

BACK BOX INFORMATION		
CODE	BACK BOX SIZE	NOTES
(1)	1-GANG (DEEP)	
(2)	2-GANG (DEEP)	
(3)	3-GANG (DEEP)	
(4)	4-GANG (DEEP)	
B-4	150MM X 150MM X 150MM (6" X 6" X 6")	
B-6	150MM X 150MM X 150MM (6" X 6" X 6")	
B-4	200MM X 200MM X 100MM (8" X 8" X 4")	
B-6	200MM X 200MM X 150MM (8" X 8" X 6")	
12-4	300MM X 300MM X 100MM (12" X 12" X 4")	
12-6	300MM X 300MM X 150MM (12" X 12" X 6")	
18-4	450MM X 450MM X 100MM (18" X 18" X 4")	
18-6	450MM X 450MM X 150MM (18" X 18" X 6")	
24-4	600MM X 600MM X 100MM (24" X 24" X 4")	
24-6	600MM X 600MM X 150MM (24" X 24" X 6")	
24R	2 GANG MID RING	
CUST	CUSTOM SIZE BACK BOX	
OCT	OCTAGON BACK BOX	

DEVICE TYPE COMPONENT ID		
ID CODE	DEVICE TYPE	NOTES
ALS	ASSISTIVE LISTENING MICROPHONE	
ALS	ASSISTIVE LISTENING SYSTEM LOOP	
ANT	WIRELESS RECEIVE ANTENNA	
AVFB	AV FLOORBOX	
BH	AV BULKHEAD	
BLU	BLUE LIGHT SYSTEM	
BP	BUTTON CONTROL PANEL	
CAM	STATIC CAMERA	
CI	COMPUTER INPUT	
CD	DOOR CONTACT	
DSD	DIGITAL SIGNAGE DISPLAY	
ENT	ENTRY STATION	
FPD	FLAT PANEL DISPLAY	
IC	INTERCOM SPEAKER STATION	
IR	INFRARED EMITTER	
JB	JUNCTION BOX	
LVC	LOW VOLTAGE CONTROLLER	
LX	LIGHTING CONTROL	
MIC	MICROPHONE	
MULT	MULTI BOX	
OS	OCCUPANCY SENSOR	
PAG	PAGING STATION	
PLFT	PROJECTOR LIFT	
POT	POTENTIOMETER	
PRET	PRESET STATION	
PRJ	PROJECTOR	
PS	PARTITION SENSOR	
PSC	PROJECTION SCREEN CONTROLLER	
PTZ	PAN/TILT/ZOOM CAMERA	
RC	RIGGING CONTROLLER	
RCM	MOTORIZED/INSET CONTROL MOTOR	
SK	CEILING LOUDSPEAKER	(X) REPRESENTS SPEAKER TYPE
SP	PROGRAM LOUDSPEAKER	
SPW	IN WALL LOUDSPEAKER	
SPF	PENDANT SPEAKER	
SW	SUBWOOFER/LOUDSPEAKER	
TB	TERMINATION BOX	
TP	TOUCHSCREEN CONTROL PANEL	
VW	VIDEO WALL	

POWER AND DATA MODIFICATIONS		
ID CODE	MODIFICATION	NOTES
MB	MOTORIZED BREAKER	
IG	ISOLATED GROUND	
TL	TWISTLOCK	
RL	RELAY	
PS	PIN AND SLEEVE	
SOCA	SOCAPEX MULTI CIRCUIT	6x CIRCUIT CONNECTOR W/ GROUNDING DISK

LIST OF DRAWINGS	
AV0-00	LEGEND AND NOTES
AV1-01	GROUND FLOOR DISTRIBUTION PLAN
AV2-01	BUILDING SECTIONS
AV4-01	AV RISERS
AV4-02	AV SYSTEMS FUNCTIONAL
AV5-01	DETAILS

BACK BOX SYMBOLS	
WALL MOUNTED BACK BOXES	
	DEVICE TYPE (REFER TO DEVICE TYPE COMPONENT ID) BACKBOX SIZE (REFER TO BACK BOX INFORMATION) MOUNTING HEIGHT
CEILING MOUNTED BACK BOXES	
	DEVICE TYPE (REFER TO DEVICE TYPE COMPONENT ID) BACKBOX SIZE (REFER TO BACK BOX INFORMATION) MOUNTING HEIGHT
FLOOR MOUNTED BACK BOXES	
	DEVICE TYPE (REFER TO DEVICE TYPE COMPONENT ID) BACKBOX SIZE (REFER TO BACK BOX INFORMATION) MOUNTING HEIGHT
BACK BOX AND DUPLEX RECEPTACLE IN SAME BOX	
BACK BOX AND DUPLEX RECEPTACLE IN A SEPARATE BOX	
SYMBOL EXAMPLE	
	POWER RECEPTACLES 56" FLAT PANEL DISPLAY AV DATA SUBNETS 2-GANG (DEEP) BACKBOX BACKBOX AND FLAT PANEL DISPLAY MOUNTED AT 1550mm AFF

MISCELLANEOUS	
	REVISION NOTE
	KEYNOTE
	DAISY CHAINED CONDUIT
	SEPARATED CONDUITS (MAY BE JOINED WITH JUNCTION BOXES)
	SEPARATE CONDUITS
	DAISY CHAINED FT6 CABLE

POWER SYMBOLS	
	OUTLET TYPE (SEE POWER AND DATA LEGEND) OUTLET POWER PHASE QUANTITY OF CIRCUITS AT LOCATION OUTLET TYPE MODIFICATION (SEE POWER AND DATA LEGEND) OUTLET AMPERAGE

POWER AND DATA LEGEND		
SYMBOL	FUNCTION	NOTES
	SIMPLEX OUTLET RECEPTACLE	
	DUPLEX POWER RECEPTACLE	
	TRIPLEX POWER RECEPTACLE	
	QUADRUPLEX POWER RECEPTACLE	
	SPLIT WIRED DUPLEX POWER RECEPTACLE	
	STUB CONDUIT	
	DIRECT CONNECTION	'XXXXX' DENOTES VOLTAGE AND AMPERAGE
	DIRECT CONNECTION FED FROM TECHNICAL POWER	'XXXXX' DENOTES VOLTAGE AND AMPERAGE
	BUILDING ETHERNET/DATA RECEPTACLE	'XX' DENOTES QUANTITY, 'XX' DENOTES THE DATA MODIFICATION FROM NEAREST NETWORK DATA CLOSET

		CONTRACTORS					
		G.C.	Dw. S	Dw. R	Dw. I	Dw. 25	Dw. 26
		Struct	Millw	Equip	Mech	Elect	
<b>AUDIO AND VIDEO SYSTEMS</b>							
<b>AUDIO/VIDEO/CONTROL SYSTEMS INFRASTRUCTURE</b>							
Isolation Transformer for AV Systems							
A/V Rack Area(s) HVAC							
Distributed Technical Power (Isolated Ground)							
Switches, Panels, Splitters and etc							
Conduit, Cable Trays, J-Hooks, Panduit							
Back Boxes							
Control & Signal Wire							
Building LAN Cat 6A Cable, Jacks, Patch, ethernet port)							
AV and Control LAN network switches							
UTP Cable, Jacks, Patch and RJ-45							
High Voltage Terminations and plates (>70V)							
Low Voltage Termination and plates (<70V)							
<b>AUDIO SYSTEMS</b>							
Microphone, Mic Cables and Stands							
Wireless microphone systems							
Computer audio interface							
DSP Processing Controllers							
Control & Mixing Console							
Presentation Loudspeakers							
Loudspeaker Rigging							
A/V Equipment Racks							
Jacksfields, Patch Panels, Ethernet switches, etc.							
Connector Plates and Connectors							
<b>ASSISTIVE LISTENING SYSTEM (ABC Required)</b>							
Power Source and Modulator							
Transmitter							
Signal Receivers							
Antennae or emitters							
Connector Plates							
<b>VIDEO SYSTEMS</b>							
Matrix Switchers and Control							
Processing/Distribution Amplifiers							
PTZ Cameras / Sources							
Patchbay, network switches							
Connector Plates							
<b>CONTROL SYSTEMS</b>							
Touch panels and button panels							
Control processor							
Control wiring and linking devices							
<b>OTHER</b>							
<b>EQUIPMENT ROOM</b>							
A/V Equipment Racks							
Jacksfields, Patch Panels, Ethernet switches, etc.							
Connector Plates and Connectors							
<b>MILLWORK</b>							
Podiums and lecterns							
Credenza mounted racks							
Table pop-up or flipstop technology pockets							
Cutting Holes in Millwork & Furniture for AV Devices							
Connecting cables and extensions for AV equipment							
Installation of AV devices in lecterns, millwork and furniture							
<b>CABLE PASS THRU</b>							
<b>FIRE ALARM</b>							
Fire Alarm - Contact Closures							
Fire Alarm - Mute Relay							
Fire Alarm Termination @ Panel							
Fire Alarm Termination @ AV Rack							
<b>HOUSELIGHTING</b>							
House Lighting Control Interface at AV equipment Rack							

D= DESIGN  
d= DESIGN INPUT  
S= SUPPLY  
I= INSTALL

NOTES	
CONDUIT INSTALLATION	1.1 CONDUIT MUST NOT BE LONGER THAN 27 METERS (89FT) OR HAVE MORE THAN TWO 90° BENDS WITHOUT USE OF PULL BOX. PULL BOX MUST BE A STANDARD SQUARE OR OCTAGONAL BOX FOR CONDUITS 38MM AND UNDER.
	1.2 LOW VOLTAGE CONDUIT PATHWAYS MUST BE LESS THAN 100 METERS (330FT) IN TOTAL.
	1.3 ALL CONDUIT ON DRAWINGS ARE MINIMUM 27MM (1 INCH) UNLESS OTHERWISE STATED ON DRAWINGS.
	1.4 THE STANDARD ACCEPTABLE CONDUIT IS FERROUS ELECTRICAL METALLIC TUBING (EMT). RIGID NON-METALLIC CONDUIT (PVC) AND OTHER NON-FERROUS CONDUITS ARE NOT GENERALLY ACCEPTABLE FOR AUDIO/VIDEO SYSTEM WIRING BECAUSE OF THEIR LACK OF ELECTROMAGNETIC SHIELDING.
	1.5 RIGID NON-METALLIC CONDUIT (PVC) MAY BE USED IN POURED CONCRETE SLAB OR WET OR OUTDOOR LOCATIONS AS REQUIRED BY CODE.
	1.6 IN CERTAIN CIRCUMSTANCES SUCH AS IN FINISHED INTERIOR WALLS OR WHERE THERE IS EXCESSIVE VIBRATION, IT MAY BE NECESSARY TO USE FLEXIBLE METAL CONDUIT. PRIOR APPROVAL OF THE AUDIOVISUAL CONSULTANT WILL BE REQUIRED IN SUCH SITUATIONS.
	1.7 ALL CONDUIT SHOULD BE CLEANLY SQUARE CUT AND DE-BURRED BEFORE INSTALLATION. CONDUIT SHOULD BE RUN PARALLEL AND/OR PERPENDICULAR TO BUILDING SURFACES. CONDUIT MUST BE WELL SUPPORTED TO PREVENT DISTORTION OR COLLAPSE. THE NUMBER OF 90 DEGREE BENDS SHOULD BE LIMITED TO NO MORE THAN TWO BETWEEN PULL BOXES. PULL BOX LOCATIONS SHOULD BE READILY ACCESSIBLE. CONDUIT WILL REQUIRE SHIELDED EXPANSION JOINTS WHERE IT PASSES THROUGH BUILDING EXPANSION JOINTS.
	1.8 PULL STRINGS SHOULD BE BLOWN INTO ALL EMPTY CONDUITS AND THE ENDS OF CONDUITS SHOULD BE TEMPORARILY CAPPED TO PREVENT THE ENTRY OF DIRT AND MOISTURE.
	1.9 EACH CONDUIT SUB-SYSTEM MUST BE BONDED TO THE BUILDING'S GROUND SYSTEM. VIDEO SYSTEM SIGNAL WIRING, EQUIPMENT RACKS AND ASSEMBLIES WILL BE INSULATED FROM THE CONDUIT SYSTEM BY THE AV CONTRACTOR.
	1.10 ELECTRICAL CONTRACTOR TO ENSURE APPROPRIATE SIZING OF CONDUIT TO HANDLE LOW VOLTAGE CABLES. AS A GENERAL RULE, MAXIMUM LOW VOLTAGE CABLES PER CONDUIT SIZE SHALL BE AS PER "MAXIMUM CABLE COUNT" IN CABLE SIZING LEGEND.
MISC NOTES	2.1 SEE AV-1 AND AV-2 SERIES DRAWINGS FOR DEVICE LOCATIONS. CONFIRM ALL LOCATIONS WITH ARCHITECTURAL DRAWINGS, AND MILLWORK DRAWINGS.
	2.2 AV SERIES DRAWINGS SHALL BE READ IN CONJUNCTION WITH AV SPECIFICATIONS.
	2.3 ALL MEASUREMENTS MUST BE CONFIRMED ON SITE.
	2.4 AV SYSTEMS CONTRACTORS TO COORDINATE ELECTRICAL INFRASTRUCTURE LOCATIONS WITH ELECTRICAL CONTRACTOR AND GENERAL CONTRACTOR.
	2.5 LEAVE 1m (3.3FT) CABLE TAIL AT BACK-BOX LOCATIONS AND 4m (13.1FT) CABLE TAIL AT RACK AND THROUGH LOCATIONS.
	2.6 ALL RACKS SHALL BE BONDED TO TECHNICAL GROUND PANEL USING A MINIMUM 6 AWG BRONZE WIRE.

LOW VOLTAGE CABLE COMBINED SIZING CHART										
CABLE ID #	CABLE DESCRIPTION /USE	CABLE TYPES	OD	MAXIMUM CABLE COUNT PER CONDUIT/PATHWAY SIZE						
				21mm (3/4")	27mm (1")	35mm (1-1/2")	41mm (1-5/8")	53mm (2")		
◇	1 GIG STP CABLE	BELDEN 2413F CAT 6 STP CABLE	7.239	3	5	9	12	21		
◇	10 GIG STP CABLE	BELDEN 100X3F CAT 6A STP CABLE	6.985	-	3	6	9	16		
◇	AUDIO MIC/LIN	BELDEN 9451P (1hr. MIC/LIN) CABLE	3.226	17	27	47	64	106		
◇	PROGRAM PASSIVE LOUDSPEAKER	BELDEN 6100UE (2IC, 14AWG) LOUDSPEAKER CABLE	5.334	6	10	17	23	38		
◇	PROGRAM PASSIVE LOUDSPEAKER	BELDEN 6000UE (2IC, 12AWG) LOUDSPEAKER CABLE	6.401	4	7	12	16	27		
◇	PROGRAM PASSIVE LOUDSPEAKER	BELDEN 6102UE (4IC, 14AWG) LOUDSPEAKER CABLE	7.671	3	4	8	11	18		
◇	PROGRAM PASSIVE LOUDSPEAKER	BELDEN 6102UE (4IC, 14AWG) LOUDSPEAKER CABLE	6.528	4	6	11	15	26		
◇	PROGRAM PASSIVE LOUDSPEAKER	BELDEN 6000UE (4IC, 12AWG) LOUDSPEAKER CABLE	7.722	3	4	8	11	18		
◇	LIGHTING CONTROL	BELDEN 1213F CAT 5E UNSHIELDED (4w / 24AWG)	5.969	5	8	13	18	31		
◇	LIGHTING CONTROL (ENTRY STATIONS)	BELDEN 8471 (4C, 16AWG) + (14AWG) DRAIN WIRE	6.96	1	3	5	7	12		
◇	SDI (GG)	BELDEN 189A (RG-6, 18AWG) SDI CABLE	5.817	5	8	14	19	32		
◇	SDI (12G)	BELDEN 4794P (SERIES 7, 16AWG) SDI CABLE	7.544	3	5	8	11	19		
◇	ANTENNA COAX	BELDEN 89013 (RG-8U, 10AWG, 50 ohm) ANTENNA CABLE	9.144	-	3	6	8	13		
◇	LOGIC CONTROL	BELDEN 82777 (3w, 22AWG) CONTROL CABLE	6.020	5	8	13	18	30		
◇	MM FIBER (INDOOR)	BELDEN F4000R9A (MM, 6 STAND FIBER IN SINGLE JACKET), OMA FIBER CABLE (INDOOR RATED)	5.5	5	9	16	22	36		
◇	MM FIBER (INDOOR)	BELDEN F4000R9A (MM, 24 STAND FIBER IN SINGLE JACKET), OMA FIBER CABLE (INDOOR RATED)	12.5	-	1	3	4	7		
◇	MM FIBER (OUTDOOR)	BELDEN F4000R9B (MM, 6 STAND FIBER IN SINGLE JACKET), OMA FIBER CABLE (OUTDOOR RATED)	5.5	5	9	16	22	36		
◇	MM FIBER (OUTDOOR)	BELDEN F4000R9B (MM, 24 STAND FIBER IN SINGLE JACKET), OMA FIBER CABLE (OUTDOOR RATED)	8.2	2	4	7	10	16		
1 - CABLE MAY OCCUPY 53% OF THE CONDUIT'S INSIDE AREA.										
2 - CABLES MAY OCCUPY 31% OF THE CONDUIT'S INSIDE AREA.										
3 - 3 OR MORE CABLES MAY OCCUPY 44% OF THE CONDUIT'S INSIDE AREA.										