SYMBOLS:

SYMBOL	DESCRIPTION
#D	NETWORK OUTLET. STANDARD HEIGHT (+18" AFF). ELECTRICAL CONTRACTOR SHALL PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG TRIM RING AND CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. SEE BELOW FOR REQUIRED CONDUIT SIZE. CONTRACTOR SHALL PROVIDE .75" CONDUIT FOR (3) OR LESS CABLES AND 1" CONDUIT FOR (4-5) CABLES. REFER TO CONDUIT CAPACITY SCHEDULE FOR ADDITIONAL INFORMATION. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE QUANTITY OF CATEGORY 6 CABLES AS INDICATED BY SUBSCRIPT.
#D	NETWORK OUTLET. ELEVATED HEIGHT (+42" AFF, UNLESS OTHERWISE NOTED). ELECTRICAL CONTRACTOR SHALL PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG TRIM RING AND CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. SEE BELOW FOR REQUIRED CONDUIT SIZE. CONTRACTOR SHALL PROVIDE .75" CONDUIT FOR (3) OR LESS CABLES AND 1" CONDUIT FOR (4-5) CABLES. REFER TO CONDUIT CAPACITY SCHEDULE FOR ADDITIONAL INFORMATION. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE QUANTITY OF CATEGORY 6 CABLES AS INDICATED BY SUBSCRIPT.
	NETWORK OUTLET - RACEWAY ONLY. STANDARD HEIGHT (+18" AFF). ELECTRICAL CONTRACTOR SHALL PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG TRIM RING AND 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
	NETWORK OUTLET - RACEWAY ONLY. ELEVATED HEIGHT (+42" AFF, UNLESS OTHERWISE NOTED). ELECTRICAL CONTRACTOR SHALL PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG TRIM RING AND .75" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
#D	NETWORK OUTLET. STANDARD HEIGHT (+18" AFF). ELECTRICAL CONTRACTOR SHALL PROVIDE 4"X 3.25" JUNCTION BOX WITH 1-GANG TRIM RING AND 1.5" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE QUANTITY OF CATEGORY 6 CABLES AS INDICATED BY SUBSCRIPT.
WAP	WIRELESS ACCESS POINT CONNECTION (CEILING). WHEN INSTALLED IN HARD/OPEN CEILING, ELECTRICAL CONTRACTOR SHALL PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG TRIM RING AND 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. REFER TO WIRELESS ACCESS POINT DETAIL (HARD/OPEN CEILING). STRUCTURED CABLING CONTRACTOR SHALL PROVIDE (1) CATEGORY 6A CABLE FOR EACH WIRELESS ACCESS POINT CONNECTION. WHEN INSTALLED IN ACCESSIBLE CEILING, STRUCTURED CABLING CONTRACTOR SHALL PROVIDE ABOVE CEILING BRACKET AND SURFACE BOX. REFER TO WIRELESS ACCESS POINT DETAIL (ACCESSIBLE CEILING). STRUCTURED CABLING CONTRACTOR SHALL PROVIDE 3'-0" EQUIPMENT CORD. WIRELESS ACCESS POINT EQUIPMENT SHALL BE OWNER FURNISHED, CONTRACTOR INSTALLED. COORDINATE WITH OWNER EXACT LOCATION AND MOUNTING METHOD OF WIRELESS ACCESS POINT EQUIPMENT.
WAP(W)	WIRELESS ACCESS POINT CONNECTION (WALL). ELECTRICAL CONTRACTOR SHALL PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG TRIM RING AND 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. REFER TO WIRELESS ACCESS POINT DETAIL (WALL). STRUCTURED CABLING CONTRACTOR SHALL PROVIDE (1) CATEGORY 6A CABLE FOR EACH WIRELESS ACCESS POINT CONNECTION. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE 3'-0" EQUIPMENT CORD. WIRELESS ACCESS POINT EQUIPMENT SHALL BE OWNER FURNISHED, CONTRACTOR INSTALLED. COORDINATE WITH OWNER EXACT LOCATION AND MOUNTING METHOD OF WIRELESS ACCESS POINT EQUIPMENT.
	CONDUIT/SLEEVE. 2" UNLESS OTHERWISE NOTED.
	RUNWAY LADDER CABLE TRAY IN TELECOMMUNICATIONS ROOMS.
X	DRAWING NOTE.

FLOOR BOXES:

SYMBOL	DESCRIPTION
FB2 #D/#V	2-GANG MULTI-SERVICE FLOOR BOX. ELECTRICAL CONTRACTOR SHALL PROVIDE FLOOR BOX, COVER, CONDUITS, ELECTRICAL DEVICES AND ASSOCIATED MOUNTING PLATES FOR A COMPLETE INSTALLATION. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE QUANTITY OF CATEGORY 6 CABLES AS INDICATED BY SUBSCRIPT. LEGRAND: EVOLUTION WFBA2F830-OG OR APPROVED EQUAL. REFER TO T602/DETAIL #1 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
FB4 #D	4-GANG MULTI-SERVICE FLOOR BOX. ELECTRICAL CONTRACTOR SHALL PROVIDE FLOOR BOX, COVER, CONDUITS, ELECTRICAL DEVICES AND ASSOCIATED MOUNTING PLATES FOR A COMPLETE INSTALLATION. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE QUANTITY OF CATEGORY 6 CABLES AS INDICATED BY SUBSCRIPT. LEGRAND: EVOLUTION EFB4SS-OG OR APPROVED EQUAL. REFER TO T602/DETAIL #2 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
FD2 #D	2-GANG DATA-SERVICE FLOOR BOX. ELECTRICAL CONTRACTOR SHALL PROVIDE FLOOR BOX, COVER, CONDUITS AND ASSOCIATED MOUNTING PLATES FOR A COMPLETE INSTALLATION. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE QUANTITY OF CATEGORY 6 CABLES AS INDICATED BY SUBSCRIPT. LEGRAND: EVOLUTION EFB4SS-OG OR APPROVED EQUAL. REFER TO T602/DETAIL #3 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

GENERAL NOTES:

A. COORDINATE WITH ARCHITECTURAL PLANS FOR EXACT NETWORK OUTLET LOCATIONS.

B. COORDINATE LOCATIONS OF CEILING MOUNTED DEVICES (WIRELESS ACCESS POINTS, SPEAKERS, CABLE TRAY, ETC) WITH ALL OTHER TRADES (ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, TECHNOLOGY, ETC).

C. ANY DIRECTION GIVEN IN THE FIELD THAT DEVIATES FROM THE CONSTRUCTION DOCUMENTS MUST BE DOCUMENTED AND VERIFIED WITH THE ENGINEER.

D. PROVIDE ALL REQUIRED HARDWARE AND LABOR FOR A COMPLETE INSTALLATION.

E. IF A CONTRADICTION OF DIRECTION IS IDENTIFIED WITHIN THE RESPONSIBILITY MATRIX, DRAWINGS AND/OR SPECIFICATIONS, CONTRACTOR SHALL REQUEST CLARIFICATION PRIOR TO FINALIZING BID OR INCLUDE THE HIGHER COST OPTION IN THEIR BID.

F. EACH 4" LOW VOLTAGE SITE CONDUIT SHALL BE PROVIDED WITH (3) 1.25" INNERDUCTS, UNLESS OTHERWISE NOTED.

G. ALL CONDUITS SHALL BE CONCEALED UNLESS OTHERWISE NOTED. WHERE CONDUITS ARE TO BE INSTALLED IN EXPOSED CEILINGS, CONDUITS SHALL BE INSTALLED TIGHT TO STRUCTURE AND PAINTED TO MATCH ADJACENT SURFACE.

H. NO SECTION OF LOW VOLTAGE CONDUIT SHALL CONTAIN MORE THAN (2) 90° BENDS, OR EQUIVALENT BETWEEN PULL POINTS. PROVIDE JUNCTION BOX SIZED PER NEC OR AS INDICATED.

I. NO SECTION OF LOW VOLTAGE CONDUIT SHALL BE LONGER THAN 100'-0" BETWEEN PULL POINTS. PROVIDE JUNCTION BOX SIZED PER NEC OR AS INDICATED.

J. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT CONDUIT ROUTING FOR TELECOMMUNICATIONS HORIZONTAL CABLING WITH STRUCTURED CABLING CONTRACTOR PRIOR TO INSTALLATION.

K. ALL 2" AND LARGER CONDUITS SHALL BE LABELED ON BOTH ENDS INDICATING DESTINATION LOCATION.

L. ALL JUNCTION BOXES MOUNTED IN EXTERIOR WALLS SHALL BE WEATHERPROOF AND GASKETED.

M. ELECTRICAL CONTRACTOR SHALL PROVIDE PULLSTRINGS (INTERIOR) OR MULE TAPE (EXTERIOR) FOR ALL CONDUITS (NEW AND EXISTING TO REMAIN) TO BE UTILIZED FOR LOW VOLTAGE SYSTEMS.

N. ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING CONDUITS TO REMAIN ARE DAMAGE FREE PRIOR TO NEW CONSTRUCTION. UTILIZE FLEXIBLE MANDRELS FOR VERIFICATION AND DOCUMENT CONDUIT SOURCE AND DESTINATION FOR ENGINEER/STRUCTURED CABLING CONTRACTOR.

O. ELECTRICAL CONTRACTOR SHALL MAINTAIN FIRE RATINGS OF WALLS, PARTITIONS, FLOORS OR CEILINGS PER NEC & IBC WHEN INSTALLING RECESSED BOXES. BOXES IN RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE NOT LESS THAN 24". THE HORIZONTAL DISTANCE MAY BE REDUCED, BUT SHALL NOT BE LESS THAN THE DEPTH OF THE WALL CAVITY, WHERE FILLED WITH CELLULOSE LOOSE FILL, ROCKWOOL OR SLAG MINERAL WOOL INSULATION OR WHERE PROTECTED BY LISTED PUTTY PADS OR OTHER LISTED MATERIALS/METHODS. ELECTRICAL CONTRACTOR SHALL PROVIDE LISTED PUTTY PADS AS REQUIRED. IN NO CASE SHALL THE AGGREGATE AREA OF OPENINGS EXCEED 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL SPACE. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH LOW VOLTAGE CONTRACTOR TO VERIFY FINAL INSTALLATION WILL SATISFY CODE REQUIREMENTS.

P. INSTALLATION OF AC VOLTAGE CABLING IN LOW VOLTAGE PATHWAYS IS NOT ACCEPTABLE.

Q. CABLING SHALL PASS STRAIGHT THROUGH ANY PULL BOX. CHANGE OF DIRECTION IN A PULL BOX IS NOT ACCEPTABLE.

R. CONDUITS SHALL NOT EXCEED 40% FILL RATIO.

S. ALL FACEPLATES AND PATCH PANELS SHALL UTILIZE MODULAR JACKS.

T. ALL CABLING, TERMINATIONS AND HOUSINGS ARE TO BE RATED FOR THE ENVIRONMENTS IN WHICH THEY ARE INSTALLED.

U. CABLING SHALL NOT BE PAINTED. MANUFACTURERS WARRANTY MAY BE VOIDED.

V. DO NOT INSTALL BRUISED, KINKED, SCORED, DEFORMED, OR ABRADED CABLE. REMOVE AND DISCARD CABLE IF DAMAGED DURING INSTALLATION AND REPLACE IT WITH NEW CABLE.

W. TERMINATE ALL CABLING ON DEDICATED SYSTEM PATCH PANEL. (WIRELESS, DATA, SECURITY, ETC.)

X. PROVIDE OUTSIDE PLANT CATEGORY CABLING FOR IN/UNDERSLAB OR OUTDOOR APPLICATIONS. CONDUIT CONTAINING OUTSIDE PLANT CABLING SHALL BE EXTENDED TO LOCAL TELECOMMUNICATIONS ROOM. INDOOR/OUTDOOR CATEGORY CABLING IS AN ACCEPTABLE ALTERNATIVE.

Y. ALL CABLING SHALL BE TERMINATED, TESTED AND LABELED PER SPECIFICATIONS. ALL LABELING SHALL BE MACHINE PRINTED. HAND WRITTEN LABELS ARE NOT ACCEPTABLE.

Z. SECURITY CONTRACTOR SHALL PROVIDE PATCH CORDS FOR TERMINATED VIDEO SURVEILLANCE AND ACCESS CONTROL PORTS IN TELECOMMUNICATIONS ROOM AND OWNER SHALL PROVIDE PATCH CORDS FOR ALL OTHER TERMINATED PORTS IN TELECOMMUNICATIONS ROOM.

AA. ALL PENETRATIONS THROUGH RATED WALLS MUST BE FIRESTOPPED. UTILIZE MECHANICAL FIRE RATED PATHWAYS. STI EZ-PATH OR APPROVED EQUAL.

BB. PROVIDE METALLIC J-HOOKS FOR CABLING IN ACCESSIBLE CEILING SPACES WITHOUT CABLE TRAY, BETWEEN CONDUITS, AND BETWEEN CONDUITS AND CABLE TRAY AT 3'-5' IRREGULAR INTERVALS. PANDUIT, COOPER B-LINE, NVENT CADDY, OR APPROVED EQUAL. PER NFPA 1221 SECTION 5.5, J-HOOKS ARE NOT ACCEPTABLE WITHIN AN EMERGENCY SERVICES COMMUNICATIONS CENTER. CABLE TRAY OR CONDUIT SHALL BE PROVIDED.

CC. THE USE OF J-HOOKS IN EXPOSED CEILING AREAS IS NOT ACCEPTABLE. PROVIDE CONDUIT OR SOLID BOTTOM CABLE TRAY. CONDUITS AND/OR SOLID BOTTOM CABLE TRAY SHALL BE PAINTED TO MATCH ADJACENT SURFACE.

DD. THE USE OF J-HOOKS ABOVE INACCESSIBLE CEILING AREAS IS NOT ACCEPTABLE. PROVIDE CONDUIT.

EE. CONTRACTOR SHALL REMOVE ALL ABANDONED EQUIPMENT AND CABLING IN ITS ENTIRETY. COORDINATE WITH OWNER AND RETURN ANY EQUIPMENT THE OWNER HAS REQUESTED. ALL EQUIPMENT SHALL BE CLEANED PRIOR TO DELIVERY TO OWNER.

FF. CONTRACTOR SHALL PROVIDE A MOCK LAYOUT DESIGN OF FLOOR BOX LOCATIONS PRIOR TO INSTALLATION.

CONTRACTOR/INTEGRATOR RESPONSIBILITY MATRIX (a)

SYSTEM	EQUIPMENT FURNISHED	EQUIPMENT INSTALLED	RACEWAY FURNISHED & INSTALLED	POWER WIRING FURNISHED & INSTALLED	CONTROLS WIRING FURNISHED & INSTALLED	PROGRAMMING & INTEGRATION	DESIGNED BY
TELECOM ROOM CABLE TRAYS	TELECOM	TELECOM	N/A	N/A	N/A	N/A	OPTIMA
STRUCTURED CABLING J-HOOKS	TELECOM	TELECOM	N/A	N/A	N/A	N/A	OPTIMA
SECURITY CABLING J-HOOKS	SECURITY	SECURITY	N/A	N/A	N/A	N/A	OPTIMA
PLYWOOD BACKBOARD	TELECOM	TELECOM	N/A	N/A	N/A	N/A	OPTIMA
EQUIPMENT RACKS & CABINETS	TELECOM	TELECOM	ELECTRICAL	ELECTRICAL	N/A	N/A	OPTIMA
TELECOMMUNICATIONS SERVICES - INTERNET SERVICE PROVIDER	UTILITY	UTILITY	ELECTRICAL	ELECTRICAL	N/A	N/A	UTILITY
TELECOMMUNICATIONS SERVICES - SITE/BETWEEN BUILDINGS (b)	TELECOM	TELECOM	ELECTRICAL	ELECTRICAL	N/A	N/A	OPTIMA
STRUCTURED CABLING	TELECOM	TELECOM	ELECTRICAL	ELECTRICAL	N/A	N/A	OPTIMA
STRUCTURED CABLING SURGE SUPPRESSION	TELECOM	TELECOM	N/A	N/A	N/A	N/A	OPTIMA
WIRELESS ACCESS POINTS	OWNER	TELECOM	ELECTRICAL	ELECTRICAL	N/A	OWNER	OWNER

NOTES:

(a) MATRIX NOT INCLUSIVE OF ALL SYSTEMS TO BE PROVIDED. REFER TO PROJECT MANUAL AND DRAWINGS FOR ADDITIONAL INFORMATION. IF A CONTRADICTION OF DIRECTION IS IDENTIFIED WITHIN THE RESPONSIBILITY MATRIX, DRAWINGS AND/OR SPECIFICATIONS, CONTRACTOR SHALL REQUEST CLARIFICATION PRIOR TO FINALIZING BID OR INCLUDE THE HIGHER COST OPTION IN THEIR BID. GENERAL CONTRACTOR IS ULTIMATELY RESPONSIBLE TO VERIFY ALL SCOPE IS COVERED.

(b) WHERE SERVICES ARE CALLED OUT WITH SPECIFIC INFORMATION (CABLE TYPE, COUNT, ETC), TELECOMMUNICATIONS CONTRACTOR SHALL INCLUDE CABLING WITHIN THEIR BID.

(c) ELECTRICAL CONTRACTOR SHALL PROVIDE THE SYSTEM SURVEY IN THEIR BASE BID. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ADD ALTERNATE FOR THE COMPLETE SYSTEM COVERING 100% OF THE BUILDING. IF ONLY A PARTIAL SYSTEM IS REQUIRED BASED ON THE SYSTEM SURVEY AND AHJ, THEN THE COST OF THE REDUCED SYSTEM SCOPE SHALL BE NEGOTIATED. REFER TO DETAIL ON ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

TECHNOLOGY SHEET INDEX

SHEET NUMBER	SHEET NAME
T101	TECHNOLOGY LEGEND AND NOTES
T301	COMPOSITE NETWORK PLAN
T302	ENLARGED NETWORK PLAN - AREA A
T401	ENLARGED TECHNOLOGY PLAN
T601	TECHNOLOGY DETAILS
T602	TECHNOLOGY DETAILS

TELECOMMUNICATIONS STANDARDS:

INSTALLATION SHALL CONFORM TO THE FOLLOWING STANDARDS:

A. TIA-568.0-E (GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES)

B. TIA-568.1-E-1 (COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING)

C. TIA-568.3-D (OPTICAL FIBER CABLING COMPONENTS)

D. TIA-568-D.2 (BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLING AND COMPONENTS)

E. TIA-569-E (TELECOMMUNICATIONS PATHWAYS AND SPACES)

F. TIA-606-C (ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE)

G. TIA-607-D (TELECOMMUNICATIONS BONDING AND GROUNDING FOR CUSTOMER PREMISES)

CATEGORY CABLE COLORS

VOICE:	BLUE CABLE - BLUE JACK
DATA:	BLUE CABLE - BLUE JACK
WIRELESS ACCESS:	YELLOW CABLE - YELLOW JACK
CAMERAS:	GREEN CABLE - WHITE JACK
DOOR ACCESS:	WHITE CABLE - WHITE JACK

CONDUIT/SLEEVE SCHEDULE

SMALL OFFICES	(2) 1" CONDUITS TO CABLE TRAY/J-HOOKS IN ACCESSIBLE CEILING SPACE IN CORRIDOR.
LARGE OFFICES	PER DRAWINGS.
WORKSPACES	PER DRAWINGS.
CONFERENCE RMS.	PER DRAWINGS.
VESTIBULES	PER DRAWINGS.

ADDITIONAL REQUIREMENTS:

A. PROVIDE A MINIMUM OF (4) 4" CONDUITS BETWEEN ALL ACCESSIBLE CEILING SPACES SEPARATED BY A HARD CEILING GREATER THAN 3'-0" UNLESS OTHERWISE NOTED. REFER TO TELECOMMUNICATIONS CONDUIT CAPACITY SCHEDULE.

CONDUIT CAPACITY SCHEDULE

CONDUIT		1.25"	1.50"	2.00"	2.50"	3.00"	
CABLES		7	10	18	25	40	

NOTES:
A. UPSIZE CONDUIT TO NEXT SIZE SHOWN IN THIS SCHEDULE WHEN CABLE CAPACITY HAS BEEN EXCEEDED.
B. CONDUIT CAPACITY CALCULATED WITH 0.30" O.D. CATEGORY CABLE AT 40% FILL RATIO.

CABLE SERVICE LOOP SCHEDULE

	SOURCE	DESTINATION	NOTES
HORIZONTAL - COPPER - DATA	10'-0"	1'-6"	
HORIZONTAL - COPPER - WAP	10'-0"	20'-0"	
HORIZONTAL - COPPER - CAMERA	10'-0"	20'-0"	

NOTES:
A. UTILIZE FIGURE EIGHT CONFIGURATION FOR LARGE SERVICE LOOPS.
B. COIL CABLING FOR FIELD DEVICE LOCATIONS AT CABLE TRAY/J-HOOKS ABOVE ACCESSIBLE CEILING.
C. PROVIDE 20'-0" SERVICE LOOP WERE A ROOM IS UTILIZED AS A PULL POINT AND NO TERMINATIONS ARE MADE.

PULL BOX SIZING SCHEDULE

CONDUIT	PULL BOX WIDTH	PULL BOX LENGTH	PULL BOX DEPTH	PULL BOX WITH MULTIPLE CONDUITS (NOTE A)
1.00"	4.00"	16.00"	3.00"	2.00"
1.25"	6.00"	20.00"	3.00"	3.00"
1.50"	8.00"	27.00"	4.00"	4.00"
2.00"	8.00"	36.00"	4.00"	5.00"
2.50"	10.00"	42.00"	5.00"	6.00"
3.00"	12.00"	48.00"	5.00"	6.00"
4.00"	15.00"	60.00"	8.00"	8.00"

NOTES:
A. FOR EACH ADDITIONAL CONDUIT, ADD INDICATED DIMENSION TO PULL BOX WIDTH.
B. SIZING INDICATED IS FOR MINIMUM PULL BOX SIZE. INCREASE AS REQUIRED.

ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR (ELEVATION TAKEN FROM FINISHED FLOOR)
AFG	ABOVE FINISHED GRADE (ELEVATION TAKEN FROM FINISHED GRADE)
AV	AUDIO/VISUAL
AVC	AUDIO/VISUAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE
BOCT	BOTTOM OF CABLE TRAY
C	CONDUIT
CAM	CAMERA
CATV	CABLE TELEVISION
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
EC	ELECTRICAL CONTRACTOR
ETR	EXISTING TO REMAIN
EXT	EXTERIOR
EV	ELECTRIC VEHICLE CHARGER
FACP	FIRE ALARM CONTROL PANEL
GYP	GYPSUM BOARD
HDMI	HIGH DEFINITION MULTIMEDIA INTERFACE
HDTV	HIGH DEFINITION TELEVISION
HH	HANDHOLE
IoT	INTERNET OF THINGS
IP	INTERNET PROTOCOL
J-BOX	JUNCTION BOX
MH	MANHOLE
MIN	MINIMUM
NEC	NATIONAL ELECTRICAL CODE
NVR	NETWORK VIDEO RECORDER
OSP	OUTSIDE PLANT
PBB	PRIMARY BONDING BUSBAR
PDU	POWER DISTRIBUTION UNIT
PoE	POWER OVER ETHERNET
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
SBB	SECONDARY BONDING BUSBAR
SC	SECURITY CONTRACTOR
SPECS	SPECIFICATIONS
TC	TELECOMMUNICATIONS CONTRACTOR
TELECOM	TELECOMMUNICATIONS
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TTB	TELEPHONE TERMINAL BACKBOARD
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
VoIP	VOICE OVER INTERNET PROTOCOL
WAP	WIRELESS ACCESS POINT
WM	WIRE MANAGEMENT
WP	WEATHERPROOF
#D	QUANTITY OF DATA CONNECTIONS
#V	QUANTITY OF VOICE CONNECTIONS

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NO.	REASON	DATE

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PROJECT NAME
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6635 EXECUTIVE CR.
CHARLOTTE, NC 28212

PROJECT NO.
1641630004

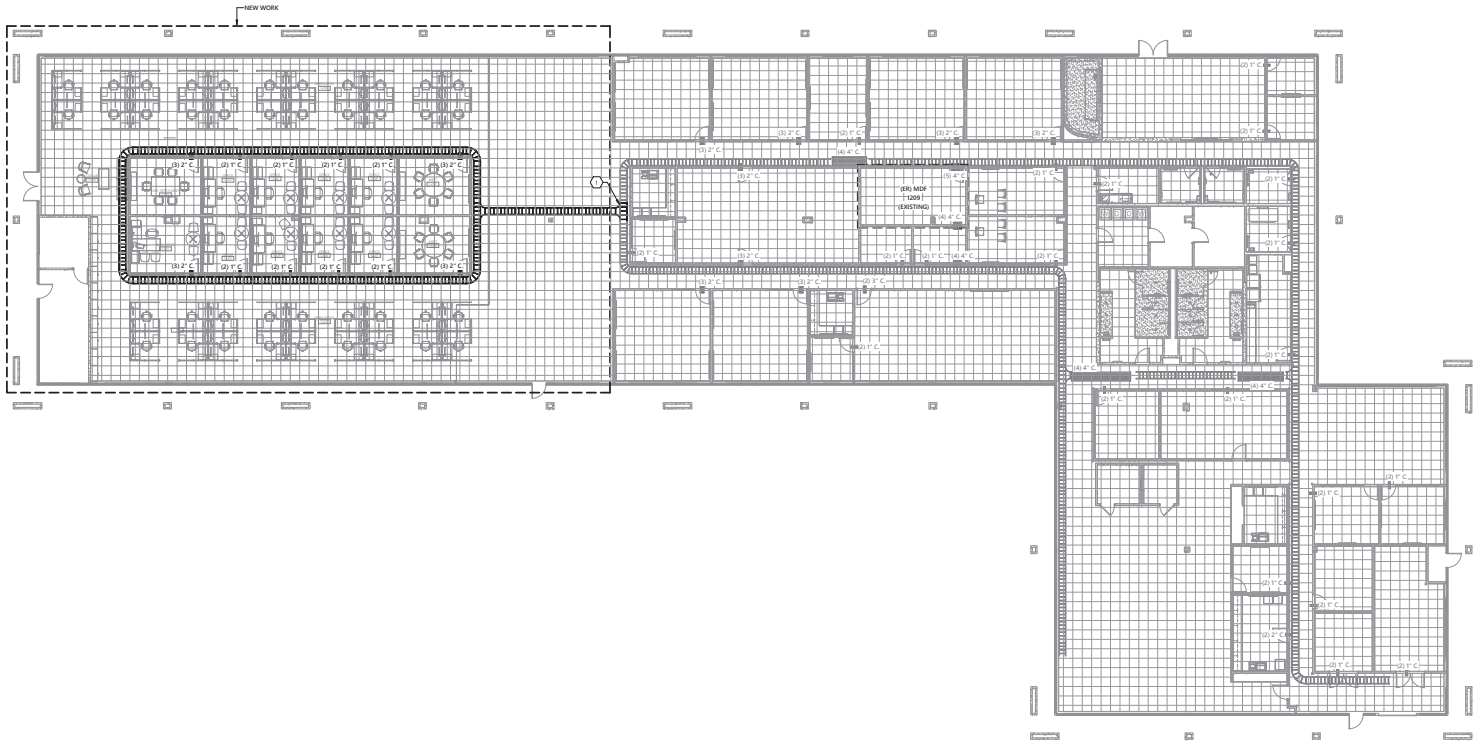
SHEET TITLE
TECHNOLOGY LEGEND AND NOTES

SHEET NUMBER
T101

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1 **COMPOSITE NETWORK PLAN**
3/32" = 1'-0"

GENERAL NOTES:

A. CONDUIT SLEEVES FOR TELECOMMUNICATION CABLING BY E.C.; TYPICAL UNLESS OTHERWISE NOTED. ALL CONDUIT PATHS TO BE AT THE SAME HEIGHT ABOVE CEILING. REFER TO CONDUIT SCHEDULE ON SHEET T100 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

B. CONTRACTOR SHALL MOUNT CABLE TRAY AT LEAST 6" ABOVE ACCESSIBLE CEILING. VERIFY FINAL CEILING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION. COORDINATE WITH ALL OTHER TRADES.

C. CONTRACTOR SHALL PROVIDE 12" OF CLEARANCE ABOVE CABLE TRAY AND 36" OF CLEARANCE FROM ONE SIDE OF CABLE TRAY TO ENSURE PROPER ACCESS TO CABLE TRAY.

D. CABLE TRAY SHALL BE 18" WIDE BY 4" DEEP, LENGTHS PER PLAN.

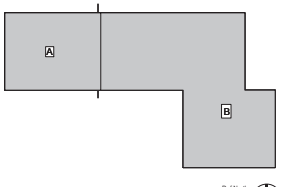
E. EXISTING STRUCTURED CABLING PATHWAYS ARE SHOWN IN HALF-TONE FOR REFERENCE ONLY.

F. CONTRACTOR SHALL ROUTE ALL NETWORK CABLING TO EXISTING (ER) MDF 1209. UTILIZE EXISTING PATHWAYS AS NECESSARY.

DRAWING NOTES: (1)

1. CONTRACTOR SHALL CONNECT 'NEW' CABLE TRAY TO 'EXISTING' CABLE TRAY. PROVIDE ALL HARDWARE FOR A COMPLETE INSTALLATION.

KEYPLAN



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ISSUE DATE:
06.16.2025

REVISIONS		
NO.	REASON	DATE

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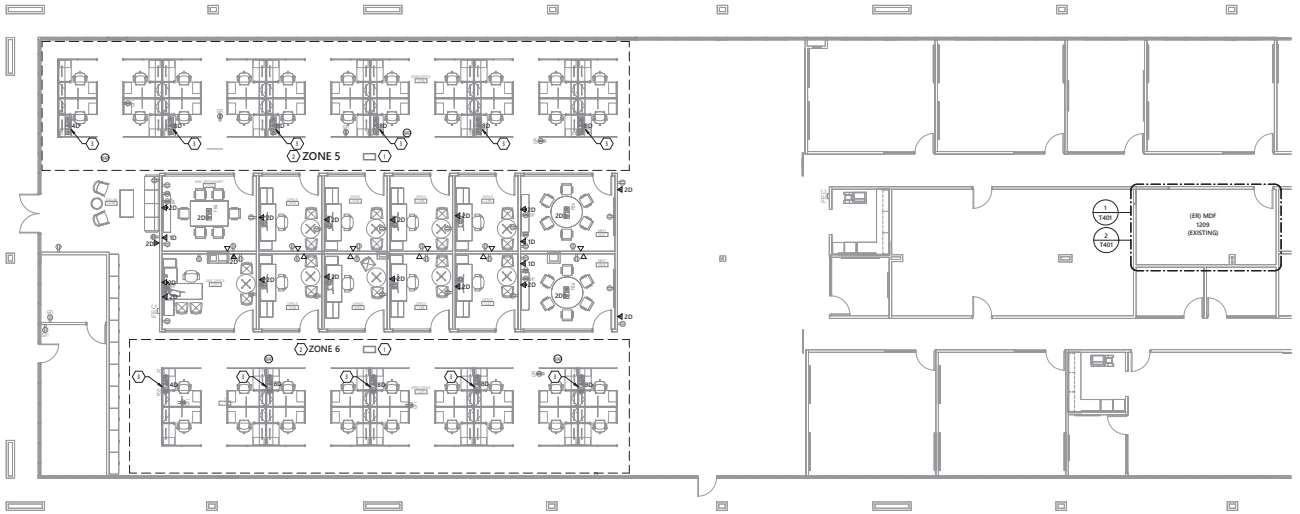
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COMPOSITE NETWORK PLAN

SHEET NUMBER
T301

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1 ENLARGED NETWORK PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES:

A. REFER TO SHEET T301 -COMPOSITE NETWORK PLAN FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

B. BLACK DASHED LINES INDICATE CABLING ZONE. ALL NETWORK CABLING SHALL ROUTE TO CONSOLIDATION POINT WITHIN CABLING ZONE; UNLESS OTHERWISE NOTED. ALL NETWORK CABLING WITH NO CABLING ZONE DESIGNATION SHALL HOMERUN BACK TO EXISTING (ER) MDF 1209 AND TERMINATE ON DEDICATED PATCH PANEL.

C. ALL CABLING ROUTED UNDERSLAB SHALL BE INDOOR/OUTDOOR PLENUM RATED.

D. CONTRACTOR SHALL ROUTE NETWORK CABLING FOR ALL WIRELESS ACCESS POINTS BACK TO (ER) MDF 1209 AND TERMINATE ON DEDICATED PATCH PANEL.

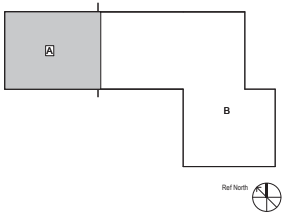
DRAWING NOTES: (#)

1. CONTRACTOR SHALL PROVIDE A PLENUM RATED IN-CEILING CONSOLIDATION POINT (ZONE) ENCLOSURE AND PATCH PANELS. CONTRACTOR SHALL ROUTE CAT 6 CABLES FROM EQUIPMENT RACK IN MDF AND TERMINATE TO PATCH PANELS WITHIN ENCLOSURE. CONTRACTOR SHALL REFER TO MANUFACTURER INSTALLATION MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS TO ENSURE A COMPLETE AND FUNCTIONAL SYSTEM. MODEL: CHATSWORTH: A12229P OR APPROVED EQUAL. REFER TO SHEET T602/DETAIL #4 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

2. CONTRACTOR SHALL ROUTE AND TERMINATE ALL NETWORK CABLES IN THIS AREA TO PATCH PANELS WITHIN CONSOLIDATION POINT (ZONE) ENCLOSURE LOCATED IN DESIGNATED ZONE; UNLESS OTHERWISE NOTED. REFER TO SHEET T602/DETAIL #4 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

3. CONTRACTOR SHALL ROUTE (2) CATEGORY 6A CABLES FROM DATA-SERVICE FLOOR BOX TO EACH WORKSTATION THROUGH SYSTEMS FURNITURE CHANNEL. PROVIDE SPLIT-LOOM WHERE REQUIRED TO BRIDGE GAPS BETWEEN FLOOR BOX AND FURNITURE CHANNEL.

KEYPLAN



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06.16.2025

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REVISIONS		
NO.	REASON	DATE

PROJECT TEAM
PRINCIPAL IN CHARGE
Ashley Hall
PROJECT MANAGER
Lynn Guimaraes
DESIGN TEAM
Tim Hicks

PROJECT NAME:
CMS STUDENT & FAMILY SUPPORT CENTER - BUILDING 6635
6635 EXECUTIVE CR.
CHARLOTTE, NC 28212

PROJECT NO.
1641630004

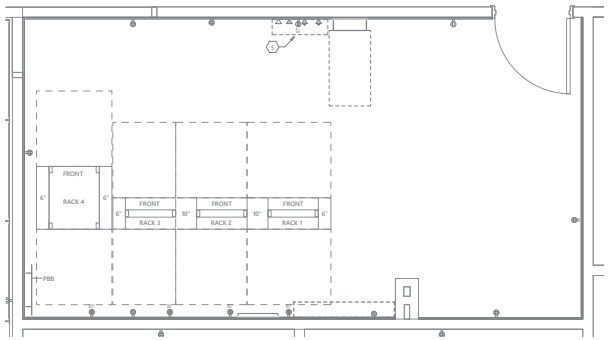
SHEET TITLE
ENLARGED NETWORK PLAN - AREA A

SHEET NUMBER
T302

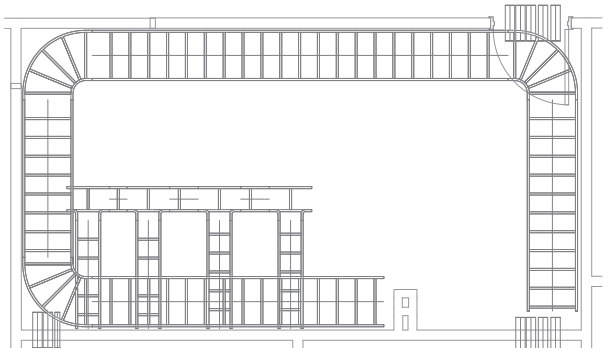
Optima Project # 22-0313

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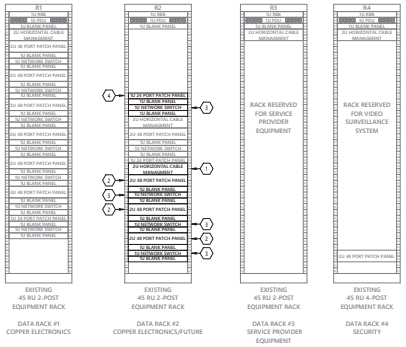
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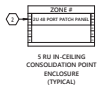
1 ENLARGED TECHNOLOGY PLAN - EXISTING (ER) MDF 1209 - EQUIPMENT
1/2" = 1'-0"



2 ENLARGED TECHNOLOGY PLAN - EXISTING (ER) MDF 1209 - PATHWAYS
1/2" = 1'-0"



3 ENLARGED TECHNOLOGY PLAN - (ER) MDF 1209
NO SCALE



4 CEILING ENCLOSURE - RACK ELEVATION - ZONES 5 & 6 (TYPICAL)
NO SCALE

GENERAL NOTES:

A. EXISTING (ER) MDF EQUIPMENT AND PATHWAYS ARE SHOWN IN HALF-TONE FOR REFERENCE ONLY.

B. PROVIDE D-RINGS AS NEEDED TO DRESS 'NEW' CABLING RUN ALONG EXISTING TTB.

C. ALL 'NEW' CATEGORY 6 AND CATEGORY 6A CABLING SHALL BE TERMINATED PER T568B STANDARD.

DRAWING NOTES: (X)

1. 2U HORIZONTAL WIRE MANAGER (TYPICAL).
2. 2U 48-PORT FLAT PATCH PANEL DEDICATED FOR DATA TERMINATIONS (TYPICAL).
3. 1U NETWORK SWITCH PROVIDED AND INSTALLED BY OWNER (TYPICAL).
4. 1U 24-PORT FLAT PATCH PANEL DEDICATED WIRELESS ACCESS POINT TERMINATIONS.
5. SPACE RESERVED SOUND MASKING SYSTEM. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.

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PROJECT TEAM:
PRINCIPAL IN CHARGE
Ashley Hall
PROJECT MANAGER
Lynn Guimaraes
DESIGN TEAM
Tim Hicks

PROJECT NAME:
CMS STUDENT & FAMILY SUPPORT CENTER - BUILDING 6635
6635 EXECUTIVE CR.
CHARLOTTE, NC 28212

PROJECT NO.
1641630004

SHEET TITLE:
ENLARGED TECHNOLOGY PLAN

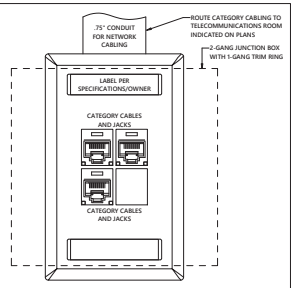
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SHEET NUMBER:
T401

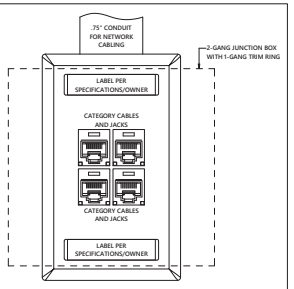
Optima Project # 22-0313

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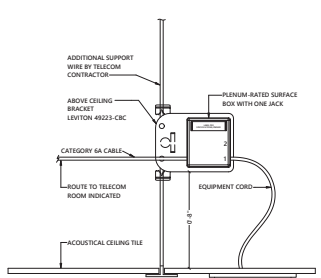
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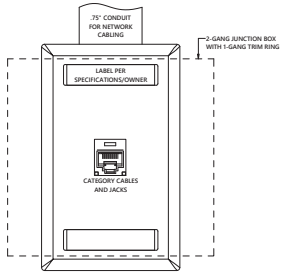
1 NETWORK OUTLET DETAIL - 4 PORT w/BLANK
NOT TO SCALE



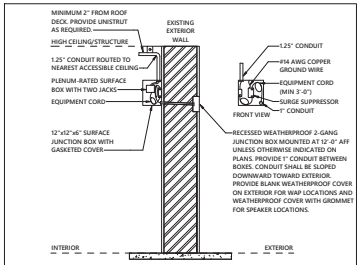
2 NETWORK OUTLET DETAIL - 4 PORT
NOT TO SCALE



3 WIRELESS ACCESS POINT DETAIL (ACCESSIBLE CEILING)
NOT TO SCALE



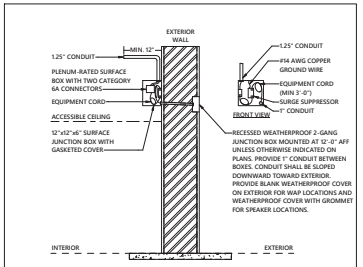
4 WIRELESS ACCESS POINT DETAIL (WALL MOUNTED, HARD AND OPEN CEILING)
NOT TO SCALE



GENERAL NOTES:

A. INTERIOR JUNCTION BOX SHALL BE MOUNTED IN AN INCONSPICUOUS, BUT ACCESSIBLE LOCATION. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER.
B. EXPOSED CONDUIT AND JUNCTION BOX COVER FINISH SHALL MATCH ADJACENT SURFACE.
C. ALL DEVICES SHALL BE SECURED INSIDE JUNCTION BOX.

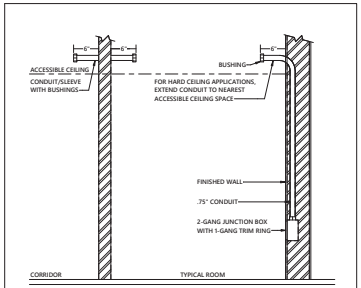
5 EXTERIOR NETWORK DEVICE DETAIL
HIGH CEILING/OPEN STRUCTURE EXISTING EXTERIOR WALL
NOT TO SCALE



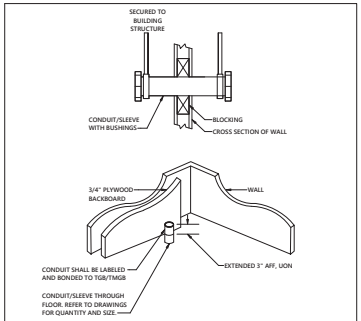
GENERAL NOTES:

A. SURFACE JUNCTION BOX SHALL BE LOCATED ABOVE ACCESSIBLE CEILING SPACE.
B. ALL DEVICES SHALL BE SECURED INSIDE JUNCTION BOX.

6 EXTERIOR NETWORK DEVICE DETAIL (ACCESSIBLE CEILING)
NOT TO SCALE



7 NETWORK OUTLET STUB UP DETAIL
NOT TO SCALE



8 TELECOMMUNICATIONS CONDUIT/SLEEVE DETAIL
NOT TO SCALE

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ISSUE DATE: 06.16.2025

REVISIONS NO.	REASON	DATE

PROJECT TEAM
PRINCIPAL IN CHARGE: Ashley Hall
PROJECT MANAGER: Lynn Guimaraes
DESIGN TEAM: Tim Hicks

PROJECT NAME: CMS STUDENT & FAMILY SUPPORT CENTER - BUILDING 6635
6635 EXECUTIVE CR.
CHARLOTTE, NC 28212

PROJECT NO.: 1641630004
SHEET TITLE: TECHNOLOGY DETAILS
SHEET NUMBER: T601

Optima Project # 22-0313

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GENERAL NOTES:

A. BASIS OF DESIGN: LEGRAND WIREMOLD FLOOR BOX RFBA2R30-OG OR APPROVED EQUAL. PROVIDE HARDWARE AS REQUIRED TO CONNECT DEVICES AND CONDUITS AS INDICATED.

B. PROVIDE (1) 5-20R RECEPTACLE.

C. PROVIDE ALL INSTALLATION HARDWARE AS REQUIRED.

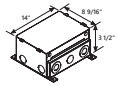
D. ROUTE NETWORK CABLING TO NEAREST ACCESSIBLE CEILING.

E. FLOOR BOX & COVER, CONDUIT, RECEPTACLES AND POWER WIRING SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

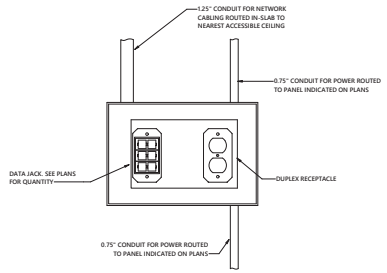
F. STRUCTURED CABLING AND ASSOCIATED HARDWARE SHALL BE PROVIDED BY STRUTURED CABLING CONTRACTOR.

G. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.

H. REFER TO T100 - TECHNOLOGY LEGENDS AND NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



DIMENSIONAL VIEW



FB2

1 2-GANG MULTI-SERVICE FLOOR BOX
NOT TO SCALE

GENERAL NOTES:

A. BASIS OF DESIGN: LEGRAND EVOLUTION FLOOR BOX EFB45S-OG OR APPROVED EQUAL. PROVIDE HARDWARE AS REQUIRED TO CONNECT DEVICES AND CONDUITS AS INDICATED.

B. PROVIDE (2) 5-20R RECEPTACLES.

C. PROVIDE ALL INSTALLATION HARDWARE AS REQUIRED.

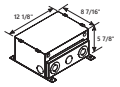
D. ROUTE NETWORK CABLING TO NEAREST ACCESSIBLE CEILING.

E. FLOOR BOX & COVER, CONDUIT, RECEPTACLES AND POWER WIRING SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

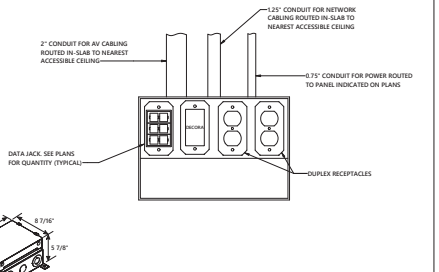
F. STRUCTURED CABLING AND ASSOCIATED HARDWARE SHALL BE PROVIDED BY STRUTURED CABLING CONTRACTOR.

G. A/V CABLING AND ASSOCIATED HARDWARE SHALL BE PROVIDED BY AV CONTRACTOR.

H. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.



DIMENSIONAL VIEW



FB4

2 4-GANG MULTI-SERVICE FLOOR BOX
NOT TO SCALE

GENERAL NOTES:

A. BASIS OF DESIGN: LEGRAND WIREMOLD FLOOR BOX RFBA2R30-OG WITH 2HUB ADAPTER OR APPROVED EQUAL. PROVIDE HARDWARE AS REQUIRED TO CONNECT DEVICES AND CONDUITS AS INDICATED.

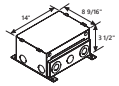
B. PROVIDE ALL INSTALLATION HARDWARE AS REQUIRED.

C. ROUTE NETWORK CABLING TO NEAREST ACCESSIBLE CEILING.

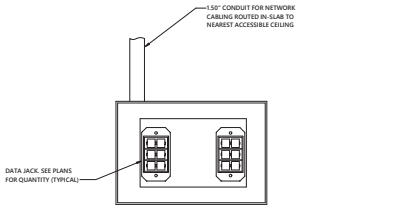
D. FLOOR BOX & COVER, CONDUIT, AND PULLSTRING SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

E. STRUCTURED CABLING AND ASSOCIATED HARDWARE SHALL BE PROVIDED BY STRUCTURED CABLING CONTRACTOR.

F. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.

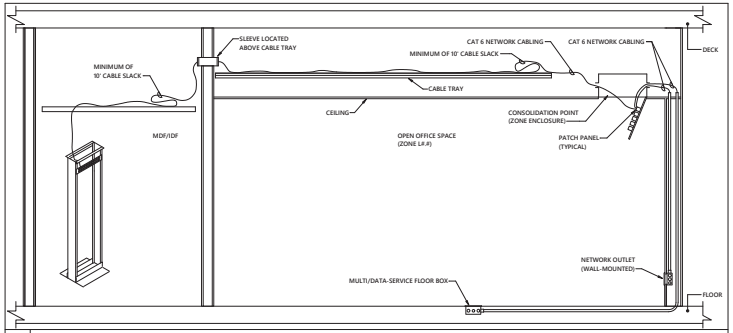


DIMENSIONAL VIEW



FD2

3 2-GANG DATA-SERVICE FLOOR BOX
NOT TO SCALE



4 IN-CEILING CONSOLIDATION POINT ENCLOSURE DETAIL
NOT TO SCALE

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PROJECT NO.
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SHEET TITLE:
TECHNOLOGY DETAILS

SHEET NUMBER:
T602

Optima Project # 22-0313

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