHT OF JUDGMENT TO APPROVE OR REJECT ALL PROPOSED SUBSTITUTIONS. IF A SUBSTITUTED PRODUCT OR EQUIPMENT IS REJECTED, PROVIDE THE SPECIFIED PRODUCT OR EQUIPMENT.

ACCESS: CONTRACTOR SHALL ENSURE THAT ACCESS IS PROVIDED FOR ALL ITEMS REQUIRING ACCESS FOR ADJUSTING OR MAINTENANCE. PROVIDE ACCESS PANELS AND DUCT ACCESS DOORS AS NECESSARY WITH NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL REVIEW MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL EQUIPMENT AND ENSURE THAT MINIMUM CLEARANCES ARE PROVIDED.

DUCT ACCESS DOORS SHALL BE HINGED TYPE. PROVIDE INSULATED ACCESS DOORS FOR INSULATED DUCTWORK. CONSTRUCT OF SAME OR THICKER GAUGE SHEETMETAL AS DUCT IN WHICH IT IS INSTALLED. PROVIDE FLUSH FRAMES FOR UNINSULATED DUCTS. PROVIDE CONTINUOUS HINGE ON ONE SIDE, WITH ONE HANDLE-TYPE LATCH FOR ACCESS DOORS 12" HIGH AND SMALLER AND TWO HANDLE-TYPE LATCHES FOR LARGER ACCSS DOORS.

TEST AND BALANCE: THE CONTRACTOR SHALL ENSURE THAT ALL HVAC DEVICES AND SYSTEMS ARE COMPLETE, TESTED AND BALANCED, AND READY FOR OPERATION WHEN THE FACILITY IS HANDED OVER TO THE OWNER. THE HVAC SYSTEM SHALL BE TESTED IN ACCORDANCE WITH AABC OR NEBB. ELIMINATE OBJECTIONABLE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. SUBMIT REPORT FOR ENGINEER'S REVIEW. CORRECT ALL DISCREPANCIES.

WIND RESISTANCE: ALL EQUIPMENT, APPLIANCE, AND SUPPORTS LOCATED EXTERIOR OF HE FACILITY SHALL BE INSTALLED TO RESIST WIND LOADS AS DETAILED IN THE FLORIDA BUILDING CODE-CHAPTER 16.

CUTTING AND PATCHING: ALL OPENINGS AROUND DUCT OR PIPE PENETRATIONS THROUGH SMOKE OR FIRE RATED FLOORS, CEILINGS OR WALLS SHALL BE SEALED AIRTIGHT WITH MATERIAL HAVING A RATING EQUAL TO THE MATERIAL OF THE WALL, CEILING OR FLOOR PENETRATED.

DUCTWORK (GENERAL): DUCTWORK DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. FABRICATE AND INSTALL IN ACCORDANCE WITH LOW VELOCITY DUCT CONSTRUCTION STANDARDS PUBLISHED BY SHEET METAL AND AIR-CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA). PROVIDE TURNING VANES AT ALL ELBOWS. MAXIMUM ALLOWABLE LEAKAGE IS 2%.

FLEXIBLE DUCT CONNECTORS: PROVIDE UL LISTED 30 OUNCE NEOPRENE COATED FIBERGLASS FABRIC DUCT CONNECTORS AT INTAKE AND DISCHARGE OF ALL HVAC

FIBROUS GLASS DUCTWORK: SUPPLY AND RETURNS SHALL BE FIBERGLASS DUCTBOARD. DUCTBOARD SHALL HAVE WITH AN INTERIOR SURFACE WHICH INHIBITS MOLD AND MILDEW GROWTH. DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH "FIBROUS GLASS DUCT CONSTRUCTION STANDARDS" BY SMANCA. DUCTWORK SHALL HAVE AN OPERATING RANGE OF POSITIVE OR NEGATIVE 2 INCHES W.G. PRESSURE, 1200 FPM VELOCITY AND 250°F AIR TEMPERATURE. DUCTS SHALL BE CONSTRUCTED OF 1-1/2" THICK (R-6) DUCTBOARD WITH A CLASS 1 UL-181 LISTING.

GALVANIZED SHEET METAL DUCTWORK: FRESH AIR AND EXHAUST DUCTS SHALL BE GALVANIZED SHEET METAL DUCTWORK. SEAL ALL JOINTS WITH FLEXIBLE MASTIC SEALANT RECOMMENDED BY SMACNA.

'T-FLEX' MAY BE USED FOR THE EXHAUST DUCTWORK.

FLEXIBLE DUCTWORK: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL-181) WITH 1" THICK 1 PCF FIBERGLASS INSULATION (R-6) AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER, WITH A ENCAPSULATED HELIX COIL. FLEXIBLE DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50 AND SHALL BE RATED FOR MINIMUM 2" W.G. PRESSURE AND 0 TO 250 F TEMPERATURE.

CARE IS TO BE TAKEN THAT ALL RUNOUTS OF FLEXIBLE DUCT ARE INSTALLED AS STRAIGHT AS PRACTICAL AND FASTENED SO AS TO ELIMINATE AIR LEAKAGE. THE INSTALLATION SHALL CONFORM TO THE TECHNIQUES SHOWN IN THE UL APPROVED AND FACTORY—SUPPLIED INSTRUCTIONS SPECIFIED FOR THE PRODUCT.

DRYER VENTS: FURNISH AND INSTALL VENTS FOR EACH DRYER. INSTALL, SIZE AND LENGTH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS WHICH WILL SUPERSEDE SIZES LISTED ON THE DRAWINGS IF DISCREPANCIES OCCUR. DUCT JOINTS SHALL NOT BE ASSEMBLED WITH SHEET METAL SCREWS OR OTHER FASTENING MEANS WHICH WILL EXTEND INTO THE DUCT. MINIMUM SIZE SHALL BE 4 INCHES. PROVIDE WEATHER CAP AND BACKDRAFT DAMPER. PROVIDE DRYER-BOX WALL PAN.

AIR DEVICES: PROVIDE GRILLES AND DIFFUSERS WITH THE CHARACTERISTICS SHOWN ON THE AIR-DEVICE SCHEDULE. REFER TO ARCHITECTURAL REFLECTIVE CEILING PLAN FOR FINAL AIR-DEVICE LOCATIONS.

REFRIGERANT PIPING: PROVIDE REFRIGERANT SUCTION AND LIQUID LINES AS NEEDED FROM EACH CONDENSING UNIT TO ITS RESPECTIVE DX COOLING COIL. PIPING SHALL BE ACR DRIED AND SEALED, HARD TEMPER COPPER WITH WROUGHT COPPER BRAZED JOINTS. COORDINATE ALL REFRIGERANT PIPING AND CHARGE WITH EQUIPMENT MANUFACTURER. UNDERGROUND REFRIGERANT LINES SHALL BE RUN IN PVC SLEEVE WITH BOTH ENDS

HEAT PUMP UNITS: PROVIDE PACKAGED COMPRESSOR/CONDENSER HEAT PUMP UNIT WITH CAPACITIES SCHEDULED AND ARE MATCHED WITH AHU. PROVIDE TIME DELAY RESTART RELAY, LOW VOLTAGE CONTROLS TRANSFORMER, CONTROLS FOR START AND OPERATION DOWN TO 36 DEGREES F., FAN RELAY, LIQUID LINE FILTER DRIER, CONTINUOUS PUMPDOWN CONTROLS.

AIR HANDLING UNITS: PROVIDE FACTORY ASSEMBLED AND TESTED PACKAGED AIR HANDLING UNIT MATCHED TO CONDENSING UNIT, WITH THE CAPACITIES SCHEDULED. UNITS SHALL USE R-410 A REFRIGERANT. UNITS SHALL BE UL AND AHRI CERTIFIED. UNITS SHALL HAVE FILTER RACK, SUPPLEMENTAL ELECTRIC HEATERS, DUAL VOLTAGE, DIRECT DRIVE

UNITS SHALL HAVE PRIMARY AND SECONDARY CONDENSATE DRAINS. PRIMARY DRAIN SHALL BE RUN TO THE EXTERIOR. SECONDARY DRAIN SHALL HAVE A FLOAT SWITCH TO SHUT DOWN UNIT IF PRIMARY DRAIN IS CLOGGED

UNITS SHALL HAVE UNIT STAND/PLENUM BOX AND BE PROVIDED VIBRATION ISOLATOR

CONDENSATE DRAINS: CONDENSATE DRAIN LINES SHALL BE PROVIDED BY PLUMBING CONTRACTOR, COORDIANTE WITH PLUMBING CONSTRACTOR.

CEILING FANS: PROVIDE STANDARD PREFABRICATED CEILING EXHAUST FAN OF THE TYPE. AND SIZE SCHEDULED. UNITS SHALL BE INSTALLED AT CEILING WITH MANUFACTURER'S GRILLE, PLUG-IN DISCONNECTS AND BACKDRAFT DAMPER. UNITS SHALL BE INSTALLED LEVEL AND THE INSTALLATION SHALL BE AS VIBRATION FREE AS POSSIBLE.

DRYER BOOSTER FAN: WHEN DRYER VENTS EXCEED ALLOWABLE LENGTH, A UL LISTED DRYER FAN SHALL BE INSTALLED AS SHOWN. FANS SHALL BE DESIGNED TO OPERATE IN HIGH MOISTURE, LINT AND DUCT LADEN AIR. FANS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FANS SHALL BE CONTROLLED BY PRESSURE SENSOR SWITCH FOR DRYER BOOSTING APPLICATION. FANS SHALL HAVE THE CHARACTERISTICS AND CAPACITIES SCHEDULE. FANS SHALL BE FANTEC OR APPROVED

PROVIDE INDICATOR LIGHT IN LAUNDRY ROOM THAT WILL ILLUMINATE WHEN FAN IS RUNNING. PROVIDE SIGN WHICH READS "BOOSTER FAN INDICATOR".

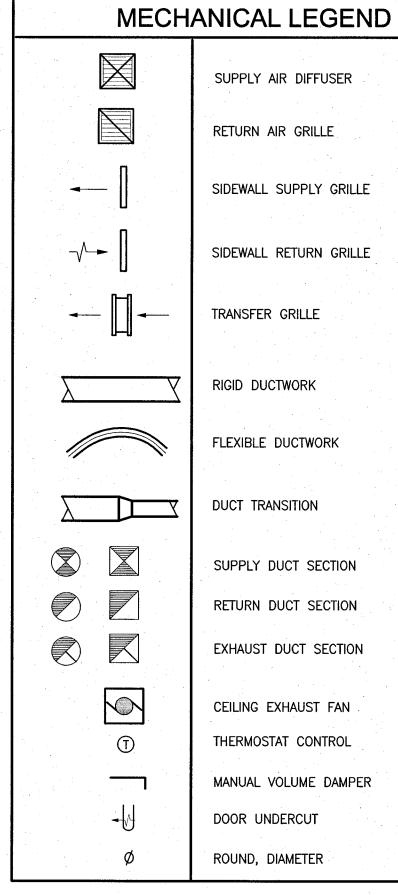
WINDLOADS: ALL EQUIPMENT INSTALLED EXTERIOR SHALL BE MECHANICALLY FASTENED PER MANUFACTURER'S SPECIFICATIONS TO WITHSTAND LOCAL WIND LOADS AND MEET THE FLORIDA BUILDING CODE REQUIREMENTS OF HURRICANE LOADS.

CONTROLS: ALL WALL MOUNTED THERMOSTATS SHALL BE INSTALLED AT AN ELEVATION OF 44" ABOVE FINISHED FLOOR. LOCATION OF THE THERMOSTATS SHALL BE COORDINATED WITH OTHER TRADES FOR A NEAT APPEARANCE. FINAL LOCATION OF THERMOSTAT SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OR HIS REPRESENTATIVE IN THE FIELD. TEMPERATURE CONTROLS SHALL BE COMPLETE WITH ALL COMPONENTS REQUIRED TO ACCOMPLISH THE CONTROL SEQUENCE SPECIFIED. MECHANICAL CONTRACTOR SHALL FURNISH, INSTALL AND WIRE ALL TEMPERATURE AND CONTROL INTERLOCKS.

COOLING MODE: WHEN THE TEMPERATURE SENSOR SENSES THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED SETPOINT, IT WILL PLACE THE UNIT IN COOLING MODE AND CYCLE THE COMPRESSOR TO MAINTAIN SPACE CONDITIONS.

HEATING MODE: WHEN THE TEMPERATURE SENSES THE SPACE TEMPERATURE IS BELOW THE OCCUPIED SETPOINT, IT WILL PLACE THE UNIT IN HEAT PUMP MODE, AS CONDITIONS CHANGE AND SUPPLEMENTAL HEAT NEEDED. THE UNIT WILL CYCLES THE ELECTRICAL HEATER TO MAINTAIN SPACE CONDITIONS.

DEHUMIDIFICATION MODE: WHEN THE HUMIDISTAT SENSOR SENSES THE SPACE HUMIDITY IS ABOVE THE OCCUPIED SETPOINT. IT WILL PLACE THE UNIT IN COOLING MODE AND CYCLE THE COMPRESSOR TO MAINTAIN SPACE CONDITIONS.



ABBREVIATIO	NS
BRITISH THERMAL UNITS	BTU
CONDENSATE DRAIN	CD
CUBIC FEET PER MINUTE	CFM
DEGREE FAHRENHEIT	* F
DOWN	DN
DRY BULB TEMPERATURE	db
ENTERING AIR TEMPERATURE	EAT
EXHAUST AIR	EA
EXHAUST FAN	EF
EXTERNAL STATIC PRESSURE	ESP
HORSEPOWER	HP
LEAVING AIR TEMPERATURE	LAT
NOT TO SCALE	NTS
OUTSIDE AIR	OA
OUTSIDE AIR TEMPERATURE	OAT
RETURN AIR	RA
ROOFTOP UNIT	RTU
SUPPLY AIR	SA
SMOKE DETECTOR	SD
TOTAL STATIC PRESSURE	TSP
TYPICAL	TYP
WATER GAUGE	WG
WITH	W/
WET BULB TEMPERATURE	wb

(AHU-1)

DIFFUSER TAG

				HEA	T PUN	MP UN	IT SC	HEDUI	_E					
MARK	MFG.	MODEL	CAPACIT	Y BTU	COMPR	ESSOR	FAN	DOWED	MCA	MOCD	CEED	UCDE	WT	DEMARKS
MARK	MFG.	MODEL	COOLING	HEATING	RLA	LRA	FLA	POWER	MCA	MOCP	SEER	HSPF	LBS	REMARKS
CU-1, 2,	BRYANT	215BNA030	28,400	29,600	14.1	73	0.5	240/1	18.1	30	15.3	8.7	110	1234
CU-3, 4	BRYANT	215BNA036	34,000	29,600	16.7	79	1.2	240/1	22.1	35	15	8.7	140	0234
① DISCO	NNECT BY DI	VISION 16	3 ANTI-S	SHORT CYCLE	TIMER									*
2 CRAN	KCASE HEATEI	R	4 INDOOF	R FAN DELAY	KIT			• • • • • • • • • • • • • • • • • • •						
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		·		AIR H	ANDI	_ER L	JNIT SC	HED	JLE				
MARK	MFG.	MODEL	CFM	NOMINAL TONS	ESP	MTR HP	HEATER KW	MCA	МОСР	POWER	WT LBS	REMARKS	
AHU-1, 3	BRYANT	FX4DNF031T0	1000	2.5	.5	1/3	10	58.5	60	240/1	130	1234	
AHU-2, 4	BRYANT	FX4DNF037T0	1200	3	.5	1/2	10	58.5	60	240/1	130	1234	

				FAN	1 SCH	EDULE				
MARK	MFG.	MODEL	CFM	POWER	ESP	AMP	RPM	SONES	WEIGHT LBS	REMARKS
EF-1	GREENHECK	SP-B90	50	115/1	0.35	0.7	700	2.5	10	10234
EF-2	FANTECH	DBF110	150	115/1	0.2	0.72				056

			·	AIR DEVI	CE SCHEE	DULE			
MARK	MFG.	MODEL	FUNCTION	TYPE	MATERIAL	FINISH	FACE SIZE	THROW	REMARKS
Α	AIRMATE	160	SUPPLY	SIDEWALL	ALUMINUM	WHITE	12×8		123
В	AIRMATE	160	SUPPLY	SIDEWALL	ALUMINUM	WHITE	10x8		023
С	AIRMATE	160	SUPPLY	SIDEWALL	ALUMINUM	WHITE	10×6	· ——	023
D	AIRMATE	180	SUPPLY	SIDEWALL	ALUMINUM	WHITE	10×6	Atlanta distanta	023
Ε	AIRMATE	404-M	SUPPLY	SURFACE	ALUMINUM	WHITE	10×10	4-WAY	023
F	AIRMATE	401-HM	SUPPLY	SURFACE	ALUMINUM	WHITE	10×6	1-WAY	023
G	AIRMATE	401-HM	SUPPLY	SURFACE	ALUMINUM	WHITE	10×6	1-WAY	003
Н	AIRMATE	401-HM	SUPPLY	SURFACE	ALUMINUM	WHITE	8×4	1-WAY	123
R	AIRMATE	280	RETURN	SURFACE	ALUMINUM	WHITE	20×20		023
S	AIRMATE	280	TRANSFER	SIDEWALL	ALUMINUM	WHITE	14×6		034
. Т	AIRMATE	280	TRANSFER	SIDEWALL	ALUMINUM	WHITE	12×6		134
S	AIRMATE	280	TRANSFER	SURFACE	ALUMINUM	WHITE	12x10 SURFACE		034

1 SEE PLANS FOR NECK SIZE (2) PROVIDE MULTI-SHUTTER DAMPER (3) PROVIDE INSULATED BOOT

(4) TWO TRANSFER GILLES SAME TYPE BOTH SIDES UNLESS OTHERWISE INDICATED

DESIGN

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MECHANICAL SCHEDULES

No. 56189 * STATE O#/

