	TECHNOLOGY LEGEND			
	DESIGNATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR THE USE OF A NETWORK CONNECTION. THE '#' SHALL BE REPLACED WITH NUMERIC TEXT			SYMBOL
'D#'	THAT IDENTIFIES THE TOTAL NUMBER OF CATEGORY 6 NETWORK CABLES THAT ARE TO BE INSTALLED AT THE TECHNOLOGY OUTLET LOCATION. CONTRACTOR TO			CR
	STAINLESS STEEL FACEPLATES WITH IDENTIFICATION WINDOWS, LABELS, BLANK INSERTS, AND ANY OTHER MATERIALS REQUIRED TO FURNISH A COMPLETE			CR
	FUNCTIONAL AND TESTED OUTLET LOCATION. ALL FACEPLATES PROVIDED SHALL CONTAIN A MINIMUM 4-PORTS AND SHALL BE APPROPRIATELY SIZED TO			DR
	ACCOMMODATE THE NUMBER OF CIRCUITS BEING INSTALLED AT THIS TECHNOLOGY OUTLET LOCATION. MAXIMUM OF SIX(6) DATA CABLES PER OUTLET.			ACP
'W'	DESIGNATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR THE USE OF A WALL MOUNTED TELEPHONE CONNECTION CONTRACTOR TO PROVIDE AND			
	INSTALL (1) CATEGORY 6 NETWORK CABLE, (1) CATEGORY 6 CONNECTOR, STAINLESS			DS
	TO FURNISH A COMPLETE FUNCTIONAL AND TESTED CIRCUIT AT EACH LOCATION SHOWN CONTRACTOR SHALL MOUNT THIS OUTLET AT ADA HEIGHT (MATCH LIGHT			(DS)
	SWITCH HEIGHT) AND COORDINATE ALL FINAL LOCATIONS WITH OTHER TRADES ON THE DRO JECT TO VERIEV THAT THE LOCATION OF THE OUTLET MAINTAINS 8" OF			MS
	CLEARANCE ON ALL FOUR SIDES OF THE BACK BOX. OUTLETS SHALL REMAIN CLEAR OF ROOM DOORS, CABINET DOORS, APPLIANCE DOORS, AND SLIDING DRAWERS.			РВ
'AP'	DESIGNATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR THE USE OF A WIRELESS ACCESS POINT CONNECTION. CONTRACTOR TO PROVIDE AND INSTALL (2)CATEGORY 6 NETWORK CABLE, (2) CATEGORY 6 CONNECTOR, (2) CAT 6 BISCUIT JACK FACEPLATE WITH IDENTIFICATION WINDOWS, LABELS, AND ANY OTHER MATERIALS			
				LD
	REQUIRED TO FURNISH A COMPLETE FUNCTIONAL AND TESTED CIRCUIT AT EACH			NOTES:
	INDICATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR	1. REFE	FOR AD	
'FF'	FURNITURE FEED, ALLOWING CABLING TO ROUTE INTO A MODULAR FURNITURE SYSTEM. CONDUIT SHALL BE SIZE TO ACCOMMODATE THE NUMBER CABLE ROUTING INTO TO THE FURNITURE SYSTEM.	[		
'V#'	VOICE OUTLET WITH CABLE AND TERMINATION AS INDICATED.			
NOTES:			1.	THE SECUR

REFERENCE TECHNOLOGY GENERAL NOTES, PLAN KEYED NOTES, AND ALL OTHER SYSTEM LEGENDS/NOTES. THE STRUCTURED CABLING SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL CATEGORY 6/6A CABLE TO ALL SYSTEMS' EQUIPMENT REQUIRING NETWORK CONNECTIVITY.

RACEWAY	LEGEND
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$\bigcirc$	INDICATES THE LOCATION OF A FLOOR MOUNTED BOX AND RACEWAY FOR LOW VOLTAGE. CONTRACTOR TO PROVIDE AND INSTALL A FLOOR BOX. EACH FLOOR BOX SHALL HAVE ONE (1) SINGLE GANG PORT WITH ONE (1) 1" CONDUIT(PER EVERY SIX(6) CATEGORY 6 OR FOUR(4) CATEGORY 6A CABLES) AND ONE (1) DOUBLE GANG PORT WITH ONE (1) 1 1/2" CONDUIT UNLESS NOTED OTHERWISE. ALL CONDUITS SHALL ROUTE FROM THE FLOOR BOX, DIRECTLY TO THE WALL INDICATED AND STUB-UP INTO THE NEAREST ACCESSIBLE PLENUM CEILING
$\Phi$	INDICATES THE LOCATION OF A CEILING MOUNTED OUTLET. CONTRACTOR SHALL MOUNT THIS OUTLET AT +12" ABOVE THE CEILING AND COORDINATE ALL FINAL LOCATIONS WITH OTHER TRADES ON THE PROJECT TO VERIFY THAT THE LOCATION OF THE OUTLET MAINTAINS 12" OF CLEARANCE FROM THE FRONT OF THE FACEPLATE FOR OWNER ACCESS.
▼	INDICATES THE LOCATION OF A NEW LOW VOLTAGE OUTLET. CONTRACTOR TO PROVIDE ONE (1) DOUBLE GANG BACK BOX WITH A SINGLE GANG REDUCER ONE (1) 1" CONDUIT STUBBING INTO THE NEAREST, ACCESSIBLE PLENUM CEILING.
$\mathbb{V}$	INDICATES THE LOCATION OF A NEW LOW VOLTAGE OUTLET. CONTRACTOR TO PROVIDE ONE (1) DOUBLE GANG BACK BOX WITH ONE (1) 1 1/2" CONDUITS STUBBING INTO THE NEAREST, ACCESSIBLE PLENUM CEILING.
$\bigtriangledown$	INDICATES THE LOCATION OF A NEW LOW VOLTAGE OUTLET. CONTRACTOR TO PROVIDE ONE (1) SINGLE GANG BACK BOX WITH ONE (1) 3/4" CONDUITS STUBBING INTO THE NEAREST, ACCESSIBLE PLENUM CEILING.
NOTES:	

- A. SYSTEM INSTALLER TO PROVIDE AND INSTALL A PLASTIC PROTECTIVE BUSHING ON ALL CONDUIT STUB-UP AND SLEEVES, PRIOR TO ROUTING CABLING IN CONDUIT, CUTTING BUSHING TO FIT ROUND INSTALLED CABLE WILL NOT BE ACCEPTED
- B. NO CONDUITS SHALL EXCEED FOR 40% MAXIMUM FILL RATIO. CONTRACTOR TO PROVIDE ADDITIONAL CONDUITS REQUIRED.
- C. ANY CONDUIT INSTALL FOR AUDIO /VIDEO SYSTEMS SHALL INCLUDE AT LEAST ONE (1) 1 1/4" CONDUIT.

	CC	JNDUI	I / CAB		LCHAR	
)NDUIT ZE (ID)	4-PR UTP CATEGORY 3	4-PR UTP CATEGORY 5/5E	4-PR UTP CATEGORY 6	4-PR UTP CATEGORY 6A	4-PR UTP CATEGORY 3/5	12-ST ARMORED FIBER OPTIC CABLE
1"	12	9	6	4	-	-
-1/4"	21	15	12	8	-	-
-1/2"	28	21	16	11	1	-
2"	47	35	27	19	3	1
3"	124	93	72	50	8	3
4"	208	155	120	83	12	6
. CONDUIT SIZE FOR 25-PAIR COPPER AND FIBER OPTIC CABLES APPLY TO SLEEVE SIZES ONLY. CONDUIT SIZES SHALL BE SIZED BASED ON MAXIMUM FILL RATION AND ALLOWING INSTALLATION TO NOT EXCEED THE MAXIMUM ALLOWABLE PULL TENSION.						

## 

B. CONDUIT FILL RATIO MAY VARY BY MANUFACTURER. THIS CHART SHALL STIPULATE A MINIMUM REQUIREMENT. CONTRACTOR SHALL REFERENCE MANUFACTURER SPECIFICATION AND DECREASE CABLE COUNT PER CONDUIT SIZE IF REQUIRED.

C. SIZES SHOWN DEPICT THE INTERIOR DIAMETER OF THE CONDUIT.

## ACC

SYMBOL	
CR	WALL OR MU
CR	DOOR MOUN
DR	DOOR RELEA
ACP	DESIGNATES ELECTRICAL NETWORK C DEPARTMEN
DS	WALL OR MU
DS	DOOR MOUN
MS	2-WAY AUDI
PB	ADA AUTO D DOOR OPER
	DPDT MAGN DOOR FRAM
LD	LOCKDOWN

REFERENCE ACCESS CO FOR ADDITIONAL INFOR

#### SEC

- E SECURITY SYSTEM INST STEM EQUIPMENT TO THE
- THE SYSTEM INSTALLER SH APPROVED CABLE SUPPOR ROUTED AND TIED DIRECTL DUCTWORK. THE CABLE SUF STEEL JOIST. AT LOCATIONS CEILING, THE SYSTEM INSTA MATERIALS TO CONNECT TH SYSTEM TO THE THREADED CEILING AT ANY LOCATIONS
- SECURITY CAMERA SYSTEM RECOMMENDED BY THE MAI SHALL HAVE A SUPPORT WI CAMERA FROM DROPPING CEILING MOUNTED SECURIT TILES. ALL CEILING MOUNTE
- . ALL EXTERIOR AND WALL MO COORDINATED WITH THE OW SCHEDULED THROUGH THE
- PROVIDE AND INSTALL MAGN PROJECT. CONTACTS TO BE

COORDINATE MONITORING REQU PROGRAM SYSTEM TO ALERT TI EVENT

ESS CONTROL LEGEND	GENERAL NOTES		SUBSCRIP	
DESCRIPTION	1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER TO MAIN CONTROL PANELS, REMOTE POWER SUPPLIES	'WM'	INDICATES THAT T HEIGHT OR IN COM HEIGHTS ARE TO E	
TED ACCESS CONTROL PROXIMITY CARD READER THAT IS INTEGRATED	AND ALL HEAD END EQUIPMENT. SYSTEM INSTALLERS SHALL COORDINATE LOCATIONS AND CONNECTIONS WITH THE PROJECT'S ELECTRICAL CONTRACTOR.			
OR HARDWARE.	2. THE PROJECT'S ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUITS, FLOOR	'WP'	FOR EXTERIOR CO	
SE BUTTON THE LOCATION OF THE ACCESS CONTROL SYSTEM, CONTROL PANEL. CONTRACTOR TO PROVIDE 120V POWER TO PANEL. PROVIDE ABLE TO PANEL AND COORDINATE WITH THE OWNER'S TECHNOLOGY T ON ACQUIRING AN IP ADDRESS.	BOX, BACK BOXES, JUNCTION BOXES, RACEWAYS, AND SLEEVES REQUIRED TO ESTABLISH CLEAR PATHWAYS FOR ALL SYSTEMS. ALL CONDUITS, SLEEVES, BOXES, AND RACEWAYS SHALL BE PROPERLY SIZED TO MAINTAIN A 40% MAXIMUM FILL RATIO. THE INSTALLER FOR EACH SYSTEM SHALL PROVIDE THE ELECTRICAL CONTRACTOR WITH SHOP DRAWINGS INDICATING LOCATIONS AND SIZES OF CONDUITS BEYOND THOSE SHOWN ON THE CONTRACT DOCUMENTS.	'AC'	INDICATES THAT T COUNTERTOP. A N DESIGNATE THE SI CONFIRMED WITH	
LLION MOUNTED, 2-WAY AUDIO/VIDEO INTERCOM DOOR STATION.	3. ALL EXPOSED SYSTEM'S WIRING OR WIRING ROUTING ACROSS NON-ACCESSIBLE CEILINGS SHALL BE ROUTED IN CONDUIT, PROVIDED AND INSTALLED BY THE PROJECT'S ELECTRICAL		INDICATES THAT T	
TED, 2-WAY AUDIO/VIDEO INTERCOM DOOR STATION.	CONTRACTOR. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH 40% CABLE FILL RATIO. MINIMUM CONDUIT SIZE SHALL BE 3/4".	'AFF'	DESIGNATE THE SI BE CONFIRMED WI	
D/VIDEO INTERCOM MASTER STATION.	4. EACH SYSTEM INSTALLER SHALL BE RESPONSIBLE FOR ENSURING ALL EXTERIOR WALL	'UC'	INDICATES THAT T	
OOR OPEN BUTTON. SHOWN FOR REFERENCE ONLY, BUTTON AND AUTO	PENETRATIONS ARE PROPERLY SEALED TO PREVENT ANY MOISTURE FROM ENTERING BUILDING.		UNDERSIDE OF TH INDICATES THAT T	
TIC DOOR CONTACT/DOOR POSITION SENSOR. FLUSH MOUNTED IN	ARE REQUIRED FOR A COMPLETE INSTALLED ON THE EXTERIOR OF THE BOILDING. IF EXTERIOR CONDUTTS ARE REQUIRED FOR A COMPLETE INSTALLATION, EACH SYSTEM CONTRACTOR SHALL COORDINATE WITH THE PROJECTS CONSULTANT PRIOR TO ANY ROUGH-IN.	'CM'	SPECIFIED HEIGHT PROJECT'S ARCHI	
BUTTON	6. EACH SYSTEM INSTALLER SHALL PROVIDE AND INSTALL PROTECTIVE BUSHINGS ON ALL CONDUIT	•	FIELD COORDINAT	
ONTROL SCHEDULE, DETAILS, AND DIVISION 28 SPECIFICATIONS	OL SCHEDULE, DETAILS, AND DIVISION 28 SPECIFICATIONS			
TALLERS SHALL BE RESPONSIBLE FOR CONNECTING ALL APPLICABLE E OWNER'S NETWORK.	RESTROOMS OR ANY TYPE OF ROOM OTHER THAN A CORRIDOR WILL NOT BE ACCEPTED. ENTER ALL ROOMS ABOVE THE ASSOCIATED ROOM DOORWAY.	2. REFERENCE 3. COMPLET INDUSTRY	FERENCE SPECIFICATIONS FC DMPLETE INSTALLATION OF ALI DUSTRY STANDARDS, COMMO	
ALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN T SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE Y TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR PPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S	<ol> <li>CONTRACTOR SHALL COORDINATE WITH THE SYSTEM ENGINEER PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.</li> </ol>	4. ALL EXTER COORDIN/ SCHEDULI	RIOR AND WALL MOUNT ATED WITH THE OWNER ED THROUGH THE ARCI	
S WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE ALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED HE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE S.	<ol> <li>THE SELECTED, INSTALLING CONTRACTOR MUST BE A CERTIFIED INTEGRATOR/INSTALLER AUTHORIZED BY THE SPECIFIED SYSTEM MANUFACTURER TO INSTALL THE CABLE PLANT AND CONNECTIVITY PRODUCTS. REFER TO SPECIFICATIONS FOR PRODUCT TYPE AND DESCRIPTION.</li> <li>SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD</li> </ol>			
I INSTALLER SHALL PROVIDE A CEILING MOUNTED INSTALLATION KIT NUFACTURER OF THE CAMERA. EACH CEILING MOUNTED CAMERA KIT	ENGINEERING PRACTICES AS ESTABLISHED BY ANSI/EIA/TIA, BICSI, AND THE NEC. 4. ALL WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES.			
TO THE FLOOR AT ANY TIME. AT NO POINT SHALL THE WEIGHT OF THE TY CAMERA BE SUPPORTED BY THE CEILING GRID SYSTEM OR CEILING THE CAMERAS SHALL BE FLUSH MOUNTED.	5. ALL TELECOMMUNICATIONS SYSTEMS EQUIPMENT AND MOUNTING LOCATIONS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY STANDARDS.			
OUNTED CAMERA LOCATIONS AND MOUNTING HEIGHTS MUST BE WNER PRIOR TO ROUGH-IN. COORDINATION MEETINGS SHALL BE	<ol> <li>ALL INDUSTRY STANDARD CATEGORY 6 CABLING PRACTICES MUST BE FOLLOWED FOR ALL DATA CABLING.</li> <li>ALL CARLES/WIRDING ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM AC</li> </ol>			
	POWER CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.			
UIREMENTS WITH THE INSTALLER FOR EACH SYSTEM AND THE OWNER. HE OWNER DESIGNATED PERSONNEL UPON A MONITORED ALARM	<ol> <li>ALWAYS CROSS OTHER SYSTEM CABLES AT A 90 DEGREE ANGLE.</li> <li>ALL CABLES AND TERMINATION COMPONENTS SHALL BE MACHINE LABELED AT BOTH ENDS. LABEL ALL CABLES PER TS DRAWINGS AND/OR SPECIFICATIONS. FINAL CABLE/OUTLET IDENTIFICATION LABELS SHALL BE COORDINATED WITH THE OWNER AND ENGINEER .</li> </ol>			
	10. CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON ALL COMMUNICATION CABLE BETWEEN BUILDINGS.			
	11. ALL EXPOSED CABLING ROUTED IN PLENUM SHALL BE PLENUM-RATED. ALL NON PLENUM-RATED			

CABLING INSTALLED IN PLENUM SPACES SHALL BE INSTALLED IN CONDUIT.

13. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.

THE CENTER OF EACH ROOM AND A 3' SERVICE LOOP ABOVE EACH OUTLET LOCATION.

OTHERWISE.

DETAILS, AND SCHEDULE.

EACH MDF AND IDF.

12. NO TERMINATION OR SPLICES SHALL BE INSTALLED IN OR ABOVE CEILINGS UNLESS NOTED NOTED

14. ALL CABLE INSTALLED SHALL ROUTE TO THE CENTER OF THE ROOM IN WHICH IT SERVES AND THEN

16. PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO EACH VIDEO SURVEILLANCE CAMERA ON

17. PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO THE BUILDING'S ACCESS CONTROL HEAD

18. PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO THE BUILDING'S INTRUSION DETECTION PANEL. TERMINATION OF THIS CABLE SHALL BE COORDINATED WITH THE SYSTEM INSTALLER.

19. PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO EACH LIGHTING CONTROL HUB ON THE ENTIRE PROJECT. COORDINATE EXACT QUANTITY AND LOCATIONS WITH THE LIGHTING CONTROL

20. PROVIDE AND INSTALL TWO (2) CATEGORY 6 DATA CIRCUITS TO EACH FSD (ALL VARIATIONS OF),

CMP, WMP, AND DS ON THE ENTIRE PROJECT. COORDINATE ANY DISCREPANCIES WITH ENGINEER.

21. PROVIDE AND INSTALL ONE (1) CATEGORY 6 DATA CIRCUIT TO THE LOCAL AIR UNIT CONTROLLER IN

22 PROVIDE AND INSTALL ONE (1) CATEGORY 6 DATA CIRCUIT TO EACH ACCESS CONTROL VIDEO DOOR STATION AND MASTER STATION ON THE ENTIRE PROJECT. COORDINATE EXACT LOCATION AND TERMINATION REQUIREMENTS WITH THE DOOR STATION INSTALLER, PRIOR TO INSTALLATION.

SYSTEM INSTALLER. CONTRACTOR TO ASSUME A MINIMUM OF TEN (10) PER PROJECT.

END PANEL. TERMINATION OF THIS CABLE SHALL BE COORDINATED WITH THE SYSTEM INSTALLER.

THE ENTIRE PROJECT. REFERENCE VIDEO SURVEILLANCE LEGEND, NOTES, FLOOR PLANS,

TO THE OUTLET LOCATION IT IS INTENDED FOR. EACH CABLE SHALL HAVE A 10' SERVICE LOOP AT



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**KFC ENGINEERING** 

STRUCTURAL

SALAS O'BRIEN MECHANICAL / ELECTRICAL



MOORE PUBLIC SCHOOLS BOARD OF EDUCATION MOORE, OKLAHOMA



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# PTS AND ABBREVIATIONS

THE DESIGNATED DEVICE IS TO BE WALL MOUNTED AT SPECIFIED MPLIANCE WITH CODE REQUIREMENTS. ALL WALL MOUNTED BE CONFIRMED WITH THE PROJECT'S ARCHITECT PRIOR TO

THE DESIGNATED DEVICE SHALL BE WEATHER PROOF AND RATED ONDITIONS INSTALLATION.

THE DESIGNATED DEVICE IS TO BE INSTALLED ABOVE THE NUMERIC VALUE SHALL REPLACE THE '#' SYMBOL AND SHALL SPECIFIC HEIGHT ABOVE COUNTER. ALL HEIGHTS ARE TO BE THE PROJECT'S ARCHITECT PRIOR TO ROUGH-IN.

THE DESIGNATED DEVICE IS TO BE INSTALLED ABOVE THE R. A NUMERIC VALUE SHALL REPLACE THE '#' SYMBOL AND SHALL SPECIFIC HEIGHT ABOVE FINISHED FLOOR. ALL HEIGHTS ARE TO /ITH THE PROJECT'S ARCHITECT PRIOR TO ROUGH-IN. THE DESIGNATED DEVICE IS TO BE MOUNTED ON THE

HE ELEVATED CANOPY. THE DESIGNATED DEVICE IS TO BE CORNER MOUNTED AT T. ALL WALL MOUNTED HEIGHTS ARE TO BE CONFIRMED WITH THE ITECT PRIOR TO ROUGH-IN.

TE ELEVATION.

ES TO CONTRACTOR

END MAY NOT APPEAR ON DRAWINGS. REFER TO GENERAL MOUNTED DEVICE MOUNTING HEIGHTS.

OR MATERIALS AND METHODS.

PRODUCTS SHALL BE IN COMPLIANCE WITH ALL CODES, N PRACTICES AND MANUFACTURER'S INSTRUCTIONS.

TED CAMERA LOCATIONS AND MOUNTING HEIGHTS MUST BE R PRIOR TO ROUGH-IN. COORDINATION MEETINGS SHALL BE HITECT'S PROJECT MANAGER.



# AGP the Abla Griffin Partnership L.L.C.

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KFC ENGINEERING

SALAS O'BRIEN

STRUCTURAL

MECHANICAL / ELECTRICAL

drawn by	
NY	
necked by	
ANUARY 2024	
date	
revisions	

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KFC ENGINEERING

STRUCTURAL

SALAS O'BRIEN MECHANICAL / ELECTRICAL

drawn by
NY
checked by
JANUARY 2024
date

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	Security System Specifications	1.03	Quality Assurance
Part 1	- General	1.03.0	Install all components as directed by Manufacturer's installation guidelines.
		•	All products shall bear the mark of UL or ETL for performance level.
•	Manufacturers Security System Manufacturer shall be DSC or DMP. See plans for the specific manufacturer required (no	•	System installation shall meet all applicable Local/State codes and safety requirements where p
∙ substiti ∙	Installer shall be certified by manufacturer to install and program the specified systems. (no substitutions)	•	All products shall be new and un-used in original packaging.
•	Peripheral device Manufacturers shall be according to equipment list. (No Substitutions)		
•	Cable Manufacturer shall be Genesis. (Or Equivalent)	1.03.02	2 Bidder/Installer Qualifications
Securi	ty Systems Equipment		Alarm technician(s) on staff.
•	security alarm control shall be dsc model # pc4020 or dmp model # xr550nl-g. (no substitutions)	•	bidding contractor shall be certified by manufacturer to install & program the specified systems.
•	security alarm control communicator shall be dsc model # t-linktl250. dpm n/a. (no substitutions)	• not be	bidding contractor shall perform all programming required to complete the installation. moore p required to assist in any part of the installation or programming.
•	security alarm keypad shall be dsc model # icd4501 or dmp model # 7675. (no substitutions)	•	bidding contractor shall have at least one year experience installing dsc/dmp equipment.
substit	utions)	•	bidding contractor shall have a minimum of 5 years experience installing commercial burglar al
•	security alarm 8 zone hardwire expander shall be dsc model # pc4108 or dmp model # 714-8. (no substitutions)	•	bidding contractor shall be able to provide insurance at the request of the owner.
•	security alarm 16 zone hardwire expander shall be dsc model # pc4116 or dmp model # 714-16. (no substitutions)	•	bidding contractor shall have a commercial burglar technician on the job site at all times during
, substit	security alarm power supply shall be disc model # pc4204 or drip systems = altronix model # smp3pmctx. (no utions)	•	Contractor shall ensure that materials delivery to work area shall be coordinated with construct
, )	security alarm power supply cabinet shall be dsc model # pc4051c. dmp n/a. (no substitutions) security alarm cabinet locks shall be dsc model # I1 or dmp model # 301. (no substitutions)		responsible for materials distribution to all trades.
•	security alarm 35'x35' motion detector shall be honeywell model # dt-8035. (no substitutions) security alarm 50'x60' motion detector shall be honeywell model # dt-8050. (no substitutions)	•	Contractor is responsible for all materials, tools and vehicles left on the job site.
•	security alarm window glass break sensor shall be honeywell model # fg-730. (no substitutions) security alarm door contact shall be ge model # 1076d-m. double pole double throw for all doors (no substitutions)	•	Follow Manufacturer's recommendations for handling of materials.
● ● for "do	each single door or double door shall be wired with 4 conductor wire. dmp systems shall be wired with 2 zones per single door or double door. one zone for security alarm and one zone or beld open alert"	1.05	Project Conditions
•	security alarm c channel door magnets shall be gri model # mc180 security alarm surface window contact shall be aleph model # ps-1541. (or equivalent approved by mps)	1.05.0	I Environmental Requirements
• nterlog	security alarm overhead door & roof hatch contact shall be amseco model # odc-59a or for rail mount applications ix ge2315al. (no substitutions)	•	Contractor shall ensure that any pollutants produced during the Work are disposed off accordin national regulations. Follow the most stringent guidelines.
•	security alarm indoor siren shall be ademco model # wave2ex. (no substitutions) security alarm outdoor siren shall be atw model # ds301set. (no substitutions)	•	It is preferred that the Contractor recycle any used or un-used components during the course o
● ● and 2 (	security alarm outdoor strobe shall be amseco model # sl401c. (no substitutions) Contractor to provide and install a total of 5 wireless holdup buttons. 3 to be installed in administration area offices	1.06	Sequencing
.01	Systems Installation	•	Contractor shall coordinate with Owner's project manager on sequencing of various trades and
•	installer shall be certified by manufacturer to install & program the specified systems.	for the	lifecycle of the project.
• equire	installer shall perform all programming required to complete the installation. moore public schools shall not be d to assist in any part of the installation or programming.	1.07	Scheduling
•	All alarm junctions and or splices shall be soldered and insulated.		terminations and testing once scheduling sequence has been determined to the Owner's Proje
•	All circuits and wiring shall be labeled at all terminating ends.	1.08	Warranty
Ð	All devices shall be mounted according to the manufactures specifications.	•	Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/o failure. ( 1 year warranty shall begin at job completion)
•	All devices shall be properly adjusted and tested prior to job completion.	Part 2	- Products
•	All cohinets shall be labeled outside with their corresponding module and zone numbers and installed with lock	2.02	Source Quality Control
•	All cabinets shall be labeled inside with module number by the corresponding module and zone list definitions.	•	Materials shall be purchased from Distributors authorized by system Manufacturers to sell new components.
•	if a new dsc main control panel is required, it shall have a T-LINKTL250 installed	Part 3	- -
•	all new dsc or dmp main control panels shall have a cat 6 cable ran back to the nearest idf for network connectivity.	3.01	Field Quality Control
•	Each expansion cabinets shall have two non-sheilded16 gauge 4 conductor cables ran from the main control to the	•	Contractor shall make available all ceiling and termination work for inspection by Manufacturer'
•	all keypads shall be wired individually back to new power supply.	•	Contractor shall replace all defective components.
•	all sirens shall be wired individually and connected to new power supply.		
•	All devices such as motion detectors, glass break detectors, door contacts, Keypads etc. shall be labeled with their corresponding module and zone number. Label shall be visible from the floor.	3.02	Adjusting
•	All motion detectors shall be sealed to prevent air and insects from entering.	•	No additional work outside of the contract scope of work shall be completed without the approv Owner's representative.
•	All steel doors shall have wide gap contacts installed.	3.03	Cleaning
•	All door contacts shall be recessed and door magnets shall be glued in place.	•	Contractor shall sweep and mop the floors of all equipment rooms or connection point closets p
•	All devices such as door contact (double doors wire as one), motion detectors, glass break detectors, etc. shall be wired individually on separate zones with end of line resistors at the devices.		Owner.
•	All devices such as motion detectors, glass break detectors, door contacts, keypads, sirens, etc. shall be labeled	2.04	Protoction
	All air conditioning condensers accessible from the outside and roof shall have pressure switches installed on the	5.04	It is the responsibility of the Contractor to ensure equipment is protected from dust and water d
-	high pressure side and be connected to the security alarm.		appropriate materials.
•	Protective grommets shall be installed on all conduits to protect wire.	•	Remove all protective covers and protective materials from equipment prior to turnover to Own
•	All devices shall be wired with NON shielded cable.	3.05	Schedules
•	All panels, power supplies and modules shall be grounded. All wire shall be run in L books above ceiling with a minimum space of $4$ " from ceiling deck. All wire shall be in	•	manager.
•	separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the red iron and roof deck.	•	It is recommended that the Contractor schedule closely with any other systems contractor to er met.
•	All wire visible from the finished floor shall be covered in decorative wire molding.	•	Contractor bidding will work closely with the electrical and or masonry contractors to ensure co
•	All wire ran between building shall be in conduit and shall be non shielded direct burial cable. It shall be a minimum		door frame access conduit, etc. are in the proper locations and accessible.
•	or 4 conductor to AvvG copper.	1.02 5	end of Section
•	Installer will work closely with the electrical and or masonry contractors to ensure conduit, back boxes, door frame		
	access conduit, etc. are in the proper locations and accessible.	1.03.0	I Prior to installation
•	Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008.	•	Show compete map of system design for approval by Owner.
•	ronow and adhere to installation practices specified by the Manufacturers.		Security System Installation Completion Check List
1.02	Products Installed but not Supplied Under This Section	Part 1	- General
•	All conduit and EMT required for Fire cabling pathway in/out of closets and in/out of wall cavities at the work area. EMT or Conduit for pathways shall have no more than two 90 degree sweeps and no continuous section over 100'.	1.01	Section Includes
•	All core holes and poke through devices in the floor for the installation of Fire cabling.	•	Security System Completion Check List
•	All core holes and EMT sleeves between floors for the routing of Fire cabling.	1.02	Completion Check List

• Back boxes for the mounting of Fire Devices.

		SYSTEMS SPECIFICATIONS		
for installing Fire Cabling.	• A	map of the entire system showing device numbers and wire routes has been left inside the main control panel and	•	Door Contacts shall be GE Model # 10/6D-M Double Pole Double Throw (To be utilized for Access Con Security Alarm) (See security alarm specs)
	a	copy has been given to Jack Phillips with MPS.	•	DOOR LOCK RELEASE BUTTON SHALL BE (NO SUBSTITUTIONS)
		an panel programming has been checked and is correct.	•	Power Supply for locking bardware
		Il zones have been tested to verify proper description at keynad		**Power supply in Keyscan Controller is for the Control and Readers only.
	• A	Il zones have been tested to verify proper reporting to the monitoring station.	•	Power Supplies shall be sized to meet requirements of Strikes and locks with a maximum of 80% amp Power Supply shall have form "C" contacts for supervision that is connected to Keyscan Control Aux In
	• A	Il zones have been tested to verify they are in their proper partition(s).	•	24 VDC Securitron- AccuPower- AQM20-8C/16C, AQD5-8C or equal.
	• A	Il sirens and strobes have been tested for proper operation.	2.01	Systems Installation
where project is located.	• A	Il motion detectors have been adjusted for proper sensitivity and have been walk tested.	•	All junctions and or splices shall be soldered and insulated.
	• A	Il motion detectors have been sealed to prevent air and insects from entering.	•	All circuits and wiring shall be labeled at all terminating ends.
	• A	Il glass break detectors have been adjusted for proper sensitivity and tested.	•	All devices shall be mounted in accordance to the manufactures specifications.
	• A	Il cabinets are labeled on the outside with module numbers and zone numbers.	•	All devices shall be properly adjusted and tested prior to job completion.
ensed Commercial Burglar	• A	Il cabinets are labeled on the inside with module numbers by the corresponding module and zone descriptions.	•	All controllers shall have a Cat 6 network cable Blue in color ran from the nearest network cabinet and
vstems.	• A	Il user codes have been programmed and tested for proper partition access.	•	with drop number.
oore public schools shall	• T	he monitoring station has the correct account information such as call list, zone descriptions etc. End of Section	•	All card readers shall be labeled with their corresponding reader number.
	1.09 F	eferences	•	All doors with access control shall have contacts installed for door status indication. Steel doors shall he gap door contacts installed.
rglar alarms.	• N	IFPA-70 National Electrical Code 2008 edition	•	All doors with access control shall have egress motions installed to allow system to detect proper egres
	• N	IFPA-72 National Fire Alarm Code		(including doors with panic exit hardware.)
during installation	• ι	IL 1666 - Standard for Safety of Flame Propagation Height	•	Protective grommets shall be installed on all conduits to protect wire.
	• N	IFPA 262 - Flame Travel and Smoke of Wires and Cables	•	All panels, power supplies and modules shall be grounded.
nstruction site manager	• L	ocal Authority Having Jurisdiction	•	All wire shall be run in J hooks above ceiling with a minimum space of 6" from ceiling deck. All wire sha separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the and roof deck.
	1.10 E	lefinitions	•	All wire visible from the finished floor shall be covered in decorative wire molding.
	AWG - A	merican Wire Gauge	•	All wire ran between building shall be in conduit and shall be direct burial cable.
		uilding Industry Consulting Service International	•	Installer shall have a licensed Access Control technician on the job site at all times during installation.
		deral Communications Commission	•	Installer will work closely with the electrical and or masonry contractors to ensure conduit, back boxes, access conduit, etc. are in the proper locations and accessible
coording to local state or		lational Electrical Contractors Association	•	Follow and adhere to installation practices specified by NFPA-70 National Electric Code. Edition 2008.
	NFPA - N	lational Fire Protection Agency	•	Follow and adhere to installation practices specified by the Manufacturers.
ourse of the construction	UL - Und	erwriters Laboratory		
			3.01 E	Bidder/Installer Qualifications
es and construction teams			•	Bidding contractor shall be a local licensed Access Control Company with licensed Access Control tech on staff.
		Access Control System Specifications	•	Bidding contractor shall have at least one year experience installing Keyscan Access Control Systems.
			•	Bidding contractor shall have a minimum of 5 years experience installing commercial Access Control S
of roughing in cables, s Project Manager.	Acc	ess Control Equipment	•	Bidding contractor shall be able to provide insurance at the request of the owner.
	Part	1 - Manufacture	•	Bidding contractor shall have a commercial Access Control technician on the job site at all times during
ip and/or system component	•	Access Control Manufacturer shall be Keyscan. (No Substitutions)	3 01 1	
	•	Peripheral device Manufacturers shall be according to equipment list. (No Substitutions)	0.01.1	ous made a second se
	•	Cable Manufacturer shall be Genesis. (Or Equivalent)	3.01.2	Prior to installation
ell new and unused	1.01	Access Control Equipment Description	•	Show compete map of system design for approval by Owner.
	•	Access Control System Manufacture shall be Keyscan (No Substitutions) Access Control Management Software = Aurora (This software is already installed and in use. It is listed for	3.01.3	Prior to final acceptance
		information purposes only)	•	Provide a soft CAD copy As-Built showing layout of Controller Panel, Card Readers, Power Supplies ar
acturer's representative or	•	Reader Control Panels shall be (No Substitutions) Keyscan CA 4500 = 4 Door Keyscan CA 8500 = 8 Door	•	mounted equipment upon Substantial Completion. Ensure all warranties specify that the Owner is entitled to all rights guaranteed by the warranty for vario
	•	Each Reader Control Panel shall be equipped with (2) 16VAC 40VA Transformer		components.
	•	Each Reader Control Panel shall be equipped with (1) 12V 7AH Battery One 2,4 or 8 Door Reader Control Panel per site shall be equipped with (1) Keyscan Netcom2p module. If the site		
		has an existing 2,4 or 8 Door Control Panel with a Netcom2P already installed, then a Netcom 2P is not needed and CIM or CIM-Link modules shall be used to connect the new Control Panel to the existing Control Panel.	3.02	Quality Assurance
approval of the Owner or	•	All Reader Control Panels shall be linked together with either CIM or CIM-Link modules.	3.02.1	Qualifications
	•	Each new Reader Control Panel shall be capable of 4 doors minimum	•	Install all components as directed by Manufacturer's installation guidelines.
		Card Readers shall be (No Substitutions)	•	All products shall bear the mark of UL or EIL for performance level.
losets prior to turnover to the	•	HID 40NKS00000000 Signo Wall Mount reader (for use in all locations except where mullion mount reader size is required to fit)	•	System installation shall meet all applicable Local/State codes and safety requirements where project is
	•	HID 20NKS00000000 Signo 20 Mullion Reader (For use on mullion mount locations where single gang reader is too	•	
				Completion Check List
water during the project with	-	ALL READERS REQUIRE 22/0 STR DAS WIRE.	Part 4	- General
		RCI 0163X32D $\frac{1}{2}$ inch Rim(ONLY USE IF $\frac{3}{4}$ INCH RIM WILL NOT FIT)	4.01	Section Includes
o Owner.		RCI F0162X32D ¾ inch Rim Fire Rated RCI F2164 RECESSED ALL-IN-ONE STRIKE	•	Access Control System Completion Check List
bliched by Owner's project	•	Where storm doors are installed, install compatible power motor and power supply to activate door hardware unless	4.02	Completion Check List
onaneu by Owner's project		Installed by door contractor.	•	A map of the entire system showing device numbers and wire routes has been left inside the main cont
or to ensure turnover date is	•	Egress wottons shall be (No Substitutions) BOSCH DS160 OR HONEYWELL IS310	-	and a copy has been given to Rodney Cobb with MPS.
sure conduit, back hoves			•	All system programming has been checked and is correct.
			•	Panel(s) has been tested for proper operation.
			•	All card readers are labeled with reader number and have been tested to verify proper operation.
			•	All user card and key fobs have been programmed into system and tested to verify proper operation.
			•	All egress motion detectors have been adjusted for proper sensitivity and have been walk tested.
			•	All controllers are labeled on the outside with module numbers.
			•	All controllers are labeled on the inside with module numbers by the corresponding module.

SHALL BE (NO SUBSTITUTIONS)	4.03 Products Installed but not Supplied Under This Section
SWITCH	All conduit and EMT required for Fire cabling pathway in/out of closets and in/out of wall cavities at the work or Conduit for pathways shall have no more than two 90 degree sweeps and no continuous section over 100'.
or the Control and Readers only.	• All core holes and poke through devices in the floor for the installation of cabling.
uirements of Strikes and locks with a maximum of 80% amp load. s for supervision that is connected to Keyscan Control Aux Input.	• All core holes and EMT sleeves between floors for the routing of cabling.
8C/16C, AQD5-8C or equal.	Back boxes for the mounting of Devices.
	• Drag line or pull string at the back boxes fished through EMT or conduit to the other end for installing Cabling.
ed and insulated.	4.04 References
il terminating ends.	NFPA-70 National Electrical Code 2008 edition
tested prior to job completion	NFPA-72 National Fire Alarm Code
a their corresponding modules and installed with lock	UL 1666 - Standard for Safety of Flame Propagation Height
cable Blue in color ran from the nearest network cabinet and labeled	NFPA 262 - Flame Travel and Smoke of Wires and Cables
	Local Authority Having Jurisdiction
corresponding reader number.	4.05 Deminitions
ntacts installed for door status indication. Steel doors shall have wide	BICSL - Building Industry Consulting Service International
ress motions installed to allow system to detect proper egress.	EIA - Electronics Industry Alliance
	FCC - Federal Communications Commission
all conduits to protect wire.	NECA - National Electrical Contractors Association
all be grounded.	NFPA - National Fire Protection Agency
g wan a minimum space of 6° from ceiling deck. All wire shall be in iring. No wire ties allowed. No wire shall be run between the red iron	UL - Underwriters Laboratory
ho povorod in doporativo wire malding	4.06 Delivery, Storage, and Protection
nduit and shall be direct buriel coble	Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager
roun and shan be uned build GDDE.	responsible for materials distribution to all trades.
and or masonry contractors to one ure conduit, book haves do a former	Contractor is responsible for all materials, tools and vehicles left on the job site.
and or masonry contractors to ensure conduit, back boxes, door frame	Follow Manufacturer's recommendations for handling of materials.
specified by NFPA-70 National Electric Code, Edition 2008.	4.07 Project Conditions
specified by the Manufacturers.	4.07.1 Environmental Requirements
	Contractor shall ensure that any pollutants produced during the Work are disposed off according to local, state or
Access Cantral Company with linenced Access Cantral technician(a)	national regulations. Follow the most stringent guidelines.
Access Control Company with licensed Access Control technician(s)	<ul> <li>It is preferred that the Contractor recycle any used or un-used components during the course of the construction project.</li> </ul>
ear experience installing Keyscan Access Control Systems.	
5 years experience installing commercial Access Control Systems.	4.07.2 Field Measurements
nsurance at the request of the owner.	<ul> <li>Contractor shall coordinate with electrical engineer on project that the main electrical service ground has a resistance to earth of less than 5 ohms.</li> </ul>
Access Control technician on the job site at all times during	Contractor shall ensure that all field testers have been calibrated from the Manufacturer within 1 year.
	All field test results will be documented and submitted to Moore Public Schools, Technology Department.
	4.08 Sequencing
	Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction team
pproval by Owner.	for the lifecycle of the project.
	4.09 Scheduling
layout of Controller Panel, Card Readers, Power Supplies and all	• Contractor shall provide a detailed construction schedule with hard dates for completion of roughing in cables, terminations and testing once scheduling sequence has been determined to the Owner's Project Manager.
ipletion.	4.10 Warranty
er is entitled to all rights guaranteed by the warranty for various	• Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. (1 year warranty shall begin at job completion)
	4.11 Source Quality Control
	Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused
facturer's installation quidelines	components.
TI for performance level	Part 5 -
	5.01 Field Quality Control
e Locarotae coues and safety requirements where project is located.	Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative.
nymai pautaylily.	Contractor shall replace all defective components.
Completion Check List	5.02 Adjusting
	No additional work outside of the contract scope of work shall be completed without the approval of the Owner or     Owner or
	Owner's representative.
: List	5.03 Cleaning
	Contractor shall sweep and mop the floors of all equipment rooms or connection point closets prior to turnover to the Ourses
numbers and wire routes has been left inside the main controller panel b with MPS.	5.04 Protection
and is correct	• It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials.
0n	Remove all protective covers and protective materials from equipment prior to turnover to Owner.
nher and have been tested to verify proper exercises	5.05 Schedules
nuer and have been tested to verify proper operation.	Coordinate work with Owner's project manager and follow scheduling sequence as established by Owner's project
annueu nuo system and tested to verify proper operation.	manager.
usied for proper sensitivity and have been walk tested.	• It is recommended that the Contractor schedule closely with any other systems contractor to ensure turnover date is met.
nun module numbers.	Contractor bidding will work closely with the electrical and or masonry contractors to ensure conduit, back boxes,
In module numbers by the corresponding module.	door frame access conduit, etc. are in the proper locations and accessible.
	End of Section



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KFC ENGINEERING

STRUCTURAL

SALAS O'BRIEN MECHANICAL / ELECTRICAL

NY
drawn by
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JANUARY 2024

revisions

date

### MOORE PUBLIC SCHOOLS BOARD OF EDUCATION MOORE, OKLAHOMA



# SECURITY UPGRADES SANTA FE ELEMENTARY SCHOOL

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