

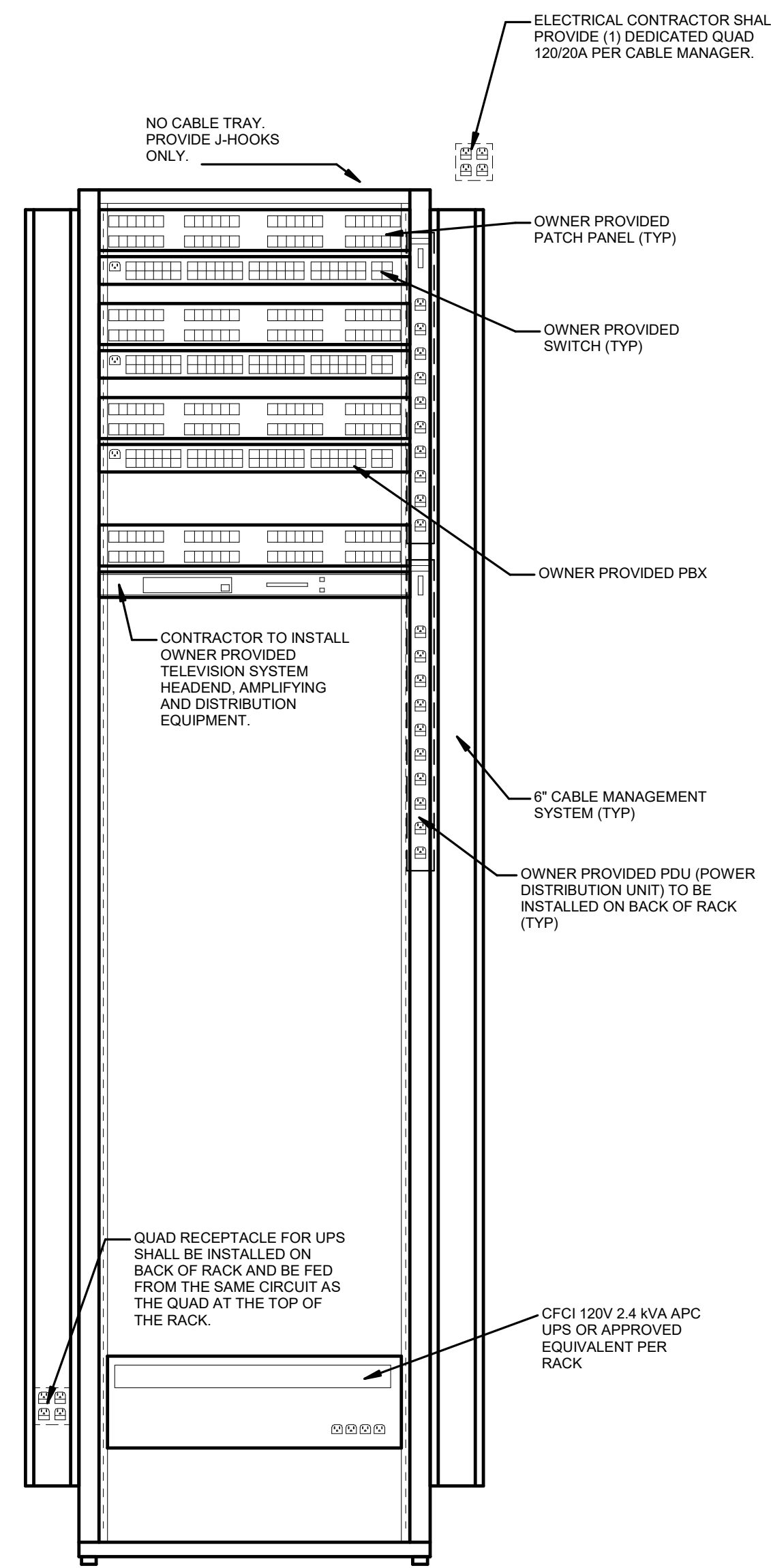
TECHNOLOGY SYMBOLS AND ABBREVIATIONS

NOTE: ALL SYMBOLS AND ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS

CABLING GENERAL NOTES

- CONTRACTOR SHALL NOT INSTALL ANY NETWORK CABLING. ONLY ROUGH-INS
- ALL CONDUIT SHALL HAVE A PULL STRING.

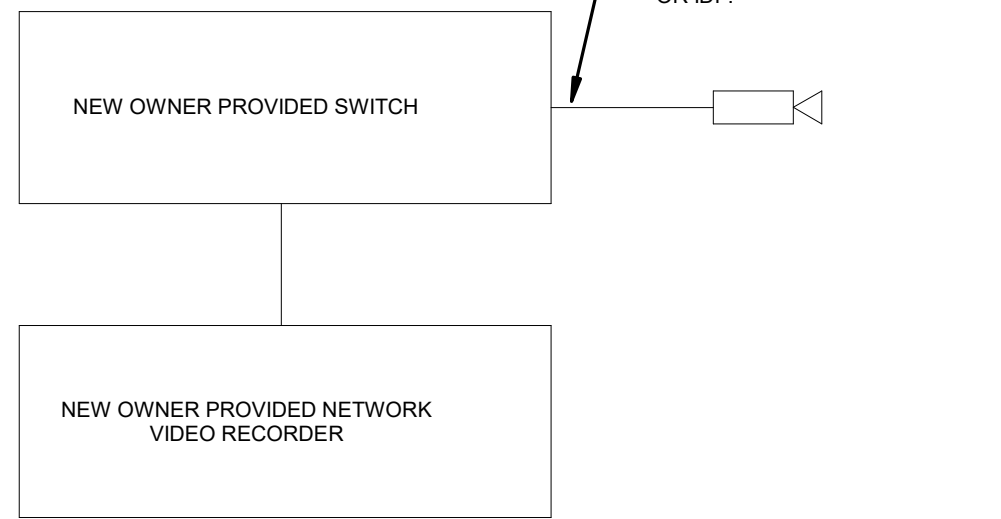
RACK DETAIL



- RACK DETAIL NOTES**
- FURNISH AND INSTALL RACK AS SHOWN. RACK SHALL BE TYPICAL 7' 2" POST.
 - PROVIDE A MINIMUM OF 20% SPARE (EMPTY) PATCH PANEL SPACES IN RACK. PATCH PANELS AND SWITCHES SHOWN ARE DIAGRAMMATIC ONLY.

CCTV NOTES AND DETAIL

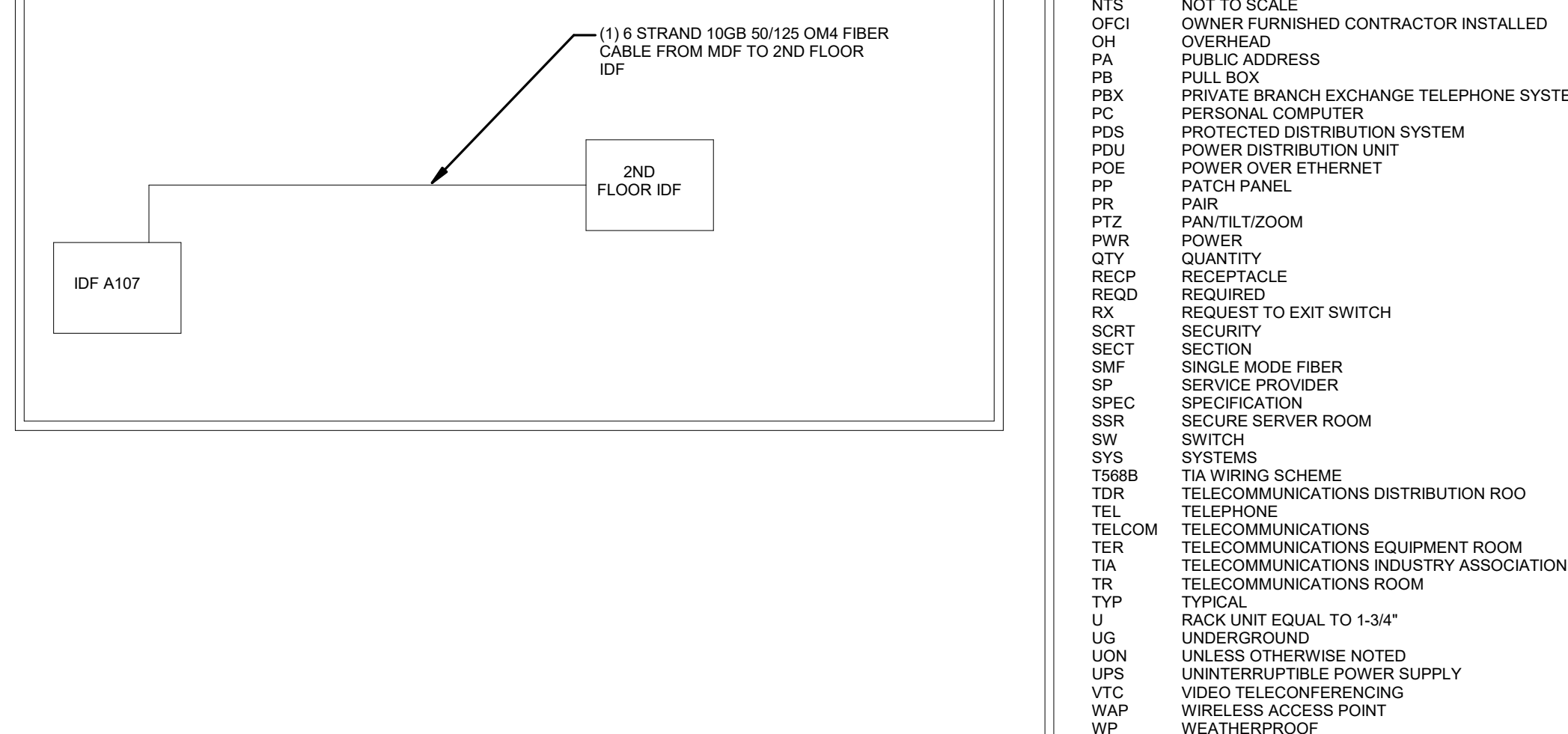
- NETWORK VIDEO RECORDING HARDWARE (NVR)
- PROVIDE THE QUANTITY AND CAPACITY SERVER/STORAGE HARDWARE AS REQUIRED FOR THIS SITE. NETWORK VIDEO RECORDING SERVERS SHALL BE RACK MOUNTED. EXACT MOUNTING LOCATIONS SHALL BE COORDINATED WITH THE OWNER PRIOR TO INSTALLATION.
 - EACH NETWORK VIDEO RECORDER (NVR) SHALL BE FULLY LICENSED AND HAVE THE VIDEO INSIGHT ENTERPRISE VIDEO MANAGEMENT SOFTWARE (VMS), FULLY LICENSED SOLUTION LOADED AND CONFIGURED FOR MAXIMUM PERFORMANCE AND RELIABILITY.
 - THE TOTAL HARD DISK STORAGE SPACE ON EACH SERVER SHALL BE SIZED AND CONFIGURED TO PROVIDE A 90MB OS PARTITION THAT WILL INCLUDE THE SYSTEM SOFTWARE PLUS A STORAGE ARRAY. THE ARRAY SHALL PROVIDE ENOUGH STORAGE CAPACITY FOR EACH CAMERA TO RECORD AT FULL RESOLUTION BY SPECIFIC CAMERA CAPABILITY. FOR CALCULATIONS, FRAME RATES FOR 2MP-3MP CAMERAS SHALL BE 30 FRAMES PER SECOND AND 3MP PANORAMIC CAMERAS AT 15 FPS. EACH IN MOTION DETECTION ACTIVATED RECORDING MODE TO BE ESTIMATED AT 20% OF EACH 24 HOUR WEEKDAY (AVERAGE FOR CALCULATION), WITH THE CAPACITY TO RETAIN THIRTY (30) DAYS OF STORAGE. CALCULATIONS SHALL BE PERFORMED USING PANASONIC COMPRESSION LEVEL QUALITY 6 (DEFAULT) FOR ALL CAMERAS IN THIS PACKAGE.
 - NVRS SHALL SUPPORT LIVE AND RECORDED CAMERA VIDEO DISPLAY VIA REMOTE CLIENT APPLICATIONS ONLY. THE CONSOLE MONITOR OUTPUT SHALL NOT SUPPORT LOCAL VIEWING.
 - THE STORAGE SIZE AND PERFORMANCE OF EACH SERVER SHALL BE BASED ON THE TYPE ON QUANTITY OF CAMERAS ATTACHED BASED ON CALCULATIONS TO BE PERFORMED BY THIS CONTRACTOR.
 - CAMERA LOCATIONS AND NVR ASSIGNMENTS: NOTE THAT ANY VARIATIONS OR CHANGES FROM THE ORIGINALLY ISSUED PLAN LOCATIONS AND CAMERA TYPES WILL REQUIRE NEW CAPACITY CALCULATIONS FOR REQUIRED STORAGE TO BE PROVIDED BY THIS CONTRACTOR.
 - RATE EACH CAMERA PROVIDED BY MPOLOAD AND GROUP APPROXIMATELY AN EQUAL LOAD ON EACH SERVER TO OPTIMIZE SYSTEM BALANCE, PERFORMANCE, AND TO BEST UTILIZE STORAGE CAPACITY. PROVIDE 10% GROWTH CAPACITY BUILT INTO EACH SERVER.
 - PROVIDE FACTORY PACKAGED NVRs PRE-LOADED, ACTIVATED, AND TESTED WITH THE FULL VIDEO INSIGHT SOFTWARE SUITE. SHALL BE A 7% LOG AND PLAY NVR READY IMMEDIATELY OUT-OF-THE BOX FOR A QUICK START TO RECORD AND VIEW INSTALLED AND NETWORKED IP CAMERAS. THE NVR SHALL INCLUDE ACTIVATED IP LICENSES. SHALL BE TESTED AND CONFIGURED AND INCLUDE US-BASED TECHNICAL SUPPORT, A 3 YEAR HARDWARE LIMITED WARRANTY, AND 3 YEARS OF VMS SOFTWARE UPGRADES.
 - PROVIDE THE QUANTITIES AND CAPACITIES TO MEET THE ABOVE CALCULATED REQUIREMENTS, EACH TO BE A VIDEO INSIGHT MODEL NVR-R-1-10XTB SERIES (X = 1B TO 30TB STORAGE CAPACITY EACH RACK MOUNT CHASSIS SERVER INCORPORATING A DELL R330 2U RACK SERVER UP TO EIGHT 3.5" DRIVE BAYS, WINDOWS 2012 PROFESSIONAL, RIBET OR LATER OPERATING SYSTEM, 450 WATT NON-REDUNDANT POWER SUPPLY, THE RATED TB TOTAL HARD DRIVE STORAGE, 8GB DDR4 RAM, AN INTEL Xeon PROCESSOR E5-2603 V3, INTEL C1010 CHIPSSET, DVD+RW OPTICAL DRIVE, INTEGRATED MATEX G200 WITH BRACIS GRAPHICS CARD, KEYBOARD AND MOUSE, AN EMBEDDED NIC 4X GBE LOW I/O TOS. DIMENSIONS 2U RACK MOUNT, 3.42" HIGH X 19" WIDE X 26.3" DEEP (WITHOUT EAR/BEZEL), WEIGHT 32 LBS. SHALL INCLUDE A STANDARD DELL WARRANTY - 3 YEAR NEXT BUSINESS DAY ON-SITE SERVICE, AFTER REMOTE DIAGNOSIS.



DATA SYMBOL LEGEND

SYMBOL / TYPE	SYMBOL DESCRIPTION
TV	TV'S SHALL BE OWNER FURNISHED OWNER INSTALLED. CONTRACTOR SHALL PROVIDE ROUGH IN AND (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE FOR ALL NON-ACCESSIBLE AREAS. COORDINATE WITH OWNER FOR TV SIZE AND MOUNTING LOCATION.
SS	SPEAKER FOR STREAMING RADIO PLAYER - CONSULT WITH MSU IT REP FOR EXACT SPECIFICATIONS. SPEAKER SHALL BE OWNER FURNISHED OWNER INSTALLED. CONTRACTOR SHALL PROVIDE ROUGH IN AND (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE FOR ALL NON-ACCESSIBLE AREAS. COORDINATE WITH OWNER FOR EXACT SPEAKER MOUNTING LOCATION.
S	SPEAKER SHALL BE OWNER FURNISHED OWNER INSTALLED. CONTRACTOR SHALL PROVIDE ROUGH IN AND (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE FOR ALL NON-ACCESSIBLE AREAS. COORDINATE WITH OWNER FOR EXACT SPEAKER MOUNTING LOCATION.
PROJ	PROJECTOR SHALL BE OWNER FURNISHED OWNER INSTALLED. CONTRACTOR SHALL PROVIDE ROUGH IN AND (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE FOR ALL NON-ACCESSIBLE AREAS. COORDINATE WITH OWNER FOR EXACT PROJECTOR MOUNTING LOCATION.
KP	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR KEY PAD.
CR	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR CARD READER.
CAM ALT	ALTERNATE CAMERA - PINSTALL (1) CAT-6 TO MDF FOR CONTRACTOR FURNISHED CONTRACTOR INSTALLED AVIGILON SECURITY CAMERA. CONTRACTOR SHALL PROVIDE (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING FOR ALL NON-ACCESSIBLE AREAS. REFER TO SHEET T203 FOR ADDITIONAL INFORMATION.
CAM	INSTALL (1) CAT-6 TO MDF FOR CONTRACTOR FURNISHED CONTRACTOR INSTALLED AVIGILON SECURITY CAMERA. CONTRACTOR SHALL PROVIDE (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING FOR ALL NON-ACCESSIBLE AREAS. COORDINATE WITH OWNER FOR EXACT AP MOUNTING LOCATION.
AVO	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR AV OUTPUT.
AVI	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR AV INPUT.
APS	APS SHALL BE OWNER FURNISHED OWNER INSTALLED. CONTRACTOR SHALL PROVIDE ROUGH IN AND (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE FOR ALL NON-ACCESSIBLE AREAS. COORDINATE WITH OWNER FOR EXACT AP MOUNTING LOCATION.
2D	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR DATA
1TE	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR ELEVATOR PHONE
1D	PROVIDE J BOX WITH 1" CONDUIT TO ACCESSIBLE CEILING FOR DATA

FIBER LINE DIAGRAM



ABBREVIATIONS

ACS	ACCESS CONTROL SYSTEM
ACC	ACCESS POINT
AF	ACCESS FLOOR
AP	APC BRAND BY SCHNEIDER ELECTRIC
APC	BUILDING AUTOMATION SYSTEM
BATT	BATTERY
BB	BACKBONE
BBPP	BACKBONE FIBER PATCH PANEL
BBV	BACKBONE VOICE
BLDG	BUILDING
BOH	BACK OF HOUSE
C	CONDUIT
CAB	CABINET
CAM	CAMERA
CAT	CATEGORY
CAT6	CATEGORY 6 ETHERNET CABLE
CATV	CABLE TELEVISION VIA COAX CABLE
CCTV	CLOSED CIRCUIT TELEVISION VIA COAX OR CAT6 CABLE
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CLG	CEILING
CMN	COMMUNICATIONS MANHOLE
COAX	COAXIAL RGE CABLE
COB	CENTER OF BOX
D	DATA
DAS	DISTRIBUTED ANTENNA SYSTEM
DEM	DELAYED EGRESS MODULE
DIST	DISTRIBUTION
DMARC	DEMARCATION POINT
DNS	DURNESS SWITCH
DWG	DRAWING
ED	EXIT DEVICE
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL EQUIPMENT
EDPT	FIRE ALARM
FA	FIRE ALARM CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL
FLOOR	FLOOR
FO	FIBER OPTIC
FOP	FIBER OPTIC PATCH PANEL
GBB	GROUND BUS BAR
GC	GENERAL CONTRACTOR
HCP	HORIZONTAL COPPER PATCH PANEL
HFFP	HORIZONTAL FIBER PATCH PANEL
HOV	HORIZONTAL VOICE
HSIA	HIGH SPEED INTERNET ACCESS
IPV	INTERNET PROTOCOL TELEVISION
IDF	INTERMEDIATE DISTRIBUTION FRAME
IDF	INTRUSION DETECTION SYSTEM
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
LAN	LOCAL AREA NETWORK
LEC	LOCAL EXCHANGE CARRIER
MDF	MAIN DISTRIBUTION FRAME
MH	MOUNTING HEIGHT
MM	MAGNETIC LOCK
MMF	MULTI MODE FIBER
MTD	MOUNTED
NEC	NATIONAL ELECTRIC CODE
NC	NOT IN CONTRACT
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OVERHEAD
PA	PUBLIC ADDRESS
PB	PULL BOX
PBX	PRIVATE BRANCH EXCHANGE TELEPHONE SYSTEM
PC	PERSONAL COMPUTER
PDS	PROTECTED DISTRIBUTION SYSTEM
PDU	POWER DISTRIBUTION UNIT
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PR	PAN/ TILT/ ZOOM
PTZ	PAN/ TILT/ ZOOM
PWR	POWER
QTY	QUANTITY
RECP	RECEPTACLE
REQD	REQUIRED
RX	REQUEST TO EXIT SWITCH
SCRT	SECURITY
SECT	SECTION
SMF	SINGLE MODE FIBER
SP	SERVICE PROVIDER
SPEC	SPECIFICATION
SSR	SECURE SERVER ROOM
SW	SWITCH
SYS	SYSTEMS
T568B	TIA WIRING SCHEME
TDR	TELECOMMUNICATIONS DISTRIBUTION ROO
TEL	TELEPHONE
TELCOM	TELECOMMUNICATIONS
TER	TELECOMMUNICATIONS EQUIPMENT ROOM
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TR	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
U	RACK UNIT EQUAL TO 1-3/4"
UG	UNDERGROUND
UNO	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTC	VIDEO TELECONFERENCING
WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF

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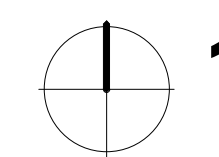
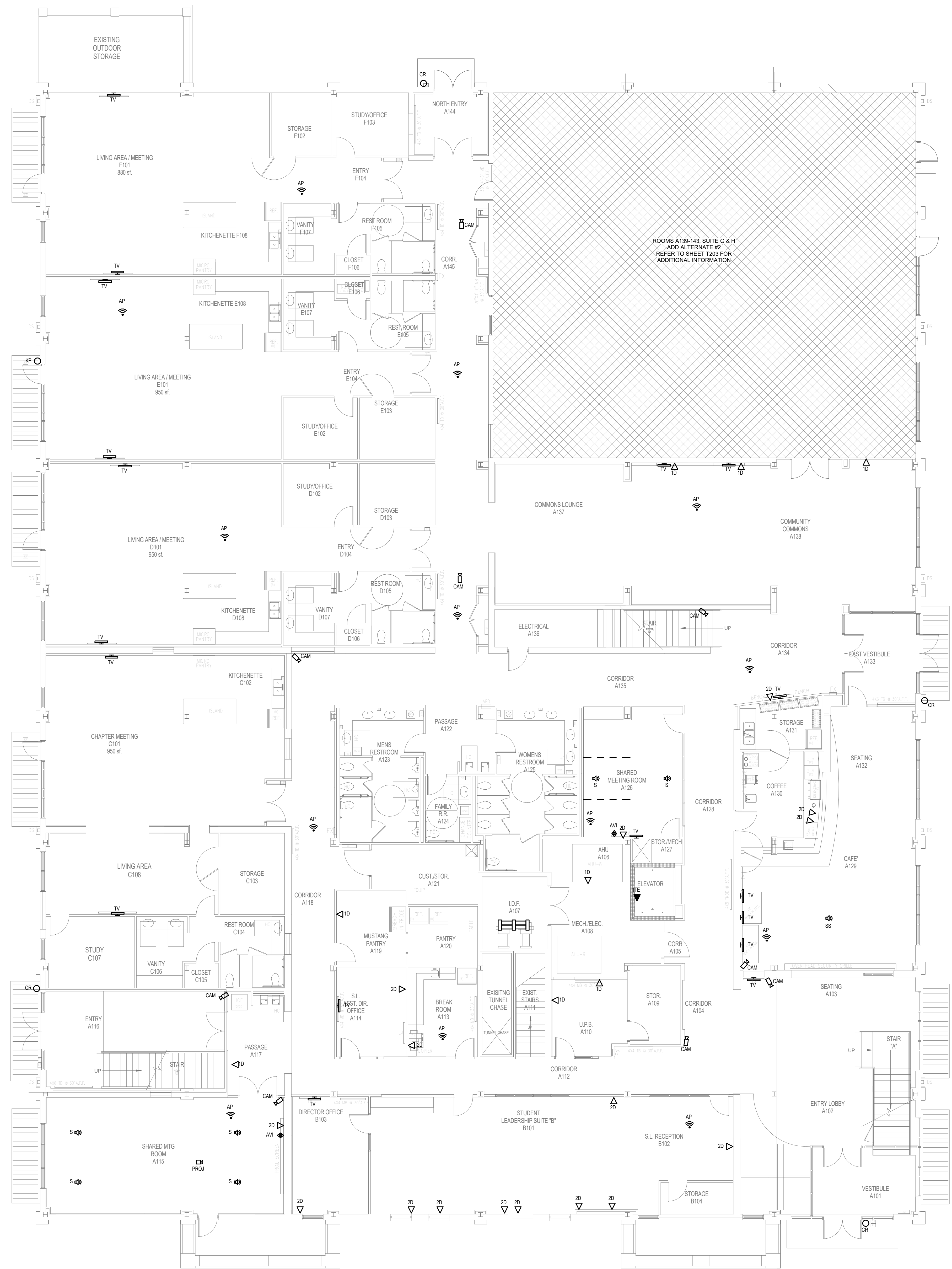
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TECHNOLOGY GENERAL NOTES AND LEGENDS
T001

DRAWN BY: JAS
CHECKED BY: JSR
DATE: 08/24/2020
PROJECT NO.: 18071



1 FIRST FLOOR TECHNOLOGY PLAN

SCALE: 1/8" = 1'-0"

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FIRST FLOOR TECHNOLOGY PLAN
T201

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2 FIRST FLOOR TECHNOLOGY PLAN - ALTERNATE #2
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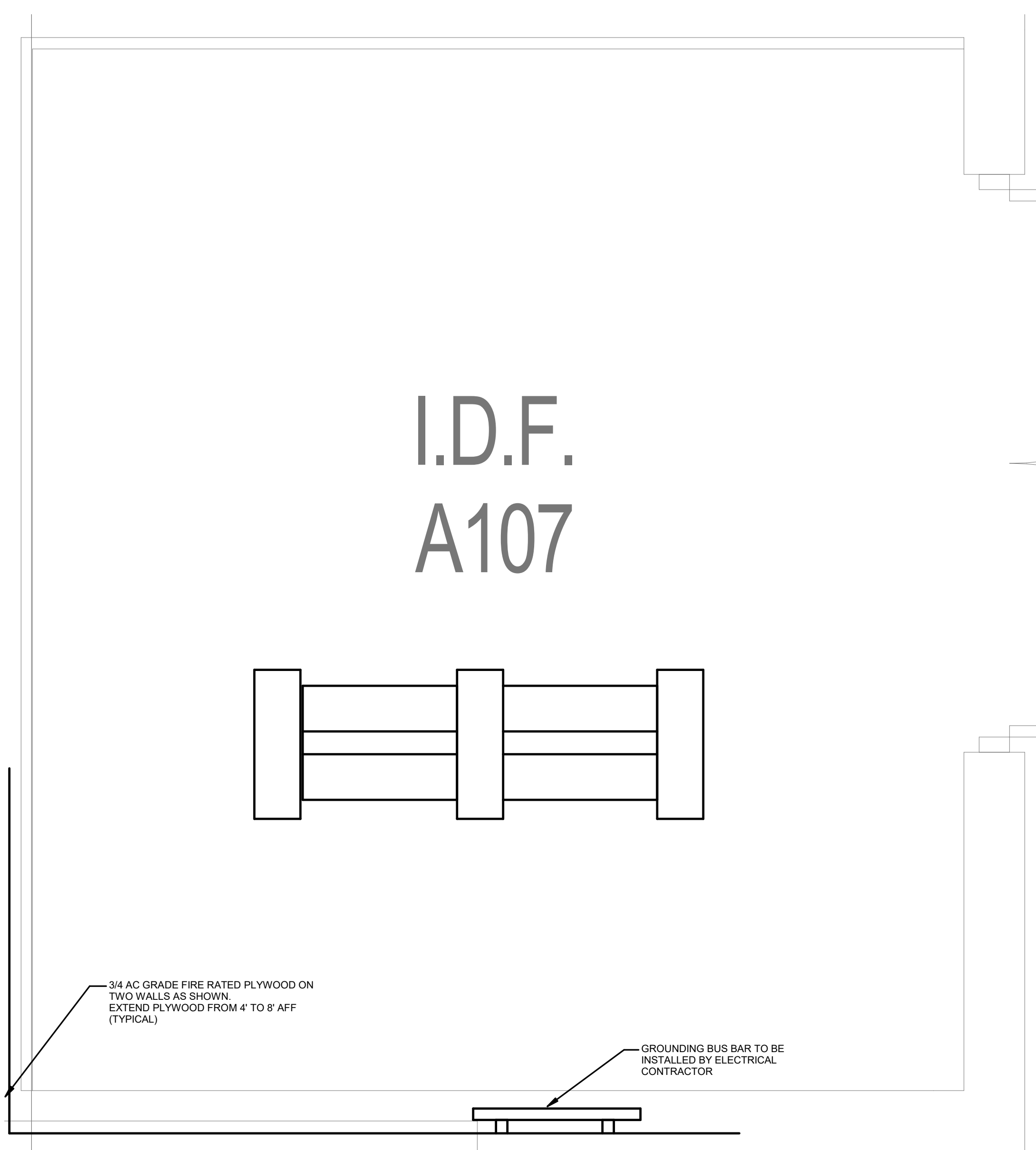
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FIRST FLOOR
 TECHNOLOGY PLAN
 ALTERNATE #2
T203

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1 ENLARGED FIRST FLOOR MDF

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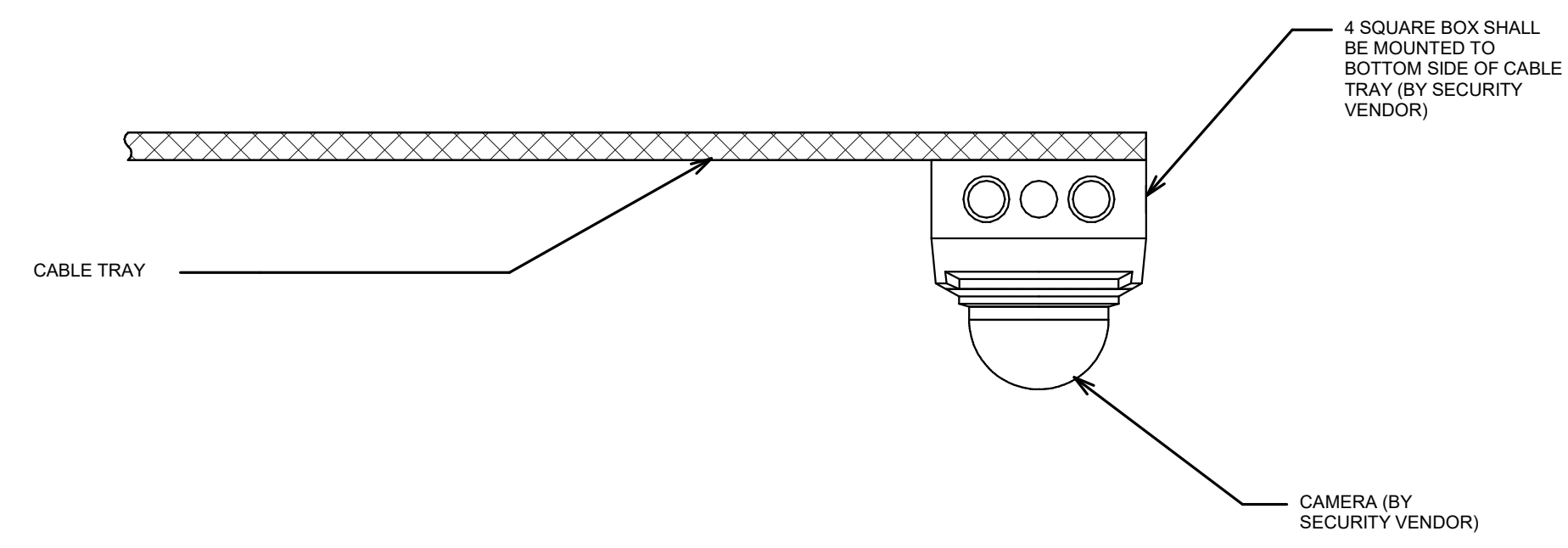
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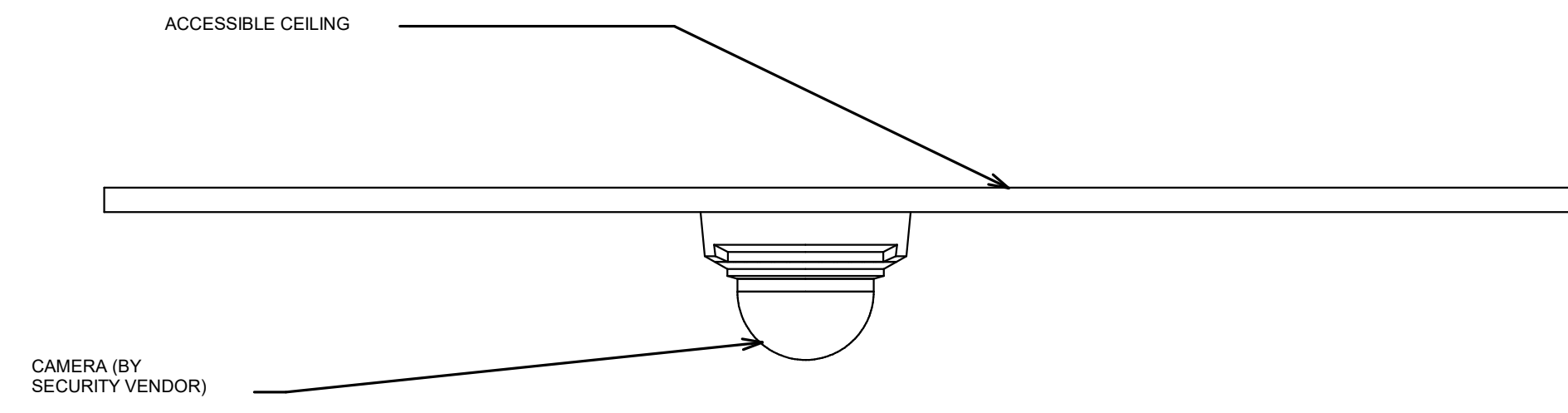
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T301

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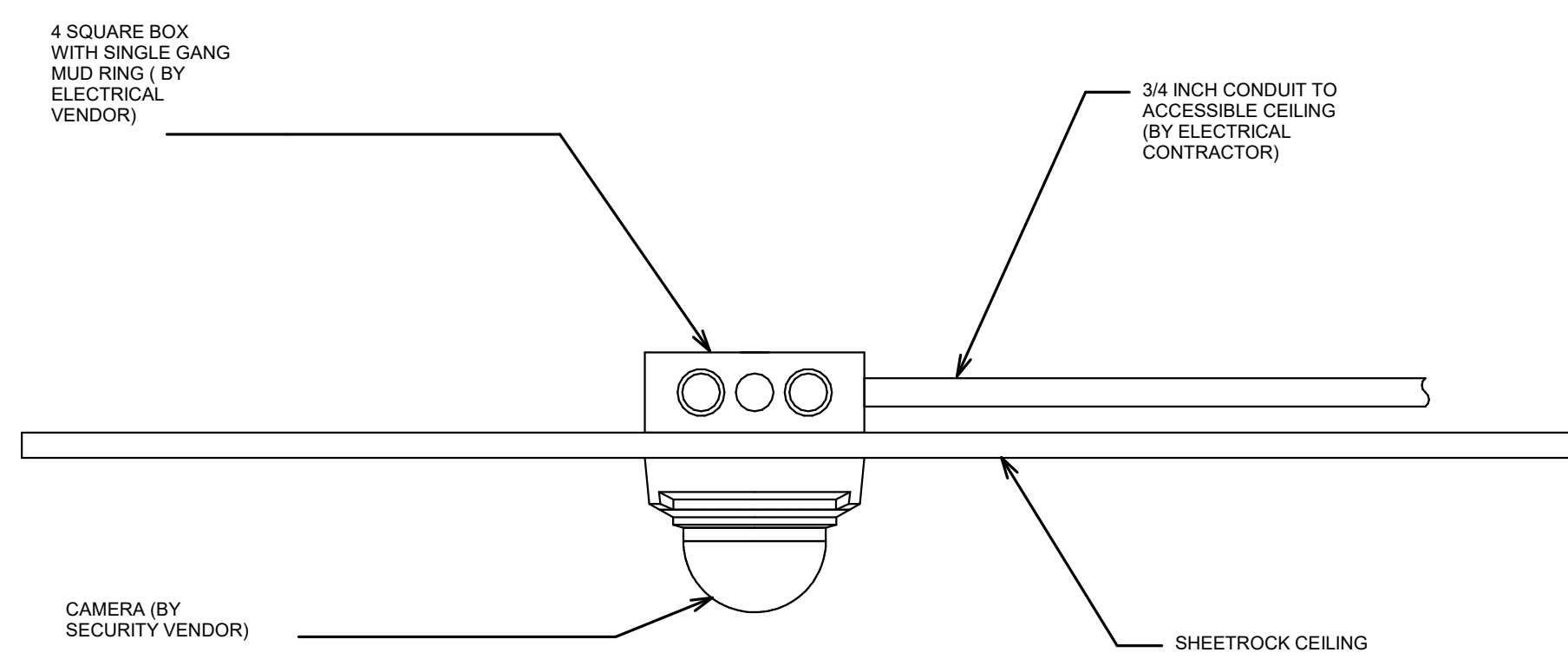
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SCALE: N.T.S.



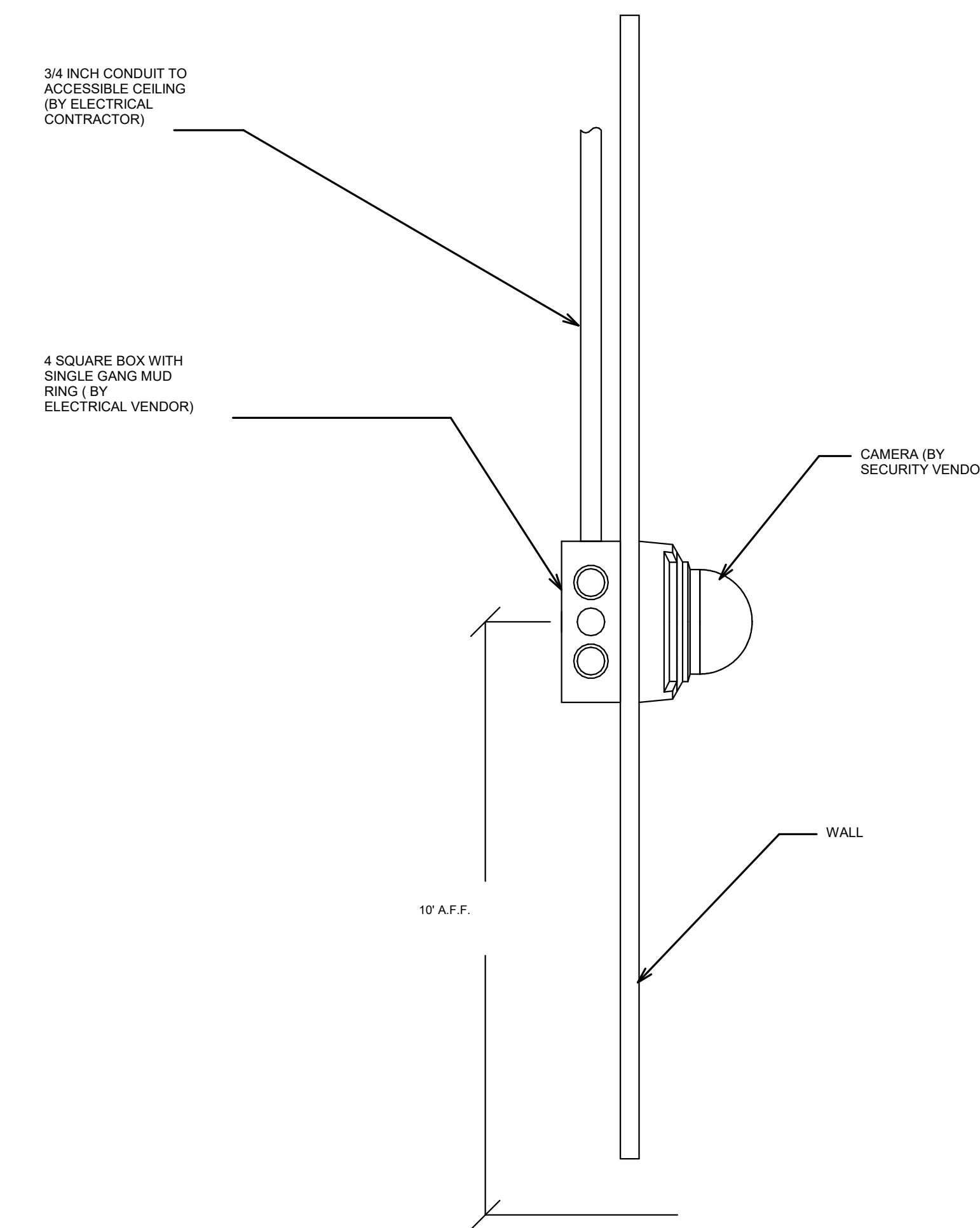
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SCALE: N.T.S.



3 CAMERA DETAILS - CEILING MOUNT - SHEET ROCK

SCALE: N.T.S.



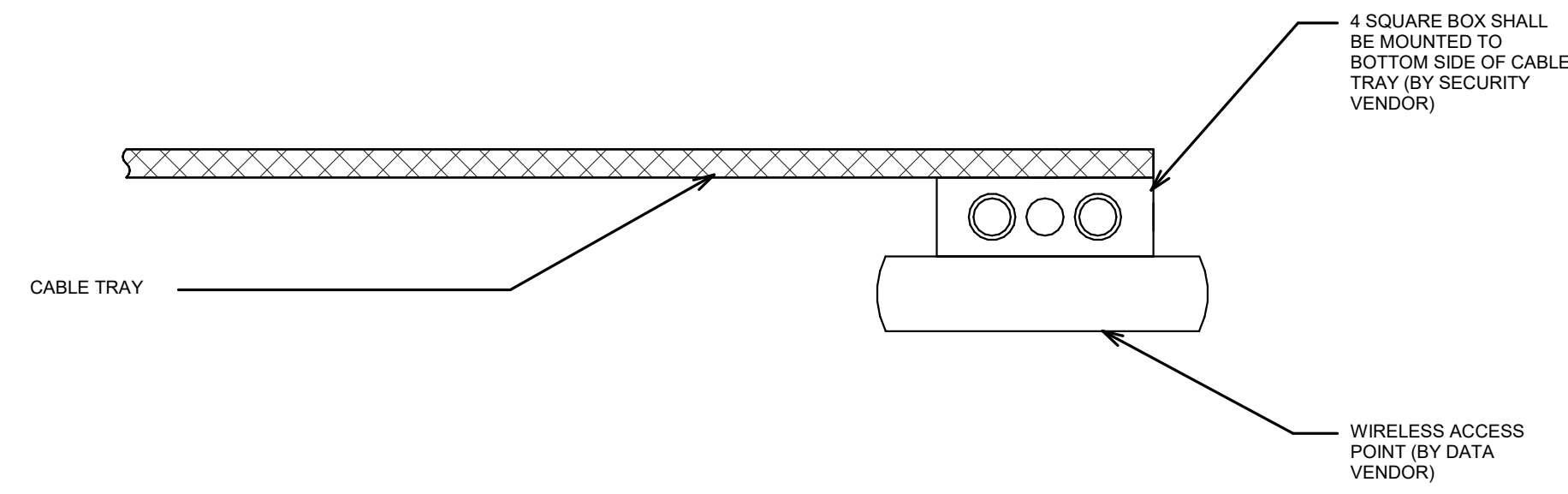
4 CAMERA DETAILS - WALL MOUNT CAMERA

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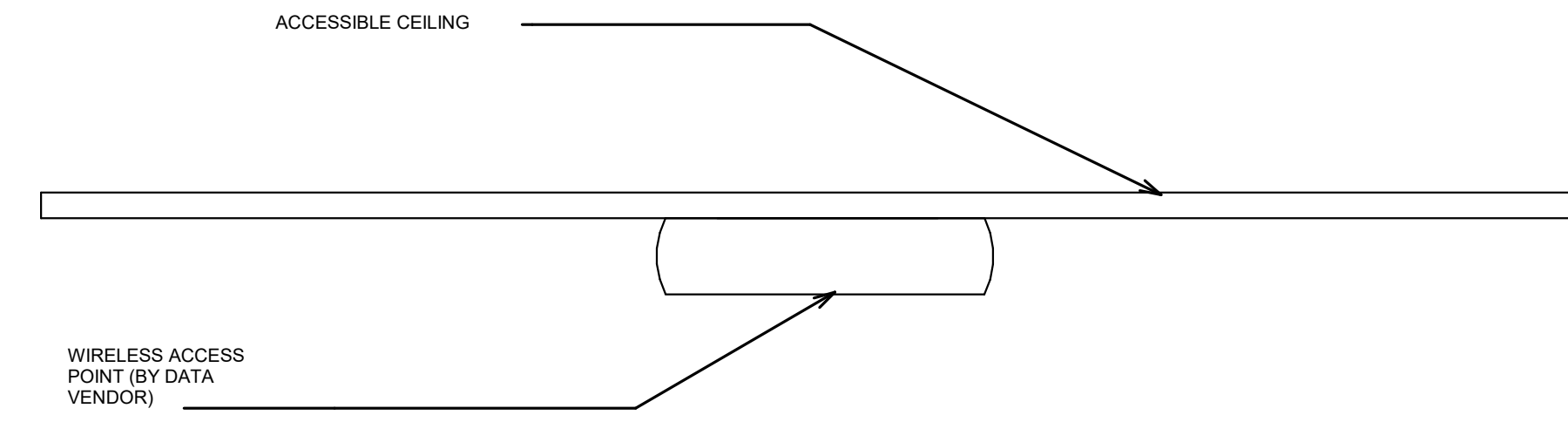
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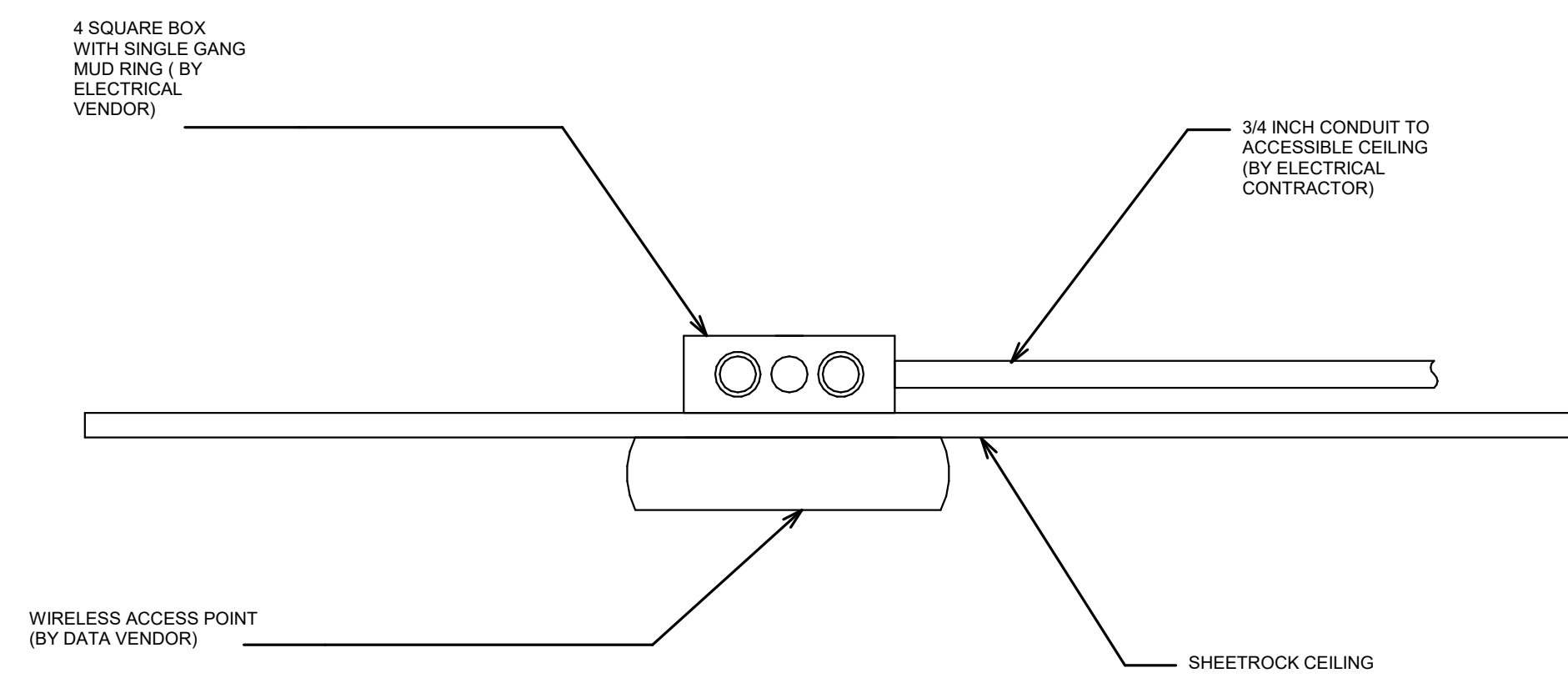
1 WIFI DETAILS - CABLE TRAY MOUNT - WAP

SCALE: N.T.S.



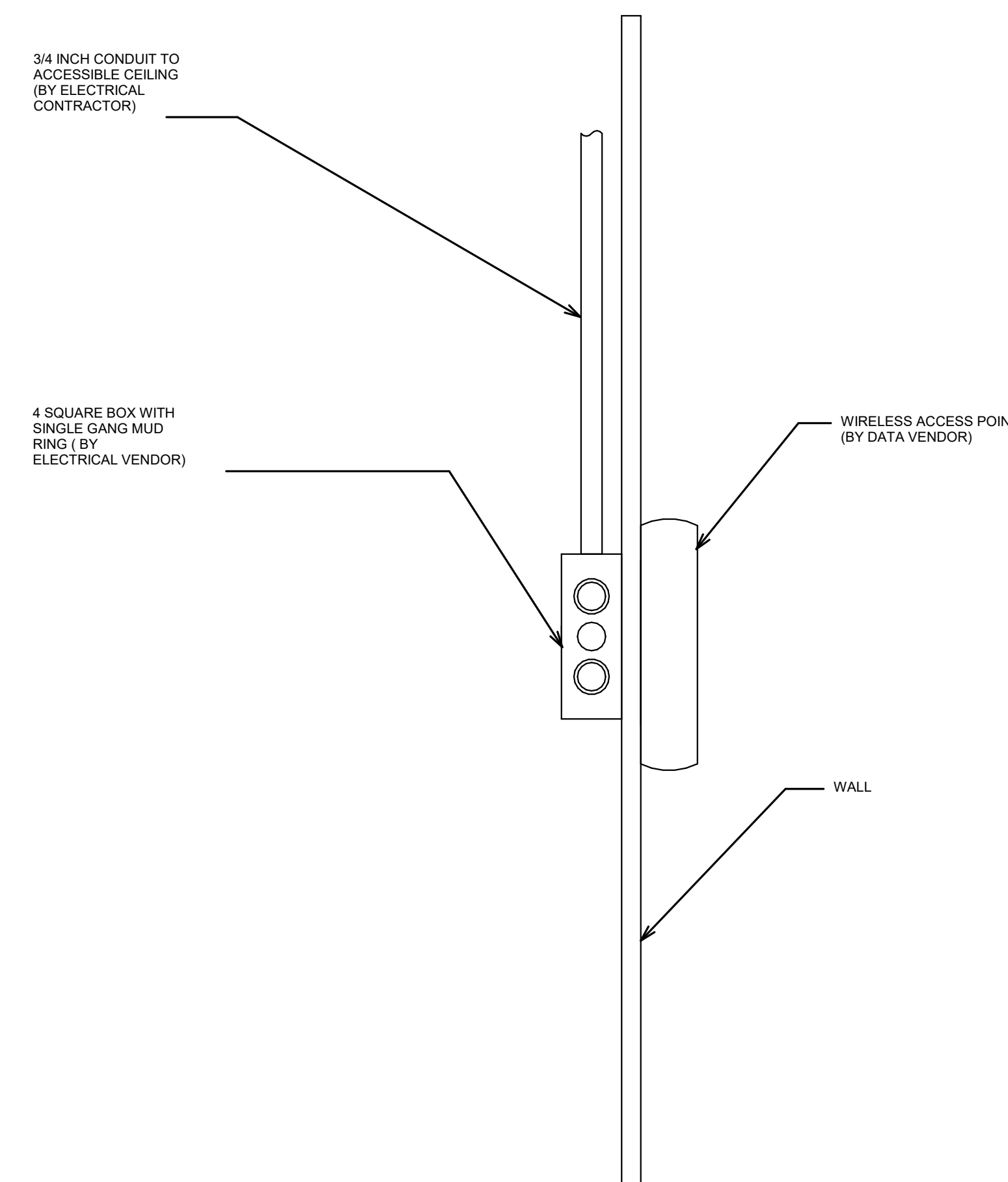
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SCALE: N.T.S.



3 WIFI DETAILS - CEILING MOUNT - SHEET ROCK

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4 WIFI DETAILS - WALL MOUNT WAP

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TECHNOLOGY WIFI
DETAILS
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