

Target Interface / Construction Compliance Inspection Checklist

Date:	Location:	YES	NO	NOTES
Combined Arms Collective Training Facility (CACTF)				
Common Items				
A: Roads-Service Lanes				
1	Trails and service roads provide adequate access to buildings for maintenance			
B: Testing Results provided to the local government construction representative				
1	Data cabling tests including fiber optic and/or copper network (ie. Cat5e)			
2	Grounding tests results. Control building (ie. ROC) has 25 Ohms or less earth resistance			
C: Drawings				
1	Contract drawings are available on-site			
2	"As-builts" will be made available to government representative after completed construction			

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Combined Arms Collective Training Facility (CACTF)				
CACTF Training Buildings				
A: Miscellaneous				
1	All target, camera, speaker and maintenance outlets in training buildings are in weatherproof enclosures. (power and data)			
2	Wireways/conduits are completely enclosed from electrical room to power and data outlets.			
3	All wireways/conduits/outlets are a minimum 7' AFF.			
4	Target, camera and speaker outlets are not GFCI.			
5	Maintenance outlets are 120V, 20A, GFCI and are populated 50ft on center throughout training building.			
6	Cat6 UTP cable is used to each target, camera and speaker data outlet.			
7	Lights in all training rooms are fed from a lighting contactor installed in electrical room.			
8	Lights in training rooms have a protective lens or protective guard installed.			
B: Target Outlets (TO)				
1	Target power outlets are a NEMA L14-20R and a NEMA L5-20R receptacle with weatherproof covers.			
2	Target Data Outlets are Amphenol RJ Field outlets installed in "code A" configuration.			
3	TO are permanently labeled and labels are readily visible.			
4	TO quantities meet DD1391, applicable TC 25-8, and CEHNC Design Guide 1110-1-23. (Typically one to two per room)			
5	Labels on targets outlets correspond with labels on patch panels and cables in DTR.			
C: Camera Outlets (CO)				
1	Camera power outlet is a NEMA L5-20R receptacle with weatherproof cover.			
2	Camera Data Outlets are Amphenol RJ Field outlets installed in "code A" configuration.			
3	Camera outlets are permanently labeled and labels are readily visible			
4	Camera outlets are located such that view is not obstructed. (i.e. does not aim at windows where view will be washed).			
5	CO quantities meet DD1391, applicable TC 25-8, and CEHNC Design Guide 1110-1-23. (Typically one per room)			
6	Labels on camera outlets correspond with labels on patch panels and cables in DTR.			
D: Speaker Outlets (SO)				
1	Speaker power outlet is a NEMA L5-20R receptacle with weatherproof cover.			
2	Speaker Data Outlets are Amphenol RJ Field outlets installed in "code A" configuration.			
3	Speaker outlets are permanently labeled and labels are readily visible.			
4	Speaker outlets are located to allow maximum audible coverage (ie. central corridor).			
5	Minimum of one speaker outlet provided per floor of building.			
6	Labels on speaker outlets correspond with labels on patch panels and cables in DTR.			
E: Camera Hangers (Brackets)				
1	Camera hangers are on site for contractor to hang near camera outlets.			

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Date:	Location:	YES	NO	NOTES
Combined Arms Collective Training Facility (CACTF)				
CACTF Training Buildings				
F: Electrical and Communication Room				
1	Panelboard is provided with 120/240V power.			
2	Panelboard has adequate working space and clearance IAW NEC.			
3	Panelboard has SPD installed properly.			
4	Panelboard has panel schedule provided and completed.			
5	Target outlets are fed via 2 pole 20A circuit breakers.			
6	Camera Outlets are fed via single pole 20A Breakers.			
7	All spare conduits or innerducts entering from underground have pull wires installed.			
8	All data or other spare conduits entering the electrical room from underground are sealed to prevent rodents from entering.			
10	A GFCI maintenance receptacle is provided in the electrical room.			
11	Adequate lighting is provided on a local switch. (Not controlled by lighting contactor)			
16	Room has walls, roof, doors and any penetrations (ie. conduit/wireway) sealed to prevent moisture, dust and rodents from entering.			
17	Room is lockable and marked "out of play".			
18	All data cabling is installed in a completely enclosed conduit system.			
28	Lighting contactor is installed properly.			
G: Data Termination Rack (DTR) - NEMA 12				
1	Data Termination Rack (DTR) is NEMA 12 rated and maintains NEMA rating after installation.			
2	DTR is a free standing 23"X31"X84" rack with interior frame to accept 19" equipment.			
3	DTR power outlet has two dedicated 20A, 120V circuits.			
4	Adequate space is available in the DTR for target equipment switches and other devices.			
5	Data cables (both fiber and copper) are permanently labeled when they enter the DTR and are labeled on the patch panel.			
6	Data cabling is installed neatly and orderly and properly anchored or fastened in the DTR.			
7	Fiber cabling is single mode.			
8	Fiber is terminated with SC connectors on patch panels.			
9	Minimum 3 meter service loop of fiber cabling is provided and properly secured inside DTR.			
10	Fiber cabling has no visible microbending, pinching, or other markings to indicate fiber failure.			
11	DTR is grounded properly to the ground system.			
12	Adequate space provided around the DTR. 36" space is available in front of DTR. Rear door can fully open 90 degrees.			

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Combined Arms Collective Training Facility (CACTF)				
Range Operations Center (ROC) - Large				
A. Miscellaneous				
1	All empty conduits shall have a pull string.			
2	HVAC is provided for comm. and control room.			
3	Lightning protection is provided. Verify UL listing will be obtained per contract (UL Listing not required per this checklist).			
4	All data jacks are permanently labeled.			
5	All metal conduits and cable trays are bonded together and grounded.			
7	Exterior lighting is provided on separate switching from interior lighting.			
8	Wall mounted exterior red lighting is located near points of egress and is on separate switching from white lights.			
9	Ceiling mounted interior red lighting is located in rooms with exterior windows and is on separate interior switches from white lighting.			
10	Emergency lighting and exits signs are provided.			
11	SPD is provided in main service panelboard.			
B. Control Room				
1	Adequate space is available for target installer work stations. Power receptacles are provided on dedicated 20 amp circuits for each work station.			
2	No counters are provided.			
C. Data Termination Rack (DTR)				
1	DTR is an enclosed 36"Dx22"Wx84"H free standing rack with 19" rack frame.			
2	DTR is provided with front and rear doors and removable side panels.			
3	36" space is available to front and rear and one side. DTR is located a minimum of 6" from the wall on the remaining side.			
4	DTR rack is properly grounded to TMGB or a single point ground via a minimum #6 AWG insulated ground cable.			
5	Data cabling armor or shield is properly grounded as close as practical to the point of entrance.			
6	Fiber is terminated with SC connectors.			
7	Data cabling in DTR is neat and orderly and adequately anchored.			
8	3 meter minimum service loop of data cabling is provided in DTR.			
9	Data cables are be permanently tagged identifying destination (ie. SIT X or lane X).			
10	Fiber cabling has no visible microbending, pinching, or other marking to indicate fiber damage.			
11	Patch panels have labeling identifying each cable's destination.			
12	Buffer tube fanout kits or fusion splice trays are installed and adequately anchored in DTR.			
13	Conduits entering DTR are properly sealed to prevent entry of moisture and rodents.			
14	Innerduct in conduits or spare conduits are provided from the DTR to downrange.			

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Combined Arms Collective Training Facility (CACTF)				
Range Operations Center (ROC) - Large				
D: Communication Room (Room Houses DTR)				
1	Panelboard has adequate working space and clearance IAW NEC.			
2	Panelboard has SPD properly installed.			
3	Panelboard has panel schedule provided and completed			
4	Power for racks is provided from 2-60A breakers to wall mounted disconnects. Conduit is installed from disconnects to junction boxes located above rack position for connection by others.			
5	Adequate rack space is available for UPS provided by others.			
6	The number of Data Termination Racks (DTR) installed is IAW CEHNC 1110-1-23 (Typically one). Adequate space is available for OPA funded racks (Typically 2 for CACTF).			
7	Cable tray is installed above drop ceiling connecting communications and control rooms. Vertical transition elbows provided above rack locations.			
8	Cable tray is grounded properly to the ground system Telecommunications Main Grounding Bar (TMGB).			
9	An additional grounding space is provided on the TMGB for grounding of racks that are not in the same row as the DTR (other racks in the same rows as DTR will be jumpered together by target installer).			
10	Minimum of 24 strands of fiber optic cable are installed between DTRs in AAR and ROC unless ROC and AAR are combined into one facility.			
11	All common user cable and equipment are installed in separate racks from range training DTR(s). Labeling is provided to differentiate between "common user" cable and range "training" cable.			

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Date:	Location:	YES	NO	NOTES
Combined Arms Collective Training Facility (CACTF)				
After Action Review (AAR) - Large				
A: Miscellaneous				
1	Adequate space is available for target installer work stations. Power receptacles are provided on dedicated 20 amp circuits for work stations.			
2	Lightning protection is provided and is properly installed (UL listing still must be obtained).			
3	SPD is provided in main service panelboard			
4	All empty conduits shall have a pull string provided.			
5	Exterior lighting is provided on separate switching located near points of egress.			
6	Exterior or interior white and red lights have separate switching.			
7	Emergency lighting and exits signs are provided IAW codes.			
8	Red lighting is provided near white fixtures on separate switches from white lighting in observation rooms, control rooms, and on exterior walls.			
B: Development Room, Theatre, and Control Room				
1	No counters are provided in development area(s).			
2	Receptacles for work stations are fed on dedicated 20-amp circuits. There should be one duplex receptacle per workstation.			
3	Two dedicated circuits (120V, 20A) provided near the DTR (two duplex or one quadplex receptacle).			
4	All metal conduits and cable trays shall be bonded together and grounded.			
5	A 20A duplex receptacle is provided near each overhead projector location in the theater area(s).			
6	A continuous 12" minimum ladder type wireway extends from DTR to the development rooms and into the front of the theater.			
7	A 1" conduit is provided from a junction box 18" above finished floor near each projection screen in the theater area to the cable tray.			
8	A 1" conduit is provided from a junction box at each overhead projector location in the theater area to the cable tray.			
9	HVAC is provided in the development, theater, and control rooms.			

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After Action Review (AAR) - Large				
C: Data Termination Rack (DTR)				
1	DTR is an enclosed 36"Dx22"Wx84"H free standing rack with 19" rack frame.			
2	DTR is provided with front and rear doors and removable side panels.			
3	36" space is available to front and rear and one side. DTR is located a minimum of 6" from the wall on the remaining side			
4	DTR rack is properly grounded to TMGB or a single point ground via a minimum #6 AWG insulated ground cable.			
5	Data cabling armor or shield is properly grounded as close as practical to the point of entrance.			
6	Fiber is terminated with SC connectors.			
7	Data cabling in DTR is neat and orderly and adequately anchored.			
8	3 meter minimum service loop of data cabling is provided in DTR.			
9	Data cables are be permanently tagged identifying destination (ie. SIT X or lane X).			
10	Fiber cabling has no visible microbending, pinching, or other marking to indicate fiber damage.			
11	Patch panels have labeling identifying each cable's destination.			
12	Buffer tube fanout kits or fusion splice trays are installed and adequately anchored in DTR.			
13	Conduits entering DTR are properly sealed to prevent entry of moisture and rodents.			
14	Innerduct in conduits or spare conduits are provided from the DTR to downrange.			