

SECURITY SYMBOLS LEGEND						
SYMBOL	DESCRIPTION	WIRING REQUIREMENTS	CONDUIT SIZE	BACKBOX	MOUNTING HEIGHT	CONDUIT GROUP #
	ACCESS CONTROL MONITOR (DESK MOUNT)	(1) CATEGORY 6 UTP	(1) 3/4"	2 GANG 3-1/2" DEEP	REFER TO ENLARGED PLANS	1
	CALL BUTTON (DESK MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	18" AFF	4
	CALL BUTTON (WALL MOUNT)	(1) #18 AWG 3-1/2" DEEP	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	4
	CARD READER (DESK MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	18" AFF	2
	CARD READER (WALL MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	2
	CONTROL PANEL (DESK MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	18" AFF	4
	CONTROL PANEL (WALL MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	4
	DURESS BUTTON (DESK MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	18" AFF	2
	DURESS BUTTON (WALL MOUNT)	(1) #18 AWG CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	4
	CELL CALL LIGHT (WALL MOUNT)	(1) #18 TFFN	(1) 3/4"	4x6x6 MOUNTED	REFER TO DETAIL	2
	EMERGENCY CALL STATION	(1) 2 STRAND FIBER OPTIC CABLE	(1) 1"	N/A	REFER TO DETAIL	4
	EMERGENCY CALL STATION (WALL MOUNT)	(1) 2 STRAND FIBER OPTIC CABLE	(1) 1"	SINGLE GANG 3-1/2" DEEP	18" AFF	4
	PATE GATEWAY (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 3/4"	2 GANG 3-1/2" DEEP	REFER TO SCHEDULE	5
	PATE GATEWAY (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 3/4"	2 GANG 3-1/2" DEEP	REFER TO SCHEDULE	5
	OUTDOOR PAGING HORN (WALL MOUNT)	(1) #18 AWG SHIELDED TWISTED PAIR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	REFER TO ENLARGED PLANS	3
	HMA MOUSE MONITOR	(1) CATEGORY 6 UTP	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	REFER TO ENLARGED PLANS	1
	HMA TOUCHSCREEN MONITOR	(1) CATEGORY 6 UTP	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	REFER TO ENLARGED PLANS	1
	INTERCOM SUB STATION (DESK MOUNT)	(1) 2 PAIR #22 AWG, 1 PAIR SHIELDED	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	3
	INTERCOM SUB STATION (WALL MOUNT)	(1) 2 PAIR #22 AWG, 1 PAIR SHIELDED	(1) 3/4"	2 GANG 3-1/2" DEEP	48" AFF	3
	INTERCOM MASTER STATION (DESK MOUNT)	(1) CATEGORY 6 UTP	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	18" AFF	3
	INTERCOM MASTER STATION (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 3/4"	2 GANG 3-1/2" DEEP	48" AFF	3
	KEYPAD (WALL MOUNT)	(1) 6 CONDUCTOR #22 AWG SHIELDED	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	3
	LIGHTING CONTROL	TBD	N/A	N/A	N/A	DIRECT CONTACT CLOSURE OR SERIAL INTERFACE ARE BOTH APPROVED MEANS OF INTEGRATION BETWEEN LIGHTING DISTRIBUTION CIRCUITS AND THE SECURITY AUTOMATION SYSTEM
	PATE LOCATOR (WALL MOUNT)	(1) PAIR 20 AWG	(1) 3/4"	2 GANG 3-1/2" DEEP	REFER TO SCHEDULE	5
	PATE LOCATOR (CEILING MOUNT)	(1) PAIR 20 AWG	(1) 3/4"	2 GANG 3-1/2" DEEP	REFER TO SCHEDULE	5
	AUDIO/RECORDING MICROPHONE (WALL MOUNT)	(1) #22 AWG SHIELDED TWISTED PAIR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	3
	AUDIO/RECORDING MICROPHONE (CEILING MOUNT)	(1) #22 AWG SHIELDED TWISTED PAIR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	CEILING	3
	MOTION SENSOR (WALL MOUNT)	(1) 2 PAIR #22 AWG	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	REFER TO FLOOR PLANS	3
	MOTION SENSOR (CEILING MOUNT)	(1) 2 PAIR #22 AWG	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	CEILING	3
	DOOR RELEASE PUSH BUTTON (DESK MOUNT)	(1) #18 AWG TWO CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	18" AFF	3
	DOOR RELEASE PUSH BUTTON (WALL MOUNT)	(1) #18 AWG TWO CONDUCTOR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	48" AFF	3
	RECEPTACLE CONTROL	TBD	N/A	N/A	N/A	DIRECT CONTACT CLOSURE OR SERIAL INTERFACE ARE BOTH APPROVED MEANS OF INTEGRATION BETWEEN RECEPTACLE DISTRIBUTION CIRCUITS AND THE SECURITY AUTOMATION SYSTEM
	REQUEST TO EXIT (DOOR MOUNT)	(1) #18 TFFN	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	REFER TO DETAIL	2
	PAGING SPEAKER (WALL MOUNT)	(1) #18 AWG SHIELDED TWISTED PAIR	(1) 3/4"	SINGLE GANG 3-1/2" DEEP	REFER TO DETAIL	3
	PAGING SPEAKER (CEILING MOUNT)	(1) #18 AWG SHIELDED TWISTED PAIR	(1) 3/4"	MANUFACTURER PROVIDED	CEILING	3
	SECURITY BARRIER	#16 #14 THIN, (2) #18 TFFN	(1) 3/4"	N/A	OPERATOR HOUSING, SEE DETAIL	1
	VIDEO MONITOR (DESK MOUNT)	(1) CATEGORY 6 UTP	(1) 3/4"	2 GANG 3-1/2" DEEP	REFER TO ENLARGED PLANS	1
	VIDEO MONITOR (WALL MOUNT)	PASSIVE DEVICE NO WIRING REQUIRED	N/A	N/A	N/A	N/A
	DOOR TYPE B CONTROLLED AND MONITORED SECURITY ROLLARD	#16 #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE T CONTROLLED AND MONITORED DETECTION SWING DOOR	#16 #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE U MONITORED ONLY	(2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE Y CONTROLLED AND MONITORED COMMERCIAL SWING DOOR	#16 #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE W CONTROLLED AND MONITORED KICK RELEASE SLIDING DOOR	(2) #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE X CONTROLLED AND MONITORED SLIDING DOOR	#16 #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE T CONTROLLED AND MONITORED PEDESTRIAN/VEHICULAR GATE	#16 #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	DOOR TYPE Z CONTROLLED AND MONITORED OVERHEAD DOOR	#16 #14 THIN, (2) #18 TFFN	REFER TO DETAIL	REFER TO DETAIL	REFER TO DETAIL	2
	SINGLE RANGER CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	SINGLE RANGER CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	HIGH SECURITY ANTI-LIGATURE CAMERA (CORNER MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 180 DEGREE CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 180 DEGREE CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 270 DEGREE CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 270 DEGREE CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 360 DEGREE CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 360 DEGREE CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 360 DEGREE CAMERA - PTZ (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	MULTI-RANGER 360 DEGREE CAMERA - PTZ (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	PTZ CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	PTZ CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	SINGLE RANGER PANORAMIC VIEW CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	SINGLE RANGER PANORAMIC VIEW CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	UNDER VEHICLE SECURITY SURVEILLANCE CAMERA	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	DUAL RANGER CAMERA (WALL MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
	DUAL RANGER CAMERA (CEILING MOUNT)	(1) CATEGORY 6 UTP	(1) 1"	SINGLE GANG 4-11/16" DEEP	REFER TO SCHEDULE	1
SYMBOL LEGEND NOTES						
1. THE CONDUIT GROUP NUMBER REPRESENTS DEVICES THAT MAY SHARE THE SAME CONDUIT. DEVICES WITH DIFFERENT CONDUIT NUMBERS MUST BE IN SEPARATE CONDUIT.						

ABBREVIATIONS	
SYMBOL	DESCRIPTION
AC	ABOVE FINISHED CEILING
AF	ABOVE FINISHED FLOOR
AP	ACCESS POINT (WIRELESS)
AV	AUDIO/VIDEO
AWG	AMERICAN WIRE GAUGE
APC	BELOW FINISHED CEILING
BDS	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAT	CATEGORY
CPP	COPPER PATCH PANEL
DAS	DISTRIBUTED ANTENNA SYSTEM
DEMARC	DEMARICATION POINT
DWG	DRAWING
EF	ENTRANCE FACILITIES
EO	EQUIPMENT OUTLET
ER	EQUIPMENT ROOM
FO	FIBER OPTIC
FOPP	FIBER OPTIC PATCH PANEL
FT	FEET
G	GROUND
HVAC	HEATING, VENTILATION AND AIR-CONDITIONING
IDF	INTERMEDIATE DISTRIBUTION FRAME
IN	INCHES
P	INTERNET PROTOCOL
IT	INFORMATION TECHNOLOGY
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LAN	LOCAL AREA NETWORK
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MM	MULTIMODE FIBER OPTIC CABLE
MTD	MOUNTED
MTR	MAIN TELECOMMUNICATIONS ROOM
NA	NOT APPLICABLE
NC	NOT IN CONTRACT
NO. #	NUMBER
NYS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OSP	OUTSIDE PLANT
PA	PUBLIC ADDRESS
PB	PULL BOX
PBB	PRIMARY BONDING BUSBAR
PCE	POINT OF ENTRY
PT	POKE THRU
PMC	POLYETHYLENE CHLORIDE
RM	ROOM
RL	RACK UNIT
SB	SECONDARY BONDING BUSBAR
SCS	STRUCTURED CABLEING SYSTEM
SEC	SECURITY
SM	SINGLE-MODE FIBER OPTIC CABLE
SPEC	SPECIFICATION
STP	SHIELDED TWISTED PAIR
TBD	TO BE DETERMINED
TNS	TELECOMMUNICATIONS & NETWORKING SERVICES
TD	TELECOMMUNICATIONS OUTLET
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TPP	TPICAL
UNW	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UT	UNSHIELDED TWISTED PAIR
V	VOICE
VA	VOLT-AMPERES
WM	VERTICAL WIRE MANAGER
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WLAN	WIRELESS LOCAL AREA NETWORK
WP	WEATHER PROOF
XP	COAXIAL PATCH PANEL

MISCELLANEOUS	
SYMBOL	DESCRIPTION
	DETAIL REFERENCE # = DETAIL NUMBER TV = DRAWING NUMBER
	KEYNOTE IDENTIFICATION # IDENTIFIES NOTE REFERENCED
	XX = SYMBOL ABBREVIATION # = DEVICE NUMBER

SECURITY EQUIPMENT NAMING LEGEND	
<b>EXAMPLE:</b> <div>CEO - SC - 01 - 001</div> <div>CONSECUTIVE LETTER NUMBER REFERENCE</div> <div>FLOOR LEVEL</div> <div>BUILDING CODE</div> <div>EQUIPMENT TYPE</div>	
<b>EQUIPMENT TYPE</b> VM: VIDEO MONITOR SYSTEM HM-T: HMA TOUCHSCREEN	
<b>BUILDING CODE</b> P: PARKING GARAGE B: BUILDING	
<b>FLOOR LEVEL</b> 1: FIRST FLOOR 2: SECOND FLOOR 3: THIRD FLOOR 4: FOURTH FLOOR 5: FIFTH FLOOR	

CAMERA NUMBERING LEGEND	
<b>EX000</b> <div>CONSECUTIVE NUMBER</div> <div>FLOOR LEVEL</div> <div>BUILDING CODE</div>	
<b>BUILDING CODE</b> P: PARKING GARAGE B: BUILDING	
<b>FLOOR LEVEL</b> 1: FIRST FLOOR 2: SECOND FLOOR 3: THIRD FLOOR 4: FOURTH FLOOR 5: FIFTH FLOOR	

SECURITY GENERAL NOTES	
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL THE WORK DESCRIBED IN THE BID DOCUMENTS AND SHALL BE REFERRED TO THROUGHOUT THESE DOCUMENTS AS THE CONTRACTOR.	
2. THE PROJECT DOCUMENTS SHALL INCLUDE THE DRAWINGS AND SPECIFICATIONS, THE PROJECT MANUAL INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL ADDITIONAL ORDERS AND ADDENDUMS.	
3. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND SITE CONDITIONS FOR THE EXACT LOCATION OF ALL SECURITY AUTOMATION SYSTEM DEVICES. CONFLICTS, IF ANY, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER WHO SHALL APPROVE ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS PRIOR TO THE COMMENCEMENT OF THE WORK.	
4. FINAL EQUIPMENT COLOR AND FINISH SELECTIONS SHALL BE REVIEWED AND APPROVED BY THE ARCHITECT.	
5. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, ALL APPLICABLE LOCAL CODES AND REGULATIONS. THESE TELECOMMUNICATIONS STANDARDS, BIDDING STANDARDS, CONSTRUCTION STANDARDS AND INDUSTRY BEST PRACTICES. ALL ELECTRICAL SAFETY AND FIRE CODES SHALL BE FOLLOWED. IF NATIONAL, STATE AND/OR CITY CODES DIFFER ON THE SAME POINT, THEN THE STRICTEST DEFINITION AND/OR INTERPRETATION SHALL BE FOLLOWED.	
6. THE SECURITY AUTOMATION SYSTEM DRAWINGS ARE DIAGNOSTIC IN NATURE. VERIFY FIELD CONDITIONS BEFORE STARTING THE INSTALLATION. ANY DISCREPANCIES BETWEEN THE SECURITY AUTOMATION DRAWINGS AND ACTUAL FIELD CONDITIONS OR OTHER PROJECT DRAWINGS SHALL BE REPORTED TO THE ENGINEER IN A TIMELY MANNER.	
7. THE SECURITY AUTOMATION DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS. ANY DISCREPANCIES BETWEEN THE SECURITY AUTOMATION DRAWINGS AND SPECIFICATIONS SHALL BE REPORTED TO THE ENGINEER IN A TIMELY MANNER.	
8. ALL CABLE PATHWAYS SHALL BE CONCEALED IN WALL AND CEILING SPACES. WHERE SURFACE RACKWAYS MAY BECOME NECESSARY, EACH INSTANCE SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.	
9. ALL CABLE PATHWAYS SHALL RUN PARALLEL OR ORTHOGONAL TO WALLS, FLOORS AND CEILINGS.	
10. COORDINATE THE LOCATION OF MECHANICAL, PLUMBING AND OTHER EQUIPMENT AS REQUIRED, PRIOR TO WORK EXECUTION IN ORDER TO PROPERLY COORDINATE CABLE PATHWAYS.	
11. ALL CONDUITS SHALL BE DEBURRED, CLEANED, CAPPED, TAGGED AND FURNISHED WITH MEASURED PULLTAPE. THE CONTRACTOR SHALL ALSO PROVIDE PLASTIC BUSHINGS AT ALL SLEAVE AND OPEN CONDUIT ENDS.	
12. THE MINIMUM BEND RADIUS FOR CONDUITS SHALL BE AS FOLLOWS: • 10 TIMES THE CONDUIT BEND RADIUS SHALL BE 4 TIMES THE INTERNAL CONDUIT DIAMETER • LARGER THAN 7/8" DIAMETER SHALL BE 10 TIMES THE INTERNAL CONDUIT DIAMETER PATHWAYS SHOWN ON THE FLOOR PLANS ARE DIAGNOSTIC AND ARE NOT INTENDED TO SHOW EXACT BEND RADII.	
13. WHEN PENETRATING THE SLAB, SLEEVES SHALL BE CUT OUT A MINIMUM OF 4" ABOVE THE FINISHED SLAB.	
14. CONTRACTOR SHALL FIELD COORDINATE BEFORE INSTALLATION. PROVIDE A PULL BOX IN CONDUIT RUNS SUCH THAT MAXIMUM CONTINUOUS CONDUIT RUN SHALL NOT EXCEED 30' AND MORE THAN TWO 90 DEGREE BENDS AND NO MORE THAN NO DISCREET TOTAL. EXCEPT ALLOWED IN A CONTINUOUS CONDUIT RUN, THERE AT LEAST ONE PULL BOX PER 90 DEGREE BEND IN CONDUIT RUN. EXCEPT IN THE STRAIGHT SECTION OF A CONDUIT AND NOT IN LIEU OF A BEND, ALL PULL BOXES ARE ACCESSIBLE AND HAVE REMOVABLE COVERS.	
15. THE CONTRACTOR SHALL USE THE FOLLOWING CRITERIA WHEN INSTALLING CABLE TRAY AND LADDER RACK: • PROVIDE VERTICAL LADDER RACK (WALL SLEEVES) AND HORIZONTAL LADDER RACK (FLOOR SPACES) ARE INSTALLED MORE THAN 10' UP ABOVE FINISHED FLOOR. • INSTALL THE LADDER RACK FROM THE BOTTOM OF THE SLEEVE TO THE TOP OF THE HORIZONTAL LADDER RACK FOR LASHING OF CABLES IN THE VERTICAL RUN. • THESE SHALL BE NO OTHER EQUIPMENT, LIGHTS, CONDUITS, FITTINGS, ETC. ATTACHED TO, MOUNTED ON, RUNNING THROUGH OR ON THE TRACK RACK EXCEPT THOSE NEEDED TO SUPPORT THE TRAY/RACK SYSTEMS.	
16. WHENEVER CABLE TRAY IS INSTALLED ABOVE ACCESSIBLE CEILINGS, ACCESS PANELS SHALL BE PROVIDED. SIZE OF ACCESS PANELS SHALL BE MINIMUM 24" X 24" FOR CABLE TRAY ACCESS. SPACING BETWEEN ACCESS PANELS SHALL NOT BE MORE THAN 8' APART. LOCATION SHALL BE COORDINATED WITH ARCHITECT AND OTHER TRADES TO CONSOLIDATE AND MINIMIZE THE QUANTITY. CONDUIT FROM OUTLETS SHALL BE TERMINATED WITHIN 2' OF AN ACCESS PANEL FOR ACCESS.	
17. RE-ESTABLISH THE FIRE RATING OF ALL PENETRATIONS MADE THROUGH FIRE RATED FLOORS OR WALLS.	
18. THE CONTRACTOR MAY CONSOLIDATE INDIVIDUAL CONDUIT PATHWAYS DIRECTLY SERVING SECURITY AUTOMATION DEVICES INTO FEWER AND LARGER CONDUIT.	
19. IF THE DIVISION OF GENERAL CONDITIONS AND PROJECT GENERAL CONDITIONS DIFFER ON THE SAME POINT, THE STRICTEST DEFINITION AND/OR INTERPRETATION SHALL GOVERN.	
20. NOTES AND GRAPHIC REPRESENTATIONS ON THE DRAWINGS SHALL NOT LIMIT THE EXTENT OF THE WORK REQUIRED. THE CONTRACTOR SHALL PROVIDE A COMPLETE, FULLY COMMISSIONED AND FUNCTIONING INTEGRATED SECURITY AUTOMATION SYSTEM IN INTERPRETATION WITH THESE DRAWINGS AND SPECIFICATIONS.	
21. THE LOCATION OF ALL SYMBOLS ON THE DRAWINGS REPRESENT THE GENERAL MOUNTING LOCATION AND ORIENTATION OF THE DEVICE. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER PRIOR TO THE INSTALLATION OF ANY WORK IF THE LOCATION INDICATED ON THE DRAWINGS IS OBSTRUCTED OR IS IN CONFLICT WITH THE WORK OF OTHER TRADES.	
22. ALL CONDUIT, PENETRATIONS, JUNCTION AND PULL BOXES, ENCLOSURES AND WIRE CABLE MANAGEMENT INCLUDING ALL SUPPORTS AND APPURTENANCES SHALL BE PROVIDED BY THE CONTRACTOR.	
23. THE CONTRACTOR SHALL VERIFY THE SIZE OF ALL CONDUIT BASED ON THE DEVICE WIRING AND INTENDED USE. THE MAXIMUM CONDUIT FILL SHALL BE 40%.	
24. THE SECURITY AUTOMATION SYSTEM CONDUIT RESEAL SHALL HAVE AN ACCESS POINT ON EACH FLOOR AS A MINIMUM.	
25. ALL CONDUIT SHALL BE RUN PARALLEL TO OR ORTHOGONAL FROM STRUCTURE. ALL CONDUIT SHALL BE CONCEALED IN WALLS, UNDER FLOORS OR ABOVE CEILINGS. THE USE OF EXPOSED CONDUIT IS NOT ALLOWED EXCEPT IN EQUIPMENT ROOMS.	
26. THE CONTRACTOR SHALL INSTALL BUSHINGS AT THE ENDS OF ALL CONDUIT TO PREVENT DAMAGE TO WIRE AND CABLE DURING AND AFTER INSTALLATION.	
27. WHERE CONDUITS PASS THROUGH FIRE RATED, FIRE RESISTANT AND/OR FIRE STOPPED FLOORS AND WALLS, THE CONTRACTOR SHALL PROVIDE SLEEVES THAT PREVENT THE SPREAD OF FIRE OR THE PRODUCTION OF COMBUSTION. SLEEVES SHALL BE SMALLER THAN SLEEVE/SLAB SEAL OR AS APPROVED BY THE ENGINEER.	
28. WHERE CONDUITS PASS THROUGH EXTERIOR WALLS, THE CONTRACTOR SHALL WATERPROOF THE PENETRATION TO MAINTAIN THE ORIGINAL ENVIRONMENTAL RATING AND LEVEL OF PROTECTION FROM THE INFILTRATION OF MOISTURE.	
29. THE CONTRACTOR SHALL BOND AND GROUND ALL CONDUITS.	
30. THE CONTRACTOR SHALL ENSURE THAT THE BEND RADII OF CONDUIT UNDER 2" SHALL BE AT A MINIMUM 4 TIMES THE OUTSIDE DIAMETER OF THE CONDUIT. THE CONTRACTOR SHALL ALSO ENSURE THAT NO INSTALLED BEND OF CONDUIT HAS MORE THAN 90 DEGREES OF TOTAL BENDS.	
31. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF CONDUIT THROUGH ACCESSIBLE AREAS AND ASSIST OTHER TRADES WITH LOCATING ACCESS PANELS WHERE NECESSARY.	
32. THE CONTRACTOR SHALL MAINTAIN SEPARATE CONDUIT RUNS FOR 100 VAC POWER AND SIGNAL LINE (LOW VOLTAGE CABLEING).	
33. CONDUITS CROSSING BUILDING EXTERIOR OR EXPANSION JOINTS, PASSING FROM BUILDING TO BUILDING, OR SUPPORTED FROM DIFFERENT PORTIONS OF THE BUILDING SHALL BE INSTALLED TO ALLOW DIFFERENTIAL SUPPORT DISPLACEMENTS WITHOUT DAMAGING THE PIPE, EQUIPMENT CONNECTIONS, OR SUPPORT CONNECTIONS. PIPE JOINTS, COUPS, KNOTS AND JOINTS SHALL BE INSTALLED AS REQUIRED TO PROVIDE SPECIFIED MOTION CAPABILITY AND LIMIT MOTION TO 1/4" SLIDING FRINGE. COORDINATE LOCATION OF BENDS, JOINTS WITH STRUCTURAL DRAWINGS.	
34. THE CONTRACTOR SHALL NOT EXERT PULLING FORCE IN EXCESS OF THE MAXIMUM TENSILE FORCE ALLOWED BY THE MANUFACTURER OF THE WIRE OR CABLE BEING INSTALLED. THE USE OF MECHANICAL TUGGERS IS STRICTLY PROHIBITED.	
35. THE CONTRACTOR SHALL VERIFY THE WIRE AND CABLE REQUIREMENTS OF EACH DEVICE WITH THE APPROVED SHOP DRAWINGS, INCLUDING THOSE OF OTHER TRADES. PRIOR TO THE INSTALLATION OF CONDUIT, WIRE AND CABLE REQUIREMENTS MAY VARY SLIGHTLY BASED ON THE DEVICE MANUFACTURER SELECTED BY THE CONTRACTOR.	
36. WIRING FOR THE SYSTEM SHALL BE CONSISTENTLY COLOR CODED, TAGGED AND LABELED. THE CONTRACTOR SHALL LABEL ALL WIRE AND CABLE PER ANSI/ISA 75.03.01. LABELS SHALL BE MACHINE PRINTED; NO HANDWRITTEN LABELS ARE PERMITTED. LABELS SHALL BE INSTALLED WITHIN 6" OF EACH END OF A WIRE OR CABLE AND THE LABEL SHALL MATCH THAT OF THE TERMINATION POINT OF THE CABLE.	
37. WHERE SHIELDED CABLEING IS REQUIRED, THE CONTRACTOR SHALL MAINTAIN THE METALLIC CONTINUITY OF THE SHIELD FOR THE ENTIRE LENGTH OF THE CABLE. THE CONTRACTOR SHALL LOCATE THE SHIELD FROM GROUND FOR THE LENGTH OF THE RUN AND THE CONTRACTOR SHALL GROUND ONE END OF THE SHIELD ONLY IN COMPLIANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.	
38. THE CONTRACTOR SHALL ENSURE THAT ALL TERMINATION EQUIPMENT IS SPECIFICALLY DESIGNED AND SUITED FOR THE TERMINATION OF THE WIRE AND/OR CABLE TYPE AND SIZE BEING USED FOR EACH APPLICATION.	
39. THE CONTRACTOR SHALL PROVIDE ALL 120 VAC WHP POWER FOR THE SECURITY AUTOMATION SYSTEM. ALL SECURITY AUTOMATION SYSTEM POWER SHALL BE SUPPLEMENTED WITH THE EXCEPTION OF INDICATED CASES WHICH MAY BE EMERGENCY ONLY. INDICATED CASES FOR LOCKS IN FIRE EXITS PATHS MUST BE FED WITH UPS/EMERGENCY POWER.	
40. THE CONTRACTOR SHALL PROVIDE AN INFORMATION TRANSPORT SYSTEM SPECIFIC TO THE SECURITY AUTOMATION SYSTEM. THIS INFORMATION TRANSPORT SYSTEM SHALL SUPPORT THE IP-BASED VIDEO SURVEILLANCE SYSTEM AND ALL OTHER NETWORK BASED SECURITY AUTOMATION SUBSYSTEMS. THE SECURITY AUTOMATION SYSTEM INFORMATION TRANSPORT SYSTEM SHALL BE MAINTAINED SEPARATE FROM THE INFORMATION TRANSPORT SYSTEM DESCRIBED IN THE DIVISION 27 SPECIFICATIONS AND SHOWN ON THE IT SERIES DRAWINGS.	

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