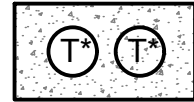


TELECOMMUNICATIONS SYMBOL LIST

	VOICE/DATA OUTLET
	DATA OUTLET
	JUNCTION BOX FOR AV OUTLET
	JUNCTION BOX FOR AV MICROPHONE
	CEILING/WALL MOUNTED WAP OUTLET
	PRIMARY BONDING BUSBAR
	SECONDARY BONDING BUSBAR
	COMBINATION VOICE/DATA/ELECTRICAL FLOOR BOX
	COMBINATION DATA/ELECTRICAL FLOOR BOX
	COMBINATION AV/ELECTRICAL FLOOR BOX
	TELECOMMUNICATIONS MAINTENANCE HOLE
	TELECOMMUNICATIONS HANDHOLE
	EXISTING TELECOMMUNICATIONS HANDHOLE
	CEILING/WALL MOUNTED JUNCTION BOX FOR CCTV CAMERA
	CEILING/WALL MOUNTED JUNCTION BOX FOR SPEAKER
	JUNCTION BOX FOR AACS CARD READER
	JUNCTION BOX FOR IDS REQUEST TO EXIT
	JUNCTION BOX FOR AACS DOOR STRIKE
	JUNCTION BOX FOR IDS DOOR CONTACT
	JUNCTION BOX FOR IDS MOTION DETECTOR
	DDC TELECOMMUNICATIONS CABINET

NOTE: THE USE OF THE TERM MAINTENANCE HOLE IS
SYNONYMOUS WITH THE TERM MANHOLE.

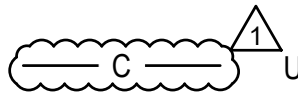
DUCT SECTION



T* - TELECOMMUNICATIONS DUCT
(SEE SITE PLAN FOR REQUIREMENT)

DUCT SECTION AND
ARRANGEMENT (SEE 1/T6.8)

LINE TYPES



UNDERGROUND TELECOMMUNICATION LINE
EXISTING UNDERGROUND TELECOMMUNICATION LINE

ABBREVIATIONS

AACS	AUTOMATED ACCESS CONTROL SYSTEM
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
AV	AUDIO VISUAL
BET	BUILDING ENTRANCE TERMINAL
BLDG	BUILDING
C	CONDUIT
CAT 6	CATEGORY 6
CATV	CABLE TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CEQ	COLLATERAL EQUIPMENT
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CCH	COMMERCIAL TELECOMMUNICATION HANDHOLE
CM	CABLE MANAGEMENT
COMM/T/TELECOM	TELECOMMUNICATIONS
CT	CABLE TRAY
CU	COPPER
CUPP	COPPER PATCH PANEL
Cx	TELECOMMUNICATION, EXISTING
(E)	EXISTING
EGB	EQUIPMENT GROUND BUS
EMT	ELECTRICAL METTALIC TUBING
FCP	FIRE ALARM CONTROL PANEL
FO	FIBER OPTIC
FOC	FIBER OPTIC CABLE
FOPP	FIBER OPTIC PATCH PANEL
G	GROUND CONDUCTOR
GCC	GUAM COMMUNITY COLLEGE
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
IDF	INTERMEDIATE DISTRIBUTION FRAME
ISP	INSIDE PLANT
MDF	MAIN DISTRIBUTION FRAME
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NTS	NOT TO SCALE
ODF	OPTICAL DISTRIBUTION FRAME
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OSP	OUTSIDE PLANT
PBB	PRIMARY BONDING BUSBAR
PDU	PROTECTED DISTRIBUTION UNIT
PET	PROTECTED ENTRANCE TERMINAL
POTS	PLAIN OLD TELEPHONE SERVICE
RBC	RACK BONDING CONDUCTOR
RGB	RACK GROUND BAR
RGS	RIGID GALVANIZED STEEL
RM	ROOM
SM	SINGLE MODE
SMF	SINGLE MODE FIBER
SBB	SECONDARY BONDING BUSBAR
SST	STAINLESS STEEL
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
THH	TELECOMMUNICATION HANDHOLE
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMH	TELECOMMUNICATION MAINTENANCE HOLE
TR	TELECOM ROOM
UTP	UNSHIELDED TWISTED PAIR CABLE
VAC	VOLTS, ALTERNATING CURRENT
VOIP	VOICE OVER INTERNET PROTOCOL
VTC	VIDEO TELECONFERENCING
WAP	WIRELESS ACCESS POINT

35. ALL EXTERIOR AND UNCONDITIONED SPACE ENCLOSURES, FASTENERS, HARDWARE, CLIMBING RUNGS, METAL BOXES, FRAMING, ACCESS COVERS, HINGES CONDUIT SUPPORTS AND BOLTS, ETC. MUST BE 304 SST. IF METAL IS WELDED, PROVIDE LOW CARBON 304L SST.
36. SUBMIT SHOP DRAWING AND CATALOG DATA FOR ALL MATERIALS FOR APPROVAL. AT THE CONCLUSION OF THE WORK, THE CONTRACTOR MUST INCORPORATE ALL CHANGES MADE, AND RECORDED, INTO THE SET OF REPRODUCIBLES IN A CLEAR, LEGIBLE AND REPRODUCIBLE MANNER. ALL STUB-OUTS MUST BE DIMENSIONALLY LOCATED WITHIN THE BUILDING STRUCTURE. AS A CONDITION FOR ACCEPTANCE OF WORK, "AS-BUILT" REPRODUCIBLE MUST BE SIGNED BY CONTRACTOR ATTESTING THAT ALL CHANGES HAVE BEEN INCORPORATED, DATED AND DELIVERED TO THE CONTRACTING OFFICER. SUBMIT ELECTRONIC (CAD & PDF) FILES AND FULL SIZE PRINTS AS PART OF CLOSE OUT DOCUMENTS.

GENERAL NOTES

- ALL TELECOMMUNICATIONS WORK MUST BE IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA), BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI), APPLICABLE SECTIONS OF NATIONAL ELECTRICAL CODE (NEC), AND THE NATIONAL ELECTRICAL SAFETY CODE (NESC).
- ALL TELECOMMUNICATIONS WORK MUST BE UNDER FULL SUPERVISION OF A REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER (RCDD).
- COMPONENTS NOT RELATED TO SUPPORT THE TELECOMMUNICATIONS ROOM(S) FUNCTION (PIPING, DUCTWORK, ETC.) SHALL NOT BE INSTALLED IN, PASS THROUGH, OR ENTER THE TELECOMMUNICATIONS ROOM(S).
- ALL EQUIPMENT AND MATERIALS MUST BE UL LISTED WHERE LISTING IS AVAILABLE THAT TYPE OF EQUIPMENT OR CONFORM TO TIA, BICSI, AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) OR NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS. SUBMIT SHOP DRAWINGS AND PRODUCT INFORMATION CATALOG FOR APPROVAL.
- NO SECTION OF CONDUIT MUST BE LONGER THAN 100 FEET WITHOUT A PULLBOX. A PULLBOX MUST BE PLACED IN A CONDUIT RUN WHERE THE LENGTH IS OVER 100 FEET, THERE ARE MORE THAN TWO-90 DEGREE BENDS, OR EQUIVALENT, OR THERE IS A REVERSE (U-SHAPED) BEND IN THE RUN. PULLBOXES MUST BE PLACED IN A STRAIGHT SECTION OF CONDUIT AND MUST NOT BE USED IN LIEU OF A BEND.
- ALL BENDS MUST BE LONG, SWEEPING BENDS WITH A RADIUS NOT LESS TEN TIMES THE INTERNAL DIAMETER OF CONDUIT.
- CONDUITS WITH LESS THAN 2" IN DIAMETER MUST HAVE MINIMUM RADIUS BENDS OF SIX TIMES THE DIAMETER OF THE CONDUIT. CONDUITS WITH 2" IN DIAMETER OR LARGER MUST HAVE MINIMUM RADIUS BENDS OF TEN TIMES THE DIAMETER OF THE CONDUIT. ALL CONDUIT BENDS SHALL BE PRE-FORMED TYPE WHERE PRE-FORMED BENDS OF THE REQUIRED SIZES ARE AVAILABLE.
- PROVIDE INSULATED BUSHINGS AT ALL TELECOMMUNICATIONS CONDUIT TERMINATIONS AT ALL BOXES AND CONDUIT STUBS.
- UNLESS OTHERWISE NOTED, ALL TELECOMMUNICATIONS CONDUIT MUST BE 1" C.
- CONDUIT FILL MUST BE IN ACCORDANCE WITH THE APPLICABLE TIA STANDARDS.
- THE MAXIMUM FILL RATIO OF ANY CABLE TRAY MUST BE 50%. THE MAXIMUM FILL DEPTH OF ANY CABLE TRAY MUST BE 6 INCHES IN ACCORDANCE WITH TIA STANDARDS.
- ALL TELECOMMUNICATION CONDUITS OUTSIDE THE TELECOMMUNICATION ROOMS OR CLOSETS MUST BE CONCEALED EITHER ABOVE SUSPENDED CEILINGS, EMBEDDED IN CONCRETE OR BELOW CONCRETE FLOORS OR CEILING STRUCTURES. JUNCTION BOXES FOR CONDUITS ABOVE DRYWALL CEILINGS MUST BE ACCESSIBLE BY CEILING ACCESS POINTS.
- ALL CABLE PATHWAYS INCLUDING CONDUITS, PULLBOXES, AND JUNCTION BOXES MUST BE PROVIDED WITH LABELS THAT STATE WHERE THEY ORIGINATE AND TERMINATE. PULLBOXES AND JUNCTION BOXES AND JUNCTION BOXES MUST BE NUMBERED IN SEQUENCE FROM THE TELECOM ROOM OUTWARDS. ALL CONDUITS, EMPTY OR USED, MUST BE CLEARLY AND PERMANENTLY MARKED AT BOTH ENDS, TO INDICATE DESTINATION. MARKING MUST BE CLEARLY VISIBLE AFTER CONSTRUCTION IS COMPLETED.
- INSTALLATION OF ALL EQUIPMENT, DEVICES, CONDUITS, AND SUPPORTS MUST MEET THE PROJECT LOCATIONS SEISMIC RESTRAINT REQUIREMENTS.
- PROVIDE PULLSTRINGS AND MECHANICAL TYPE PLUG IN ALL EMPTY CONDUITS UNLESS OTHERWISE INDICATED.
- UNLESS OTHERWISE NOTED, ALL EQUIPMENT OR OUTLET LOCATIONS AND TELECOMMUNICATIONS RACEWAY RUNS SHOWN ON PLAN ARE DIAGRAMMATIC. EXACT LOCATIONS OF EQUIPMENT OR OUTLET AND TELECOMMUNICATIONS RACEWAY RUNS MUST BE DETERMINED ON FIELD. COORDINATE ALL TELECOMMUNICATIONS WORK AND AVOID CONFLICT WITH WORK BY OTHER TRADES.
- SEAL ALL CONDUITS AFTER CABLES ARE INSTALLED WHERE CABLE RUNS ENTER OR EXIT BUILDING OR UNDERGROUND STRUCTURES TO PREVENT ENTRANCE OF MOISTURE, GASES, AND RODENTS.
- SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS AND SLABS USING UL LISTED FIRE RATED SEALANT OR ASSEMBLY TO MAINTAIN THE INTEGRITY OF THE FIRE RATING.
- ALL WALL MOUNTED TELECOMMUNICATION OUTLETS MUST BE A MINIMUM CONSIST OF A 4 11/16" SQUARE X 2 1/8" DEEP OUTLET BOX WITH SINGLE GANG PLASTER RING. OUTLET BOX MUST HAVE SUFFICIENT DEPTH TO MEET REQUIRED CABLING BEND RADI.
- ALL FLUSH FLOOR MOUNTED OUTLET BOXES MUST BE UL514A COMPLIANT AND PROVIDED WITH BRASS COVER PLATE. OUTLET BOX MUST HAVE SUFFICIENT DEPTH TO MEET REQUIRED CABLING RADI.
- ALL CAT6A CABLING LOCATED IN-SLAB OR BELOW GROUND MUST BE WET LOCATION LISTED. PROVIDE ALL TESTS AND LABELING BETWEEN EACH PATCH PANEL AND ALL OUTLET DEVICES IN ACCORDANCE WITH TIA/BICSI STANDARDS OR REQUIREMENTS. TEST AND LABELING PLANS MUST BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF WORK. ALL TESTING MUST BE COORDINATED AND SCHEDULED VIA THE CONTRACTING OFFICER IN ORDER TO ALLOW THE OWNER TO WITNESS TESTING IF SO DESIRED.
- ALL CABLE RUNS WITHIN EACH TELECOMMUNICATION CABINET MUST BE PROVIDED WITH THE MAINTENANCE LOOPS EQUIVALENT TO TWO TIMES THE HEIGHT OF THE CABINET.
- ALL CABLE TERMINATIONS MUST BE TESTED FROM THE WORKSTATION OUTLET TO THE CORRESPONDING PATCH PANELS.
- PROVIDE TELECOMMUNICATIONS LABELING REQUIREMENTS PER TIA/BICSI STANDARD. SUBMIT SHOP DRAWINGS INDICATING FINAL LABELING SCHEME AND COORDINATE WITH CONTRACTING OFFICER PRIOR TO PRINTING.
- CONDUITS, RACEWAYS, WIREWAYS, NETWORKING, SECURITY SYSTEMS, ENCLOSURES, AND PULL BOXES FOR TELECOMMUNICATION SYSTEMS MUST BE INSTALLED AT A MINIMUM OF 6" AWAY FROM ANY ELECTRICAL EQUIPMENT, DEVICES, LIGHT FIXTURES INCLUDING CONDUIT AND WIRING.
- ADJUST ALL LOCATIONS OF ALL NEW TELECOM EQUIPMENT AND WIRING AS REQUIRED TO CLEAR BUILDING OBSTRUCTIONS AND OTHER EQUIPMENT AS NECESSARY TO COMPLY WITH NEC CLEARANCES PROVIDE ALL BRACKETS, HANGERS, METAL CHANNELING, AND FASTENERS TO PROPERLY INSTALL THE TELECOM EQUIPMENT AND WIRING.
- ALL CONDUITS INSTALLED MUST BE MANDREL TESTED WITH A SOLID TELECOMMUNICATIONS TYPE MANDREL. MANDREL TEST RESULTS MUST BE DOCUMENTED AND PROVIDED TO THE CONTRACTING OFFICER WITHIN 14 DAYS AFTER COMPLETING THE TEST.
- PROVIDE 50 FEET MINIMUM MAINTENANCE LOOP FOR ALL CABLES AT TMH AND 30 FEET MINIMUM MAINTENANCE LOOP FOR ALL CABLE AT HANDHOLE FEEDING BUILDING ENTRANCE FACILITIES.
- COORDINATE WITH CONTRACTING OFFICER ON FINAL IDENTIFICATION OF ALL TELECOMMUNICATION HANDHOLES. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.
- ALL DUCTS MUST BE SEALED TO RESIST LIQUID, GAS, AND RODENT INFILTRATION AT ALL TELECOMMUNICATION HANDHOLES, AND BUILDING ENTRANCE POINT LOCATIONS.
- PRESERVE AND PROTECT EXISTING UTILITIES AND STRUCTURES FROM DAMAGE AND OPERATIONS. RESTORE TO THEIR ORIGINAL CONDITION OR BETTER, IMPROVEMENTS DAMAGED AS A RESULT OF CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIDEWALKS, SIGNS, FENCES, LANDSCAPING, STRUCTURES, UTILITIES, WALLS AND OTHER IMPROVEMENTS.
- ALL EXTERIOR MOUNTED ENCLOSURE MUST BE WEATHERPROOF, NEMA 4X 304 SST. ALL HARDWARE MUST BE SST, UNLESS OTHERWISE NOTED.
- CONTRACTOR MUST NOTIFY CONTRACTING OFFICER IMMEDIATELY IN WRITING OF DISCREPANCIES BETWEEN PLAN AND ACTUAL CONDITIONS PRIOR TO SUBMITTAL OF BID.
- DETAILS ARE INTENDED TO SHOW METHOD AND MANNER OF ACCOMPLISHING WORK. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITION AND SUCH MODIFICATIONS MUST BE INCLUDED AS PART OF THE WORK.

IF SHEET IS LESS THAN 24" X 36"
REDUCED PRINT - USE GRAPHIC SCALES

MOUNTING HEIGHT SCHEDULE

MOUNTING HEIGHT SCHEDULE (UNLESS OTHERWISE INDICATED)								
DEVICE ON PLAN	MOUNTING HEIGHT	REFERENCE POINT						REMARKS
		FLOOR	CEILING	TO	IL	TOP	BOTTOM	
 	15"	•			•			UNLESS OTHERWISE NOTED
			•					
	7'-6"	•			•			UNLESS OTHERWISE NOTED
	7'-6"	•			•			UNLESS OTHERWISE NOTED
			•					
	8'-0"				•			
	10'-0" WHERE INDICATED ON PLAN							
	5'-6"	•				•		