

4-PIPE FAN COIL UNIT SCHEDULE

MARK	MANUFACTURER MODEL	SERVICE	SUPPLY AIR CFM	OUTDOOR AIR CFM	ESP (IN WG)	HP	COOLING COIL											HEATING COIL											ELECTRICAL	OPERATING WEIGHT (LBS)	REMARKS
							TOTAL MBH	SENSIBLE MBH	EAT (DB)	EAT (WB)	LAT (WB)	LAT (WB)	GPM	EWT (°F)	LWT (°F)	NO. ROWS	MAX WATER PD (FT)	TOTAL MBH	EAT (DB)	LAT (DB)	LWT (°F)	EWT (°F)	NO. ROWS	MAX WATER PD (FT)	VPHHZ	FLA	MCA	MCCP			
FCU 1	PRICE BCH16	VESTIBULE	1600	0	0.5	1.0	49.3	39.1	80	67	55	52	12.8	42	58	6	10	38.8	70	100	2.0	42	58	2	10	4803/60	2.1	15	500	1, 2, 3, 4, 5, 6	
FCU 2	PRICE BCH12	PLAYERS CLUB	1250	200	0.5	1.5	44.2	30.3	80	67	55	52	10.5	42	58	6	10	28.1	70	100	1.4	42	58	2	10	4803/60	3.0	15	500	1, 2, 3, 4, 5, 6	
FCU 3	PRICE BCH16	VESTIBULE	1600	0	0.5	1.0	49.3	39.1	80	67	55	52	12.8	42	58	6	10	38.8	70	100	2.0	42	58	2	10	4803/60	2.1	15	500	1, 2, 3, 4, 5, 6	
FCU 4	PRICE BCH20	RESTROOMS	2000	300	0.5	1.5	73.5	49.8	80	67	55	52	12.8	42	58	6	10	48.2	70	100	2.5	42	58	2	10	4803/60	3.0	15	500	1, 2, 3, 4, 5, 6	
FCU 5	PRICE BCH20	FIRE RISER 34	1800	0	0.5	1.5	67.1	45.2	80	67	55	52	14.2	42	58	6	10	45.5	70	100	2.3	42	58	2	10	4803/60	3.0	15	500	1, 2, 3, 4, 5, 6	
FCU 6	PRICE BCH08	EMERGENCY ELECTRICAL 35	800	0	0.5	0.75	23.8	19.0	80	67	55	52	7.9	42	58	6	10	17.9	70	100	0.9	42	58	2	10	4803/60	1.6	15	400	1, 2, 3, 4, 5, 6	
FCU 7	PRICE BCH16	ELECTRICAL 36	1600	0	0.5	1.0	49.3	39.1	80	67	55	52	12.8	42	58	6	10	38.8	70	100	2.0	42	58	2	10	4803/60	2.1	15	500	1, 2, 3, 4, 5, 6	
FCU 8	PRICE BCH08	ELEC 97C	800	0	0.5	0.75	23.8	19.0	80	67	55	52	7.9	42	58	6	10	17.9	70	100	0.9	42	58	2	10	4803/60	1.6	15	400	1, 2, 3, 4, 5, 6	
FCU 9	PRICE BCH08	ELEC 97A	800	0	0.5	0.75	23.8	19.0	80	67	55	52	7.9	42	58	6	10	17.9	70	100	0.9	42	58	2	10	4803/60	1.6	15	400	1, 2, 3, 4, 5, 6	
FCU 10	PRICE BCH08	IDF 70	800	0	0.5	0.75	23.8	19.0	80	67	55	52	7.9	42	58	6	10	17.9	70	100	0.9	42	58	2	10	4803/60	1.6	15	400	1, 2, 3, 4, 5, 6	
FCU 11	PRICE BCH08	UNDER STAGE	800	0	0.5	0.75	23.8	19.0	80	67	55	52	7.9	42	58	6	10	17.9	70	100	0.9	42	58	2	10	4803/60	1.6	15	400	1, 2, 3, 4, 5, 6	

- 2" FILTER RACKS.
- EXTENDED RANGE.
- NON-CFC / NON-HCFC REFRIGERANT.
- SMOKE DETECTOR IN SUPPLY AIR DUCT. PROVIDE TEMPERATURE SENSOR.
- Y-BALL FLOW CONTROL VALVE. HAYS MESURFLO AUTOMATIC (2-80 PSID RANGE) WITH PT PORTS. HOSE KIT WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE), BANDED AND LABELED FOR CORRESPONDING FAN COIL.
6. Y-BALL FLOW CONTROL VALVE. HAYS MESURFLO AUTOMATIC (2-80 PSID RANGE) WITH PT PORTS. HOSE KIT WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE), BANDED AND LABELED FOR CORRESPONDING FAN COIL.

COMPUTER ROOM AIR CONDITIONING UNIT SCHEDULE

MARK	GENERAL DATA			FANS			ECONOCOIL COIL				DX COOLING				HUMIDIFICATION			ELECTRICAL				OPERATING WEIGHT (LBS)	REMARKS			
	MANUFACTURER MODEL	LOCATION	CFM	ESP (IN)	QTY.	RPM	BHP	HP	TOTAL MBH	SENS MBH	EAT (DB)	EAT (F/HR)	GPM	TOTAL MBH	SENS MBH	EAT (DB)	EAT (F/HR)	CAPACITY (LB/HR)	WATER CONN (IN)	VPHHZ	FLA			MCA	MCCP	
CRAC 1	LIEBERT D5053HDAT1E1	MDF	8000	0.8	2	-	3.4	-	170.4	157.1	75	45%	36.4	CCU 1	197.4	177.6	75	45%	22	-	4603/60	57.1	69.4	75	2100	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
CRAC 2	MM606KNAHEH3	CASINO IDF	3750	0.5	1	-	-	2	82.2	76.8	75	45%	17.6	CCU 2	92.7	84.9	75	45%	10	-	4603/60	21.0	26.3	30	705	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
CRAC 3	LIEBERT MM606KNAHEH1	BALLROOM IDF	2900	0.5	1	-	1.1/2	-	55.6	51.5	75	45%	12.0	CCU 3	62.7	55.8	75	45%	8	-	4603/60	19.8	24.8	25	650	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

- PROVIDE REFRIGERANT LINES SIZED PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE CLEARANCE AROUND UNIT PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE P-TRAPS AND ARRANGE SLOPE OF REFRIGERANT PIPING FOR OIL RETURN.
- PROVIDE SAFETY CONTROLS.
- PROVIDE BAGNET IP CONTROL INTERFACE. VERIFY WHICH TO PROVIDE WITH CONTROLS CONTRACTOR PRIOR TO PRODUCTION.
- PROVIDE SPACE TEMPERATURE SENSOR.
- PROVIDE TRAPS IN REFRIGERANTSUCTION LINES AS REQUIRED TO MEET MANUFACTURER'S OVERALL LENGTH REQUIREMENTS.
- PROVIDE PREMIUM EFFICIENT MOTOR.
- PROVIDE CONDENSATE PUMP.
- PROVIDE HUMIDIFIER.
- FIA CONTRACTOR TO PROVIDE SMOKE DETECTOR.
- PROVIDE BAS INTERFACE. BAGNET PROTOCOL.

AIR DISTRIBUTION SCHEDULE

MARK	MANUFACTURER MODEL	AIRFLOW RANGE	SERVICE TYPE	MAX NC	NECK SIZE	PANEL SIZE	REMARKS
D-1 CFM	TITUS MCD	0-100	SUPPLY CEILING	30	6"X6"	24"X24"	1, 2, 3
D-2 CFM	TITUS MCD	101-200	SUPPLY CEILING	30	8"X8"	24"X24"	1, 2, 3
D-3 CFM	TITUS MCD	201-350	SUPPLY CEILING	30	10"X10"	24"X24"	1, 2, 3
D-4 CFM	TITUS MCD	351-600	SUPPLY CEILING	30	12"X12"	24"X24"	1, 2, 3
D-5 CFM	TITUS FL-25	400-600	SUPPLY LINEAR	30	12"Ø	4' LENGTH (2) 2 1/2" SLOTS	1, 2, 3
D-6 CFM	TROX FBA-3-V-KF-SM-200	80-95	FLOOR SUPPLY	30	-	24"X24"	1, 2, 3
D-7 CFM	TITUS TMR	1000	CEILING SUPPLY	30	8"	22"	-
D-8 CFM	TITUS FL-25	0-300	SUPPLY LINEAR	30	10"Ø	4' LENGTH (2) 2 1/2" SLOTS	1, 2, 3
D-9 CFM	TITUS MCD	0-100	SUPPLY CEILING	30	6"X6"	12"X12"	1, 2, 3
D-10 CFM	TITUS MCD	101-200	SUPPLY CEILING	30	8"X8"	14"X14"	1, 2, 3
D-11 CFM	TITUS MCD	201-350	SUPPLY CEILING	30	10"X10"	16"X16"	1, 2, 3
D-12 CFM	TITUS MCD	800	SUPPLY CEILING	30	16"X16"	24"X24"	1, 2, 3
D-13 CFM	TITUS MCD	1750	SUPPLY CEILING	30	18"X18"	24"X24"	1, 2, 3

AIR DISTRIBUTION SCHEDULE (CONT.)

MARK	MANUFACTURER MODEL	AIRFLOW RANGE	SERVICE TYPE	MAX NC	NECK SIZE	PANEL SIZE	REMARKS
D-14 CFM	TITUS PAR	750	SUPPLY CEILING	30	15"X15"	24"X24"	1, 2, 3
D-15 CFM	TITUS PAR	400	SUPPLY CEILING	30	12"X12"	24"X24"	1, 2, 3
R-1 CFM	TITUS 50F	0-2000	RETURN CEILING	30	22"X22"	24"X24"	1
R-2 CFM	TITUS FL-25	400-600	RETURN LINEAR	30	12"Ø	4' LENGTH (2) 2 1/2" SLOTS	1, 4
R-4 CFM	TITUS 350FL	350-900	RETURN SIDEWALL	30	14"X14"	16"X16"	1, 3
R-5 CFM	TITUS 50F	0-150	RETURN CEILING	30	6"X6"	12"X12"	1
R-6 CFM	TITUS 350R	350-600	RETURN CEILING	30	18"X10"	20"X12"	1
R-7 CFM	TITUS PAR	750	RETURN CEILING	30	15"X15"	24"X24"	1
R-8 CFM	TITUS FL-2T	0-300	RETURN CEILING	30	10"Ø	4' LENGTH (2) 2 1/2" SLOTS	1
R-9 CFM	TITUS 272RL	0-2100	RETURN SIDEWALL	30	36"X18"	38"X29"	1
EX-1 CFM	TITUS 50F	0-100	EXHAUST CEILING	30	6"X6"	24"X24"	1
EX-2 CFM	TITUS 50F	101-200	EXHAUST CEILING	30	8"X8"	24"X24"	1
EX-3 CFM	TITUS 50F	201-375	EXHAUST CEILING	30	10"X10"	24"X24"	1
EX-4 CFM	TITUS 50F	376-600	EXHAUST CEILING	30	12"X12"	24"X24"	1

- COORDINATE BORDER, COLOR, FINISH AND EXACT LOCATION WITH ARCHITECT
- WHERE A BALANCING DAMPER IS SHOWN IN THE DUCTWORK TAKEOFF- NO OBD REQUIRED.
- PROVIDE SQUARE TO ROUND TRANSITION FROM FACTORY.
- Ø 1/2" SLOT- 1" SLOT 1/2" INLET.

COMPUTER ROOM AIR COOLED CONDENSER UNIT SCHEDULE

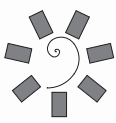
MARK	MANUFACTURER MODEL	INDOOR UNIT	LOCATION	NOMINAL CAPACITY (TONS)	CONDENSER FANS			OA AMBIENT °F		ELECTRICAL			OPERATING WEIGHT (LBS)	REMARKS
					NO.	FLA	RPM	MIN	MAX	VPHHZ	MCA	MCCP		
CCU 1	LIEBERT MCL110EBADJ	CRAC 1	ROOF	15	2	5.6	-	-10	105	4603/60	6.3	15	610	1, 2, 3, 4, 5, 6
CCU 2	LIEBERT PPH067A-AHN	CRAC 2	ROOF	5	1	11.7	-	-10	105	4603/60	14.2	20	400	1, 2, 3, 4, 5, 6
		CRAC 3	ROOF	3	1	8.1	-	-10	105	4603/60	9.7	15	360	1, 2, 3, 4, 5, 6
CCU 3	LIEBERT PPH067A-AHN	CRAC 3	ROOF	5	1	11.7	-	-10	105	4603/60	14.2	20	400	1, 2, 3, 4, 5, 6

- PROVIDE REFRIGERANT LINES SIZED PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE CLEARANCE AROUND UNIT PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE P-TRAPS AND ARRANGE SLOPE OF REFRIGERANT PIPING FOR OIL RETURN.
- PROVIDE SAFETY CONTROLS.
- PROVIDE LOW AMBIENT KIT FOR UNIT OPERATION DOWN TO 20°F.
- PROVIDE HOT GAS BY-PASS.

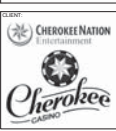
HEATING WATER UNIT HEATER SCHEDULE

MARK	MANUFACTURER MODEL	LOCATION	TYPE	CAPACITY MBH	AIR			ELECTRICAL			HEATING WATER			OPERATING WEIGHT (LBS)	REMARKS	
					CFM	EAT (DB)	LAT (DB)	HP (W)	RPM	VPHHZ	GPM	EWT (°F)	LWT (°F)			PD (FT)
HEH 1	REZNOR WS	LOADING DOCK	VERTICAL	50.0	1250	40.0	84.4	0.15	1600	1201/60	3.0	140	100	0.12	70.0	1, 2
HEH 2	REZNOR WS	LOADING DOCK	VERTICAL	50.0	1250	40.0	84.4	0.15	1600	1201/60	3.0	140	100	0.12	70.0	1, 2
HEH 3	REZNOR WS	LOADING DOCK	VERTICAL	50.0	1250	40.0	84.4	0.15	1600	1201/60	3.0	140	100	0.12	70.0	1, 2
HEH 4	REZNOR WS	LOADING DOCK	VERTICAL	50.0	1250	40.0	84.4	0.15	1600	1201/60	3.0	140	100	0.12	70.0	1, 2

- PROVIDE CEILING MOUNTED BRACKET.
- PROVIDE SENSOR AND WIRING UP TO UNIT HEATER.
- Y-BALL FLOW CONTROL VALVE. HAYS MESURFLO AUTOMATIC (2-80 PSID RANGE) WITH PT PORTS. HOSE KIT WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE), BANDED AND LABELED FOR CORRESPONDING HEAT PUMP.
- PIPE SIZE TO COILS: LESS THAN 3 1/2" GPM-2 1/4" LESS THAN 6.1 GPM-1". LESS THAN 11.1 GPM-1.5"



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CHEROKEE NATION ENTERTAINMENT  
TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

PROJECT NAME  
BID PACKAGE 05

DATE	05/03/18	JOB NUMBER	17-06
DESIGNER		REVISION	
CHECKER		DATE	
APPROVER			

M0.5

MECHANICAL SCHEDULES



### AHU-4 TERMINAL BOX SCHEDULE

MARK	MANUFACTURER MODEL	AIR FLOW (CFM)			INLET DIA (IN)	VAV AIR PRESSURE DROP (IN WG)	NC RATING @ 1" SP		REHEAT COIL (HEATING WATER)				PD (FT)	ROWS	OPERATING WEIGHT (LBS)	REMARKS		
		MAX.	COOLING MIN.	HEATING MIN.			DISCHARGE	RADIATED	MBH	GPM	EAT (°F)	LAT (°F)					EWT (°F)	LWT (°F)
		1000	600	600														
AVV 4.1	TITUS DESV	1000	600	600	10	0.3	20	22	19.2	2.6	65	95	140	100	0.5	2	25	1.
AVV 4.2	TITUS DESV	1000	600	600	10	0.3	20	22	19.2	2.6	65	95	140	100	0.5	2	25	1.
AVV 4.3	TITUS DESV	1000	600	600	10	0.3	20	22	19.2	2.6	65	95	140	100	0.5	2	25	1.
AVV 4.4	TITUS DESV	1000	600	600	10	0.3	20	22	19.2	2.6	65	95	140	100	0.5	2	25	1.
AVV 4.5	TITUS DESV	2000	1200	1200	14	0.3	17	22	38.4	4.2	65	95	140	100	0.8	2	25	1.
AVV 4.6	TITUS DESV	1200	720	720	10	0.4	22	24	23.0	4.3	65	95	140	100	1.2	2	25	1.
AVV 4.7	TITUS DESV	800	480	480	10	0.2	18	22	15.4	1.7	65	95	140	100	0.3	2	25	1.
AVV 4.8	TITUS DESV	1500	900	900	12	0.4	21	23	28.8	3.8	65	95	140	100	1.1	2	25	1.
AVV 4.9	TITUS DESV	1500	900	900	12	0.4	21	23	28.8	3.8	65	95	140	100	1.1	2	25	1.
AVV 4.10	TITUS DESV	2200	1400	1400	14	0.4	17	22	44.8	6.3	65	95	140	100	1.7	2	25	1.
AVV 4.11	TITUS DESV	2200	1400	1400	14	0.4	17	22	44.8	6.3	65	95	140	100	1.7	2	25	1.
AVV 4.12	TITUS DESV	500	300	300	06	0.3	21	24	9.6	1.4	65	95	140	100	0.3	2	25	1.

1. WITH HANGER BRACKETS.  
 2. NOT USED.  
 3. CONTROLS AND ACTUATOR BY BAS CONTRACTOR.  
 4. MINIMUM 3 DUCT DIAMETERS OF STRAIGHT RIGID DUCT ON INLET.  
 5. DUCT TO INLET - MIN ONE (EVEN) DUCT SIZE LARGER THAN LISTED INLET. IF OVER 15 FOOT RUN OR MORE THAN TWO 90° ELBOWS-MIN. TWO DUCT SIZES LARGER.  
 6. UNITS WITH HEATING WATER COIL. HAYS MESURFLO AUTOMATIC Y-BALL FLOW CONTROL VALVE (2-80 PSID RANGE) WITH PT PORTS. HOSE KIEI WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE). BANDED  
 7. PIPE SIZES TO COLS: LESS THAN 3.1 GPM=3/4", LESS THAN 6.1 GPM=1", LESS THAN 11.1 GPM=1.25", LESS THAN 18.1 GPM=1.5".  
 8. MINIMUM INLET SP: 1".  
 9. MINIMUM DOWNSTREAM SP: 0.25".  
 AND LABELED FOR CORRESPONDING VAV BOX.

### AHU-5 TERMINAL BOX SCHEDULE

MARK	MANUFACTURER MODEL	AIR FLOW (CFM)			INLET DIA (IN)	VAV AIR PRESSURE DROP (IN WG)	NC RATING @ 1" SP		REHEAT COIL (HEATING WATER)				PD (FT)	ROWS	OPERATING WEIGHT (LBS)	REMARKS		
		MAX.	COOLING MIN.	HEATING MIN.			DISCHARGE	RADIATED	MBH	GPM	EAT (°F)	LAT (°F)					EWT (°F)	LWT (°F)
		1100	700	700														
AVV 5.1	TITUS DESV	1100	700	700	10	0	20	23	22.	4.	65	95	140	100	1.	2	2	1.
AVV 5.2	TITUS DESV	2200	1350	1350	14	0	17	22	43.	5.	65	95	140	100	1.	2	2	1.
AVV 5.3	TITUS DESV	650	400	400	08	0	19	22	12.	1.	65	95	140	100	0.	2	2	1.
AVV 5.4	TITUS DESV	650	400	400	08	0	19	22	12.	1.	65	95	140	100	0.	2	2	1.
AVV 5.5	TITUS DESV	650	400	400	08	0	19	22	12.	1.	65	95	140	100	0.	2	2	1.
AVV 5.6	TITUS DESV	600	400	400	08	0	19	20	12.	1.	65	95	140	100	0.	2	2	1.
AVV 5.7	TITUS DESV	3000	1800	1800	24x16	0	24	34	57.	5.	65	95	140	100	1.	2	2	1.
AVV 5.8	TITUS DESV	775	500	500	08	0	21	23	16.	3.	65	95	140	100	1.	2	2	1.
AVV 5.9	TITUS DESV	3000	1800	1800	24x16	0	24	34	57.	5.	65	95	140	100	1.	2	2	1.
AVV 5.10	TITUS DESV	3000	1800	1800	24x16	0	24	34	57.	5.	65	95	140	100	1.	2	2	1.
AVV 5.11	TITUS DESV	775	500	500	08	0	21	23	16.	3.	65	95	140	100	1.	2	2	1.
AVV 5.12	TITUS DESV	500	300	300	06	0	21	24	9.	1.	65	95	140	100	0.	2	2	1.

1. WITH HANGER BRACKETS.  
 2. NOT USED.  
 3. CONTROLS AND ACTUATOR BY BAS CONTRACTOR.  
 4. MINIMUM 3 DUCT DIAMETERS OF STRAIGHT RIGID DUCT ON INLET.  
 5. DUCT TO INLET - MIN ONE (EVEN) DUCT SIZE LARGER THAN LISTED INLET. IF OVER 15 FOOT RUN OR MORE THAN TWO 90° ELBOWS-MIN. TWO DUCT SIZES LARGER.  
 6. UNITS WITH HEATING WATER COIL. HAYS MESURFLO AUTOMATIC Y-BALL FLOW CONTROL VALVE (2-80 PSID RANGE) WITH PT PORTS. HOSE KIEI WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE). BANDED  
 7. PIPE SIZES TO COLS: LESS THAN 3.1 GPM=3/4", LESS THAN 6.1 GPM=1", LESS THAN 11.1 GPM=1.25", LESS THAN 18.1 GPM=1.5".  
 8. MINIMUM INLET SP: 1".  
 9. MINIMUM DOWNSTREAM SP: 0.25".  
 AND LABELED FOR CORRESPONDING VAV BOX.

### AHU-1 TERMINAL BOX SCHEDULE

MARK	MANUFACTURER MODEL	AIR FLOW (CFM)			INLET DIA (IN)	VAV AIR PRESSURE DROP (IN WG)	NC RATING @ 1" SP		REHEAT COIL (HEATING WATER)				PD (FT)	ROWS	OPERATING WEIGHT (LBS)	REMARKS		
		MAX.	COOLING MIN.	HEATING MIN.			DISCHARGE	RADIATED	MBH	GPM	EAT (°F)	LAT (°F)					EWT (°F)	LWT (°F)
		2200	1400	1400														
AVV 1.1	TITUS DESV	2200	1400	1400	14	0	17	22	44.	6.	65	95	140	100	1.	2	2	1.
AVV 1.2	TITUS DESV	2200	1400	1400	14	0	17	22	44.	6.	65	95	140	100	1.	2	2	1.
AVV 1.3	TITUS DESV	2200	1400	1400	14	0	17	22	44.	6.	65	95	140	100	1.	2	2	1.
AVV 1.4	TITUS DESV	2200	1400	1400	14	0	17	22	44.	6.	65	95	140	100	1.	2	2	1.
AVV 1.5	TITUS DESV	100	50	50	04	0	26	27	5.	0.	65	95	140	100	0.	2	2	1.
AVV 1.6	TITUS DESV	2000	1200	1200	14	0	17	22	38.	4.	65	95	140	100	0.	2	2	1.
AVV 1.7	TITUS DESV	2100	1350	1350	14	0	17	22	44.	6.	65	95	140	100	1.	2	2	1.

1. WITH HANGER BRACKETS.  
 2. NOT USED.  
 3. CONTROLS AND ACTUATOR BY BAS CONTRACTOR.  
 4. MINIMUM 3 DUCT DIAMETERS OF STRAIGHT RIGID DUCT ON INLET.  
 5. DUCT TO INLET - MIN ONE (EVEN) DUCT SIZE LARGER THAN LISTED INLET. IF OVER 15 FOOT RUN OR MORE THAN TWO 90° ELBOWS-MIN. TWO DUCT SIZES LARGER.  
 6. UNITS WITH HEATING WATER COIL. HAYS MESURFLO AUTOMATIC Y-BALL FLOW CONTROL VALVE (2-80 PSID RANGE) WITH PT PORTS. HOSE KIEI WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE). BANDED  
 7. PIPE SIZES TO COLS: LESS THAN 3.1 GPM=3/4", LESS THAN 6.1 GPM=1", LESS THAN 11.1 GPM=1.25", LESS THAN 18.1 GPM=1.5".  
 8. MINIMUM INLET SP: 1".  
 9. MINIMUM DOWNSTREAM SP: 0.25".  
 AND LABELED FOR CORRESPONDING VAV BOX.

### AHU-9 TERMINAL BOX SCHEDULE

MARK	MANUFACTURER MODEL	AIR FLOW (CFM)			INLET DIA (IN)	VAV AIR PRESSURE DROP (IN WG)	NC RATING @ 1" SP		REHEAT COIL (HEATING WATER)				PD (FT)	ROWS	OPERATING WEIGHT (LBS)	REMARKS		
		MAX.	COOLING MIN.	HEATING MIN.			DISCHARGE	RADIATED	MBH	GPM	EAT (°F)	LAT (°F)					EWT (°F)	LWT (°F)
		375	250	250														
AVV 9.1	TITUS DESV	375	250	250	06	0	18	20	8.	1.	65	95	140	100	0.	2	2	1.
AVV 9.2	TITUS DESV	450	300	300	06	0	20	23	9.	1.	65	95	140	100	0.	2	2	1.
AVV 9.3	TITUS DESV	825	500	500	08	0	21	24	16.	3.	65	95	140	100	1.	2	2	1.
AVV 9.4	TITUS DESV	450	300	300	06	0	20	23	9.	1.	65	95	140	100	0.	2	2	1.
AVV 9.5	TITUS DESV	725	450	450	08	0	20	23	14.	2.	65	95	140	100	0.	2	2	1.
AVV 9.6	TITUS DESV	800	500	500	08	0	21	24	16.	3.	65	95	140	100	1.	2	2	1.
AVV 9.7	TITUS DESV	225	150	150	04	0	27	29	5.	0.	65	95	140	100	0.	2	2	1.
AVV 9.8	TITUS DESV	800	500	500	08	0	21	24	16.	3.	65	95	140	100	1.	2	2	1.
AVV 9.9	TITUS DESV	1000	600	600	10	0	20	22	19.	2.	65	95	140	100	0.	2	2	1.
AVV 9.10	TITUS DESV	500	300	300	06	0	21	24	9.	1.	65	95	140	100	0.	2	2	1.
AVV 9.11	TITUS DESV	200	150	150	04	0	26	27	5.	0.	65	95	140	100	0.	2	2	1.
AVV 9.12	TITUS DESV	400	250	250	06	0	18	22	8.	1.	65	95	140	100	0.	2	2	1.
AVV 9.13	TITUS DESV	750	500	500	08	0	21	23	16.	2.	65	95	140	100	1.	2	2	1.

1. WITH HANGER BRACKETS.  
 2. NOT USED.  
 3. CONTROLS AND ACTUATOR BY BAS CONTRACTOR.  
 4. MINIMUM 3 DUCT DIAMETERS OF STRAIGHT RIGID DUCT ON INLET.  
 5. DUCT TO INLET - MIN ONE (EVEN) DUCT SIZE LARGER THAN LISTED INLET. IF OVER 15 FOOT RUN OR MORE THAN TWO 90° ELBOWS-MIN. TWO DUCT SIZES LARGER.  
 6. UNITS WITH HEATING WATER COIL. HAYS MESURFLO AUTOMATIC Y-BALL FLOW CONTROL VALVE (2-80 PSID RANGE) WITH PT PORTS. HOSE KIEI WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE). BANDED  
 7. PIPE SIZES TO COLS: LESS THAN 3.1 GPM=3/4", LESS THAN 6.1 GPM=1", LESS THAN 11.1 GPM=1.25", LESS THAN 18.1 GPM=1.5".  
 8. MINIMUM INLET SP: 1".  
 9. MINIMUM DOWNSTREAM SP: 0.25".  
 AND LABELED FOR CORRESPONDING VAV BOX.

### AHU-10 TERMINAL BOX SCHEDULE

MARK	MANUFACTURER MODEL	AIR FLOW (CFM)			INLET DIA (IN)	VAV AIR PRESSURE DROP (IN WG)	NC RATING @ 1" SP		REHEAT COIL (HEATING WATER)				PD (FT)	ROWS	OPERATING WEIGHT (LBS)	REMARKS		
		MAX.	COOLING MIN.	HEATING MIN.			DISCHARGE	RADIATED	MBH	GPM	EAT (°F)	LAT (°F)					EWT (°F)	LWT (°F)
		725	450	450														
AVV 10.1	TITUS DESV	725	450	450	08	0	20	23	14.	2.	65	95	140	100	0.	2	2	1.
AVV 10.2	TITUS DESV	600	400	400	08	0	19	20	12.	1.	65	95	140	100	0.	2	2	1.
AVV 10.3	TITUS DESV	400	250	250	06	0	18	22	8.	1.	65	95	140	100	0.	2	2	1.
AVV 10.4	TITUS DESV	600	400	400	08	0	19	20	12.	1.	65	95	140	100	0.	2	2	1.
AVV 10.5	TITUS DESV	900	550	550	08	0	22	25	17.	4.	65	95	140	100	2.	2	2	1.
AVV 10.6	TITUS DESV	1075	650	650	10	0	20	23	20.	3.	65	95	140	100	0.	2	2	1.
AVV 10.7	TITUS DESV	600	400	400	08	0	19	20	12.	1.	65	95	140	100	0.	2	2	1.
AVV 10.8	TITUS DESV	2000	1200	1200	14	0	17	22	38.	4.	65	95	140	100	0.	2	2	1.
AVV 10.9	TITUS DESV	2000	1200	1200	14	0	17	22	38.	4.	65	95	140	100	0.	2	2	1.

1. WITH HANGER BRACKETS.  
 2. NOT USED.  
 3. CONTROLS AND ACTUATOR BY BAS CONTRACTOR.  
 4. MINIMUM 3 DUCT DIAMETERS OF STRAIGHT RIGID DUCT ON INLET.  
 5. DUCT TO INLET - MIN ONE (EVEN) DUCT SIZE LARGER THAN LISTED INLET. IF OVER 15 FOOT RUN OR MORE THAN TWO 90° ELBOWS-MIN. TWO DUCT SIZES LARGER.  
 6. UNITS WITH HEATING WATER COIL. HAYS MESURFLO AUTOMATIC Y-BALL FLOW CONTROL VALVE (2-80 PSID RANGE) WITH PT PORTS. HOSE KIEI WITH MINIMUM 24" SS LINES. ISOLATION BALL VALVES (LEVER HANDLE). BANDED  
 7. PIPE SIZES TO COLS: LESS THAN 3.1 GPM=3/4", LESS THAN 6.1 GPM=1", LESS THAN 11.1 GPM=1.25", LESS THAN 18.1 GPM=1.5".  
 8. MINIMUM INLET SP: 1".  
 9. MINIMUM DOWNSTREAM SP: 0.25".  
 AND LABELED FOR CORRESPONDING VAV BOX.



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CHEROKEE NATION ENTERTAINMENT  
 TAHLEQUAH CASINO  
 TAHLEQUAH, OKLAHOMA

PROJECT NAME:  
 BID PACKAGE 05




### EXHAUST FAN SCHEDULE

MARK	GENERAL DATA			FAN					ELECTRICAL			OPERATING WEIGHT (LBS)	REMARKS
	MANUFACTURER MODEL	LOCATION	SERVICE	TYPE	CFM	ESP (IN WG)	RPM	BHP	HP (W)	FLA	V/PHHZ		
EF-1	GREENHECK GB-101-15	ROOF	RESTROOMS MENS 11 WOMENS 13	CENTRIFUGAL	2900	0.75	1349	1.02	1 1/2	3	480/360	200	1, 2, 3, 4
EF-2	GREENHECK GB-101-3	ROOF	RESTROOMS MENS 73 WOMENS 74	CENTRIFUGAL	700	0.5	1316	0.15	1/3	7.2	115/160	100	1, 2, 3, 4
EF-3	GREENHECK GB-101-3	ROOF	RESTROOMS TOILET #7 TOILET #8	CENTRIFUGAL	500	0.5	1192	0.11	1/3	7.2	115/160	100	1, 2, 3, 4
EF-4	GREENHECK GB-131-5	ROOF	RESTROOMS MENS 90	CENTRIFUGAL	1100	0.5	1210	0.23	1/2	9.8	115/160	100	1, 2, 3, 4
EF-5	GREENHECK GB-131-5	ROOF	RESTROOMS WOMENS 92	CENTRIFUGAL	1200	0.5	1269	0.26	1/2	9.8	115/160	100	1, 2, 3, 4
EF-6	GREENHECK GB-101-6	ROOF	RESTROOMS WOMENS 22	CENTRIFUGAL	800	0.5	1397	0.18	1/2	9.8	115/160	100	1, 2, 3, 4
EF-7	GREENHECK SR-8500	CEILING	RESTROOMS TOILET #2	CEILING	150	0.5	950	-	(172)	-	115/160	25	2, 3, 4

1. PROVIDE ROOF CURB.  
2. PROVIDE MOTOR WITH THERMAL OVERLOADS.  
3. PROVIDE DISCONNECT SWITCH.  
4. PROVIDE BACKDRAFT DAMPER.

### AIR CURTAIN SCHEDULE

MARK	GENERAL DATA			FAN				ELECTRICAL			OPERATING WEIGHT (LBS)	REMARKS
	MANUFACTURER MODEL	LOCATION	LENGTH	MAX CFM AT NOZZLE	MAX FPM AT NOZZLE	MOTOR RPM	HP	FLA	V/PHHZ			
ACU-1	MARS 48CHS	ENTRANCE	4'-0"	4000	4000	1750	1	2.0	480/360	85	1, 2	

1. PROVIDE MICRO SWITCH AND CONTROL PANEL FOR AUTO ON/OFF OPERATION.  
2. PROVIDE WALL MOUNTING BRACKETS.

### AIR BALANCE SCHEDULE

UNIT	KITCHEN				BUILDING			
	SUPPLY	RETURN	OUTSIDE	EXHAUST	SUPPLY	RETURN	OUTSIDE	EXHAUST
AHU-1	13.00	11.00	2.00	-	-	-	-	-
AHU-2	-	-	-	-	34.00	16.00	8.00	-
AHU-3	-	-	-	-	34.00	16.00	8.00	-
AHU-4	7.90	5.267	2.63	-	7.10	4.73	2.367	-
AHU-5	-	-	-	-	16.00	12.00	4.00	-
AHU-6	-	-	-	-	25.00	0	25.00	25.00
AHU-7	-	-	-	-	25.00	0	25.00	25.00
AHU-8	-	-	-	-	16.00	12.00	4.00	-
AHU-9	-	-	-	-	2.00	4.50	1.50	-
AHU-10	-	-	-	-	8.00	6.00	2.00	-
MAU-1	15.50	0	15.50	-	-	-	-	-
MAU-2	8.000	0	8.00	-	-	-	-	-
WSPH-1	-	-	-	-	1.60	1.60	0	-
WSPH-2	-	-	-	-	1.25	1.05	20	-
WSPH-3	-	-	-	-	1.60	1.60	0	-
WSPH-4	-	-	-	-	2.00	1.70	30	-
WSPH-5	-	-	-	-	1.80	1.80	0	-
WSPH-6	-	-	-	-	80	80	0	-
WSPH-7	-	-	-	-	1.60	1.60	0	-
WSPH-8	80	80	0	-	-	-	-	-
WSPH-9	-	-	-	-	80	80	0	-
WSPH-10	-	-	-	-	80	80	0	-
CRAC-1A/B	-	-	-	-	8.00	8.00	0	-
CRAC-2A/B	-	-	-	-	3.75	3.75	0	-
CRAC-3A/B	-	-	-	-	2.80	2.80	0	-
HUH-1	-	-	-	-	1.25	1.25	0	-
HUH-2	-	-	-	-	1.25	1.25	0	-
HUH-3	-	-	-	-	1.25	1.25	0	-
HUH-4	-	-	-	-	1.25	1.25	0	-
AC-1	4.00	4.00	0	-	-	-	-	-
EF-1	-	-	-	-	-	-	-	2.90
EF-2	-	-	-	-	-	-	-	70
EF-3	-	-	-	-	-	-	-	50
EF-4	-	-	-	-	-	-	-	110
EF-5	-	-	-	-	-	-	-	120
EF-6	-	-	-	-	-	-	-	80
EF-7	-	-	-	-	-	-	-	15
KEP-1	-	-	-	-	5.15	-	-	-
KEP-2	-	-	-	-	4.80	-	-	-
KEP-3	-	-	-	-	6.45	-	-	-
KEP-4	-	-	-	-	2.90	-	-	-
KEP-5	-	-	-	-	5.80	-	-	-
KEP-6	-	-	-	-	4.27	-	-	-
KEP-7	-	-	-	-	60	-	-	-
KEP-8	-	-	-	-	110	-	-	-
KEP-9	-	-	-	-	60	-	-	-
KEP-	-	-	-	-	60	-	-	-
KEP-	-	-	-	-	200	-	-	-
TOTAL	49.20	21.06	28.13	33.82	182.6	102.2	80.36	57.20

KITCHEN = SA - RA - EA = -5,692 CFM  
BUILDING = SA - RA - EA = +23,167 CFM

### MAU-1 TERMINAL BOX SCHEDULE

MARK	MANUFACTURER MODEL	AIR FLOW (CFM)			INLET DIA (IN)	VAV AIR PRESSURE DROP (IN WG)	NC RATING @ 1" SP		REHEAT COIL (HEATING WATER)					OPERATING WEIGHT (LBS)	REMARKS	
		MAX.	COOLING MIN.	HEATING MIX.			DISCHARGE	RADIATED	MBH	GPM	EAT (°F)	LAT (°F)	LWT (°F)			FD (°F)
MCV-1.1	TITUS DESV	3360	385	-	16	-	-	-	-	-	-	-	-	-	-	1
MCV-1.2	TITUS DESV	1900	300	-	14	-	-	-	-	-	-	-	-	-	-	1
MCV-1.3	TITUS DESV	2430	300	-	14	-	-	-	-	-	-	-	-	-	-	1
MCV-1.4	TITUS DESV	1700	190	-	12	-	-	-	-	-	-	-	-	-	-	1
MCV-1.5	TITUS DESV	2400	300	-	14	-	-	-	-	-	-	-	-	-	-	1
MCV-1.6	TITUS DESV	1480	190	-	12	-	-	-	-	-	-	-	-	-	-	1
MCV-1.7	TITUS DESV	2230	300	-	14	-	-	-	-	-	-	-	-	-	-	1

1. INLET SIZE SHALL BE AS SCHEDULED UNLESS NOTED OTHERWISE.

### KITCHEN EXHAUST FAN SCHEDULE

MARK	MANUFACTURER MODEL	GENERAL DATA			FAN					ELECTRICAL			OPERATING WEIGHT (LBS)	REMARKS
		LOCATION	SERVICE	TYPE	CFM	ESP (IN WG)	RPM	BHP	HP (W)	FLA	V/PHHZ			
KEP-1	GREENHECK CUBE-300XP-50	ROOF	BANQUET KITCHEN	UPBLAST CENTRIFUGAL	6150	1.75	1372	-	5	7.6	480/360	350	1, 2, 3, 4, 5	
KEP-2	GREENHECK CUBE-240HP-50	ROOF	BANQUET KITCHEN	UPBLAST CENTRIFUGAL	4900	1.75	1113	-	5	7.6	480/360	350	1, 2, 3, 4, 5	
KEP-3	GREENHECK CUBE-360XP-75	ROOF	FINE DINING KITCHEN	UPBLAST CENTRIFUGAL	6450	2.0	1146	-	7.5	5.1	480/360	500	1, 2, 3, 4, 5	
KEP-4	GREENHECK CUBE-180HP-30	ROOF	FINE DINING KITCHEN	UPBLAST CENTRIFUGAL	2900	1.75	1490	-	3	4.8	480/360	250	1, 2, 3, 4, 5	
KEP-5	GREENHECK CUBE-300XP-60	ROOF	GRAB-N-GO KITCHEN	UPBLAST CENTRIFUGAL	5000	2.0	1392	2.95	5	7.6	480/360	350	1, 2, 3, 4, 5	
KEP-6	GREENHECK CUBE-240HP-30	ROOF	GRAB-N-GO KITCHEN	UPBLAST CENTRIFUGAL	4375	1.75	1066	2.09	3	4.8	480/360	300	1, 2, 3, 4, 5	
KEP-7	GREENHECK CUBE-101HP-5	ROOF	GRAB-N-GO DISH	UPBLAST CENTRIFUGAL	600	1.0	2034	0.28	1/2	1.1	480/360	200	1, 2, 3, 4, 5	
KEP-8	GREENHECK CUBE-141-7	ROOF	BANQUET DISH	UPBLAST CENTRIFUGAL	1100	1.0	1278	0.38	3/4	1.6	480/360	200	1, 2, 3, 4, 5	
KEP-9	GREENHECK CUBE-101HP-5	ROOF	BANQUET DISH	UPBLAST CENTRIFUGAL	600	1.0	2034	0.28	1/2	1.1	480/360	200	1, 2, 3, 4, 5	
KEP-10	GREENHECK CUBE-101HP-5	ROOF	FINE DINING DISH	UPBLAST CENTRIFUGAL	600	1.0	2034	0.28	1/2	1.1	480/360	200	1, 2, 3, 4, 5	
KEP-11	REFER TO FOOD SERVICE	ROOF	SMOKER	REFER TO FOOD SERVICE DRAWINGS	2000	-	-	-	-	-	-	-	REFER TO FOOD SERVICE DRAWINGS	

1. PROVIDE ROOF CURB.  
2. PROVIDE MOTOR WITH THERMAL OVERLOADS.  
3. PROVIDE DISCONNECT SWITCH.  
4. UL 762 RATING.  
5. PROVIDE GREASE TRAP WITH ABSORBENT MATERIAL.

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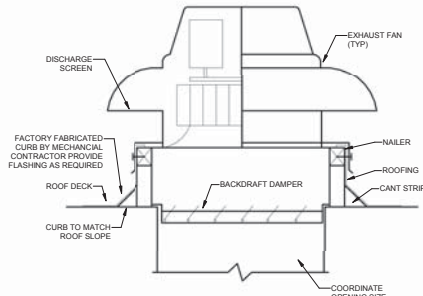
CHEROKEE NATION ENTERTAINMENT  
TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

PROJECT NAME:  
BID PACKAGE 05

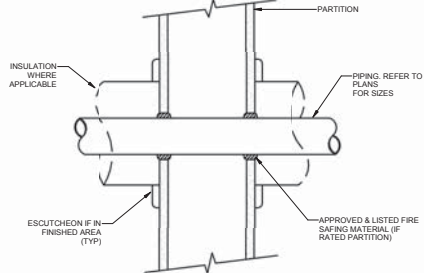
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3		
4		
5		

DATE: 05/03/18  
JOB NUMBER: 17-06

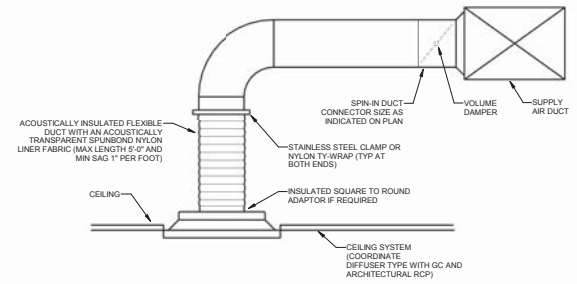
PROJECT NUMBER:  
**M0.7**  
MECHANICAL SCHEDULES



**A**  
M0.8 NTS  
**ROOF EXHAUST FAN**

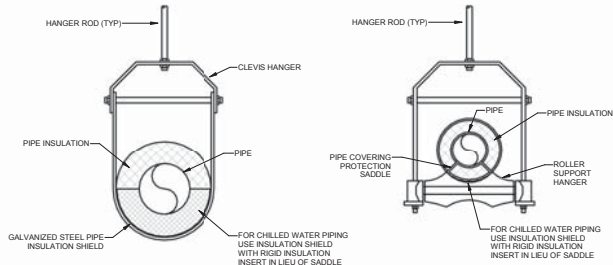


**B**  
M0.8 NTS  
**PIPE THROUGH WALL**



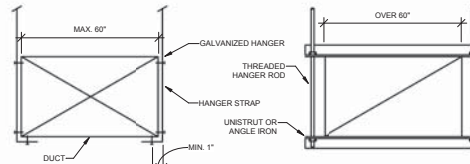
**C**  
M0.8 NTS  
**CEILING DIFFUSER WITH FLEX DUCT**

**DETAIL NOTES:**  
1. USE WORM DRIVE CLAMPS OR DRAW BANDS FOR CONNECTING FLEXIBLE AIR DUCT TO DIFFUSER AND BRANCH DUCT SPLICES IN FLEXIBLE AIR DUCT SHALL NOT BE ALLOWED.



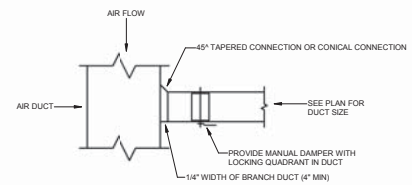
**D**  
M0.8 NTS  
**PIPE HANGER FOR INSULATED PIPING**

**DETAIL NOTES:**  
1. USE CLEVIS HANGER FOR 1/2" UP TO 4"  
2. USE ROLL SUPPORT HANGER FOR 4" TO 8"  
3. PIPE 10" AND LARGER SHALL HAVE ROLLER SUPPORT HANGER WITH DUAL RODS.

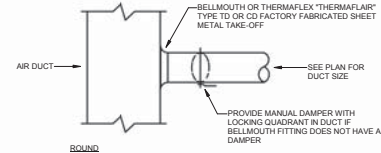


**E**  
M0.8 NTS  
**DUCT HANGER SUPPORT**

**DETAIL NOTES:**  
1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQUARE FEET, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.  
2. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA STANDARDS.

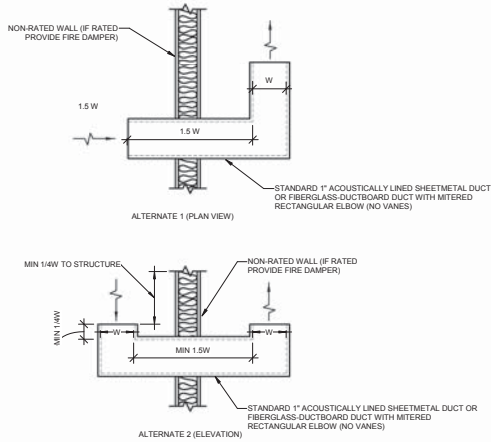


**F**  
M0.8 NTS  
**TYPICAL BRANCH DUCT TAKE-OFF**



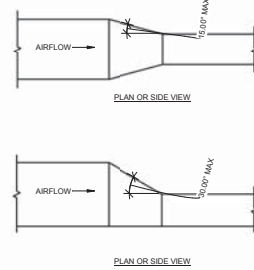
**G**  
M0.8 NTS  
**ROOF MOUNTED EQUIPMENT CURB**

**DETAIL NOTE:**  
1. INSTALL CURB PER MANUFACTURER RECOMMENDATIONS

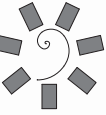


**H**  
M0.8 NTS  
**TRANSFER DUCT**

**DETAIL NOTES:**  
1. SEE PLANS FOR SIZE AND LOCATION OF AIR TRANSFER DUCT.



**J**  
M0.8 NTS  
**DUCT TRANSITION**



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TAHLEQUAH, OKLAHOMA

PROJECT NAME  
**BID PACKAGE 05**

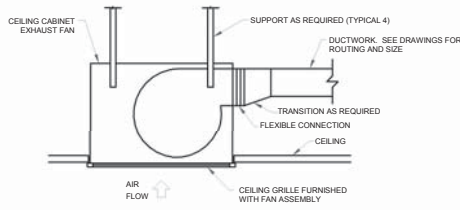
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2	REVISION	
3	REVISION	
4	REVISION	

DATE: **05/03/18** JOB NUMBER: **17-06**

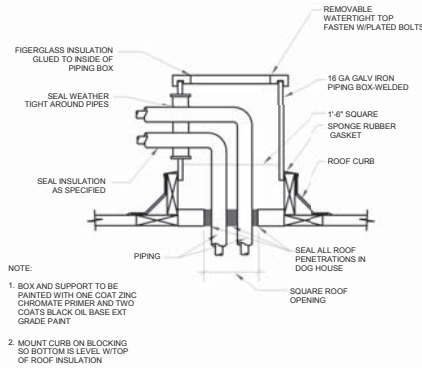
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MECHANICAL DIAGRAMS

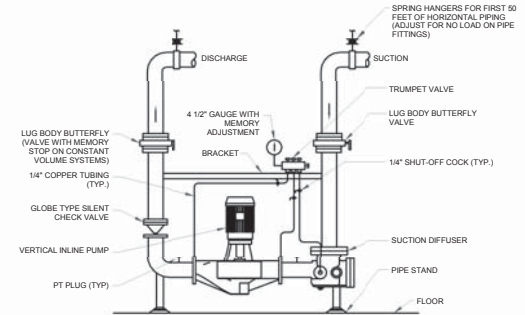




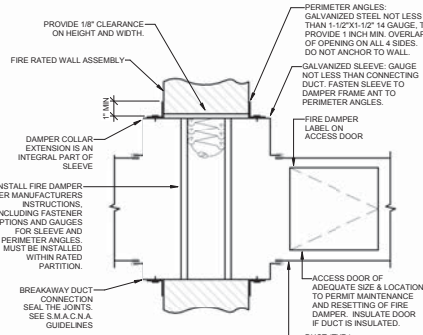
**A**  
M0.9 NTS  
**CEILING EXHAUST FAN**



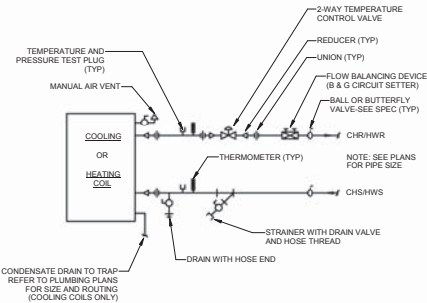
**B**  
M0.9 NTS  
**PIPING DOG HOUSE**



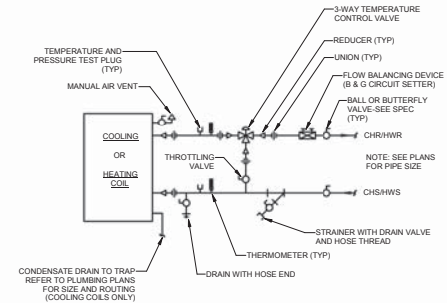
**C**  
M0.9 NTS  
**VERTICAL INLINE PUMP  
(2 1/2" PIPING AND OVER)**



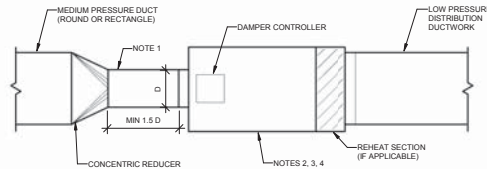
**D**  
M0.9 NTS  
**FIRE DAMPER**



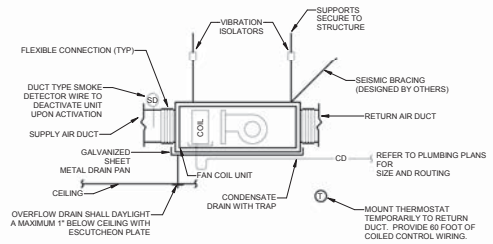
**E**  
M0.9 NTS  
**2-WAY COOLING/HEATING COIL**



**F**  
M0.9 NTS  
**3-WAY COOLING/HEATING COIL**



**G**  
M0.9 NTS  
**TERMINAL BOX**



**H**  
M0.9 NTS  
**HORIZONTAL FAN COIL UNIT**



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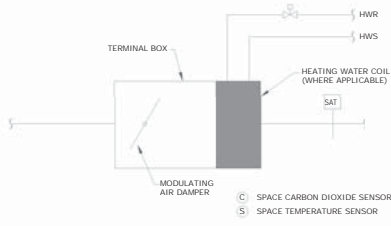
PROJECT NAME  
**BID PACKAGE 05**

REVISION	DATE	DESCRIPTION
1	05/03/18	ISSUE FOR BIDDING
2		
3		
4		

DATE: **05/03/18** JOB NUMBER: **17-06**

PROJECT NUMBER: **M0.9**

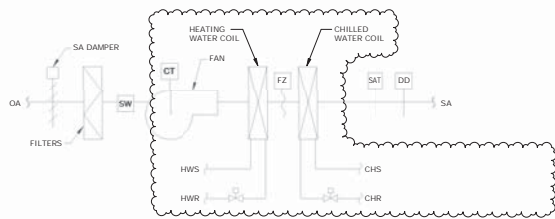
MECHANICAL DIAGRAMS



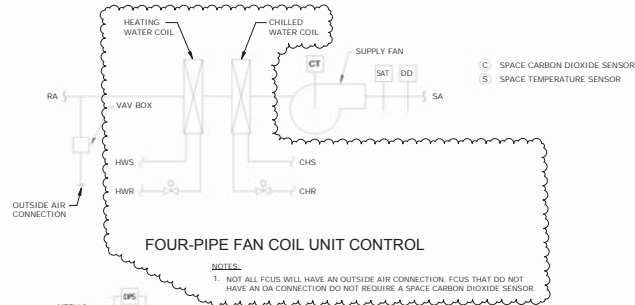
VARIABLE AIR VOLUME TERMINAL BOX CONTROL

NOTES:

1. ONLY VAV BOXES WITH A HEATING COIL HAVE A SUPPLY AIR TEMPERATURE SENSOR.



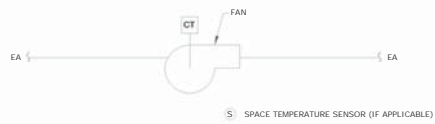
TEMPERED MAKE UP AIR UNIT CONTROL



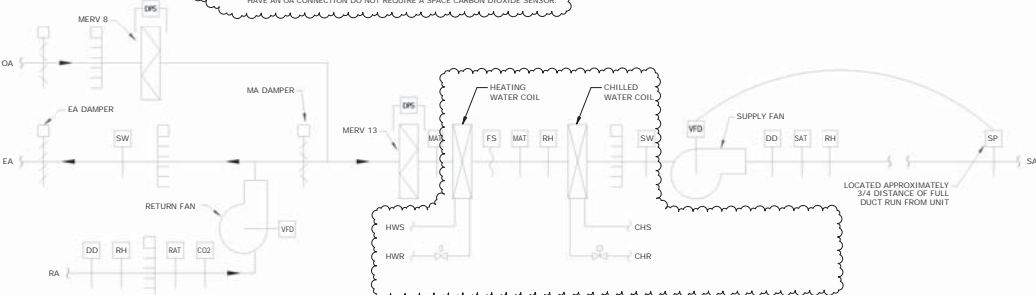
FOUR-PIPE FAN COIL UNIT CONTROL

NOTES:

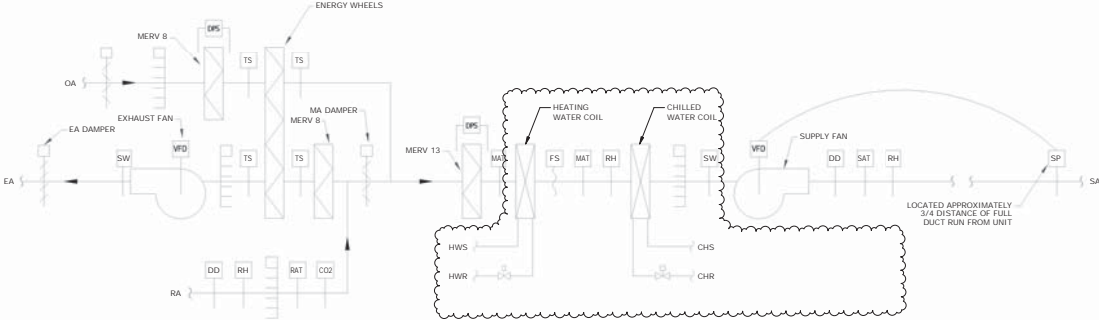
1. NOT ALL FCUS WILL HAVE AN OUTSIDE AIR CONNECTION. FCUS THAT DO NOT HAVE AN OA CONNECTION DO NOT REQUIRE A SPACE CARBON DIOXIDE SENSOR.



TYPICAL EXHAUST FAN CONTROL



AIR HANDLING UNIT CONTROL WITHOUT WHEEL

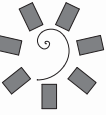


AIR HANDLING UNIT CONTROL WITH WHEEL

CONTROL SYMBOLS AND ABBREVIATIONS

NOTE: THIS IS A MASTER SCHEDULE. NOT ALL SYMBOLS CONTAINED HEREIN MAY APPEAR ON THE DRAWINGS.

- CO2 DUCT MOUNTED CARBON DIOXIDE SENSOR
- DD DUCT TYPE SMOKE DETECTOR
- EA EXHAUST AIR TEMPERATURE SENSOR
- FZ FREEZE STAT
- HWT HEAT EXCHANGER AIR TEMPERATURE SENSOR
- LAT LEAVING AIR TEMPERATURE SENSOR
- MAT MIXED AIR TEMPERATURE SENSOR
- SAT OUTDOOR AIR TEMPERATURE SENSOR
- RH DUCT MOUNTED RELATIVE HUMIDITY SENSOR
- RAT RETURN AIR TEMPERATURE SENSOR
- SP DUCT MOUNTED STATIC PRESSURE SENSOR
- SPH DUCT MOUNTED STATIC PRESSURE HIGH LIMIT
- SPL DUCT MOUNTED STATIC PRESSURE LOW LIMIT
- SAT SUPPLY AIR TEMPERATURE SENSOR
- BACKDRAFT DAMPER
- Automatic Temperature Control Damper (Parallel Blade Type)
- Automatic Temperature Control Damper (Opposed Blade Type)
- AIRFLOW MEASURING STATION
- Space Mounted Carbon Dioxide Sensor
- Space Mounted Relative Humidity Sensor
- Space Mounted Temperature Sensor
- Space Mounted Thermostat
- Space Mounted Static Pressure Sensor
- SW SWITCH
- DPS DIFFERENTIAL PRESSURE SENSOR
- CT CURRENT TRANSDUCER
- VFD VARIABLE FREQUENCY DRIVE
- FS FLOW SWITCH
- PUMP
- PRESSURE GAUGE
- THERMOMETER
- RELIEF VALVE
- 3-WAY ELECTRIC CONTROL VALVE, NC BYPASS LEG
- 2-WAY ELECTRIC CONTROL VALVE, NC BYPASS LEG
- ACD AUTOMATIC CONTROL DAMPER
- EA EXHAUST AIR
- NC NORMALLY CLOSED
- NO NORMALLY OPEN
- OA OUTSIDE AIR
- RA RETURN AIR
- SA SUPPLY AIR



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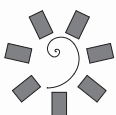
PROJECT NAME  
**BID PACKAGE 05**

NO.	DATE	DESCRIPTION
1	05/03/18	ISSUED FOR BIDDING
2		
3		

DATE: 05/03/18 JOB NUMBER: 17-06

PROJECT NUMBER: **M0.10**

MECHANICAL  
 CONTROLS  
 DIAGRAMS



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CONSULTING FIRM



CLIENT



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TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

PROJECT NAME

BID PACKAGE 05

1	MECHANICAL SEQUENCE	
2	MECHANICAL SEQUENCE	
3	MECHANICAL SEQUENCE	
4	MECHANICAL SEQUENCE	
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8	MECHANICAL SEQUENCE	
9	MECHANICAL SEQUENCE	
10	MECHANICAL SEQUENCE	

DATE: 05/03/18 JOB NUMBER: 17-06

DRAWING NUMBER: MO.11

MECHANICAL CONTROLS SEQUENCES

SECTION 23093 - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS APPENDIX - A

1 COOLS LISTED FOR 25 GPM OR LESS ARE EQUIPPED WITH DYNAMIC BALANCING VALVES. COOLS OVER 25 GPM DO NOT HAVE DYNAMIC BALANCING VALVES AND ARE TO BE EQUIPPED WITH PRESSURE INDEPENDENT TYPIC CONTROLS VALVES, AIR HANDLERS. HEATING WATER VALVES REQUIREMENT OF SIZE TO BE PRESSURE INDEPENDENT.

100 FLOW METERS  
1 SHALL BE ULTRASONIC TYPE REQUIRING NO MORE THAN 50 STRAIGHT PIPE DIAMETERS BEFORE AND AFTER THE METER FOR OPERATION AND CALIBRATION WITH THE GAS

THE FOLLOWING SEQUENCES ARE GENERIC AND ARE PROVIDED TO DEMONSTRATE THE LEVEL OF CONTROL THAT WILL BE REQUIRED.

**MECHANICAL UNIT**

- 1 PARTS IN GENERAL TO INCLUDE: X TO XX, UNIT CONFIGURATION, SUPPLY PATH, OUTSIDE AIR DAMPER, FILTER, ENERGY WHEEL, FAN, HEATING COIL, #1 COOLING COIL, HEATING COIL, #2 REHEAT COIL, #3 SUPPLY AIR FAN, EXHAUST PATH, FILTER, ENERGY WHEEL, EXHAUST FAN, EXHAUST DAMPER, A MIXED AIR RETURN AIR DAMPER EXISTS ON ALL UNITS.
- 2 BAS INTERFACE EQUIPMENT - EQUIPMENT SUPPLIED BY BAS UNLESS NOTED OTHERWISE. ALL ITEMS TO BE DISPLAYED ON THE GUI.
- 3 FREEZE PROTECTION - UNITS TO HAVE AN AVERAGING FREEZE CAPILLARY TUBE ON THE DOWNSTREAM SIDE OF HEATING COIL #1, SET AT 30°F. ACTIVATION OF THE FREEZE STAT SWITCH WILL FAL, THE UNIT AND ALARM.
- 4 LOW STATIC SWITCH - UNITS TO HAVE A LOW STATIC SWITCH ON THE SUPPLY FAN INTAKE. ACTIVATION OF THE LOW STATIC SWITCH WILL FAL, THE UNIT AND ALARM.
- 5 DAMPER OPERATORS SUPPLIED BY BAS, DAMPERS SUPPLIED WITH UNIT.
- 6 SAT TRANSMITTER DOWNSTREAM OF SA FAN.
- 7 RH TRANSMITTER DOWNSTREAM OF SA FAN.
- 8 SUPPLY AIR PATH DUCT DETECTOR SUPPLIED BY FIA CONTRACTOR AND UNIT INTERLOCK WIRING BY FIA CONTRACTOR. BAS TO SHOW DUCT DETECTOR STATUS AND SEND A SIMULTANEOUS FAL COMMAND TO THE UNIT ON DUCT DETECTOR ACTIVATION.
- 9 RETURN AIR PATH DUCT DETECTOR (WHERE APPLICABLE) SUPPLIED BY FIA CONTRACTOR AND UNIT INTERLOCK WIRING BY FIA CONTRACTOR. BAS TO SHOW DUCT DETECTOR STATUS AND SEND A SIMULTANEOUS FAL COMMAND TO THE UNIT ON DUCT DETECTOR ACTIVATION.
- 10 WHERE PROVIDED, VFD FOR SUPPLY FAN CONTROL, CONTROL BY BAS - VFD SUPPLIED WITH UNIT.
- 11 AVERAGING TEMPERATURE TRANSMITTER AFTER THE COOLING COIL.
- 12 AVERAGING TEMPERATURE TRANSMITTER BEFORE AND AFTER THE FIRST HEATING COIL.
- 13 AVERAGING FREEZE STAT AFTER THE FIRST HEATING COIL.
- 14 RH TRANSMITTER AFTER THE FIRST HEATING COIL.
- 15 OUTSIDE AIR FILTER STATIC PRESSURE SWITCH.
- 16 MODULATING OUTSIDE AIR DAMPER - DAMPERS WITH UNIT, CONTROL BY BAS.
- 17 MODULATING RETURN AIR MIXED AIR DAMPER - DAMPER WITH UNIT, CONTROL BY BAS.
- 18 AVERAGING TEMPERATURE TRANSMITTER IN RETURN AIR DUCT BY BAS.

SEQUENCE OF OPERATIONS FOR HVAC CONTROLS  
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SECTION 23093 - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS APPENDIX - A

- 6 DURING COMMISSIONING THE CONTROLS CONTRACTOR SHALL ADJUST THE INITIAL SET POINTS TO ACHIEVE A STABLE OPERATING CONDITION. CASINO FRONT AND BACK OF HOUSE EQUIPMENT OPERATING SCHEDULE WILL BE PROVIDED BY FACILITIES OR OWNER OPERATIONS DURING COMMISSIONING. OTHER ARE 20/0 ON A 7/20/0 SCHEDULE. INITIAL TEMPERATURE SET POINTS, UNLESS NOTED BY THE OWNER WILL BE 5°F OFF SET POINT. INITIAL TEMPERATURE SET POINTS: CASINO FLOOR: 65°F HEATING GUARANTEED, 75° COOLING; HEATING OFFICES AND MOST BOX SPACES - 75° HEATING, 70° HEATING. THE CENTRAL PLANT IS A 24/7 OPERATION. THE GAS SHALL BE MAINTAINED AT 100% OF THE DESIGN FLOW PER SPACE. ALERT ANY SPACE BY ABOVE OR BELOW SET POINT FOR MORE THAN 30 MINUTES.
- 7 DURING COMMISSIONING THE CONTROLS CONTRACTOR SHALL ALLOW FOR UP TO 80 IRRADIATION CHANGES.
- 8 ENERGIZABLE CENTRAL PLANT CHILLED WATER / CONDENSATE WATER / CHILLER COMPONENTS
- 2 ENERGIZABLE CENTRAL PLANT HEATING WATER COMPONENTS
- 3 OPERATIONAL VAV BOX OR VAV VALVES ASSOCIATED WITH EACH AHU
- 4 OPERATIONAL VAV BOX OR VAV VALVES ASSOCIATED WITH EACH AHU
- 5 OPEN COIL VAV BOX DAMPER ASSOCIATED WITH EACH AHU
- 6 OPERATIONAL FOU COIL WATER VALVES PER LEVEL
- 8 OPERATIONAL ALL FOU HW WATER VALVES PER LEVEL
- 9 OPERATIONAL ALL FOU HW WATER VALVES
- 1 THE BAS SHALL BE WEB ACCESSIBLE. THE CONTRACTOR IS TO PROVIDE THE SERVICE FOR THE FIRST YEAR.
- 1 SPACE TEMPERATURE TRANSMITTERS SHALL HAVE A FIELD ADJUSTABLE RANGE AND BE CAPABLE TO DISPLAY THE SET POINT. ENERGIZABLE OF THE TRANSMITTERS TEMPERATURE CONTROL SHALL BE SET FROM THE GUI. THE RANGE OF ADJUSTABILITY SHALL BE SET FROM THE GUI. DEFAULT IS NO FIELD CONTROL.
- 7.00 MISC O&M DISPLAY ITEMS
- 1 OUTSIDE AIR TEMPERATURE
- 2 OUTSIDE AIR HUMIDITY
- 3 SPACE TEMPERATURE SET POINT
- 4 SPACE TEMPERATURE
- 5 SPACE HUMIDITY SET POINT
- 6 SPACE HUMIDITY
- 7 SPACE CO2 SET POINT
- 8 SPACE CO2
- 9 CONTROL VALVES SHALL NOTE "N OPEN" DAMPERS SHALL NOTE "N OPEN" (IF SHOWN) SHALL INDICATE "N" "N"
- 10 VFD DEVICES SHALL DISPLAY CURRENT DRAW
- 11 DUCT DETECTOR STATUS FOR ASSOCIATED AIR HANDLER (AHU), MAIL FOU, FAN)
- 14 CASINO FLOOR BUILDING STATIC PRESSURE RELATIVE TO EXTERIOR
- 15 BASEMENT LEVEL BUILDING STATIC PRESSURE RELATIVE TO EXTERIOR
- 16 BUILDING POWER SOURCE - LOCAL UTILITY OR GENERATOR
- 8.00 SPACE CO2 CONTROL VALVES

SEQUENCE OF OPERATIONS FOR HVAC CONTROLS  
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- 12 FOR MAKE-UP AIR UNITS MEANS STOP PANELS, CLOSE COIL CONTROL VALVES, CLOSE THE OUTSIDE AIR DAMPER, FREEZE STAT REMAINS OPERATIONAL AND ALARMS.
- 4.00 GENERAL
- 1 ALARMS SHALL BE NOTED ON THE GUI AND REQUIRE USER INPUT THROUGH THE WORK STATION TO RESET FOR NORMAL OPERATION TO RESUME. WHEN RESET THE SYSTEM SHALL REVERT TO A CONTROLLED DAMPER TO THE NORMAL OPERATING SEQUENCE.
- 2 AS EACH MAKE-UP AIR UNIT SHALL BE RECEIVED BY THE USER SHALL REMAIN UNITS, CLEARED BY THE OPERATOR. IF THE SYSTEM OR CONDITION CLEARS ITSELF THE EQUIPMENT IS TO BE RESTARTED. THE SYSTEM SHALL REVERT TO THE ALERT SHALL CHANGE COLOR STATUS TO INDICATE NORMAL OPERATION HAS RESUMED. THE ALERT WILL BE CLEARED THROUGH THE GUI.
- 3 EACH PIECE OF EQUIPMENT CONTROLLED BY THE BAS SHALL HAVE AN AUTO OFF MAINTENANCE/ALARM LIFT SWITCH ON THE GUI. JEZ COMMAND WILL PLACE THE EQUIPMENT UNDER BAS CONTROL. USER INPUTS AND COMMANDS ARE ALLOWED TO CHANGE/EQUIPMENT HAS PROGRAMMED OPERATIONS. ANY USER INPUT SHALL BE IDENTIFIED BY COLOR CHANGE OR TAG UNTIL RELEASED TO AUTO MODE. ANY USER INPUT SHALL GO OUT AND RETURN TO PROGRAMMED OPERATION AFTER 15 MIN. THE COUNT DOWN TIMER SHALL DISPLAY ON THE GUI AND NOTE COMMAND TO BE RESET. MAY BE MULTIPLE TIMES, ACCEPTABLE TO GO TO A SECOND SCREEN. JEZ COMMAND WILL STOP THE UNIT, WHERE APPLICABLE COILS ASSOCIATED VALVES, DAMPERS AND NOT ALLOW ANY MANUAL INPUTS FROM THE GUI. DISPLAY ALERT STATUS.
- 4 APPLICABLE COILS ASSOCIATED VALVES, DAMPERS AND NOT ALLOW ANY MANUAL INPUTS FROM THE GUI. DISPLAY ALERT STATUS.
- 5 WHEN RESTARTING EQUIPMENT OFF CLOSING ASSOCIATED VALVES, DAMPERS AND ALL OTHER MANUAL OVERRIDES FROM THE GUI. WHEN USER INPUTS ARE RECEIVED TO OVERRIDE A CONDITION, THE OVERRIDES SHALL CHANGE STATE ON THE GUI VIA COLOR OR TAG TO NOTE OVERRIDE. DISPLAY ALERT STATUS. ALARM CONDITION NOTES A FAILURE THAT NEEDS USER INPUT TO CORRECT. EQUIPMENT WILL NOT TRY TO RESTART UNTIL THE ALARM IS ACKNOWLEDGED. IN THE CASE OF MULTIPLE PIECES OF EQUIPMENT SERVING A COMMON PURPOSE - CHILLERS, BOILERS, CHILLED WATER PUMPS AND HEATING SYSTEM SECONDARY PUMPS, IF THE USER ATTEMPTS TO STOP THE EQUIPMENT, ALL EQUIPMENT THE BAS SHALL AUTOMATICALLY GO TO THE NEXT AVAILABLE PIECE OF EQUIPMENT. DISPLAY ALERT STATUS. ALERT CONDITION NOTES A NON CRITICAL CONDITION EXISTED THAT CAUSED THE EQUIPMENT TO OPERATE OUTSIDE OF NORMAL OPERATING CONDITIONS FOR A GIVEN TIME. DISPLAY ALERT STATUS.
- 6 WHERE RESTARTING EQUIPMENT IS DESIGNED WITH THE SYSTEM OR MULTIPLE PIECES OF EQUIPMENT SERVING A COMMON PURPOSE, THE USER UPON COMMAND, THEY SHALL HAVE A LEAD/LAG SEQUENCE BASED UPON RUN TIME WITH THE GOAL TO EQUALLY EXERCISE EQUIPMENT. THE LEAD/LAG SEQUENCE SHALL BE SET BY THE OPERATOR. THE LEAD/LAG SEQUENCE SHALL CHANGE EVERY 30 SECONDS. THE LEAD/LAG SEQUENCE SHALL BE OVERRIDDEN BY THE USER BUT WILL CHANGE STATUS IN COLOR OR BY TAG TO NOTE THE OVERRIDE. ANY PIECE OF EQUIPMENT THAT HAS BEEN PLACED IN AN OUT OF SERVICE MODE (OFF, MAINTENANCE, ALARM) WHICH HAS CAUSED THE LEAD/LAG SEQUENCE TO STOP THAT DEVICE SHALL, WHEN THE EQUIPMENT IS PLACED BACK INTO SERVICE, OPERATE AT THE LEAD/LAG POSITION IN THE LEAD/LAG SEQUENCE. EQUIPMENT SHALL GO INTO A FORCED STAGE UP AND THEN RELEASE TO NORMAL OPERATION.

SEQUENCE OF OPERATIONS FOR HVAC CONTROLS  
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SECTION 23093 - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS APPENDIX - A

- Building Automation System  
Project: Tahlequah Casino  
Description: Preliminary Controls Sequence
- BUILDING AUTOMATION SYSTEM**
- 1 THE BAS SHALL CONTROL AUTOMATIC OPERATIONS ASSOCIATED WITH MOST INSTALLED EQUIPMENT, INCLUDING BUT NOT LIMITED TO AIR HANDLERS, PUMPS, CONTROLS VALVES, VAV BOXES, FAN COILS, MOTORIZED DAMPERS, CHILLERS, BOILERS AND FANS. THE SELECT BAS COMPONENTS MAY BE POWERED FROM A SECONDARY POWER SOURCE (GENERATOR). THE BAS CONTRACTOR SHALL PROVIDE UPS DEVICES TO PROTECT THE EQUIPMENT FROM VOLTAGE SPIKES AND FOR CRITICAL CONTROL FUNCTIONS TO STAY OPERATING SWITCH OVER TO GENERATOR. WHERE A SECONDARY POWER SOURCE EXISTS, UNLESS INSTRUCTED OTHERWISE, ALL BAS EQUIPMENT TO BE ON THE SECONDARY POWER SOURCE.
  - 2 MINIMUM BAS EQUIPMENT CONTROLS TO BE COMPLETE WITH UPS DEVICES
    - 1 BAS SERVER
    - 1 BAS OPERATOR WORK STATION (IF DIFFERENT FROM SERVER)
    - 1 CASINO AIR HANDLER CONTROLLERS
  - 3 DEFINITIONS: TERMS USED THROUGHOUT THIS SPECIFICATION
    - 1 GUI: GRAPHICAL USER INTERFACE. THE MAIN OPERATOR WORK STATION WHERE BAS OPERATIONS CAN BE OBSERVED AND WHERE USER INPUTS CAN HAPPEN.
    - 2 GUI ADJ: MEANS A POINT IS DISPLAYED ON THE GUI AND IS ADJUSTABLE FROM THAT SCREEN. WHEN THE POINT IS ADJUSTED, A PROGRAM DEFAULT VALUE EXISTS THAT POINT VALUE SHALL BE DISPLAYED AND THE NEW VALUE DISPLAYED ADJACENT AND IN A DIFFERENT COLOR.
    - 3 BAS: BUILDING AUTOMATION SYSTEM + FMS: FACILITIES MANAGEMENT SYSTEM + BMS: BUILDING MANAGEMENT SYSTEM + EDC: DIRECT CONTROL SYSTEM + EMS: ENERGY MANAGEMENT SYSTEM
    - 4 FAL: EQUIPMENT DEFINITION.
    - 5 FOR A CHILLER MEANS STOP THE CHILLER, CLOSE ISOLATION VALVES AND ALARMS
    - 6 FOR A CHILLED WATER PUMP (CHP) OR HEATING WATER SECONDARY PUMP (HP) MEANS STOP THE PUMP AND ALARMS.
    - 7 FOR A BOILER OR ITS ASSOCIATED BOILER PRIMARY PUMP MEANS SHUT DOWN THE BOILER, STOP ITS ASSOCIATED PRIMARY PUMP, ISOLATE THE BOILER AND ALARMS
    - 8 FOR A FAN COIL MEANS STOP THE FAN, CLOSE COIL CONTROL VALVES AND IF APPLICABLE, CLOSE THE VENTILATION CONNECTION VAV BOX AND ALARMS.
    - 9 FOR A VAV BOX MEANS CLOSE THE VAV BOX, CLOSE THE HEATING CONTROL VALVE (IF APPLICABLE) AND ALARMS.
    - 10 FOR AN EXHAUST FAN MEANS TURN OFF THE FAN, ISOLATE WHERE APPLICABLE AND ALARMS.
    - 11 FOR AN AIR HANDLING UNIT MEANS STOP FAN, CLOSE OUTSIDE AIR AND EXHAUST AIR DAMPERS, OPEN MIXED AIR DAMPER IF AVAILABLE, CLOSE THE COOLING COIL VALVE, CLOSE THE HEATING COIL VALVE. IF A MIXED AIR TEMPERATURE TRANSMITTER EXISTS MODULATE THE HEATING COIL VALVE TO MAINTAIN 5°F. FREEZE STAT REMAINS OPERATIONAL, IF AN ENERGY RECOVERY WHEEL EXISTS, STOP THE WHEEL AND ALARMS.

SEQUENCE OF OPERATIONS FOR HVAC CONTROLS  
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SECTION 23093 - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS APPENDIX - A

- 2 ENABLE GENERAL EXHAUST FAN
- 3 IF NO RUN STATUS IS RECEIVED WITHIN ONE MINUTE, ALARM THE GUI.
- 4 REFERENCED UNIT APPLICATION EXHAUST FAN HAS REQUIRE A TIME OF DAY SCHEDULE, PROVIDE AS DIRECTED.

**CENTRAL PLANT**

**SYSTEM SUMMARY**

- 1 COMMUNICATE WITH THE PACKAGED CENTRAL PLANT OVER A BACKNET INTERFACE. MAP ALL POINTS PROVIDED.
- 2 COMMANDS TO BE MADE AVAILABLE.
- 3 REMOTE OFF HEATING AND CHILLED WATER PUMPS TO BE SENT TO MODULAR SYSTEM FOR PUMP GROUP.
- 4 CHILLED AND HEATING WATER RESET TO BE SENT OF HITE MODULAR SYSTEM.
- 13 FILTER STATIC PRESSURE SWITCH
- 14 TWO POSITION OUTSIDE AIR DAMPER
- 15 INTERLOCK OPERATION WITH THE KEF
- 16 ALARM COMMAND STATUS MISMATCH
- 17 SEQUENCING - CONSTANT AIR VOLUME MAU
- 18 THE KITCHEN EXHAUST AND MAKE-UP AIR SYSTEM SHALL BE ENABLED THROUGH THE USE OF A LOCAL KITCHEN EXHAUST HOOD CONTROL PANEL.
- 19 UPON STAT SIGNAL OF KITCHEN EXHAUST HOOD, ENABLE KEF AIR MONITOR THE KEF STAT SIGNAL, IF NOT RECEIVED WITHIN 8 SECONDS, ALERT THE GUI.
- 20 UPON RECEIPT OF STATUS SIGNAL OF KITCHEN EXHAUST HOOD, RUN, ENABLE THE MAU INT.
- 21 IF STAT IS OFF, OPEN THE HEATING WATER CONTROL VALVE 50%.
- 22 OPEN THE OUTSIDE AIR DAMPER, WHEN CONFIRMED STAT THE BAS FAN, RELEASE THE HEATING WATER CONTROL VALVE TO NORMAL LEAVING AIR TEMPERATURE CONTROL.
- 23 MODULATE THE HEATING AND COOLING WATER VALVES TO MAINTAIN SAT. SP.
- 24 IF THE MAKE-UP AIR UNIT SUPPLY AIR FAN RUN STATUS SIGNAL IS NOT RECEIVED WITHIN 10 SECONDS, FAL, THE MAU AND ALARM THE GUI.
- 25 INITIAL SET POINT FOR SAT. SP. GUI ADJUSTABLE.
- 26 THE MAXIMUM ALLOWABLE SUPPLY AIR TEMPERATURE IS 75°F. THE MINIMUM ALLOWABLE SUPPLY AIR TEMPERATURE IS 50°F. IF SAT. OUTSIDE THESE PARAMETERS FOR MORE THAN 20 SECONDS, ALERT GUI.
- 37 ACTIVATION OF THE FREEZE STAT SWITCH WILL FAL, THE UNIT, OUTSIDE AIR DAMPER CLOSERS, HEATING COIL, OPENS, COOLING COIL, CLOSERS AND ALARM. AFTER COORDINATION OF THE OUTSIDE AIR DAMPER CLOSERS AND 60 MINUTES, CLOSE THE HEATING WATER COIL VALVE, OPEN THE HEATING WATER COIL VALVE EVERY 15 MINUTES FOR 15 MINUTES UNTIL THE ALARM IS CLEARED.

**CRAC UNITS**

- 1 INTERNAL CONTROLS MAINTAIN OPERATION OF THE CRAC UNITS
- 2 AUTOMATICALLY MONITOR OPERATING STATUS AND BE CONTROLLED BY INTERNAL CRAC UNIT CONTROLS.
- 3 FREEZE PROTECTION - UNITS TO HAVE AN AVERAGING FREEZE CAPILLARY TUBE ON THE DOWNSTREAM SIDE OF HEATING COIL #1, SET AT 30°F. ACTIVATION OF THE FREEZE STAT SWITCH WILL FAL, THE UNIT AND ALARM.
- 4 LOW STATIC SWITCH - UNITS TO HAVE A LOW STATIC SWITCH ON THE SUPPLY FAN INTAKE. ACTIVATION OF THE HIGH STATIC SWITCH WILL FAL, THE UNIT AND ALARM.

**GENERAL EXHAUST FAN**

TO GO 1 APPLIES TO 5F, 2F.

SEQUENCE OF OPERATIONS FOR HVAC CONTROLS  
MSA 1001, Technical Specs

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SECTION 23093 - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS APPENDIX - A

- 20 RH TRANSMITTER IN THE RETURN AIR
  - 21 VFD FOR EXHAUST FAN CONTROL, CONTROL BY BAS - VFD SUPPLIED WITH UNIT. CONTROL TO BE SHOWN WITH THE OPERATION OF THE MIXED AIR DAMPER.
  - 22 IF CAT - CHILLED WATER SETPOINT (TYPICALLY 52F OR 54F), MODULATE WHEEL TO MAINTAIN CHILLED WATER SETPOINT.
  - 23 IF CHILLED WATER SETPOINT - CAT - HWT, THEN WHEEL + OFF.
  - 24 IF CAT - HWT, THEN WHEEL + ON.
- FAN COILS**
- 1 SPACE CONDITION INFORMATION PROVIDED BY A WALL MOUNTED SENSOR (TEMPERATURE TRANSMITTER). ON DEMAND FOR COOLING START THE FAN COIL FAN. IF THE FC SUPPLY AIR FAN CURRENT SWITCH SIGNAL IS NOT RECEIVED WITHIN 60 SECONDS, CLOSE COIL CONTROL VALVES AND ALARMS. COOLING MODE. MODULATE THE COOLING CONTROL VALVE TO MAINTAIN SPACE CONDITIONS. FAN COIL FAN RUNS CONTINUOUS. COOLING MODE. OPEN THE COOLING VALVE TO MAINTAIN A LEAVING AIR TEMPERATURE OF 55°F. WHEN THE ROOM SENSOR IS SATISFIED, CLOSE THE CONTROL VALVE AND STOP THE FC FAN. COOLING MODE SELECTABLE FROM GUI. PROVIDE AN OPTION SWITCH ON THE GUI FOR CONTINUOUS FC FAN OPERATION.
  - 2 ON DEMAND FOR HEATING START THE FAN COIL FAN. IF THE FC SUPPLY AIR FAN CURRENT SWITCH SIGNAL IS NOT RECEIVED WITHIN 60 SECONDS, CLOSE COIL CONTROL VALVES AND ALARMS. HEATING MODE. MODULATE THE HEATING CONTROL VALVE TO MAINTAIN SPACE CONDITIONS. CONTROL THE FC FAN TO A MAINTAIN 80% FAN COIL FAN RUNS CONTINUOUS. HEATING MODE. MODULATE THE HEATING COIL TO MAINTAIN A LAT OF 90°F. WHEN ROOM SENSOR IS SATISFIED, CLOSE THE CONTROL VALVE AND STOP THE FC FAN. PROVIDE AN OPTION SWITCH ON THE GUI FOR CONTINUOUS FC FAN OPERATION.
  - 3 UPON LOSS OF RUN STATUS OF THE FAN COIL UNIT FOR 60 SECONDS, FAL, THE UNIT AND CLOSE WATER COIL VALVES. ALARM THE UNIT.
  - 4 DUCT DETECTOR SHUT DOWN A FIA CONTRACTOR INTERLOCK. THE BAS SHALL MONITOR DUCT DETECTOR STATUS AND SEND A SIMULTANEOUS FAL COMMAND TO THE UNIT ON DUCT DETECTOR ACTIVATION.

**KITCHEN EXHAUST SYSTEM/MAU SYSTEM**

- 1 THIS SEQUENCE OF OPERATION PERTAINS TO A 100% OUTSIDE AIR, OR CONSTANT VOLUME MAKE-UP AIR UNIT. UNIT CONFIGURATION: SUPPLY PATH: OUTSIDE AIR TWO POSITION MOTORIZED DAMPER, FILTER, HEATING COIL, COOLING COIL, SUPPLY AIR FAN.
- 2 DUCT DETECTOR SHUT DOWN A FIA CONTRACTOR INTERLOCK. THE BAS SHALL MONITOR DUCT DETECTOR STATUS AND SEND A SIMULTANEOUS FAL COMMAND TO THE UNIT ON DUCT DETECTOR ACTIVATION.
- 3 FREEZE PROTECTION - UNITS TO HAVE AN AVERAGING FREEZE CAPILLARY TUBE ON THE DOWNSTREAM SIDE OF HEATING COIL #1, SET AT 30°F. ACTIVATION OF THE FREEZE STAT SWITCH WILL FAL, THE UNIT AND ALARM.
- 4 LOW STATIC SWITCH - UNITS TO HAVE A LOW STATIC SWITCH ON THE SUPPLY FAN INTAKE. ACTIVATION OF THE HIGH STATIC SWITCH WILL FAL, THE UNIT AND ALARM.
- 5 SUPPLY DUCT STATIC PRESSURE CONTROL, FOR VAV BOX EQUIPPED MAUS, DUCT STATIC PRESSURE SENSOR FAILURE - DEFAULT TO LAST KNOWN VALUE AND ALERT GUI.
- 6 BAS INTERFACE EQUIPMENT - EQUIPMENT BY BAS UNLESS NOTED OTHERWISE. ALL ITEMS TO BE DISPLAYED ON THE GUI.
- 7 DAMPER OPERATORS BY BAS, DAMPERS WITH UNIT.

SEQUENCE OF OPERATIONS FOR HVAC CONTROLS  
MSA 1001, Technical Specs

APPENDIX - A, Page 4 of 7

REVISIONS  
ENTIRE SHEET







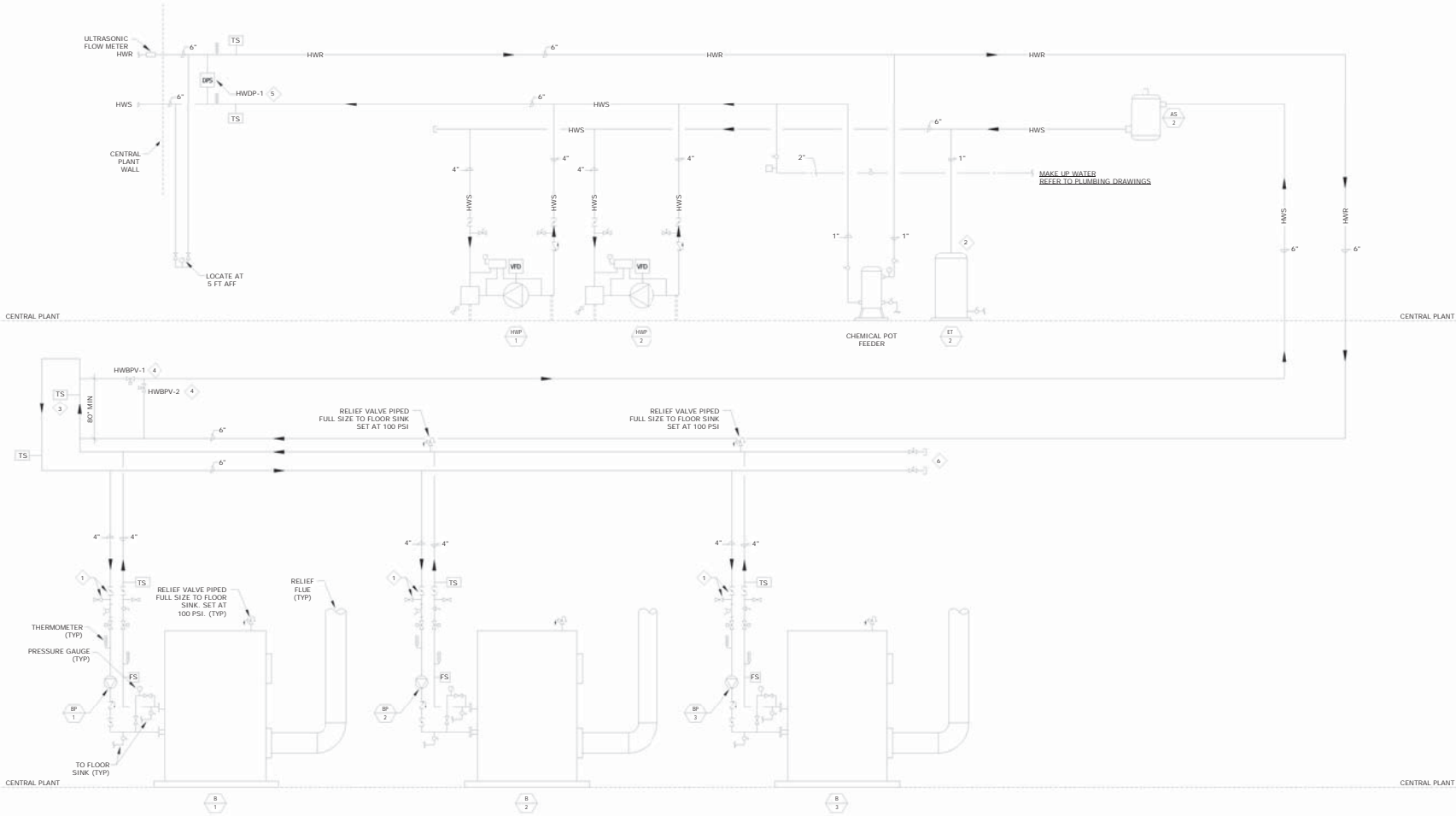


**GENERAL NOTES:**

1. TEMPERATURE GAUGES: WEISS VARIANGLE DIGITAL (PROVIDE WEATHERPROOF COVER IN EXTERIOR LOCATIONS).
2. PRESSURE GAUGES: WEISS DUOY1-0100-4L-SG
3. REFER TO PUMP AND MAKE-UP WATER DETAILS FOR ADDITIONAL REQUIREMENTS.
4. SET HWP VFD MIN SPEED / FREQUENCY TO 6 HZ.

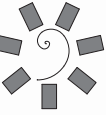
**SHEET NOTES:**

1. BOILER ISOLATION VALVES AND AIR BLEED VALVES SHALL BE PHYSICALLY INSTALLED HIGHER THAN THE TOP OF THE BOILER. PROVIDE CHAIN WHEELS ON THE BOILER ISOLATION VALVES.
2. ADJUST CHARGE TO SUIT SYSTEM REQUIREMENTS.
3. LOCATE TRANSMITTER AT MIDPOINT ON BRIDGELINE.
4. THIS VALVE MINIMUM SPECIFICATION VALVE: TECO BF-HP SERIES.
5. HWBP-2 TO BE LOCATED AT AHU-2.
6. EMERGENCY TAPS EXTEND TO OUTSIDE OF PLANT IN THE BOX.



**A HEATING WATER PIPING DIAGRAM**  
M0.13 NTS

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CHEROKEE NATION ENTERTAINMENT  
**TALHEQUAH CASINO**  
TALHEQUAH, OKLAHOMA

PROJECT NAME:  
**BID PACKAGE 05**

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	
2	ISSUED FOR PERMIT	
3	ISSUED FOR PERMIT	

DATE: 05/03/18 JOB NUMBER: 17-06

SHEET NUMBER: **M0.13**

MECHANICAL PIPING DIAGRAMS

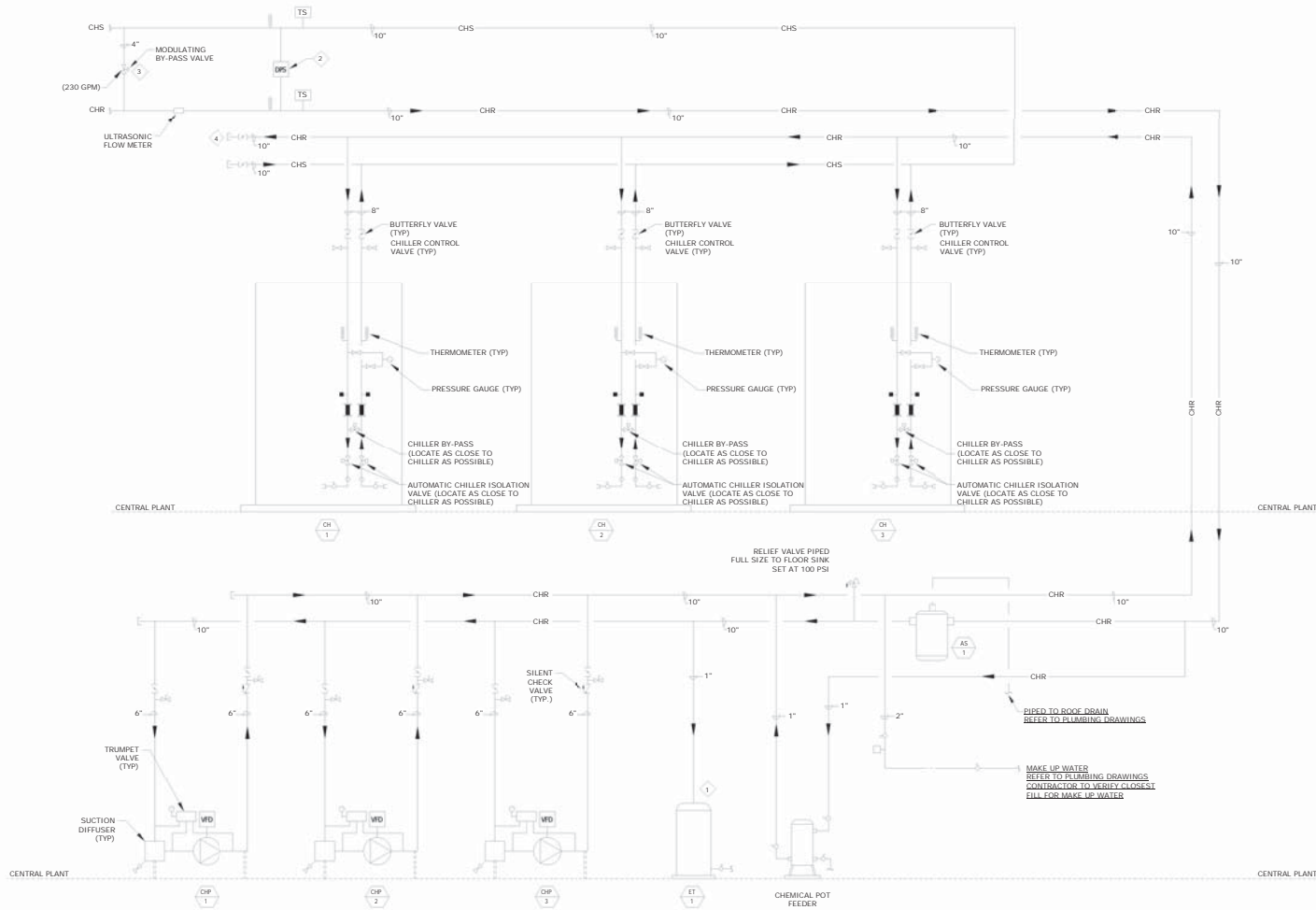


**GENERAL NOTES:**

- TEMPERATURE GAUGES: WEISS VARI-ANGLE DIGITAL (PROVIDE WEATHERPROOF COVER IN EXTERIOR LOCATIONS).
- PRESSURE GAUGES: WEISS DUOY1-0100-4L-SG
- REFER TO PUMP AND MAKE-UP WATER DETAILS FOR ADDITIONAL REQUIREMENTS.
- SET OHP W/D MIN SPEED / FREQUENCY TO 6 HZ
- BAS TO COLLECT EVAPORATOR EWT / LWT AND CONDENSER EWT / LWT FROM EACH CHILLER CONTROL PANEL.
- BAS TO COLLECT EVAPORATOR DP FROM EACH CHILLER CONTROL PANEL.

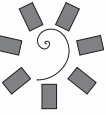
**SHEET NOTES:**

- ADJUST TANK CHARGE VALVE TO SUIT SYSTEM REQUIREMENTS.
- DP SENSOR AT AIR COOLED CHILLER.
- BY-PASS LOCATED AT CHILLER.
- EMERGENCY TAPS EXTEND TO OUTSIDE OF PLANT IN THE BOX.



**1 CHILLED WATER PIPING DIAGRAM**  
MO.14 NTS

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**CHEROKEE NATION ENTERTAINMENT  
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TAHLEQUAH, OKLAHOMA

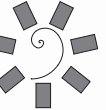
PROJECT NAME  
**BID PACKAGE 05**

NO.	DATE	DESCRIPTION
1	05/03/18	ISSUED FOR BIDDING

DATE: 05/03/18 JOB NUMBER: 17-06

SHEET NUMBER: **MO.14**

MECHANICAL PIPING DIAGRAMS



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**TAHLEQUAH CASINO**  
 TAHLEQUAH, OKLAHOMA

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1	05/03/18	ISSUED FOR BIDDING
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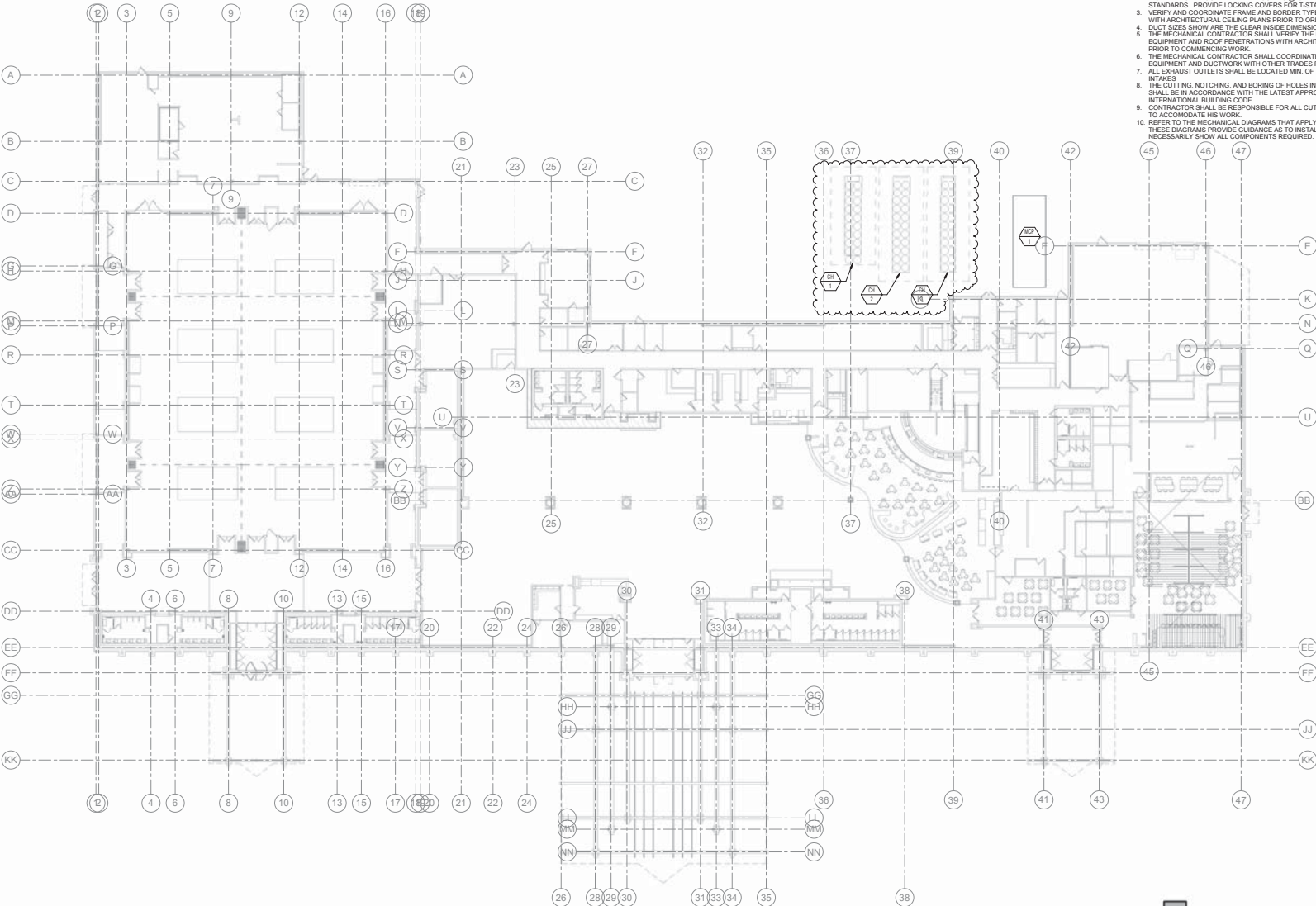
DATE: 05/03/18 JOB NUMBER: 17-06

PROJECT NUMBER: **M1.0**

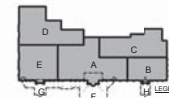
**MECHANICAL OVERALL FLOOR PLAN**

**GENERAL NOTES:**

- ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILING. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
- VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS 5/8" A.F.F. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
- VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
- DUCT SIZES SHOW ARE THE CLEAR INSIDE DIMENSIONS.
- THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES PRIOR TO COMMENCING WORK.
- ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
- THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
- REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.



MECHANICAL OVERALL FLOOR PLAN  
 3/64" = 1'-0"



- LEGEND**
- A - GAMING
  - B - SOUTH
  - C - BOH
  - D - SHANGHAI BOH
  - E - NORTH
  - F - CANOPY
  - G - CANOPY
  - H - CANOPY



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CONSULTING ENGINEER



CHEROKEE NATION ENTERTAINMENT  
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 TALHEQUAH, OKLAHOMA

PROJECT NAME  
**BID PACKAGE 05**

NO.	REVISION	DATE
1	ISSUE FOR PERMITTING	
2	ISSUE FOR PROCEEDING	
3	ISSUE FOR PROCEEDING	

DATE: 05/03/18 JOB NUMBER: 17-06

M1.1

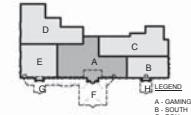
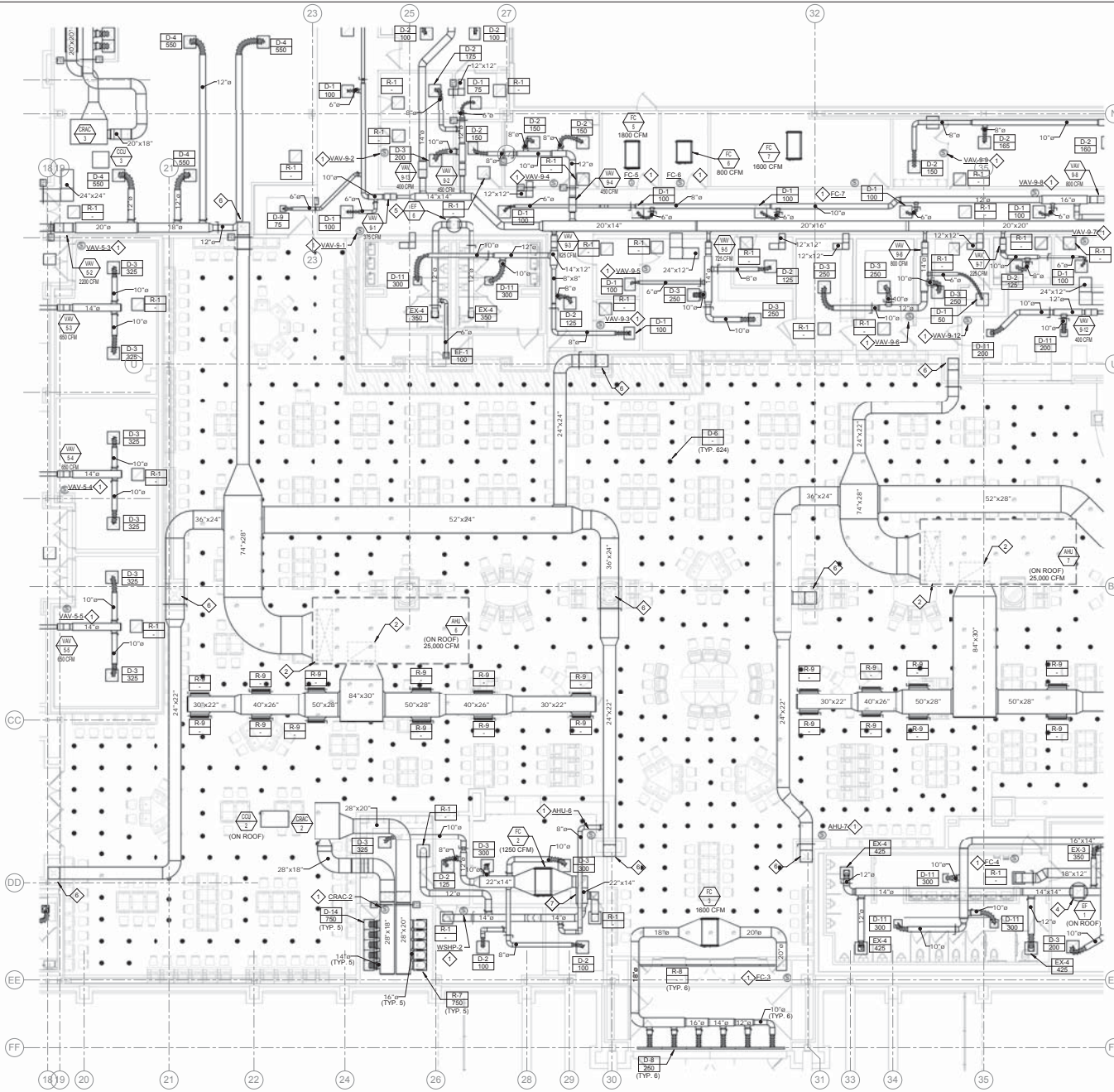
MECHANICAL ENLARGED FLOOR PLAN - GAMING

**GENERAL NOTES:**

- ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILING. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
- VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS @ 4' F.E. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
- VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
- DUCT SIZES SHOWN ARE THE CLEAR INSIDE DIMENSIONS.
- THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES PRIOR TO COMMENCING WORK.
- ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
- THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR, JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
- REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

**SHEET NOTES:**

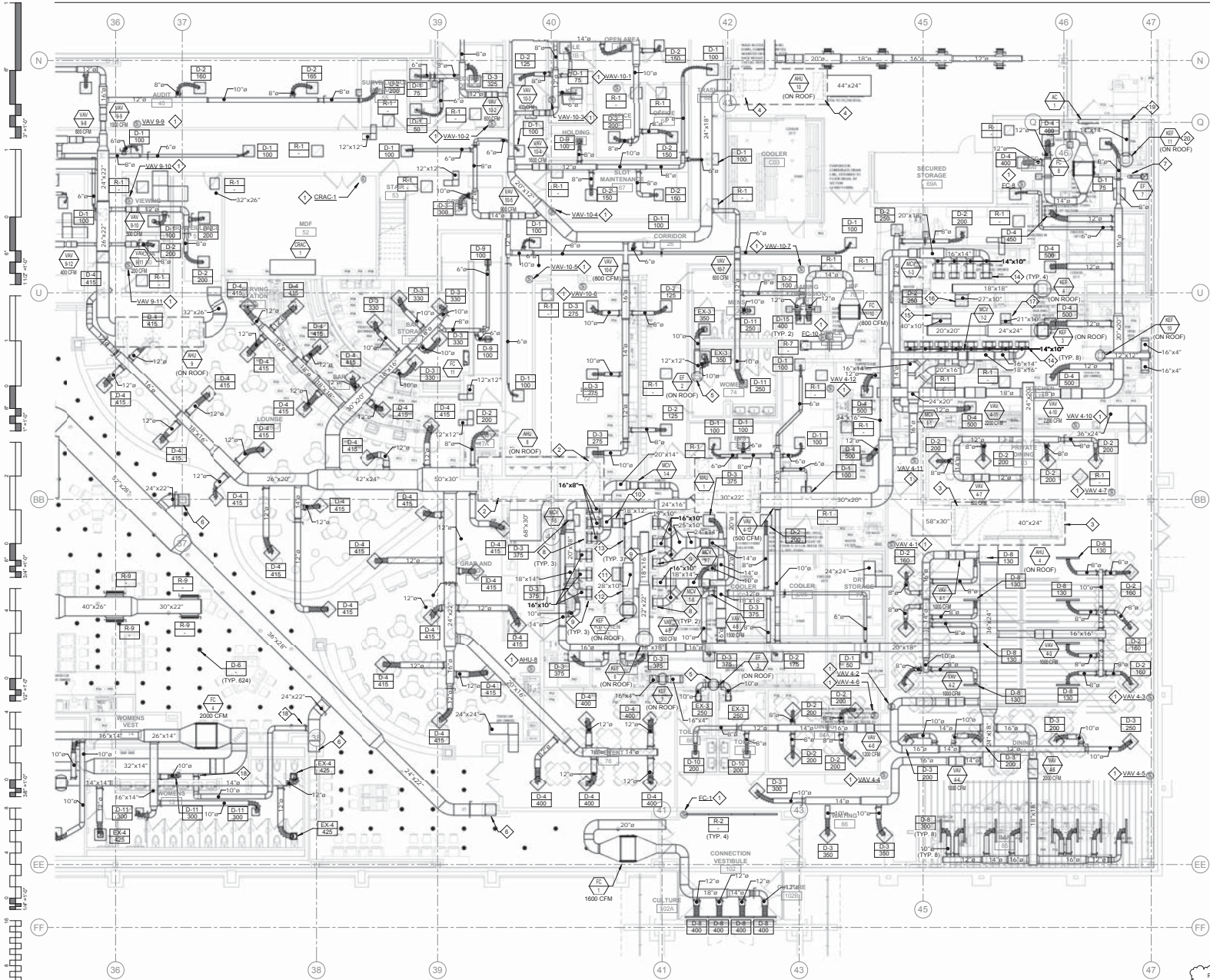
- PROVIDE SENSOR AND WIRING UP TO AIR HANDLING UNIT, FAN COIL UNIT, AND/OR VAV BOX AS INDICATED.
- 74"x28" SUPPLY AIR, 84"x30" RETURN AIR UP TO ABLE AND ABLL.
- NOTE DELETED.
- 24"x22" EXHAUST AIR UP TO EE-1.
- 14"x14" EXHAUST AIR UP TO EE-4.
- 24"x22" SUPPLY AIR DUCT DOWN TO RAISED FLOOR, TERMINATE 12" ABOVE FINISHED FLOOR.
- 8"Ø OUTSIDE AIR DUCT (200 CFM).
- 10"Ø OUTSIDE AIR DUCT (200 CFM).



ENTIRE SHEET  
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MECHANICAL ENLARGED FLOOR PLAN - GAMING  
 1/8" = 1'-0"

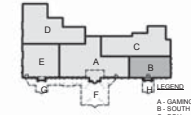




MECHANICAL ENLARGED FLOOR PLAN - SOUTH  
 1/8" = 1'-0"

- GENERAL NOTES:**
- ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILING. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS @ 48" A.F.F. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
  - VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS @ 48" A.F.F. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
  - VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
  - THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
  - THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES PRIOR TO COMMENCING WORK.
  - ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
  - THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
  - REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

- SHEET NOTES:**
- PROVIDE SENSOR AND WIRING UP TO AIR HANDLING UNIT. WATER SOURCE HEAT PUMP UNIT, AND/OR VAV BOX AS INDICATED.
  - 50"x30" SUPPLY AIR, 68"x30" RETURN AIR UP TO AHU-8.
  - 40"x24" SUPPLY AIR, 50"x30" RETURN AIR UP TO AHU-4.
  - 48"x20" SUPPLY AIR, 58"x21" RETURN AIR UP TO AHU-10.
  - 12"x12" EXHAUST AIR UP TO EE-2 AND EE-3.
  - 24"x22" SUPPLY AIR DUCT DOWN TO RAISED FLOOR. TERMINATE 12" ABOVE FINISHED FLOOR.
  - 8"x8" EXHAUST UP THROUGH ROOF WITH APPROVED AIR CAP.
  - 16"x8" MAKE-UP AIR DOWN TO HOOD.
  - 16"x10" MAKE-UP AIR DOWN TO HOOD.
  - 19"x10" GREASE EXHAUST DOWN TO HOOD.
  - 28"x10" GREASE EXHAUST DOWN TO HOOD.
  - 16"x10" GREASE EXHAUST DOWN TO HOOD.
  - 25"x10" GREASE EXHAUST DOWN TO HOOD.
  - 14"x10" MAKE-UP AIR DOWN TO HOOD.
  - 40"x10" GREASE EXHAUST DUCT DOWN TO HOOD.
  - 27"x10" GREASE EXHAUST DUCT DOWN TO HOOD.
  - 21"x10" GREASE EXHAUST DUCT DOWN TO HOOD.
  - 10"x8" OUTSIDE AIR DUCT.
  - 14"x14" GREASE EXHAUST DUCT DOWN TO SMOKER (ITEM # 63FD). REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.
  - 14"x14" GREASE EXHAUST UP THROUGH ROOF TO FAN. REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.



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CHEROKEE NATION CASINO

CHEROKEE NATION ENTERTAINMENT  
 TAHLEQUAH CASINO  
 TAHLEQUAH, OKLAHOMA

PROJECT NAME: BID PACKAGE 05

NO.	DATE	DESCRIPTION
1	05/03/18	ISSUED FOR BIDDING
2	05/03/18	REVISED

DATE: 05/03/18 JOB NUMBER: 17-06

M1.2  
 MECHANICAL ENLARGED FLOOR PLAN - SOUTH

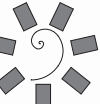
**GENERAL NOTES:**

1. ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILINGS. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
2. VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS WITH ARCHITECT IN ACCORDANCE WITH AIA STANDARDS. PROVIDE LOCKING COVERS FOR R-I STATS.
3. VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
4. DUCT SIZES SHOW ARE THE CLEAR INSIDE DIMENSIONS.
5. THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
6. THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES.

7. ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10' 0" FROM ANY OUTSIDE AIR INTAKES.
8. THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
10. REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

**SHEET NOTES:**

1. PROVIDE SENSOR AND WIRING UP TO AIR HANDLING UNIT, FAN COIL UNIT, UNIT HEATERS AND/OR VAV BOX AS INDICATED.



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 TAHLEQUAH CASINO  
 TAHLEQUAH, OKLAHOMA

PROJECT NAME

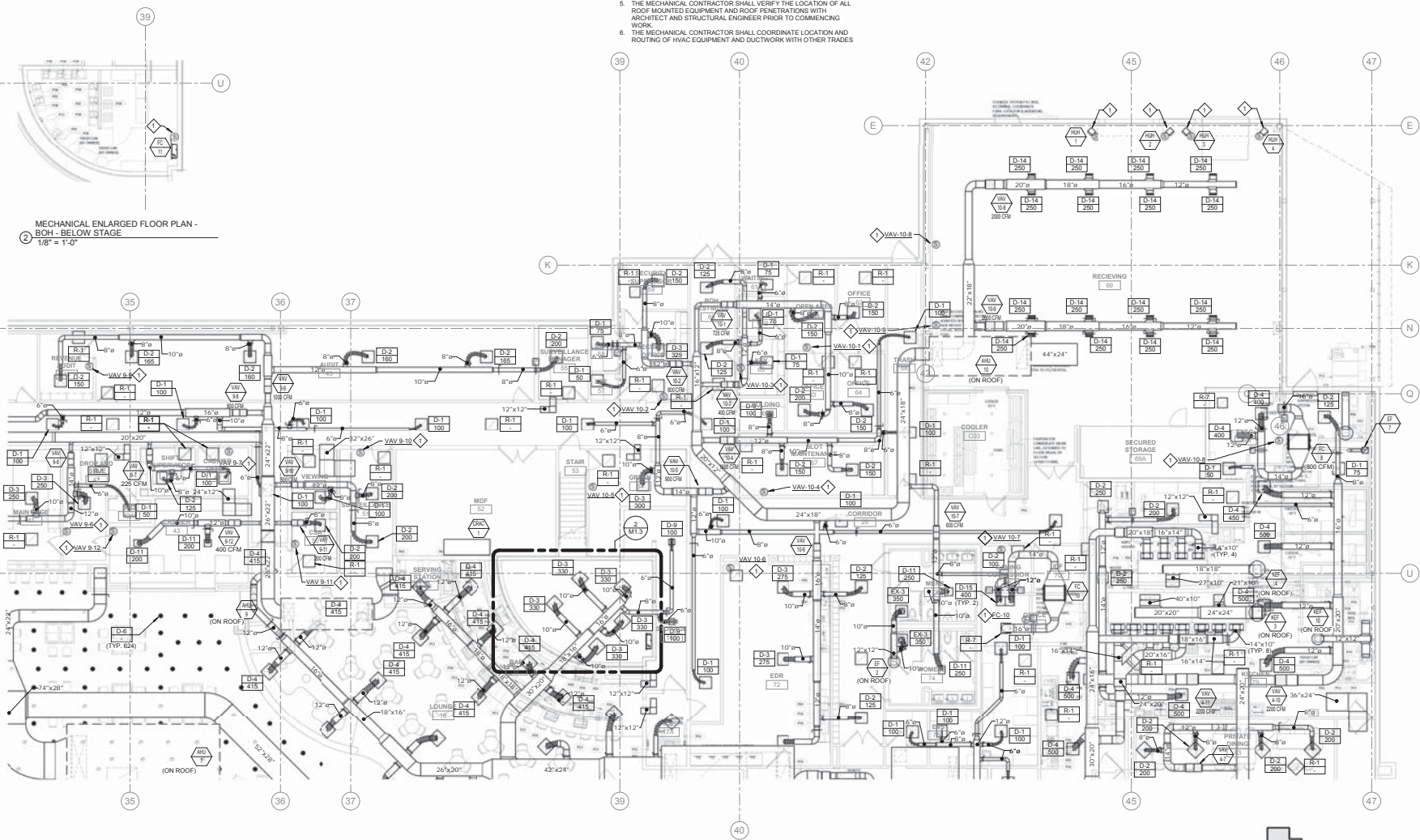
BID PACKAGE 05

NO.	REVISION
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2	BY: [Signature]
3	DATE: 05/03/18
4	BY: [Signature]

DATE: 05/03/18 JOB NUMBER: 17-06

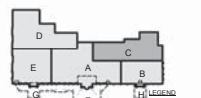
M1.3

MECHANICAL ENLARGED FLOOR PLAN - BOH



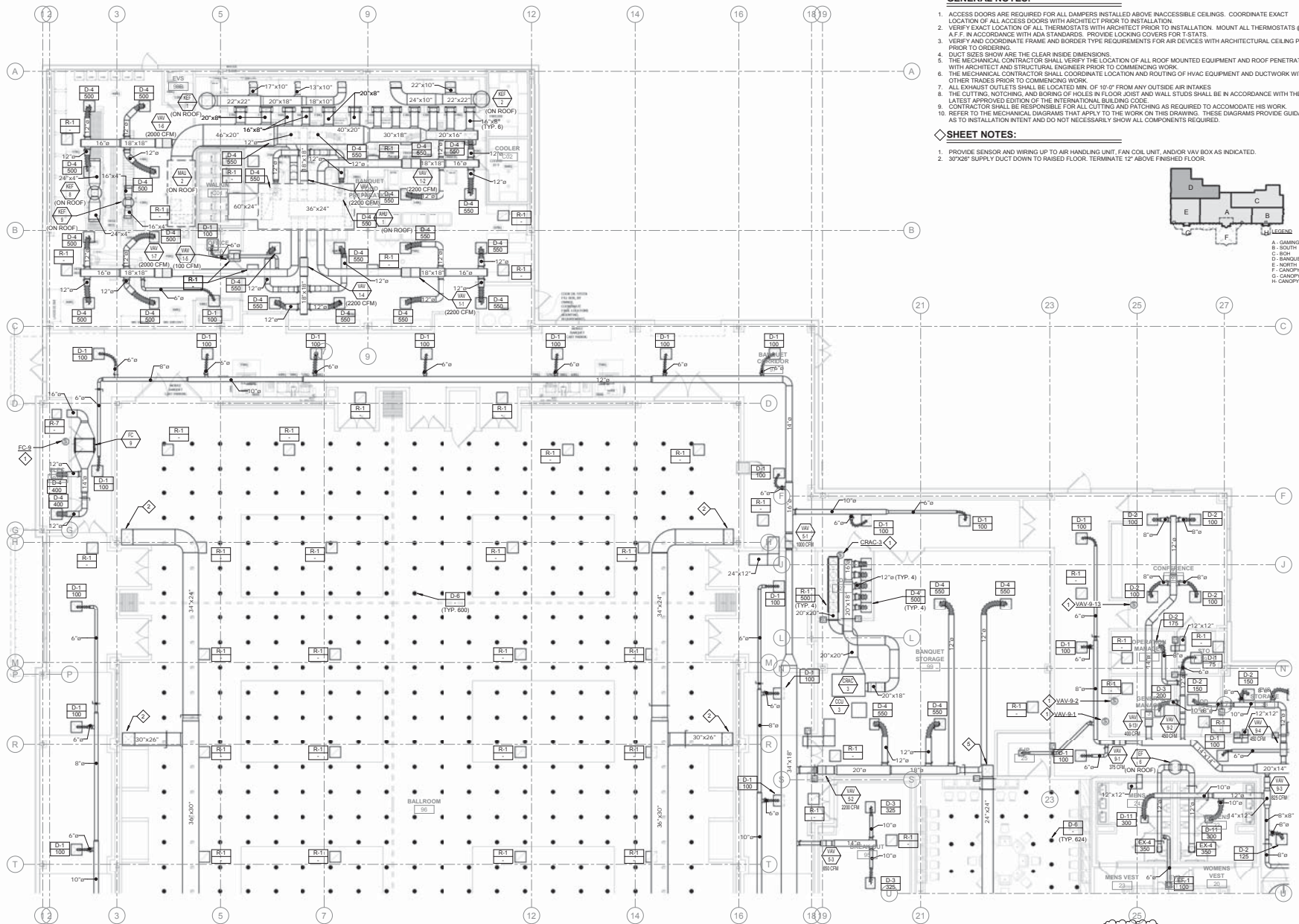
MECHANICAL ENLARGED FLOOR PLAN - BOH - BELOW STAGE  
 1/8" = 1'-0"

MECHANICAL ENLARGED FLOOR PLAN - BOH  
 1/8" = 1'-0"



REVISION  
 ENTIRE SHEET





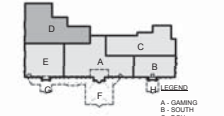
MECHANICAL ENLARGED FLOOR PLAN - BANQUET BOH  
 1/8" = 1'-0"

**GENERAL NOTES:**

- ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILINGS. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
- VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS @48" A.F.F. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
- VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
- DUCT SIZES SHOW ARE THE CLEAR INSIDE DIMENSIONS.
- THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES PRIOR TO COMMENCING WORK.
- ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
- THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
- REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

**SHEET NOTES:**

- PROVIDE SENSOR AND WIRING UP TO AIR HANDLING UNIT, FAN COIL UNIT, AND/OR VAV BOX AS INDICATED.
- 30"x26" SUPPLY DUCT DOWN TO RAISED FLOOR. TERMINATE 12" ABOVE FINISHED FLOOR.



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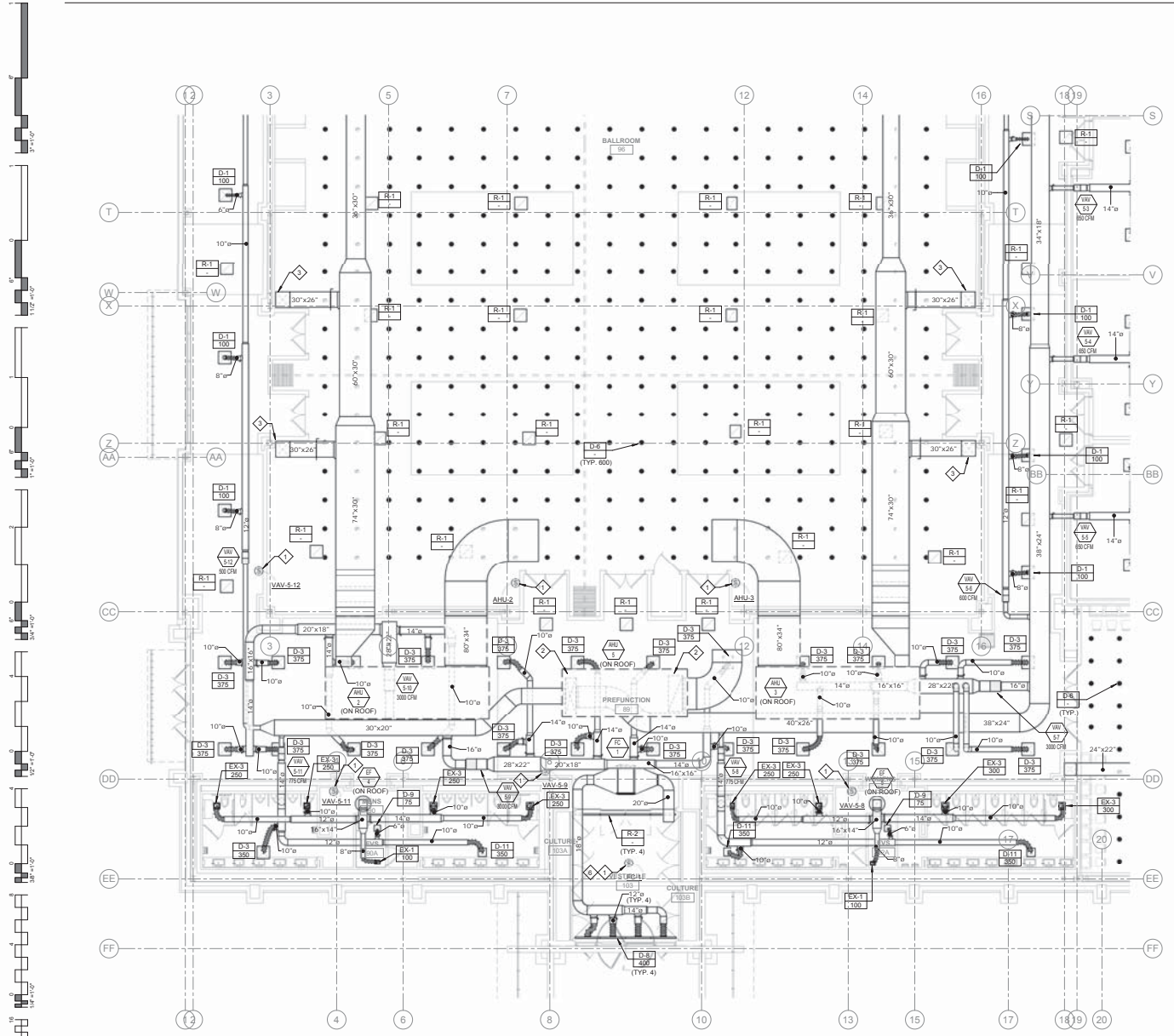
CHEROKEE NATION ENTERTAINMENT  
**TALHEQUAH CASINO**  
 TALHEQUAH, OKLAHOMA

PROJECT NAME:  
**BID PACKAGE 05**

REVISION	DATE	BY	DESCRIPTION
1			ISSUED FOR PERMITTING
2			ISSUED FOR PERMITTING
3			ISSUED FOR PERMITTING

DATE: 05/03/18  
 JOB NUMBER: 17-06

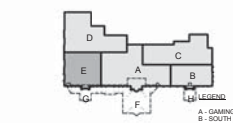
**M1.4**  
 MECHANICAL ENLARGED FLOOR PLAN - BANQUET BOH



- GENERAL NOTES:**
- ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILINGS. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
  - VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS @4" A.F.F. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
  - VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
  - DUCT SIZES SHOW ARE THE CLEAR INSIDE DIMENSIONS.
  - THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
  - THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES PRIOR TO COMMENCING WORK.
  - ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
  - THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
  - REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

- SHEET NOTES:**
- PROVIDE SENSOR AND WIRING UP TO AIR HANDLING UNIT, FAN COIL UNIT, AND/OR VAV BOX AS INDICATED.
  - 20"x30" SUPPLY AIR DUCT, 60"x30" RETURN AIR DUCT UP TO AHU-3.
  - 30"x20" SUPPLY AIR DUCT DOWN TO RAISED FLOOR. TERMINATE 12" ABOVE FINISHED FLOOR.
  - ALL EXTERIOR DUCTWORK SHALL HAVE 2" INSULATION WITH JACKETING.
  - 24"x34" SUPPLY AIR DUCT DOWN TO RAISED FLOOR. TERMINATE 12" ABOVE FINISHED FLOOR.
  - CEILING MOUNTED SENSOR.

MECHANICAL ENLARGED FLOOR PLAN - NORTH  
 1/8" = 1'-0"



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CHEROKEE NATION ENTERTAINMENT  
 TAHLEQUAH CASINO  
 TAHLEQUAH, OKLAHOMA

PROJECT NAME  
 BID PACKAGE 05

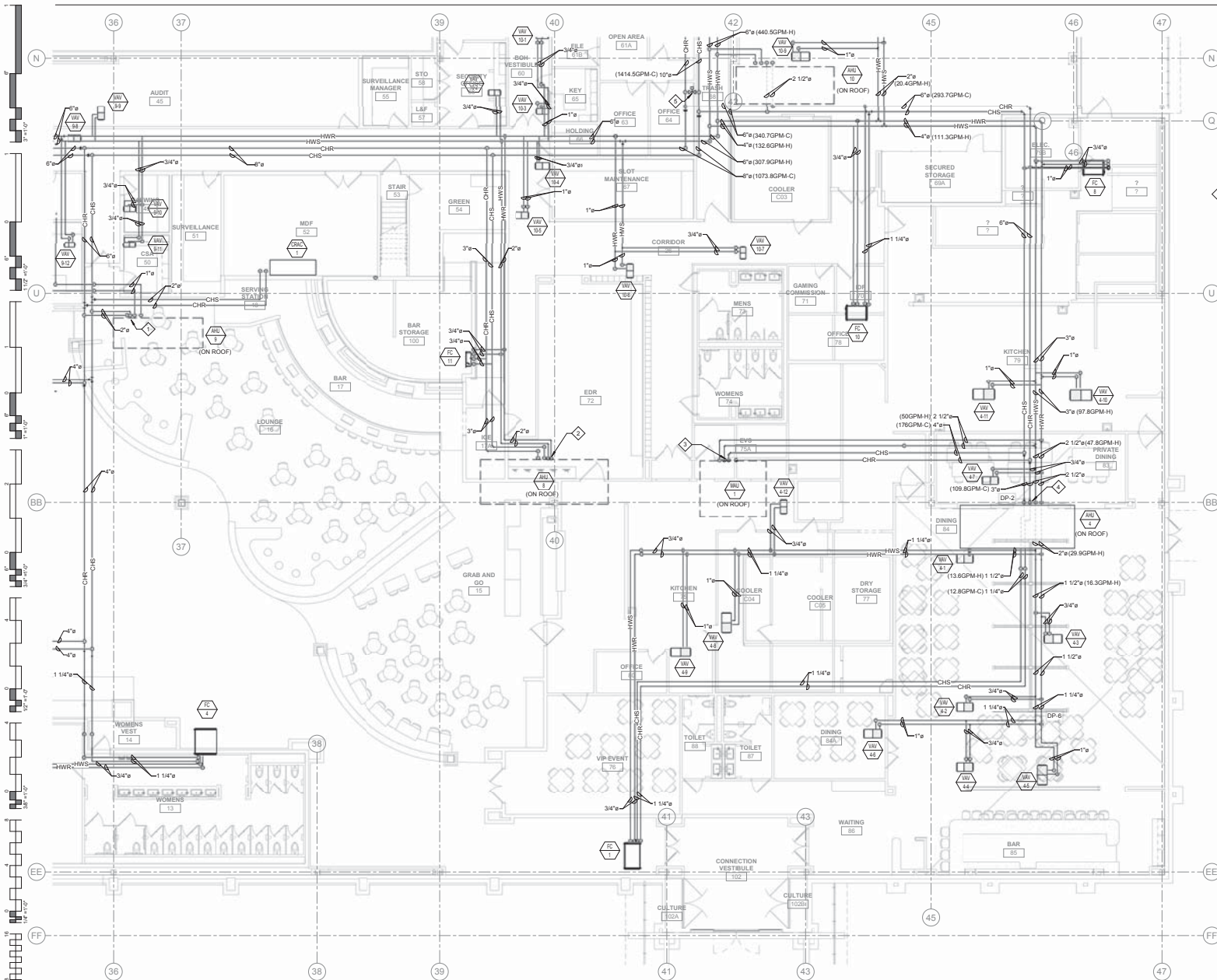
NO.	REVISION	DATE
1	ISSUE FOR PERMIT	
2	ISSUE FOR PERMIT	
3	ISSUE FOR PERMIT	

DATE: 05/03/18 JOB NUMBER: 17-06

M1.5  
 MECHANICAL ENLARGED FLOOR PLAN - NORTH







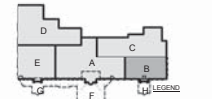
**GENERAL NOTES:**

1. ACCESS DOORS ARE REQUIRED FOR ALL VALVES INSTALLED ABOVE INACCESSIBLE CEILING. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
2. THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
3. THE CUTTING, NOTCHING AND BORING OF HOLES IN FLOOR, JOISTS AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE WORK.
5. REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO THE INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

**◆ SHEET NOTES:**

1. 2" CHS/CHR AND 1" HWS/HWR PIPING UP TO AHJL-0.
2. 3" CHS/CHR AND 2" HWS/HWR PIPING UP TO AHJL-0.
3. 4" CHS/CHR AND 2 1/2" HWS/HWR PIPING UP TO MAJL-1.
4. 4" CHS/CHR AND 1 1/2" HWS/HWR PIPING UP TO AHJL-0.
5. PROVIDE 4" BY-PASS, 3" CONTROL VALVE.

MECHANICAL ENLARGED FLOOR PLAN - SOUTH  
1/8" = 1'-0"



REVISIONS  
ENTIRE SHEET

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PROFESSIONAL SEAL  
JAMES R. ARCHITECT  
OKLAHOMA

**msa**  
MECHANICAL SERVICES, INC.  
700 N.W. 10th St. Suite 140  
Tahlequah, OK 74464  
T: 800.548.8244  
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CHEROKEE NATION  
CHEROKEE CASINO

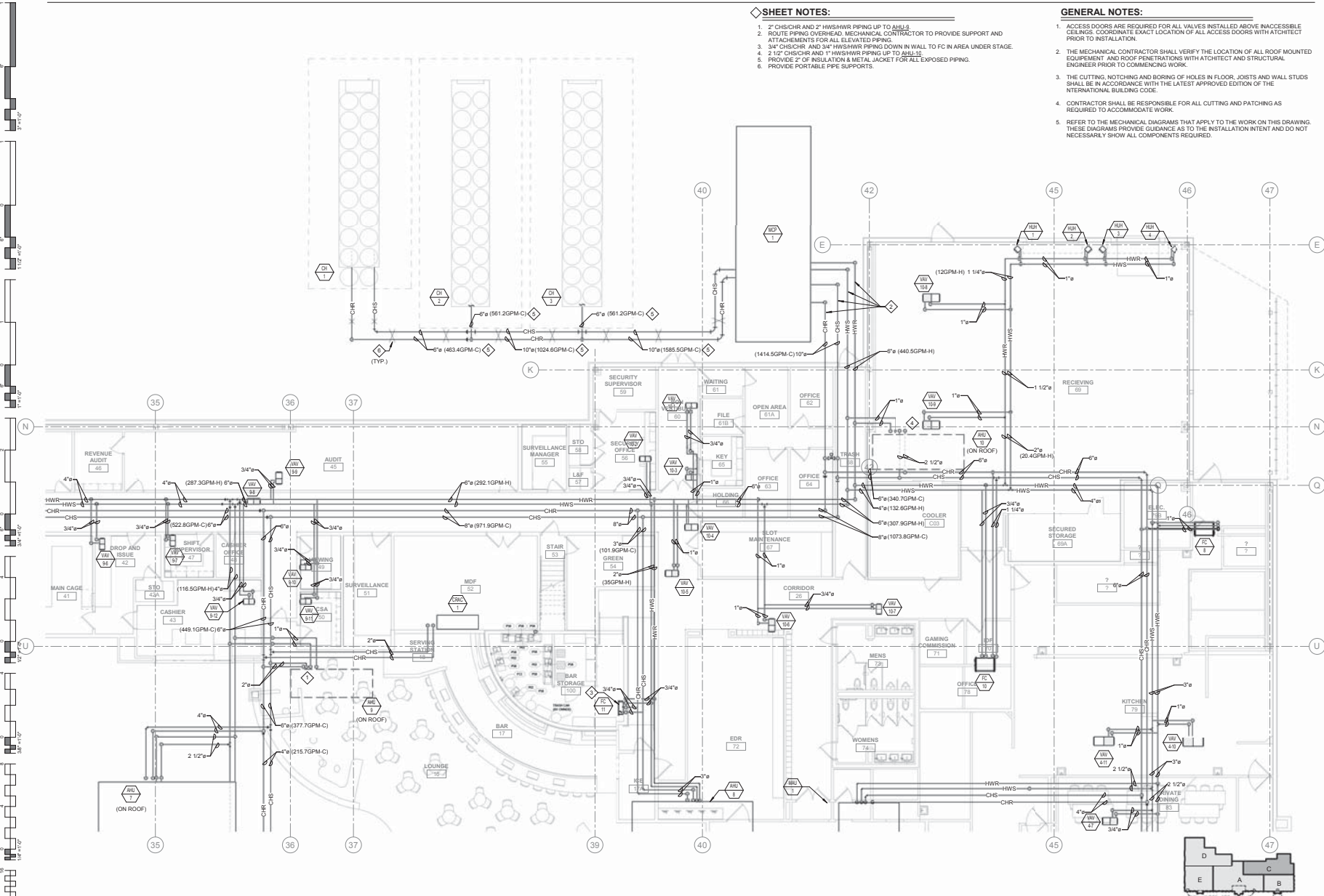
CHEROKEE NATION ENTERTAINMENT  
TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

PROJECT NAME  
BID PACKAGE 05

NO.	DATE	DESCRIPTION
1	05/03/18	ISSUED FOR BIDDING
2	05/03/18	ISSUED FOR BIDDING
3	05/03/18	ISSUED FOR BIDDING

DATE: 05/03/18 JOB NUMBER: 17-06

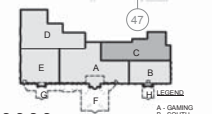
M4.2  
MECHANICAL PIPING ENLARGED PLAN - SOUTH



MECHANICAL ENLARGED FLOOR PLAN - BOH  
 1 1/8" = 1'-0"

- SHEET NOTES:**
- 2" CHS/CHR AND 2" HW/HWR PIPING UP TO ABUHS
  - ROUTE PIPING OVERHEAD. MECHANICAL CONTRACTOR TO PROVIDE SUPPORT AND ATTACHMENTS FOR ALL ELEVATED PIPING.
  - 3/4" CHS/CHR AND 3/4" HW/HWR PIPING DOWN IN WALL TO FC IN AREA UNDER STAGE.
  - 2 1/2" CHS/CHR AND 1" HW/HWR PIPING UP TO ABUHS
  - PROVIDE 2" OF INSULATION & METAL JACKET FOR ALL EXPOSED PIPING.
  - PROVIDE PORTABLE PIPE SUPPORTS.

- GENERAL NOTES:**
- ACCESS DOORS ARE REQUIRED FOR ALL VALVES INSTALLED ABOVE INACCESSIBLE CEILING. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
  - THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
  - THE CUTTING, NOTCHING AND BORING OF HOLES IN FLOOR, JOISTS AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE WORK.
  - REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO THE INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.



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 STATE OF OKLAHOMA

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 Tulsa, Oklahoma 74103  
 918.436.4644

CHEROKEE NATION  
 CASINO

CHEROKEE NATION ENTERTAINMENT  
 TAHLEQUAH CASINO  
 TAHLEQUAH, OKLAHOMA

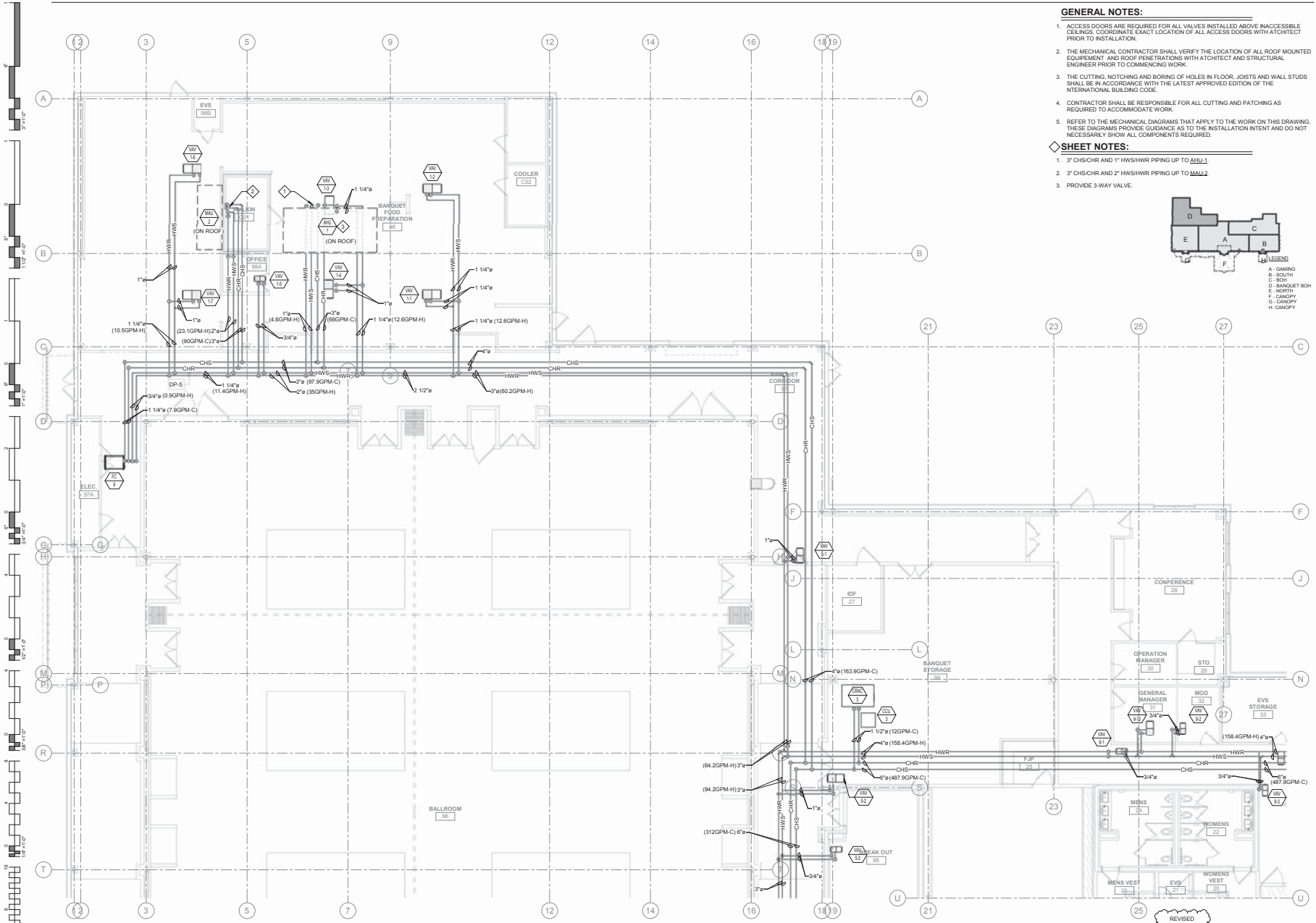
PROJECT NAME  
 BID PACKAGE 05

NO.	REVISION	DATE
1	ISSUE FOR PERMIT	
2	ISSUE FOR CONSTRUCTION	
3	ISSUE FOR PRODUCTION	

DATE: 05/03/18 JOB NUMBER: 17-06

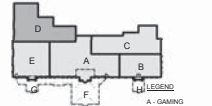
M4.3

MECHANICAL PIPING ENLARGED PLAN - BOH



- GENERAL NOTES:**
- ACCESS DOORS ARE REQUIRED FOR ALL VALVES INSTALLED ABOVE INACCESSIBLE CEILINGS. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
  - THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF-MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
  - THE CUTTING, NOTCHING AND BORING OF HOLES IN FLOOR, JOISTS AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE WORK.
  - REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO THE INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.

- ◆ SHEET NOTES:**
- 3" CHS/CHR AND 1" HWS/HWR PIPING UP TO **ALL** 1.
  - 3" CHS/CHR AND 2" HWS/HWR PIPING UP TO **MALL** 2.
  - PROVIDE 3-WAY VALVE.



MECHANICAL ENLARGED FLOOR PLAN - BANQUET BOH  
1/8" = 1'-0"



CHEROKEE NATION ENTERTAINMENT  
TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

PROJECT NAME  
BID PACKAGE 05

REVISION	DATE	DESCRIPTION
1	05/03/18	ISSUED FOR PERMIT
2	05/03/18	ISSUED FOR PERMIT
3	05/03/18	ISSUED FOR PERMIT

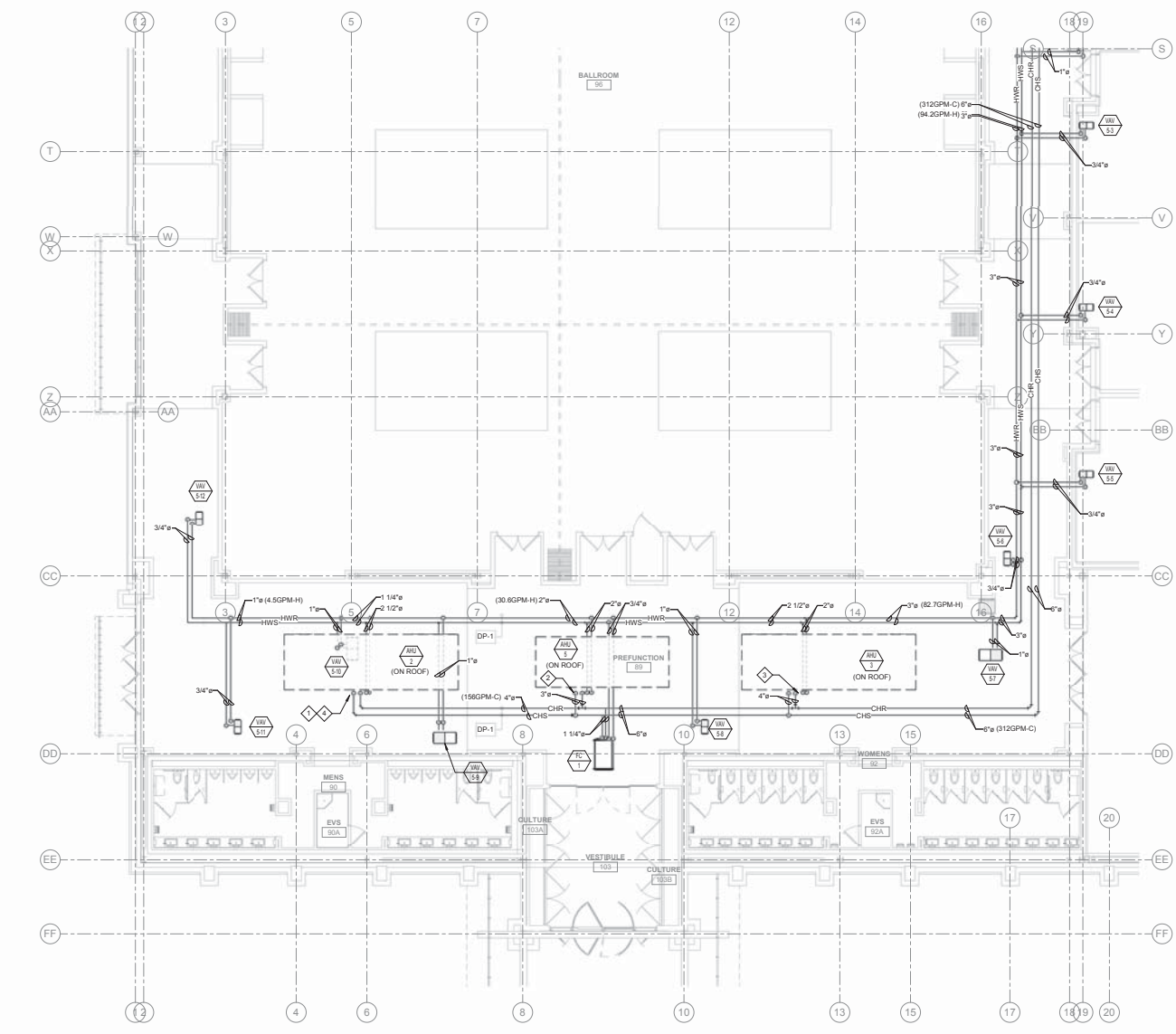
DATE: 05/03/18 JOB NUMBER: 17-06

SHEET NUMBER: M4.4

MECHANICAL PIPING ENLARGED PLAN - BANQUET BOH

REVISED ENTIRE SHEET

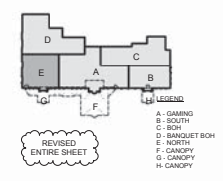




MECHANICAL ENLARGED FLOOR PLAN - NORTH  
 1/8" = 1'-0"

- GENERAL NOTES:**
- ACCESS DOORS ARE REQUIRED FOR ALL VALVES INSTALLED ABOVE INACCESSIBLE CEILINGS. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
  - THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
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- SHEET NOTES:**
- 4" CHS/CHR AND 2 1/2" HWWS/HWR PIPING UP TO AHU 2
  - 3" CHS/CHR AND 2" HWWS/HWR PIPING UP TO AHU 1
  - 4" CHS/CHR AND 2" HWWS/HWR PIPING UP TO AHU 3
  - PROVIDE 3-WAY VALVE.



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CLIENT: **CHEROKEE NATION**  
**Cherokee CASINO**

PROJECT NAME:  
**BID PACKAGE 05**

CHEROKEE NATION ENTERTAINMENT  
 TAHLEQUAH CASINO  
 TAHLEQUAH, OKLAHOMA

NO.	DESCRIPTION	DATE
1	DATE REVISION	
2	DATE REVISION	
3	DATE REVISION	

DATE: 05/03/18 JOB NUMBER: 17-06  
 SHEET NUMBER:

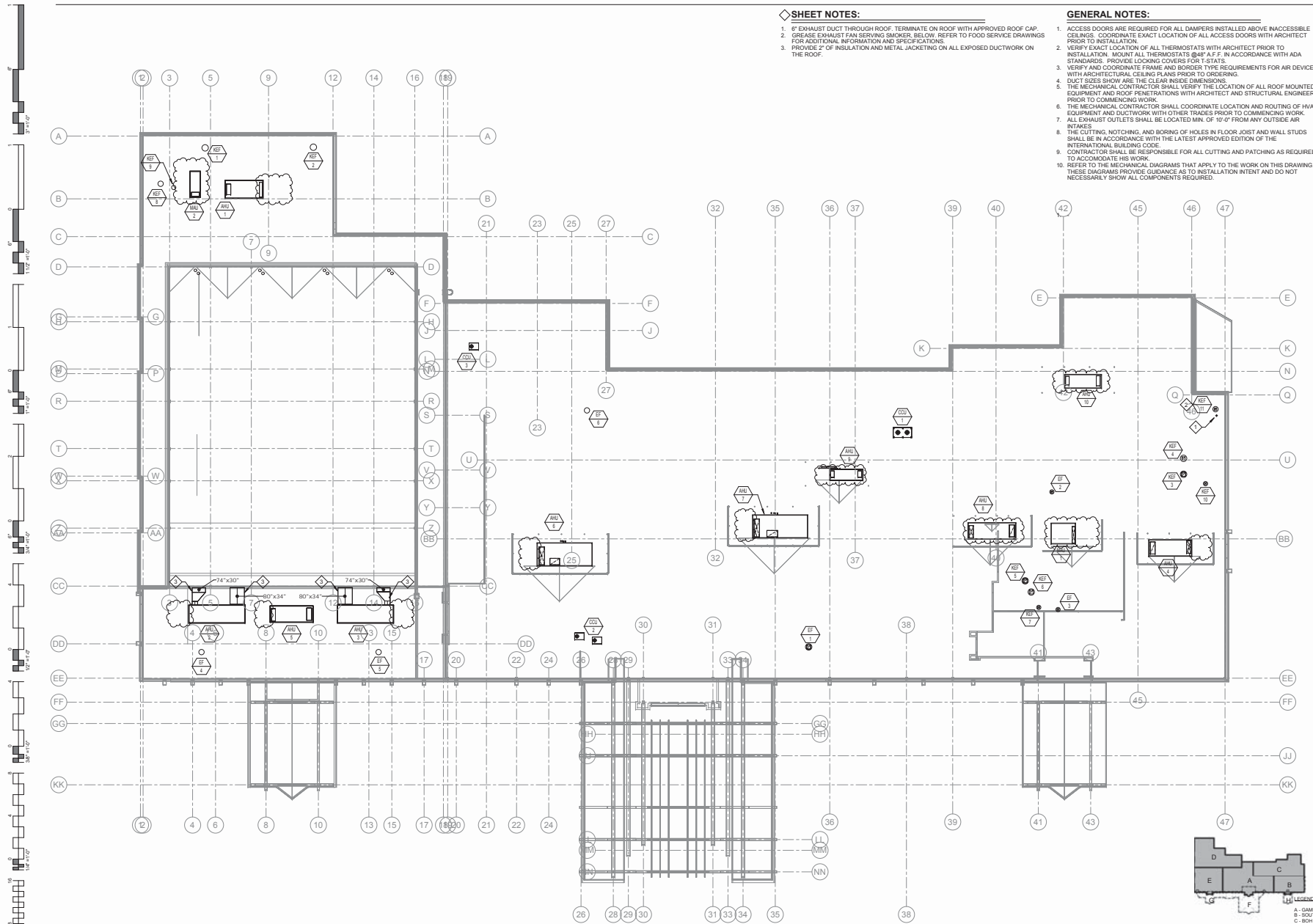
**M4.5**  
 MECHANICAL PIPING ENLARGED PLAN - NORTH

**SHEET NOTES:**

1. IF EXHAUST DUCT THROUGH ROOF, TERMINATE ON ROOF WITH APPROVED ROOF CAP
2. GREASE EXHAUST FAN SERVING SMOKER, BELOW, REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
3. PROVIDE 2" OF INSULATION AND METAL JACKETING ON ALL EXPOSED DUCTWORK ON THE ROOF.

**GENERAL NOTES:**

1. ACCESS DOORS ARE REQUIRED FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILING. COORDINATE EXACT LOCATION OF ALL ACCESS DOORS WITH ARCHITECT PRIOR TO INSTALLATION.
2. VERIFY EXACT LOCATION OF ALL THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNT ALL THERMOSTATS 8"AP A.F.F. IN ACCORDANCE WITH ADA STANDARDS. PROVIDE LOCKING COVERS FOR T-STATS.
3. VERIFY AND COORDINATE FRAME AND BORDER TYPE REQUIREMENTS FOR AIR DEVICES WITH ARCHITECTURAL CEILING PLANS PRIOR TO ORDERING.
4. DUCT SIZES SHOW ARE THE CLEAR INSIDE DIMENSIONS.
5. THE MECHANICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
6. THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF HVAC EQUIPMENT AND DUCTWORK WITH OTHER TRADES PRIOR TO COMMENCING WORK.
7. ALL EXHAUST OUTLETS SHALL BE LOCATED MIN. OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
8. THE CUTTING, NOTCHING, AND BORING OF HOLES IN FLOOR JOIST AND WALL STUDS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE INTERNATIONAL BUILDING CODE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS WORK.
10. REFER TO THE MECHANICAL DIAGRAMS THAT APPLY TO THE WORK ON THIS DRAWING. THESE DIAGRAMS PROVIDE GUIDANCE AS TO INSTALLATION INTENT AND DO NOT NECESSARILY SHOW ALL COMPONENTS REQUIRED.



Roof - Mechanical Roof Plan  
1" = 20'-0"



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CHEROKEE NATION ENTERTAINMENT  
**TALHEQUAH CASINO**  
TALHEQUAH, OKLAHOMA

PROJECT NAME:  
**BID PACKAGE 05**

NO.	REVISION	DATE
1	DATE REVISION	
2	ISSUE TO ARCHITECT	
3	ISSUE TO ARCHITECT	

DATE: 05/03/18 JOB NUMBER: 17-06

**M6.1**

MECHANICAL ROOF PLAN

## Tahlequah Casino Addendum 15

Date: July 13, 2018

### Electrical

<u>Sheets</u>	<u>Description</u>
E0.0	Updated drawing index.
E0.3	Revised Slot Floor Junction Box Schedule as indicated.
E0.10	Revised single line diagram as indicated.
E0.12	Revised single line diagram as indicated.
E0.13	Revised single line diagram as indicated.
E0.15	New sheet.
E0.20	Revised panel schedules as indicated.
E0.21	Revised panel schedules as indicated.
E0.22	Revised panel schedules as indicated.
E0.30	Revised Dimmer Panel 'TCDRN' as indicated.
ES1.0	Revised/relocated site light poles and circuiting based on updated site plan.
ES1.0A	Revised entire sheet.
E1.0	Relocated/deleted electrical equipment and equipment callouts as indicated.
E1.1	Revised electrical outlets and circuiting for new gaming layout. Added/deleted/relocated outlets and circuiting as indicated.
E1.1M	Added/deleted/relocated electrical connections and circuiting to mechanical equipment based on mechanical design coordination.
E1.1A	Deleted electrical equipment as indicated.
E1.1AM	Added/deleted/revised electrical connections and circuiting to mechanical equipment based on mechanical design coordination.
E1.2	Added/deleted/relocated outlets and circuiting as indicated. Added Sheet Note 7 as indicated.
E1.2M	Added/deleted/revised electrical connections and circuiting to mechanical equipment based on mechanical design coordination.
E1.3	Relocated electrical equipment and equipment callouts as indicated.

- E1.3M Revised/deleted electrical connections to mechanical equipment based on mechanical design coordination. Relocated electrical equipment as indicated.
- E1.4 Added/deleted/relocated electrical connections to mechanical equipment based on mechanical design coordination.
- E1.5 Revised architectural background.
- E1.5M Added/deleted/relocated electrical connections to mechanical equipment based on mechanical design coordination.
- E1.6 Added deleted/relocated electrical connections to mechanical equipment based on mechanical design coordination.
- E3.1 Deleted electrical equipment and equipment callout as indicated.
- E3.2 Relocated electrical equipment and equipment callout as indicated.
- E3.3 Relocated electrical equipment, outlets and circuiting as indicated.
- E6.1A Deleted electrical equipment as indicated.
- E7.1 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.2 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.3 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.4 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.5 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.6 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.7 Deleted light fixtures and circuiting based on owner accepted VE.
- E7.8 Deleted light fixtures and circuiting based on owner accepted VE.



### DRAWING INDEX

SHEET NUMBER	SHEET TITLE	BID PACKAGE 02 (100% SET)			
		BID PACKAGE 02 DATE: 02/27/18	BID PACKAGE 03 DATE: 02/27/18	BID PACKAGE 04 DATE: 02/27/18	BID PACKAGE 05 DATE: 02/27/18
EO.0	SYMBOL LIST				
EO.1	GENERAL NOTES				
EO.2	SINGLE LINE AND FOOD SERVICE SYSTEM NOTES				
EO.3	SCHEDULES				
EO.4	ELECTRICAL DIAGRAM				
EO.10	SINGLE LINE DIAGRAM - MAIN SERVICE SWITCHBOARD 'TCMSA'				
EO.11	PARTIAL SINGLE LINE DIAGRAM				
EO.12	SINGLE LINE DIAGRAM - MAIN SERVICE SWITCHBOARD 'TCMSB'				
EO.13	PARTIAL SINGLE LINE DIAGRAM				
EO.14	PARTIAL SINGLE LINE DIAGRAM				
EO.15	PARTIAL SINGLE LINE DIAGRAM				
EO.20	PANEL SCHEDULES				
EO.21	PANEL SCHEDULES				
EO.22	PANEL SCHEDULES				
EO.23	PANEL SCHEDULES				
EO.24	PANEL SCHEDULES				
EO.25	PANEL SCHEDULES				
EO.26	PANEL SCHEDULES				
EO.30	DIMMER SCHEDULES				
EO.31	DIMMER SCHEDULES				
EO.40	LIGHTING FIGURE SCHEDULE				
EO.41	LIGHTING FIGURE SCHEDULE				
ES1.0	ELECTRICAL SITE PLAN				
ES1.0A	ELECTRICAL SITE PLAN - CCTY INFRASTRUCTURE				
E1.0	ELECTRICAL OVERVIEW PLAN				
E1.1	ENLARGED POWER PLAN - GAMING				
E1.1M	ENLARGED MECHANICAL POWER PLAN - GAMING				
E1.1A	ENLARGED POWER PLAN - EAST				
E1.1AM	ENLARGED MECHANICAL POWER PLAN - EAST				
E1.2	ENLARGED POWER PLAN - SOUTH				
E1.2M	ENLARGED MECHANICAL POWER PLAN - SOUTH				
E1.3	ENLARGED POWER PLAN - BOH				
E1.3M	ENLARGED MECHANICAL POWER PLAN - BOH				
E1.4	ENLARGED POWER PLAN - BANQUET BOH				
E1.5	ENLARGED POWER PLAN - NORTH				
E1.5M	ENLARGED MECHANICAL POWER PLAN - NORTH				
E1.6	POWER PLAN - ROOF				
E3.1	ENLARGED ELECTRICAL ROOM PLANS				
E3.2	ENLARGED ELECTRICAL ROOM PLANS				
E3.3	ENLARGED PLANS				
E6.1	ENLARGED LIGHTING PLAN - GAMING				
E6.1A	ENLARGED LIGHTING PLAN - EAST				
E6.2	ENLARGED LIGHTING PLAN - SOUTH				
E6.3	ENLARGED LIGHTING PLAN - BOH				
E6.4	ENLARGED LIGHTING PLAN - BANQUET BOH				
E6.5	ENLARGED LIGHTING PLAN - NORTH				
E7.1	ENLARGED EXTERIOR LIGHTING PLAN				
E7.2	ENLARGED EXTERIOR LIGHTING PLAN				
E7.3	ENLARGED EXTERIOR LIGHTING PLAN				
E7.4	ENLARGED EXTERIOR LIGHTING PLAN				
E7.5	ENLARGED EXTERIOR LIGHTING PLAN				
E7.6	ENLARGED EXTERIOR LIGHTING PLAN				
E7.7	ELECTRICAL ELEVATION WEST				
E7.8	ELECTRICAL ELEVATIONS NORTH AND SOUTH				
EF5120	FOODSERVICE ELECTRICAL CONNECTION PLAN				
EF5121	FOODSERVICE ELECTRICAL CONNECTION PLAN				
EF5122	FOODSERVICE ELECTRICAL CONNECTION PLAN				
EF5123	FOODSERVICE ELECTRICAL CONNECTION PLAN				
EF5124	FOODSERVICE ELECTRICAL CONNECTION PLAN				
TOTAL		20	56	35	21

### ELECTRICAL SYMBOL LIST

NOTED THIS IS A MASTER SCHEDULE. NOT ALL SYMBOLS AND/OR ABBREVIATIONS CONTAINED HEREIN MAY APPEAR ON THE DRAWINGS.

	FLUORESCENT FIGURE - RECESSED, LAY-IN		SWITCHGEAR
	FLUORESCENT FIGURE - RECESSED, FLANGED		PANELBOARD - SURFACE MOUNTED
	FLUORESCENT FIGURE - SURFACE		PANELBOARD - FLUSH MOUNTED
	FLUORESCENT FIGURE - SUSPENDED		EELISTING / RELOCATED PANELBOARD - SURFACE MOUNTED
	FLUORESCENT FIGURE - OPEN STRIP WITH WIRE GUARD		EELISTING / RELOCATED PANELBOARD - FLUSH MOUNTED
	FLUORESCENT FIGURE - WALL MOUNTED		TRANSFORMER
	INCANDESCENT, H.I.D. OR MINI-FLUORESCENT - SURFACE OR RECESSED, PER FIGURE SCHEDULE		ENCLOSED CIRCUIT BREAKER
	INCANDESCENT, H.I.D. OR MINI-FLUORESCENT - WALL BRACKET		FIRE ALARM EQUIPMENT
	INCANDESCENT, H.I.D. OR MINI-FLUORESCENT - WALL WASH		COMBINATION FIRE/SMOKE DAMPER
	LOW VOLTAGE INCANDESCENT FIGURE		SMOKE DAMPER
	CHANDELIER (PROVIDE STRUCTURAL BACKING)		SHUNT TRIP STATION
	FAN (PROVIDE STRUCTURAL BACKING)		CONTROL STATION AT CAB* TO TOP UON (SEE ADA)
	SPOTLIGHT - BOICOR TRACK MOUNTED - TRACK LENGTH AS INDICATED		RELAY
	STEP LIGHT - SURFACE OR RECESSED, PER FIGURE SCHEDULE		CONTRACTOR WITH INTEGRAL HOA SELECTOR
	ROLLARD		MAGNETIC STARTER, SIZE 1 UON
	POLE OR POST - ARM OR TOP MOUNTED CUT-OFF LUMINAIRE		DISCONNECT SWITCH(30/3 UON OR FUSIBLE OPENING-NONFUSED)
	TWIN LAMP BATTERY PACK - UNSWITCHED, WALL MOUNTED 20"X12" BELOW CEILING (U.O.D.)		COMBINATION STARTER (DISCONNECT) SIZE 1 UON
	TWIN LAMP BATTERY PACK - UNSWITCHED, CEILING MOUNTED, FLUSH OR SURFACE PER FIGURE SCHEDULE		VARIABLE FREQUENCY DRIVE
	EXIT LIGHT - FACES AND ARROWS AS INDICATED, UNIVERSAL MOUNTING, UNSWITCHED		SINGLE PHASE MOTOR CONTROL ASSEMBLY HP-RATED SWITCH AND POWER RELAY 20:1 (O.D.O.)
	EXIT LIGHT - LOW LEVEL: 6" - 8" X 2" TO BOTTOM, 4" WALK OFF DOOR FRAME		PULLBOX- SIZE AND LOCATION AS REQUIRED
	LOW VOLTAGE		JUNCTION BOX- SIZE PER NEC REQUIREMENTS
	LED		MECHANICAL EQUIPMENT DESIGNATION
	NEON		MOTOR OUTLET
	NEON		LIGHTING FIXTURE DESIGNATION(TYPE F1, 120 WATTS QUANTITY = 3)
	FIGURE, EQUIPMENT ON EMERGENCY		C = CONNECTED LOAD
	SWITCHES AT CAB* TO TOP UON (SEE ADA)		D = DEMAND LOAD
	SWITCH - SINGLE POLE		S = STANDBY LOAD
	SWITCH - THREE WAY		EQUIPMENT LOAD - SUMMARY DEPRESSED IN XVA AND AMP(S)
	SWITCH - OCCUPANCY TYPE		SHEET NOTE DESIGNATION
	SWITCH - OCCUPANCY TYPE, CEILING MOUNTED		FEEDEE DESIGNATION (SEE FEEDER SCHEDULE)
	SWITCH - EMERGENCY		CIRCUITING IN WALL OR ABOVE CEILING
	SWITCH - PULL TOGGLE (NONFPM LIGHTED POSITION)		CIRCUITING IN FLOOR OR BELOW GRADE
	SWITCH - KEVED OPERATED		TICS - NO. OF #12 WIRES IF MORE THAN TWO(2) ISOLATED GROUND WIRE
	SWITCH - SLIDER TYPE ELECTRONIC DIMMER (WATTAGE RATING AS REQUIRED)		SLUT-OUT
	SWITCH - MOMENTARY CONTACT/SPOT CENTER OFF UON		CIRCUIT DOWN
	MANUAL MOTOR STARTER - POLES AND HEATERS AS REQUIRED		MOISTURE SEAL-OFF
	PHOTOELECTRIC SWITCH - 1500 VA UON		30 AMP / 3 POLE (REPRESENTATIVE)
	SIGNAGE OUTLET CONNECTION		AL ALUMINUM
	DEVICES AT (24" TO CENTER LINE UON (SEE ADA)		AFF ABOVE FINISHED FLOOR
	DEVICES MOUNTED IN MULTIPLE UNDER COMMON COVER MAXIMUM HEIGHT ON WALLS = CAB* TO TOP UON (SEE ADA)		AFG ABOVE FINISHED GRADE
	DEVICES MOUNTED IN OR ABOVE BACKDROP(S) MAXIMUM HEIGHT ON WALLS = CAB* TO TOP UON (SEE ADA)		AIC AMP INTERRUPTING CURRENT
	DEVICES IN MULTI-COMPARTMENT FLUSH FLOOR MOUNTED UON		ATS AUTOMATIC TRANSFER SWITCH
	RECEPTACLE - DUPLEX		BKBD BACKBOARD
	RECEPTACLE - DUPLEX - HALF SWITCHED (TOP HALF)		C CONDUIT (WITH PULL COND. IF OTHERWISE EMPTY)
	RECEPTACLE - DUPLEX - INTEGRAL GFCI CIRCUITRY		CU COPPER
	RECEPTACLE - DUPLEX - ISOLATED GROUND (DRANGE FACET) NEMA 520R/IG		E EXISTING TO REMAIN
	RECEPTACLE - DOUBLE DUPLEX - INTEGRAL GFCI CIRCUITRY		F FUSE (DUAL ELEMENT, TIME DELAY)
	RECEPTACLE - SPECIAL TYPE (SEE ADDITIONAL NOTES)		FRD FURNISHED BY OTHERS
	RECEPTACLE(S) - CEILING MOUNTED		FFEN FUSE PER EQUIPMENT NAMEPLATE
	PLUG MOLD SURFACE RACEWAY SYSTEM (2-CIRCUIT WITH OUTLETS 18" O.C. U.O.D. MOUNTED ABOVE BACKDROP(S) U.O.D.)		GFCI GROUND FAULT CIRCUIT INTERRUPTER
	TELEPHONE POLE		GND GROUND
	SMOKE DETECTOR - LOCAL ONLY, 120V, W/INTEGRAL BATTERY AND ALARM HORN: WALL MOUNT AT 12" BELOW CEILING		HOA HAND-OFF-AUTOMATIC
	SMOKE DETECTOR - LOCAL ONLY, 120V, W/INTEGRAL BATTERY, STROBE, AND ALARM HORN: WALL MOUNT AT 12" BELOW CEILING		HP HORSEPOWER
	OUTLET - CLOCK		IG ISOLATED GROUND
	OUTLET - TELEPHONE		K KCMIL (300 KCMIL = 300K)
	OUTLET - DATA		NF NOT FUSED
	OUTLET - DOOR BELL/BUTZER		NLC NOT IN CONTRACT
	OUTLET - MICROPHONE		NL NIGHT LIGHT
	OUTLET - VOLUME CONTROL (CAB* TO TOP UON)		NTS NOT TO SCALE
	OUTLET - SPEAKER 8" COAXIAL W/ BACK BOLT/AND GRILLE		RE EXISTING TO BE RELOCATED
	OUTLET - THERMOSTAT (REF. MECHANICAL DRAWINGS)		RGS RIGID GALVANIZED STEEL
	TV (SECURITY CAMERA - FIELD MOUNTING PER PLANS)		TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
	TV (SECURITY CAMERA - PTD - PAN, TILT, ZOOM MOUNTING PER PLANS)		UNSW UNSWITCHED
			UPS UNINTERRUPTIBLE POWER SUPPLY
			UON UNLESS OTHERWISE NOTED
			WP WEATHER PROOF (NEMA 3R)
			RE EXISTING TO BE REMOVED
			TRR TRANSFORMER

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PROFESSIONAL ENGINEER  
OKLAHOMA  
JULY 13, 2018

CONSULTANT LOGO

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CLIENT

**CHEROKEE NATION**  
CASINO

CHEROKEE NATION ENTERTAINMENT  
TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

PROJECT NAME

**BID PACKAGE 02  
(100% SET)**

REV	DATE	DESCRIPTION
1		
2		
3		
4		

DATE: 03/27/18 JOB NUMBER: 17-06

SHEET NUMBER: E0.0

SYMBOL LIST



SLOT FLOOR JUNCTION BOX SCHEDULE					
POSITION	PANEL	CIRCUIT #	HOMERUN	SLOT BANK	CONTROL CHANNEL
01	TCSPI	1,3,5,7	1 1/4"		
02	TCSPI	9,11,13,15	1 1/4"		
03	TCSPI	17,19,21	1 1/4"		
04	TCSPI	23,25,27,29	1 1/4"		
05	TCSPI	31,33,35,2	1 1/4"		
06	TCSPI	4,6,8,10	1 1/4"		
07	TCSPI	12,14,16,18	1 1/4"		
08	TCSPI	20,22,24,26	1 1/4"		
09	TCSPI	28,30	1 1/4"		
10	TCSPI	1,3,5,7	1 1/4"		
11	TCSPI	9,11,13	1 1/4"		
12	TCSPI	15,17,19	1 1/4"		
13	TCSPI	21,23,25,27	1 1/4"		
14	TCSPI	29,31,33	1 1/4"		
15	TCSPI	2,4	1 1/4"		
16	TCSPI	6,8,10,12	1 1/4"		
17	TCSPI	14,16,18,20	1 1/4"		
18	TCSPI	22,24,26,28	1 1/4"		
19	TCSPI	30,32,35	1 1/4"		
20	TCSPI	1,3	1 1/4"		
21	TCSPI	5,7,9,11	1 1/4"		
22	TCSPI	13,15,17,34	1 1/4"		
23	TCSPI	19,21,23,25	1 1/4"		
24	TCSPI	27,29,31,33	1 1/4"		
25	TCSPI	2,4,6,8	1 1/4"		
26	TCSPI	10,12,14,16	1 1/4"		
27	TCSPI	18,20,22,24	1 1/4"		
28	TCSPI	26,28,30,32	1 1/4"		
29	TCSPI	1,3,5,7	1 1/4"		
30	TCSPI	9,11,13,38	1 1/4"		
31	TCSPI	15,17,19	1 1/4"		
32	TCSPI	21,23,25,27	1 1/4"		
33	TCSPI	29,31,33	1 1/4"		
34	TCSPI	35,2,4	1 1/4"		
35	TCSPI	6,8,10,12	1 1/4"		
36	TCSPI	14,16,18	1 1/4"		
37	TCSPI	20,22,24,26	1 1/4"		
38	TCSPI	28,30,32,34	1 1/4"		
39	TCSPI	1,3,5	1 1/4"		
40	TCSPI	7,9,11,13	1 1/4"		
41	TCSPI	15,17,19,21	1 1/4"		
42	TCSPI	23,25,27	1 1/4"		
43	TCSPI	2,4,6	1 1/4"		
44	TCSPI	8,10,12	1 1/4"		
45	TCSPI	14,16,18,20	1 1/4"		
46	TCSPI	22,24,26,28	1 1/4"		
47	TCSPI	34,36	1 1/4"		
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FEEDER SCHEDULE																	
FEEDER	AMPERE	CONDUIT AND WIRE (COPPER) THWN, 3Φ, 3W,			GROUND	FEEDER	AMPERE	CONDUIT AND WIRE (COPPER) THWN, 3Φ, 4W,			GROUND						
1	20	1/2"	-	3	-	#12	#12	31	20	1/2"	-	4	-	#12	#12		
2	30	1/2"	-	3	-	#10	#10	32	30	3/4"	-	4	-	#10	#10		
3	40	3/4"	-	3	-	#8	#10	33	40	1"	-	4	-	#8	#10		
4	50	1"	-	3	-	#6	#10	34	50	1 1/4"	-	4	-	#6	#10		
5	60	1"	-	3	-	#6	#10	35	60	1 1/4"	-	4	-	#6	#10		
6	70	1 1/4"	-	3	-	#4	#8	36	70	1 1/4"	-	4	-	#4	#8		
7	80	1 1/4"	-	3	-	#4	#8	37	80	1 1/4"	-	4	-	#4	#8		
8	100	1 1/4"	-	3	-	#2	#8	38	100	1 1/2"	-	4	-	#2	#8		
9	125	1 1/2"	-	3	-	#1	#6	39	125	1 1/2"	-	4	-	#1	#6		
10	150	1 1/2"	-	3	-	#1/0	#6	40	150	2"	-	4	-	#1/0	#6		
11	175	2"	-	3	-	#2/0	#6	41	175	2"	-	4	-	#2/0	#6		
12	200	2"	-	3	-	#3/0	#6	42	200	2"	-	4	-	#3/0	#6		
13	225	2"	-	3	-	#4/0	#4	43	225	2 1/2"	-	4	-	#4/0	#4		
								43T	225	2 1/2"	-	4	-	#4/0	#2		
14	250	3"	-	3	-	#250 K	#4	44	250	3"	-	4	-	#250 K	#4		
								44T	250	3"	-	4	-	#250 K	#2		
15	300	4"	-	3	-	#350 K	#4	45	300	4"	-	4	-	#350 K	#4		
16	350	4"	-	3	-	#500 K	#2	46	350	4"	-	4	-	#500 K	#2		
17	400	4"	-	3	-	#500 K	#2	47	400	4"	-	4	-	#500 K	#2		
								47T	400	(2)	2"	-	8	-	#3/0	(2) #1/0	
18	500	(2)	3"	-	6	-	#250 K	(2) #2	48	500	(2)	3"	-	8	-	#250 K	(2) #2
								48T	500	(2)	3"	-	8	-	#250 K	(2) #1/0	
19	600	(2)	4"	-	6	-	#350 K	(2) #1	49	600	(2)	4"	-	8	-	#350 K	(2) #1
20	800	(2)	4"	-	6	-	#500 K	(2) #1/0	50	800	(2)	4"	-	8	-	#500 K	(2) #1/0
								50T	800	(3)	4"	-	12	-	#350 K	(3) #2/0	
21	1000	(4)	4"	-	12	-	#250 K	(4) #2/0	51	1000	(4)	4"	-	16	-	#250 K	(4) #2/0
								51T	1000	(4)	4"	-	16	-	#250 K	(4) #2/0	
22	1200	(4)	4"	-	12	-	#350 K	(4) #3/0	52	1200	(4)	4"	-	16	-	#350 K	(4) #3/0
23	1600	(5)	4"	-	15	-	#500 K	(5) #4/0	53	1600	(5)	4"	-	20	-	#500 K	(5) #4/0
								53T	1600	(5)	4"	-	20	-	#500 K	(5) #350 K	
24	2000	(6)	4"	-	18	-	#500 K	(6) #250 K	54	2000	(6)	4"	-	24	-	#500 K	(6) #250 K
25	2500	(7)	4"	-	21	-	#500 K	(7) #350 K	55	2500	(7)	4"	-	28	-	#500 K	(7) #350 K
26	3000	(8)	4"	-	24	-	#500 K	(8) #400 K	56	3000	(8)	4"	-	32	-	#500 K	(8) #400 K
27	4000	(11)	4"	-	33	-	#500 K	(11) #500 K	57	4000	(11)	4"	-	44	-	#500 K	(11) #500 K

TRANSFORMER SCHEDULE									
480V TO 208/120V, 3Φ, 4W									
DESIGNATION	RATING KVA	WINDINGS		TEMPERATURE RISE		SECONDARY GROUND	COMMENTS		
		CH	AL	100°C	115°C			80°C	
T1	15	●	●	●	●	#8	-		
T2	30	●	●	●	●	#8	-		
T3	45	●	●	●	●	#6	-		
T4	75	●	●	●	●	#2	-		
T5	112.5	●	●	●	●	#1/0	-		
T6	150	●	●	●	●	#1/0	-		
T7	225	●	●	●	●	#2/0	-		
T8	300	●	●	●	●	#3/0	-		
T9	500	●	●	●	●	#3/0	-		
T10	750	●	●	●	●	#3/0	-		
T11	-					-	-		



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CHEROKEE NATION ENTERTAINMENT  
TAHLEQUAH CASINO  
TAHLEQUAH, OKLAHOMA

BID PACKAGE 02  
(100% SET)

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
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7		
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10		

DATE: 03/27/18 JOB NUMBER: 17-06  
SHEET NUMBER:

E0.3  
SCHEDULES

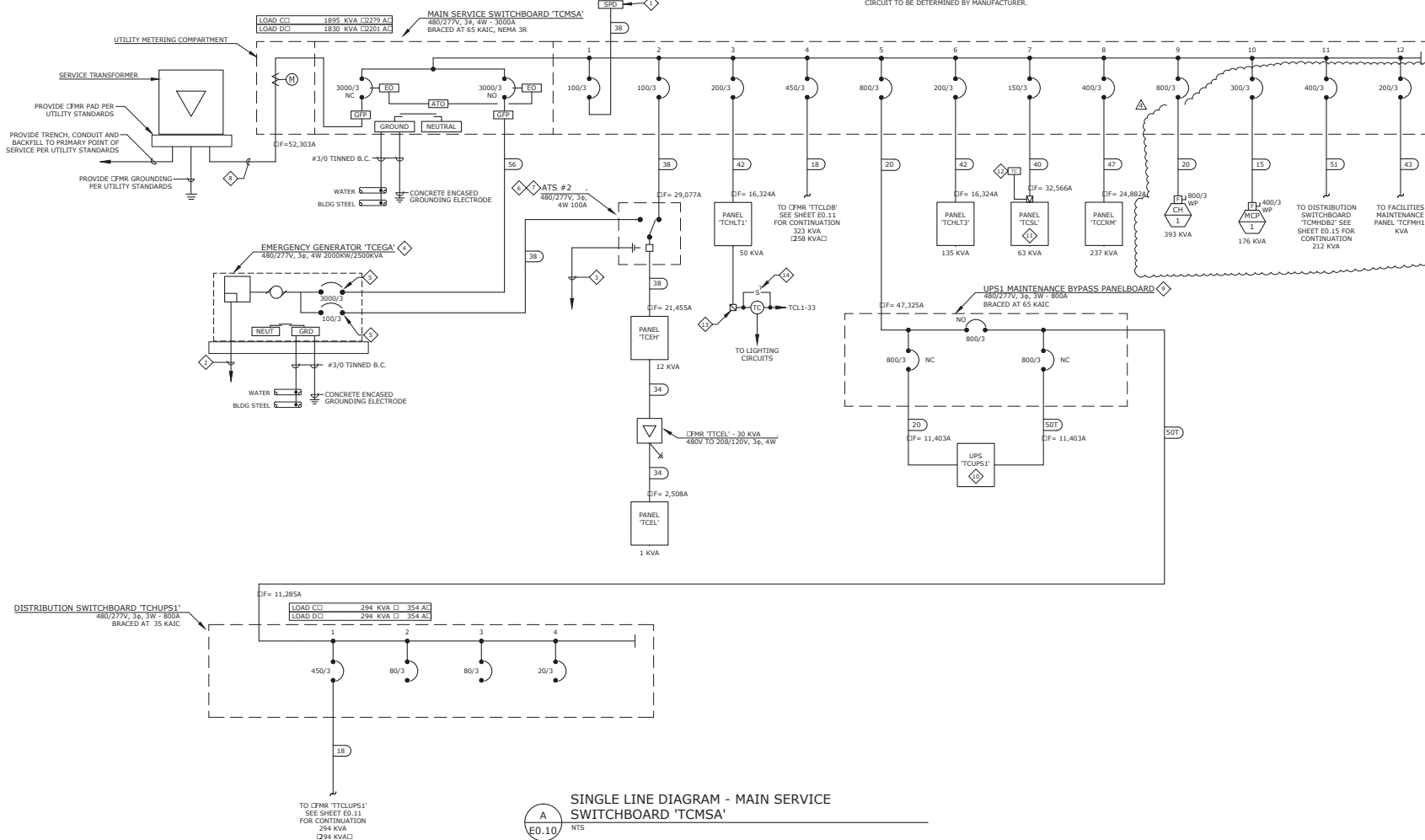
**GENERAL NOTES**

- MINIMUM EQUIPMENT A.I.C. RATINGS ARE 14K A.I.C. □ 480/277V AND 10K A.I.C. □ 208/120V UNLESS OTHERWISE NOTED.
- THE DESIGN PROFESSIONAL HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE A.I.C. RATINGS INDICATED FOR EACH DEVICE ARE ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
- THE DESIGN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED VOLTAGE DROP CALCULATIONS FOR ALL BRANCH CIRCUITS AND FEEDERS PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 210.19(A)(2) FPN NO. 4.
- PANELBOARD LOAD SUMMARIES INCLUDE ADDITIONAL 25% □ OF ALL CONTINUOUS AND LARGEST MOTOR LOADS WHERE APPLICABLE.
- AS PART OF THE PHASED CONSTRUCTION, ALL EQUIPMENT FEEDER UNDERGROUND RACEWAYS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 01. THE REMAINING RACEWAY SYSTEM INCLUDING INSTALLATION OF FEEDER CONDUCTORS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 02. VERIFY ADDITIONAL REQUIREMENTS WITH THE GENERAL CONTRACTOR/OWNER'S REPRESENTATIVE/CONSTRUCTION MANAGER.
- REFER TO SHEET E0.2 FOR SINGLE LINE NOTES, SEQUENCE OF OPERATION AND FEEDER SCHEDULE.
- NORMAL ELECTRICAL SERVICE AND GENERATOR ELECTRICAL SERVICE TO ENTER BUILDING AS SEPARATE DUCTBANKS AND AT SEPARATE LOCATIONS. THE CONTRACTOR SHALL MARK THE PAVEMENT SHOWING ROUTING OF EACH SYSTEM.

**SHEET NOTES**

- ◇ PROVIDE SURGE PROTECTIVE DEVICE AS DEFINED IN SPECIFICATIONS UNDER TVSS SECTION.
- ◇ MINIMUM 1 1/4" CONDUIT FROM GENERATOR CONTROL PANEL TO REMOTE STATUS PANEL IN SURVEILLANCE ROOM. PROVIDE CABLE HARNESS PER MANUFACTURER'S REQUIREMENTS.
- ◇ MINIMUM 3/4" CONDUIT FROM ATS TO GENERATOR CONTROL PANEL FOR START SIGNAL. PROVIDE CABLE HARNESS PER MANUFACTURER'S REQUIREMENTS.
- ◇ EMERGENCY GENERATOR SHALL BE 480V, 3PH, 4W WITH FULLY ENCLOSED WEATHERPROOF HOUSING, CRITICAL GRADE RUFFLES, MINIMUM 24 HOUR BASE TANK WITH FUEL FREEZE PROTECTION SYSTEM, BATTERY CHARGER, BATTERY HEATER BLANKET, RADIATOR/CASE HEATERS, ETC. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ◇ BREAKER STYLE SHALL ALLOW FOR FULL COORDINATION OF EMERGENCY SYSTEM PER NEC 700, 701 AND 702.
- ◇ TRANSFER SWITCH SHALL BE FULLY AUTOMATIC.
- ◇ ATS #2 100A, 480V, 3φ, 4W, 4 POLE, BRACED FOR 35KAIC. TRANSFER SWITCH SHALL BE RATED TO COMPLY WITH NEC 700 AND 701.
- ◇ 120°C - 32 - 500KCMIL, THHN/THWN, CU.
- ◇ SWITCHBOARD TO BE SUPPLIED BY UPS MANUFACTURER AND BE PROVIDED WITH INPUT BREAKER, MAINTENANCE BYPASS BREAKER AND OUTPUT BREAKER. FINAL CIRCUIT TO BE DETERMINED BY MANUFACTURER.

- ◇ UPS TO BE 600KVA, 480V, 3φ INPUT/480V, 3φ OUTPUT FLYWHEEL TYPE UNIT. UPS TO BE MANUFACTURED BY ACTIVE POWER AND BE PROVIDED WITH ACTIVE MONITORING VIA BUS.
- ◇ PANEL TO BE MOUNTED IN MAIN SERVICE SWITCHBOARD 'TCMSA'.
- ◇ PROVIDE ASTRONOMIC TIMECLOCK WITH DIGITAL OUTPUT.
- ◇ PROVIDE 30A/1P MECHANICALLY HELD LIGHTING CONTRACTOR IN NEMA 1 ENCLOSURE ABOVE OR ADJACENT TO PANEL FOR CONTROL OF LIGHTING CIRCUIT. PROVIDE WITH 7-DAY PROGRAMMABLE TIME CLOCK AND BATTERY BACK-UP. NUMBER OF POLES DETERMINED BY NUMBER OF LIGHTING CIRCUITS TO BE CONTROLLED.
- ◇ PROVIDE CONTRACTOR OVERRIDE TIMER SWITCH (DEVOTON #6651 OR EQUIVALENT) COORDINATE LENGTH OF OVERRIDE WITH THE END USER.



**SINGLE LINE DIAGRAM - MAIN SERVICE SWITCHBOARD 'TCMSA'**



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CHEROKEE NATION ENTERTAINMENT  
**TAHLEQUAH CASINO**  
 TAHLEQUAH, OKLAHOMA

PROJECT NAME  
**BID PACKAGE 02 (100% SET)**

NO.	DATE	DESCRIPTION
1	03/27/18	ISSUED FOR BIDDING
2	03/27/18	ISSUED FOR BIDDING
3	03/27/18	ISSUED FOR BIDDING
4	03/27/18	ISSUED FOR BIDDING
5	03/27/18	ISSUED FOR BIDDING

DATE: **03/27/18** JOB NUMBER: **17-06**

SHEET NUMBER: **E0.10**

SINGLE LINE DIAGRAM - MAIN SERVICE SWITCHBOARD 'TCMSA'

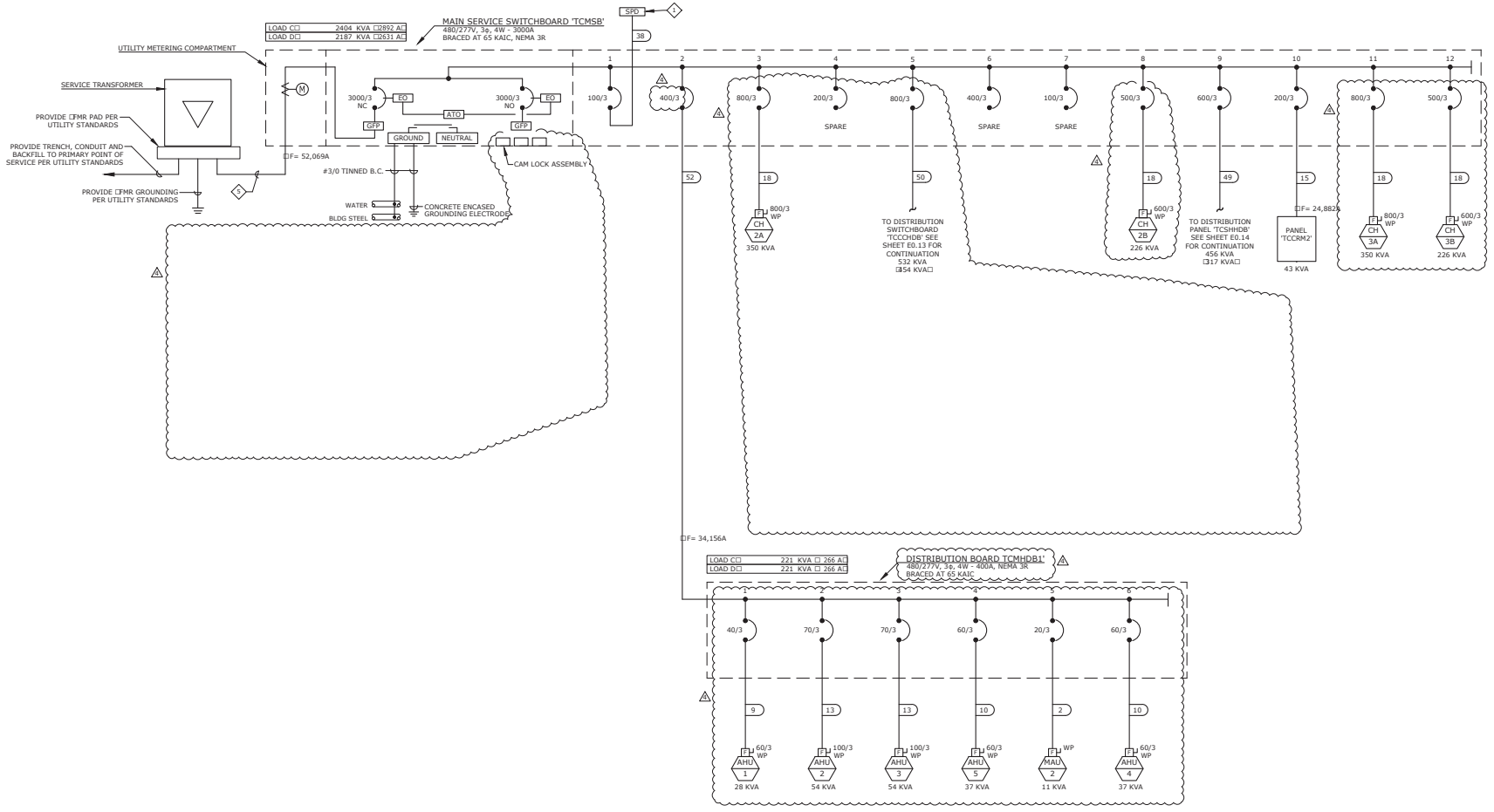


**GENERAL NOTES**

- MINIMUM EQUIPMENT A.I.C. RATINGS ARE 14K A.I.C. □ 480/277V AND 10K A.I.C. □ 208/120V UNLESS OTHERWISE NOTED.
- THE DESIGN PROFESSIONAL HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE A.I.C. RATINGS INDICATED FOR EACH DEVICE ARE ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
- THE DESIGN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED VOLTAGE DROP CALCULATIONS FOR ALL BRANCH CIRCUITS AND FEEDERS PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 215.19 (B) (1) (FN) NO. 4.
- PANELBOARD LOAD SUMMARIES INCLUDE ADDITIONAL 25% OF ALL CONTINUOUS AND LARGEST MOTOR LOADS WHERE APPLICABLE.
- AS PART OF THE PHASED CONSTRUCTION, ALL EQUIPMENT FEEDER UNDERGROUND RACEWAYS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 01. THE REMAINING RACEWAY SYSTEM INCLUDING INSTALLATION OF FEEDER CONDUCTORS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 02. VERIFY ADDITIONAL REQUIREMENTS WITH THE GENERAL CONTRACTOR/OWNERS REPRESENTATIVE/CONSTRUCTION MANAGER.
- REFER TO SHEET E0.2 FOR SINGLE LINE NOTES, SEQUENCE OF OPERATION AND FEEDER SCHEDULE.
- NORMAL ELECTRICAL SERVICE AND GENERATOR ELECTRICAL SERVICE TO ENTER BUILDING AS SEPARATE DUCTBANKS AND AT SEPARATE LOCATIONS. THE CONTRACTOR SHALL MARK THE PAVEMENT SHOWING ROUTING OF EACH SYSTEM.

**SHEET NOTES**

- ◇ PROVIDE SURGE PROTECTIVE DEVICE AS DEFINED IN SPECIFICATIONS UNDER TVSS SECTION.
- ◇ NOTE DELETED.
- ◇ NOTE DELETED.
- ◇ NOTE DELETED.
- ◇ 32 - 500CMIL THHN/THWN, CU.



**SINGLE LINE DIAGRAM - MAIN SERVICE SWITCHBOARD 'TCMSB'**



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**CHEROKEE NATION**  
 Entertainment & Resorts  
**Cherokee**  
 CASINO

**CHEROKEE NATION ENTERTAINMENT  
 TAHLEQUAH CASINO**  
 TAHLEQUAH, OKLAHOMA

PROJECT NAME

**BID PACKAGE 02 (100% SET)**

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		

DATE	JOB NUMBER
03/27/18	17-06

SHEET NUMBER

**E0.12**

SINGLE LINE DIAGRAM - MAIN SERVICE SWITCHBOARD 'TCMSB'





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CHEROKEE NATION ENTERTAINMENT  
**Tahlequah Casino**  
TAHLEQUAH, OKLAHOMA

BID PACKAGE 02  
(100% SET)

NO.	DATE	DESCRIPTION
1	03/27/18	ISSUED FOR BIDDING
2	03/27/18	ISSUED FOR BIDDING
3	03/27/18	ISSUED FOR BIDDING
4	03/27/18	ISSUED FOR BIDDING
5	03/27/18	ISSUED FOR BIDDING
6	03/27/18	ISSUED FOR BIDDING
7	03/27/18	ISSUED FOR BIDDING
8	03/27/18	ISSUED FOR BIDDING
9	03/27/18	ISSUED FOR BIDDING
10	03/27/18	ISSUED FOR BIDDING

DATE: 03/27/18 JOB NUMBER: 17-06

SHEET NUMBER: E0.13

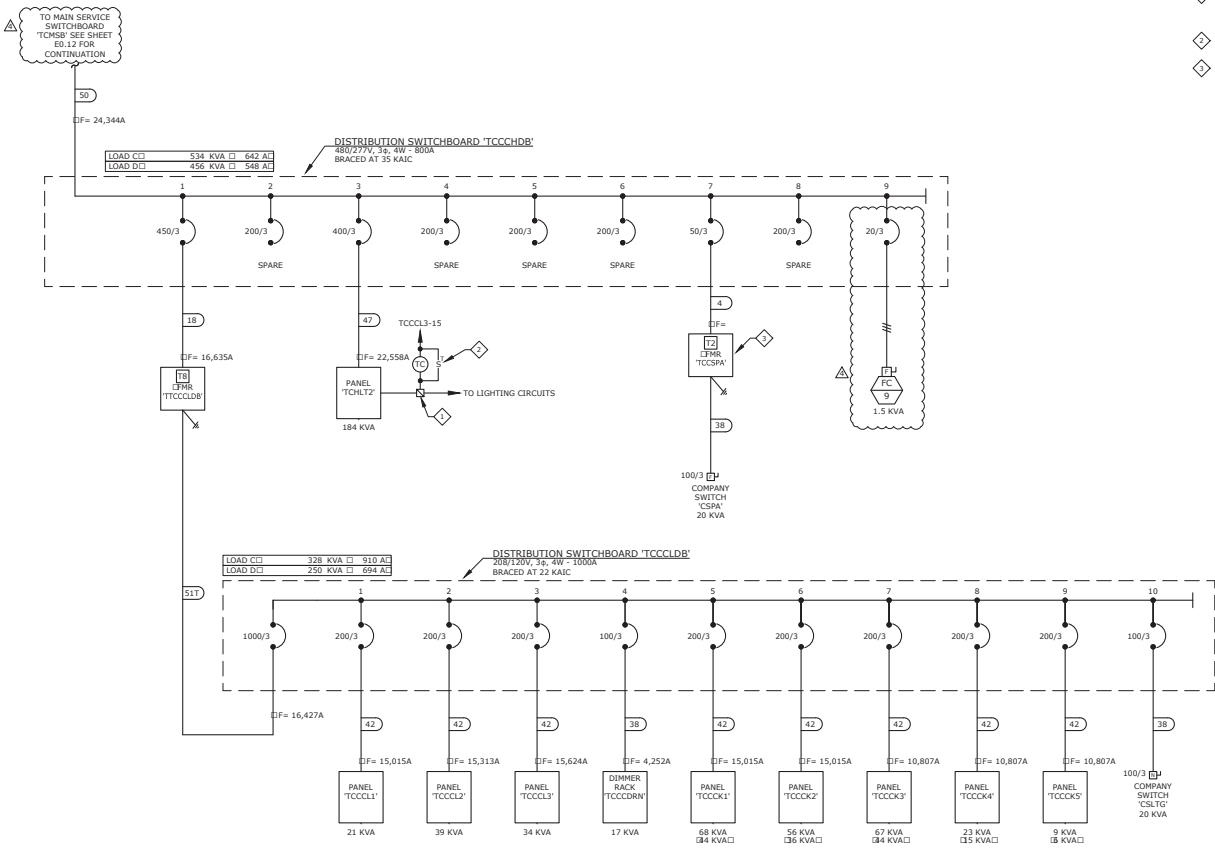
PARTIAL SINGLE LINE DIAGRAM

**GENERAL NOTES**

- MINIMUM EQUIPMENT A.I.C. RATINGS ARE 14K A.I.C. □ 480/277V AND 10K A.I.C. □ 208/120V UNLESS OTHERWISE NOTED.
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- THE DESIGN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED VOLTAGE DROP CALCULATIONS FOR ALL BRANCH CIRCUITS AND FEEDERS PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 210.19(A) (3) (FPN NO. 4).
- PANELBOARD LOAD SUMMARIES INCLUDE ADDITIONAL 25% OF ALL CONTINUOUS AND LARGEST MOTOR LOADS WHERE APPLICABLE.
- AS PART OF THE PHASED CONSTRUCTION, ALL EQUIPMENT FEEDER UNDERGROUND RACEWAYS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 01. THE REMAINING RACEWAY SYSTEM INCLUDING INSTALLATION OF FEEDER CONDUCTORS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 02. VERIFY ADDITIONAL REQUIREMENTS WITH THE GENERAL CONTRACTOR/OWNER'S REPRESENTATIVE/CONSTRUCTION MANAGER.
- REFER TO SHEET E0.2 FOR SINGLE LINE NOTES, SEQUENCE OF OPERATION AND FEEDER SCHEDULE.
- NORMAL ELECTRICAL SERVICE AND GENERATOR ELECTRICAL SERVICE TO ENTER BUILDING AS SEPARATE DUCTBANKS AND AT SEPARATE LOCATIONS. THE CONTRACTOR SHALL MARK THE PAVEMENT SHOWING ROUTING OF EACH SYSTEM.

**SHEET NOTES**

- ◇ PROVIDE 30A/12P MECHANICALLY HELD LIGHTING CONTRACTOR IN NEMA 1 ENCLOSURE ABOVE OR ADJACENT TO PANEL FOR CONTROL OF LIGHTING CIRCUIT. PROVIDE WITH 7-DAY PROGRAMMABLE TIME CLOCK AND BATTERY BACK-UP. NUMBER OF POLES DETERMINED BY NUMBER OF LIGHTING CIRCUITS TO BE CONTROLLED.
- ◇ PROVIDE CONTRACTOR OVERRIDE TIMER SWITCH (EVITON #6651 OR EQUIVALENT) COORDINATE LENGTH OF OVERRIDE WITH THE END USER.
- ◇ TRANSFORMER TO BE AUDIO ISOLATION TYPE.



**A PARTIAL SINGLE LINE DIAGRAM**  
E0.13 R/S



**GENERAL NOTES**

1. MINIMUM EQUIPMENT A.I.C. RATINGS ARE 14K A.I.C. □ 480/277V AND 10K A.I.C. □ 208/120V UNLESS OTHERWISE NOTED.
2. THE DESIGN PROFESSIONAL HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE A.I.C. RATINGS INDICATED FOR EACH DEVICE ARE ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
3. THE DESIGN PROFESSIONAL HAS PERFORMED ALL THE REQUIRED VOLTAGE DROP CALCULATIONS FOR ALL BRANCH CIRCUITS AND FEEDERS PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 210.19(A) □ IFCN NO. 4.
4. PANELBOARD LOAD SUMMARIES INCLUDE ADDITIONAL 25% OF ALL CONTINUOUS AND LARGEST MOTOR LOADS WHERE APPLICABLE.
5. AS PART OF THE PHASED CONSTRUCTION, ALL EQUIPMENT FEEDER UNDERGROUND RACEWAYS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 01. THE REMAINING RACEWAY SYSTEM INCLUDING INSTALLATION OF FEEDER CONDUCTORS WILL BE FURNISHED AND INSTALLED AS PART OF BID PACKAGE 02. VERIFY ADDITIONAL REQUIREMENTS WITH THE GENERAL CONTRACTOR/OWNERS REPRESENTATIVE/CONSTRUCTION MANAGER.
6. REFER TO SHEET E0.2 FOR SINGLE LINE NOTES, SEQUENCE OF OPERATION AND FEEDER SCHEDULE.
7. NORMAL ELECTRICAL SERVICE AND GENERATOR ELECTRICAL SERVICE TO ENTER BUILDING AS SEPARATE DUCTBANKS AND AT SEPARATE LOCATIONS. THE CONTRACTOR SHALL MARK THE PAVEMENT SHOWING ROUTING OF EACH SYSTEM.



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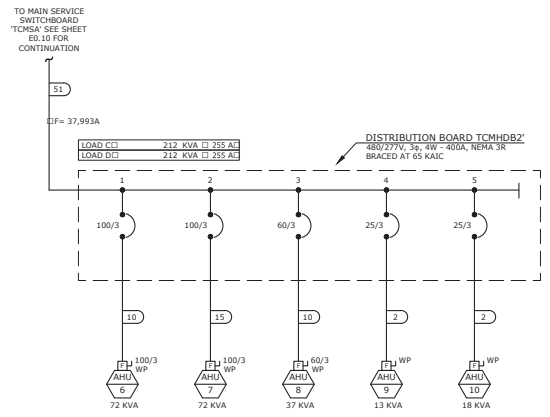
PROJECT FRAME  
ADDENDUM #15

REVISIONS	
NO.	DESCRIPTION

DATE: 07/13/18 JOB NUMBER: 17-06

DRAWN BY: E0.15

PARTIAL SINGLE LINE DIAGRAM



**A**  
E0.15 PARTIAL SINGLE LINE DIAGRAM  
RTS