J.2.1
OBO Codes

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

About This Edition

The 2026 Edition of the OBO Project Standard Requirements (OPSR) is organized into the following volumes in order of precedence:

- OPSR 1 – OBO Codes*
- OPSR 2 – OBO Guide Specifications
- OPSR 3 – OBO Project Requirements
- OPSR 4 – OBO Space and Adjacencies
- OPSR 5 – OBO Deliverable Requirements
- OPSR 6 – Reserved
- OPSR 7 – OBO Standard Templates
- OPSR 8 – OBO Standard Questionnaires

*OBO Codes (U) (Full minus OBO Telecommunications Code Volume B)
*OBO Telecommunications Code Volume B (SBU)

OPSR Volumes 1-4 make up the OBO Design Standards and are under the purview of the Office of Design and Engineering (OBO/PDCS/DE). The documents contained herein represent all guidance and technical requirements for these standards.

OPSR Volumes 5-8 make up the OBO Deliverable Resources and are under the purview of the Office of Project Development and Coordination (OBO/PDCS/PDC).

Design Principles

The mission of the Bureau of Overseas Buildings Operations (OBO) is to provide the most effective facilities for conducting United States diplomacy abroad.

OBO/PDCS/DE develops the design standards and criteria for all overseas State Department facilities. OBO adopts industry codes and standards and supplements those with unique State Department requirements.

Design Tenets

Embassy and consulate buildings should present a welcoming architectural form that represents the United States and acknowledges Host Nation culture with mutual respect via architecture, design, engineering, technology, art, and culture.

The State Department expects to use and operate its buildings for many decades. This places a greater emphasis on the total cost of ownership long term. Life-cycle cost-effective energy and water efficiency measures should be incorporated to the extent operable and maintainable by local staff. Passive strategies, such as high insulation levels and thermal bridge reductions, should be prioritized over

mechanical, high-tech, or proprietary systems with greater maintenance requirements. The concept of whole-building performance must be incorporated into the design to optimize the balance of function, security, safety, energy, resiliency, operability, and maintainability.

2025-2026 Changes

The 2026 OBO Design Standards include updates to guidance and technical requirements submitted by diverse OBO subject matter experts. Some highlights include:

- **Adoption of the 2024 International Code Council Family of Codes:**
  - Moved Chapters 9 and 10 requirements from the OBO International Fire Code to the International Building Code.
  - Updated Structural tables in the International Building Code.
  - Added Equipment Rooms and Chemical Storage Rooms to the International Swimming Pool and Spa Code.
  - Updated Harvesting Water requirements in the International Zoning Code.
  - Divided the OBO Telecommunications Code into separate Unclassified (U) and Sensitive But Unclassified (SBU) volumes.
- **New OBO Guide Specification:**
  - 329300 Plants.
- **Reorganization of the OBO Project Requirements (OPR):**
  - Reformatted content so every paragraph can be cited.
  - Reordered OPR documents to match drawing documentation standards in OPSR 05 (*See Crosswalk*).
  - Consolidated OPR 4-022-01 Compound Access Control and OPR 4-201-01 Support Buildings into OPR 02 General (*See Crosswalk*).
  - Renamed OPR 2-300-01 Utility Services to OPR 08 Civil (*See Crosswalk*).
  - Renamed OPR 2-601-01 Site Design to OPR 09 Landscape (*See Crosswalk*).
  - Developed new OPR 15 Water Feature (*See Crosswalk*).
- **Elimination of the 2025 OPSR Volume 6 – OBO Reference Documents:**
  - Deleted or revised outdated drawings.
  - Incorporated revised drawings into the appropriate OPR as attachments (*See Crosswalk*).
- **Updates to the Space Requirements Program Modules (SRP-Ms):**
  - Developed new SRP-M to provide guidance on size, naming, and required components.

- Developed new SRP-Ms for the DT Suite (Diplomatic Technology).
- Created a new FLEX Mission space group that includes all standard SRP-Ms.

Please reference the CCR Change Log and FY26 Crosswalks (OPR and Drawings) for detailed information concerning incorporated changes. For changes related to SRP-Ms and adjacency diagrams, reference the *Summary of Changes* tables in OPSR 4 – OBO Space and Adjacencies.

Contact designstandards@state.gov for general questions or comments about these standards. If you are under contract on a State Department project, you must go through your Contracting Officer's Representative for any contract-related questions.

LIMITED CONTENT - REPRODUCTION AND DISTRIBUTION IS AUTHORIZED BUT RESTRICTED
The content included in this version of OBO Standard Project Requirements may be limited based on project scope and sensitivity of the security-related information. Such information is marked *Sensitive but Unclassified* (SBU) or *Controlled Unclassified Information* (CUI) and will not be included in publicly released versions of these documents. The SBU (and higher) information will be available through the Contracting Officer's Representative after the requestor's need and credentials are authenticated. Unclassified content herein may become SBU/CUI once linked to a specific project, site, or building and must be handled accordingly. **Click here for more information and SBU/CUI handling instructions and cover page.**

CHANGE LOG

2026 OBO Project Standard Requirements (OPSR) Content Changes

Note: Changes listed here are not exhaustive and are provided for user convenience only. Contractors are responsible for compliance with all technical requirements.

Document/ Section	Chapter	Change
General		
All documents	N/A	Revised formatting of published documents to enhance searchability.
OPSR 1 - OBO Codes		
IBC	Table of Contents	Added chapter 35.
IBC	Ch 1 - Scope and Administration	Added section 105.2 and renumbered subsequent sections.
IBC	Ch 1 - Scope and Administration	Revised section 104 to adopt the 2024 ICC code editions.
IBC	Ch 1 - Scope and Administration	Revised section 105.1.1 regarding requiring permits.
IBC	Ch 1 - Scope and Administration	Revised section 107.
IBC	Ch 4 - Special Detailed Requirements based on Use and Occupancy	Deleted section 428.3.5 from Representational Housing Section.
IBC	Ch 4 - Special Detailed Requirements based on Use and Occupancy	Renumbered sections to align with IBC.
IBC	Ch 5 - General Building Heights and Areas	Deleted section 505.
IBC	Ch 7 - Fire and Smoke Protection Features	Added requirement to 703.7 to state rating.
IBC	Ch 9 - Fire Protection and Life Safety Systems	Relocated fire alarm requirements from specifications to code.
IBC	Ch 9 - Fire Protection and Life Safety Systems	Relocated IFC Chapter 9 requirements to IBC Chapter 9.
IBC	Ch 11 - Accessibility	Revised and added sections to Ch. 11.

Document/ Section	Chapter	Change
IBC	Ch 12 - Interior Environment	Revised formatting of section 1208 to match code style guide.
IBC	Ch 12 - Interior Environment	Revised section 1206.5.1.
IBC	Ch 15 - Roof Assemblies and Rooftop Structures	Revised section 1506.4.
IBC	Ch 16 - Structural Design	Revised section 1624.
IBC	Ch 16 - Structural Design	Revised section 1624.2.2.
IBC	Ch 24 - Glass and Glazing	Revised paragraph 2405.6.
IBC	Ch 24 - Glass and Glazing	Revised section 1.2.D.
IBC	Ch 29 - Plumbing	Revised section 2902.1.2.
IBC	Ch 29 - Plumbing	Revised sections 2902.3.3 and 2902.3.3.1.
IBC	Ch 34 - Physical and Technical Security Requirements	Revised requirements for manhole cover locks.
IBC	Ch 34 - Physical and Technical Security Requirements	Added reference to OTC requirements to 3420.5.3.3.
IBC	Ch 34 - Physical and Technical Security Requirements	Deleted language in 3404.9.8.2 regarding specific types of locks.
IBC	Ch 34 - Physical and Technical Security Requirements	Deleted section 3403.11.1 and renumbered remaining sections.
IBC	Ch 34 - Physical and Technical Security Requirements	Renumbered section 3404.8.2.
IBC	Ch 34 - Physical and Technical Security Requirements	Revised and renamed 3404.9.2 regarding egress route and elevator vestibules.
IBC	Ch 34 - Physical and Technical Security Requirements	Revised section 3404.11.3.
IBC	Ch 34 - Physical and Technical Security Requirements	Revised section 3404.5.1.1.
IBC	Ch 34 - Physical and Technical Security Requirements	Revised section 3404.9.2:
IBC	Ch 34 - Physical and Technical Security Requirements	Revised section 3420.4.1.3.
IBC	Ch 34 - Physical and Technical Security Requirements	Revised sections 3404.9.6.3, 3404.9.2.1 & 3404.9.2.2
IBC	Appendix N Replicable Buildings	Deleted the year reference.
IBC	Appendix W	Replaced references to Appendix R with Appendix W.

Document/ Section	Chapter	Change
IEBC	Ch 10 - Change in Occupancy	Revised section 1006 to correct reference to section 304.3.1.
IFC	Ch 5 - Fire Service Features	Revised to address possible locations for fire command center.
IFC	Ch 9 - Fire Protection and Life Safety Systems	Clarified section 907.2.2.2 regarding smoke detection.
IFC	Ch 9 - Fire Protection and Life Safety Systems	Revised section 906.1.2.1.3 item 1.
IFC	Ch 10 - Means of Egress	Added reference to OBO-ICS IBC and clarified where it differed.
IMC	Ch 1 - Scope and Administration	Clarified that HHW is prohibited in PCC.
IMC	Ch 3 - General Requirements	Revised language to address corrosion concerns.
IMC	Ch 3 - General Requirements	Revised section 312.2.
IMC	Ch 3 - General Requirements	Revised section 313.6.1.
IMC	Ch 4 - Ventilation	Clarified section 403.3 regarding circulation spaces.
IMC	Ch 4 - Ventilation	Revised chapter 4 to coordinate with OBO-ICS IBC chapter 34.
IMC	Ch 5 - Exhaust Systems	Revised section 504.3.
IMC	Ch 5 - Exhaust Systems	Revised to prescribe generator exhaust termination locations.
IMC	Ch 11 - Refrigeration	Clarified PCC chillers do not count as one of the offline chillers.
IMC	Ch 12 - Hydronic Piping	Revised materials table. See footnotes.
IMC	Ch 13 - Fuel Oil Piping and Storage	Revised to prevent overflow of fuel in generator room.
IPC	Ch 6 - Water Supply and Distribution	Added meter requirements for irrigation water to IZC.
IRC	Ch 3 - Building Planning	Deleted reference to Design Criteria document.
IRC	Ch 3 - Building Planning	Revised section 310 Residential Group R for consistency.
IRC	Ch 6 - Wall Construction	Clarified section R609.1.1 to prohibit PVC and PVC-clad windows and door frames.

Document/ Section	Chapter	Change
IRC	Table of Contents	Rejected new 2024 IRC Appendices NC, NF, NG, NH, and NJ.
ISPSC	Ch 4 - Public Swimming Pools	Relocated text from section 320 (formerly 319) and incorporated into section 325.
IZC	Ch 6 - Commercial and Commercial/Residential Zones	Added section 604.3.4.
IZC	Ch 6 - Commercial and Commercial/Residential Zones	Revised section 604.10.
IZC	Ch 8 - General Provisions	Added exemption in 812.5.4.3
IZC	Ch 8 - General Provisions	Added fall protection requirement in 812.2.16.2.
IZC	Ch 8 - General Provisions	Added list in 818.2 regarding corrosion resistance.
IZC	Ch 8 - General Provisions	Clarified language 813.3.4.
IZC	Ch 8 - General Provisions	Clarified section 801.4.2.
IZC	Ch 8 - General Provisions	Clarified section 813.3.2.2.
IZC	Ch 8 - General Provisions	Clarified sections 802, 803, and 804 are not adopted.
IZC	Ch 8 - General Provisions	Deleted hydraulic equipment from 813.8.1.
IZC	Ch 8 - General Provisions	Deleted section 801.3.3.
IZC	Ch 8 - General Provisions	Renumbered paragraphs 813.3.3.1 thru 813.3.5.4 with new numbers 813.3.4 thru 813.3.12.4.
IZC	Ch 8 - General Provisions	Revised paragraphs and titles in subsections from 813 to 816.
IZC	Ch 8 - General Provisions	Revised section 811.3.1.1.
IZC	Ch 8 - General Provisions	Revised section 812 for clarity.
IZC	Ch 8 - General Provisions	Revised sections 813.3.12.3 through 816.13.
IZC	Ch 8 - General Provisions	Revised site slope requirements.
NEC	Ch 2 - Wiring and Protection	Revised cable sizes for consistency.
OTC	Ch 1 - Scope and Administration	Added section 101.1.1.
OTC	Ch 1 - Scope and Administration	Deleted language from 101.3.1.
OTC	Ch 2 - Definitions	Added definition "Work Area Outlet (WAO)".

Document/ Section	Chapter	Change
OTC	Ch 2 - Definitions	Revise definition of Distribution Device (DD).
OTC	Ch 3 - General Requirements	Deleted section 306.4
OTC	Ch 3 - General Requirements	Revised section 303.2.1.1.
OTC	Ch 3 - General Requirements	Revised section 304.1.2.
OTC	Ch 3 - General Requirements	Revised section 305.1.6.
OTC	Ch 3 - General Requirements	Revised section 308.1.1.
OTC	Ch 3 - General Requirements	Revised section 308.4.
OTC	Ch 4 - Service Entrance and Site Distribution	Deleted OTC section 404.1 #2.
OTC	Ch 4 - Service Entrance and Site Distribution	Revised section 402.1.
OTC	Ch 4 - Service Entrance and Site Distribution	Revised section 405.1.
OTC	Ch 4 - Service Entrance and Site Distribution	Revised section 405.5.6.
OTC	Ch 5 - Telecommunications Equipment Spaces	Revised section 501.2.
OTC	Ch 5 - Telecommunications Equipment Spaces	Revised section 502.3.
OTC	Ch 5 - Telecommunications Equipment Spaces	Revised section 502.5.
OTC	Ch 5 - Telecommunications Equipment Spaces	Revised section 504.1.1.
OTC	Ch 6 - General Telecommunications Cabling for Buildings	Revised chapter 6.
OTC	Ch 6 - General Telecommunications Cabling for Buildings	Revised section 605.2.
OTC	Ch 11 - Telecommunications for Residential Buildings	Revised chapter 11.
OTC	Ch 15 - General Telecommunications for Office Buildings	Revised chapter 15.
OTC	Ch 15 - General Telecommunications for Office Buildings	Revised section 1112.1.
OTC	Ch 16 - Telecommunications Equipment Spaces in Office Buildings	Revised chapter 16.
OTC	Ch 17 - Telecommunications Cabling for Office Buildings	Revised chapter 17.
OPSR 2 - Guide Specifications		
Division 06	061719 - Cross-Laminated Timber Panels	Added sections 1.4.D, 1.7, and 3.6.
Division 06	061800 - Glued-Laminated Construction	Added section 1.4.F, 1.8, and 3.5.
Division 08	087135 - Non-Security Door Hardware	Revised section 1.2.D - Keying Schedule.
Division 08	087135 - Non-Security Door Hardware	Revised sections 2.6.A, 2.6.B.1 and 2.6.C.4.

Document/ Section	Chapter	Change
Division 08	087155 - Security Door Hardware	Revised specification 087155-B Defense Attache suite hardware.
Division 08	088855 - Security Glazing	Revised specification.
Division 10	104415 - Fire-Protection Specialties	Revised specification.
Division 11	114000 - Food Service Equipment	Revised section 3.9.
Division 11	115700 - Shop Equipment	Revised Basis of Design models.
Division 11	115700 - Shop Equipment	Revised section 2.10.F
Division 11	117000 - Medical Equipment	Revised specification section 2.14 basis of design for surgical light.
Division 11	118126 - Window Washing and Fall Protection Accessories	Renamed specification.
Division 14	142105 - Electric Tractions Elevators	Revised language regarding combustible suspension.
Division 21	211305 - Fire Sprinkler Systems	Revised language in specification.
Division 21	211305 - Fire Sprinkler Systems	Revised reference standard in section 2.4.H.
Division 21	211305 - Fire Sprinkler Systems	Revised referenced codes.
Division 22	223230 - Potable Water Treatment	Revised language in specification.
Division 23	230905 - Instrumentation and Controls for HVAC	Revised language in section 1.2.B.
Division 23	230905 - Instrumentation and Controls for HVAC	Revised section 3.2.
Division 23	230905 - Instrumentation and Controls for HVAC	Revised specification section 1.2.F.
Division 23	230905 - Instrumentation and Controls for HVAC	Revised table 3.13.4 footnote to coordinate terminology.
Division 23	234105 - Air Filtration	Modified number of FCU filters to be provided.
Division 23	236427 - Air-Cooled, Rotary-Screw Water Chillers	Revised reference standards in 2.11.C.
Division 23	236427 - Air-Cooled, Rotary-Screw Water Chillers	Revised specification to require chilled water treatment startup.
Division 23	237315 - Central-Station Air Handling Units	Added designer notes to paragraph 2.2.
Division 23	237315 - Central-Station Air Handling Units	Added designer notes to specification.
Division 23	237315 - Central-Station Air Handling Units	Deleted requirement for davits.
Division 23	237315 - Central-Station Air Handling Units	Revised section 2.2.B.

Document/ Section	Chapter	Change
Division 23	237315 - Central-Station Air Handling Units	Revised specification regarding submittals.
Division 23	237315 - Central-Station Air Handling Units	Revised specification section 1.4.
Division 26	260525 - Grounding and Bonding for Electrical Systems	Clarified section 2.1.G regarding bonding requirements.
Division 26	260815 - Field Testing and Inspection Of Electrical Systems	Added sub-paragraph 3.1.C.
Division 26	262325 - Power Sequence Of Operation	Added paragraph 1.7.
Division 26	262325 - Power Sequence Of Operation	Added sub-paragraph 1.6.B.
Division 26	262725 - Wiring Devices	Revised requirements section 2.2.B.1.
Division 26	263214 - Engine Generators	Deleted section 1.2.A.2 to defer to generator manufacturer.
Division 26	263214 - Engine Generators	Revised reference standards in sections 1.2.A and 2.8.B.
Division 26	263214 - Engine Generators	Revised section 2.8.B ASTM references.
Division 26	263552 - Low-Voltage Automatic Voltage Regulators	Added designers note to clarify use.
Division 27	270508 - Common Work Results for Telecommunications	Revised specification.
Division 27	270526 - Grounding and Bonding for Communications Systems	Revised specification.
Division 27	270528 - Surface-Mounted Raceways for Communication Systems	Revised section 2.2.C.
Division 27	270553 - Identification for Communications Systems	Revised specification.
Division 27	270645 - Schedules for Audiovisual Systems	Revised specification.
Division 27	271113 - Communications Entrance Protection	Revised specification.
Division 27	271116 - Communications Cabinets and Frames	Revised specification.
Division 27	271119 - Communications Termination Blocks and Patch Panels	Revised specification.
Division 27	271123 - Communications Cable Management and Ladder Rack	Revised specification.
Division 27	271305 - Communications Backbone Cabling	Revised specification.
Division 27	271505 - Communications Horizontal Cabling	Revised language in section 2.2-A-2.
Division 27	271505 - Communications Horizontal Cabling	Revised specification.
Division 27	271543 - Communications Faceplates and Connectors	Revised specification.
Division 27	272129 - Data Communication Switches and Power Supplies	Revised specification.
Division 27	274100 - Audiovisual Systems General Requirements	Revised specification.

Document/ Section	Chapter	Change
Division 27	274114 - Architecturally-Integrated Audiovisual Elements	Revised specification.
Division 27	274117 - Projection Screens and Projector Lifts	Revised specification.
Division 27	275105 - Audio Systems for Consular Services	Revised specification.
Division 27	275118 - Sound Masking System	Revised language.
Division 27	275118 - Sound Masking System	Revised specification.
Division 27	275405 - Consular Queue Management System Infrastructure and Displays	Revised specification.
Division 28	284626 - Addressable Fire Alarm Systems	Revised referenced codes.
Division 32	323305 - Site Furnishings	Added new specification.
Division 33	337105 - Underground Ducts and Raceways	Revised section 2.5.
OPSR 3 - OBO Project Requirements		
All OPRs	N/A	Renumbered and renamed OPRs in a logical manner.
N/A	OPR 02 General	Added new specification.
N/A	OPR 02 General	Revised section 1208.6.6 regarding maximum guard both height.
N/A	OPR 02 General	Revised section 2-4.5.1.
N/A	OPR 02 General	Revised to provide 3m clearance.
N/A	OPR 04 Physical Security	Incorporated updated Red Book.
N/A	OPR 04 Physical Security	Incorporated updated Red Book.
N/A	OPR 09 Landscape (Formerly Site Design)	Added new specification.
N/A	OPR 09 Landscape (Formerly Site Design)	Added new specification.
N/A	OPR 09 Landscape (Formerly Site Design)	Added new specification.
N/A	OPR 09 Landscape (Formerly Site Design)	Revised OPR regarding pool deck material.
N/A	OPR 09 Landscape (Formerly Site Design)	Revised OPR.
N/A	OPR 09 Landscape (Formerly Site Design)	Revised section 2-7.2.9.1.
N/A	OPR 10 Architecture	Renamed section 2-1.2.3.

Document/ Section	Chapter	Change
N/A	OPR 10 Architecture	Revised language to include bumper guards in service corridors.
N/A	OPR 10 Architecture	Revised OPR regarding exterior finish materials.
N/A	OPR 10 Architecture	Revised OPR regarding finish flooring installation.
N/A	OPR 10 Architecture	Revised requirements regarding glass railings.
N/A	OPR 10 Architecture	Revised section 2-1.1.1-5 regarding fire pump room access.
N/A	OPR 10 Architecture	Revised section 2-1.2.3.3 regarding roof hatches.
N/A	OPR 10 Architecture	Revised section 3.1.1.1 regarding vision panels.
N/A	OPR 15 Water Feature	Added new OPR.
N/A	OPR 18 Mechanical	Revised OPR regarding equipment replacement.
N/A	OPR 18 Mechanical	Revised section 2.1.
N/A	OPR 18 Mechanical	Revised section 2-1.3 regarding filter trays.
N/A	OPR 18 Mechanical	Revised section 2-1.4.3 regarding area drains.
N/A	OPR 20 Fire Protection	Added sections 2-2 and 2-3.
N/A	OPR 26 Telecommunications and Audio Visual	Revised language in section 3.3.1.1 C.
N/A	OPR 26 Telecommunications and Audio Visual	Revised OPR.
N/A	OPR 31 Specifications Criteria	Added to Attachment D Standard Extra Material (Spare Parts).
N/A	OPR 31 Specifications Criteria	Aligned content with OBO Deliverable Requirements.

J.2.1

OBO International Building Code

OBO-ICS IBC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL BUILDING CODE (IBC)

The *OBO International Building Code Supplement* adopts the *2024 International Building Code (IBC)* and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted, as described. Sections named in the chapters below are amended or added by this supplement Remaining (unnamed) sections are adopted with no amendments, or not adopted, as described. Appendices are adopted, amended, added or not adopted as indicated.

CHAPTER 1 SCOPE AND ADMINISTRATION

101	General
102	Applicability
103	Authority Having Jurisdiction
104	Alternative Means of Compliance and Equivalencies
105	Permits
106	No amendments
107	Design Submittal Standards
108	Temporary Structures, Equipment and Systems
109	Not adopted
110	Not adopted
111	Certificate of Occupancy
112	Service Utilities
113	Not adopted
114	Not adopted
115	Not adopted
116	Not adopted

CHAPTER 2 DEFINITIONS

201	General
202	ICC Definitions
203	OBO Terms and Abbreviations

CHAPTER 3 OCCUPANCY CLASSIFICATION AND USE

301	No amendments
302	No amendments
303	Assembly Group A
304 – 309	No amendments
310	Residential Group R
311	No amendments
312	No amendments

CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

401	No amendments
402	Not adopted
403 - 405	No amendments
406	Motor-vehicle-Related Occupancies
407	No amendments

408 Not Adopted
409 No amendments
410 No amendments
411 Not Adopted
412 No amendments
413 No amendments
414 Hazardous Materials
415 No amendments
416 No amendments
417 Not adopted
418–427 No amendments
428 Not adopted
429 Physical Security
430 Information Technology
431 Technical Security
432 Staff Housing
433 Representational Housing

CHAPTER 5 GENERAL BUILDING HEIGHTS AND AREAS
501 – 504 No amendments
505 Mezzanines, Equipment Platforms and Catwalks
506 No amendments
507 No amendments
508 Mixed Use and Occupancy
509 No amendments
510 No amendments

CHAPTER 6 TYPES OF CONSTRUCTION
No amendments

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES
701 No amendments
702 No amendments
703 Fire-Resistance Ratings and Fire Tests
704 No amendments
705 Exterior Walls
706 No amendments
707 Fire Barriers
708 – 715 No amendments
716 Opening Protectives
717 Ducts and Air Transfer Openings
718 – 722 No amendments

CHAPTER 8 INTERIOR FINISHES
801 No amendments
802 No amendments
803 Wall and Ceiling Finishes
804 Interior Floor Finish
805 – 807 No amendments
808 Acoustical Ceiling Systems

CHAPTER 9 FIRE PROTECTION AND LIFE SAFETY SYSTEMS

901 No amendments
902 No amendments
903 Automatic Sprinkler Systems
904 No amendments
905 Standpipie Systems
906 Portable Fire Extinguishers
907 Fire Alarm and Detection Systems
908–910 No amendments
911 Fire Command Cente
912 No amendments
913 Fire Pumps
914–918 No amendments

CHAPTER 10 MEANS OF EGRESS

1001-1003 No amendments
1004 Occupant Load
1005 Means of Egress Sizing
1006-1008 No amendments
1009 Accessible Means of Egress
1010 Doors, Gates and Turnstiles
1011 Stairways
1012 No amendments
1013 Exit Signs
1014 Handrails
1015 Guards
1016 No amendments
1017 Exit Access Travel Distance
1018-1023 No amendments
1024 No amendments
1025 Luminous Egress Path Markings
1026 No amendments
1027 No amendments
1028 Exit Discharge
1029 No amendments
1030 No amendments
1031 Emergency Escape and Rescue
1032 No amendments

CHAPTER 11 ACCESSIBILITY

1101 General
1102-1112 Not adopted

CHAPTER 12 INTERIOR ENVIRONMENT
1201 No amendments
1202 No amendments
1203 Temperature Control
1204 No amendments
1205 No amendments
1206 Sound Transmission
1207 No amendments
1208 Interior Space Dimensions
1209-1211 No amendments

CHAPTER 13 ENERGY EFFICIENCY
1301 General

CHAPTER 14 EXTERIOR WALLS
1401 General
1402 Performance Requirements
1403 Materials
1404-1406 No amendments
1407 Exterior Insulation and Finish Systems (EIFS)
1408-1412 No amendments
1413 Exterior Wall Maintenance Equipment Requirements

CHAPTER 15 ROOF ASSEMBLIES AND ROOFTOP STRUCTURES
1501-1505 No amendments
1506 Materials
1507 Requirements for Roof Coverings
1508–1512 No amendments

CHAPTER 16 STRUCTURAL DESIGN
1601 General
1602 No amendments
1603 Construction Documents
1604 General Design Requirements
1605 Load Combinations
1606 No amendments
1607 Live Loads
1608 Snow Loads
1609 Wind Loads
1610–1612 No amendments
1613 Earthquake Loads
1614 No amendments
1615 Tsunami Loads
1616 No amendments
1617-1620 Reserved
1621 Seismic Design Requirements for Nonstructural Components
1622 Seismic Design Requirements for Seismically Isolated Structures
1623 Seismic Design Requirements for Structures with Damping Systems
1624 Blast Analysis and Design

CHAPTER 17 SPECIAL INSPECTIONS AND TESTS
1701–1703 No amendments
1704 Special Inspections and Tests, Contractor Responsibility and Structural Observation
1705–1709 No amendments

CHAPTER 18 SOILS AND FOUNDATIONS
1801 General
1802 No Amendments
1803 Geotechnical Investigations
1804 No amendments
1805 No amendments
1086 No amendments
1807 No amendments
1808 Foundations
1809 No amendments
1810 Deep Foundations

CHAPTER 19 CONCRETE
1901 General
1902 Coordination of Terminology
1903 Specifications for Tests and Materials
1904 Durability Requirements
1905 No amendments
1906 No amendments
1907 Slabs-On-Ground
1908 No amendments
1909 Concrete Quality, Mixing and Placing
1910 Details of Reinforcement
1911 Joint Requirements
1912 Modifications to ACI 318M

CHAPTER 20 ALUMINUM
No amendments

CHAPTER 21 MASONRY
No amendments

CHAPTER 22 STEEL
2201 General
2202 Structural Steel and Composite Structural Steel and Concrete
2203 No amendments
2204 Cold Formed Steel
2205–2214 No amendments

CHAPTER 23 WOOD
2301 General
2302–2309 No Amendments

CHAPTER 24 GLASS AND GLAZING
2401 No amendments

2402 No amendments
2403 General Requirements for Glass
2404 No amendments
2405 Sloped Glazing and Skylights
2406–2409 No amendments
2410 Blast Resistance Requirements

CHAPTER 25 GYPSUM BOARD, GYPSUM PANEL PRODUCTS AND PLASTER
No amendments

CHAPTER 26 PLASTIC
No amendments

CHAPTER 27 ELECTRICAL
No amendments

CHAPTER 28 MECHANICAL SYSTEMS
No amendments

CHAPTER 29 PLUMBING SYSTEMS
2901 No amendments
2902 Minimum Plumbing Facilities
2903 No amendments
2904 Emergency Showers & Eyewash Stations
2905 Irrigation of Interior Planting

CHAPTER 30 ELEVATORS AND CONVEYING SYSTEMS
3001 General
3002 Hoistway Enclosures
3003 Emergency Operations
3004 – 3009 No amendments

CHAPTER 31 SPECIAL CONSTRUCTION
3101 – 3104 No amendments
3105 Awnings and Canopies
3106 No amendments
3107 Signs
3108 No amendments
3109 Swimming Pools, Spas and Hot Tubs
3110–3112 No amendments
3113 Relocatable Buildings
3114 No amendments

CHAPTER 32 ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY
No amendments

CHAPTER 33 SAFEGUARDS DURING CONSTRUCTION
No amendments

CHAPTER 34 PHYSICAL AND TECHNICAL SECURITY REQUIREMENTS
3401 Administration
3402 Definitions & Abbreviations
3403 Physical and Technical Security I Requirement Table
3404 Primary (On-Compound) Facility Requirements: Chancery and Consulate
3405 Satellite (Off-Compound) Facility Requirements: USG as Sole Occupant
3406 Satellite (Off-Compound) Facility Requirements: Tenant of Commercial Office (TCO)
3407 Satellite (Off-Compound) Facility Requirements: Residential Housing (Multi-family) and Recreational (REC) Compounds
3408 Satellite (Off-Compound) Facility Requirements: Specially Designated Residences (SDR), Representational Residences and Staff Housing (SDA)
3409 Satellite (Off-Compound) Facility Requirements: Support Facilities and Unclassified Warehouse (WHE)
3410 Satellite (Off-Compound) Facility Requirements: American Broadcast Bureau (ABB) Relay Station
3411-3419 Reserved
3420 Special Use and Occupancy

CHAPTER 35 REFERENCED STANDARDS
Adopted with amendment

APPENDIX A Not adopted

APPENDIX B Not adopted

APPENDIX C Not adopted

APPENDIX D Not adopted

APPENDIX E Not adopted

APPENDIX F RODENT PROOFING
No amendments

APPENDIX G FLOOD-RESISTANT CONSTRUCTION
No amendments

APPENDIX H SIGNS
H101– H104 Not adopted
H105 Design and Construction
H106 Electrical
H107 Not adopted
H108 Animated Devices
H109 Not adopted
H110 Roof Signs
H111 Not adopted
H112 Not adopted
H113 Marquee Signs
H114– H116 Not adopted

APPENDIX I PATIO COVERS
No amendments

APPENDIX J GRADING
J101 – J105 Not adopted
J106 Excavations
J107 Fills
J108 – J111 Not adopted

APPENDIX K Not adopted

APPENDIX L EARTHQUAKE RECORDING INSTRUMENTATION
No amendments

APPENDIX M TSUNAMI-GENERATED FLOOD HAZARD
No amendments

APPENDIX N Not adopted

APPENDIX O Not adopted

APPENDIX P Not adopted

APPENDIX Q – V Reserved

APPENDIX W CORROSION-RESISTANT CONSTRUCTION
W101 General
W102 Referenced Corrosion-Resistant Requirements
W103 Corrosion Mitigation

APPENDIX X PHYSICAL SECURITY REFERENCE MATERIAL
X101 General
Attachment X1 Climb-Resistance Diagrams and Criteria
Attachment X2 Building Separation Diagrams
Attachment X3 Forced Entry Decorative Grille Criteria
Attachment X4 Permitted Locations for Office Compound Underground Parking

APPENDIX Y SECURITY DETAILS FOR BUILDING CONSTRUCTION
Y101 General

APPENDIX Z DESIGN CRITERIA FOR SECURITY LIGHTING
Z101 General

END OF IBC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

Delete section title and replace with the following:

SECTION 101
GENERAL

Delete and replace Section 101.1 with the following:

101.1 Title. The *OBO Building Code*, herein referred to as "this code" adopts the *2024 International Building Code* (IBC) as amended by the OBO International Building Code Supplements (OBO-ICS IBC).

101.1.2 Model Code Supplements. Supplements to the International Building Code prepared by the International Code Council are not adopted by OBO. The version dated August 2023 is adopted.

101.1.3 Additional model codes adopted and amended by OBO. OBO adopts the following additional model codes as amended by the 2026 OBO International Code Supplements (OBO-ICS).

101.1.3.1 OBO Existing Building Code. The *OBO Existing Building Code* adopts the provisions of the *2024International Existing Building Code* (ICC IEBC) version dated August 2023 as amended by the OBO International Existing Building Code Supplements (OBO-ICS IEBC).

101.1.3.2 OBO Fire Code. The *OBO Fire Code* adopts the provisions of the *2024 International Fire Code* (ICC IFC) version dated October 2023 as amended by the OBO International Fire Code Supplements (OBO-ICS IFC).

101.1.3.3 OBO Mechanical Code. The *OBO Mechanical Code* adopts the provisions of the *2024 International Mechanical Code* (ICC IMC) version dated May 2024 as amended by the OBO International Mechanical Code Supplements (OBO-ICS IMC).

101.1.3.4 OBO Plumbing Code. The *OBO Plumbing Code* adopts the provisions of the *2024 International Plumbing Code* (ICC IPC) version dated June 2023 as amended by the OBO International Plumbing Code Supplements (OBO-ICS IPC).

101.1.3.5 OBO Residential Code. The *OBO Residential Code* adopts the provisions of the *2024 Residential Code* (ICC IRC) version dated May 2024 as amended by the OBO International Residential Code Supplements (OBO-ICS IRC).

101.1.3.6 OBO Swimming Pool & Spa Code. The *OBO Swimming Pool & Spa Code* adopts the provisions of the *2024 International Swimming Pool & Spa Code* (ICC ISPSC) version dated July 2023 as amended by the OBO International Swimming Pool & Spa Code Supplements (OBO-ICS ISPSC).

101.1.3.7 OBO Zoning Code. The *OBO Zoning Code* adopts the provisions of the *2024 International Zoning Code* (ICC IZC) version dated July 2023 as amended by the OBO International Zoning Code Supplements (OBO-ICS IZC).

101.1.3.8 OBO Electrical Code. The *OBO Electrical Code* adopts the *2020National Electrical Code* (NFPA-NEC) Effective date 8/25/2019 including Amendments 1-17 dated 4/12/2022as amended by the OBO National Electrical Code Supplements (OBO-ICS NEC).

101.1.3.8.1 NFPA supplements. NFPA supplements to the NEC are not adopted by OBO.

101.1.3.9 OBO Telecommunications Code. The *OBO Telecommunications Code* developed and adopted by OBO is referred to as the OBO-OTC.

101.1.4 Additional model codes adopted without amendment by OBO. The following International Code Council Codes are adopted without amendment by OBO.

101.1.4.1 OBO Fuel Gas Code. Provisions of the *2024 International Fuel Gas Code* (IFGC) version dated October 2023 are adopted in full.

101.1.4.2 OBO Private Sewage Disposal Code. Provisions of the *2024 International Private Sewage Disposal Code* (IPSDC) version dated July 2023 are adopted in full.

101.1.5 Model codes not adopted by OBO. The following International Code Council Codes are not adopted by OBO.

101.1.5.1 Provisions of the *International Electrical Code* (IEC) are not adopted. Refer to Section 101.1.3.8 for the OBO adopted model electrical code.

101.1.5.2 Provisions of the *International Energy Conservation Code* (IECC) are not adopted except as noted in OBO-ICS IBC Chapter 13 and OBO-ICS IRC Chapter 11.

101.1.5.3 Provisions of the *International Property Maintenance Code* (IPMC) are not adopted.

101.1.5.4 Provisions of the *International Wildland-Urban Interface Code* (IWUIC) are not adopted.

101.1.5.5 Provisions of the *International Performance Code* for Buildings and Facilities (ICCPC) are not adopted.

101.1.5.6 Provisions of the *International Green Construction Code* are not adopted.

101.1.5.7. Provisions in the appendices in each ICC Model Code shall not apply unless specifically adopted. The OBO-ICS "Table of Contents" for each code indicates which ICC I-Code Appendixes are adopted and/or amended by OBO.

101.1.6 Code references. All references within this code to other chapters or sections without specific reference to a different code shall refer to OBO-ICS IBC. Where IBC is specifically referenced, it shall mean the ICC model code. Where other codes refer to chapters or sections without a specific code name, it shall refer to chapters or sections within that code as adopted by OBO.

Delete and replace Section 101.2 with the following:

101.2 Scope. The provisions of this code must apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building, structure, or any appurtenances connected or attached to such buildings or structures.

101.2.1 The provisions of this code must apply to all Marine Security Guard Residences (MSGRs).

101.2.2. The provisions of this code must apply to on-compound staff housing not classified as detached one- and two-family staff dwellings or multiple single family staff dwellings (townhouses) not more than three stories above grade plane in height.

101.2.3 The provisions of this code must apply to on-compound and off-compound representational housing in accordance with Section 433.

101.2.4 The provisions of this code must apply to all high-rise housing in accordance with IBC Section 403.

101.2.5 Detached one- and two-family staff dwellings and multiple single family staff dwellings (townhouses) not subject to blast requirements and not more than three stories above grade plane in height with a separate means of egress and their accessory structures must comply with the *OBO Residential Code* (OBO-ICS IRC).

Exception. The provisions of this code must apply to on-compound staff housing in accordance with Section 432

Delete and replace Section 101.4 with the following:

101.4 Referenced codes. The other codes listed in Sections 101.1 and referenced elsewhere in this code shall be considered part of the requirements of this code as prescribed at each such reference.

Add the following Sections 101.5 through 101.7:

101.5 Effective date of the *OBO Building Code*. The OBO-ICS is effective October 1, 2025.

101.5.1 Limitations of effective code for inactive projects. Projects that have a delay, either planned or unintentional of more than 24 months during any phase of the design, including but not limited to, during bridging, between bridging and design build, during design, or between design completion and the solicitation of offers for construction must be re-evaluated to determine if any design revision is necessary due to changes in criteria (including codes, standards (OBO Project Requirements (OPR)), and specifications) or site infrastructure based on the current edition of the OBO Project Standard Requirements (OPSR) when the design is continued. Note: The evaluation must include the differences between the OBO Project Standard Requirements utilized during the design and the current OBO Project Standard Requirements at the time the design is continued.

101.6 Host country codes and standards. Currently adopted editions and supplements of the Host Country's local building codes, including zoning requirements and product standards, as of the contract date are also applicable to the building project In cases where the Host Country's codes and standards are more stringent or conflicting, the contractor must submit an RFI to the Contracting Officer (COR) for resolution.

101.7 Marginal markings indicating updates. Solid vertical lines in the margins within the body of the supplement indicate a deletion, change, or an addition from the technical requirements of the previous edition of the OBO Code.

SECTION 102
APPLICABILITY

Delete and replace Section 102.6 with the following:

102.6 Existing structures. The occupancy of any structure existing on the date of adoption of this code must be permitted to continue without change, except as otherwise specifically provided in this code, the *OBO Existing Building Code* (OBO-ICS IEBC), or the *OBO Fire Code* (OBO-ICS IFC), or as is deemed necessary by the Authority Having Jurisdiction (AHJ) for the general safety and welfare of the occupants.

Delete and replace Section 102.6.2 with the following:

102.6.2 Building previously occupied. The occupancy of any structure existing on the date of adoption of this code must be permitted to continue without change, except as specifically covered in this code, the *OBO Fire Code* (OBO_ICS IFC), or as is deemed necessary by the Authority Having Jurisdiction (AHJ) for the general safety and welfare of the occupants and the public.

Delete and replace section 103 in its entirety with the following:

SECTION 103

AUTHORITY HAVING JURISDICTION

103.1 Creation of Enforcement Office. The OBO Office of Design and Engineering (OBO/PDCS/DE) shall be the "Authority Having Jurisdiction" (AHJ) unless noted otherwise with the code. The Office Director of the OBO Office of Design and Engineering shall serve as the 'code official'.

103.2 Appointment. The Office Director of the OBO Office of Design and Engineering shall appoint 'building officials' as deemed necessary for enforcement of this code. While final authority rests with the code official, the building official may review and approve technical information on behalf of the AHJ.

103.3 USAID managed property. USAID's Overseas Management Support Office in the Bureau for Management, USAID/Washington (USAID/W - M/OMS) shall be the Authority Having Jurisdiction for USAID-managed property only.

103.4 Code official. Where used in this code, the term "code official" shall be defined as the "authority having jurisdiction"

103.5 Official Records The AHJ shall keep official records as required by the law or for as long as the building or structure to which such records relate remain in existence.

Delete and replace section 104 in its entirety with the following:

SECTION 104
ALTERNATE MEANS OF COMPLIANCE AND EQUIVALENCIES

104.1 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved by the AHJ.

104.1.1 Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, must consist of valid research reports from approved sources.

104.1.2 Tests. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the AHJ shall have the authority to require tests as evidence of compliance to be made without expense to the jurisdiction. Test methods must be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the AHJ must approve the testing procedures. Tests must be performed by an approved agency. Reports of such tests must be retained by the AHJ for the period required for retention of public records.

104.2 Approval of alternative means of compliance and equivalencies. Alternative means of compliance and/ or equivalencies proposed must be approved by the AHJ prior to incorporation into the Contract Documents.

Requests for approval must include pertinent data required to adequately describe proposed change and all of the following:

Written justification for the deviation from established criteria and demonstration that the proposed alternative solution provides not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability, and safety.

Hazard analysis, compensatory features, comparative cost analyses (first cost and life cycle cost), criteria used.

Lack of funds will not be considered or accepted as justification for an alternate means of compliance.

OBO approval of equivalencies and alternatives is applicable only on a project-specific building-specific basis. Such approval shall not constitute blanket approval for any other case.

104.2.1 Equivalencies documentation. Complete documentation of approved equivalences must be included in the Issue for Construction design package and provided on the drawings for all submissions including Issue for Construction and As-Built.

104.3 Approved materials and equipment. Materials, equipment and devices approved by the AHJ shall be constructed and installed in accordance with such approval.

104.3.1 Material and equipment reuse. Materials, equipment and devices shall not be reused unless such elements are in good working condition and approved by the AHJ.

SECTION 105
PERMITS

Delete and replace section 105 in its entirety with the following:

105.1 Required. Post or proponent must make application to the Authorities Having Jurisdiction (AHJ) and obtain the required permit for the types of post actions listed below that involve U.S. Government-owned/long-term leased (GO/LTL) real property, regardless of cost or funding source.

105.1.1 Types of projects requiring the issuance of a permit. Post or proponent must obtain a permit prior to commencement of any new construction, renovation, remodeling, or temporary building work. Permits are also required for the following types of projects including, but not limited to:

1. Demolition of structures or other facilities.

2. Interior structural alterations.

3. Interior alterations affecting space functions or design.

4. New, relocated or substantially altered driveways, walls, parking areas, landscaping, or other exterior works.

5. Removal, replacement, or alteration of structural support members, (e.g., beams, trusses, columns, and load-bearing walls, including cutting new openings in load-bearing walls). Replacement of, or alterations to, roof, roof structure, including placement or erection of any structures, equipment, or devices on the roof.

6. Excavation below, or adjacent to, existing buildings and wall foundations. Construction of any facility or placement of any heavy equipment on roofs or on balconies.

7. Repairs due to structural failures, except temporary emergency repairs. Removal, replacement, or alteration of structural support members, (e.g., beams, trusses, columns, and load-bearing walls, including cutting new openings in load-bearing walls).

8. Changes made to any relocatable structure (e.g., modular, prefabricated units or shipping containers), whether occupied or not, to be used for purposes other than their originally intended and authorized use.Excavation below, or adjacent to, existing buildings and wall foundations.

9. Replacement of, or alterations to, roof, roof structure, including placement or erection of any structures, equipment, or devices on the roof.Repairs due to structural failures, except temporary emergency repairs.

10. Construction of any facility or placement of any heavy equipment on roofs or on balconies.

11. Procurement, placement, or construction of relocatable structures, to include modular or prefabricated units, or shipping containers.

12. Alteration of a space which would affect ADA/ABA compliance.

13. Repairs or modifications to fire protection systems or life safety features.

14. Maintenance, conservation, alteration and/or additions to heritage structures and associated architecturally or culturally significant features.

105.2 Validity of permit. The issuance or granting of a permit must not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of this jurisdiction shall not be valid. The issuance of a permit based upon construction documents and other data shall not prevent the building official from requiring the correction of errors in the construction documents and other data. The building official is also authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

SECTION 107

CONSTRUCTION DOCUMENTS **Delete and replace section 107.1 with the following:**

107.1 General. Submittal documents consisting of *construction documents*, statement of *special inspections*, geotechnical reports, and other information specific in Section 107 must be submitted. This requirement applies to Post-Managed projects and OBO permitted projects. For all other projects, see individual project deliverable requirements and scopes of work.

Delete and replace section 107.2.1 with the following, but retain the remaining subsections.

107.2.1 Information on construction documents. *Construction documents* must be of sufficient clarity to indicate the location, nature, and extent of the work proposed and show in detail that it will conform to the provisions of this code as determined by the *authority having jurisdiction.*

Delete and replace section 107.3 in its entirety with the following:

107.3 Code analysis. The registered design professional shall provide code analysis of the applicable requirements of this code and host country code(s) for each building and for site. Each code analysis must identify the following information at the beginning of the analysis on each discipline drawing set and on any code analysis reports:

1. Identify OBO Project Standard Requirements (OPSR) version used for project: 20XX OBO Project Standard Requirements.

2. Identify Code version required by the OBO Project Standard Requirements used for project: 20XX OBO Code.

3. Identify referenced Codes used for project as identified in Section 101.4 Referenced Codes.

4. Identify the base ICC Code version required for project as identified in Section 101.1 Title.

107.3.1 Analysis format. Analysis format must be consistent with the International Code Council - Plan Review Record for new construction or major renovations / additions.

Exception. Other code analysis forms may be used if approved in advance by the COR.

107.3.2 OBO-unique analysis requirements. Due to OBO security requirements that have unique effects upon life-safety and minimum plumbing facilities in buildings, provide the following code analysis on drawings for all buildings submitted for schematic design and every submittal thereafter:

107.3.2.1 Life safety. Plans must include locations and ratings of fire-resistive construction; occupant loads; egress components; egress capacities and utilization; exit remoteness; common path of travel distances; exit access travel distances; dead end distances; egress from safe havens and safe areas; all equivalencies in accordance with Section 104.1; and any other life safety features determined to be significant by OBO/OPS/FIRE or the Qualified Fire Protection Engineer.

107.3.2.2 Special walls. Plans must include locations of security hardline walls and doors and indicate security ratings. Refer to OBO-ICS IBC Chapter 34.

107.3.2.3 Plumbing fixture count code analysis. Architect must provide the following to demonstrate that adequate numbers of plumbing fixtures complying with OBO-ICS IBC Chapter 29 have been incorporated into each building, on each floor, and within PAA and GWA areas separated by hardlines.

1. Floor plans for each floor must show special walls, occupant load for each occupancy use group, maximum distance to plumbing facilities, toilet room layouts, and plumbing fixture counts.

2. Table on each floor plan demonstrating that adequate number of plumbing fixtures have been incorporated on each floor and within PAA and GWA area separated by hardlines.

107.3.2.4 Analysis submittals. Drawings required by Sections 107.3.1 through 107.3.2.3 must be packaged together in submittal to facilitate review.

Delete and replace section 107.4 with the following:

107.4 Professional seals and signatures. Affix proper seals and signatures by registered design professional(s), for permit submission and / or design issued for construction phases, in accordance with the following:

107.4.1 A registered design professional must sign and seal each drawing, specification cover sheet(s), report or calculation cover sheet(s), or other documents that are required to be signed and sealed only if the following requirements are met:

107.4.1.1 The design professionals must possess valid, current, professional registration issued in the United States or host country.

Exception: Where host country design professionals are not available, documents may be signed and sealed by third-country design professionals with licensure and/or expertise acceptable to the host country for local permitting, subject to the approval of the *authority having jurisdiction*.

107.4.1.2 The registered design professional is competent in the subject matter of those documents by virtue of education or experience, or both.

107.4.1.3 The registered design professional has served in one of the following roles in the project:

1. Personally prepared the documents: had direct technical knowledge and responsible control over the content of technical submissions during their preparation.

2. Approved the documents: performed substantive review and authority to make revisions with regard to the preparation of submissions.

107.4.2 Life safety, fire protection, and fire alarm submittals and verification requirements.

107.4.2.1 Qualified fire protection engineer (QFPE) project requirements. The QFPE must be responsible for the design and execution of the fire protection and life safety systems, including, but not limited to, building code analysis; life safety code analysis; design of automatic fire alarm, detection, and suppression systems; water supply analysis, and commissioning for the entire project.

107.4.2.2 All life safety, fire protection, and fire alarm, submittals for the project must be prepared, coordinated, and signed and sealed by a qualified fire protection engineer (QFPE.) Submittals include, but are not limited to, all life safety, fire protection, fire alarm drawings, code analysis, specifications, reports, calculations, and all other documents related to these systems. All design and shop drawings must identify how the design density was determined and any limitations to the storage arrangements based on the sprinkler system design.

107.4.2.3 Design compliance certification. The QFPE must provide signed and sealed written documentation at the 100 percent design submittal that the fire protection systems are in compliance with applicable codes, fire protection and life safety design criteria. The documentation must verify that all items listed in the design analysis are correctly shown on the Contract Documents, and list any approved equivalencies utilized in accordance with OBO-ICS IBC Section 104.

SECTION 108
TEMPORARY STRUCTURES, EQUIPMENT AND SYSTEMS

Delete and replace section 108 in its entirety with the following:

108.1 Required. Posts must make application to the Authorities Having Jurisdiction and obtain the required permit for temporary structures, regardless of cost or funding source. Such permits must be limited as to time of service but must not be permitted for more than 180 days.

108.1.1 Non-permanent facilities. Refer to Section 3103 for provisions related to non-permanent facilities.

108.1.2 Authorities Having Jurisdiction.

1. The Bureau of Overseas Buildings Operations (OBO/PDCS/DE).

2. USAID's Overseas Management Support Office in the Bureau for Management, USAID/Washington (USAID/W - M/OMS).

Delete sections 109 through 110in their entirety.

SECTION 111
CERTIFICATE OF OCCUPANCY

Delete and replace section 111 in its entirety with the following:

111.1 Use and occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the *authority having jurisdiction* has issued a certificate of occupancy therefore as provided herein. Issuance of a certificate of occupancy must not be construed as an approval of a violation of the provisions of this code or other conditions of the contract.

Exception. Certificates of occupancy are not required for work exempt from permits under Section 105.

111.2 Certificate issued. OBOwill issue a certificate of occupancy after the following items are received:

111.2.1 Upon completion of construction, the Project Director or occupying office must provide attestation to OBOthat the project was completed in accordance with the permitted documents.

111.2.2 Provide one set of hardcopy and one set of electronic as-built documents to OBO

111.3 Temporary occupancy. The *authority having jurisdiction* is authorized to issue a temporary certificate of occupancy before completion of the entire work covered by the permit, provided that such portion or portions must be occupied safely. The authority having jurisdiction must set a time period during which the temporary certificate of occupancy is valid.

111.4 Revocation. The *authority having jurisdiction* is authorized to, in writing, suspend or revoke a certificate of occupancy or completion issued under the provisions of this code wherever the certificate is issued in error, or on the

basis of incorrect information supplied, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

SECTION 112
SERVICE UTILITIES

Delete and replace section 112 in its entirety with the following:

112.1 General. Refer to OBO-ICS IZC Chapter 8 for requirements.

Delete sections 113 through 116 in their entirety. .

END OF CHAPTER IBC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

Delete and replace section 201 in its entirety with the following:

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

201.3 Terms not defined. Where terms are not defined through the methods authorized by this chapter, such terms shall have ordinarily accepted meanings such as the context implies.

Replace section 202 title with the following:

SECTION 202
ICC DEFINITIONS

Replace definitions of the terms below with the following:

ACCESSIBLE. (1) A site, building, facility, or portion thereof that complies with the requirements of the Architectural Barriers Act (ABA) for accessibility to sites, facilities, buildings and elements by individuals with disabilities as identified in Section 1101. (2) In reference to building exterior walls/windows and compound perimeter walls, anything located less than the distances identified for security purposes in the OBO Codes.

HISTORIC BUILDINGS. See "Culturally Significant Buildings" in Section 203.

HURRICANE PRONE REGIONS. Post locations vulnerable to hurricanes, cyclones, and typhoons; identified in Table 1609 by wind speed values bolded and italicized.

Add the following section 203:

SECTION 203
OBO TERMS, ACROMYNS, AND ABBREVIATIONS

203.1 OBO security terms and definitions. Refer to OBO-ICS IBC Chapter 34 for security definitions.

203.2 OBO terms and definitions.

ACCESSIBLE. (1) A site, building, facility, or portion thereof that complies with the requirements of the Architectural Barriers Act (ABA) for accessibility to sites, facilities, buildings and elements by individuals with disabilities as identified in Section 1101. (2) In reference to building exterior walls/windows and compound perimeter walls, anything located less than the distances identified for security purposes in the OBO Codes.

AHJ. See Authority Having Jurisdiction

ANTI-CLIMB. Label of a wall or fence that inhibits climbing and conforms to OBO Codes for security purposes. See Climb-Resistant.

ARSO. Assistant RSO.

AUTHORITY HAVING JURISDICTION (AHJ). (1) Governmental agency which regulates the construction process. (2) For Department of State projects, the Office of Design and Engineering (OBO/PDCS/DE) in the OBO Program Development, Coordination, and Support Directorate, is the Authority Having Jurisdiction. Refer to OBO-ICS IBC Chapter 1, Authority Having Jurisdiction.

BLOCKING AND STACKING. Blocking and Stacking is the process of configuring a building's office and floor adjacency relationships to ensure that common boundaries between areas with differing security requirements do not create unacceptable physical or technical security vulnerabilities.

BOLLARD. Concrete-filled steel pipes used to channel or restrict vehicular traffic.

BUILDING OFFICIAL Refer to OBO-ICS IBC Section 103 Authority Having Jurisdiction

CAC. Compound Access Control.

CAG. Cleared American Guard.

CLAN. Classified Local Area Network.

CLEARED AMERICAN ESCORT (CAE). Locally Employed, Cleared U.S. Citizen who has been provided suitable training in relevant construction surveillance procedures.

CLEARED AMERICAN GUARD (CAG). Cleared U.S. citizen (Top Secret), who is selected, trained, and assigned to Project for purpose of protecting security integrity of site, building, materials, furniture, fixtures, equipment, and other items scheduled for inclusion in controlled access area(s) (CAA).

CLEARED U.S. CITIZEN. U.S. citizen possessing current validated security authorized by the Project Director/COR to be at the Final Construction Site, Support Site, and any Secure Storage Area (SSA).

CMPD. Compound.

CMR. Chief of Mission's Residence. The official, private residence of the United States Ambassador and family in a foreign country.

COB. Consulate Office Building – Existing.

CODE OFFICIAL. Refer to OBO-ICS IBC Chapter 1, Authority Having Jurisdiction.

COMPOUND. The portion of an individual site for group of Department overseas buildings within the primary security enclosure of the site.

COMPOUND ACCESS CONTROL (CAC). System of gates, barriers, and guard booths, used to pre-screen personnel and vehicles entering a secure perimeter.

COMPROMISE. Unauthorized disclosure of classified information, or unauthorized access to secured products/materials/equipment.

CONSEC. Construction surveillance procedures.

CONSTRUCTION SECURITY PLAN (CSP). Project specific security plan developed by the USG to ensure that construction activities are undertaken in manner consistent with applicable USG regulations.

COR Contract Officer of Record

CSP. Construction Security Plan.

CST. Construction Surveillance Technician.

CULTURALLY SIGNIFICANT BUILDINGS. Buildings designated by the Department of State as historically, architecturally, or culturally significant in The Secretary of State's Register of Culturally Significant Property.

DEAL TRAY. The subassembly of a transaction window which enables routine passage of materials of limited size between sides of the window.

DS. Diplomatic Security, Bureau of.

EOB. Existing Office Building – Other (other than an OBC, COB, or OBX).

FINISH WORK. Work, other than general construction as defined below, including insulation, partition/ceiling systems, finishes, cabinet work, conveyor systems, specialties, building furnishings/fixtures/equipment, and mechanical/electrical services and equipment including those specialized for fire protection, security, communication, control, utility optimization, safety, comfort, convenience, and similar purposes.

FLYING FRAGMENTS. Fragments generated by the destruction of "unhardened" (not blast-resistant) features such as perimeter walls, adjacent structures, sunscreens, veneers, ornaments, exposed mechanical, electrical equipment, etc.

GENERAL CONSTRUCTION. Construction activity for completion of building foundations, structure, and enclosure or shell. Utility work that penetrates the exterior plane of the building and the installation of doors, windows and façade work are not considered general construction. Any reinforcement work done to increase load-bearing capacity in existing buildings is not considered general construction.

GENERAL WORK AREA (GWA). 1) Areas of building in which access by the public is restricted; 2) Work space occupied by U.S. citizen and Locally Employed Staff (LES) personnel in which Sensitive But Unclassified (SBU) information may be handled, stored, discussed, or processed. Examples include administrative and consular offices.

HAZARD. Potential interaction between people, equipment, material, or environment which could result in damage to property or equipment, disruption of mission, contamination of environment, or substantial personal injury resulting in time loss.

INTERIM FACILITY. (See definition for temporary facility.)

MSG. Marine Security Guard. U.S. guard force employed at Posts to protect Diplomatic facilities and personnel.

MSG-1. See Post One.

MSGR. Marine Security Guard Residence.

NCOIC. Non-Commissioned Officer in Charge of the Marine detachment at a Post; Senior Marine at a Post, see Detachment Commander.

NEW OFFICE ANNEX (NOX). In terms of physical security for overseas U.S. Government (USG) facilities, a new office annex (NOX) is an office building constructed on an existing compound by or on behalf of USG.

NEW OFFICE BUILDING (NOB). In terms of physical security for overseas U.S. Government (USG) facilities, a new office building (NOB) is an office building or compound constructed by or on behalf of USG which was at the 35% design development stage subsequent to June 1991.

NEWLY ACQUIRED BUILDING (NAB). In terms of physical security for overseas USG facilities, a newly acquired building (NAB) is an office building or compound not constructed by or on behalf of USG which was acquired by purchase, lease, or other means, subsequent to June 1991.

RELOCATABLE BUILDINGS . Structures designated by OBO intended for occupancy for a period greater than 180 days and not to exceed five years.

OBC. Office Building Chancery – Existing.

OBX. Office Building Annex – Existing.

PCC. Post Communications Center. An area within the Chancery or Consulate where post communication activity takes place.

PERIMETER. The outermost area over which the post has control and is normally defined by the property line.

PERIMETER BARRIER. A wall, fence, structure, or a natural topographic feature which provides protection to the compound. The outer defensive tier of the compound.

POST ONE. Marine security guard location generally staffed on a 24-hour basis. Post One is the primary guard booth for a DOS facility and is normally located at the main entrance security screening area to a diplomatic facility. Secondary guard booths at the same facility will be designated as Post Two, Post Three, etc., and are staffed by MSGs, CAGs, local guards, or receptionists. Also known as "MSG-1" and "Guard Post 1."

PUBLIC OFFICE FACILITY. Facility which exists for use of public functions such as libraries and cultural centers. It is located in a commercial or residential building not collocated with the chancery or consulate. No classified material is maintained. U. S. Government may or may not be sole occupant.

QUALIFIED FIRE PROTECTION ENGINEER (QFPE). An individual who is a registered professional engineer (P.E.), who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveying (NCEES) and has relevant fire protection engineering experience.

RANDOM PROCUREMENT. An approved method whereby vendor is selected at random from among number of possible vendors. The required quantity of items is procured and taken to Controlled Access Area(s) (CAA) or secure storage area (SSA), without vendor's prior knowledge of intended procurement, and without referrals to or from vendor.

RANDOM SELECTION. A process in which a limited percentage of materials, originally procured without security restriction for non-specific common use, are randomly selected upon receipt of bulk shipment materials for specific use in Controlled Access Area(s) (CAA).

RAW MATERIALS. Unfinished materials, normally unprocessed natural materials, and non-fabricated products, for use in construction, manufacture, or assembly of building components. Examples include water, aggregate, sand, and cement/gypsum/lime.

RESTRICTED AREA. Those areas of the CAA where unescorted access is limited to authorized U. S. citizen personnel possessing at least a SECRET clearance. Uncleared personnel must be under the continuous escort of appropriately cleared U.S. citizen personnel.

RSO. Regional Security Officer.

SCC. Security control center.

SDA. Staff Officer's Residence. (Derived from obsolete term "Staff Diplomatic Apartment".)

SECURITY CONTROL CENTER (SCC). A base of operations at a limited number of Posts similar to Post One but serving multiple compounds at the Post.

SIC. Systems Interface Cabinet. Archaic term for primary TSS cabinets located within space now designated as electrical-closet (EC) Room or sub-EC Rooms.

SITE SECURITY MANAGER (SSM). Designated USG representative responsible to the Project Director/COR for all site security matters involving CAA construction projects.

SLAB-ON GRADE. Also referred to as slab-on-ground.

SOLE OCCUPANT OF BUILDING/COMPOUND. Stand-alone facility (not a Chancery/Consulate) on its own compound or in a commercial office building with U. S. Government (USG) as sole occupant. May hold a limited amount of classified material and hosts a limited number of tenant agencies (USIA, Agriculture, Commerce, and USAID).

SPALL/SPALLING. Target or bullet material which is broken free due to ballistic impact and projected into the surrounding area.

SSM. Site Security Manager (an on-site officer responsible for security matters related to construction).

SSO. Senior Security Officer in charge.

TEMPORARY FACILITIES. Structures erected for a period of less than 180 days. See also Relocatable Buildings.

TENANT OF COMMERCIAL OFFICE SPACE (TCO). Chief of Mission facility (not a chancery or consulate) located in a commercial office building with non-U.S. Government organizations and has no control over access to the building.

TACTICAL OPERATION CENTER (TOC). Room or suite of rooms located at Posts that warrant enhanced situational awareness and command capabilities to handle crises.

UN-CLEARED WORKER. Any worker, including U.S. Citizen, who does not possess Bureau of Diplomatic Security (DS)-approved security clearance.

UNCONTROLLED (AREA). Any area outside the PAC or an area controlled by measures that can be circumvented surreptitiously or forcibly.

UNRESTRICTED PROCUREMENT. The acquisition (purchase and shipment) of any material for use on Project without security control or safeguard.

VAULT. A space constructed to enclose and safeguard sensitive material or operations.

END OF CHAPTER 2 AMENDMENTS

CHAPTER 3
OCCUPANCY CLASSIFICATION AND USE

SECTION 303
ASSEMBLY GROUP A

Add the following to the list in section 303.3 Group A-2:

"Representational spaces in on-compound and off-compound representational housing in accordance with Section433."

SECTION 310
RESIDENTIAL GROUP R

Add the following to the list in section 310.3 Group R-2:

"Marine Security Guard Residence (MSGR)"

Add the following to the list in section 310.4 Group R-3:

"Chief of Mission Residence (CMR)"

END OF CHAPTER IBC-3 AMENDMENTS

CHAPTER 4
SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

SECTION 406
MOTOR-VEHICLE-RELATED OCCUPANCIES

Revise the second sentence of the following Subsection:

406.2.4 Floor surface.

"The area of the floor used for parking of automobiles or other vehicles, must be sloped a minimum of 1% to provide positive drainage of liquids to drains or toward the main vehicle entry doorway."

Add the following subsection 406.5.12:

406.5.12 Automatic sprinkler system. Where electric vehicle parking stations are provided, an open parking garage must be equipped with an *automatic sprinkler system* in accordance with OBO-ICS IBC Section 903.2.

SECTION 414
HAZARDOUS MATERIALS

Add the following subsection 414.1.4:

414.1.4 Chlorine. Where the term "chlorine" is used in OBO Codes, OBO Guide Specifications, and OBO Project Requirements, chlorine form must be liquid hypochlorite. Chlorination equipment must utilize liquid hypochlorite in lieu of solid chlorine tablet form due to risks associated with transportation of solid tablet form.

Exception. Where locally available and approved for use on a case-by-case basis by OBO/PDCS/DE/ME.

Add the following subsection after 414.5.3 Spill control, drainage and containment:

414.5.3.1 Fuel oil containment. Provide spill control and secondary containment at all generator and diesel-powered fire pump rooms or areas.

Add the following section 414.7:

414.7 Toxic Materials.

414.7.1 New use. Toxic materials are not permitted in the design of new buildings or renovations of existing buildings, including but not limited to the following materials:

1. Asbestos Containing Materials (ACM).
2. Lead and lead-bearing paint.
3. Polychlorinated Biphenyls (PCB).
4. Ethylene glycol.

5. Mercury.

414.7.2 Abatement. Unless directed otherwise in writing by OBO/CFSM/FM through the COR, construction contractors must not perform abatement of hazardous materials.

If a construction contractor encounters hazardous or toxic materials, they must contact the COR. Abatement procedures will be contracted to a separate contractor under the direction of OBO, with coordination by OBO/CFSM/FM.

SECTION 429
PHYSICAL SECURITY REQUIREMENTS FOR OCCUPANCIES

429.1 General physical security. Refer to Chapter 34.

SECTION 430
INFORMATION TECHNOLOGY

430.1 General requirements for wireless technology on office compounds. Wireless equipment and devices on office compounds must comply with the following.

430.1.1 Permitted locations for use of WLAN. Refer to OBO OTC for requirements.

430.1.1.1 Prohibited Wi-Fi capable mechanical equipment. Mechanical equipment, components, and devices are not permitted to be Wi-Fi capable, refer to OBO-ICS IMC Chapter 3.

430.2 Permitted devices. GFE, Internet of thing (IoT) devices like light fixture, refrigerator, microwave ovens, etc. When this equipment has Wi-Fi or Bluetooth capability, it shall be disabled in CAA spaces.

Exception. Mechanical equipment, components, and devices are prohibited from being wireless capable. Refer to OBO-ICS IMC Chapter 3.

430.3 Installation of Wi-Fi capable equipment and devices. Disable all Wi-Fi prior to installation within all Wi-Fi-enabled installed equipment (e.g., light fixtures, etc.) or devices (e.g., refrigerators, microwaves, etc.).

430.4 Prohibited Communication Capability for Devices within the CAA. Bluetooth or near-field communication enabled equipment or devices are strictly prohibited within CAA. Device selected must be incapable of Bluetooth or near-field communication connectivity without modification.

430.5 Requirements contained elsewhere in OBO codes. Refer to OBO OTC for additional specific requirements. Refer to OBO-ICS IMC Chapter 3 and OBO-ICS NEC Chapter 1 for other requirements.

Add the following section 431 Technical Security:

SECTION 431
TECHNICAL SECURITY

431.1 General. Refer to Chapter 34.

Add the following section 432 Staff Housing:

SECTION 432
STAFF HOUSING

432.1 General. Detached one- and two-family dwellings and multiple-single family dwellings (e.g., townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures must comply with the OBO-ICS IRC except as indicated in this section.

Exception. Dwellings located on-compound or that are designed to withstand blast effects must comply with the following requirements.

1. The structural design must comply with the OBO-ICS IBC.
2. Requirements of Section 605, *Air Filters*, of the OBO-ICS IMC must apply.
3. Requirements of Chapter 5, Exhaust Systems, of the OBO-ICS IMC must apply.
4. Requirements of Chapter 4, *Ventilation*, of the OBO-ICS IMC must apply.

Add the following section 433 Representational Housing:

SECTION 433
REPRESENTATIONAL HOUSING

433.1 General. Representational housing, whether on-compound or off-compound, includes the following residence types:

1. Chief of Mission Residence (CMR)
2. Deputy Chief of Mission Residence (DCMR)
3. Consul General Residence (CGR)
4. Consul Residence (CR)
5. Principal Officer Residence (POR)

433.2 Definition. Representational housing includes all of the following elements:

1. Private residence
2. Representational spaces. Representational spaces are defined as those areas used for official reception and entertainment for local officials and dignitaries; and include the necessary support spaces.

433.3 Requirements. Representational housing, whether on-compound or off-compound must meet the provisions of this code except as indicated in this section.

433.3.1 Electrical. The provisions of the OBO-ICS IRC must apply to the installation of the electrical systems including alternations, repairs, replacement equipment, appliances, fixtures, fitting, and appurtenances thereto.

433.3.2 Mechanical. The provisions of the OBO-ICS IRC must apply to the installation, alterations, repairs, and replacement of mechanical systems including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

433.3.3 Plumbing. The provisions of the OBO-ICS IRC must apply to the installation, alterations, repair, and replacement of plumbing systems including equipment, appliances, fixtures, fittings and/or appurtenances, and where connected to a water or sewage system.

433.3.4 Fire protection systems. The provisions of Chapter 9, *Fire Protection and Life Safety Systems* must apply to the installation of the fire protection systems including alternations, repairs, replacement equipment, appliances, fixtures, fitting, and appurtenances thereto.

END OF CHAPTER IBC-4 AMENDMENTS

CHAPTER 5
GENERAL BUILDING HEIGHTS AND AREAS

Rename section 505 as follows:

SECTION 505
MEZZANINES, EQUIPMENT PLATFORMS, AND CATWALKS

Add the following sentence to the end of section 505.3 Equipment platforms:

"The provisions of this section apply to permanent equipment platforms and catwalks installed on the exterior of buildings for the purpose of façade maintenance."

Delete and replace subsection 505.3.3 in its entirety with the following:

505.3.3 Guards. Equipment platforms and catwalks must have guards where required by Section 1015.2 and must comply with Section 1015.6.

Add the following subsections after subsection 505.3.3:

505.3.4 Walking surface. The walking surface of equipment platforms and catwalks must comply with the following:

1. Minimum width: Not less than 914 mm (36 inches).
2. Maximum size of surface openings: Not to exceed 25 mm (1 inch) in any dimension.
3. Surface must be slip-resistant with a coefficient of friction greater than or equal to 0.85.
4. Ladder–only access to equipment is not acceptable. Access must be from platform and catwalks.

505.3.5 Access to equipment platforms. Access to equipment platforms must be restricted to prevent access by unauthorized personnel and must be in accordance with security requirements. Access to equipment platforms and catwalks must comply with all of the following:

1. Hatches must have a minimum width of 1 m (3.3 feet).
2. Hatches must be lockable.
3. Access to rooftop equipment must be free of trip hazards to ensure maintenance can be performed safely.

505.3.6 Crossover platforms at roof surfaces. Conduit, piping, cabling, and door thresholds attached or laid across roof surface must have a crossover platform to gain access to the equipment requiring maintenance.

END OF CHAPTER IBC-5 AMENDMENTS

CHAPTER 7
FIRE AND SMOKE PROTECTION FEATURES

SECTION 703
FIRE-RESISTANCE RATINGS AND FIRE TESTS

Delete and replace item 2 of Section 703.5 with the following:

2. Indicate the rating in hours and the type of assembly (e.g., fire barrier, fire partition, fire wall).

Add item 3 to Section 703.5 as follows:

3. Include lettering not less than 3 inches (76mm) in height with a minimum 3/8 inch (9.5 mm) stroke in a contrasting color incorporating the suggested wording, "2-HOUR FIRE BARRIER - PROTECT ALL OPENINGS," or other wording.

SECTION 705
EXTERIOR WALLS

Delete and replace Exception 5 under Section 705.12 with the following:

5. Group R-3 where the entire building is provided with Class C roof covering, the exterior wall shall be permitted to terminate at the underside of the roof sheathing or deck of Type III, IV, and V construction, provided:

5.1. The roof sheathing or deck is constructed of approved noncombustible materials or of fire-retardant-treated wood for a distance of 1220 mm (48 inches); or

5.2. The roof is protected with 16 mm (0.625 inch) Type X gypsum board directly beneath the underside of the roof sheathing or deck, supported by a minimum of nominal 50-mm (2-inch) ledgers attached to the side of the roof framing members for a minimum distance of 1220 mm (48 inches).

Delete and replace the last two sentences of 705.12.1 Parapet construction with the following:

“Refer to Section 1402 for minimum parapet height requirements.”

SECTION 716
OPENING PROTECTIVES

Add Exception 4 to subsection 716.2.6.1 Door closing as follows:

"4**.** Approved surface-mounted bolts are permitted on the top and bottom of the inactive leaf where required by DS or SEB."

SECTION 717
DUCTS AND AIR TRANSFER OPENINGS

Delete and replace subsection 717.5.4 in its entirety with the following:

717.5.4 Fire partitions. Ducts that penetrate fire partitions must be constructed of approved materials in accordance with the OBO Mechanical Code (OBO-ICS IMC), and the duct penetrating the wall must comply with all of the following requirements:

1. The duct must not exceed 0.06 m^2 (100 square inches)

2. The duct must be constructed of steel not less than 0.55 mm (0.0217 inches) in thickness.

3. The duct must not have openings that communicate the corridor with adjacent spaces or rooms.

4. The duct must be installed above a ceiling.

5. The duct must not terminate at a wall register in the fire-resistance-rated wall.

6. A minimum of 305 mm (12 inches) long by 1.52 mm (0.060 inches) thick steel sleeve must be secured to both sides of the wall and all four sides of the sleeve with minimum 38-mm by 38-mm by 1.52-mm (1½-inches by 1½-inches by 0.060-inches) steel retaining angles. The retaining angles must be secured to the sleeve and the wall with M5 (No. 10) screws. The annular space between the steel sleeve and the wall opening must be filled with mineral wool batting on all sides.

Exceptions:

1. Corridor walls in buildings equipped with Section 903.3.1.1 or 903.3.1.2 and the duct is protected as a through-penetration in accordance with Section 714.

2. Tenant partitions in covered and open mall buildings where the walls are not required by provisions elsewhere in the code to extend to the underside of the floor or roof sheathing, slab or deck above.

3. Such walls are penetrated by ducted HVAC systems, have a required fire-resistance rating of 1 hour or less, and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system must be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system must be constructed of sheet steel not less than 0.6 mm (No. 26 gage) thickness and must be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

4. Where it is not feasible to provide duct systems and duct penetrations of fire partitions in accordance with this section, ducts or air transfer openings may be protected with approved fire dampers installed in accordance with their listing with written approval from OBO/DE/ME and OBO/OPS/FIRE/FPE.

717.5.4.1 Corridors. Duct and air transfer openings that penetrate corridors must be protected as follows:

1. A corridor damper must be provided where corridor ceilings, constructed as required for the corridor walls as permitted in Section 708.4, Exception 3, are penetrated.

2. A ceiling radiation damper must be provided where the ceiling membrane of a fire-resistance-rated floor-ceiling or roof-ceiling assembly, constructed as permitted in Section 708.4, Exception 2, is penetrated.

3. Ducts that penetrate a corridor enclosure required to have smoke and draft control doors in accordance with Section 716.2.2.1 must be constructed of steel not less than 0.48 mm (0.019 inches) in thickness, and the duct system must not have openings serving the corridor.

Exceptions:

1. Where the building is equipped throughout with an approved smoke control system in accordance with Section 909, and smoke dampers are not necessary for the operation and control of the system.

2. Where it is not feasible to provide duct systems and duct penetrations of corridors in accordance with this section or smoke dampers are necessary for the operation and control of an approved smoke control system, ducts or air transfer openings may be protected with approved smoke dampers designed to resist the passage of smoke with written approval from OBO/DE/ME and OBO/OPS/FIRE/FPE.

END OF CHAPTER IBC-7 AMENDMENTS

CHAPTER 8
INTERIOR FINISHES

SECTION 804
INTERIOR FLOOR FINISH

Add the following sections804.5 and 804.6:

804.5 Carpeting. Carpeting must conform to the following requirements:

804.5.1 Carpeting types. Modular carpet tiles are the standard for carpeted areas. Broadloom carpets or carpet tiles may be used in the Executive Suite.

804.5.2 VOC limits. Carpet systems must meet or exceed the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

1. In addition to complying with the above limits, carpets and padding used must be tested and determined to be compliant in accordance with the California Department of Public Health (CDPH) Standard Method v1.1-2010, using the applicable exposure scenario.

2. In addition to complying with the above limits, adhesives used in carpet installation must comply with the VOC limits of the South Coast Air Quality Management District Rule #1168.

3. The following documentation must be submitted to the COR:

3.1. Narrative listing all of the carpet systems used in the building and stating that they comply with the current VOC limits of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.

3.2. Cut sheets for each carpet product used in the building highlighting VOC limits.

804.6 Minimum coefficient of friction for walking surfaces. Provide the following minimum static coefficient of friction for interior and exterior floor surfaces in accordance with Table 804.6.

Table 804.6
Minimum Coefficient of Friction for Interior and Exterior Walking Surfaces

Minimum Coefficient of Friction	Surface
0.6	Floor surfaces, general
0.8	Steps and landings, ramps and landings

SECTION 808
ACOUSTICAL CEILING SYSTEMS

Add the following section 808.2:

808.2 Residential application. Acoustical tile lay-in panel ceilings are not permitted within individual apartments or dwelling units.

Exceptions:

1. Corridors
2. Service areas

END OF CHAPTER IBC-8 AMENDMENTS

CHAPTER 9
FIRE PROTECTION AND LIFE SAFETY SYSTEMS

SECTION 903
AUTOMATIC SPRINKLER SYSTEMS

Delete and replace sections 903.2 through 903.2.12 in their entirety with the following:

903.2 Where required. An approved automatic sprinkler system must be installed in all new buildings in accordance with Section 903.3.1.1. The automatic sprinkler systems must be hydraulically and seismically designed.

903.2.1 Automatic sprinkler system hazard classification. Automatic sprinkler systems must be designed to Light Hazard Group 1 except when a higher hazard exists. Refer to *NFPA 13* Appendix A for hazard classification of typical occupancies.

903.2.2 Warehouses. Warehouses must be protected with Early Suppression Fast-Response (ESFR) sprinklers in accordance with NFPA 13 criteria for storage. At a minimum, the system must be designed based on Class IV commodity storage utilizing the proposed rack layout unless the planned or actual storage has a higher commodity classification.

Delete and replace subsection 903.3.1.1 in its entirety with the following:

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers must be installed throughout in accordance with NFPA 13.

Delete subsections 903.3.1.1.1 and 903.3.1.1.2. Subsection 903.3.1.1.3 to remain.

Delete and replace subsection 903.3.5 in its entirety with the following:

903.3.5 Compound water supplies. Water for office compound automatic sprinkler systems must be supplied from the compound fire protection water tank. The supply must be protected against backflow in accordance with OBO-ICS IZC Section 813.

Add the following subsection 903.3.5.3:

903.3.5.3 Water supply requirements based on hazard classification. Where the hazard classification is higher than ordinary hazard, the water supply requirements must be determined based upon the higher demand category as specified by *NFPA 13;* and must be approved, on a case-by-case basis, by OBO.

Delete and replace subsection 903.3.7 in its entirety with the following:

903.3.7 Fire department connections. A Siamese connection must be provided outside the compound adjacent to a main street in accordance with *NFPA 13 and 14*. The location of the fire department hose connections must be approved by OBO/OPS/FIRE. The connection size and threads must be compatible with the local fire department and conspicuously marked with bilingual signs.

SECTION 905
STANDPIPE SYSTEMS

Delete and replace section 905.2 and replace with the following:

905.2 Installation standard. Standpipe systems must be installed in accordance with this section and NFPA 14.

Exception. The residual pressure of 690 kPa (100 psi) for 65-mm (2½-inch) hose connections and 450 kPa (65 psi) for 38-mm (1½-inch) hose connections is not required to be greater than 450 kPa (65 psi) in buildings equipped throughout with an automatic sprinkler system in accordance with section 903.3.1.1 where the highest floor is not more than 45.72 m (150 feet) above the lowest level of fire department vehicle access.

Add the following sentence to the end of the paragraph of section 905.3 prior to the exceptions:

"Sprinkler and standpipe systems must be supplied by common risers."

Add the following sentence to the end of the paragraph of section 905.6:

"Standpipes must be designed in accordance with *NFPA 14*, except as herein modified. For combined systems, standpipe system risers must serve as the water sprinkler system risers in buildings having both systems."

SECTION 906
PORTABLE FIRE EXTINGUISHERS

Delete and replace section 906.1 with the following:

906.1 Where required. Portable fire extinguishers must be installed in accordance with Paragraphs 906.1.1 and 906.1.2.

906.1.1 General.

1. Portable fire extinguishers must be external cartridge type.

2. Travel distance to a portable fire extinguisher must be measured from the most remote point to the extinguisher along the natural and unobstructed path

906.1.2 Requirements based on use and occupancy.

906.1.2.1 Office buildings - general.

906.1.2.1.1 Required rating. 4-A:40-B:C

906.1.2.1.2 Maximum travel distance. 22 m (75 feet).

906.1.2.1.3 Additional requirements.

1. Provide additional fire extinguishers for specific hazards.

2. Provide additional extinguishers where hardlines and any special locking devices limit access to firefighting appliances, when locating portable fire extinguishers.

Exception: Extinguishers must not be located in consular waiting areas or in paths of egress leading from these areas.

906.1.2.2 Flammable liquid storage / woodworking areas.

906.1.2.2.1 Required rating: 4-A:40-B:C.

906.1.2.2.2 Maximum travel distance. 9 m (30 feet) from any flammable storage / commercial cooking / woodworking area.

906.1.2.2.3 Additional requirements.

1. Typical locations: snack bars, generator rooms, paint shops, fuel-dispensing areas, and fuel-fired equipment.

2. Additional extinguishers should be provided for specific hazards.

906.1.2.3 Flammable liquid storage commercial cooking areas.

906.1.2.3.1 Required rating: 4-A:40-B:C.

906.1.2.3.2 Maximum travel distance. 9 m (30 feet) from any commercial cooking area.

906.1.2.4 Electronic areas and Classified Computer Rooms (CCRs).

906.1.2.4.1 Required rating. 4-A:40-B:C.

906.1.2.4.2 Additional requirements.

1. A minimum of one must be installed in or just outside the door of communications centers, computer rooms and other essential electronic areas.

906.1.2.5 Warehouse / storage buildings.

906.1.2.5.1 Required rating. 4-A:40-B:C.

906.1.2.5.2 Maximum travel distance. 15 m (50 feet).

906.1.2.5.3 Additional requirements.

1. Provide additional fire extinguishers for specific hazards.

906.1.2.6 Individual residential units.

1. Required rating. 4-A:40-B:C.

2. Minimum number required. One per dwelling.

906.1.2.7 Parking structures.

1. Required rating: 4-A:40-B:C.

2. Minimum number required. One for every ten vehicle spaces.

906.1.2.8 Common areas for staff housing (SDA) and Marine Security Guard Residence (MSGR).

1. Required rating: 4-A:40-B:C.

2. Maximum travel distance: 22 m (75 feet).

3. Additional requirements:

a. Provide a minimum of one per floor level.

b. Provide additional fire extinguishers for specific hazards.

SECTION 907
FIRE ALARM AND DETECTION SYSTEMS

Delete and replace subsection 907.2.2 in its entirety with the following:

907.2.2 Group B. A manual fire alarm system must be installed in all buildings with a Group B occupancy. The alarm system must activate the occupant notification in accordance with Section 907.5. The fire alarm system must be designed and installed per NFPA 72 and the OBO Guide Specification for Fire Alarm Specification.

907.2.2.1 Group B occupancies with sprinkler protection. Provide a partial automatic smoke detection system throughout Group B occupancies provided with sprinkler protection. Smoke detection must be provided in all areas except the following:

1. Individual offices,
2. Kitchens,
3. Bathrooms,
4. Locker rooms containing showers, and
5. Janitor's Closets.

907.2.2.1.1 Heat detection. In buildings provided with sprinkler protection, heat detectors must only be installed where necessary for purposes of elevator shunt trip or other fire safety control functions.

907.2.2.1.2 Group B support buildings. An automatic smoke detection system is not required in Group B Support Buildings provided with automatic sprinkler protection unless used for residential purposes.

907.2.2.2 Group B occupancies without sprinkler protection. An automatic smoke detection system must be installed throughout Group B occupancies in buildings without sprinkler protection. Where smoke detection is not suitable due to the environment, heat detection shall be permitted.

907.2.2.3 Manual fire alarm boxes. Manual fire alarm boxes must not be installed in consular waiting areas and other areas accessible to the general public.

Delete and replace subsection 907.2.9.3 in its entirety with the following:

907.2.9.3 Group R-2 automatic smoke detection. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 must be installed in Group R-2 occupancies in all of the following locations:

1. Common spaces outside of dwelling units and sleeping units.
2. Laundry rooms, mechanical equipment rooms, and storage rooms.
3. All interior corridors serving sleeping units or dwelling units.

Exception: An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units or dwelling units where each sleeping unit or dwelling unit either has a means of egress door opening directly to an exterior exit access that leads directly to an exit or a means of egress door opening directly to an exit.

Required smoke alarms in dwelling units and sleeping units in Group R-2 occupancies must be interconnected with the fire alarm system in accordance with NFPA 72.

SECTION 911
FIRE COMMAND CENTER

Delete and replace Section 911 in its entirety with the following:

911.1 General. Refer to OBO-ICS IFC Chapter 5 Section 508 *Fire Command Center* for requirements.

SECTION 913
FIRE PUMPS

Add the following section 913.6:

913.6 Additional requirements. Fire pumps must be diesel driven where required.

> **Exception.** The use of electric motor-driven fire pumps may be permitted only on a project-specific basis. Contractor must submit written justification for approval. Approval must be submitted to and approved by both OBO/PDCS/DE/EE and OBO/OPS FIRE. Where electric fire pumps are provided, they must be connected to an emergency power source. The electric driven fire pump must be equipped with an automatic transfer switch to change the power source from domestic to emergency power per NFPA 20. The emergency power must be sized for the in-rush requirements of the motor.

913.6.1 Split case horizontal fire pump. The fire pump package must be a modular, skid-mounted pump, diesel or electric driven. The package must be factory tested as a complete working system with the controller, jockey pump, day tank, batteries, flow meter line, and associated piping.

913.6.2 Vortex plate. Vortex plate within the water tank must be a 1220-mm x 1220-mm (48-inch x 48-inch) plate installed 150 mm (6 inches) above bottom of tank. Vortex plate is required only for horizontal split case fire pumps.

913.6.3 Fire pump size. Fire pumps must be sized to provide the necessary pressure and flow based upon the hazard/demand of the system at the hydraulically most remote point, rated at a minimum of 1893 L (500 gal) at 690 kPa (100 psi) or larger.

913.6.4 Fuel supply quantity for diesel-driven pumps. Provide a minimum fuel supply for diesel-driven pumps sufficient to equal 3.8 L (1 gal) per 1 hp plus 10% plus the amount of fuel required to conduct an automatic weekly test run for 30 minutes. Fire pump fuel day tank must be a minimum of 568 L (150 gal) usable capacity.

913.6.5 Jockey pump controllers. Jockey pump controllers must be provided with emergency backup power.

913.6.6 Electric fire pump controllers. Controller types for electric fire pumps must be approved by OBO/PDCS/DE/EE.

913.6.7 Fire pump room. The fire pump room must be located above grade and in areas not subject to flooding. The fire pump room must be sized for each fire pump to have a minimum of 4.6 m x 7.8 m (15 feet x 25.5 feet) of clear space that does not contain any columns or other obstructions.

913.6.8 Multiple fire pumps. Where multiple fire pumps are required, all pumps must be from the same manufacturer. Where construction requires an additional fire pump to an existing compound system, the new fire pump must be from the same manufacturer that produced the existing fire pump. Procurement of pumps from a different manufacturer are permitted only upon written approval from OBO/OPS/FIRE/FPE.

END OF CHAPTER IBC- 9 AMENDMENTS

CHAPTER 10
MEANS OF EGRESS

SECTION 1004
OCCUPANT LOAD

Insert the following after the first sentence in Section 1004.5 (balance of section is unchanged):

"Where two numbers are provided in Table 1004.5, the designer must calculate the occupant load based on both numbers and utilize the higher occupant load."

Add the following functions of space to Table 1004.5:

ADDITIONS TO TABLE 1004.5 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT	
FUNCTION OF SPACE	**OCCUPANT LOAD FACTOR [a.]**
Consular Waiting Areas	0.65 net (circulating path 9.3 gross) or 1.4 gross
Gallery Spaces	0.65 net (circulating path 9.3 gross) or 1.4 gross
Lobbies	1.4 gross
Multi-purpose Rooms	0.65 net

For US customary units: 1 m = 3.28 feet, 1 m^2 = 10.76 square feet.

[a.] Floor area in square m per occupant.

SECTION 1005
MEANS OF EGRESS SIZING

Delete Exception 1 to Section 1005.3.1.

Delete Exception 1 to Section 1005.3.2.

SECTION 1009
ACCESSIBLE MEANS OF EGRESS

Add the following sentence to Section 1009.3.3 Area of refuge.

"Enclosed exit and exit access stairways serving as required accessible means of egress must provide areas of refuge, even where buildings have two-way communication and are fully sprinklered."

Delete and replace Exceptions 1 and 2 to Section 1009.3.3 with the following:

Exceptions

1. *Areas of refuge* are not required at unenclosed exit access stairways where two-way communication is provided at the elevator landing in accordance with Section 1009.8.

2. *Areas of refuge* are not required at unenclosed stairways in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Delete and replace subsection 1009.8.1 in its entirety with the following:

1009.8.1 Communication system requirements. Two-way communication systems must provide communication between each required location and Post 1. The two-way communication system must include both audible and visible (i.e., indicator light) signals.

SECTION 1010
DOORS, GATES AND TURNSTILES

Add Exception to Subsection 1010.1.2.1 as follows:

Exception: Doors serving as means of egress from occupied exterior areas that are required to swing out from the building by Chapter 34 are not required to swing in the direction of egress travel where the door installation includes all of the following:

1. The door is provided with a call button and camera connected to Post 1 or another constantly attended location.

2. The door can be unlocked upon a signal from Post 1 or the constantly attended location.

3. The door is provided with a power-assisted operator that complies with ANSI/BHMA A156.10 or ANSI/BHMA A156.19 with an accessible push-button control.

Delete and replace item 8 and all of the Subitems to Subsection 1010.2.4 with the following:

8. Other than egress courts, where occupants must egress from an exterior space through the building for means of egress, exit access doors shall be permitted to be equipped with an approved locking device where installed and operated in accordance with all of the following:

8.1. A weatherproof telephone or two-way communication system in accordance with Sections 1009.8.1 and 1009.8.2 must be located adjacent to not less than one required exit access door on the exterior side.

8.2. The door can be unlocked upon a signal from Post 1 or the constantly attended location.

8.3. The door is provided with a power-assisted operator that complies with ANSI/BHMA A156.10 or ANSI/BHMA A156.19 with an accessible push-button control.

Add Exception 5 to Subsection 1010.2.8 as follows:

"5. Representational housing equipped with a sprinkler system in accordance with Section 903.3.1.1 where panic and fire exit hardware is technically infeasible to be implemented while meeting the requirements for representational space.

Delete Section 1010.2.12 in its entirety with the following:

1010.2.12 Delayed egress. DS and OBO approved delayed egress locking systems are permitted to be installed on doors serving Group A, B, F, I, M, R, S, and U occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907.

1010.2.12.1 Delayed egress locking system. The delayed egress locking system must be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system must deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate free egress.

2. The delay electronics of the delayed egress locking system must deactivate upon loss of power controlling the lock or lock mechanism, allowing free immediate egress.

3. The delayed egress locking system must have the capability of being deactivated manually at a central station (Security Post). A centrally controlled manual abort feature can be added providing the abort feature meets OBO and DS requirements.

4. An attempt to egress must initiate an irreversible process that must allow such egress in not more than 15 seconds when physical effort to exit is applied to the egress side of the door hardware for not more than 3 seconds. Initiation of the irreversible process must activate an audible signal at the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics must be by manual means only.

5. The egress path from any point must not pass through more than one delayed egress locking system.

6. Provide a sign on the door and locate adjacent to the door exit hardware. The sign letters must be at least 25 mm (1 inch) in height on contrasting background:

6.1. The sign must read: KEEP PUSHING. THIS DOOR WILL OPEN IN 15 SECONDS. ALARM WILL SOUND.

6.2. The sign must comply with the visual character requirements in Chapter 11.

7. Emergency lighting must be provided on the egress side of the door.

8. The delayed egress locking system units must be *listed* in accordance with UL 294.

9. The door must swing in the direction of egress.

SECTION 1011
STAIRWAYS

Delete and replace first sentence of section 1011.12 as follows:

“In buildings four or more stories above grade plane, and all office buildings regardless of number of stories, one stairway must extend to the roof surface.”

SECTION 1013
EXIT SIGNS

Add Exception 6 to section 1013.1 as follows:

6. Exit signs are not required in representational spaces of representational housing equipped with a sprinkler system, in accordance with Section 903.3.1.1, where omitting exit signs would not create a life safety hazard.

SECTION 1014
HANDRAILS

Delete and replace section 1014.8 with the following:

1014.8 Clearance. Clear space between a handrail and a wall or other surface must not be less than 57 mm (2.25 inches). A handrail and a wall or other surface adjacent to the *handrail* must be free of any sharp or abrasive elements.

SECTION 1015
GUARDS

Add subsections to 1015.4 as follows:

1015.4.1 Toe boards. Where guards are required and people exposed to falling objects may be present below, toe boards must be required. This includes but is not limited to balconies, mezzanines, stairwell landings, catwalks, equipment platforms and other similar structures.

1015.4.2 Toe board height. Where required, toe boards must have a minimum height of 90 mm (3.5 inches).

Delete and replace the first sentence of section 1015.6 as follows:

"Parapets or guards shall be provided where various components that require service including appliances, equipment, fans, or roof hatch openings are located on a roof; or where an open side of a walking surface is located more than 762 mm (30 inches) above the floor, roof, or grade below."

Delete and replace the first sentence of section 1015.7 as follows:

"Parapets or guards shall be provided at the roof perimeter where the roof level is accessible by stair or roof hatch; or where an open side of a walking surface is located more than 762 mm (30 inches) above the floor, roof, or grade below."

Add subsection 1015.7.1 as follows:

1015.7.1 Roof hatches. Provide guardrails surrounding each roof hatch. Provide 1000 mm (40 inches) clearance between hatch and inside of guardrails on all sides. Provide gate with latch in guardrail to allow access to roof areas.

SECTION 1017
EXIT ACCESS TRAVEL DISTANCE

Delete and replace section 1017.3 with the following:

1017.3 Measurement. *Exit access* travel distance must be measured from the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit. Where more than one exit is required, exit access travel distance must be measured to the nearest exit. Measurements must be made using right angles with respect to walls.

Exception. In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.

SECTION 1025
LUMINOUS EGRESS PATH MARKINGS

Delete and replace section 1025.1 as follows:

1025.1 General. Approved luminous egress path markings delineating the exit path must be provided in accordance with Sections 1025.1 through 1025.5.

Exceptions:

1. Luminous egress path markings must not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1025.1, Exception 1.

2. Representational spaces.

1025.1.1 Applicable building types or occupancies. Provide luminous egress path markings in the following building types or occupancies:

1. High-rise buildings.

2. Windowless buildings.

3. All B occupancies and buildings that contain B occupancies regardless of height.

4. Residential housing.

Exception. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above-grade in height with a separate means of egress and their accessory structures.

1025.1.2 Safe Areas and Safe Havens. Provide luminous egress path markings at safe areas and safe havens:

1. Interior at vestibules, and interior corridors.

2. Exterior from entrance(s) along the path of egress travel to exit stairways.

3. Provide wall-mounted demarcation lines placed with the bottom edge of the stripe not more than 100 mm (4 inches) above the finished floor.

4. Provide door markings in accordance with Section 1025.2.6.

1025.1.3 Compound emergency sanctuaries. Provide luminous egress path markings within all Compound Emergency Sanctuaries (CES) regardless of occupancy type and along the path of egress travel to the exit discharge.

Exceptions:

1. CACs.

2. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above-grade in height with a separate means of egress and their accessory structures.

1025.1.3.1 CES perimeter demarcation lines. Provide floor, wall, and door markings as appropriate in accordance with Section 1025.2.4.

SECTION 1028
EXIT DISCHARGE

Delete and replace section 1028.5 with the following:

1028.5 Access to a public way. The exit discharge must provide a direct and unobstructed access to a public way or accessible site route. Refer to OBO-ICS IZC Chapter 8 – Site Accessibility.

1028.5.1 Connection from exit discharge to site accessible route. Provide accessible connection from exit discharge to the site accessible route system. Accessible connection must be paved and allow for wheelchair mobility. Dispersal areas are not permitted.

SECTION 1031
EMERGENCY ESCAPE AND RESCUE

Add Exception 6 to section 1031.2 as follows:

Exceptions:

6. Residential structures required to comply with OBO-ICS IBC Section 3403.2 are not required to be provided with emergency escape and rescue openings provided all of the following conditions are met:

6.1. The building is of noncombustible construction in accordance with Chapter 6.

6.2. The building is fully equipped with an approved automatic sprinkler system.

6.3. The building is equipped with a fire alarm and detection system.

6.4. The building is equipped with smoke exhaust capability.

6.5. The fire alarm and detection system is continuously monitored on-site.

END OF CHAPTER IBC-10 AMENDMENTS

CHAPTER 11
ACCESSIBILITY

Delete and replace chapter 11 in its entirety with the following:

SECTION 1101
GENERAL

1101.1 Scope. The provisions of this chapter shall control the design and construction of facilities for accessibility to physically disabled persons.

1101.2 Accessible design and construction. New and existing buildings and facilities must be designed and constructed to be accessible in accordance with the Architectural Barriers Act (ABA) Accessibility Standards, (2015), Chapters 1 through 10 as amended by GSA, and Chapter 11 of this code.

Exception. No new alterations are required for accessibility when an existing building was in compliance at the time it was built. Where existing elements or spaces are altered, each altered element or space shall comply with the applicable requirements of Chapter 11 of this code and OBO-ICS IEBC Chapter 3.

1101.2.1 General application. The requirements of this Section apply to Department of State (State) buildings and facilities located outside the Continental United States, whether building and facilities are owned or leased by the Department of State.

1101.2.1.1 FE/BR doors. FE/BR doors along required accessible routes must comply with the model ABA standards, including clear width and door thresholds, and be equipped with DS approved power door operators defined in OBO specification section 087155.

1101.2.1.2 FE/BR door replacement. When FE/BR doors are replaced in existing facilities, each such door must have a clear opening width of 32” (815mm). When existing structural conditions prohibit this minimum width, the door width may be reduced but shall not be less than 31.25” (795mm). In such alterations, all other elements shall be provided, including but not limited to compliant clear floor space and door hardware.

1101.2.2 Site application. The requirements of this section apply to those portions of Diplomatic compounds and sites around standalone Diplomatic buildings which are utilized by general Diplomatic staff and visitors.

1101.2.3 Building type application and space application. The requirements of this section apply to the building types identified in 101.2.3.1 below.

Exception. Building types and spaces providing only service functions such as Utility Building, Warehouse, Shops, and structures and equipment directly associated with the actual process of construction are not required to be accessible. Toilet and bathing facilities and dressing, fitting, and locker rooms dedicated specifically to janitorial staff, USG official drivers, maintenance personnel, and security guards are not required to be accessible.

1101.2.3.1 OBO-specific building types requiring accessibility. The following building occupancy types are required to be accessible for all new construction or portions modified during renovation.

1. Office Buildings.

2. Support buildings serving staff and families (e.g., Recreational Facility, Commissary).

3. Marine Security Guard Residence (MSGR). Public spaces (e.g. main entrance, living room, dining room, recreation room, heritage room, and public restroom(s)) must be accessible; the associated kitchen and spaces for the exclusive use of the Marines or support staff (e.g., break room, laundry, exercise room) are not required to be designed for accessibility.

4. Representational Housing (CMR, DCR, CGR, SOR). Representational spaces, family spaces, and guest spaces.

5. Staff Housing (SDA). Common public spaces and a minimum of 5% of individual dwelling units in accordance with ABA. Accessible units shall be dispersed equally amount the unit types. If only one accessible dwelling unit is provided, the unit shall be large enough to accommodate a senior officer.

6. Compound Access Control (CAC) Facilities. Pedestrian screening areas at each CAC type.

7. Outreach buildings such as American Centers.

8. Mixed-use occupancies. When elements such as shops, utilities and storage areas are combined with other facilities containing office and common use areas, the office and common use areas must be accessible.

9. Temporary buildings and facilities including occupancies identified in items 1 – 8 above.

10. Non-permanent buildings and facilities including occupancies identified in items 1 – 8 above.

1101.2.4 Additional accessibility requirements. In addition to accessibility requirements of this Chapter, including those in cited references, additional requirements are included in the following OBO-ICS Chapters:

1. OBO-ICS IBC 1009: Accessible Means of Egress including Areas of refuge at stairways and two-way communication systems.

2. OBO-ICS IBC 1028: Site accessible route from exit discharge.

3. OBO-ICS IBC 3001.4: Accessibility of passenger elevators.

4. OBO-ICS IEBC 306: General accessibility provisions for work on existing buildings, including requirements for replacement or new installation of FE/BR doors.

5. OBO-ICS IEBC 5: General use of OBO permit process where Prescriptive Compliance Method is used.

6. OBO-ICS IEBC 810: Accessibility provisions for Alterations – Level 2. The provisions also apply to OBO Existing Building Code Chapters 9, 10, and 11.

7. OBO-ICS IPC 404: Accessible plumbing fixtures.

8. IRC: No changes to model IRC provisions for accessibility.

9. OBO-ISPSC 307.1.5: Accessibility for swimming pools.

10. OBO-ICS IZC 801.2.4: Accessible parking spaces.

11. OBO-ICS IZC 817: Site accessibility.

1101.2.5 OBO Accessibility Technical Requirements. The requirements of section 1101.2.5 provide additional exemptions and amendments to the ABA.

1101.2.5.1 Marine Security Guard Residence (MSGR)

1. Provide a minimum of one accessible exterior route to connect the accessible entrance of an On-compound MSGR with each office building, recreation building, Main Compound Access Control (MCAC) building, and to the public entrance into the MCAC.

2. Provide a minimum of one accessible interior route from the entrance door connecting all required accessible interior spaces.

3. Provide a minimum of one accessible public toilet room accessed from the interior accessible route connecting all other accessible spaces.

4. Doors at the entry to MSGRs are exempt from ABA chapter *404.2.9 Door and Gate Opening Force.*

5. Warning Systems within the accessible zone shall be both audible and visual. This shall be coordinated with the Office of Fire Protection.

1101.2.5.2 Consular Windows

1. Counters serving Consular interview windows, cashier windows, and pass back windows shall have a maximum height of 940 mm. All counters on the applicant side must have a depth no greater than 305 mm with no obstructions underneath.

2. Counters serving both sides of Consular privacy booth windows shall have a maximum height of 760 mm and be provided with an accessible *circular turning space* or *T-shaped turning space* within the applicant and interviewer rooms.

1101.3 ABA Scoping Requirements: ABA Chapter 2 Scoping Requirements establishes the minimum accessibility compliance requirements and shall be amended as follows:

Add to F202.4 Alterations Affecting Primary Function Areas:

1. Areas identified in Section 1101.2.3 shall constitute primary function areas.

2. Cost and scope as determined under criteria established by OBO Authority Having Jurisdiction.

Add to F205.1 General:

Operable parts on devices required to comply shall be mounted with their top edge no higher than 1220 mm (4’-0”) above finish floor. Intercom units, security devices, keypads, wall phones, switches, etc., are all required to be accessible. Other operable parts required to be accessible, such as outlets, must be mounted with their lower edge no more than 380 mm (15”) above finish floor.

Add to F206.2.2 Within a Site:

1. On a facility site that includes other buildings housing offices, residential and/or recreational spaces, an accessible route must extend from the Main CAC to each such space and connecting each other space.

2. The practical accessible route on any site connecting spaces and elements required to be accessible shall connect other elements such as shops and service buildings.

3. Where site routes exist for purposes of accessing compound emergency sanctuaries, areas of refuge, or areas of rescue assistance, then each such route shall be an accessible route, or an alternate accessible route shall be provided

4. To the greatest extent possible, the accessible path of travel shall coincide with the path most people use at both internal and external locations. Alternatively, the path shall not exceed the distance taken by able bodied personnel.

5. Although a ramp is generally preferred, a vertical platform wheelchair lift may be employed for vertical distances less than one story if that is the only available option.

Add to F206.2.3 Multi-Story Buildings and Facilities, Exception 1:

1. Elevator may be excepted from 2-story buildings only when the conditions of the exception shown in F206.2.3 (exception 1) are met.

Add to F206.2.4 Spaces and Elements:

1. Accessible routes within an office building shall extend to all portions of the building containing offices and common use areas regardless of building zone (PAA, GWA, LAA, or CAA) and occupant (U.S. Direct Hire, Locally Employed Staff, or Visitor).

2. The interior accessible route shall serve any mezzanine, basement or penthouse of a building when it contains office space, meeting space or a designated accessible residential unit.

3. Inclined wheelchair lifts and chair lifts of any kind are prohibited except when individually granted exception by OBO/PDCS/DE/AD. These may be allowed in extraordinary circumstances when no other means of accessibility can be achieved.

Add to F207.1 General:

1. An accessible means of egress from a floor on the accessible level shall lead to a designated area of refuge where persons may congregate in safety within the site perimeter of the property. The route must have a surface that will allow for wheelchair mobility.

2. Each building containing office space, common use space (such as recreational space) or dwelling units required to be accessible shall have an area of rescue assistance, located within each required exit stair enclosure on each floor above and below the accessible level. Each area of rescue assistance shall provide a floor area for not less than one wheelchair space per required exit stair per non-accessible floor.

3. At the discretion of OBO, the minimum number of wheelchair spaces required on a floor alternatively may be clustered in one location on that floor within an enclosed exit stair or within an enclosed area serving a fire service access elevator.

4. In renovation projects with existing stair enclosures where it is not feasible to provide one area of rescue assistance per stair per stair per non-accessible floor, the minimum number of wheelchair spaces required on a given floor may be provided in separate protected enclosure(s) attached or adjacent to the existing stair.

5. At exit stairs that are not enclosed per exceptions allowed by the IBC code, provide an enclosed protected area of rescue assistance adjacent to and/or within sight of the access point to such stair(s) at each level above or below the accessible level.

6. Each area of rescue assistance must be served by an intercom directly to Post 1. This may be voice only or voice/video. Identifying signage on the protected side of the stair doors shall be provided at each location of an area of rescue assistance.

Add to F208.2 Minimum Number of Parking Spaces:

1. The number of accessible parking spaces shall comply with table F208.2 and applies to staff and visitor parking. Accessible parking spaces for staff parking and visitor parking shall not be combined. This requirement does not apply to official USG vehicles.

2. Accessible parking spaces in visitor parking areas shall have signs that not only include the universal symbol of accessibility but shall also contain text in both English and the host country language to indicate parking restriction. The text shall be modeled on the format used by the host country.

Add to F209.2.1 Passenger Loading Zones:

Provide a passenger loading zone at the Main CAC and Consular CAC (if separate from the Main CAC).

Add F219.1 General:

Assistive listening systems shall be limited to PAA and GWA.

Add to F227.3 Counter in Sales and Service:

1. See Section 1101.2.5.2 for Consular window requirements.

2. Counters serving banks or cashiers shall have a maximum counter height of 940mm (3'-1"). Any counter on the applicant side must have a depth limited to 305mm (12") maximum.

3. At least a portion of a counter that is required for package inspection in any screening facility shall be at a height not greater than 760mm (30").

4. At least a portion of a counter that is required in any common use mail preparation area or other similar common use element shall have at least a portion of a counter at a height not greater than 760mm (30").

OBO Access Guide is available at https://dosobo-access.wbdg.org/.

END OF CHAPTER IBC-11 AMENDMENTS

CHAPTER 12
INTERIOR ENVIRONMENT

SECTION 1203
TEMPERATURE CONTROL

Delete and replace section 1203.1 with the following:

1203.1 Equipment and systems. For temperature and comfort control requirements, refer to OBO-ICS IMC Section 309.

SECTION 1206
SOUND TRANSMISSION

Delete and replace section 1206.1 in its entirety with the following:

1206.1 Scope. This section shall apply to interior walls, partitions, and floor/ceiling assemblies between adjacent spaces, functions, or occupancies in office building PAA and GWA areas, residential buildings, and combined buildings.

1206.1.1 Additional requirements.

1206.1.1.1 Refer to other attachments for CAA requirements.

1206.1.1.2 Refer to Section 1206.4 noise restrictions for equipment

Delete and replace section 1206.2 in its entirety with the following:

1206.2 Methods. Provide acoustical batt insulation, door gaskets, automatic door bottoms, additional mass (gypsum board, concrete, concrete masonry units), and other material or devices required to achieve performance required in Table 1206.2.

Exceptions:

1. Automatic door bottom and sound seals are required only for doors which require STC 50 or higher sound protection.

2. Requirements do not apply to exterior walls of NOBs.

TABLE 1206.2
GENERAL PURPOSE SOUND ISOLATION CRITERIA

Source	Adjacent	Minimum STC
Interview rooms	Main Lobby, Consular Waiting, CACs	STC-50
GWA Multi-purpose rooms, large conference rooms, and medium conference rooms*	Offices, related spaces	STC-45

Medical suite perimeter, provider offices, examination rooms, consultation rooms, and observation rooms	Other spaces in medical suite	STC-50
Closed offices, team rooms, focus rooms, and small conference rooms*	Adjacent offices and spaces	STC-45
GWA open office suite	Corridors, lobbies, etc.	STC-45
Mechanical equipment rooms*	Any spaces. Applies to wall construction only.	STC-50
Toilet rooms, housing common rooms (High-rise combined) *	Adjacent spaces	STC-45
Shops	Adjacent offices or residential occupancies in combined buildings	STC-50
MSGR sleeping rooms	At all demising walls, doors, and floor slabs connecting adjacent occupied spaces.	STC-55
Dwelling unit common walls with another unit or corridor	Between adjacent residential dwelling units, dwelling unit corridors, and service areas.	STC-55
SDA high-rise and townhouse bedrooms	Other spaces.	STC-48

*Minimum STC requirements shall only apply to demising walls separating adjacent, functional, occupied spaces.

Add the following sections 1206.4 and 1206.5*:*

1206.4 Noise restrictions for equipment.

1206.4.1 External noise levels at the site boundary of the facility shall comply with the host country's noise laws and regulations. When local standards do not exist, noise shall not exceed 55 dB (daytime) and 45 dB (nighttime) using the "A-Weighted Sound Level."

1206.4.2 Internal noise levels within buildings shall not exceed RC-35N in private offices, RC-30N in conference rooms and residences, and RC-40N in open office space per *ARI Standard 885-90*.

1206.4.3 All vibrating, reciprocating and rotating equipment mounted to the roof, or the building structure shall be isolated from its associated piping/ducting and the building structure.

1206.5 Acoustic requirements for MSGR bedrooms. MSGR bedrooms shall be treated for acoustic isolation complying with the requirements of this section to allow off-duty Marines to sleep at all hours including when a function is occurring in the common spaces.

1206.5.1 MSGR bedroom perimeter enclosure partitions. MSGR bedroom perimeter enclosure partitions shall be constructed to meet the requirements of the following: Gypsum Association GA File Number WP 1522.

1206.5.1.1 Required locations. Partitions included: Between adjacent bedrooms, between bedroom and other space, between bedroom and corridor, between bathroom and corridor, and between bathroom and adjacent bathroom or other space.

1206.5.2 Structure underside. Provide sound insulation on the structure underside to achieve sound performance equivalent to partition.

1206.5.3 Devices installed in partitions. All devices installed in partitions (e.g., electrical, telecommunication, audiovisual, etc.) boxes installed in partitions shall be staggered so that there is no direct sound path between adjacent spaces. Provide insulation on all sides of boxes to prevent acoustical leaks and flanking paths.

1206.5.4 Pipe penetrations. Provide acoustical insulation in annular void surrounding pipe and caulk top and underside of structure.

1206.5.5 White noise generator. Provide white noise generators with proper voltage and frequency in each bedroom.

SECTION 1208
INTERIOR SPACE DIMENSIONS

Add the following section 1208.6*:*

1208.6 Access for service and maintenance. Provide at least one continuous access route meeting minimum dimensional requirements from the service entrance to the following rooms / spaces.

1208.6.1 Equipment spaces. Provide access for large equipment maintenance and replacement to all spaces housing equipment, including but not limited to, air-handlers, chillers, switchgear, generators, fire pumps, boilers, environmental security filters, and heat exchangers.

1208.6.1.1 Equipment spaces access. Access to equipment spaces via stairs is not permitted.

1208.6.1.2 Interior columns. Interior of equipment spaces shall be free of columns. At perimeter wall of spaces, columns are not permitted to reduce required clearances within equipment room or reduce usable wall space for required equipment.

1208.6.2 Service spaces. Provide access to service spaces, including but not limited to, food service facilities, mailroom, pouch vault, and trash rooms**.**

1208.6.3 Dimensional requirements. Provide the following minimum dimensions.

1208.6.3.1 Corridors. Minimum width: 1300 mm (51 inches).

1208.6.3.2 Door openings. Minimum clear width: 1830 mm (72 inches).

1208.6.3.2.1 Door hinges for equipment spaces. Provide 180-degree hinges on doors for access to large equipment rooms. Refer to 1208.5.1 Equipment spaces for room types required to meet this requirement.

1208.6.3.3 Hoistway clear openings:

Office Building Service Elevators: 1300 mm (51 inches).

Office Building Passenger Elevators: 1100 mm (43.3 inches)

1208.6.3.4 Other requirements.

1. Refer to Chapter 34 for Post Communications Center (PCC) requirements.

2. Refer to OBO-ICS IMC, OBO-ICS IPC, and OBO-ICS NEC for clearances at equipment.

1208.6.4 Atrium / Gallery maintenance. Provide one access route from building exterior into the atrium / gallery to accommodate high-lift equipment used for upper maintenance such as window cleaning and lamp replacement.

1. Doors and corridors shall comply with Section 1208.6.3 along entire access route.

2. Configure doors and corridor(s) to provide adequate maneuvering clearance for high-lift equipment.

1208.6.5 Maximum gallery height. The maximum height permitted from the atrium/gallery finished floor to the underside of the slab above is 12.2 m (40 feet) to facilitate interior wall, ceiling, and equipment maintenance and replacements by mobile lift. Refer to Chapter 14 for exterior wall maintenance equipment requirements.

Exception. Existing buildings with an atrium.

1208.6.6 Maximum guard booth height. The maximum height permitted within any guard booth requiring 15-minute FE/BR protection shall be 4750mm from the finished floor to the underside of the slab above.

END OF CHAPTER IBC-12 AMENDMENTS

CHAPTER 13
ENERGY EFFICIENCY

SECTION 1301
GENERAL

Delete and replace Chapter 13 Energy Efficiency in its entirety with the following:

1301.1. Low-rise residential buildings. Design and construction of buildings three stories or less in height above grade that include sleeping accommodations where the occupants are primarily permanent in nature (30 days or more) must be in accordance with Code of Federal Regulations 10 CFR 435 Energy Efficiency Standards for the Design and Construction of New Federal Low-Rise Residential Buildings (this includes compliance with the *International Energy Conservation Code* – see 10 CFR 435 for details).

1301.2 All buildings other than low-rise residential. Design and construction of buildings not covered by OBO-ICS IBC Section 1301.1.1 must be in accordance with Code of Federal Regulations 10 CFR 433 Energy Efficiency Standards for the Design and Construction of New Federal Commercial and Multi-Family High-Rise Residential Buildings, which includes compliance with ANSI/ASHRAE/IES 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings; however, R-values must be no less than R-19 (U = 0.0526 Btu/(h·ft2·°F)) for exterior walls and no less than R-30 (U = 0.0333 Btu/(h·ft2·°F)) for roof assemblies.

END OF CHAPTER IBC-13 AMENDMENTS

CHAPTER 14
EXTERIOR WALLS

SECTION 1401
GENERAL

Delete and replace Section 1401.1 with the following:

1401.1 Scope. The provisions of this chapter establish the minimum requirements for exterior walls; parapets; exterior wall coverings; exterior wall openings; exterior windows and doors; architectural trim; balconies and similar projections; and bay and oriel windows.

SECTION 1402
PERFORMANCE REQUIREMENTS

Add the following section1402.11:

140211 Roof edge fall protection.

140211.1 Provide parapets or guardrail at roof edges of all buildings.

Exception. Compound Access Control (CAC) buildings where there is no roof-mounted equipment.

1402.112 The height of the parapet must be in accordance with Table 1402.8.2, measured from the top of walking surface at roof high point to top of coping.

Table 1402.8.2
PARAPET HEIGHT

Building type	Minimum parapet or guardrail height
Office building	1067 mm
Other	1067 mm [a] 762 mm [b]

a. Buildings which have stair access, hatch access or rooftop equipment.
b. Buildings which do not have stair access, hatch access or rooftop equipment.

SECTION 1403
MATERIALS

Insert the following subsection at the end of Section 1403.5:

1403.5.4 Corrosion resistance for exterior metals. Exterior enclosure metals must comply with Appendix W.

SECTION 1407
EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

Delete and replace section 1407 in its entirety with the following section 1407.1:

1407.1 General. The use of exterior insulation and finish systems (EIFS) is prohibited.

Add the following Section 1413

SECTION 1413
EXTERIOR WALL MAINTENANCE EQUIPMENT REQUIREMENTS

1413.1 Exterior wall maintenance equipment. Provide exterior maintenance equipment in accordance with the requirements of this section. Refer to Chapter 12 for interior maintenance equipment requirements.

1413.1.1 Maximum permitted wall height for the use of façade maintenance exterior lifts. The maximum permitted wall height for use of exterior lifts must not exceed 18.3 m (60 feet) above grade at base of wall.

1413.1.2 Suspended scaffolds. Provide roof mounted suspended scaffold system for façade maintenance where wall height exceeds 18.3 m (60 feet) above grade at base of wall.

END OF CHAPTER IBC-14 AMENDMENTS

CHAPTER 15
ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

SECTION 1506
MATERIALS

Add the following section 1506.4:

1506.4 Roof ladders, stairs, platforms, walkways. Roof ladders, stairs, platforms, walkways guardrails and handrails exposed to the elements at roof levels must be constructed of concrete, steel, aluminum, or fiberglass. Exposed wood is prohibited.

SECTION 1507
REQUIREMENTS FOR ROOF COVERINGS

Add new subsection 1507.15.2:

1507.15.2 Landscaped (vegetated) roofs.

1507.15.2.1 General. Landscaped roof systems are not permitted without the written approval of the OBO Authority Having Jurisdiction - OBO/PDCS/DE Office Director on a project-specific basis.

1507.15.2.2 Prohibited location. Vegetated roofs are not permitted to be installed on roofs above any CAA space.

END OF CHAPTER IBC-15 AMENDMENTS

CHAPTER 16
STRUCTURAL DESIGN

SECTION 1601
GENERAL

Add the following sections 1601.2 through 1601.5:

1601.2 Minimum design loads and associated criteria. The minimum structural design loads and associated criteria for Department of State mission buildings and other structures shall be in accordance with IBC model code Chapter 16 except as amended herein.

1601.2.1 Bridge design. Design of bridges shall be in accordance with AASHTO LRFD Bridge Design Specifications and AISC Steel Bridge Design Handbook.

1601.2.2 Pedestrian bridges. Design of pedestrian bridges shall be in accordance with the AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges.

1601.2.3 Environmental engineering concrete structures. Design of environmental engineering concrete structures shall be in accordance with ACI 350 Code Requirements for Environmental Engineering Concrete Structures.

1601.2.3 Antenna towers. Design of antenna towers shall be in accordance with ANSI/TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas.

1601.3 Structural systems. The primary structural framing system for structures governed by this code shall be designed and constructed of reinforced, cast-in-place concrete (refer to Chapter 19) unless an alternative framing system is specifically approved by OBO/PDCS/DE.

1601.4 Prohibited framing systems and configurations.

1601.4.1 Alternative concrete framing systems. Precast, prestressed/post-tensioned framing systems or precast/-prestressed components shall not be used.

1601.4.2 Lightweight concrete. Lightweight concrete as defined in ACI 318M shall not be used in structural members of the lateral force resisting system or resisting forces generated by blast.

1601.4.3 Transfer girders. Transfer girders supporting more than two framed levels are not permitted unless approved by OBO/PDCS/DE.

1601.4.4 Cantilevers. Cantilevered slabs, beams, and girders shall not exceed the lesser of the following unless specifically approved by OBO/PDCS/DE:

1. Cantilever thicknesses shall meet or exceed the member size limits as defined in ACI 318M with updates provided by Chapter 19, section 1905, unless analysis of deflections is utilized as defined in Chapter 16, section 1604.3.1.

2. Cantilever lengths:

a. Slab cantilever lengths beyond the furthest line of perimeter building columns and associated edge beams shall not exceed one-third (1/3) of the cantilever slab's backspan bay dimension. If slab cantilever lengths exceed this limit, then cantilever beams/girders shall be provided (see below for cantilever beam/girder limits). Note: the one-third backspan requirement assumes a typical two-way slab system.

When one-way slab and beam systems are utilized, the cantilever slab shall not exceed one-third of the interior structural bay size, neglecting intermediate floor beams/joists.

b. Beam and girder cantilever lengths beyond the furthest line of perimeter building columns and associated edge beams shall not exceed one-half (1/2) of the beam's cantilever backspan.

3. Cantilever backspan thickness:

a. Cantilever slab backspan member thicknesses shall meet or exceed the cantilever slab thickness for at least half (1/2) of the perimeter slab bay in the backspan direction.

b. Beam and girder backspan member thicknesses shall meet or exceed the cantilever beam or girder thickness, extending to a minimum of the first interior support column or wall.

4. Consideration for deflections (due to immediate live load and long-term concrete creep and shrinkage effects) shall be properly coordinated with detailing of non-structural elements attached to or supported by the cantilever slab (e.g., curtainwall, floor and ceiling finishes, etc.). These considerations are in addition to meeting the deflection limits outlined in the model IBC and ACI 318M. 3-D structural analysis and industry standard modeling techniques shall be utilized to ensure member deflections resulting from structural load effects are taken into account. Reference section 1604.3.2 for additional information on deflection considerations.

1601.4.5 Seismic Isolation and Damping. The use of seismic base isolation or damping systems are prohibited.

1601.5 Progressive collapse. Designs shall not facilitate or be vulnerable to progressive collapse. All new facilities shall be designed in accordance with *UFC 4-023-03 Design of Buildings to Resist Progressive Collapse*.

1601.5.1 Progressive collapse requirements for office buildings and American Centers. Regardless of the number of stories, all embassy office buildings and American Centers shall be designed to resist progressive collapse. Tie Force method of analysis is not allowed for these buildings.

1601.5.2 Internal column removal. A/E shall verify with OBO if the structure incorporates screening procedures that meet the definition of controlled public access. Controlled public access structures need not be designed for internal column removal.

1601.5.3 Enhanced Local Resistance (ELR). Enhance Local Resistance is required.

1601.5.4 Underground parking. Where allowed below permitted structures as defined in Chapter 34 – Requirements for Parking Structures, newly constructed underground parking structures shall be designed for progressive collapse. No Unified Facilities Criteria (UFC) provisions exempting a structure from Progressive Collapse design shall be allowed.

1601.5.4.1 Column removal. Internal and perimeter column and load bearing wall removal will be required only at the parking levels.

SECTION 1603
CONSTRUCTION DOCUMENTS

Add subsection 1603.1.10 following 1603.1.9:

1603.1.10 Progressive Collapse design data. The following information shall be indicated on the construction documents:

1. General note stating the following:

Design of the building is in accordance with UFC 4-023-03, DD/MM/YYYY. Future additions or alterations to this structure shall not jeopardize the requirements for progressive collapse resistance.

2. Risk Category.

3. Method of progressive collapse resistance (Alternate Path, Enhanced Local Resistance or combinations thereof).

SECTION 1604
GENERAL DESIGN REQUIREMENTS

Delete and replace 1604.3.2 with the following:

1604.3.2 Reinforced concrete. The deflection of reinforced concrete structural members shall not exceed that permitted by ACI 318M. Deflections must be explicitly calculated regardless of whether ACI 318M minimum thicknesses are satisfied.

Delete and replace section 1604.5 with the following:

1604.5 Risk category. All office buildings and compound utility buildings shall be assigned to Risk Category III. All other buildings and structures shall be assigned to Risk Category II or higher. The risk category for structures other than office buildings and compound utility buildings shall not be lower than the risk category defined in Table 1604.5. Freestanding artworks outside the building footprint may be assigned to Risk Category I.

SECTION 1605
LOAD COMBINATIONS

Add the following to 1605.1 at the end of the first paragraph:

"Load factors on snow loads in ASCE 7-22 load combinations shall be amended to the corresponding load factors indicated in ASCE 7-16."

Delete and replace Exception 2 of Section 1605.1 with the following:

2. Where the allowable stress design load combinations of ASCE 7 Section 2.4 are used, flat roof snow loads of 30 pounds per square foot (1.44 kN/m^2) and roof live loads of 30 pounds per square foot (1.44 kN/m^2) or less need not be combined with the seismic load. Where flat roof snow loads exceed 30 pounds per square foot (1.44 kN/m^2), 20 percent shall be combined with seismic loads.

Add the following to section 1605.1.1 to the end of the paragraph:

Load factors on snow loads in the ASCE 7-22 load combinations shall be amended to the corresponding load factors indicated in the ASCE 7-16.

Delete and replace Equations 16-1, 16-3, 16-4, and 16-5 in Section 1605.2 with the following: Retain the remaining formulas:

$D + L + (L_r \text{ or } S \text{ or } R)$ (Equation 16-1)

$D + L + 0.6W + S/2$ (Equation 16-3)

$D + L + S + 0.6(W/2)$ (Equation 16-4)

D + L + S + E/1.4 (Equation 16-5)

Replace Exception 2 of Section 1605.2 with the following

2. Flat roof snow loads of 30 pounds per square foot (1.44 kN/m^2) or less and roof live loads of 30 pounds per square foot (1.44 kN/m^2) or less need not be combined with seismic loads. Where flat roof snow loads exceed 30 pounds per square foot (1.44 kN/m^2), 20 percent shall be combined with seismic loads.

SECTION 1607
LIVE LOADS

Add the following subsection:

1607.1.1 General. Design Loads shall comply with the International Building Code (IBC) Table 1607.1, except as noted in this subsection.

A minimum uniform live load of 4.79 kN/m^2 (100 psf) and a concentrated live load of 8.90 kN (2,000 lbs) shall be applied to all office structure slabs, unless the tabulated live load required by IBC Table 1607.1 or OBO ICS Table 1607.1.1 is higher.

(See Table on next page)

TABLE 1607.1.1
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_0, AND MINIMUM CONCENTRATED LIVE LOADS

IBC Table 1607.1 Ref. No.	OCCUPANCY OR USE		UNIFORM (kN/m^2)	CONCEN-TRATED (kN)
15.	Garages and Vehicle Floors	Armored vehicles	Actual weight of vehicle	
		Passenger vehicles only	2.39[c]	See Section 1607.7
23.	Office Buildings	Floors supporting built-in conference rooms (BCR)	4.79	8.90
		File, telecom equipment, and telecom rooms shall be designed for heavier loads based on anticipated occupancy.	6.00	
		Post communication center (PCC)	4.79	
		UPS room and battery rooms	6.00[b]	
27.	Residential	Exercise rooms	4.79	8.90
		Emergency response room	4.79	
		Representational areas	2.87	
		Storage	4.79	
		Mechanical rooms and areas	4.79	
		Stairs and Exits	4.79	1.33
28.	Roofs[d]	Ordinary flat, pitched, and curved roofs (that are not occupiable)	1.44	1.33
		Office building roof	6.00[b]	8.90
		Utility Building roof	6.00[b]	
		Roof maintenance shed (RMS) - floor	2.40	--
		Roof maintenance shed (RMS) - roof	0.96	--
		Safe Areas/Haven	4.79	
		Secure Rooms	6.00	
		Safe/pouch rooms	6.00	
	Mechanical Spaces	Mechanical rooms and areas	7.18[b]	11.12
		Generator rooms or generator support frames	11.97[b]	
		Antenna and Mechanical, Electrical, Plumbing Access Platforms	4.79	
	Ammunition Storage		Actual weight of ammunition	
	Support Annex (SPX) Floors		6.00[b]	8.90
	Utility Building (UTL) Floors		7.18[b]	8.90

For Imperial Units: 25.4 mm = 1 inch; $645.16mm^2 = 1\ in^2$; $0.0929m^2 = 1\ ft^2$; $0.0479\ kN/m^2 = 1\ lb/ft^2$; 0.004448kN = 1 lb

a. Live load reduction is not permitted
b. Live load reduction is only permitted in accordance with Section 1607.13.1.2 or Item 1 of Section 1607.13.2
c. Live load reduction is only permitted in accordance with Section 1607.13.1.3 or Item 2 of Section 1607.13.2
d. Also see Section 1607.14

Delete and replace section 1607.2 with the following:

1607.2 Loads not specified. For occupancies or uses not designated in IBC 1607.1 nor OBO ICS IBC 1607.1.1, the live load shall be determined in accordance with a method approved by OBO.

Delete and replace section 1607.3 with the following. Retain subsections 1607.3.1 and 1607.3.2:

1607.3 Uniform live loads. The live loads used in the design of OBO buildings and other structures shall be the maximum loads expected by the intended use or occupancy but shall in no case be less than the minimum uniformly distributed live loads given in IBC Table 1607.1 and OBO ICS IBC Table 1607.1.1. Live loads acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface. For existing building live loading requirements, refer to OBO ICS IEBC section 304 Structural Design Loads and Evaluations and Design Procedures.

Delete and replace section 1607.4 with the following:

1607.4 Concentrated live loads. Floors, roofs and other similar surfaces shall be designed to support the uniformly distributed live loads prescribed in 1607.3 or the concentrated live loads given in IBC Table 1607.1 and OBO ICS IBC Table 1607.1.1, whichever produces the greater effects. Unless otherwise specified, the indicated concentrated loads shall be assumed to be uniformly distributed over an area of 762 mm by 762 mm and shall be located so as to produce the maximum load effects in the structural members.

Delete and replace section 1607.6 in its entirety with the following:

1607.6 Helipads. Helipads shall be designed for the following live loads and considered to act concurrently:

1. Two single concentrated point loads 2400 mm (94 inches) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum take-off weight of the helicopter and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated loads shall be applied over an area of 200 mm (8 inches) by 200 mm (8 inches).

2. Uniform live load of 3.00 kN/m^2 (63 psf).

Delete and replace section 1607.8.1 in its entirety with the following:

1607.8.1 Loads. Where any structure does not restrict access for vehicles that exceed a 4,536 kg (10,000 lb) gross vehicle weight rating, those portions of the structure subject to such loads shall be designed using the vehicular live loads, including consideration of impact and fatigue, in accordance with AASHTO LRFD Bridge Design Specifications.

Delete and replace subsection 1607.13 with:

1607.13 Reduction in uniform live loads. Except for uniform roof live loads, all other minimum uniformly distributed live loads, L_0 in IBC Table 1607.1 or OBO ICS Table 1607.1.1, are permitted to be reduced for vertical members in accordance with 1607.13.1 or 1607.13.2. Uniform roof live loads are permitted to be reduced in accordance with 1607.14. No live load reduction shall be permitted for: horizontal members, columns or walls supporting the roof.

Exception: Live load reductions may be applied in the design of foundation members, irrespective of restrictions on individual structural members.

Add the following subsection1607.14.4:

1607.14.4 Additional roof loads. All roofs shall be designed for specified antennas, equipment installation loads, equipment hoist attachments, and other operational loading demands. All such areas shall be clearly designated on the architectural and structural drawings.

Add the following section 1607.22:

1607.22 Special loads on perimeter walls or fences. In addition to normal code requirements, compound perimeter walls/fences shall be designed to withstand a line load of 3.00 kN/m (206 pounds/foot) located 1.524 m (5 feet) above grade and a concentrated load of 1.35 kN (303 pounds) located anywhere on the wall/fence face. These loads are not cumulative and shall be analyzed separately.

SECTION 1608
SNOW LOADS

Delete and replace section 1608.1 in its entirety with the following:

1608.1 General. Design snow loads shall be determined in accordance with Chapter 7 of ASCE 7-16, but the design roof load shall not be less than that determined by Section 1607. Design snow loads shall be determined using the snow importance factor defined in Chapter 1 of ASCE 7-16.

Exception: Temporary structures complying with section 3103.6.1.1.

1608.1.1 Load factors for snow loads. Refer to Section 1605 for amendments specific to snow loads adopting ASCE 7-16 load factors.

Delete and replace section 1608.2 in its entirety and replace with the following:

1608.2 Ground snow loads. Gound snow loads to be used in determining the design snow loads for roofs and other snow accumulation surfaces shall be as indicated in OBO-ICS IBC Table 1608.1 (located at the end of this Chapter). The tabulated ground snow loads in Table 1608.1 are based on an extreme value statistical analysis of data available in the vicinity of the site using a value with a 2-percent annual probability of being exceeded (50-year mane recurrence interval). Site-specific case studies shall be determined in accordance with Chapter 7 of ASCE 7-16 and shall be approved by OBO/PDCS/DE/CSE.

SECTION 1609
WIND LOADS

Delete and replace the first sentence of last paragraph of subsection 1609.1.1 with the following:

"The wind speeds in Table 1609.1 are basic design wind speeds, V, and shall be converted in accordance with Section 1609.3.1 to allowable stress design wind speeds, V_{asd}, when the provisions of the standards referenced in Exceptions 4 and 5 are used."

Delete and replace section 1609.3 in its entirety with the following:

1609.3 Basic design wind speed. OBO post-specific basic wind speed, V, used in the determination of design wind loads shall be as specified in Table 1609.1 (located at the end of this chapter). For locations where basic wind speed values are not provided, basic wind speeds shall be determined on the basis of regional climatic data and/or tropical cyclone simulation models in accordance with Chapter 26 of ASCE 7 and submitted to OBO/PDCS/DE/CSE for review and approval.

Delete and replace section 1609.5 in its entirety with the following:

1609.5 Tornado loads. The design and construction of Risk Category III and IV buildings and other structures located in tornado-prone Posts, as designated in Table 1609.1 shall be in accordance with Chapter 32 of ASCE 7, except as modified by this code.

Add the following subsection 1609.5.1:

1609.5.1 Tornado speed. Replace ASCE 7, Section 32.5.1 with the following:

The tornado speed, V_T, used in the determination of tornado loads on buildings and other structures shall be determined from Table 1609.5.1 for the assigned risk category. The effective plan area, A_e, of the building, other structure, or facility, shall be determined in accordance with Section 32.5.4 and shall be rounded up to the next largest tabulated A_e.

Table 1609.5.1
Tornado speeds for Risk Category III and IV buildings and other structures

Effective Plan Area, A_e (m^2)	0.1	186	929	3,716	9,290	23,226	92,903	371,612
Risk Category III (m/s)	35	36	38	40	42	44	50	55
Risk Category IV (m/s)	42	43	44	46	48	51	56	62

Table 1609.5.1 Notes:
Note 1: Tornado speeds are 3-second gust wind speeds at 10m above ground
Note 2: OBO/PDCS/DE/CSE may authorize studies to determine alternative tornado speeds on a case-by-case basis. Proposed alternative tornado wind speeds must be compliant with ASCE 7 methodology and submitted to OBO/PDCS/DE/CSE for approval.

SECTION 1613
EARTHQUAKE LOADS

Add the following to end of the first paragraph in section 1613.1:

"Spectral response acceleration parameters found in the USGS Seismic Design Geodatabase referenced in ASCE 7 shall be replaced with project-specific parameters in the Statement of Work, or otherwise from OBO/PDCS/DE/CSE."

SECTION 1615
TSUNAMI LOADS

Add the following subsection 1615.1.1:

1615.1.1 General. OBO buildings and structures considered to be in Tsunami Design Zones, required to comply with Chapter 6 of ASCE 7, will be specifically indicated in project-specific requirements.

SECTION 1621
SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS

Add the following to ASCE 7 Section 13.6.4.5:

5. Pendant mounted lighting fixtures shall have a safety wire rim inside the stem to connect fixtures to underside of ceiling structure. Chain hung fixtures shall be attached with closed hooks.

6. Emergency battery operated lighting fixtures installed on shelf brackets shall be secured with chain or bolts to their support.

Add the following subsections:

Add the following to ASCE 7 Section 13.6.11:

1621.2 ASCE 7 Section 13.6.11.5 Retention of Wire Rope. Provide means for retaining each wire rope in its sheave groove during seismic activity.

1621.3 ASCE 7 Section 13.6.11.6 Prevention of Snagging. Provide means for preventing the snagging of ropes, chains and traveling cables when displaced by seismic disturbance.

SECTION 1624
BLAST ANALYSIS AND DESIGN

Add the following section:

1624.1 General. Buildings required to be blast-resistant shall comply with the requirements of this section to prevent structural collapse during and after a blast event, to prevent loss of life, minimize injuries, and make evacuation and rescue possible. Minor damage to structural components and heavy damage to the façade may occur.

1624.2 Blast analysis and design. Blast analysis and design shall include all of the following.

1624.2.1 Blast loads. Buildings required to be blast-resistant shall be designed for all of the following.

1. Vehicular Bomb. The blast loading is based on a vehicular bomb located at the perimeter of the compound.

2. Setback distances. Refer to OBO-ICS IBC Chapter 34 for requirements.

3. See project specific classified criteria for definition of W3 charge weight in pounds of TNT.

a. For SECCA-exempt posts, the charge weight shall be 0.25 W3. Contact SEB or DS for applicability of SECCA-exempt status.

b. For all other posts, the charge weight shall be W3.

4. For projects involving existing construction (i.e. NABs, EOBs) refer to section 1624.3 for alternate threat requirements.

1624.2.1.1 Blast parameters. The air blast resulting from a bomb shall be assumed as originating at a single point source, consisting of a hemispherical shock wave. The blast parameters (e.g., peak pressure, impulse, duration) shall be defined at the location of the component under consideration. Refer to UFC 3-340-02 for requirements.

1624.2.1.2 Loading functions. Refer to UFC 3-340-02 for loading functions; the relevant sections are listed below for various structural components. Refer to UFC 3-340-01 for components not covered by the above reference; the appropriate section is listed for those cases.

TABLE 1624.2.1.2
STRUCTURAL COMPONENT LOADING FUNCTIONS

Component	Loading Type	*UFC 3-340-02*	*UFC 3-340-01*
Exterior wall	Reflected pressure	2-15.3.2.	9.3
Exterior column	Reflected pressure		

Flat roof slab	Incident pressure Internal pressure	2-15.3.3 Fig. 2-201(b)	9.3
Exterior bay	Internal pressure	Fig. 2-201(b)	
Ext. bay floor slabs	Internal pressure	Fig. 2-201(b)	
Windows	Refl./Inc. pressure	6-27 to 32	
Bsmt. walls & fdn.	Ground shock		9.4
In-structure shock	Ground shock		Chapter 12

1624.2.1.3 Leakage pressure on internal partitions. Leakage pressure on internal partitions is not expected from the impinging blast wave for blast-resistant buildings. Internal partitions are not required to resist blast pressure.

Exception. Internal walls and slabs of interior rooms with louver openings to outside air shall be designed for the resulting infill pressure.

1624.2.2 Blast design criteria. All OBO facilities subject to blast requirements shall conform to the requirements of *UFC 3-340-02, Design of Structures to Resist the Effects of Accidental Explosions* except as noted herein. The following tables summarize the design criteria for cast-in-place reinforced concrete components and steel framing components, respectively, as applied to OBO office buildings. For exterior wall design using different materials, alternate criteria may be investigated that allows for heavy non-structural damage but that can be shown, by means of calculation and appropriate test data, to provide adequate blast and seismic protection. Such designs are subject to approval by OBO.

1624.2.2.1 Material properties. Material design strengths shall be increased using the static and dynamic increase factors as shown in the U.S. Army Corps of Engineers Protective Design Center Technical Report PDC TR-06-01 Rev 1 (SBEDS Methodology Manual).

1624.2.2.2 Load combinations. Blast analyses shall be performed utilizing the following load combinations:

1. DL+ LL+ Blast Loads
2. DL+ 0.25 LL+ Blast Loads

1624.2.2.3 Cast-in-place reinforced concrete. Refer to Table 1624.2.2.3 for cast-in-place reinforced concrete design criteria.

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TABLE 1624.2.2.3
CAST-IN-PLACE REINFORCED CONCRETE DESIGN CRITERIA

Topic	Criteria	Section
Maximum flexural response for interior slabs	$\theta \leq 6^o$	4-16 (Type II)
Maximum flexural response for non-load bearing exterior walls roof slabs and beams*	$\theta \leq 4^o$	4-16 (Type II)
Maximum flexural response for load bearing exterior walls*	$\theta < 2^o$	
Exterior wall ties	Provided at each intersection	4-18.4
Maximum flexural response for columns	$\mu \leq 3$	4-51
Ultimate shear stress (w/ stirrups)	$10 (f_{cd})^{0.5}$	4-18.1

Where: θ is member end rotation
μ is ductility
f_{cd} is dynamic concrete strength

For each item in the table above, the section of this reference (*UFC 3-340-02*) addressing the topic is listed in the right-hand column.

*If shear ties are used connecting the front and back faces of flexural reinforcement, a maximum rotation of 4 degrees may be used.

1624.2.2.3.1 Ductile detailing requirements. Unless more stringent ductile detailing requirements are required by Code or design, all frame members (including those not subjected to blast forces) of all reinforced concrete structures designed for blast shall be detailed in accordance with the IBC's Intermediate Moment Frame (IMF) requirements as a minimum. This requirement primarily impacts locales with low seismic hazard and is intended to provide additional ductility to accommodate uncertainties associated with abnormal loading conditions. The resulting IMFs shall be considered as not having any impact or applicability to the designated lateral force resisting system of the building. Note that this is a detailing requirement and not a loading requirement.

1. Lacing requirements per UFC 3-340-02 are waived.

2. Transverse reinforcement requirements (wall slabs) shall use cross-ties as defined by IBC and not as shown in Figure 4-101 per UFC 3-340-02. Furthermore, consecutive cross-ties shall have their 90-degree hooks at opposite sides of the flexural member as provided in the IBC.

3. Further IMF Requirements: Columns shall always be detailed as columns regardless of the factored compressive axial load on the column. Use closed stirrups and ties for all beams and columns. Provide lateral joint reinforcement spaced at 150 mm (6 inches) maximum at all beam/column joints.

1624.2.2.3.2 Alternate splicing requirements. Throughout the building structural frame, splicing shall be avoided in regions of high shear and moment. Also, splicing within a region shall be staggered in

order to avoid failure at a particular splice location. For structural elements specifically designed for blast (e.g., the exterior walls and the roof framing), tension splices shall be used throughout.

1624.2.2.4 Structural steel. Refer to Table 1624.2.2.4 for structural steel design criteria.

TABLE 1624.2.2.4
STRUCTURAL STEEL FRAMING DESIGN CRITERIA

Topic	Criteria
Maximum flexural response:	
For composite/steel concrete slab[1]	$\theta \leq 4^o$, $\mu \leq 20$
For steel wall plate	$\theta \leq 10^o$, $\mu \leq 30$
For exterior wall columns[1]	$\theta \leq 2^o$, $\mu \leq 10$
For interior columns[1]	$\theta \leq 2^o$, $\mu \leq 10$
For steel studs used in exterior walls(Fy $\leq$ 33 ksi steel)[2]	$\theta \leq$ 9-18^o, $\mu \leq 20$ (limit overall deflection to less than 600 mm)
For steel studs used in exterior walls (Fy > 33 ksi steel)[3]	$\theta \leq$ 7.5-15^o, $\mu \leq 12$ (limit overall deflection to less than 600 mm)
For primary beams/girders[1]	$\theta \leq 4^o$, $\mu \leq 20$
For cold-formed roof deck	$\theta \leq 2^o$, $\mu \leq 2$
Ultimate shear stress in primary beams	$f_v \leq 0.55\ f_{dy}$
Where:	f_{dy} = dynamic yield stress

Notes for Table 1624.2.2.4.

[1] The maximum sideway deflection is limited to 0.04 times the story height, as per *UFC 3-340-01*.

[2] Maximum rotation is approximately 9 degrees for a linear shape and 18 degrees for a parabolic shape.

[3] Maximum rotation is approximately 7.5 degrees for a linear shape and 15 degrees for a parabolic shape.

1624.2.2.5 Mass Timber/CLT. Refer to Table 1624.2.2.5 for Mass Timber CLT Panel design criteria.

TABLE 1624.2.2.5
MASS TIMBER CLT PANEL DESIGN CRITERIA

Topic	Criteria
Maximum flexural response:	
Flatwise Bending or Flatwise Shear (no axial load)	$\theta \leq 4^o$, $\mu \leq 2$
Flatwise Bending or Flatwise Shear (with axial load)	$\theta \leq 4^o$, $\mu \leq 2$

1624.2.2.6 Blast window frames. Refer to tables below for blast window frame design criteria. All blast window frame designs shall address, at a minimum, the response of axial effects on connections, stability and compression buckling of the mullions, and the potential for glazing and bite failure at the large response limits provided.

TABLE 1624.2.2.6-1
STEEL WINDOW FRAME CRITERIA

For muntin members of windows with special laminated glazing and muntins	$\theta \leq 25^o$, $\mu \leq 30$
All other members	$\theta \leq 9^o$, $\mu \leq 15$

TABLE 1624.2.2.6-2
ALUMINUM WINDOW FRAME CRITERIA

For members where ultimate tensile strength is 10% higher than yield strength	$\theta \leq 9^o$, $\mu \leq 15$
For members where ultimate tensile strength is NOT 10% higher than yield strength	$\mu \leq 1$

1624.2.2.7 Door systems in blast resistant envelope. Refer to ASTM F2927-21 Diplomatic Security Testing Supplement for blast testing criteria. If components of the door system were not tested (i.e., window lite, concrete anchorage), blast calculations must be included.

1624.2.2.8 Hatches and louvers in blast resistant envelope. Where hatches and louvers are placed in a building's blast resistant envelope, the entire assembly shall be designed for the lowest of the following:

1. The blast capacity of the assembly.

2. The impinging blast pressure wave.

Steel plate and window mullion allowables may be used, as detailed above. OBO may consider waiving this requirement for non-occupied spaces.

1624.2.2.9 Blast resistant exterior stud walls. Prescriptive versions of these walls are available from OBO/PDCS/DE. Deviations and additions to these wall designs shall be verified by a blast analysis using the above allowables.

1624.2.2.10 Frangible building features. Frangible building features are components attached the exterior of blast-resistant structures or installed close to the exterior of blast-resistant structures, that could pose a potential hazard to personnel after a blast event. Frangible building features include sun shading devices, entrance canopies (attached and free-standing), screens, and balcony railings.

Exception. The following elements are not required to meet requirements for frangible building features: exterior building cladding, CACs, perimeter walls, warehouses, cabanas, swimming pools, tennis courts, gymnasiums, parking areas, walkway trellises, items not attached to or installed close to, a blast-resistant building and small items (e.g., fire extinguishers, benches, flagpoles, etc.).

1624.2.2.9.1 Frangible building features shall be designed to be blast resistant.

1624.2.2.9.1.1 Analysis and design. Provide analysis and calculations demonstrating that the frangible building features will deform in a ductile manner and remain attached to the supporting structure. Blast loads collected by frangible features shall be transferred to the blast resistant structure.

1624.2.2.11 Guard towers. Refer to OBO-ICS IBC Section 3420.10 for guard tower blast design criteria.

1624.2.3 Global analysis: Base shear. The calculation of the base shear due to blast shall be compared to the base shear calculated for the appropriate seismic zone for the region. The building shall be designed for the worst of these two cases.

1624.2.3.1 Formula for base shear due to blast. Shown below is the derivation of the formula for base shear due to blast that shall be used.

1. Ultimate Resistance: The ultimate resistance, Rm, for an impulsive loading acting on an elasto-plastic system is:

$$R_m = \frac{2*\pi*I}{T_a*(2*\mu-1)^{0.5}}$$

Where:
I = the blast induced impulse
T_a = the fundamental period of the structure
μ = the design ductility

2. Impulse: The impulse used shall be the total reflected impulse impinging on the face of the building. The calculation of the total impulse may be accomplished by using the CONWEP code per UFC 3-340-01 to determine the average impulse on the structure and then multiplying this average value by the total area of impingement.

3. Fundamental Period of the Structure: There are many methods available for estimating the fundamental period of the structure. The IBC provides one acceptable method. As shown elsewhere in the IBC and outlined below:

$$T_a = C_T(h_n)^{0.75}$$

Where: C_T = numerical coefficient dependent on building type.

h_n = the total height of the building in feet.

The *IBC* states that: C_T=0.035 for steel moment-resisting frames.

C_T = 0.030 for reinforced concrete moment-resisting frames and eccentrically braced steel frames

C_T= 0.020 for all other buildings

4. Value of CT: If this method is chosen, OBO recommends a CT value of between 0.03 and 0.02 be used for the design of reinforced concrete structures. It is often desirable to obtain a distribution of answers between these end points to ascertain how the base shear is affected by a change in this parameter and use engineering judgment to choose the most appropriate solution for design. The amount of 'infill' wall used for the building exterior may affect this parameter. A CT value of 0.035 is recommended for steel frame structures.

1624.2.3.2 Wall response. Since the ground floor exterior walls of Embassy facilities are constructed of cast-in-place reinforced concrete or stiff steel layers to meet forced entry and ballistic resistance requirements, the lateral force resisting system will utilize these walls. Thus, these walls need to be designed and detailed with adequate provisions for ductility and inelastic response. What is not desired is a sudden shear type failure.

1. Above the ground floor, forced entry and ballistic resistance requirements are usually not required if they are considered to be 5.00 m (16.4 feet) above grade or an accessible platform. Such walls shall be designed to provide adequate blast and seismic protection to the occupants, but heavy (repairable) damage from a blast event is allowed. Thus, lighter weight (infill) construction may be considered, providing that it by shown, by calculation and appropriate test data, that it provides adequate occupant protection to blast and seismic loading.

2. If such 'infill' walls are used, such walls may reduce blast reaction forces to the surrounding structure, but also allow small amounts of blast pressure inside the building. Additionally, they may decrease the weight and stiffness of the overall structure. The blast consultant and structural engineer shall fully explore these items during the design phases if exterior infill walls are used in the design.

3. Typical μ values are well known for various elements failing in shear and flexure under flexural loading (*see UFC 3-340-02*). Due to the unique features of blast loading (i.e., incident and reflected pressures surrounding the building) and the uncertainties (as outlined above) pertaining to configuration and response of NOBs, OBO recommends a μ value of 5 for base shear calculations. Different ductility's shall be used for individual element design. Parameters influencing the ultimate ductility of these structures are the mode of failure, the amount of reinforcement, the presence of a P-delta effect, the wall panel aspect ratio, and the number of building stories.

1624.2.3.3 Uniform pressure. Continuing with the derivation of base shear methodology, the building is assumed to be a cantilever under uniform pressure, such that:

$$R_m = \frac{2*M_u}{h_n}$$

Where: M_u = The ultimate moment

1624.2.3.4 Ultimate resisting forces. For a building responding in the first shear mode, the ultimate resisting forces consist of a couple produced by the base shear and the inertial forces, which are assumed to increase linearly with height:

$$M_u = \frac{2*h_n*V_b}{3}$$

Where: V_b = the base shear

1624.2.3.5 Base shear. Finally, combining the two expressions for Rm and Mu leads to:

$$V_b = \frac{3*\pi*I}{2*T_a*(2*\mu-1)^{0.5}}$$

1624.2.3.6 Distribution of force. This is the expression that shall be used for the calculation of base shear due to blast. The distribution of this force decreases linearly from ground level to roof level, so that:

$$V(x) = Vb*(1-x/hn)$$

Where: x is less than h_n

1624.3 Blast analysis for existing construction. Certain types of renovation and acquisition projects require a blast vulnerability study to identify specific recommendations and upgrades to mitigate the effects of blast. OBO and DS will review the recommendations and determine which, if any, will be incorporated as project specific requirements. Blast vulnerability studies that identify specific building vulnerabilities are classified confidential.

1624.3.1 The existing building's as-built capacity to resist the blast effects.

1. Blast performance shall be documented for both the minimum threshold for failure and the full NOB charge weight threat (W3).
2. Failure shall be defined as a.) onset of progressive collapse and b.) a fragmentary hazard to building occupants.

1624.3.2 Retrofit design options for mitigating blast effects.

1. Designs must include a mitigation option utilizing the full charge weight at the afforded setback.
2. If it is not feasible (based on cost, setback, or other building limitations) to produce a building upgrade to the full extent of the required criteria, designs must include options that mitigate lesser threats as indicated below, with the resulting protection indicated.
    a. Setbacks less than 12 meters (40 feet), 25% W3 at actual distances.

b. Setbacks between 12 meters (40 feet) and 22.5 meters (73.8 feet), a design impulse of 300 psi-msec.

1624.3.3 Wall breaches at adjoining spaces. Where walls or other structural elements are shared or abut with non-Department space, the design basis threat for evaluating breaching scenarios for vulnerabilities and mitigation designs shall be 2.5% W3 at a standoff of 0.45 meter (18 inches).

1624.3.2 Blast design criteria. Blast vulnerability studies of existing structural and fenestration elements shall utilize Low Level of Protection response limits, as defined by PDC TR-06-02, as the threshold for establishing failure. Blast mitigation designs for these elements shall use the OBO response limits identified in section 1624.2.2.

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TABLE 1608.1
DESIGN CRITERIA FOR SNOW

POST	GROUND SNOW LOADS Pg (kN/m2)
Abidjan	0
Abu Dhabi	0
Abuja	0
Accra	0
Adana	0.24
Addis Ababa	0
AIT Kaohsiung	Note 1
AIT Taipei	0
Algiers	0
Almaty	1.44
Amman	0
Amsterdam	2.4
Ankara	0.96
Antananarivo	0
Apia	0
Ashgabat	2.4
Asmara	0
Astana (Nur-Sultan)	1.92
Asuncion	0
Athens	0.48
Auckland	0
Baghdad	0
Baku	0.96
Bali	Note 1
Bamako	0
Bandar Seri Begawan	0
Bangkok	0
Bangui	0
Banja Luka	1.68
Banjul	0
Barcelona	0.48
Barranquilla	0
Basrah	0
Beijing	0.24
Beirut	0

Belfast	0.96
Belgrade	1.44
Belmopan	0
Belo Horizonte	0
Berlin	1.68
Bern	1.92
Bishkek	0.96
Bissau	0
Bogota	0
Bordeaux	1.44
Brasilia	0
Bratislava	1.44
Brazzaville	0
Bridgetown	0
Brussels	1.92
Bucharest	1.68
Budapest	2.64
Buenos Aires	0.96
Bujumbura	0
Busan	Note 1
Cairo	0
Calgary	1.92
Canberra	0.48
Cancun	0
Cape Town	0
Caracas	0
Cartagena	Note 1
Casablanca	0
Cebu	0
Chengdu	0.24
Chennai	0
Chiang Mai	0
Chisinau	3.12
Ciudad Juarez	0
Colombo	0
Conakry	0
Copenhagen	2.4
Cotonou	0
Curacao	0
Cusco	Note 1
Dakar	0

Damascus	0.48
Dar Es Salaam	0
Dhahran	0
Dhaka	0
Dili	0
Djibouti	0
Doha	0
Dominica	Note 1
Douala	0
Dubai	0
Dublin	1.44
Durban	0
Dushanbe	1.44
Dusseldorf	1.92
Edinburgh	1.44
Erbil	Note 1
Florence	0.96
Fort de France	0
Frankfurt	0.96
Freetown	0
Fukuoka	0.24
Gaborone	0
Geneva	0.96
Genoa	1.44
Georgetown	0
Guadalajara	0
Guangzhou	0
Guatemala City	0
Guayaquil	0
Hague, The	1.44
Halifax	1.68
Hamburg	1.68
Hamilton	0
Hanoi	0
Harare	0
Havana	0
Helsinki	1.68
Hermosillo	0
Ho Chi Minh City	0
Hong Kong	0
Honiara	0

Hyderabad	0
Islamabad	1.68
Istanbul	1.68
Izmir	Note 1
Jakarta	0
Jeddah	0
Jerusalem, Embassy	0
Johannesburg	0
Juba	0
Kabul	1.44
Kampala	0
Karachi	0
Kathmandu	0
Khartoum	0
Kigali	0
Kingston	0
Kinshasa	0
Kolkata	0
Kolonia	0
Koror	0
Krakow	2.63
Kuala Lumpur	0
Kuwait	0
Kyiv	1.44
La Paz	3.84
Lagos	0
Lahore	0
Las Palmas	Note 1
Leipzig	0.96
Libreville	0
Lilongwe	0
Lima	0
Lisbon	0
Ljubljana	1.44
Lome	0
London	0.96
Luanda	0
Lusaka	0
Luxembourg	0.96
Lyon	2.66
Madrid	1.44

Majuro	0
Malabo	0
Male	Note 1
Managua	0
Manama	0
Manila	0
Maputo	0
Marseille	1.68
Maseru	0
Matamoros	0
Mazatlan	Note 1
Mbabane	0
Medan	0
Melbourne	0.48
Merida	0
Mexico City	0
Milan	2.63
Minsk	1.92
Mogadishu	0
Monrovia	0
Monterrey	0
Montevideo	0
Montreal	4.55
Moscow	1.92
Mostar	2.4
Mumbai	0
Munich	1.92
Muscat	0
Nagoya	0.24
Naha	0
Nairobi	0
Naples	0
Nassau	0
Nay Pyi Taw	Note 1
N'Djamena	0
New Delhi	0
Niamey	0
Nicosia	0
Nogales	0
Nouakchott	0
Nuevo Laredo	0

Nuku'alofa	Note 1
Nuuk	Note 1
Osaka-Kobe	0.24
Oslo	1.92
Ottawa	2.87
Ouagadougou	0
Palermo	0
Palma De Mallorca	Note 1
Panama City	0
Paramaribo	0
Paris	0.96
Perth	0
Peshawar	1.68
Phnom Penh	0
Podgorica	2.4
Ponta Delgada	0
Port au Prince	0
Port Louis	0
Port Moresby	0
Port of Spain	0
Port Vila	Note 1
Porto Alegre	0
Poznan	Note 1
Prague	1.44
Praia	0
Pretoria	0
Pristina	0.96
Quebec	5.26
Quito	0.24
Rabat	0
Rangoon	0
Recife	0
Rennes	Note 1
Reykjavik	1.44
Riga	2.4
Rio de Janeiro	0
Riyadh	0
Rome	0.24
San Jose	0
San Salvador	0
Sanaa	0

Santiago	0.24
Santo Domingo	0
Sao Paulo	0
Sapporo	0.24
Sarajevo	1.44
Seoul	0.24
Seville	Note 1
Shanghai	1.44
Shenyang	0.24
Singapore	0
Skopje	1.44
Sofia	1.44
St. George's	0
St. Johns	0
St. Kitts & Nevis	Note 1
St. Lucia	Note 1
St. Petersburg	1.92
St. Vincent & the Grenadines	Note 1
Stockholm	1.44
Strasbourg	1.44
Surabaya	0
Suva	0
Sydney	0
Tallinn	1.44
Tangier	0
Tashkent	1.44
Tbilisi	1.44
Tegucigalpa	0
Tel Aviv, EBO	0
Thessaloniki	2.87
Tijuana	0
Tirana	1.2
Tokyo	0.24
Toronto	1.44
Toulouse	Note 1
Tripoli	0
Tromso	Note 1
Tunis	0
Udorn	0
Ulaanbaatar	1.92

Valencia	Note 1
Valletta	0
Vancouver	1.44
Vatican City	0.24
Victoria	0
Vienna	1.44
Vientiane	0
Vilnius	1.44
Vladivostok	1.44
Warsaw	1.44
Wellington	0
Windhoek	0
Winnipeg	Note 1
Wuhan	Note 1
Yaounde	0
Yekaterinburg	2.87
Yerevan	1.44
Yokohama - RLS	0.24
Zagreb	1.44
Zurich	0.96

Table 1608.1 Notes:
Note 1: Not available. Investigate local conditions and submit values to OBO/PDCS/DE/CSE for approval.

TABLE 1609.1
WIND DESIGN CRITERIA

Post	Basic Wind Speed, V *(m/s)*, by Risk Category				Hurricane-Prone	Tornado-Prone
	I	II	III	IV		
Abidjan	42.3	45.0	47.8	49.6		
Abu Dhabi	42.0	44.7	46.9	48.3		
Abuja	51.7	55.7	59.8	62.4		
Accra	40.3	43.3	46.4	48.5		
Adana	42.0	44.7	46.9	48.3		Y
Addis Ababa	51.0	54.9	59.0	61.7		
AIT Kaohsiung	66.1	70.1	73.7	75.7	Y	Y

AIT Taipei	63.6	66.4	69.2	71.0	Y	
Algiers	48.6	51.9	55.3	57.5		Y
Almaty	41.7	44.9	48.2	50.3		Y
Amman	43.0	45.9	48.8	50.7		
Amsterdam	46.9	48.7	50.5	51.4		Y
Ankara	58.0	60.2	62.5	63.8		
Antananarivo	65.4	71.8	77.6	81.5	Y	
Apia	67.7	74.3	81.7	85.6	Y	
Ashgabat	44.8	48.0	51.3	53.5		
Asmara	42.3	45.0	47.8	49.6		
Astana (Nur-Sultan)	52.6	56.2	59.9	62.3		Y
Asuncion	66.4	75.3	86.3	95.4		Y
Athens	53.2	55.3	57.3	58.6		Y
Auckland	44.0	45.4	46.7	47.5		Y
Baghdad	42.3	45.0	47.8	49.7		
Baku	42.7	44.8	47.1	48.5		
Bali	37.4	41.6	45.6	48.2		
Bamako	51.7	55.7	59.8	62.4		
Bandar Seri Begawan	46.7	51.0	55.4	58.3		
Bangkok	45.8	49.5	53.3	55.8		
Bangui	42.3	45.0	47.8	49.6		
Banja Luka	51.2	56.2	61.3	64.6		Y
Banjul	42.3	45.0	47.8	49.6		
Barcelona	44.1	45.7	47.5	48.6		Y
Barranquilla	53.9	58.7	63.8	67.7	Y	Y
Basrah	42.0	44.7	46.9	48.3		
Beijing	41.9	45.0	48.2	50.3		Y
Beirut	48.7	50.3	52.0	53.0		Y
Belfast	41.7	43.3	44.9	45.8		Y
Belgrade	34.1	35.5	36.8	37.7		Y
Belmopan	58.2	62.3	66.6	69.6	Y	
Belo Horizonte	42.5	48.2	55.3	61.1		
Berlin	41.1	42.9	45.6	46.9		Y
Bern	39.8	41.1	42.9	43.8		Y
Bishkek	47.3	51.2	55.4	58.0		
Bissau	42.3	45.0	47.8	49.6		
Bogota	43.3	47.0	50.9	53.4		
Bordeaux	35.3	36.5	37.7	38.4		Y
Brasilia	38.0	40.9	43.9	45.9		
Bratislava	41.3	42.9	44.5	45.4		Y

Brazzaville	37.3	40.2	43.2	45.1		
Bridgetown	60.0	67.2	74.3	77.5	Y	
Brussels	39.8	41.1	42.9	43.8		Y
Bucharest	35.7	37.8	40.0	41.4		Y
Budapest	40.2	43.0	46.0	48.0		Y
Buenos Aires	39.5	41.6	43.9	45.3		Y
Bujumbura	49.5	53.4	57.5	60.1		
Busan	59.6	63.2	67.0	69.2	Y	
Cairo	41.7	44.3	47.0	48.8		
Calgary	41.9	44.2	46.7	48.4		Y
Canberra	40.0	41.7	43.4	44.4		Y
Cancun	71.6	77.2	82.3	85.1	Y	Y
Cape Town	44.3	46.0	47.4	48.7		Y
Caracas	41.9	47.3	53.0	57.0		Y
Cartagena	44.1	47.5	51.1	53.3		Y
Casablanca	52.1	55.8	59.8	62.3		Y
Cebu	58.7	66.1	72.1	75.2	Y	Y
Chengdu	37.0	40.0	43.1	45.1		Y
Chennai	54.8	59.6	64.4	67.2	Y	
Chiang Mai	42.4	45.8	49.3	51.5		
Chisinau	35.7	37.9	40.2	41.6		Y
Ciudad Juarez	47.0	50.2	53.5	55.5		Y
Colombo	51.0	56.5	62.3	66.0		
Conakry	51.7	55.7	59.8	62.4		
Copenhagen	38.0	39.8	41.1	42.0		Y
Cotonou	42.3	45.0	47.8	49.6		
Curacao	56.0	64.0	72.0	75.4	Y	
Cusco	40.5	43.6	46.8	48.9		
Dakar	42.3	45.0	47.8	49.6		
Damascus	62.5	64.9	67.4	70.1		
Dar Es Salaam	40.6	43.7	47.0	49.1		
Dhahran	42.5	45.1	47.9	49.6		
Dhaka	45.6	49.2	53.3	55.9		Y
Dili	48.7	53.0	57.6	60.5		
Djibouti	42.5	46.0	49.8	52.2		
Doha	42.0	44.7	46.9	48.3		Y
Dominica	59.2	66.2	73.0	76.9	Y	
Douala	42.3	45.0	47.8	49.6		
Dubai	42.0	44.7	46.9	48.3		
Dublin	39.8	41.1	42.9	43.8		Y

Durban	39.5	41.0	42.6	43.5		Y
Dushanbe	47.6	51.7	55.9	58.6		
Dusseldorf	41.1	42.9	45.6	46.9		Y
Edinburgh	40.3	41.7	43.3	44.4		Y
Erbil	42.0	44.7	46.9	48.3		
Florence	46.4	49.3	52.5	54.4		Y
Fort de France	64.4	70.2	76.0	78.7	Y	
Frankfurt	36.7	38.9	40.7	42.0		Y
Freetown	42.3	45.0	47.8	49.6		
Fukuoka	59.5	62.0	65.0	66.9	Y	Y
Gaborone	42.3	45.0	47.8	49.6		
Geneva	39.7	41.2	42.7	43.7		Y
Genoa	48.0	51.2	54.4	56.4		Y
Georgetown	39.7	43.4	47.3	49.7		
Guadalajara	46.1	49.4	52.9	55.2		Y
Guangzhou	50.6	54.5	57.6	59.3	Y	Y
Guatemala City	50.3	54.3	58.5	61.2		
Guayaquil	34.8	37.6	40.5	42.3		
Hague, The	43.4	45.2	46.9	47.8		Y
Halifax	45.2	48.7	52.8	55.0		
Hamburg	41.1	42.9	45.6	46.9		Y
Hamilton	61.1	64.3	67.6	69.5	Y	
Hanoi	43.5	46.3	49.3	51.4		
Harare	41.7	44.3	47.0	48.8		
Havana	62.3	66.8	71.8	74.2	Y	Y
Helsinki	35.1	36.5	37.8	38.7		Y
Hermosillo	40.2	43.2	46.4	48.6		
Ho Chi Minh City	39.2	43.1	47.4	49.6		
Hong Kong	60.9	65.3	69.5	72.3	Y	Y
Honiara	66.4	71.4	76.2	79.1		
Hyderabad	50.1	55.3	60.7	64.2		
Islamabad	42.0	44.7	46.9	48.3		Y
Istanbul	58.1	60.2	62.6	63.9		Y
Izmir	58.0	60.2	62.5	63.8		Y
Jakarta	35.3	38.6	42.1	44.3		
Jeddah	45.4	48.8	52.3	54.6		
Jerusalem, Embassy	42.0	44.7	47.1	49.0		Y
Johannesburg	39.5	41.0	42.6	43.5		Y
Juba	51.2	56.2	61.4	64.7		
Kabul	49.8	53.7	57.8	60.4		

Kampala	51.2	56.2	61.4	64.7		
Karachi	53.3	57.7	62.4	65.3		
Kathmandu	55.3	61.1	67.2	71.1		
Khartoum	44.0	47.2	50.5	52.6		
Kigali	49.5	53.4	57.5	60.1		
Kingston	59.7	65.3	69.3	71.4	Y	
Kinshasa	42.3	45.0	47.8	49.6		
Kolkata	59.1	64.5	69.2	71.7	Y	Y
Kolonia	39.6	44.9	51.7	56.3		
Koror	57.1	65.9	73.5	77.8	Y	
Krakow	35.8	37.3	38.6	39.5		Y
Kuala Lumpur	32.5	34.9	37.3	38.8		
Kuwait	47.1	50.5	54.0	56.3		
Kyiv	44.0	46.6	49.1	50.7		Y
La Paz	38.9	41.6	44.5	46.4		
Lagos	42.3	45.0	47.8	49.6		
Lahore	42.0	44.7	46.9	48.3		Y
Las Palmas	43.9	45.5	47.3	48.4		Y
Leipzig	41.8	44.2	46.5	47.9		Y
Libreville	37.3	40.2	43.2	45.1		
Lilongwe	42.3	45.0	47.8	49.6		
Lima	36.3	39.2	42.2	44.2		
Lisbon	49.2	52.0	54.9	56.7		Y
Ljubljana	32.6	33.9	35.0	35.9		Y
Lome	42.3	45.0	47.8	49.6		
London	36.4	38.5	40.8	42.2		Y
Luanda	37.3	40.2	43.2	45.1		
Lusaka	43.3	46.7	50.2	52.5		
Luxembourg	39.0	40.5	42.1	43.0		Y
Lyon	38.5	39.7	41.0	41.9		Y
Madrid	39.6	41.1	42.6	43.5		Y
Majuro	38.6	49.0	62.7	71.5		
Malabo	37.3	40.2	43.2	45.1		
Male	47.3	50.5	53.8	56.0		
Managua	39.3	42.3	45.4	47.3		Y
Manama	42.0	44.7	46.9	48.3		
Manila	65.2	69.3	73.0	74.8	Y	Y
Maputo	48.8	52.8	57.0	59.6		
Marseille	41.6	43.0	44.3	45.2		Y
Maseru	42.9	46.1	49.6	51.8		Y

Matamoros	61.2	64.8	68.0	70.2	Y	Y
Mazatlan	59.5	62.9	66.7	68.9	Y	
Mbabane	40.5	43.8	47.1	49.3		Y
Medan	35.8	39.1	42.5	44.7		
Melbourne	43.8	45.7	47.5	48.6		Y
Merida	49.0	53.6	58.8	61.8	Y	Y
Mexico City	41.3	44.3	47.4	49.3		Y
Milan	42.0	44.7	47.5	49.4		Y
Minsk	38.2	39.7	41.1	42.1		Y
Mogadishu	44.0	47.2	50.6	52.8		
Monrovia	42.3	45.0	47.8	49.6		
Monterrey	40.4	43.1	45.8	47.6		Y
Montevideo	56.8	61.3	66.0	69.0		Y
Montreal	41.9	44.6	47.5	49.4		Y
Moscow	37.4	39.4	41.4	42.8		Y
Mostar	51.6	54.7	58.0	60.0		Y
Mumbai	45.6	49.7	54.4	57.0		
Munich	40.9	43.1	45.3	46.8		Y
Muscat	42.0	44.7	46.9	48.3		
Nagoya	60.5	63.5	66.0	67.7	Y	Y
Naha	71.7	74.7	78.5	80.3	Y	Y
Nairobi	44.0	47.2	50.6	52.8		
Naples	45.2	48.2	51.2	53.2		Y
Nassau	68.3	73.8	78.7	81.3	Y	
Nay Pyi Taw	34.0	37.5	41.1	43.4		
N'Djamena	51.7	55.7	59.8	62.4		
New Delhi	45.3	48.7	52.3	54.5		Y
Niamey	51.7	55.7	59.8	62.4		
Nicosia	38.0	39.4	40.9	41.8		Y
Nogales	41.4	44.2	47.1	49.0		
Nouakchott	42.3	45.0	47.8	49.6		
Nuevo Laredo	42.1	45.3	48.6	50.8		Y
Nuku'alofa	62.6	69.4	76.4	82.1	Y	
Nuuk	66.6	69.8	73.2	75.4		
Osaka-Kobe	63.0	66.5	69.5	71.0	Y	Y
Oslo	35.9	37.4	38.7	39.6		Y
Ottawa	38.2	40.7	43.4	45.1		Y
Ouagadougou	42.3	45.0	47.8	49.6		
Palermo	47.9	51.1	54.2	56.3		Y
Palma De Mallorca	44.1	45.7	47.5	48.6		Y
Panama City	25.9	27.3	29.1	30.0		

Paramaribo	41.8	45.5	49.4	51.9		
Paris	37.6	38.9	40.2	41.0		Y
Perth	43.8	45.7	47.5	48.6		Y
Peshawar	42.0	44.7	46.9	48.3		Y
Phnom Penh	34.0	36.3	38.9	40.7		
Podgorica	46.1	49.9	53.7	56.2		Y
Ponta Delgada	50.3	53.1	56.1	58.0		
Port au Prince	56.7	60.4	64.0	66.4	Y	
Port Louis	72.5	78.5	85.2	89.9	Y	
Port Moresby	53.4	58.3	63.4	66.7		
Port of Spain	43.5	53.4	61.9	66.7	Y	
Port Vila	78.1	85.1	93.0	97.2	Y	
Porto Alegre	39.5	42.7	46.0	48.1		Y
Poznan	35.8	37.3	38.6	39.5		Y
Prague	35.8	37.2	38.6	39.4		Y
Praia	42.3	45.0	47.8	49.6		
Pretoria	39.5	41.0	42.6	43.5		Y
Pristina	37.3	38.8	40.2	41.1		
Quebec	39.0	41.4	44.0	45.7		Y
Quito	44.1	48.0	52.1	54.6		
Rabat	52.1	55.8	59.8	62.3		Y
Rangoon	48.8	53.2	57.0	59.5	Y	
Recife	39.8	45.2	51.8	57.2		
Rennes	37.6	38.9	40.2	40.9		Y
Reykjavik	57.2	59.5	61.7	63.0		
Riga	39.1	40.6	42.2	43.1		Y
Rio de Janeiro	39.0	42.0	45.1	47.0		
Riyadh	42.0	44.7	46.9	48.3		
Rome	45.3	48.2	51.2	53.2		Y
San Jose	36.6	38.8	41.2	42.6		
San Salvador	36.1	38.5	41.0	42.6		
Sanaa	42.0	44.7	46.9	48.3		
Santiago	36.9	39.8	42.8	44.7		
Santo Domingo	62.0	65.4	68.9	71.2	Y	
Sao Paulo	53.1	60.3	69.1	76.3		Y
Sapporo	45.6	48.3	51.2	53.0		Y
Sarajevo	44.8	48.4	52.2	54.6		
Seoul	50.8	54.2	57.8	60.0	Y	
Seville	39.5	41.0	42.5	43.5		Y
Shanghai	53.2	56.4	59.3	60.8	Y	Y

Shenyang	47.7	51.9	56.3	59.1		Y
Singapore	30.3	31.6	32.7	33.5		
Skopje	39.7	41.3	42.7	43.7		
Sofia	47.2	51.3	55.6	58.4		Y
St. George's	58.5	66.2	72.8	76.8	Y	
St. Johns	63.0	66.1	69.6	71.7	Y	
St. Kitts & Nevis	67.6	73.6	80.6	84.5	Y	
St. Lucia	57.8	64.7	70.6	74.7	Y	
St. Petersburg	42.8	45.0	47.3	48.8		Y
St. Vincent & the Grenadines	55.5	62.0	69.2	72.7	Y	
Stockholm	39.1	40.6	42.2	43.1		Y
Strasbourg	38.6	39.7	41.1	41.9		Y
Surabaya	36.3	39.5	42.9	45.1		
Suva	69.2	75.0	81.6	85.8	Y	
Sydney	43.8	45.7	47.5	48.6		Y
Tallinn	34.3	35.6	36.9	37.8		Y
Tangier	52.1	55.8	59.8	62.3		Y
Tashkent	48.5	52.6	57.0	59.8		Y
Tbilisi	53.8	56.1	58.6	60.2		
Tegucigalpa	38.0	40.8	43.6	45.5		Y
Tel Aviv, EBO	42.0	44.7	47.1	49.0		Y
Thessaloniki	42.9	44.3	46.0	46.9		Y
Tijuana	42.2	45.8	49.6	52.0		Y
Tirana	40.2	43.1	46.2	48.1		Y
Tokyo	61.2	64.4	66.5	68.3	Y	Y
Toronto	45.7	48.8	52.0	54.1		Y
Toulouse	35.3	36.5	37.6	38.4		
Tripoli	49.3	52.7	56.3	58.6		
Tromso	44.1	45.8	47.4	48.5		
Tunis	47.3	50.5	53.9	56.1		Y
Udorn	45.8	49.5	53.3	55.8		
Ulaanbaatar	43.9	46.7	49.7	51.6		
Valencia	39.5	41.1	42.6	43.5		Y
Valletta	47.8	51.0	54.2	56.2		
Vancouver	39.9	42.2	44.7	46.3		
Vatican City	46.3	49.2	52.4	54.3		Y
Victoria	42.3	45.0	47.8	49.6		
Vienna	44.7	47.3	50.0	51.7		Y
Vientiane	49.5	53.4	57.6	60.3	Y	
Vilnius	39.1	40.5	42.2	43.0		Y

Vladivostok	53.4	58.3	63.4	66.7		
Warsaw	35.8	37.3	38.6	39.5		Y
Wellington	51.8	53.3	54.8	55.7		Y
Windhoek	41.7	44.3	47.0	48.8		
Winnipeg	42.6	45.2	48.1	49.9		Y
Wuhan	39.2	42.7	46.3	48.6		Y
Yaounde	37.3	40.2	43.2	45.1		
Yekaterinburg	37.4	39.4	41.4	42.8		
Yerevan	54.3	58.5	62.8	65.6		
Yokohama - RLS	61.5	64.6	66.7	67.8	Y	Y
Zagreb	40.6	42.2	43.8	44.7		Y
Zurich	42.9	44.8	46.6	47.7		Y

Table 1609.1 Notes:
Note 1: Values are 3-second gust wind speeds at 10m above ground for Exposure Category C.

END OF TABLES

END OF CHAPTER IBC-16 AMENDMENTS

CHAPTER 17
SPECIAL INSPECTIONS AND TESTS

SECTION 1704
SPECIAL INSPECTIONS AND TESTS, CONTRACTOR RESPONSIBILITY AND STRUCTURAL OBSERVATION

Delete and replace section 1704.2 with the following:

1704.2 Special inspections and tests. For all OBO projects, the owner or the owner's authorized agent must employ one or more approved agencies to provide special inspections and tests during construction on the types of work specified in Section 1705 and identify the approved agencies to the building official.

Retain the IBC exceptions to Section 1704.2 and all subsections (1704.2.1 through 1704.2.5.1) thereafter.

END OF CHAPTER IBC-17 AMENDMENTS

CHAPTER 18
SOILS AND FOUNDATIONS

SECTION 1801
GENERAL

Add the following sections 1801.2 and 1801.3:

1801.2 Service life. The minimum design service life of the structural components of the foundation system must be 100 years.

1801.3 Prohibited foundation systems. Aggregate piers (stone columns, geopiers, etc.) or other similar systems under different names, are not allowed to be used on sites with a site-specific MCE_G peak ground acceleration exceeding 0.2g, as determined by ASCE 7, Section 11.8.3, item 2.

SECTION 1803
GEOTECHNICAL INVESTIGATIONS

Delete and replace the last sentence of Section 1803.1 with the following and add exception:

"Where geotechnical investigations involve in-situ testing, laboratory testing, or engineering calculations, such investigations shall be conducted by a U.S. registered design professional with at least 10 years professional experience on projects of similar nature."

Exception. Where directed otherwise by OBO/PDCS/DE/CSE.

Delete and replace the last sentence of Section 1803.5.12, Bullet 2, with the following:

"Peak ground acceleration shall be determined in accordance with the project-specific Statement of Work or otherwise provided by OBO/PDCS/DE/CSE."

Delete sub-bullets 2.1 and 2.2 under 2. In section 1803.5.12.

Add the following subsection 1803.5.13:

1803.5.13 Ground modifications. Where ground modifications are proposed, geotechnical investigations must be conducted and must include all of the following:

1. Evaluation of the site, groundwater, and soil (stratigraphy) conditions to ensure the ground modifications can be effectively achieved for the project intended construction.
2. Conduct a proof test of the proposed ground modification on an area of the site where directed by OBO.
3. Evaluation of proof test results.

1803.5.13.1 Site production. Site production of ground modifications must not proceed until approved by OBO.

SECTION 1808
FOUNDATIONS

Delete and replace the first paragraph of section 1808.8.1 with the following:

1808.8.1 Concrete or grout strength and mix proportioning.

"Concrete or grout in foundations must have a specified compressive strength (f'c) not less than the largest applicable value indicated in Table 1808.8.1, except refer to OBO-ICS IBC Chapter 19 for minimum specified compressive strength (f'_c) of concrete and grout for elements 1, 2a, and 2b and replace 4,000 psi for element 5 (Micropiles) with 35 MPa (5076 psi). "

SECTION 1810
DEEP FOUNDATIONS

Add the following subsections 1810.3.2.5.1 and 1810.3.2.5.2:

1810.3.2.5.1 Protection of steel piles. For corrosive soils and/or ground water the steel piles must include a corrosion allowance (sacrificial metal loss). The sacrificial metal or corrosion allowance is the thickness of metal (above what is structurally required for the pile) needed to compensate for the loss of metal that will occur as the pile corrodes over the design service life of the pile. The design service life is defined in section 1801.3. The extra metal thickness is added to all surfaces of the pile exposed to the corrosive soil and/or ground water. The following minimum corrosion rate for a mildly aggressive environment must be used: 0.025 mm (0.001 inches) per year per exposed surface. The above corrosion rate must also be applied to piles in fill materials regardless of the corrosive environment of the soil/or ground water. For aggressive or highly aggressive environments further studies are required to determine the corrosion rate. The use of other methods of protection may be considered with approval from OBO/PDCS/DE/CSE.

1810.3.2.5.2 Steel shell. Provide corrosion protection of the shell in accordance with Section 1810.3.2.5.1.

END OF CHAPTER IBC-18 AMENDMENTS

CHAPTER 19
CONCRETE

SECTION 1901
GENERAL

Add the following items to the end of section 1901.5:

1901.5 Construction documents.

12. Structural drawings must clearly indicate reinforcement size, cardinal direction, spacing and layer placement (ex. top/bottom) for slab elements.

13. Provide details of openings in structural members. These details must incorporate all structural detailing requirements for walls and slabs subject to forced-entry and / or blast requirements. The details must specifically address the location of diagonal bars at openings, and the treatment of interrupted bars at openings.

14. Structural drawings must indicate exposure classes based on the severity of the anticipated exposure of members.

15. Where specific construction practices, sequences, and methodology effects have been utilized in long-term deflection analysis and design of the structure in accordance with Subsection 1901.7, the construction documents (drawings and specifications) must explicitly require the same construction practices and sequences to ensure construction methods match the analysis assumptions. These assumptions include, but are not limited to, shoring and reshoring durations, curing times and methods. The contract documents must also include requirements for the contractor to submit a construction methodology and sequence plan to OBO detailing compliance with these requirements.

Add the following section 1901.8:

1901.8 Requirements for concrete structural framing systems. Concrete structural framing systems must comply with the following.

1901.8.1 General.

1. Minimum structural member thicknesses must be based on ACI 318M as amended by OBO-ICS IBC Section 1905.

2. The minimum column dimension must be 300 mm (12 inches).

3. Exterior bearing walls are permissible.

1901.8.2 Concrete framing systems for office building structures resisting blast. Unless specifically allowed otherwise by OBO/PDCS/DE, the following structural requirements must apply to office buildings:

1. Two-Way Solid Floor Slab Systems: Framed systems must be two-way solid floor slabs supported on all sides by beams or bearing walls.

1901.8.3 Concrete framing systems for all other buildings and structures.

1. Two-Way Solid Floor Slab Systems: Framed systems of two-way solid floor slabs supported on all sides by beams or bearing walls

2. One-Way Solid Floor Slab Systems: Framed systems of one-way floor slabs supported by beams or bearing walls are permitted. Continuous beams or walls along perimeter column lines of the building are required.

3. Flat-Slab Floor Systems: Framed systems of flat-slabs with drop panels are permitted. Continuous beams or walls along perimeter column lines of the building are required.

SECTION 1902
COORDINATION OF TERMINOLOGY

Add the following subsection 1902.1.2:

1902.1.2 Concrete service life. The number of years before major restoration with minimal maintenance. Major restoration is defined as repairs requiring jack hammering or other destructive means of concrete repair preparation. It shall be assumed that no repairs or maintenance are ever possible for foundations.

SECTION 1903
SPECIFICATIONS FOR TESTS AND MATERIALS

Add the following sections 1903.4 and 1903.5:

1903.4 Reinforcing type. All reinforcement must comply with ASTM A706/A706M, Grade 420 (60) or ASTM A615/A615M, Grade 420 (60), with limitations as specified in ACI 318M, Section 20.2.2.5.

1903.5 Reinforcing source. Reinforcement must (a) be manufactured by a steel mill prequalified to supply reinforcing steel for OBO projects or (b) be manufactured by a steel mill where the supplied reinforcing steel is evaluated and approved by OBO per section 1903.5.1.

1903.5.1 Substitution requests for ASTM A615/A615M or A706/A706M or preapproved mill. Approval by OBO is required for use of reinforcing steel not meeting the full requirements of ASTM A615/A615M or A706/A706M. Approval is also required for reinforcing steel from a mill not prequalified by OBO. Evaluation of a proposed alternate reinforcing steel standard must be made by the structural engineer of record (SER). Aspects identified below, of a proposed variance/substitution must be evaluated by the SER. During construction, testing of actual reinforcing steel must be done by an independent testing laboratory familiar with testing reinforcing steel to ASTM requirements, accredited by either AASHTO Material Reference Laboratory (AMRL) or International Accreditation Services (IAS), or as approved by OBO. The SER shall approve test results and approve use of proposed reinforcing steel prior to submittal to OBO for evaluation. The complete evaluation must be submitted to OBO for approval and must include the following elements/test data.

1. Name and location (city and country) of Manufacturer (if applicable).
2. Manufacturer's Chief Metallurgist contact information (telephone and email).
3. Bar dimensions.
4. Permissible variation in weights.
3. Deformations (include data worksheets).
4. Tensile strength.
5. Minimum yield strength.
6. Maximum yield strength (if applicable per ACI 318M, Section 20.2.2.5).
7. Minimum ratio of tensile strength to actual yield strength (if applicable per ACI 318M Section 20.2.2.5).

8. Elongation requirements (including the requirements of ACI 318M, Section 20.2.2.5).

9. Bend requirements (indicate pin diameters).

10. Bar markings (either graphic depiction and/or photographic) including explanation of meaning of marks.

11. Chemical composition limits (carbon, manganese, phosphorous, sulfur, silicon, copper, nickel, and vanadium) as applicable.

12. A sample copy of the mill's tag which separates and identifies the manufacturer's heat and testing identification numbers and an explanation of the elements on the mill tag.

13. A comparison between test results from the independent testing labs and manufacturer's mill certificates as applicable.

14. A comparison between a proposed reinforcing steel standard and ASTM A615/A615M and A706/A706M as applicable.

15. Evaluate criteria and method for determining yield strength (offset method, extension under load method).

SECTION 1904
DURABILITY REQUIREMENTS

Add the following sections 1904.3 through 1904.8:

1904.3 Concrete service life. The minimum design service life of all concrete structures including site perimeter and retaining walls must be 100 years.

Exception. Civil structures (e.g., manholes, inlets, etc.) are not required to meet this requirement. All civil structures exposed to corrosive environments must receive the necessary protections to achieve the ACI 50-year design service life.

1904.4 Corrosive environment. Exposure classes S1, S2, S3, C1, and C2 as defined by ACI 318M Table 19.3.1.1 and soils with pH values between 6.5 and 4.0 must be considered corrosive environments. Structural concrete elements subject to these exposure categories must be adequately protected by suitable materials, methods, and processes.

1904.5 Effectiveness of protection. The effectiveness of protective materials, methods, or processes must have been thoroughly established by satisfactory service life records or other evidence that demonstrates the effectiveness of such protective measures. To achieve effective protection of concrete elements, the durability requirements of ACI 318M must be supplemented with guidance from PCA's Design and Control of Concrete Mixtures, ACI 210.2R (Guide to Durable Concrete), ACI 362.1R (Guide for Design of Durable Parking Structures), ACI 365.1R (Service-Life Prediction), and suitable numerical modeling. The service life assessment must include analysis of soil corrosivity and testing for corrosion or degradation issues.

1904.6 Numerical modeling. Employ the use of applicable techniques to assess multiple distress degradation mechanisms and engage a qualified durability consultant. Numerical durability modeling must be used to:

1. Confirm that the proposed concrete mix design meets the service life requirement for concrete elements of the project.

2. Provide durability and corrosion protection to supplement code minimum requirements and usual construction practices to mitigate premature failure and/or costly repair of structures.

The following must be assumed for the numerical modeling of chlorides:

1. Concrete Cover. The assumed concrete cover must be taken as the specified concrete cover minus the allowable cover tolerance as defined by ACI 117.

2. Corrosion Threshold. The assumed chloride ion content, at the reinforcing steel depth, necessary to initiate corrosion must be taken as 0.05 percent by mass of concrete for uncoated (black) reinforcing bars.

3. Propagation Time. The corrosion propagation time shall be taken as 10 years for uncoated (black) steel reinforcement. This requires the concrete system to have a predicted time until breach of corrosion threshold of 90 years for the design 100-year service life requirement.

1904.7 Corrosion mitigation. Provide corrosion mitigation recommendations including those needed to reduce repairs or maintenance for elements such as foundation elements.

1904.8 Extent of protection. Exterior building walls shall be considered exposed concrete unless approved otherwise by OBO.

The additional modifications and requirements to ACI 318M apply:

1. For parallel nonprestressed reinforcement in a horizontal layer, clear spacing must be at least the greatest of 35 mm, 1.5 d_b, and (4/3) d_{agg}.

2. Continuing reinforcement must not be spliced within the beam column joint.

3. Placement of top beam bars outside of the closed ties or stirrups is not allowed.

4. For all beams at least two corner bars must be provided continuously both top and bottom.

5. The design of beams and slabs must take into consideration the difference in depth, d, to reinforcing steel due to inner and outer layer placement.

6. At any section of a flexural member, for top as well as for bottom reinforcement, the reinforcement ratio must not exceed 0.025.

7. Area of longitudinal reinforcement, A_{st}, for non-composite compression members must be (a) not less than $0.01A_g$ or (b) not more than $0.04A_g$ if bars are required to be lap spliced (0.08 in the region of the lap), or (c) not more than $0.06A_g$ of section if bars are required to be mechanically spliced.

8. Where used for beam or column bars, mechanical splices must comply with ACI Type 2 as defined by ACI 318M, Section 18.2.7.1 (mechanical splice must develop in tension or compression, as required, at least $1.25f_y$ of the bar, and must develop the specified tensile strength of the spliced bar).

9. Groups of three or more parallel reinforcing bars bundled in contact to act as a unit shall be prohibited unless specifically allowed by OBO/PDCS/DE.

10. Add the following text to ACI 318M Section 24.2.1:

Additionally, consideration for deflections (due to immediate live load and long-term concrete creep and shrinkage effects) must be properly coordinated with detailing of non-structural elements (e.g., curtainwall, floor and ceiling finishes, interior partitions etc.) attached to or supported by structural elements (e.g., beams, slabs, etc.). These considerations are in addition to meeting the deflection limits outlined in the IBC and in the section below.

11. Delete ACI 318M Table 7.3.1.1 and replace with the following OBO-ICS IBC table:

OBO-ICS Table 7.3.1.1 - Minimum Thickness of Solid Non-prestressed One-way Slabs

[1] The time dependent factors above are appropriate for one-way and two-way slab and beam systems only and is not permitted for use with flat-slab framing systems. Where flat-slab framing systems are utilized, the time dependent factors must be multiplied by two.

SECTION 1907
SLABS-ON-GROUND

Delete section 1907 and replace with the following:

1907.1 General. The thickness of concrete slabs-on-ground must not be less than 125 mm (5 inches) and must have a minimum steel reinforcement ratio (ρ) of 0.0010.

Exception. Thickness of slabs-on-ground in warehouses, heavy storage facilities, generator rooms, or subject to loads equal to or greater than 12.00 kN/m^2 must not be less than 200 mm (8 inches).

1907.1.1 Vapor retarder. A 0.15 mm (6-mil; 0.006 inch) polyethylene vapor retarder with joints lapped not less than 150 mm (6 inches) must be placed between the base course or subgrade and the concrete floor slab, or other approved equivalent methods or materials must be used to retard vapor transmission through the floor slab.

1907.2 Slab-on-ground design. Design of slabs-on-ground and slab-on-ground joint details must be in accordance with the recommendations of *ACI 360R, Design of Slabs on Ground*. Slabs-on-ground supporting aircraft loading must be designed in accordance with UFC 3-260-02. Typical joint details for slabs-on-ground must be shown on the structural drawings, and joint locations must be shown on structural and/or architectural plans.

1907.3 Slab-on-ground construction. Slabs-on-ground must be constructed in accordance with the recommendations of *ACI 302.1R, Guide for Concrete Floor and Slab Construction.*

Add the following sections 1909 through 1912:

SECTION 1909
CONCRETE QUALITY, MIXING AND PLACING

1909.1 Strength. Concrete strength must be based on cylinders made per ASTM C31/C31M from molds conforming to ASTM C470/C470M and tested in accordance with ASTM C39/C39M. The design concrete strength must not exceed 55 MPa (8,000 psi) unless specifically allowed otherwise by OBO/PDCS/DE. Minimum concrete strength (f'c) and maximum water-cementitious materials ratio (w/c) must be as follows (unless more stringent requirements for concrete subjected to special exposure conditions or sulfate exposure govern):

1. Building Frame and Miscellaneous Structures: f'c = 30 MPa (4,400 psi) minimum at 28 days. Maximum w/c = 0.54 for non-air-entrained concrete and 0.45 for air-entrained concrete.

2. Foundations, Retaining Walls, Slab-On-Ground, and Civil Site Work: f'c = 25 MPa (3,600 psi) minimum at 28 days. Maximum w/c = 0.61 for non-air-entrained concrete and 0.52 for air-entrained concrete.

3. Mass Foundations: f'c = 20 MPa (2,900 psi) minimum at 28 days. Maximum w/c = 0.65 for non-air-entrained concrete and 0.56 for air-entrained concrete.

1909.2 Consolidation. Design reinforcing steel to allow for internal vibration of the concrete. Openings in the reinforcement of 100 mm by 100 mm (4 inches by 4 inches) minimum and spaced at 600 mm (24 inches) each way must be provided for this purpose. Refer to ACI 309R for additional information.

SECTION 1910
DETAILS OF REINFORCEMENT

1910.1 Configuration and assembly of the reinforcing steel system. The designer shall ensure that the configuration and assembly of the complete reinforcing system will accommodate placement of reinforcing steel in the

most heavily reinforced beam/column joints, wall/window openings, and column splice zones within the tolerances specified in the code and supplement.

SECTION 1911
JOINT REQUIREMENTS

1911.1 Exterior building walls. The designer must show all joint locations on the structural drawings and must address crack control on the structural drawings and in the specifications. Methods of crack control for structural concrete walls must be in accordance with the recommendations of *ACI 224R, Control of Cracking in Concrete Structures*. Methods of crack control for architectural concrete must be in accordance with the recommendations of *ACI 303R, Guide to Cast-In-Place Architectural Concrete Practice*. Concrete that is exposed, painted, skim coated, covered with stucco, or otherwise covered with a material that is directly adhered to the concrete, must be considered as architectural concrete.

1911.2 Site walls. Provide control joints spaced not greater than 6.00 m (19.7 feet) on center, and expansion joints not greater than 30.00 m (98.40 feet) on center. Provide a joint at all steps in wall elevation. Control joint and expansion joint locations must be shown on the site plan drawings.

SECTION 1912
MODIFICATIONS TO ACI 318M

The additional modifications and requirements to ACI 318M apply:

1. For parallel nonprestressed reinforcement in a horizontal layer, clear spacing must be at least the greatest of 35 mm, 1.5 d_b, and (4/3) d_{agg}.

2. Continuing reinforcement must not be spliced within the beam column joint.

3. Placement of top beam bars outside of the closed ties or stirrups is not allowed.

4. For all beams at least two corner bars must be provided continuously both top and bottom.

5. The design of beams and slabs must take into consideration the difference in depth, d, to reinforcing steel due to inner and outer layer placement.

6. At any section of a flexural member, for top as well as for bottom reinforcement, the reinforcement ratio must not exceed 0.025.

7. Area of longitudinal reinforcement, A_{st}, for non-composite compression members must be (a) not less than $0.01A_g$ or (b) not more than $0.04A_g$ if bars are required to be lap spliced (0.08 in the region of the lap), or (c) not more than $0.06A_g$ of section if bars are required to be mechanically spliced.

8. Where used for beam or column bars, mechanical splices must comply with ACI Type 2 as defined by ACI 318M, Section 18.2.7.1 (mechanical splice must develop in tension or compression, as required, at least $1.25f_y$ of the bar, and must develop the specified tensile strength of the spliced bar).

9. Groups of three or more parallel reinforcing bars bundled in contact to act as a unit shall be prohibited unless specifically allowed by OBO/PDCS/DE.

10. Add the following text to ACI 318M Section 24.2.1:

> Additionally, consideration for deflections (due to immediate live load and long-term concrete creep and shrinkage effects) must be properly coordinated with detailing of non-structural elements (e.g., curtainwall, floor and ceiling finishes, interior partitions etc.) attached to or supported by structural elements (e.g., beams, slabs, etc.). These considerations are in addition to meeting the deflection limits outlined in the IBC

and in the section below.

11. Delete ACI 318M Table 7.3.1.1 and replace with the following OBO-ICS IBC table:

OBO-ICS Table 7.3.1.1 - Minimum Thickness of Solid Non-prestressed One-way Slabs

Support condition	**Minimum *h*** [1]
Simply supported	ℓ/20
One end continuous	ℓ/24
Both ends continuous	ℓ//28
Cantilever	ℓ/8

[1] Expressions applicable for normal weight concrete and fy = 60,000 psi (420 MPa). For other cases, minimum *h* must be modified in accordance with 7.3.1.1.1 through 7.3.1.1.3, as appropriate.

12. Delete ACI 318M Section 8.3.1.1 and replace with the following section:

8.3.1.1 For nonprestressed slabs without interior beams spanning between supports on all sides (e.g., flat-slab systems), having a maximum ratio of long-to-short span of 2, overall slab thickness h must not be less than the limits in Table 8.3.1.1, and must be at least 150 mm thick. Where the ratio of long-to-short span is 1.5 or less, increase h in Table 8.3.1.1 by a minimum of 10%. Deflections must be explicitly calculated in all flat-slab cases using 3-D finite element analysis.

13. Delete ACI 318M Table 9.3.1.1 and replace with the following OBO-ICS IBC table:

OBO-ICS Table 9.3.1.1 - Minimum Depth of Non-prestressed Beams

Support condition	**Minimum *h*** [1]
Simply supported	ℓ/14
One end continuous	ℓ/15
Both ends continuous	ℓ/18
Cantilever	ℓ/4

[1] Expressions applicable for normal weight concrete and fy = 60,000 psi (420 MPa). For other cases, minimum *h* must be modified in accordance with 9.3.1.1.1 through 9.3.1.1.3, as appropriate.

END OF CHAPTER IBC-19 AMENDMENTS

CHAPTER 22
STEEL

SECTION 2201
GENERAL

Add the following section2201.:

2201.6 Steel framing systems. Steel framing systems where allowed by OBO, must meet the following requirements:

2201.6.1 Primary members. Primary members (e.g. main beams, columns, and girders) must consist of hot-rolled structural shapes (hollow structural sections, HSS excepted). The shapes must be doubly symmetrical, have a constant depth, and be "compact" according the AISC definition.

2201.6.2 Secondary structural members. Secondary structural members may consist of hot-rolled or cold-formed structural steel. Main secondary members must be doubly symmetrical and of constant depth.

2201.6.3 Primary structural framing connections. Primary structural framing connections must be either shop-welded and field bolted, or shop-bolted and field-bolted.

Exception. Field welding may be allowed where specifically approved by OBO/PDCS/DE/CSE.

2201.6.4 Floor slabs. Floor slabs must be solid and supported on all sides by beams, including slabs using a steel deck.

SECTION 2202
STRUCTURAL STEEL AND COMPOSITE STRUCTURAL STEELAND CONCRETE

Add the following subsections2202.1.1 through 2202.1.3:

2202.1.1 Hot-rolled shapes. Hot-rolled shapes must have nominal yield strength between 250 MPa (36 ksi) to 350 MPa (50 ksi) and conform to ASTM A36/A36M or ASTM A992/A992M.

2202.1.2 Structural steel plate. Structural steel plate must have nominal yield strength between 250 MPa (36 ksi) to 350 MPa (50 ksi) and conform to ASTM A36/A36M or ASTM A529/A529M.

2202.1.3 Cold-formed steel tubes. Cold-formed steel tubes must have a nominal yield stress between 290 MPa (42 ksi) to 320 MPa (46 ksi) and conform to ASTM A500/A500M, Grade B.

SECTION 2204
COLD-FORMED STEEL

Add the following section 2204.3:

2204.3 Cold-Formed Steel. Cold-formed steel, except for steel tubes, must meet or exceed the requirements of ASTM A653/A653M.

END OF CHAPTER IBC-22 AMENDMENTS

CHAPTER 23
WOOD

SECTION 2301
GENERAL

Add the following subsections 2301.1.1 and 2301.1.2:

2301.1.1 Use of structural laminated timber systems. The use of structural -laminated timber systems is only permitted on a project-specific basis with the written approval of the OBO/PDCS/DE office director.

2301.1.2 Permitted structural laminated timber systems. The following structural laminated systems are permitted. No other systems are permitted.

1. Cross laminated timber
2. Structural glue-laminated timber
3. Structural composite lumber

END OF CHAPTER IBC-23 AMENDMENTS

CHAPTER 24
GLASS AND GLAZING

SECTION 2403
GENERAL REQUIREMENTS FOR GLASS

Add the following section 2403.6:

2403.6 Identification of full height glass partitions and doors. All full height glass partitions and doors must be identified with markings to prevent occupants from walking into glass.

2403.6.1 Locations for markings. Markings must be located at two levels: between 850 mm (33 inches) and 1000 mm (39 inches) and between 1400 mm (55 inches) and 1600 mm (63 inches) above the floor.

2403.6.2 Visual contrast required. Markings must contrast visually with the background when viewed from both inside and out in all lighting conditions.

2403.6.3 Size of markings. Markings must be a logo or sign at least 150 mm (6 inches) high and repeated on glazing or decorative feature such as broken lines or continuous bands not less than 50 mm (2 inches) high. Markings must be approved by OBO\PDCS\DE\ID prior to being incorporated into project.

2403.6.4 Marking methods. Chemical etching; sandblasting; adhesive strips; decals; paint or other opaque marking materials; opaque door pulls or push bars must extend across at least 2/3 of the total glazed area.

SECTION 2405
SLOPED GLAZING AND SKYLIGHTS

Add the following subsection 2405.2.1:

2405.2.1 Blast Resistant and FEBR Sloped glazing and skylights are prohibited in buildings that are required to meet Blast Resistance and/or Forced Entry Blast Resistance (FEBR) requirements.

Add the following section 2405.6:

2405.6 Fall protection. All skylight openings must be equipped with a protective screen to prevent falls through the skylight.

Exception. Where directed by OBO, provide a fixed guard on all exposed sides in lieu of protective screen in accordance Section 1015 Guards.

2405.6.1 Protective screen at skylights. Screens must be constructed and attached to meet the following:

1. Withstand a load of 90.0 kg (200 pounds) applied perpendicular to any point on the screen.
2. Limit screen deflection under applied load, to prevent screen from transferring load into skylight glazing system.

Add the following section 2410:

SECTION 2410
BLAST RESISTANCE REQUIREMENTS

2410.1 General. The following constitutes additional requirements for the blast design of windows in general as well as specific criteria associated with various glazing products. Blast resistant windows may be either conventional framed or muntin framed window systems. Muntin windows are windows that use special structural members, called muntins, mounted to the window frame flush to the inside face of the glass. These muntins act as restraints to the laminated glass. A qualified blast consultant must be tasked with producing a rational analysis and design of all window components.

2410.2 Rebound. Rebound must be considered in the design of the frame and anchorage system. For muntin window systems, rebound forces must be discounted.

2410.3 Frames/anchorage systems. Muntin window frames shall be designed using the procedure outlined in Technical Report Number 01.01 (Revision A) by the Bureau of Diplomatic Security and automated in the computer code WAMuntin. When reinforced concrete is used for exterior walls, priority must be given to the use of an embedded plate assembly around the rough opening for the attachment of any window resisting blast. For infill walls, other attachment schemes may be used. ACI 318 must be used for the design of all anchorages to concrete. The minimum bite used for all blast resistant glazing systems must be 25 mm (1 inch).

2410.4 FE/BR glass-clad polycarbonate systems. One method of meeting the forced-entry/ballistic resistance requirement is by using a glazing system consisting of many layers of glass laminated together with polycarbonate. Test data and theory to predict the blast capacity of such glazing systems is a controversial area. In addition, the long-term performance of such products when exposed to the harsh environment of some overseas sites is unknown with respect to delamination and UV degradation.

2410.5 Uncaptured open bite frames with structural silicone. Special criteria pertains to frames of this type as detailed below.

1. The effect of negative phase blast forces must be considered as contributing to the tendency of the glass to overmatch the silicone and detach from the curtain wall framing elements. In accordance with traditional blast design the negative phase forces must not be considered as precluding the inbound travel of the glazing.

2. The load applied to the structural silicone for both inbound and outbound conditions is shown in Figure 1. The silicone bond of the glass to the frame must be checked for all load conditions resulting from inbound and outbound loading and movement. On inbound loading the loading / movement includes shear (sliding), moment (prying), and compression. During outbound loading / movement there is a reversal of shear and moment with the normal force changing to tension. Note that near the corners of the opening there is a localized effect that results in a different combination of load direction.

3. The analysis of the silicone adhered system must account for the range of possible reactions produced by differing glass strengths. Silicone shear must be validated with the in-plane forces generated by WinGard derived 1 out of 1000 “weak” glass. Silicone tension must be validated with respect to 750 out of 1000 “strong” glass.

4. Stresses in the structural silicone must be calculated from load transfer through the silicone where the silicone bond is primary to retaining the glass in the frame (e.g., rebound condition). Maximum tensile stress must be limited to Ft/1.25 (Ft = ultimate tensile stress). In addition, the strain in the silicone must be calculated from movement of the glass relative to the frame (e.g., maximum inbound glass deflection with consideration for sliding and prying). The maximum strain due to joint movement must be limited to 0.5*St (St = strain at Ft). It is preferred that high strain rate stress strain data be used in the evaluation. Static data may be used if it can be demonstrated that the results are conservative as compared with high strain rate data.

5. Calculations and analysis must consider the direct interaction of a coupled system consisting of glazing, silicone and framing to validate the performance of the uncaptured silicone glazed curtain wall system. This

analysis should include material and geometrical nonlinearities including the effects of global stability, local buckling, and high strain rate effects. The transient dynamic characteristics of the application of blast loading must be explicitly analyzed to include pressure time histories with both positive and negative phases. Piecewise linear curves may be used to represent the pressure curves. This analysis must include glazing, silicone, framing, and connections. The fidelity of the calculations presented in this analysis must capture the localized effect of buckling, tearing, and load transfer through connections including the structural silicone.

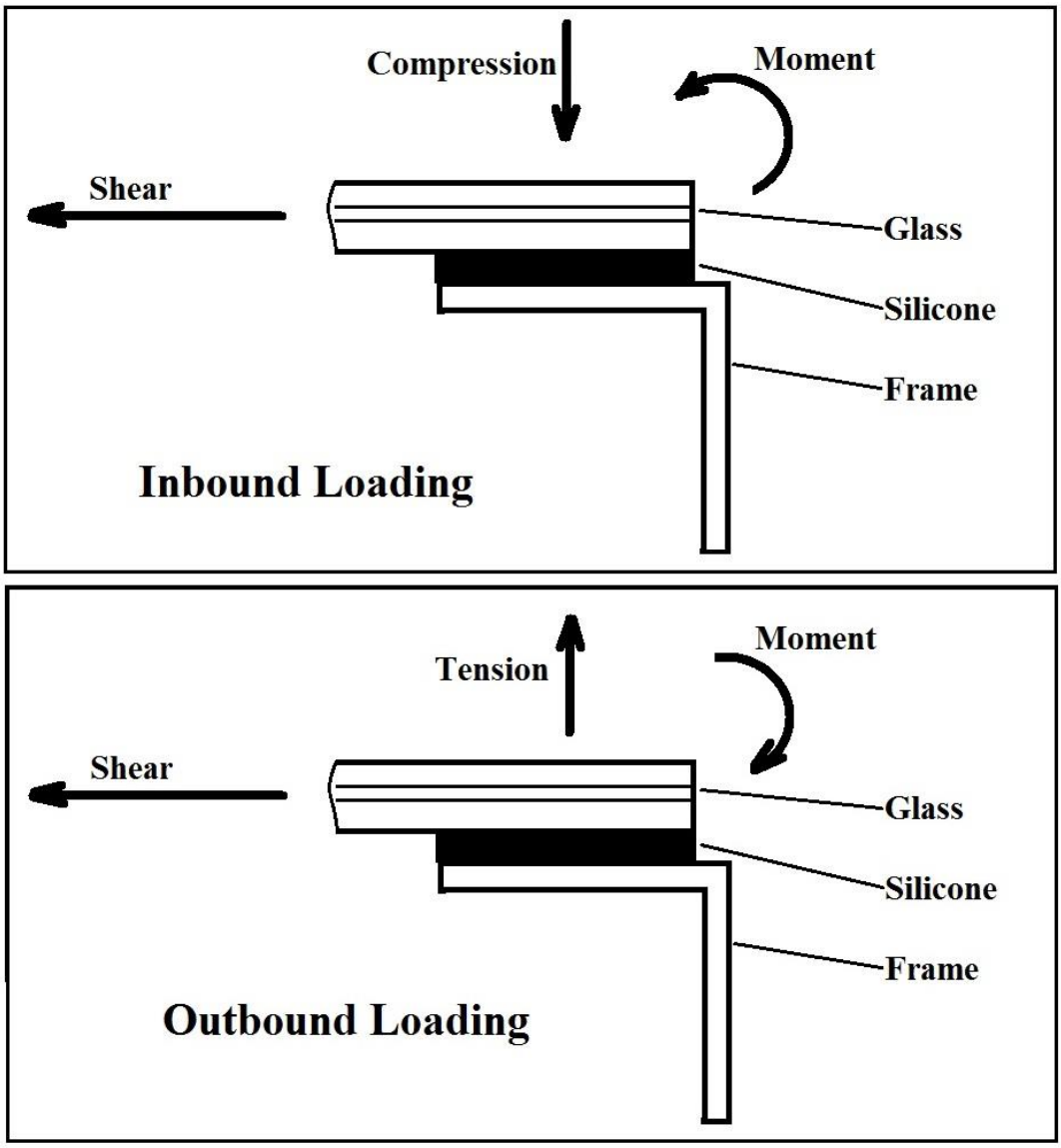

Figure 1.

2410.6.1 Rectangular windows. The use of the computer code WINGARD (no earlier than version PE 5.5.1), distributed by the General Services Administration is recommended with the following glazing parameters. The acceptable level of glazing performance is considered 'cracked – stays in frame'.

2410.6.2 Non-rectangular windows. For non-rectangular blast window openings, high fidelity Finite Element Analysis (FEA) modeling is required in order to investigate possible bite failure from the nonsymmetric glazing response. The following procedure specifies the minimum requirements that must be satisfied:

1. FEA Boundary Condition Criteria:
   a. Window frame must utilize rigid elements.
   b. Glass bite modeled using actual dimensions. The captured bite must account for the glass edge being held by the frame to resist displacements perpendicular to the plane of the window.
   c. Glass must not be directly attached to the frame and must allow for any pull-out displacement.
   d. Glass to frame (or gasket) interaction may account for friction.
   e. Gaskets may be included and bonded to the frame but must not be bonded to the glass.
   f. Gasket preload is acceptable if documented as in accordance with field or manufacturer confirmed installation processes.
2. Calibration of FEA Model to Wingard:
   a. Develop a Calibration FEA model to match Wingard performance:
      i. Calibration FEA model for a rectangular opening must match input parameters for the associated Wingard run (i.e. dimensions, bite, loading, and glass make-up).
      ii. Calibration FEA model must use boundary condition criteria specified in section 1. Specifically, the boundary conditions integral to the Wingard development are not acceptable (in terms of symmetry, edge restraint, and shape of opening).
      iii. Tune the response of the FEA calibration to match the performance condition, maximum displacement, and predicted pull-out as they represent the type of physical results from tests that were used to validate Wingard and that are routinely observed or measured in blast tests.
         1. GSA Condition 2 (cracked stays in frame) from Wingard results.
         2. Maximum predicted inner lite displacement perpendicular to the glass.
         3. Predicted pull-out in terms of glass edge node in-plane displacement.
      iv. Acceptable parameters for tuning include mesh size, element formulation, material properties, and friction at the frame (or gaskets if included).
3. Non-rectangular FEA Model:
   a. Incorporate the parameters from the tuned FEA model and modify the geometry to match the shape of the non-rectangular window.
   b. Non-rectangular model must use boundary condition criteria specified in section 1.
   c. A Friedlander pressure curve with negative phase is permissible.

2410.6.3 Non-rectangular windows. (Wingard exception). Wingard may be used in cases where a predominantly rectangular in shape window has the two longest edges of the opening parallel to one another, the resulting encompassing rectangle's aspect ratio must be no less than two, and the interior angles nominally between 70 and 110 degrees (See Figure 2). In that case Wingard may be used with opening dimensions corresponding to a squared-off-rectangle encompassing the outer boundaries of the actual window.

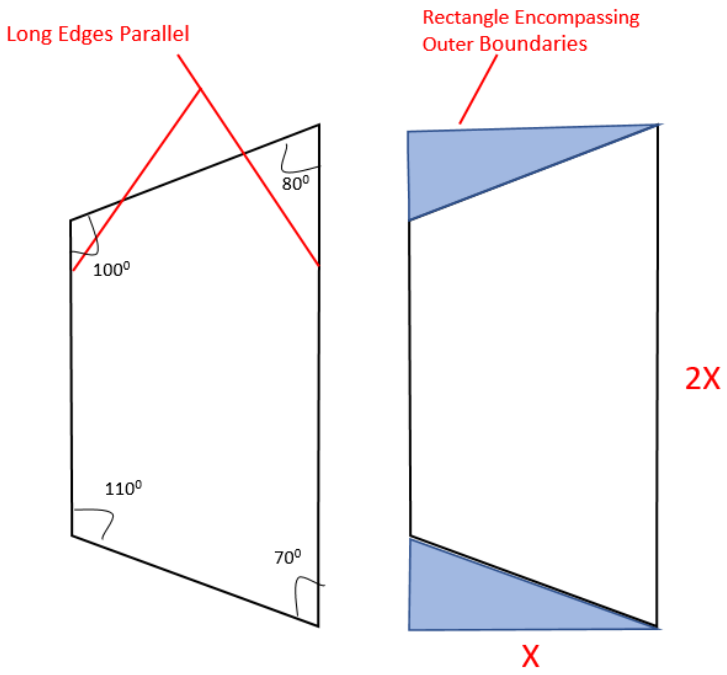

Figure 2.

2410.7 OBO glazing parameters. Use the following parameters:

2410.7.1 Sizing glazing layup. Use the following values:

1. Annealed glass: 8 breaks per thousand (static and dynamic).
2. Strengthened and tempered glass:1 break per thousand (static and dynamic).

2410.7.2 Frame design. Use the controlling reaction forces derived from either the following or the above cases for glass strengths:

1. Annealed glass: 750 breaks per thousand (dynamic); 8 breaks per thousand (static).
2. Strengthened and tempered glass: 750 breaks per thousand (dynamic); 1 break per thousand (static).

2410.7.3 Sizing layup and frame design. Use the following values:

1. Polycarbonate and Noviflex: Ductility factor of 2.
2. SentryGlas interlayer (elastic/plastic properties):

   Young's Modulus = 30 ksi

   Poisson's Ratio = 0.5

   Elongation at Break = 0.5

   Allowable Tensile Strength = 4,000 psi

   Unit Weight = 58.8 lbs/ft^3

2410.7.4 Sizing glazing. Glazing required to meet FE/BR and blast requirements must be limited to an overall size no greater than 1524mm (60 inches) x 2743 mm (108 inches).

2410.8 Glazing types. All exterior windows not designed for FE/BR resistance must be sized to meet blast requirements using laminated glazing of either fully thermally tempered or heat strengthened glass meeting the requirements of ANSI Z97.1. Substitution of other glazing products such as polycarbonate, custom assemblies of polycarbonate, and chemically strengthened glass, will only be considered on a case-by-case basis with approval of OBO and DS.

2410.9 Skylights, roof monitors, windows. Skylights, roof monitors, and windows on walls facing interior courtyards open to the sky, and similar window assemblies must be designed in accordance with the analysis procedures cited for ordinary exterior windows. Muntin windows are not allowed for skylight applications. A qualified blast consultant must perform the analysis and design of such assemblies.

2410.10 Doors. Refer to OBO-ICS IBC Chapter 16 - Blast Analysis And Design.

2410.11 Blast tests. In lieu of analysis, the results of project-relevant blast tests, by an independent testing agency, must be provided as justification of the blast window and skylight design. OBO reserves the right to reject test data considered insufficient.

END OF CHAPTER IBC-24 AMENDMENTS

CHAPTER 29
PLUMBING SYSTEMS

SECTION 2902
MINIMUM PLUMBING FACILITIES

Add fixture requirements for the additional classifications shown below in IBC Table 2902.1 per Table 2902.1 (Partial): The remainder of the table and footnotes are unchanged.

IBC TABLE 2902.1 (Partial)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

No.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS		LAVATORIES		ELECTRIC WATER COOLERS	OTHER
			Male	Female	Male	Female		
1	Assembly	Gallery	1 per 75	1 per 40	1 per 200	1 per 150	Minimum 2 per security zone separated by hardlines	Refer to 2902.8 for service sink requirements.
		Dining						
2	Business	GWA Office	1 per 25		1 per 40			
8	Storage	Gardener Room						1 utility sink in Gardener Room

Add the following subsections 2902.1.1.1 and 2902.1.1.2:

2902.1.1.1 Office building unique fixture calculations. Fixture calculations must reflect allocation by floor, and by zone for each floor where multiple zones, as identified in Section 2902.1.4, are present on a given floor, except for PAA zone at Service Entrance. Fractional numbers resulting from applying the fixture ratios of Table 2902.1 must be rounded up to the next whole number. The use of fractional values is not permitted.

2902.1.1.2 Additional requirements. Refer to OBO-ICS IBC Section 107.3.2.3.

Add the following subsection 2902.1.2.1:

2902.1.2.1 Additional single-user toilet facilities. In new buildings that require toilets, provide a minimum of one accessible, single-user toilet room on each floor of each non-residential building on the compound and on the ground floor of the on-compound MSGR.

Exceptions:

1. See exceptions to 2902.3.

Add the following subsection 2902.1.4:

2902.1.4 Office areas separated by hardlines. Office buildings must be treated as distinct zones for the purposes of plumbing fixture allocation. Areas separated by hardlines in these zones: Public Access Area (PAA) and General Work Area (GWA). Refer to OBO-ICS IBC Chapter 1 Design Submittal Standards.

2902.1.4.1 CAA areas. CAA occupants may transit CAA entrance hardline in accordance with Section 2902.3.3.2 CAA areas.

Add Exception 3 to Subsection 2902.3 Exceptions:

Exceptions:

3. Toilet facilities located in Compound Access Control (CAC) facilities service spaces are for use by guards at all CAC types and by facility maintenance staff at Service CACs; access to facilities in these locations must not be provided for the public.

Delete the second sentence of Section 2902.3.1 Access in its entirety.

Add the following subsection 2092.3.1:

2902.3.1 Access. Access to the required facilities must be from within the building.

Exception. Compound Access Control (CAC) buildings.

Delete and replace subsection 2902.3.3 with the following:

2902.3.3 Location of toilet facilities. In occupancies other than Assembly Group A and Business Group B, the required public and employee toilet facilities must be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities must not exceed a distance of 45 m (150 ft).

2902.3.3.1 Location of toilet facilities in Assembly Group A and Business Group B. In Assembly Group A and Business Group B, the required public and employee toilet facilities must be located on the same floor where required and are not permitted to be located on any other story. The path of travel to such facilities must not exceed a distance of 45 m (150 feet).

Exceptions.

1. The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved.

2. Areas complying with Sections 2902.3.3.2 through 2902.3.3.4.

2902.3.3.2 CAA areas. In CAA areas separated by a hardline, the path of travel to required GWA toilet facilities is permitted to cross the hardline and must not exceed a distance of 60 m (200 feet). The restroom in the chief of mission suite is not permitted to be used for or included in plumbing fixture calculations to establish number of fixtures or path of travel for CAA areas.

2902.3.3.3 Consular Affairs suites. The path of travel from the most remote GWA consular office window or workstation to the required employee toilet facilities must not exceed a distance of 45 m (150 feet).

2902.3.3.4 Consular exterior waiting areas. The path of travel for consular applicants to the required toilet facilities must not exceed a distance of 152 m (500 feet).

2902.3.3.5 Toilet rooms serving food service spaces. Toilet rooms serving food preparation areas, serveries, or cafeterias are prohibited from opening directly into those spaces.

Delete and replace section 2902.5 with the following:

2902.5 Drinking fountain location. In all OBO buildings, the required public and employee drinking fountains must be electric water cooler types and must be located on the same floor where required. Travel to another story for required electric water coolers is not permitted. The path of travel to such facilities must not exceed a distance of 55 m (180 feet).

2902.5.1 Approvals. Water coolers must conform to ASHRAE 18. Water coolers and bottle dispensers must conform to NSF 61, Section 9. Electrically operated, refrigerated water dispensers must be listed and labeled in accordance with UL 399.

2902.5.2 Drinking fountain type. Provide air-cooled, electric water coolers at all locations required to have drinking fountains. Provide a minimum of one integral bottle filler unit per location required to have an electric water cooler.

2902.5.3 Accessible water coolers. Refer to accessibility requirements in OBO-ICS IBC Chapter 11.

2902.5.4 Water cooler requirements. Provide the following.

2902.5.4.1 Type. Stainless steel, single, self-contained, accessible or non-accessible, pressure electric water cooler with integral bottle filler.

2902.5.4.2 Chilling capacity: 30 liters per hour (8.0 gph) at 10 degrees C (50 degrees F) based on 26 degrees C (80 degrees F) inlet water and 32 degrees C (90 degrees F) ambient per ASHRAE 18.

2902.5.4.3 Filter. Replaceable type.

2902.5.4.4 Sensors. Electronic bottle filler sensor and visual filter monitor.

2902.5.4.5 Mounting. Semi-recessed for buildings required to be accessible; surface mounted for buildings not required to be accessible.

2902.5.4.6 Activation. Front and side bubbler pushbar activation, electronic.

Delete and replace section 2902.6 with the following:

2902.6 Small occupancies. Provide electric water coolers in all OBO buildings with toilet facilities.

Add the following sections 2902.8 and 2902.9:

2902.8 Service sinks. Provide a minimum of one janitor's closet with service sink per floor for all buildings on the compound except as required in 2902.8.1.

2902.8.1 Office buildings floor(s) with PAA and GWA areas separated by hardlines. Provide one janitor's closet with service sink within each security zone separated by hardlines.

2902.9 Diaper changing stations. Provide diaper changing stations in the following locations:

1. Office building lobby PAA restrooms.
2. Office building restrooms serving the Gallery.
3. Restrooms serving the Cafeteria.
4. Restrooms in the MED unit.

5. Restrooms serving Consular Waiting areas, interior and exterior.

6. SDA lobby restrooms.

7. Restrooms serving SDA Cafeteria.

8. Restrooms serving SDA multipurpose and meeting rooms.

9. Cabana restrooms.

Add the following Section:

SECTION 2904
EMERGENCY SHOWERS AND EYEWASH STATIONS

2904.1 General. The following requirements are based upon OSHA standard CFR 1910.151.c.

2904.2 Locations. Provide emergency plumbing stations at the locations identified in Table 2904.1.

2904.3 Types. Provide the following emergency plumbing station types:

EW-1 Self-contained eyewash station

EW-2 Plumbed eyewash station

EW-3 Plumbed combination eyewash station and emergency shower

EW-4 Deck-mounted eyewash station

2904.4 Waste connections. Provide waste connections at emergency showers and plumbed emergency eyewash stations. Provide floor drains where plumbed emergency showers and eyewash stations are installed.

2904.5 Water supply. Provide hot- and cold-water supplies to emergency showers and plumbed emergency eyewash stations. Comply with manufacturer's installation instructions. The temperature of the water supply must be controlled by a thermostatic mixing valve (TMV) complying with ASSE 1071.

TABLE 2904.1
EMERGENCY PLUMBING STATION LOCATIONS

LOCATION	TYPE	PARAMETERS
Water-Cooled Chiller Units or Cooling Towers	EW-1	Provide at reservoir where water is treated; water-cooled units not standard for OBO projects
Battery Service Areas	EW-3	For batteries sized to charge vehicles or larger
Battery Charging Stations	EW-3	
Generator Rooms	EW-1	For generators sized larger than 25 kW
Health Units	EW-4	Lab and phlebotomy room sinks
Maintenance Shops	EW-2	Provide a minimum of one unit in the following spaces: Carpentry shop Paint shop
Swimming Pool Equipment & Chemical Storage Areas	EW-3	

UPS Units using Wet Cell UPS	EW-1	Wet cell UPS not standard for capital projects
Vehicle Maintenance Bays	EW-3	Provide minimum one. Bays are permitted to share emergency stations provided that the maximum travel distance must not exceed the value in Section 2904.6
Wastewater Treatment Areas	EW-3	Provide where chemicals are used for treatment
Water Testing &Treatment Areas	EW-3	Provide where chemicals are used for treatment
Other areas not defined above	EW-3	Where corrosive chemicals are used

2904.6 Travel Distance. Provide emergency stations within 15 m (50 feet) of the actual place or area where a potential hazard incident is likely to occur in the locations identified in Table 2904.1. Path to emergency stations must be along normal means of egress. Path to meet the travel distance requirement is not permitted to include doors.

Exception. One intervening door is permitted when all of the following conditions are met:

1. The hazard is not corrosive.
2. Door is not provided with locking hardware.
3. Door swings in direction of path of travel to emergency plumbing fixture.
4. The emergency plumbing fixture is on the same level as the hazard.

Add the following Section:

SECTION 2905
IRRIGATION OF INTERIOR PLANTING

2905.1 General. Where an irrigation system is provided for interior planting or rooftop planting, irrigation system must be connected to treated rainwater or potable water systems. Project-specific design and water source must be submitted for review and approval by both OBO/PDCS/DE/CSE and OBO/PDCS/DE/ME. The use of reclaimed water is not permitted. Rainwater piping within building interior must be Identified as “NON-POTABLE - NOT TO BE USED FOR HUMAN CONSUMPTION”.

END OF CHAPTER IBC-29 AMENDMENTS

CHAPTER 30
ELEVATORS AND CONVEYING SYSTEMS

SECTION 3001
GENERAL

Delete and replace section 3001.3 with the following:

3001.3 Referenced standards. The design, construction, installation, alteration, repair and maintenance of elevators and conveying systems must conform to the ASME A17.1 elevator code, when security requirements specify that only cleared Americans can install and maintain the equipment. When security requirements allow the elevator equipment to be installed and maintained by local personnel, the local standards and EN 81 family of Codes shall be implemented.

> **Exception**. ASME A17.1 Section 2.29.1.1 Identification of Equipment: Each elevator in the building shall be assigned a unique alphabetic identification. Numeric and alphanumeric identification are prohibited.

Delete and replace section 3001.4 with the following:

3001.4 Accessibility. Passenger elevators required to be accessible must be designed, in accordance with OBO-ICS IBC Chapter 11.

Add the following subsection 3001.7:

3001.7 Authority Having Jurisdiction. The Authority Having Jurisdiction for elevators and conveying systems is OBO/OPSFAC/PS (ElevatorSupport@state.gov).

SECTION 3002
HOISTWAY ENCLOSURES

Delete and replace section 3002.1.1 with the following:

3002.1.1 Opening protectives. Openings in hoistway enclosures must be protected as required in Chapter 7, but in no case, shall the minimum fire resistance rating of all hoistway enclosure doors and frames be less than 90 minutes. This requirement must apply regardless of the referenced standard identified in accordance with Section 3001.3.

> **Exception.** The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I Emergency Recall Operation.

Add the following subsection 3002.1.3:

3002.1.3 Hoistway opening sizes. Refer to OBO-ICS IBC Section 1208 for required hoistway opening size.

Delete and replace first sentence of 3002.4 with the following:

3002.4 Elevator car to accommodate ambulance stretcher.

"Where elevators are provided in buildings four or more stories above grade, or four or more stories below grade plane, or in all office buildings, not less than one elevator must be provided for fire department emergency access to all floors."

Add the following subsections3002.10 through 3002.12:

3002.10 Electrical equipment and wiring. All electrical equipment and wiring must conform to the OBO-ICS NEC.

3002.11 Equipment permitted in hoistway. Only electrical wiring, raceways, and cables used directly in connection with the elevator, including wiring for signals, for communication with the car, for lighting, heating, air conditioning, and ventilating the car, hoistway and/or machine room, for fire detection and suppression systems, and for pit sump pumps, shall be permitted to be installed inside the hoistway.

3002.12 Elevator controller and auxiliary fire alarm relay location. Controllers and auxiliary fire alarm relay must be located where accessible without entering a hoistway.

SECTION 3003
EMERGENCY OPERATIONS

Add the following subsection 3003.1.5:

3003.1.5 Automatic transfer switch. All elevators that operate on standby power must have circuitry connected to the automatic transfer switch (ATS) that will allow each elevator to park with the doors open prior to the switching from standby power to normal power.

Delete and replace section 3003.2 and replace with the following.

3003.2 Fire fighters' emergency operation. All elevators must be provided with manual and automatic recall operation. Manual Recall operation must initiate by a key switch at designated landing. Automatic recall operation must be initiated by the building fire alarm system when any elevator lobby smoke detector, except designated landing, has been activated. When the smoke detector is activated at the designated landing, the elevator(s) must recall to an alternate landing.

3003.2.1 In-car fire fighters' operation. For the in-car fire fighters' operation, refer to referenced standards Section 3001.2

Add the following sections 3003.4 and 3003.5:

3003.4 Emergency communication. Provide emergency communication within each cab:

1. Hands-free telephone station, with an automatic dialer.

2. Telephone must be flush-mounted on the car-operating panel at a maximum of 1220 mm (48 inches) above the floor.

3. Telephone must be located behind a perforated grille and connected to a programmable auto-dialer located with the controller.

4. Auto-dialer must be equipped with a solid-state charger unit that will automatically provide emergency power within 10 seconds in the event of failure of the normal power supply.

5. Auto-dialer must be programmed to connect first to Post One, then local emergency services.

6. Telephone must be capable of sending and receiving calls through a telephone line in the machine room.

7. Provide a Public Address system speaker in each elevator car and machine room.

3003.5 Elevator controls. Elevator controls must automatically reboot in the event of a power failure. The design must include a telephone with a jack adjacent to each elevator controller to be used for troubleshooting and local reprogramming. The telephone with jack must be located between 1 m (3.3 feet) and 3 m (10 feet) from the elevator controller.

END OF CHAPTER IBC-30 AMENDMENTS

CHAPTER 31
SPECIAL CONSTRUCTION

SECTION 3105
AWNINGS AND CANOPIES

Add the following subsection 3105.2.1:

3105.2.1 Bird roost prevention. Design canopies and awnings without exposed ledges, surfaces or exposed piping to prevent birds from roosting.

SECTION 3107
SIGNS

Delete and replace Section 3107.1 with the following:

3107.1 Building signage. The *OBO Signage Standards* in OBO-ICS IBC Appendix H and OPR Signage Design Standards, provide unified identity standards and protection for the safety of occupants of a U.S. Mission Building

SECTION 3109
SWIMMING POOLS, SPAS AND HOT TUBS

Delete and replace section 3109 in its entirety with the following:

3109.1 General. The design, construction, alteration, movement, renovation, replacement, repair and maintenance of swimming pools, spas, and hot tubs shall comply with the requirements of the OBO-ICS ISPSC.

3109.1.1 The design, construction, alteration, movement, renovation, replacement, repair and maintenance of in-ground pools shall conform to the requirements of the OBO-ICS ISPSC.

SECTION 3113
RELOCATABLE BUILDINGS

Delete and replace section 3113 in its entirety with the following:

3113.1 General. The provisions of this section shall apply to relocatable buildings (also identified as non-permanent facilities) and intended for occupancy for a period greater than 180 days and not to exceed five years.

Exception. This section shall not apply to manufactured housing used as dwellings.

3113.1.1 Compliance. Except as provided in Section 3113 relocatable buildings shall comply with other applicable sections of the OBO Codes.

3113.1.2 Permit required. Relocatable buildings shall not be erected, operated, or maintained for any purpose without obtaining a permit from the OBO authority having jurisdiction.

3113.1.2.1 Supplemental information. Supplemental information specific to a relocatable building shall be submitted to the authority having jurisdiction. It shall, include the following information with the permit application:

1. Manufacturer's name and address.

2. Date of manufacture.

3. Serial number of module.

4. Manufacturer's design drawings.

5. Type of construction in accordance with Section 602.

6. Design loads including: roof live load, roof snow load, floor live load, wind load and seismic site class, use group and design category.

7. Additional building planning and structural design data.

8. Site-built structure or appurtenance attached to the relocatable building.

3113.1.2.2 Relocation. OBO-ICS uses the term "relocatable building" to be consistent with ICC model codes terminology. OBO's intention for the capability of the design of a building to facilitate future relocation is project-specific; OBO will identify if that requirement is applicable for a particular project.

3113.1.2.2.1 Reuse of relocatable buildings. Prior to reuse of a relocatable building by OBO, the building shall be renovated and updated to comply with current OBO requirements and standards.

3113.2 Construction documents. A permit application and construction documents shall be submitted for each installation of a relocatable building. The construction documents shall include a site plan indicating the location of non-permanent facility and documents prepared or assembled for describing the design, and physical characteristics of the elements of the project necessary for obtaining a building permit.

3113.3 Manufacturer's data plate. Each relocatable module shall have a data plate that is permanently attached on or adjacent to the electrical panel and shall include the following information:

1. Occupancy group.

2. Manufacturer's name and address.

3. Date of manufacture.

4. Serial number of module.

5. Design roof live load, design floor live load, snow load, wind and seismic design.

6. Approved quality assurance agency or approved inspection agency.

7. Codes and standards of construction.

8. Envelope thermal resistance values.

9. Electrical service size.

10. Fuel burning equipment and size.

11. Special limitations if any.

3113.4 Certificate of occupancy. Certificate of occupancy for relocatable buildings will be valid until either of the following, whichever comes first:

1. Five years; or

2. Upon substantial completion of the permanent structure intended to accommodate the functions of the relocatable buildings.

3113.5 Maximum height. Relocatable buildings shall not exceed one story in height.

Exceptions.

1. Office occupancies shall not exceed two stories in height.
2. Residential occupancies shall not exceed two stories in height.

3113.6 Minimum separation distances. Relocatable buildings shall be located to provide the following minimum separation distances:

3113.6.1 Required fire department access on one side. Provide a minimum of 6000 mm (236 inches) clear for fire department access on one side. Structures separated by 6000 mm (236 inches) may share a common fire department access.

3113.6.2 Required clearance on other sides. Provide a minimum 3000 mm (118 inches) on clear all other sides.

3113.7 Means of egress. Relocatable buildings shall conform to the means of egress requirements in Chapter 10 and shall have a maximum travel distance of 30 m (100 feet).

3113.7.1 Doors.

3115.7.1.1 Fire-resistance rating. Exterior doors shall have a minimum 1/3-hour (20 minute) fire door rating.

3113.7.1.2 Closers. Exterior doors and interior doors that are part of the egress system shall be self- or automatic-closing in accordance with Section 716.

3113.7.1.3 Interior door construction. Interior doors shall be non-combustible.

3113.7.1.2 Residential requirements.

3113.7.1.2.1 Occupancy load. The maximum number of occupants shall not exceed seven per story in any housing cluster.

3113.7.1.2.2 Separation distance. Each housing cluster shall be provided with the minimum separation distances identified in Section 3115.5.

3113.7.1.2.3 Egress stairs. A minimum of two exterior egress stairs shall be installed for every two-story housing cluster.

Exception. A maximum of two housing clusters may share one common egress stair provided that each cluster also has an independent egress stair located at the end opposite the common egress stair.

3113.8 Fire protection systems. Relocatable buildings shall be equipped throughout with an automatic sprinkler system in accordance with Chapter 9 of the Fire Code of Overseas Buildings Operations, NFPA13, and as required in Sections 3115.8.1 through Sections 3115.8.5.

3113.8.1 Windowless buildings. Where relocatable buildings are required to be forced entry/ballistic resistant, refer to International Building Code Chapter 4 - Special Detailed Requirements Based on Use and Occupancy for fire protection requirements for windowless buildings.

3113.8.2 Automatic sprinkler system. Non-permanent housing units shall be protected with automatic sprinkler systems in accordance with NFPA 13R.

3113.8.2.1 Sprinkler heads. Automatic fire sprinkler systems shall be equipped with quick reaction sprinkler heads.

3113.8.3 Supervisory service. Fire protection systems shall be monitored by a supervising station located at Post 1 in accordance with NFPA 72.

3113.8.4 Smoke alarms. Relocatable building housing units shall be protected with listed multiple-station residential smoke alarms capable of initiating the alarms of all units in the residential cluster.

3113.8.5 Fire pump. Fire pump and water supply for relocatable buildings shall be sufficient to provide for conformance with NFPA 20. Validation of the sufficiency of these systems must be obtained from OBO/OPS/FIRE for each project..

3113.9 Prohibited materials. The following materials are not permitted to be used in the construction or furnishing of relocatable buildings: In addition, materials shall not adversely otherwise affect the health of occupants.

1. Pressed wood, engineered wood, material made from wood veneers, particles, or wood fibers bonded together with an adhesive under heat and pressure.

2. Plastic furniture.

3. Locally manufactured combustible materials that do not comply with the flame spread and smoke developed requirements of the *OBO-ICS IFC* Chapter 8.

4. Products or construction using formaldehyde (including paints and adhesives).

3113.10 Electrical requirements.

3113.10.1 Electrical code. Installation, interior wiring, and appliance installations shall conform to the *OBO-ICS NEC*.

3113.10.2 Overhead service conductors. Overhead service conductors are permitted only to relocatable buildings.

3113.10.3 Exhaust fans. Installation shall comply with the following:

1. All fans shall be wired to a switch that operates in conjunction with the lighting.

2. Fans in serving restrooms, shower facilities and areas requiring forced ventilation shall not be wired to operate continuously.

3113.11 Cooking appliances. Cooking appliances are prohibited in residential relocatable buildings.

3113.12 Emergency planning and preparedness. Refer to *the OBO-ICS IFC*, Chapter 4 for requirements.

END OF CHAPTER IBC-31 AMENDMENTS

Add the following Chapter

CHAPTER 34
PHYSICAL AND TECHNICAL SECURITY REQUIREMENTS

SECTION 3401
ADMINISTRATION

3401.1 General. The purpose of this physical and technical security section is to provide safe, secure, and resilient facilities abroad. Chapter 34 is organized as follows:

3401. Administration
3402. Definitions and Abbreviations
3403. Physical and Technical Security Requirement Tables
3404. Primary (On-Compound) Facility Requirements: Chancery and Consulate
3405. Satellite (Off-Compound) Facility Requirements: USG as Sole Occupant
3406. Satellite (Off-Compound) Facility Requirements: Tenant of Commercial Office (TCO)
3407. Satellite (Off-Compound) Facility Requirements: Residential Housing (Multi-Family) and Recreational (REC) Compounds
3408. Satellite (Off-Compound) Facility Requirements: Specially Designated Residences (SDR), Representational Residences and Staff Housing (SDA)
3409. Satellite (Off-Compound) Facility Requirements: Support Facility and Unclassified Warehouse (WHE)
3410. Satellite (Off-Compound) Facility Requirements: American Broadcast Bureau (ABB) Relay Stations
3420. Special Use and Occupancy

3401.2 Purpose and Scope. The provisions of this chapter apply to construction for U.S. Diplomatic Mission buildings and structures overseas. Temporary and relocatable facilities must meet the same standards as permanent construction. The security related code requirements work in concert with the Scope of Work (SOW), OBO Code, OBO Guide Specifications, OBO Project Requirements (OPR), Space and Adjacency Standards, and the SRP-Ms developed for specific spaces. The SOW must identify which type of compound applies to the project either Primary (On-Compound) or Satellite (Off-Compound). The requirements for certain building types differ depending on the compound designation. The requirements are organized around the security principle of tiers of defense for early detection and to allow time for security forces to respond. The requirements are organized as follows:

1. Outside Compound Perimeter Barrier
2. Compound Perimeter Barrier
3. Compound Access Control (CAC)
4. Clear Zone, Setback, and Exterior Spaces
5. Secondary and Support Structures (Non-Blast)
6. Primary Structures (Blast)
7. Housing Facilities
8. Office Buildings
9. Office Space Groups
10. Office Spaces

3401.3 OBO Physical and Technical Security Specification Appendix References

033000 – Cast in Place Concrete (covers embeds for FE/BR and blast window and door embeds)

055005 – Metal Fabrications (covers FE/BR steel supports)

077234 – FE/BR Roof Hatches

083454 – FE/BR Door Assemblies

083322 – Overhead Forced Entry (FE) Coiling Doors

083459 – Vault Doors

084414 – Framed Security Curtainwall

085651 – Aluminum Security Windows

085652 – Security Teller Windows

087155 – Security Hardware (includes table for security hardware locations)

088855 – Security Glazing

089117 – Security Louvers

133435 – Mail Screening Facilities

264115 – Lightning Protection

265554 – Undercarriage Vehicle Inspection Lighting (covers sally port lighting)

281005 – Tech Security Access System (covers Active Vehicle Barrier, Gate Systems and Door Controls)

281805 – Tech Security Access Equipment (covers X-Ray, Trace Detector Unit, Walk Through Metal Detector (WTMD))

282305 – Technical Security Video System SVS) (covers cameras)

283105 – Technical Security Intrusion Detection System (IDS)

283325 – TSS Intercommunications Systems (covers intercoms)

283337 – Technical Security Duress Systems (covers duress button)

284705 – Mass Notification Systems (covers ENS and IDNS)

285115 – Security Management System Enterprise (SMSe)

324003 – Climb Resistant Gate Systems

324004 – Anti-Ram Gate Systems

324007 – Active Roadway Barrier System

324008 – Rising Bollard Barricade System

324009 - Crash Rated Drop Arm System

3401.4 Supporting Security Publication Reference Documents The following must apply to US Diplomatic Mission compounds

3401.4.1 – APPENDIX Y:

3401.4.1.1 - Y1 Physical Security Detail Handbook (Red Book) is hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement of security elements. See Attachment A to OBO Project Requirements (OPR) Physical Security.

3401.4.1.2 – Y2: 2012 Diplomatic Security Perimeter Barriers Calculation Guide is hereby incorporate by reference and must apply to the design, installation, alteration, repair and replacement of site physical security site barriers, site perimeter walls and fences both passive and active. See Attachment C to OBO Project Requirements (OPR) Landscape.

3401.4.2 – APPENDIX X

3401.4.2.1 – Attachment X1: Climb-Resistance Diagrams and Criteria is hereby incorporate by reference and must apply to the design, installation, alteration, repair, and replacement of climb resistance elements.

3401.4.2.2 – Attachment X2: Building Separation Diagrams are hereby incorporate by reference and must apply to the design, installation, alteration, repair, and replacement of security elements.

3401.4.2.3 – Attachment X3: Forced-Entry Decorative Grille Criteria is hereby incorporate by reference and must apply to the design, installation, alteration, repair, and replacement of security elements.

3401.4.2.4 – Attachment X4: Permitted Locations for Office Compound Underground Parking is hereby incorporate by reference and must apply to the design, installation, alteration, repair, and replacement of underground parking.

3401.4.3 – APPENDIX Z

3401.4.3.1 –**Z1**: 2013 OBO Site Lighting Guidelines and Criteria is hereby incorporate by reference and must apply to the design, installation, alteration, repair, and replacement lighting elements. See Attachment D to OBO Project Requirements (OPR) Landscape.

3401.4.3.2 – **Z2**: 2005 OBO Site Lighting Guidelines and Criteria is hereby incorporate by reference and is available by request for projects originally designed using this Guideline

3401.5 – SRP-M and Space Agencies. Refer to OPSR 4 for specific space groups, adjacencies, configurations, and furniture requirements.

SECTION 3402

DEFINITIONS AND ABBREVIATIONS

3402.1 General. The Webster's unabridged dictionary must be used to provide ordinary accepted meaning to terms that are not specifically identified in the code. Where terms are not defined in this chapter and are defined in other codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes. This section is organized alphabetically.

AACS. See Automated Access Control System.

ABOVE STANDARD REQUIREMENT (ASR). See Operational Security Requirements

ABB. See American Broadcast Bureau Relay Stations

AC. See Access Control.

AC. See American Center.

ACCESS CONTROL. Control of vehicular and pedestrian entry by means of physical barriers, devices and/or inspection procedures.

ACCESS CONTROL AREAS. There are five areas of access control within the building: Public Access Area (PAA), General Work Area (GWA), Administratively Controlled Area, Limited Access Area (LAA), and **Controlled Access Area (CAA).**

ACCESS CONTROL FACILITY (ACF). A temporary system of gates, barriers, and guard booths, used to pre-screen personnel and vehicles entering a secure perimeter in support of a construction project**.**

ACCESS DENIAL SYSTEM. A nonlethal crowd control measure intended to protect a facility against riots or disturbances by causing the mob to disperse or become incapacitated.

ACCESSIBLE. In reference to building exterior walls, windows and compound perimeter barriers, anything located less than the distances identified for security climb resistance criteria in the OBO Codes.

ACCESSIBLE PLATFORM. In reference to exterior building walls/windows and compound perimeter walls, any platform that is accessible in relation to security climb resistance criteria in the OBO Codes.

ACCESSIBLE WINDOWS AND OPENINGS. Ground and higher floor windows/openings (includes vents, sidelights, air conditioners, etc.) easily reached from outside (generally, without the use of ladders, rope, or other climbing aid) and greater in size than an area identified in the OBO Codes.

ACN. See American Corner

ACTIVE BARRIERS. A barrier that blocks access but allows passage when necessary. Active barriers include anti-ram vehicle barriers, anti-ram drop arm, and anti-ram gates.

ADJACENT AREA AND CONTIGUOUS SPACE. Space surrounding Controlled Access Area(s) (CAA) besides/below/above; includes adjoining spaces extending beyond external walls/floor/ceiling of CAA through such spaces to next set of walls/floors/ceilings of building.

ADMINISTRATIVELY CONTROLLED AREA. Area in the building, behind the hardline, in which unescorted access is limited to authorized personnel, either LES or American, who work in those areas. A space or office space which contains unclassified items whose compromise or loss severely impact post operations (e.g., PC system personal or payroll data, safes containing funds, etc.) must be monitored. Walls comprising an administratively controlled area shall be slab-to-slab construction.

AMERICAN BROADCAST BUREAU (ABB) RELAY STATIONS. Voice of America (VoA) broadcast relay stations.

AMERICAN CENTER (AC). American Spaces (strategic and digital venue for dialogue and public diplomacy) located in the USG leased or owned facilities and operated by USG.

AMERICAN CORNER (ACN). American Spaces (strategic and digital venue for dialogue and public diplomacy) located in the facilities of, and operated by, institutional partners. Also referred to as a Bi-National Center (BNC).

AMERICAN PRESENCE POST (APP). American presence posts are small operations, generally with one

foreign service officer and several locally employed staff. APPs do not process visas and operate on an unclassified basis.

ANTI-CLIMB. See Climb Resistance.

ANTI-RAM. Label of a barrier that arrests vehicles seeking to penetrate the barrier in conformance to the security standards in the OBO Codes. Anti-Ram protection applies to vehicle approaches, including adjacent compounds, open fields, private and public roads.

APARTMENT. A building containing separate residential apartment units with a common entrance.

APP. See American Presence Post.

ASR. See Operational Security Requirement (OSR) formerly known as Above Standard Requirements (ASR)

ATTACK SIDE. Public (or exposed) side of a perimeter barrier, hardline wall, door, or window. For vehicle barriers, the direction of approach for uninspected vehicles. The compound side of a CAC door on the interior of the compound is the attack side. See “protected side.”

AUTOMATED ACCESS CONTROL SYSTEM (AACS). A sub-system of the SMSe.

B&S. See Blocking and Stacking.

BALCONY. A balcony is considered an elevated outdoor functional space if it is accessible, habitable and has a direct, unobstructed line-of-sight from adjacent streets, from which a physical attack (including projectiles) could be directed (from street level) against occupants on the balcony.

BALLISTIC RESISTANCE (BR). Label of products and designs intended to resist ballistics that has been certified by DS in accordance with DS Certification Standards, SD-STD-01.01 Forced Entry and Ballistic Resistance of Structural Systems.

BCN. See Bi-National Center.

BI-NATIONAL CENTER. Bi-National Centers are locally registered not for profit organizations whose aim is to foster understanding between the U.S. and the host country through foreign teaching, cultural activities, educational exchanges, and libraries.

BLAST PROTECTION. Construction of exterior walls and building features, such as windows, in accordance with administratively controlled criteria, to provide a degree of shielding from the effects of an explosive charge detonated at a specified distance.

BLOCKING AND STACKING. The process of configuring a building’s office and floor adjacency relationships to ensure that common boundaries between areas with differing security requirements do not create unacceptable physical and technical security vulnerabilities

BNC. See American Corner (ACN).

BOLLARD. Concrete-filled steel pipes used to channel or restrict vehicular traffic.

BR. See Ballistic Resistance.

CA. See Satellite (Off-Compound) Consular Agency.

CAA. See Controlled Access Area.

CAA CORE AREA. A security term that refers to those areas of the building requiring the highest levels of protection. Uncleared U.S. employees or visitors are not permitted in the Core area. Note: that this is different from the architectural industry term "building core” which refers to a vertical space used for circulation and services such as staircases, elevators, electrical cables, water pipes and risers.

CAA RESTRICTED AREA. Those areas of the building in which classified information is permitted to be handled, stored, discussed, or processed. Classified discussions and processing are permitted but limited to designated areas. Authorized uncleared U.S. and LES employees and visitors are permitted in the restricted area if they are properly escorted.

CAC. See Compound Access Control Facilities and CAC Types.

CAC – COMBINED. A combined Pedestrian-Vehicle CAC is an amalgamation of the Pedestrian-only and Vehicle-only CACs. This CAC consists of a sheltered area housing a local guard desk, package inspection area, Package X-ray machine, package storage, WTMD, a guard booth, rest room, mechanical/electrical room and Sub-EC Room, an explosives detector unit and sally port. The guard booth is situated so that both pedestrian as well as vehicle screening can be monitored. Cover the sally port at posts that have adverse weather conditions such as heavy rainy seasons, significant snow, or other conditions that make it difficult to perform vehicle screening.

CAC – CONSULAR (CCAC). A consular CAC is a pedestrian only CAC, with no vehicles.

CAC – FUNCTION. Includes a screening area that serves as the location for guards to conduct initial screening of staff and public at different CAC locations along the compound perimeter. Vehicles are permitted to enter the compound normally at only one CAC facility. Deliveries of supplies are made at one of the CAC facilities using a truck transfer station; the trucks do not enter the compound at that location.

CAC – MAIN (MCAC). A main CAC is composed of a combined Pedestrian-Vehicle CAC.

CAC – PEDESTRIAN ONLY (PCAC). A pedestrian-only CAC consists of a sheltered area housing a local guard desk, package inspection area, package x-ray machine, package storage, walk-through metal detector (WTMD) and Sub-EC Room.

CAC – PEDESTRIAN SCREENING PROCESS. Pedestrians enter the CAC through a door in the perimeter wall. A local guard sits at a desk, performs inspection, and greets visitors. The inspection typically consists of using a package x-ray machine to monitor personal belongings, and a WTMD to monitor the person him or herself. The inspection consists of a manual check of belongings. The guard checks and temporarily stores items not permitted on the compound. Visitors receive a badge at the CAC and wait for an escort in order to enter the compound. Upon leaving, pedestrians exit via the CAC and stop to return badges and retrieve personal belongings. Occasionally, pedestrians may wait in the CAC for taxis.

CAC – RESIDENTIAL (RCAC). A residential CAC is composed of a combined Pedestrian-Vehicle CAC to serve compound housing.

CAC – SERVICE (SCAC). A service CAC is composed of a combined Pedestrian-Vehicle CAC with a temporary receiving area and a trash holding area.

CAC – TYPES. There are four types of CACs: Pedestrian Only, Vehicle Only, Pedestrian-Vehicle Combined, and Service CAC. The type of CAC required for a site shall be determined by a combination of the specific program requirements and the specific site configuration. All CACs are composed of a system of gates, barriers, guard booths, and screening areas.

CAC - VEHICLE ONLY. A Vehicle Only CAC is designed to create an area where a vehicle stops for screening prior to entering the compound. The CAC consists of a sheltered area housing a guard booth, equipment storage, rest room, mechanical/electrical room and Sub EC-Room, an explosives detector unit, and a vehicle screening area (also known as “sally port”). Cover the sally port at posts that have adverse weather conditions such as heavy rainy seasons, significant snow, or other conditions that make it difficult to perform vehicle screening.

CAC - VEHICLE SCREENING PROCESS. Vehicle screening occurs inside the perimeter wall. A vehicle enters the sally port through the sliding, rolling, telescoping, cantilever, or bi-fold vehicle gate in the perimeter wall. At this point, the interior vehicle barrier is in the secure position. The vehicle gate closes, and the vehicle is inspected. Inspection generally comprises verification of the vehicle identification; verification of the vehicle occupant's identification; an explosives detection screening; and a check of the vehicle interior, undercarriage, engine compartment, trunk, and gas-fill cover area. The undercarriage inspection is conducted using a hand-held mirror device. Passengers are required to exit the vehicle and be screened and badged inside the CAC. After the vehicle is inspected, the interior vehicle barrier is released, allowing passage of the vehicle. This barrier is re-secured prior to another vehicle entering the compound.

CAM. See Central Alarm Monitoring

CAPS. See Culvert Alternative Protection System.

CENTRAL ALARM MONITORING (CAM). An alarm monitoring center or central monitoring station to monitor burglar, fire, and residential alarm systems. The Central Monitoring System may also include watchman and supervisory services.

CES. See Compound Emergency Sanctuary.

CH. See Cluster Housing

CHANCERY BUILDING. A building with or without its own compound, usually containing classified or sensitive information or equipment, occupied by a wide range of U.S. Government interests and activities.

CHIEF OF MISSION RESIDENCE (CMR). The official, representational private residence of the United States Ambassador and family in a foreign country.

CGR. See Consul General Residence.

CLEAR ZONE. An area extending inward 6.1 m (20 feet) from the protected side of the perimeter barrier, free of any auxiliary structures, parking areas, or other man-made features. The clear zone must provide a visually clear area for the guards controlling the perimeter and must not provide any hiding places for intruders.

CLIMB RESISTANT. Label of a wall or fence that inhibits climbing and conforms to OBO Codes for security purposes, previously referred to as "Anti-Climb".

CLIMBABLE ROUTE. The route created along a surface that contains multiple hand-holds and foot-holds within vertical and horizontal reach such that a climber can continuously maintain three (3) points of hand or foot contact. Climbable Routes pertain to surfaces no more than 3 degrees from vertical. For sloped surfaces in excess of 3 degrees, contact OBO/CFSM/SM/SEB for specific requirements.

CLUSTER HOUSING (CH). See Satellite (Off-Compound) Residential Facilities.

CMR. See Chief of Mission Residence.

COB. See Existing Consulate Office Building.

COMPOUND. See Primary (On-Compound) or Satellite (Off-Compound) for physical and technical security requirements for

COMPOUND ACCESS CONTROL FACILITIES (CAC). Entry point buildings at secure perimeter of compound consisting of a system of gates, barriers, and guard booths, used to pre-screen entering personnel and vehicles.

COMPOUND EMERGENCY SANCTUARY (CES). A protected building or room designated as a temporary shelter during an attack or other crisis for personnel unable to reach or be accommodated in locations

identified in the OBO Codes. CES are not required to meet setback or blast resistant construction requirements.

COMPOUND - PRIMARY (On-Compound). See Primary (On-Compound).

COMPOUND - SATELLITE (Off-Compound). See Satellite (Off-Compound).

CONSUL GENERAL RESIDENCE (CGR). The official, representational private residence of the Consul General (and family) in a foreign country.

CONSULATE BUILDING. A building with or without its own compound, usually containing classified or sensitive information or equipment, occupied by a large number or wide range of U.S. Government interests and activities.

CONSULAR AGENCY (CA). See Satellite (Off-Compound) Consular Agency (CA).

CONTROLLED. The state of being directly protected by 24-hour presence of Cleared American Personnel or being under protection of technical devices approved and installed by Bureau of Diplomatic Security (DS).

CONTROLLED ACCESS AREA (CAA). The only area(s) within a building where classified information or materials are handled, stored, discussed, or processed. All unauthorized personnel must be under constant escort and observation. There are two categories of CAA: core and restricted.

CORE. See CAA Core.

CRIMPERS. Crimpers are small vertical edges that are just deep enough to fit the tips of the fingers into. A Crimper is ana element that permits 5-finger grip in a crimped position. Crimpers are not permitted on Climb-Resistant surfaces.

CULVERT ALTERNATIVE PROTECTION SYSTEMS (CAPS). A modular concrete system used for rapid field assembly, disassembly, and relocation. The CAPS modules are 508 mm (20 inches) thick and available in a variety of sizes.

DCMR. See Deputy Chief of Mission Residence.

DEAL DRAWER. The subassembly of a transaction window which enables routine passage of materials of limited size between sides of the window. In protected interior and exterior assemblies, a DOS approved transaction drawer is required. The deal drawer retracts to a flush position on the attack side of the assembly.

DEAL TRAY. The subassembly of a transaction window which enables routine passage of materials of limited size between sides of the window. The window is permitted to be fixed or other convoluted design.

DEMARC ROOM. The demarcation room is where the public or outside vendor utilities terminate and transition to the private equipment.

DEPUTY CHIEF OF MISSION RESIDENCE (DCMR). The official, representational private residence of the Deputy Chief of Mission (and family) in a foreign country.

EAP. See Emergency Action Plan.

EC. See Electric Cabinet.

EC ROOM. See Electric Cabinet Room.

EDGES. Edges are relatively thin ledges that are horizontal and may slope downward away from the Climb-Resistant surface. Edges have generally smooth surface and require the climber to use an open-handed grip. Edges are considered hand holds when they provide a horizontal surface greater than or equal to 50 mm (2 inches) but less than 125 mm (5 inches) in depth, are greater than or equal to 75 mm (3 inches) in length, are

greater than or equal to 100 mm (4 inches) in width, and have a slope greater than or equal to 90 degrees but less than 135 degrees when measured from the vertical surface providing climb resistance. Edges that slope upward such that the horizontal surface is greater than 90 degrees are considered Jugs/Crimpers and are not permitted. Edges are considered foot holds when they provide a horizontal surface greater than or equal to 5 mm (0.2 inches) in depth, are greater than 5 mm (0.2 inches) in length and have a slope greater than or equal to 90 degrees but less than 135 degrees when measured from the vertical surface providing climb resistance.

ELECTRIC CABINET (EC). Also referred to as Security Interface Cabinet (SIC), the main Technical Security System (TSS) interface point.

ELECTRIC CABINET ROOM. Also referred to as the SIC Room, a room that houses the main security interface cabinet for TSS.

ELEVATED OUTDOOR FUNCTIONAL SPACE. An accessible above grade platform enclosed by a wall, Guardrail, balustrade on the exterior of a building accessible from the interior of the building, or an above grade space considered by the International Building Code (IBC) as habitable space. Elevated Outdoor Functional Space is further defined as having direct, unobstructed line-of-sight from adjacent streets, from which a physical attack (Including projectiles) directed (from street level) against the occupants of the Elevated Outdoor Functional Space. There are physical security restrictions on the use of Elevated Outdoor Functional Space.

EMERGENCY ACTION PLAN (EAP). A written procedural plan detailing the appropriate response to various types of emergencies impacting a diplomatic facility.

EMERGENCY NOTIFICATION SYSTEM (ENS). A system of one-way dissemination or broadcast of messages to one or many groups of people, alerting them to a pending or existing emergency.

EMERGENCY RESIDENTIAL RESPONSE ROOM (ERRR). A dedicated room in the MSGR where weapons and equipment can be stored. The ERRR room is in addition to the main react room within the principal office building and complements its function.

ENS. See Emergency Notification System

EOB. See Existing Office Building.

ERRR. See Emergency Residential Response Room

EXISTING CONSULATE OFFICE BUILDING (COB). An existing consulate office building (COB) is an office building constructed by or on behalf of the U.S. government, or buildings not designed by the department that were acquired prior to July 1991.

EXISTING OFFICE BUILDING (EOB). An existing office building (EOB) is an office building constructed by or on behalf of the U.S. government, or buildings not designed by the department that were acquired prior to July 1991.

EXTERIOR HARDLINE. The exterior of a building or structure, to include walls, windows, doors, louvers and man-passable openings located below 5m above grade or accessible platform, constructed or reinforced in accordance with the physical security standards. Also referred to as the primary hardline.

EXTERIOR LAA. Exterior LAA is defined as being adjacent to CAA space, but outside the building envelope. Exterior LAA is not required to meet the same physical and technical standards as interior LAA; however, it must operate as controlled space. Exterior LAA restricts non-cleared persons from gaining physical access to the CAA perimeter using locks, architectural fences, other physical barriers, alarms, and/or CCTV coverage. Areas so designated include rooftop areas over/adjacent to core CAA areas, and certain rooftop or ground mounted HVAC equipment. Roof areas and balconies above/adjacent to Core CAA areas must be

designated as LAA.

FE. See Forced Entry.

FE/BR. Combined Forced Entry / Ballistic Resistant; see each for their definition.

FOOT-HOLD / HAND-HOLD. Elements/components of a fence, wall, building façade, or other surface that enhance the ability of a person to climb the building or element. Hand and foot holds include but are not limited to the following definitions**: HORIZONTAL REACH.** The horizontal distance from an accessible platform, hand-hold or foothold, less than 1.6 m (5.25 feet). **VERTICAL REACH**. The vertical distance from an accessible platform or highest achievable foot-hold; less than 2.75 m (9 feet). Vertical reach includes a factor for jumping.

FORCED ENTRY (FE). Label for designs intended to resist forced entry effort that has been certified by DS in accordance with DS Certification Standards, SD-STD-01.01 Forced Entry and Ballistic Resistance of Structural Systems.

FRANGIBLE BUILDING FEATURES See section 1624.2.2.10.

GENERAL WORK AREA (GWA). The area behind the hardline, where U.S. citizen employees and authorized locally employed staff, as well as official dependents of U.S. citizen employees are permitted without escort. Sensitive But Unclassified (SBU) information is permitted to be handled, stored, discussed, or processed. No classified work shall be stored, processed, or discussed in the GWA.

GUARD BOOTH. The term is used to refer to any guard booth located at a CAC, or building entrance, controlled by local guards. Guard Booths occur at the Main Entrance (POST 1) and the Service Entrance (POST 2) to the NOB, NOX, NAB or EOB in a lock and leave facility.

GWA. See General Work Area

HAND-HOLD / FOOT-HOLD. Elements/components of a fence, wall, building façade, or other surface that enhance the ability of a person to climb the building or element. Hand and foot holds include but are not limited to the following definitions::**HORIZONTAL REACH.** The horizontal distance from an accessible platform, hand-hold or foot-hold, is less than 1.6 m (5.25 feet). **VERTICAL REACH**. The vertical distance from an accessible platform or highest achievable foot-hold; less than 2.75 m (9 feet). Vertical reach includes a factor for jumping.

HARDENED ALTERANTIVE TRAILER SYSTEM (HATS). A flexible and scalable building system that have been analytically modeled and physically teste against multiple threats and exceed OSPB standards for FE/BR protection.

HARDLINE. Term referring to a system of barriers surrounding a protected area which afford degrees of forced entry, ballistic resistant, or blast protection, or combinations of these three. A hardline includes walls, floors, ceilings, roofs, windows, doors, or non-window openings, all of which provide the level of protection specified for that hardline. Hardlines are designated as 5-MIN FE, 15-MIN FE/BR and 60-MIN FE/BR.

HATS. See Hardened Alternative Trailer System

HDSVS. See High-Definition Security Video System

HIGH-DEFINITION SECURITY VIDEO SYSTEM (HDSVS) – See Security Video System (SVS).

HORIZONTAL REACH. The horizontal distance from an accessible platform, handhold, foothold, less than 1.6 m (5.25 feet).

HOUSING. There are several different types of housing. The security criteria for housing differ depending on whether it is located on or adjacent to a Primary (On-Compound) or a remote Satellite (Off-Compound)

location.

HOUSING – MULTI-FAMILY. See Apartment.

HOUSING – REPRESENTATIONAL. Whether on-compound or off-compound, includes the following residence types: Chief of Mission Residence (CMR), Deputy Chief of Mission Residence (DCMR), Consul General Residence (CGR), Consul Residence (CR), Principal Officer Residence (POR). For security purposes some of these housing types are considered Specially Designated Residences (SDR).

HOUSING – SINGLE FAMILY. See Single Family Housing – Detached.

IDNS. See Imminent Danger Notification System

IDS. See Intrusion Detection System

IMMINENT DANGER NOTIFICATION SYSTEM (IDNS). A notification and annunciation system for all department facilities and compounds activated upon immediate threat.

INTERIM OFFICE BUILDING (IOB). Structures erected for a period of greater than 180 days and less than five years.

INTERIOR HARDLINE. The hardline separating public access from general work areas (GWA). Also referred to as the secondary hardline.

INTERVIEW ROOM. A two-sided space, divided into a public visitor side and a private GWA staff side.

INTRUSION DETECTION SYSTEMS (IDS) – ENHANCED. These systems consist of a sensor (e.g., duress button, door contact, tamper switches and motion sensor) that reports to a central annunciation panel at Post 1. These systems are used to monitor the Controlled Access Areas (CAA) and Limited Access Areas (LAA).

INTRUSION DETECTION SYSTEMS (IDS) - LOW LEVEL These systems consist of a sensor (e.g., duress button, door contact, tamper switches and motion sensor) that reports to a central annunciation panel at Post 1. These systems are used to monitor Compound Access Controls (CAC), Public Access Controls (PAC), General Work Areas (GWA), and Administratively Controlled Areas that contain valuable assets other than classified material.

IOB. See Interim Office Building.

JUGS. The term “jugs” is derived from the expression “jug-handle”. Jugs are large handholds or footholds that usually have space for both hands to fit on the hold. A handhold or foothold that is called a jug is easy to use because it permits a 4-finger handle like grip. Jugs are not permitted on Climb-Resistant surfaces.

KEY MANAGEMENT SYSTEM. A DS approved key storage system located behind the interior hardline with direct visual access from Post 1.

L&L. See Lock and Leave Constant Presence or Lock and Leave Intermittent Presence

LAA. See Limited Access Area

LAA Exterior. See Exterior LAA.

LIMITED ACCESS AREA (LAA). A non-controlled access area (non-CAA) equipped with DS-approved locks and alarms in which only authorized U.S. citizens with security clearances are permitted unrestricted access. Uncleared persons must be escorted. A 24-hour cleared U.S. presence must monitor alarms for LAAs. Posts without a 24-hour cleared U.S. presence must have a DS-approved supplemental security system.

LOCK AND LEAVE (L&L) CONSTANT PRESENCE. Guard functions are accomplished by locally hired

personnel (Local Guards). In a constant presence, an American open and close the facility and are constantly present during business hours.

LOCK AND LEAVE (L&L) INTERMITTENT PRESENCE. Guard functions are accomplished by locally hired personnel (Local Guards). In an intermittent presence, a local guard, or local staff member are permitted to open and close the facility, and an American is intermittently present during normal business hours.

MAIL SCREENING FACILITIES (MSF). A prefabricated one room or two-room facility with a Class 1 biological safety cabinet for screening incoming mail.

MAIN ENTRANCE LOBBY. The main office building entrance is the point of reception and entry for most visitors. The main lobby serves as a primary circulation point for the building and provides access to other public functions associated with the Multi-Purpose Room. At posts where there is not a separate Consular entrance, this also serves as the Consular entrance. The local guard is the first station that all persons pass through when entering the main entrance lobby. The local guard performs the visitor inspection procedure under the direct line of sight from MSG Post 1. The local guard is located at an open inspection desk that allows the guard to check bags, cameras, and other miscellaneous items. Adequate space is needed to store collected items. Visitors pass through the WTMD monitored by the local guard. If required, they obtain temporary identification badges from the MSG. Upon exiting, visitors return their visitor's passes and retrieve any personal items left upon entry. Entrance and exit paths must be clearly defined, allowing for a smooth and efficient flow, both by visitors and employees.

MAN-PASSABLE. Label for opening where the size, is greater than or equal to 620 sq. cm (100 sq. inches) and one dimension is greater than 150 mm (6 inches permitting access by intruder.

MARINE SECURITY GUARD (MSG). An organization of the United States Marine Corps (USMC) whose detachments provide security at American embassies, American consulates, and other official United States Government offices such as the United States Mission to NATO.

MARINE SECURITY GUARD BOOTH (MSG Booth). The term is used to refer to any guard booth located at a building entrance, controlled by MSGs. MSG booths are located at the Main Entrance (POST 1) and the Service entrance (POST 2) to the NOB.

MARINE SECURITY GUARD RESIDENCE (MSGR). A residence for active Marine Security Guard (MSG) personnel detachment. The MSGR has communal living spaces (kitchen, dining, living room, recreation room, exercise room, and heritage room) and private living quarters spaces where the detachments and TDY bedrooms are located.

MSF. See Mail Screening Facilities

MSG. See Marine Security Guard

MSG-1. See Post 1

MSGR. See Marine Security Guard Residence

NAB. See Newly Acquired Building.

NCC. See New Consulate Compound.

NEC. See New Embassy Compound.

NEW CONSULATE COMPOUND (NCC). A compound that includes a new Consulate office building

NEW EMBASSY COMPOUND (NEC). A compound that includes a new Embassy (Chancery) office building.

NEW OFFICE ANNEX (NOX). In terms of Physical security for overseas US Government (USG) facilities, a

new office annex (NOX) is an office building constructed on an existing compound by or on behalf of USG.

NEW OFFICE BUILDING (NOB). A new office building (NOB) is an office building constructed by or on behalf of the U.S. government, after June 1991.

NEWLY AQUIRED BUILDING (NAB). In terms of physical security for overseas USG facilities, a newly acquired building (NAB) is an office building or compound not constructed by or on behalf of the USG which was acquired by purchase, lease, or other means, after June 1991.

NMP. See Non-Man Passable.

NOB. See New Office Building.

NON-MAN-PASSABLE (NMP). Label of opening design certified by DS to resist entry by an individual. This is also known as a "secondary" hardline, when there is a public area located behind the primary hardline.

NON-SECURITY GLAZING. Glazing not required to be FE, FE/BR, or blast resistant.

NOX. See New Office Annex

OCCUPIED EXTERIOR ELEVATED SPACES. See Elevated Outdoor Functional Space.

OCCUPIED ROOF. An occupied roof is considered an elevated outdoor functional space if it is accessible, habitable and has a direct, unobstructed line-of-sight from adjacent streets, from which a physical attack (including projectiles) could be directed (from street level) against occupants on the occupied roof.

PAA. See Public Access Area.

PAC. See Public Access Control.

PASSIVE BARRIERS. A fixed structure designed to stop access. There are a variety of passive anti-ram barriers ranging from retaining walls and trenches to bollards, planters, and knee walls.

PCAC. See CAC-Pedestrian Only

PCC. See Post Communications Center.

PERIMETER BARRIER. A wall, fence, structure, or a natural topographic feature which provides protection to the compound. The outer defensive tier of the compound.

PINCHES. Pinches are holds that have opposing faces which must be pinched (usually by the entire hand, with fingers on one side and the thumb on the other) to grip. Pinches are considered hand-holds when they provide 5 finger grip of an element, are less than or equal to 100 mm (4 inches) in width, are greater than or equal to 50 mm (2 inches) in depth and are 75 mm (3 inches) or more in length and are angled in the vertical direction from the climb resistant surface at least 30 degrees but not more than 135 degrees. Pinches are considered foot-holds when they are greater than or equal to 50 mm (2 inches) in depth and are 75 mm (3 inches) or more in length; are angled in the vertical direction from the climb resistant surface at least 30 degrees but less than or equal to 90 degrees. Vertical Pinches within Horizontal Reach of each other are considered foot-holds since they provide a means to "shimmy" upward.

POCKETS. Pockets are shallow or deep openings in a surface in which fingers or the edge of a foot may be inserted. Pockets are considered hand-holds when they provide a vertical or horizontal gap in a climb resistant surface (i.e., joints in façade material) that is greater than 15 mm (0.6 inches) wide and greater than 50 mm (2 inches) in depth, and 75 mm (3 inches) or more in length. Pockets are considered foot-holds when they provide a vertical or horizontal gap in a climb resistant surface (i.e., joints in a façade materials) that is greater than 10 mm (0.4 inches) wide, greater than or equal to 5 mm (0.2 inches) in depth, and are 5 mm (0.2 inches) or more in length. [At compound perimeter barriers, meeting either dimension constitutes a pocket

foot-hold and is not allowed]. Pockets or any size that slope upward such that the horizontal surface is greater than 90 degrees are considered Jugs/Crimpers and are not permitted.

POR. See Principal Officer Residence.

POST 1. The primary security booth in a Department of State Facility that is controlled by a Marine Security Guard (MSG).

POST 2. The secondary security booth in a Department of State facility that is controlled by a Marine Security Guard (MSG) or Local Guard. Access area designation is dependent on staff assigned. See GUARD BOOTH and MARINE SECURITY GUARD BOOTH (MSG Booth) definitions.

POST COMMUNICATIONS CENTER (PCC). An area within the Chancery or Consulate requiring the highest level of protection.

PRIMARY (ON-COMPOUND). Refers to any collocated office Chancery or Consulate with or without its own compound.

PRIMARY (ON-COMPOUND) HOUSING. Housing that is located on the chancery or consulate compound or residential housing compounds adjacent or near the chancery or consulate compound. Collocation of housing on or adjacent to the chancery/consulate compound is subject to a post specific security and life safety threat assessment.

PRINCIPAL OFFICER RESIDENCE (POR). The official, representational private residence of the Principal Officer and family in a foreign country.

PROTECTED SIDE. The side of the hardline wall, fence, barrier, or other physical security element from which protection from attack from an aggressor is determined. Protected side indication is used to determine measurements of setback and standoff distances.

PUBLIC ACCESS AREA (PAA). Areas where locally employed staff and uncleared personnel have unrestricted access.

PUBLIC ACCESS CONTROL (PAC). A screening space inside building entrances that admit the public.

PUBLIC OFFICE FACILITY. See Satellite (Off-Compound) Public Office Building.

RAA. See CAA Restricted Area

RECEIVING AREA. The receiving area consists of a building with two loading docks; one located on the compound side and the other on the public side. Space for a large X-ray machine must be provided in the receiving building.

RESIDENTIAL COMPOUNDS. See Satellite (Off-Compound) Residential Facilities.

RESIDENTIAL SAFE HAVEN. See Safe Haven - Residential

RESTRICTED ACCESS AREA (RAA). See CAA Restricted Area.

SAFE AREA. A designated area within a building that serves as an emergency sanctuary and provides at least 15-MIN FE/BR protection, protected emergency power, dedicated ventilation, control and monitoring center communications, secondary emergency escape and restroom facilities.

SAFE HAVEN - OFFICE. A designated area within a building that serves as an emergency sanctuary and provides at least 60-MIN FE/BR protection, protected emergency power, dedicated ventilation, control and monitoring center communications, secondary emergency escape and toilet facilities.

SAFE HAVEN - RESIDENTIAL. A designated area within a residence, of substantial construction, emergency

communication and escape.

SALLY PORT. An enclosed area used for verifying identity and conducting inspections before allowing a vehicle or pedestrian to continue into the protected area. Usually incorporates double barriers to prevent tailgating.

SATELLITE (OFF-COMPOUND). Refers to any single office like a consular agency, public office facility, warehouse, or standalone housing with or without its own compound. Satellite facilities are separate from Embassy (Chancery) or Consulate Primary Compounds.

SATELLITE (OFF-COMPOUND) CONSULAR AGENCIES (CA). Consular agencies must not be collocated in any U.S. Government office building or compound; they provide consular-related services on behalf of the supervisory Post.

SATELLITE (OFF-COMPOUND) PUBLIC OFFICE FACILITY. A facility for public functions, such as libraries and cultural centers. It is in a commercial or residential building and not collocated with the Chancery or Consulate. The U.S. Government may or may not be the sole occupant.

SATELLITE (OFF-COMPOUND) RECREATIONAL FACILITIES. Recreational facilities (REC) include, but are not necessarily limited to, functional areas such as gyms, bars, pools, restaurants, salons, playgrounds, day care rooms, equipment rental, gift shops, dry cleaning/laundry, and community rooms.

SATELLITE (OFF-COMPOUND) RESIDENTIAL FACILITIES. A separate enclosed compound for residences, remote from the Embassy (Chancery) or Consulate Compound, that includes Specially Designated Residences (SDR)s (such as CMR, POR, CGR, and MSGR), other representational residences (DCMR), single and multifamily SDA residences that contains 7 or more units or the USG occupies more than 50% of the total units. The residential compounds are subject to additional security requirements like the Primary (On-Compound) compound perimeter barrier for anti-ram and climb resistance requirements.

SATELLITE (OFF-COMPOUND) RESIDENTIAL. Stand-alone residences, remote from the Embassy (Chancery) or Consulate Compound, that include Specially Designated Residences (SDR)s (such as CMR, POR, CGR, and MSGR), other representational residences (DCMR), single and multifamily SDA residences with fewer than 7 units or less than 50% USG occupied.

SATELLITE (OFF-COMPOUND) SOLE OCCUPANT OF A BUILDING OR COMPOUND. A stand-alone facility, that is not a Chancery or Consulate. Located on its own compound or commercial office building with the U.S. Government as the sole occupant – may host a limited number of tenant agencies such as Agriculture, Commerce and USAID.

SATELLITE (OFF-COMPOUND) TENANT OF A COMMERCIAL OFFICE BUILDING (TCO). A facility that is not a Chancery or Consulate, located in a commercial office building with non-U.S. Government organization and no control over access to the building. The US Government is not the sole occupant and does not occupy more than 49% of the usable square footage of a commercial office building.

SATELLITE (OFF-COMPOUND) UNCLASSIFIED WAREHOUSE. A facility under the control of the General Services Office (GSO) or other foreign affairs agencies and is sued exclusively as a warehouse for unclassified materials.

SCAC. See CAC-Service

SCC. See Security Control Center.

SDA. See Staff Officer Residence.

SDR. See Specially Designated Residence.

SECURE ROOM. CAA remote storage areas, and CAA Core Suites. Glazing is not permitted. See the Physical Security Detail Handbook for details.

SECURITY CONTROL CENTER (SCC). Designated area containing security and other controls for the post, often located in and designated as MSG Post One.

SECURITY HARDWARE (SHW). Security door hardware sets

SECURITY INTERFACE CABINET (SIC). Also referred to as Electric Cabinet (EC), the main Technical Security System (TSS) interface point.

SECURITY INTERFACE CABINET (SIC) ROOM. Also referred to as the EC Room, a room that houses the main security interface cabinet for TSS.

SECURITY INTERFACE CABINET. (Also known as EC Cabinet)

SECURITY MANAGEMENT SYSTEM ENTERPRISE (SMSe). a computer-based system that provides interface with almost all TSS components.

SECURITY SCREENING. Security screening consists of a local guard, seated at a package inspection and storage desk, and WTMD(s). There are two levels of security screening, one at the compound access control (CAC) and a second at the public access control (PAC) building entrance.

SECURITY VIDEO SYSTEM (SVS) - SVS provides an enterprise, networked Video Management System (VMS) for the Department's physical security infrastructure, responsible for securely locating and attaching to all Internet Protocol (IP) cameras on the Security Management System enterprise (SMSe) Network (SMSeNet).

SETBACK. The minimum distance from the exterior / attack face of the compound perimeter anti-ram barrier to the outer edge of the blast envelope of the structure. Climb Resistance is measured from the outer edge of the compound perimeter climb resistant barrier to the exterior climb resistant face of a building.

SHATTER RESISTANT WINDOW FILM (SRWF). Security product used in limited project application were directed by OBO.

SHW. See Security Hardware.

SIC. See Security Interface Cabinet.

SIC ROOM. See Security Interface Cabinet Room.

SINGLE FAMILY HOUSING - DETACHED. House, townhouse, or multiple residential units that have individual entrances from the street for each unit.

SLOPERS. Slopers slope down away from the vertical surface and have a generally smooth surface, requiring a climber to exert maximum friction to gain an effective hold by using an open-handed grip and pushing inwards. Slopers are considered hand-holds when they provide a horizontal surface at least 125 mm (5 inches) in depth and 100 mm (4 inches) in length, have a slope greater than or equal to 135 degrees but less than 150 degrees measured from the vertical surface. Slopers are considered foot-holds when they provide a horizontal surface at greater than or equal to 5mm in depth and length and have a slope greater than or equal to 135 degrees, but less than 150 degrees measured from the vertical surface.

SMSe. See Security Management System Enterprise.

SOLE OCCUPANT OF A BUILDING / COMPOUND. See Satellite (Off-Compound) Sole Occupant of a Building / Compound.

SPALL. Target or bullet material which is broken free due to ballistic impact and projected into the surrounding area.

SPECIALLY DESIGNATED RESIDENCE (SDR). In terms of security requirements, a high-profile residence such as a CMR, CGR, POR or MSGR.

SPX. See Support Shops Annex.

SRWF. See Shatter Resistant Window Film.

STAFF HOUSING (SDA). Derived from the legacy terms “Staff Diplomatic Housing” and “Staff Duty Apartments” refers to either detached single family dwellings, multiple single-family dwelling (e.g., townhouse) and multi-family dwellings such as apartments.

STANDOFF. See “Setback”.

SUBSTANTIAL CONSTRUCTION. All walls, floors and roofs of masonry, wood or metal providing resistance to unauthorized access and clear evidence of forced entry.

SUBSTANTIAL DOOR. A door with specific security features. When constructed of wood, solid wood 45 mm (1.75 inches) thick. When constructed of steel, Steel Door Institute (SDI) level 4 maximum duty is required.

SUPPORT ANNEX (SPX). See Support Shops Annex

SUPPORT SHOPS ANNEX (SPX). An unclassified shops facility under the control of the U.S.G., used exclusively as a shop. For newly constructed or newly acquired shops that contain offices, the office portion of the shops is governed by criteria listed in Office Building criteria.

SVS. See Security Video System

TACTICAL OPERATION CENTER (TOC). Designated area containing security and other controls for the post located in a designated areas and functions as an overseer or MSG Post One.

TCO. See Satellite (Off-Compound) Tenant of Commercial Office Space.

TECHNICAL SECURITY SYSTEMS (TSS). A set of systems divided into 4 main categories: Infrastructure, Deterrent Systems, Detection Systems and Response Systems.

TENANT OF COMMERCIAL OFFICE (TCO). See Satellite (Off-Compound) Tenant of Commercial Office Space.

TERRACE. A terrace is considered an elevated outdoor functional space if it is accessible, habitable and has a direct, unobstructed line-of-sight from adjacent streets, from which a physical attack (including projectiles) could be directed (from street level) against occupants on the terrace.

TOC. See Tactical Operation Center

TRASH HOLDING AREA. The trash holding area consists of an area to house the compound trash dumpsters. This area is to be enclosed with a wall, a lockable gate or roll-up door at the public side, and lockable gate or door at the compound side. The trash area must be accessed from within the compound for Post use, and from the exterior, for trash company use.

TSS. See Technical Security Systems

UNCLASSIFIED WAREHOUSE. See Satellite (Off-Compound) Unclassified Warehouse.

VAULT. A space constructed to enclose and safeguard sensitive material or operations.

VERTICAL REACH. The vertical distance from an accessible platform, handhold, or foothold, less than 2.75

m (9 feet). Vertical reach includes a factor for jumping.

WALK THROUGH METAL DECTECTOR (WTMD). A Device to detect metal objects and weapons, located at all screening PACs. The WTMD have external vertical indicator lamps, which cannot be obscured from view.

WAREHOUSE (WHE). An unclassified warehouse is a facility under the control of the U.S.G., used exclusively as a warehouse or terminal building for unclassified material. For newly constructed or newly acquired warehouses that contain offices, the office portion of the warehouse is governed by criteria listed in Office Building criteria.

WHE. See Warehouse.

WINDOW GRILLE. Spaced, rigid bars which are mounted over exterior windows (or other man-passable penetrations of the host structure) to prevent access. See the Physical Security Detail Handbook for Details.

WTMD. See Walk Through Metal Detector.

ZONE I COMPOUND LIGHTING STANDARDS. Building exterior surfaces (4.0 lx), such as walls and roofs.

ZONE II COMPOUND LIGHTING STANDARDS. Building entrances (14.0 lx) and inspection locations (20.0 lx).

ZONE III COMPOUND LIGHTING STANDARDS. Exterior site, intermediate areas between the buildings and the compound perimeter barrier, including roadways (4.0 lx), storage areas (1.0lx), parking areas and lots (2.0 lx) and open areas (.5 lx).

ZONE IV COMPOUND LIGHTING STANDARDS. Exterior, perimeter areas such as the compound perimeter barrier (4.0 lx), water approaches (1.1 lx), roadways entrances (10.0 lx), and pedestrian entrances (14.0 lx) on post stand by power system.

SECTION 3403
PHYSICAL AND TECHNICAL SECURITY GENERAL REQUIREMENTS

3403.1 General.

This section provides an overview of the physical and technical security requirements in table form. The tables differentiate the requirements by Primary (On-Compound) and Satellite (Off-Compound), requirements for blast and non-blast structures and requirements for specific spaces. The section includes 3403.2 Physical Security (AW) Requirements tables, 3403.3 Technical Security (SY) Requirements tables and 3403.4 Special Use tables.

The Requirement Tables are organized as follows:

Table A: Outside Compound Perimeter Barrier

Table B: Compound Perimeter Barrier

Table C: Compound Access Control

Table D: Clear Zone, Setback and Exterior Spaces

Table E: Secondary and Support Structures (Non-Blast)

Table F: Primary Structures (Blast)

Table G: Housing Facilities

Table H: Office Facilities

Table J: Office Space Groups

Table K: Office Spaces

3403.2 Physical Security (AW) Requirements.

3403.2.1 General.

3403.2.1.1 Physical Security Protection Ratings. When doors, glass, glazing, grilles, louvers, or other penetrations are provided in walls, ceilings or floors that require a specific level of security protection, match or exceed the rating of that protection. When the opening size of the penetration is greater than or equal to 620 sq. cm (100 sq. inches) and one dimension is greater than 150 mm (6 inches), provide a DOS certified NMP and tamperproof grille to match the security protection rating. Provide an inspection hatch on the secure side of the penetration. A slab-on-grade is considered inaccessible and therefore satisfies 5-MIN FE and 15-MIN FE/BR floor rating protection requirement.

Exception: On a project specific basis, a slab-on-grade satisfies the 60-MIN FE/BR floor rating protection requirement, subject to OBO approval.

3403.2.1.2 Exterior Illumination. Exterior illumination for grounds adjacent to the building facades, all entrance areas, and common areas must be in accordance with the 2013 OBO Site Lighting Guidelines and Criteria.

3403.2.2 Primary (On-Compound) Physical Security (AW) Requirements: Chancery and Consulate Buildings and Compounds.

3403.2.2 TABLE A
COMPOUND PERIMETER BARRIER

	Physical Security Protection
PKG – Parking lots fences, walls, and parking garage façades	CLIMB RESISTANT (2.1 m)

3403.2.2 TABLE B
COMPOUND PERIMETER BARRIER

	Physical Security Protection
Compound Perimeter Barrier	ANTI-RAM CLIMB RESISTANT (2.75 or 3.2 m)

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3403.2.2 Table C
COMPOUND ACCESS CONTROL

	Physical Security Protection
CAC – Street Side (Exterior)	15-MIN FE/BR (6-Sided)
CAC – Compound Side (Interior)	15-MIN FE/BR (6-Sided)
CAC – Guard Booth (Serves as Guard Booth CES)	15-MIN FE/BR (6-Sided)
CAC – Consular Pass Back CAC – Barrier Controls Room CAC – Sub-EC Room	15-MIN FE/BR (6-Sided)
CAC – Demarcation Room (*At exterior side of compound perimeter barrier)*	5-MIN FE *(An exception to physical security protection rating requirement to match or exceed wall rating)*
CAC – Loading Dock Service Doors (*At exterior side of compound perimeter barrier)*	15-MIN FE *(An exception to physical security protection rating requirement to match or exceed wall rating)*

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3403.2.2 TABLE D
CLEAR ZONE, SETBACK AND EXTERIOR SPACES

	Physical Security Protection
Clear Zone	Minimum 6.1-m (20-foot) clear zone extending inward form the protected side of the compound perimeter barrier
On-Compound Parking Lots	Minimum 1 m (3.3-foot) separation from exterior face of buildings not subject to blast requirement Minimum 6.1-m (20-foot) separation from the exterior face of buildings that require blast protection (office and housing), and CACs and UTL buildings Minimum 15.3-m (50-foot) separation from the exterior face of NAB or EOB office building
Landscaping Stone Requirements	To avoid rocks and stones being used as projectiles; small stones used for mulch, mow strips, or other functional or aesthetical purposes on the surface of the ground should be less than 20 mm (0.75 inches) in diameter. All stone used for landscape functional or aesthetic purposes should be minimum 500 mm (20 inches) in any direction.
Consular Pathway Barrier (Consular Windows greater than 25)	Provide a continuous consular separation barrier (fence or wall) at a height of 1.2 m (4 feet)
Consular Pathway Barrier (Consular Windows greater than 5 but less than 25)	Provide a continuous consular separation barrier (fence or wall) at a height of 0.9 m (3 feet)
Consular Pathway Barrier (Consular Windows less than 5)	Provide circulation width of 2 m (6.6 feet) and provide a mostly evergreen and hardy plant material landscape separation barrier.
MSGR Exercise Yard	Provide a 1.8-m (6-foot) opaque fence and two gates to screen yard from public view from the adjacent streets, from the residential portion of the compound and from office buildings.
Vehicular Path	Provide alternate remote emergency exit for vehicles
Housing Separation hardware	Provide a 1.85-m (6-foot) wall or fence to provide visual separation of the office occupancies and support functions from the SDA, CMR, DCMR, CGR, POR or SOR housing occupancies collocated on the compound

3403.2.2 TABLE E
SECONDARY BUILDINGS

	Physical Security Protection	Special Use
Modular Mail Screening Facilities		Access to CES
UTL – Utility Buildings		Access to CES
UTL – Utility Buildings (housing safe area generators)	15-MIN FE/BR (6 – sided)	Access to CES
SPX – Shops, Lockers, Showers, Break Rooms		Access to CES
WHE – Warehouse / Storage without offices		Access to CES
PKG – Parking Structures	Minimum 1-m (3.3-foot) separation from exterior face of buildings not subject to blast requirement Minimum 6.1-m (20-foot) separation from the exterior face of buildings that require blast protection (office and housing), and CACs and UTL buildings Minimum 15.3-m (50-foot) separation from the exterior face of REC facilities, NAB and EOB office buildings	Access to CES
CAB – Cabana / Pool House		Access to CES

3403.2.2 TABLE F
PRIMARY STRUCTURES

	Setback	Physical Security Protection	Special Use
REC – Recreational Facilities[2]	30.5 m (100 feet)	BLAST 15-MIN FE/BR[1]	Safe Area
Building Courtyards	30.5 m (100 feet)	BLAST FE/BR roof protection is not required	

NOTES for 3403.2.2 TABLE F

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

[2] The functional spaces (fitness center, gyms, indoor pools, restaurants, salons, gift shops, dry cleaning, laundry, and community rooms) are considered recreational functions and must meet the same requirement as REC even if they are not co-located together on the compound.

3403.2.2 TABLE G
HOUSING FACILITIES

	Setback	Physical Security Protection	Special Use
Specially Designated Residence (SDR): Marine Security Guard Residence (MSGR)	30.5 m (100 feet)	BLAST EXERIOR WALL (15-MIN FE/BR - 6-Sided)	ERRR
Specially Designated Residence (SDR): Representational (CMR, CGR, POR)	30.5 m (100 feet)	BLAST EXTERIOR WALL (15-MIN FE/BR[1])	Safe Haven (Residential)
Other: Representational Housing (DCMR)	30.5 m (100 feet)	BLAST EXTERIOR WALL (15-MIN FE/BR[1])	Safe Haven (Residential)
SDA - Staff Housing Single Family	30.5 m (100 feet)	BLAST EXTERIOR WALL (15-MIN FE/BR[1])	Safe Haven (Residential)
SDA - Staff Housing Apartments	30.5 m (100 feet)	BLAST EXTERIOR WALL (15-MIN FE/BR[1])	Safe Area (Consolidated safe area(s) internally accessible from individual apartments in the building.

NOTES for 3403.2.2 TABLE G

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

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3403.2.2 TABLE H
OFFICE FACILITIES

	Setback	Physical Security Protection	Special Use
USAID - Office Buildings	30.5 m (100 feet)	BLAST EXTERIOR WALL HARDLINE (15-MIN FE/BR[1]) PAC / INTERIOR HARDLINE (15-MIN FE/BR)	Safe Area
NOX - Office Buildings[3]	30.5 m (100 feet)	BLAST EXTERIOR WALL HARDLINE (15-MIN FE/BR[1]) PAC INTERIOR HARDLINE (15-MIN FE/BR)	Safe Area
NOB - Chancery or Consulate Office Buildings	30.5 m (100 feet)	BLAST EXTERIOR WALL HARDLINE (15-MIN FE/BR[1]) PAC / INTERIOR HARDLINE (15-MIN FE/BR)	Safe Area and Safe Haven (Office)
NAB, EOB – Chancery or Consulate Office Buildings	30.5 m (100 feet)	BLAST VULNERABILITY ASSESSMENT EXTERIOR WALL HARDLINE (15-MIN FE/BR* OR 15-MIN FE[1]) PAC / INTERIOR HARDLINE (15-MIN FE/BR OR 15-MIN FE)	Safe Area and Safe Haven (Office)

NOTES for 3403.2.2 TABLE H

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

[3] The functional spaces (Cafeteria and Office, Commercial travel office, Commercial bank, Commissary retail space and office, Community Liaison Office (CLO), Diplomatic Post Office (DPO), Facility Maintenance Section (FMS) office, General Services Office (GSO) office, Health Unit, Local Guard dispatch, training rooms, and staff offices, Motor pool dispatch and supervisor offices, Warehouse management offices) are considered office functions and must meet the same requirement as a NOX even if they are not co-located together on the compound.

3403.2.2 TABLE J
OFFICE SPACE GROUPS

	Setback	Physical Security Protection
American Center Space Group	30.5 m (100 feet)	15-MIN FE/BR (6-sided)
CAA Suite Space Group	30.5 m (100 feet)	SLAB-TO-SLAB
Commissary Space Group	30.5 m (100 feet)	SLAB-TO-SLAB
Consular Section Space Group	30.5 m (100 feet)	Administratively Controlled 15-MIN FE/BR (6-sided at Consular Waiting)
Health Unit Space Group	30.5 m (100 feet)	Administratively Controlled
Information and Technology Space Group	30.5 m (100 feet)	Administratively Controlled LAA Requirements
Main Lobby Space Group	30.5 m (100 feet)	15-MIN FE/BR (6-Sided)
Mail Room Space Group	30.5 m (100 feet)	Administratively Controlled
MPR Space Group	30.5 m (100 feet)	15-MIN FE/BR (6-Sided)
PCC Space Group	30.5 m (100 feet)	60-MIN FE/BR (6-Sided) No glazing permitted
PCC Generator and ATS Space Group	30.5 m (100 feet)	60-MIN FE/BR (6-Sided) No glazing permitted
PCC Mechanical Room Space Group	30.5 m (100 feet)	LAA Requirement
PCC Chiller Yard Space Group	30.5 m (100 feet)	Exterior LAA Requirement No alarm system required
Service Entrance Space Group	30.5 m (100 feet)	15-MIN FE/BR (6-Sided)

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3403.2.2 TABLE K
OFFICE SPACES

	Setback	Physical Security Protection
Cashier Booths	30.5 m (100 feet)	Administratively Controlled SLAB-TO-SLAB
EC Room – Main	30.5 m (100 feet)	LAA Requirement SLAB-TO-SLAB No glazing permitted Substantial Door
Guard Booth	30.5 m (100 feet)	15-MIN FE/BR (6-Sided)
ID Photo Room	30.5 m (100 feet)	LAA Requirement SLAB-TO-SLAB No glazing permitted Substantial Door
Interview Room	30.5 m (100 feet)	15-MIN FE/BR *(Between PAA and GWA spaces)*
Pharmacy	30.5 m (100 feet)	Administratively Controlled SLAB-TO-SLAB Substantial Door
Post 1 / Post 2	30.5 m (100 feet)	LAA Requirements 15-MIN FE/BR (6 Sided) No alarm system required
Pouch Vault	30.5 m (100 feet)	LAA Requirements 15-MIN FE/BR (6-Sided) No glazing permitted

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3403.2.3 Satellite (Off-Compound) Physical Security (AW) Requirements: Building or Compound where USG is the Sole Occupant - Tenant Agency Offices under Chief of Mission or Public Facilities (Libraries and Cultural Centers) No Chancery or Consulate

3403.2.3 TABLE A
OUTSIDE PERIMETER BARRIER

Physical Security Protection
Refer to 3403.2.2 Table A Primary (On-Compound) Requirements

3403.2.3 TABLE B
COMPOUND PERIMETER BARRIER

Physical Security Protection
Refer to 3403.2.2 Table B Primary (On-Compound) Requirements

3403.2.3 TABLE C
COMPOUND ACCESS CONTROL

Physical Security Protection
Refer to 3403.2.2 Table C Primary (On-Compound) Requirements

3403.2.3 TABLE D
CLEAR ZONE, SETBACK AND EXTERIOR SPACES

Physical Security Protection
Refer to 3403.2.2 Table D Primary (On-Compound) Requirements

3403.2.3 TABLE E
SECONDARY BUILDINGS

Physical Security Protection
Refer to 3403.2.2 Table E Primary (On-Compound) Requirements

3403.2.3 TABLE F
PRIMARY STRUCTURES

Physical Security Protection
Refer to 3403.2.2 Table F Primary (On-Compound) Requirements

3403.2.3 TABLE G
HOUSING FACILITIES

Physical Security Protection
Refer to 3403.2.2 Table G Primary (On-Compound) Requirements

3403.2.3 TABLE H
OFFICE FACILITIES

Office Facilities	Setback	Physical Security Protection	Special Use
Offices Under Chief of Mission[3]	30.5 m (100 feet)	BLAST EXTERIOR WALL HARDLINE (15-MIN FE/BR[1]) PAC / INTERIOR HARDLINE (15-MIN FE/BR)	Safe Area or Safe Haven
Public Facilities (Libraries and Cultural Centers)	30.5 m (100 feet)	BLAST EXTERIOR WALL HARDLINE (15-MIN FE/BR[1]) PAC / INTERIOR HARDLINE (15-MIN FE/BR)	Safe Area

NOTES for 3403.2.3 TABLE H

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

[3] The functional spaces (Cafeteria and Office, Commercial travel office, Commercial bank, Commissary retail space and office, Community Liaison Office (CLO), Diplomatic Post Office (DPO), Facility Maintenance Section (FMS) office, General Services Office (GSO) office, Health Unit, Local Guard dispatch, training rooms, and staff offices, Motor pool dispatch and supervisor offices, Warehouse management offices) are considered office functions and must meet the same requirement as an Office Under Chief of Mission even if they are not co-located together on the compound.

3403.2.3 TABLE J
OFFICE SPACE GROUPS

Physical Security Protection
Refer to 3403.2.2 Table J Primary (On-Compound) Requirements

3403.2.3 TABLE K
OFFICE SPACES

Physical Security Protection
Refer to 3403.2.2 Table K Primary (On-Compound) Requirements

3403.2.4 Satellite (Off-Compound) Physical Security (AW) Requirements: Tenant of a Commercial Office (TCO) - Tenant Agency Offices under Chief of Mission or Public Facilities (Libraries and Cultural Centers) No Chancery or Consulate

Tables A through G Not Applicable

3403.2.4 TABLE H
OFFICE FACILITIES

TCO Office Facilities[5]	Setback	Physical Security Protection	Special Use
Offices Under Chief of Mission	30.5 m (100 feet)	BLAST VULNERABILITY ASSESSMENT EXTERIOR WALL HARDLINE (5-MIN FE or 15-MIN FE/BR[1]) SRWF window protection (Above 5 m) PAC / INTERIOR HARDLINE (5-MIN FE or 15-MIN FE/BR)	Safe Area[4]
Public Facilities (Libraries and Cultural Centers)	30.5 m (100 feet)	BLAST VULNERABILITY ASSESSMENT EXTERIOR WALL HARDLINE (5-MIN FE[1]) SRWF window protection (Above 5 m) PAC / INTERIOR HARDLINE (5-MIN FE)	Safe Area[4]

NOTES for 3403.2.4 TABLE H

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

[4] Additional physical security protection required on a project specific basis, as directed by OBO

[5] TCO facility preferences include: a building with a PAC, local guards, no underground parking, and lease space above the second floor.

3403.2.4 TABLE J
OFFICE SPACE GROUPS

Physical Security Protection
Refer to 3403.2.2 Table J Primary (On-Compound) Requirements

3403.2.4 TABLE K
OFFICE SPACES

Physical Security Protection
Refer to 3403.2.2 Table K Primary (On-Compound) Requirements

3403.2.5 Satellite (Off-Compound) Physical Security (AW) Requirements: Residential Housing and Recreation (REC) Compounds

3403.2.5 TABLE A
OUTSIDE PERIMETER BARRIER

Physical Security Protection
Refer to 3403.2.2 Table A Primary (On-Compound) Requirements

3403.2.5 TABLE B
COMPOUND PERIMETER BARRIER

Physical Security Protection
Refer to 3403.2.2 Table B Primary (On-Compound) Requirements

3403.2.5 TABLE C
COMPOUND ACCESS CONTROL

Physical Security Protection
Refer to 3403.2.2 Table C Primary (On-Compound) Requirements

3403.2.5 TABLE D
CLEAR ZONE, SETBACK AND EXTERIOR SPACES

Physical Security Protection
Refer to 3403.2.2 Table D Primary (On-Compound) Requirements

3403.2.5 TABLE E
SECONDARY BUILDINGS

Physical Security Protection
Refer to Table E.1 Primary (On-Compound) Requirements

3403.2.5 TABLE F
PRIMARY STRUCTURES

	Setback	Physical Security Protection	Special Use
REC – Recreational Facilities[2]	20 m (65 ft)	5-MIN FE[1]	Safe Area

NOTES for 3403.2.5 TABLE F

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

[2] The functional spaces (fitness center, gyms, indoor pools, restaurants, salons, gift shops, dry cleaning, laundry, and community rooms) are considered recreational functions and must meet the same requirement as REC even if they are not co-located together on the compound.

3403.2.5 TABLE G
HOUSING FACILITIES

	Setback	Physical Security Protection	Special Use
General Housing		EXTERIOR WALLS (Substantial Construction) EXTERIOR GLAZING, SKYLIGHTS AND WINDOWS**** (SRWF) (RSO Approved internal lock or latch) *Exception: On a project specific basis, additional compliance enhancements (such as a required grills and shutters) are required subject to the direction of OBO.* SLIDING GLASS DOOR (The sliding glass doors must have the operable section sliding inside the fixed section) EXTERIOR DOORS (Substantial Door and Frame) (Outswing doors must have the external door hinges made non-removeable) MAIN ENTRY DOOR (180-degree door viewer – electrical or optical) *Exception: If the entrance door has a sidelight permitting visual identification, then a door viewer is not required.* EGRESS (Housing Facilities must have a secondary means of egress from the building that complies with OBO ICS IBC	Varies
SDR: Marine Security Guard Residence (MSGR)	20 m (65 feet)	Refer to General Housing above	

SDR: Representational Housing (CMR, DCMR, CGR, POR)	20 m (65 feet)	Refer to General Housing above	Safe Haven (Residential)
Residential Compounds	20 m (65 feet)	Refer to General Housing above	Individual Safe Haven (Residential)
SDA - Staff Housing Single Family (USG Purpose-Built, Newly Acquired Building (NAB) Leases and building acquisitions)	VARIES	Refer to General Housing above	Safe Haven (Residential)
SDA - Staff Housing Apartments (USG Built Facilities)	20 m (65 feet)	Refer to General Housing above	Individual Safe Haven (Residential) Per unit
SDA - Staff Housing Apartments (Newly Acquired Building (NAB) Leases and building acquisitions)	20 m (65 feet)	Refer to General Housing above	Individual Safe Haven (Residential) Per unit

3403.2.6 Satellite (Off-Compound) Physical Security (AW) Requirements: Specially Designated Residence (SDR), Representational Residences, and Staff Housing (SDA)

3403.2.6 TABLE A Not Applicable

3403.2.6 TABLE B
COMPOUND PERIMETER BARRIER

Compound Perimeter Barrier	Physical Security Protection
Compound Perimeter Barrier	Barrier that significantly deter access to the property 2.75 m (9 feet) required on project specific basis

3403.2.6 TABLE C
COMPOUND ACCESS CONTROL

Compound Access Control	Physical Security Protection	Special Use
SDR: Gatehouse with Guard Booth	No FE/BR rating required Environmentally controlled guard booth	Access to CES
SDA - Staff Housing Apartments	The main lobby of an apartment building with a guard is considered a type of access control.	
SDA - Staff Housing Single Family	Single Family (SDA) residences are exempt from the access control requirement.	

3403.2.6 TABLE D
CLEAR ZONE, SETBACK AND EXTERIOR SPACES

Clear Zone, Setback and Exterior	Physical Security Protection
Clear Zone	6.1 m (20 feet) preferred but not required
Exterior Spaces	MSGR exercise area must be screened from public view

3403.2.6 TABLE E
SECONDARY BUILDINGS

Secondary Buildings (Non-Blast)	Physical Security Protection	Special Use
Parking Structures (Garages)	Separation of parking and structures not required	Access to CES

3403.2.6 TABLE F Not Applicable

3403.2.6 TABLE G
HOUSING FACILITIES

Physical Security Protection
Refer to Table G.4 Satellite (Off-Compound) Residential Housing and Recreation (REC) Compounds Requirements

3403.2.7 Satellite (Off-Compound) Physical Security (AW) Requirements: Unclassified Warehouse (WHE)

3403.2.7 TABLE A Not Applicable

3403.2.7 TABLE B
COMPOUND PERIMETER BARRIER

Compound Perimeter Barrier	Physical Security Protection
Compound Perimeter Barrier	2.75 m (9 feet) preferred but not required Climb Resistant Barrier that significantly deter access to the property

3403.2.7 TABLE C Not Applicable

3403.2.7 TABLE D
CLEAR ZONE, SETBACK AND EXTERIOR SPACES

Clear Zone, Setback and Exterior	Physical Security Protection
Clear Zone	6.1 m (20 feet) preferred but not required

3403.2.7 TABLE E
SECONDARY BUILDINGS

Secondary Buildings (Non-Blast)	Physical Security Protection	Special Use
Parking	Separation of parking from structures not required	Access to CES

3403.2.8 Satellite (Off-Compound) Physical Security (AW) Requirements: American Broadcast Bureau (ABB) Relay Stations

3403.2.8 TABLE A
OUTSIDE COMPOUND PERIMETER BARRIER

	Physical Security Protection
PKG – Parking lots fences, walls, and parking garage façades	CLIMB RESISTANT (2.1 m)

3403.2.8 TABLE B
COMPOUND PERIMETER BARRIER

	Physical Security Protection
Compound Perimeter Barrier	ANTI-RAM PERIMETER FENCE Provide a hot-dip galvanized chain link fence surrounding the operations area. Fence must be 2.5-m (8.2-foot) minimum height. 40-mm (1.5-inch) mesh with 3.8-mm (0.15-inch) diameter wire. Provide 300-mm (12-inch) “V” type outrigger, with 3 strands of barbed wire on each arm of the “V”.

3403.2.8 TABLE C
COMPOUND ACCESS CONTROL

	Physical Security Protection
CAC – Guard Booth (Serves as Guard Booth CES)	15-MIN FE/BR (6-Sided)
Vehicle Gate	Provide an automatic, lockable sliding vehicle gate at the entrance to the operations area. Gate must be 2.5-m (8.2-foot) high and meet the same requirements as the perimeter fence. The vehicle gate will be electronically controlled at the perimeter guard booth. Vehicle lanes must be 3.1 to 3.7 m (10 to 12 feet) wide.
Guard Towers	Guard tower basis of design: MGTS2-H or equivalent. Fabrication drawings of the MGTS2-H are available from Diplomatic Security. Guard towers may be pre-engineered and modular per basis of design, or custom design complying with the requirements herein.

3403.2.8 TABLE D
CLEAR ZONE, SETBACK AND EXTERIOR SPACES

	Physical Security Protection
Clear Zone	Minimum 6.1-m (20-foot) clear zone extending inward form the protected side of the compound perimeter barrier – preferred but not required

3403.2.8 TABLE E through TABLE G not applicable

3403.2.8 TABLE H
OFFICE FACILITIES

	Setback	Physical Security Protection	Special Use
ABB – Relay Station Buildings	30.5 m (100 feet)	BLAST EXTERIOR WALL HARDLINE (5-MIN FE[1]) EXTERIOR WINDOWS (15-MIN FE/BR OR 5-MIN FE[1] with SRWF) EXTERIOR DOORS AND NON-WINDOW OPENINGS (15-MIN FE/BR OR 5-MIN FE[1]) INTERIOR PARTITIONS (5-MIN FE) INTERIOR DOORS AND NON-WINDOW OPENINGS (15-MIN FE/BR OR 5-MIN FE) EGRESS (Staff Office Facilities must have a secondary means of egress from the building that complies with OBO fire life safety regulations)	Safe Area[4]

NOTES for 3403.2.8 TABLE H

[1] Requirement to 5 m (16.4 feet) above grade or accessible platform

[4] Additional physical security protection required on a project specific basis, as directed by OBO.

3403.2.9 Special Use Occupancy Physical Security (AW) Requirements

3403.2.9 TABLE L SPECIAL USE

	Physical Security Protection
CES	15-MIN FE/BR (6-Sided)
Safe Area	15-MIN FE/BR (6-Sided)
Safe Haven (Office)	60-MIN FE/BR (6-Sided) No glazing permitted
Safe Haven (Residential)	5-MIN GRILL preference or local equivalent SUBSTANTIAL DOOR(s)
Lock & Leave	600 mm (23.6 inches) Horizontal LAA between GWA and CAA Spaces
ERRR	SLAB-TO-SLAB
HATS	BLAST and 60-MIN FE/BR
CAPS	Based on Space Type and Use
MGTS2-H	ANTI-RAM CLIMB RESISTANT 360-degree unobstructed line of sight

3403.3 Technical Security (SY) Systems

3403.3.1 Technical Security (SY) is divided into 4 main categories: Infrastructure, Deterrent Systems, Detection Systems and Response Systems. The tables below are provided for reference only, Refer to the associated OBO specifications and attachments for additional detail and requirements.

3403.3.2 Primary (On-Compound) Technical Security (SY) Requirements: Chancery and Consulate Buildings and Compounds.

3403.3.2 TABLE A
OUTSIDE COMPOUND PERIMETER BARRIER

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
PKG – Parking lots and parking garages	**SUB-EC ROOM**	**SVS** (Parking gates and vehicle barrier coverage)		**ENS** (Provide zone control for exterior horns)

3403.3.2 TABLE B
COMPOUND PERIMETER BARRIER

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
Compound Perimeter Barrier		**SVS** (exterior, and top view overlap coverage not more than 45 meters apart)		**ENS** (Provide zone control for exterior horns)

3403.3.2 TABLE C
COMPOUND ACCESS CONTROL

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
CAC, Guard Booth and Sally Port *Vehicle Barrier*	**EC ROOM** **SUB-EC ROOM** **EQUIP RACK**	**SVS** (Personnel and public queuing area, visitor access and screening area including the WTMD, unobstructed vehicle gates, vehicle barriers, vehicle screening areas, including front of approaching vehicle and unobstructed receiving and loading dock areas including overhead service access doors coverage) **BARRIER CONTROLS** (Provide barrier controls at applicable CAC guard booths with active slave-control units and Post 1 with Master override controls) **DOOR CONTROLS** (provide individual control of FE/BR doors, provide an emergency lock-up function to secure doors from the guard booth, provide individual release function and interface with Fire Alarm Control Unit for security egress doors. Post 1 will have override of all doors.)	**IDS** (Door switch at building perimeter doors, roof hatches and roll-up doors) **WTMD** (At public access control areas (PAC)) **X-RAY** (At public access control (PAC) areas of and at Service CAC Receiving Area) **TRACE DETECTOR** (Locate in guard booths of CACs for screening vehicles and pedestrians)	**ENS** (Provide zone control CACs and Sally Port) **IDNS** (Provide duck and cover switch at PAC screening, trash transfer and receiving screening area) **DURESS** (Provide duress button at screening area and guard booth) **INTERCOM** (Between guard booth and the public entrance)

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3403.3.2 TABLE D
CLEAR ZONE, SETBACK, AND EXTERIOR SPACES

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
Clear Zone				**ENS** (Provide zone control for exterior horns)
Parking Lots		**SVS** (Parking lot area coverage including gate entry and egress points)		**ENS** (Provide zone control for exterior horns)
Consular Garden and Pathway		**SVS** (Pedestrian path and exterior waiting area coverage)		**ENS** (Provide zone control for exterior horns)
Main Entrance Plaza		**SVS** (Main entrance path and main building entrance coverage)		**ENS** (Provide zone control for exterior horns)
MSGR Exercise Yard				**ENS** (Provide zone control for exterior horns)
Vehicular Path		**SVS** (Vehicular movement route coverage)		**ENS** (Provide zone control for exterior horns)
Housing Separation				**ENS** (Provide zone control for exterior horns)
Courtyards				**ENS** (Provide zone control for exterior horns)

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3403.3.2 TABLE E
SECONDARY BUILDINGS

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
Modular Mail Screening Facilities			**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors)	**ENS** (Provide zone control for Site Buildings) **DURESS** (Provide duress button at mail screening)
UTL - Utility Buildings	**SUB-EC ROOM EQUIP RACK**	**SVS** (Attack side of fire exit and FEBR doors coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors)	**ENS** (Provide zone control for Site Buildings)
SPX – Shops, Lockers, Showers, Break Rooms	**SUB-EC ROOM**	**SVS** (Attack side of fire exit doors coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors)	**ENS** (Provide zone control for Site Buildings)
WHE – Warehouse (no offices)	**SUB-EC ROOM**	**SVS** (Attack side of fire exit doors coverage)	**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch at agency-controlled storage, chem/bio and remote emergency equipment storage)	**ENS** (Provide zone control for Site Buildings)
PKG – Parking	**SUB-EC ROOM**	**SVS** (Attack side of fire exit doors, gates, and vehicle barrier coverage and at least one camera per ramp)	**IDS** (Provide door switch at exterior perimeter doors)	**ENS** (Provide zone control for Site Buildings)
CAB – Cabana / Pool House			**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors)	**ENS** (Provide zone control for Site Buildings)

3403.3.2 TABLE F PRIMARY STRUCTURES

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
REC –	**SUB-EC**	**SVS**	**IDS**	**ENS**

Recreational Facilities[2]	**ROOM**	(Attack side of fire exit doors coverage)	(Door Switch at building perimeter doors, roof hatches and roll-up doors)	(Provide zone control for Site Buildings)

NOTES for 3403.3.2 TABLE F

[2] These functional spaces (fitness center, gyms, indoor pools, restaurants, salons, gift shops, dry cleaning, laundry, and community rooms) are considered recreational functions and must meet the same requirement as REC even if they are not co-located together on the compound.

3403.3.2 TABLE G
HOUSING FACILITIES

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
SDR: Marine Security Guard Residence (MSGR)	**SUB-EC ROOM**	**SVS** (Attack side of fire exit doors, external side of exterior hardline doors and roof hatch coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors)	**ENS** (Provide zone control for MSGR) **DURESS** (Provide duress button at recreation room pantry)
SDR: Representational Housing (CMR, CGR, POR)	**EC ROOM**	**SVS** (Attack side of fire exit doors, external side of exterior hardline doors and roof hatch coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors) **WTMD** (Provision to add at entry for events)	**ENS** (Provide zone control for SDR: CMR)
Other Representational Housing (DCMR)	**EC ROOM**	**SVS** (Attack side of fire exit doors, external side of exterior hardline doors and roof hatch coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors) **WTMD** (Provision to add at entry for events)	**ENS** (Provide zone control for SDR: DCMR)
SDA: Staff Housing (Single Family or Apartments)	**SUB-EC ROOM**	**SVS** (Attack side of fire exit doors, external side of exterior hardline doors and roof hatch coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors)	**ENS** (Provide zone control for SDA)

3403.3.2 TABLE H
OFFICE FACILITIES

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
NOB, NAB, EOB Chancery or Consulate Office Buildings NOX and USAID Office Buildings	**SMSe** **EC ROOM** **EQUIP RACK**	**SVS** (Attack side of fire exit doors, external side of exterior hardline doors, and rooftop and roof hatch coverage)	**IDS** (Door Switch at building perimeter doors, roof hatches and roll-up doors) **WTMD** (At public access control areas (PAC))	**ENS** (Provide separate zone control for NOB and NOB/CAA)

3403.3.2 TABLE J
OFFICE SPACE GROUPS

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
American Center Space Group		**SVS** (PAA area coverage)		**ENS** (Provide separate zone control for NOB and NOB/CAA)
CAA Circulation		**AACS** (Card readers and pin pads must be located at CAA workspace perimeter)	**IDS** (Protect corridor, stairwell, work areas and support spaces not located within suite(s) with volumetric motion sensors and door contracts.)	**ENS** (Provide separate zone control for NOB and NOB/CAA)
CAA Suite			**IDS** (Protect workspace and offices within a CAA suite with volumetric motion sensors and door contacts)	**ENS** (Provide separate zone control for NOB and NOB/CAA)
Consular Section Space Group		**SVS** (Consular section teller windows, consular elevators when applicate functions are located on multiple floors, consular interior and exterior waiting area and consular public walkway coverage)	**WTMD** (At public access control areas (PAC)) IDS Protect the ACS storage room	**ENS** (Provide separate zone control for NOB and NOB/CAA) **IDNS** (Provide duck and cover switch at consular screening) **DURESS** (Provide duress button at consular screening area, teller windows, and consular privacy booths)

Executive Suite Space Group				**ENS** (Provide separate zone control for NOB and NOB/CAA) **DURESS** (Provide duress button in AMB, CG, PO, DCM and OMS, desks)
LAA			**IDS** (Protect with volumetric motion sensors and door and or hatch contacts)	**ENS** (Provide separate zone control for NOB and NOB/CAA)

3403.3.2 TABLE J
OFFICE SPACE GROUPS (CONTINUED)

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
Main Entrance Lobby Space Group		**SVS** (PAA area and attack side of interior hardline door coverage) **AACS** (Card readers and pin pads must be located at NOB entrance, exterior "primary" hardline and "secondary" interior hardline)	**WTMD** (At public access control areas (PAC))	**ENS** (Provide separate zone control for NOB and NOB/CAA) **IDNS** (Provide duck and cover switch at PAC screening area) **DURESS** (Provide duress button at screening area and in interview room) **INTERCOM** (Provide wall mounted audio device outside building entrance with connection to Post 1)
Mailroom Space Group			**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**ENS** (Provide separate zone control for NOB and NOB/CAA) **DURESS** (Provide duress button at local mail screening area)
Multipurpose Room Space Group		**SVS** (PAA area coverage)		**ENS** (Provide separate zone control for NOB and NOB/CAA)
Service Entrance Space Group	**SUB-EC ROOM EQUIP RACK**	**SVS** (Screening area coverage)	**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch) **WTMD** (at public access control	**ENS** (Provide separate zone control for NOB and NOB/CAA) **IDNS**

			areas (PAC))	(Provide duck and cover switch at service screening area) **DURESS** (Provide duress button in screening area and guard booth)

3403.3.2 TABLE K
OFFICE SPACES

	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
CAA Offices	**SMSe** (At RSO and ESO offices / Workstations)		**IDS** (Protect workspace and offices within a CAA suite with volumetric motion sensors and door contacts)	(Provide separate zone control for NOB and NOB/CAA)
Cashier(s) Consular, FMO and Bank			**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**ENS** (Provide separate zone control for NOB and NOB/CAA) **DURESS** (Provide duress button)
Consular Waiting		**SVS** (Consular section teller windows and consular waiting area coverage)	**WTMD** (At public access control areas (PAC))	**ENS** (Provide separate zone control for NOB and NOB/CAA) **IDNS** (Provide duck and cover switch at consular screening)
EC Room – Main	**SMSe** **EC ROOM EQUIP RACK** (Provide TSS equipment racks for SMSe controls, and for SVS switching, network servers, fiber optic converters and recording equipment. Sub-EC room racks	**SVS** (Interior EC Room coverage) **AACS** (Card readers and pin pads must be located at EC Room entrances)	**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**ENS** (Provide separate zone control for NOB and NOB/CAA)

	and/or wall mounted racks are required for SVS network servers and fiber optic converts)			
Elevator Lobby		**SVS** (Lobby coverage in shared buildings and when elevator provides access to CAA entrance)		**ENS** (Provide separate zone control for NOB and NOB/CAA)
Gallery and Hub		**SVS** (GWA shared Gallery and Hub space coverage)		**ENS** (Provide separate zone control for NOB and NOB/CAA)

Guard Booth	**SMSe**	**BARRIER CONTROLS** (Provide barrier controls at applicable CAC guard booths with active slave-control units and Post 1 with Master override controls) **DOOR CONTROLS** (provide individual control of FE/BR doors, provide a emergency lock-up function to secure doors from the guard booth, provide individual release function and interface with Fire Alarm Control Unit for security egress doors)	**IDS** (Door switch at building perimeter doors, roof hatches and roll-up doors) **TRACE DETECTOR** (Locate in guard booths for screening pedestrians)	**ENS** (Provide separate zone control for NOB and NOB/CAA) **IDNS** (Provide duck and cover switch) **DURESS** (Provide duress button)
ID Photo Room	**SMSe**		**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**ENS**
Mail Room(S)			**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**DURESS** (Provide duress button at local mail screening area)
Pharmacy			**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**ENS**
Post 1	**SMSe EQUIP RACK**	**BARRIER CONTROLS** (Provide barrier controls at applicable CAC guard booths		**ENS** (Provide control unit, rack mounted call

Post 2		with active slave-control units and Post 1 with Master override controls) **DOOR CONTROLS** (provide individual control of FE/BR doors, provide an emergency lock-up function to secure doors from the guard booth, provide individual release function and interface with Fire Alarm Control Unit for security egress doors)		station with microphone, volume control on speakers) **IDNS** (Provide duck and cover switch) **INTERCOM** (Provide audio device for each applicable building)
Pouch Vault				**ENS**

3403.3.3 TSS Documents.

The Technical Security System (TSS) must comply with the latest TSS Application Guidelines and the design, once installed, will comply with each element of the TSS Pre-Accreditation Checklist. Products not previously evaluated on the TSS Product List will require more testing and evaluation at the manufacturer's or contractor's expense. TSS Application Guidelines, TSS Pre-Accreditation Checklist, and TSS Product List may be requested from the Contracting Officer or Contracting Officer's Representative, if not already provided."

3403.4 Special Use Occupancy Technical Security (SY) Requirements:

TABLE 3403.4
SPECIAL USE

SPECIAL USE OCCUPANCIES	Infrastructure	Deterrent Systems	Detection Systems	Response Systems
CES				**ENS** (Provide volume control on speakers)
Safe Area	**SUB-EC Cabinet** **EQUIP RACK**	**SVS** (Inconspicuous installation to provide entrances and ingress / egress path coverage) Monitors to view entrances and exits to safe area		**ENS** (Provide volume control on speakers)
Safe Haven (Office)	**SMSe** **SUB-EC Cabinet** **EQUIP RACK**	**SVS** (Inconspicuous installation to provide entrances and ingress / egress path coverage)		**ENS** (Provide control unit, rack mounted call station with microphone, volume control on

		DOOR CONTROLS (provide door control along the path of egress and entry between the primary Safe haven and compound perimeter		speakers and Post 1 override)
Safe Haven (Residential)				)
Lock & Leave	**EC ROOM EQUIP RACK**	**SVS** (Facility perimeter, including the exterior of the L&L primary door, the bypass door, and the Knox boxes coverage) **BARRIER CONTROLS** (Provide barrier controls at applicable CAC guard booths with active slave-control units and Post 1 with Master override controls) **AACS** (Records entry of personnel to the facility and the entry of cleared U.S. citizens into LAA and CAA areas) **DOOR CONTROLS** (provide individual control of FE/BR doors, provide a emergency lock-up function to secure doors from the guard booth, provide individual release function and interface with Fire Alarm Control Unit for security egress doors. All FEBR doors will have override in Post 1)	**IDS** (Control Panels, Door Switch, and Motion Sensor w/ Tamper Switch)	

ERRR		**SVS** (Interior side of the door coverage. Exterior side of roof hatch)	**IDS** (Door Switch, and Motion Sensor w/ Tamper Switch)	**ENS**
HATS	Requirements Based on Use			
CAPS	Requirements Based on Use			
MGTS2-H		**SVS**		**ENS** **IDNS** (Provide duck and cover switch)

3403.3.3 TSS Documents.

The Technical Security System (TSS) must comply with the latest TSS Application Guidelines and the design, once installed, will comply with each element of the TSS Pre-Accreditation Checklist. Products not previously evaluated on the TSS Product List will require more testing and evaluation at the manufacturer's or contractor's expense. TSS Application Guidelines, TSS Pre-Accreditation Checklist, and TSS Product List may be requested from the Contracting Officer or Contracting Officer's Representative, if not already provided."

SECTION 3404
PRIMARY (ON-COMPOUND) REQUIREMENTS: CHANCERY AND CONSULATE

3404.1 General. This section addresses the requirements for Primary (On-Compound) facilities. Refer the Primary (On-Compound) Physical Security (AW) Requirements Matrix in Section 3403.02.02. This section is organized as follows:

1. Outside Perimeter Barrier
2. Compound Perimeter Barrier
3. Compound Access Control (CAC)s
4. Clear Zone, Setback and Exterior Spaces
5. Secondary and Support Structures
6. Primary Structures
7. Housing Facilities
8. Office Buildings
9. Office Space Groups
10. Office Spaces

3404.2 Outside Compound Perimeter Barrier

3404.2.1 General

3404.2.1.1 Staff and Official Visitor Parking (lot or parking garage) must be located outside the compound perimeter barrier, physically separated, visually screened from public view, and located in close proximity to the Main CAC.

3404.2.1.2 Non-Official Visitor Parking (lot or parking garage), when mandated by local jurisdiction, must be located outside the compound perimeter barrier, and visually screened from public view.

3404.2.1.3 Host Nation Facilities, like guard shelters, police, or military support must be located outside the perimeter barrier.

3404.2.1.4 Other Facilities located outside the compound perimeter barrier that touch or connect to the compound perimeter barrier must maintain the same level of climb resistant perimeter protection within 2.75 m (9 feet) of its connection to the compound perimeter barrier.

3404.2.2 Layout

3404.2.2.1 Staff Parking lots and garages must have guard booths for use by local guards, to provide visual control of vehicle and pedestrians entering and exiting the parking area. The guard booths must be conditioned as appropriate for the climate, at each entrance and exit point.

3404.2.2.2 Staff Parking lots and garages must have lockable vehicle barrier gates at every vehicular lane entering and exiting the parking area and separate lockable pedestrian gates. Parking garages must have a lockable roll up door or gate to secure the facility after business hours. Parking barrier vehicle and pedestrian gate controls must be in the guard booth(s).

3404.2.2.3 Official Visitor Parking must be physically separated from the staff parking lot or parking garage (i.e., two completely different parking areas). A wall or fence around the official visitor parking is not mandated by DOS security requirements.

Exception: On a project specific basis, compliance alternatives (such as a wall or fence) are required subject to the direction of OBO.

3404.2.2.4 Non-Official Visitor Parking must be physically separated from the official visitor parking and separated from staff parking.

Exception: On a project specific basis, compliance alternatives (such use of staff parking for non-official visitors during non-business hours) are permitted subject to the direction of OBO and additional control measures.

3404.2.2.5 Host Nation Facilities are not permitted to have direct access to the compound. Provide a guard shelter, and restroom facilities for use by local guards, conditioned as appropriate for the climate, at each entrance and exit point.

3404.2.2.6 Drop-off and pick-up areas must be provided at the Consular CAC and the Main CAC for visitors arriving by motor vehicle. The drop-off / pick up areas and vehicle entrance driveway must be configured to avoid presenting a straight approach to the office building entrance.

3404.2.2.7 Parking curb or wheel stops must be located 3.4 m (11 feet) away from the face of climb resistant compound perimeter barrier.

3404.2.2.8 Service Court must be designed so that fuel trucks park outside the perimeter wall or fence, with a fill pipe in the perimeter wall or fence, so that the trucks do not come onto the compound.

3404.2.3 Systems

3404.2.3.1 Fuel Fill must have lockable covers for the fill pipe(s) outside the compound perimeter barrier, and a shut-off valve inside the compound. Fuel vent openings must be 3.7 m (12 feet) above grade and protected with a mesh screen to prevent entry of insects and debris.

3404.3 Compound Perimeter Barrier

3404.3.1 General

3404.3.1.1 Compound Perimeter Barriers must provide active and passive anti-ram and climb resistance protection at levels calculated using the Diplomatic Security Perimeter Barriers Calculation Guide. Areas designed without performing calculation should assume a minimum M-50 (K-12) required level of protection.

3404.3.1.2 Compound Perimeter DS Approved Passive Anti-Ram Barriers must be used. There are a range of options from retaining walls, trenches, bollards, planters, and knee walls. Superficial design modifications that do not change the anti-ram characteristics of the barrier are permitted. Such design modifications include finishes, appliqués, alignment, combinations of different types of barriers, etc.

3404.3.2 Layout

3404.3.2.1 Climb Resistant. Compound Perimeter Barriers must provide climb resistant protection for a minimum of 2.75 m (9 feet) or 3.2 m (10.5 feet) above grade or accessible platform on the attack side and protected side, on a site-specific basis when directed by OBO. See SOW for project specific height and type requirements.

3404.3.2.2 Location. Compound Perimeter Barriers anti-ram and climb-resistant perimeters need not be in the same plane if each provides the minimum required setback.

3404.3.2.3 Property Line Requirements. Compound Perimeter Barriers anti-ram perimeter compound barrier adjacent to a street or public way must be flush with the property line or set back from the property line. Where the compound shares a property line with an adjacent property, the visible anti-ram portion of these compound barriers and the climb-resistant compound perimeter barrier must be a minimum 2.75 m (9 feet) from the property line. Provide a continuous secondary control fence at the adjacent property line with gates for guard patrol access. More restrictive setbacks must be identified on a project-specific basis.

3404.3.2.4 Opaque Requirement. Compound Perimeter Barriers must be opaque at service areas and where compound boundary abuts any use other than a public street.

3404.3.3 Systems

3404.3.3.1 Storm and Sanitary Sewer Systems crossing the compound perimeter barrier require non-man passable grilles inside storm and sanitary sewers at the first manhole inside the compound when the sewers are larger than 620 sq. cm (100 sq. inches) and one dimension is greater than 150 mm (6inches). Provide access to the grilles for cleaning. Manholes must be secured with pentagon head bolts.

3404.3.3.2 Security requirements for manhole covers. Provide the following locking devices.

3404.3.3.2.1 TSS equipment and wiring or fuel lines and fuel fill equipment. Provide locking device for all manhole covers, handholds, access panels, and hinged vault doors within the compound containing TSS equipment and wiring or fuel lines and fuel fill equipment. Acceptable locking devices:

1) The use of manhole designed ‘lock bolts’ with unique patterned bolt head.

2) The use of locking bar or hasp and padlock.

3) The use of manufactured lockable manhole inserts that are installed below the manhole cover that allow for a padlock.

3404.3.3.2.2 Water sewer equipment, electrical and communication. Provide penta head bolts for all manhole covers, handholds, drainage grates, access panels, and hinged vault doors located within the compound.

3404.4 Compound Access Control (CAC)s

3404.4.1 General

3404.4.1.1. Location. Compound Access Control (CAC)s, entry point buildings, must be located at the secure perimeter of compound. Vehicle CACs must egress to remote roadways.

Exception: Provide one alternate remote vehicular entrance/exit from the compound in case of an emergency, when both vehicle CACs egress to the same roadway.

3404.4.1.2. Guard Booth. Compound Access Control (CAC)s must provide an enclosed, environmentally controlled guard booth adjacent to the pedestrian and vehicle entrances

3404.4.1.3. Windows. Compound Access Control (CAC)s must provide windows to allow guards to monitor outside activity, both on the compound and on the street/public side, as well as oversee vehicle screening in the sally port, oversee pedestrian screening in the pedestrian entry area, and control doors in the CAC.

3404.4.1.4. Protected Side. CAC Interior must be considered the “protected side” and the street and compound side are considered the “attack” side for the purposes of forced entry protection.

3404.4.1.5. Anti-Ram Protection. CAC Anti-Ram protection must be maintained at the compound perimeter barrier. Anti-ram protection must be part of the CAC exterior walls or on a project specific basis provided separately 1m (3.3 feet) in front of the CAC façade. It is preferable to achieve anti-ram protection at the trash area using fixed controls (e.g., bollards, planters, elevated platforms, etc.)

3404.4.2 Layout

3404.4.2.1 CAC Sally Port - Vehicle Lanes The horizontal clearance at the CAC Sally Port traffic lanes must be a minimum of 3.100 m (10 feet), a maximum of 4m (13 feet) and accommodate host country emergency vehicles. Each lane must be provided with its own separate gate and screening area. Sally Port with multiple lanes must have a barrier that prevents lane crossing. A clear length of 8.750 m (30 feet) (bumper to bumper) accommodates most vehicles.

Exception: On a project specific basis, compliance alternatives (such as larger vehicle lane width or length for host country emergency vehicles) are permitted subject to the approval of OBO.

3404.4.2.2 CAC Sally Ports - Enclosure Provide a fenced/walled enclosure at the sally port to prevent pedestrians and vehicles from accessing the compound. Sally port enclosure must meet the same minimum height, climb resistant and transparent/opaque requirements as the perimeter wall or fence. Anti-ram protection is required around the interior side of the sally port, and between each of the vehicle lanes (for a multi-lane CAC). This consists of fixed controls along the side and between lanes, with an active roadway barrier system or hydraulic bollard barricade system (DS certified system capable of operating to the secure position in 1.5 seconds (2 seconds for electromechanical bollard systems) or less in emergency mode) at the inner end of the sally port. Anti-ram protection is not required at the outer end of the sally port. All lanes in the sally port are required to have the capability to screen incoming vehicles.

3404.4.2.3 CAC Sally Port - Vehicle Gates Sliding, rolling, telescoping, cantilever, or bi-fold perimeter gates, including all components must be heavy duty, designed for operating in adverse conditions with little maintenance. The vehicle slide gate width must accommodate a 4m (13 foot) maximum compound

perimeter barrier opening in accordance with the OBO specification section 324006 Anti-Ram Gate Systems. Gates must be designed so that a 130 mm (5 inch) sphere cannot pass beneath, through or around the gate. Vehicle gates, including compound perimeter and inner sally port gates, must meet the same minimum height, climb resistant and transparent/opaque requirements as the perimeter wall or fence. When a facility requires a solid perimeter wall, the use of an opaque gate is required at the perimeter of the compound. Vehicle gates on the inner side of the sally port to the compound must be transparent so that the guard can see vehicle traffic coming and going. Gates must be interlocked so that they cannot be open at the same time. Override of this function is to be in Post 1.

Exception: On a project specific basis, existing facilities compliance alternatives (such as a manual remote emergency exit gate) are permitted subject to the approval of OBO.

3404.4.2.4 CAC Sally Port - Canopy When at a post that has adverse weather conditions, e.g., a severe rainy season, heavy snow, etc., provide a canopy over the sally port to shield the screening process from the elements. Canopy must not trap vehicle fumes or interfere with SVS coverage and must provide adequate height clearance for the largest common vehicle using that entrance. The canopy height must provide a minimum of 4570-mm (15 foot) vertical clearance.

Exception: On a project specific basis, compliance alternatives (such as a higher vertical clearance for crane or emergency vehicle access) are required subject to the direction of OBO.

3404.4.2.5 CAC Active Barriers. Refer to OBO Guide Specification for acceptable systems.

3404.4.2.6 CAC Guard Booths must be located so that the guard has direct visual contact with the vehicle screening process (when applicable), the entrance gate, the pedestrian screening process (when applicable), and any other areas under the guard's control. Provide two or three teller windows with deal drawers in the guard booth; one for communication between the guard and the sally port (when applicable), and one for communication between the guard and persons outside the perimeter wall and one located between the guard and the pedestrian screening area (when applicable). Provide visual access for the guard to the outside of the perimeter wall or fence. Provide adequate space and millwork to house a telephone, computer/printer, and the security equipment. Provide countertop controls for gate and barrier systems when vehicular screening is required.

3404.4.2.7 CAC Screening must have separate ingress and egress routes. Both ingress and egress routes require access to the local guard and package storage area. Provide ample storage space for various sizes and types of parcels in the CAC pedestrian screening area. This varies from post to post, consult project specific space requirements program (SRP). Provide a minimum of 500 mm (20 inches) between the WTMD and the x-ray machine, doors, or other moving metal.

3404.4.2.8 CAC Shading is required at the guard booth and windows to reduce solar glare and heat gain. and reduce the impact of rain on the guard's vision outside the booth.

3404.4.2.9 CAC Visa Pass-back, when required by the SRP, must be in the designated Consular CAC. The visa pass-back window is accessed by the applicants from outside the compound perimeter wall to minimize unnecessary crowding inside the pedestrian portion of the CAC.

3404.4.2.10 CAC Interview Room, when required by the SRP, must be in the designated Main CAC.

3404.4.3 Systems

3404.4.3.1 Mechanical and Ventilation. CAC must have heating, ventilation, and air conditioning at the enclosed CAC structures. Refer to OBO-ICS IMC Chapter 3 for prohibited location for exterior HVAC equipment.

3404.4.3.2 Electrical Lighting and Power. CAC must have emergency power for all equipment, including the security screening equipment and lighting.

3404.4.3.3 Snow Melt. CAC must have in-ground ice/snow melting capability in the sally port and sidewalks surrounding the CACs when located in a heavy snow/ice environment. Coordinate design with available active anti-ram vehicle barrier manufacturers.

3404.4.3.4 Sub-EC Room. CAC must have a sub-EC room for each CAC supporting TSS equipment and size the sub-EC room per the SRP.

3404.4.3.5 Guard Booth Lighting. CAC Guard Booth must have a dimmer switch for lighting in the guard booth.

3404.4.3.6 Sally Port Undercarriage Lighting. CAC Sally Port must have undercarriage lighting in accordance with the OBO Guide Specification.

3404.5 Compound Clear Zone, Setbacks and Exterior Spaces

3404.5.1 Clear Zone

3404.5.1.1 Clear Zone – Structures. Only the CAC, and, as agreed to by OBO, transformer / utility building(s) or mail screening unit are permitted to be located at the perimeter wall. In these cases, the required clear zone must extend inward from the innermost encroachment of those buildings. No other structures or building elements, including canopies, may project into the clear zone.

3404.5.1.2 Clear Zone – Plantings are permitted in the clear zone. Limit planting in the clear zone to items that do not obscure local guard or camera vision. Maximum plant height when fully grown must not exceed 300 mm (12 inches).

3404.5.1.3 Clear Zone – Lighting, **cameras, and "civil appurtenances"** are permitted in the clear zone. Limit the number of light pole bases and other infrastructure items so that they do not obscure local guard and camera vision. Light pole bases and other infrastructure objects must not exceed 150-mm (6-inch) height above grade. Retaining walls are discouraged in the clear zone.

Exception: On a project specific basis, when site conditions require retaining walls, additional compliance requirements (such as additional SVS coverage, provisions for roving guards to traverse the retaining walls, etc.) are required subject to the direction of OBO.

3404.5.1.4 Clear Zone – Underground Utility Vaults and underground parking are permitted in the clear zone.

3404.5.1.5 Clear Zone – Parking Structures or portions thereof located at or above grade are not permitted to be within the clear zone.

3404.5.1.6 Clear Zone – Barriers. Provide lockable gates in the consular separation barrier at the clear zone for staff access. Opaque consular separation barriers such as walls must not be used in the clear zone.

3404.5.2 Compound Setback must be measured from the attack face of the perimeter anti-ram barrier to the outer edge of the exterior face of a building. Where wedge style barriers are used, the minimum distance must be measured from the attack face of the barrier in the secure position.

3404.5.3 Compound Parking

3404.5.3.1 On-Compound Parking of unscreened vehicles is not permitted. On-Compound parking

spaces for non-government vehicles and visitors are not permitted.

Exception: Pre-approved visitors to representational and housing facilities are permitted.

3404.5.3.2 On-Compound Official Vehicle Parking must not be in the clear zone and located at least 6.1 m (20 feet) from the exterior face of buildings subject to blast requirements.

3404.5.3.3 Marine Security Guard Residence (MSGR) Parking must be located near MSGR building with an all-weather parking cover designed to blend with the MSGR architecture.

3404.5.3.4 Representational Housing Parking must be located near the representational housing, and there are no setback requirements for these spaces in relation to this housing.

3404.5.3.5 Staff Housing (SDA) Parking is permitted but not required within the compound. The inclusion of on-compound staff housing parking is identified on a project-specific basis by OBO. Where included, these on-compound spaces must be located near the staff housing buildings, and there are no setback requirements for these spaces in relation to this housing.

3404.5.4. Compound Gardens and Pathway

3404.5.4.1 Consular Pathway. Provide continuous dedicated consular path and separation barrier from the Consular CAC to the Consular lobby entrance to prevent unauthorized access to other portions of the embassy compound.

Exception: On a project specific basis, compliance alternatives (such as the elimination of the separation barrier where there is no separation of consular applicants from other visitors) are permitted subject to the approval of OBO.

3404.5.4.2 Consular Pathway Gates. Provide lockable gates/access points as needed for maintenance and site circulation by roving guards and at the clear zone.

3404.5.4.3 Consular Pathway Barrier The top of consular separation barrier must be designed and constructed to prevent its use as a climbable platform adjacent to office buildings.

3404.5.4.4 Consular Pathway Separation. Do not cross Consular Garden with vehicular circulation.

3404.5.4.5 Consular Pathway Connection. Provide a sidewalk, connecting the Consular Entrance to the Main Entrance. Locate these within proximity to each other. Provide a locking gate at the sidewalk at the line of demarcation for the consular visitors.

3404.5.4.6 Vehicular Pathway. Provide a continuous paved vehicular access route from Main CAC entrance to Service CAC capable of supporting Post and emergency vehicles.

Exception: On a project specific basis, compliance alternatives (such as an unpaved permeable “green” solution that support Post and emergency vehicles) are permitted subject to the approval of OBO.

3404.5.4.7 Courtyards. A courtyard is considered protected when it is surrounded by occupied space where the exterior walls are higher than 5.0 m (16.4 feet) above grade or accessible platform. Provide the same FE/BR protection as the other exterior walls of the building for a courtyard that is not protected. Design courtyards, regardless of whether they are protected or not, for the specified blast requirements applicable for that building.

3404.5.5. Systems

3404.5.5.1. Fuel Storage Tanks must be underground and must be located at least 0.9 m (3 feet) from

the perimeter barrier. Clearance from exterior face of foundation to tank must be equal to, or exceed, the distance from grade level above tank to the bottom of the tank.

Exception: On a project specific basis, compliance alternatives are permitted subject to the approval of OBO.

3404.5.5.2. Utility Meters. Where utilities are required to be metered, and when permitted by utility company and local authorities, locate meters and meter valves in secure areas inside the perimeter wall, with remote readers in an accessible location outside the compound.

3404.6 Secondary and Support Buildings

3404.6.1 Modular Mail Screening Facilities

3404.6.1.1 Location. Modular Mail Screening Facilities must be located adjacent to the Service CAC, opposite the pedestrian screening facility, adjacent to the perimeter wall.

3404.6.1.2 Compound Perimeter Adjacent. Modular Mail Screening Facilities, when adjacent to the perimeter of the compound, must be located less than 600 mm (24 inches) from the perimeter fence or wall, and requires an anti-climb climb resistant fence between the unit and the perimeter. If the modular mail screening facility is located less than 150 mm (6 inches), no fence is required between the unit and the perimeter. If this location is not feasible, due to site specific conditions, then locate facility as per OBO direction, but not within the 6.1-m (20-foot) clear zone at the compound perimeter.

3404.6.2 Parking Structures (PKG)

3404.6.2.1 Parking Structures (PKG) must be located a minimum of 1 m (3.3 feet) from Warehouses (WHE) and Support Annexes (SPX).

Exception: Underground Parking Structures are permitted to be located beneath the building footprint of a Warehouse (WHE) or Support Annex (SPX) and share structural elements.

3404.6.2.2 Parking Structures (PKG) Underground parking structures require minimum soil separation of 6.1 m (20 feet) between the underground parking structure and the vertical structural elements (Walls and Columns).

Exception: Parking Structure elements such as piles, pile caps, or footers are excluded from the 6.1-m (20-foot) requirement.

3404.6.2.3 Parking Structures (PKG) are prohibited below all buildings and building footprints that require blast protection, CACs, and utility buildings.

3404.6.2.4 Parking Structures (PKG) do not require blast calculations from a vehicle-borne explosion, however the structures located above an underground parking structure must be designed for progressive collapse.

3404.7 Primary Structures

3404.7.1 Blast Structures, structural framing, and exterior envelope, including exterior façade, walls, floors, and roofs, must withstand a bomb of a specified type and weight. The charge weight is provided in the classified contract attachments. When building types are combined or connected, there are specific requirements to provide independent structures or separation when a non-blast building is within the required setback and adjacent to a building with blast protection. Coordinate the blast design with the penetration allowed by the active vehicle barriers. The provisions of the OBO-ICS IBC – Chapter 16 must apply to structures designed to blast.

3404.7.2 Weather Vestibules. When a weather vestibule is provided, it is to be treated as part of the building, and not as a "blow-away" appendage. The weather vestibule must meet setback, blast, and other security requirements for the exterior of the building.

3404.7.3 Structural Sub-Frame. Provide a structural subframe to separate FE and FE/BR doors from windows and other products on multi- product elevations for improved adjustability, maintenance, and operations.

3404.7.4 Exterior Glazing (other than FE/BR) is required to be laminated tempered glass or laminated heat-strengthened glass, minimum 12-mm (0.5-inch) thick (total), with a 25-mm (1-inch) frame bite. Exterior sliding glass doors and accessible skylights are not permitted.

3404.7.5 Glass Railing Systems provided at occupied elevated interior and exterior space must be designed and constructed to prevent glass or supports from becoming secondary fragments in the event of a blast. Glass railings must be coordinated with the blast consultant during the design to ensure that a hazard is not created in the event of a blast, and subject to the approval of OBO.

3404.7.6 Interior Glazing. Provide minimum 6-mm (0.25-inch) laminated tempered or laminated heat-strengthened glazing for all interior glazing. This applies to "window-type" glazing, including glazed partitions in doors and "systems" furniture. It does not apply to glass furniture, artwork, or mirrors.

3404.7.7 Glass Furniture. The use of glass furniture and artwork (such as sculptures) must be approved by OBO on a site-specific basis. Glass furniture and artwork must be coordinated with the blast consultant during the design to ensure that a hazard is not created in the event of a blast.

3404.8 Housing Facilities

3404.8.1 General

3404.8.1.1 Blast. Housing Facilities structural framing and exterior envelope of the housing facilities, including exterior façade, walls, floors, and roofs, must withstand a bomb of a specified type and weight. The charge weight is provided in the classified contract attachments. When building types are combined or connected, there are specific requirements to provide independent structures or separation when a non-blast building is within the required setback and adjacent to a building with blast protection.

3404.8.1.2 Sliding Glass Doors and Accessible Skylights. Housing Facilities sliding glass doors and accessible skylights are not permitted.

3404.8.1.3 Fenestration. Housing Facilities fenestration is not limited if the performance requirements are fully met.

3404.8.2 SDR: Marine Security Guard Residence (MSGR)

3404.8.2.1 Location. Marine Security Guard Residence (MSGR) main entrance must be located so that it has a direct path for rapid response to the NOB. Provide exterior entry hardware on the NOB located to facilitate rapid response from MSGR.

3404.8.2.2 Sleeping Areas. Marine Security Guard Residence (MSGR) must have a pushbutton combination lock(s) to restrict access to sleeping areas of the MSGR.

3404.8.2.3 Video Intercom. Marine Security Guard Residence (MSGR) must have a video intercom at front door and remote access control for Heritage Room doors, and recreational areas of the MSGR.

3404.8.2.4 Door Control Systems. Marine Security Guard Residence (MSGR) must have a door control system video intercom with remote release at MSGR bar to control the MSGR main entry door.

3404.8.2.5 Elevated Outdoor Functional Spaces. Marine Security Guard Residence (MSGR) elevated exterior spaces (terraces and balconies) are not permitted.

3404.8.3 Specially Designated Residence (SDR) and Representational Housing (CMR, CGR, POR, DCMR)

3404.8.3.1 Elevated Outdoor Functional Spaces (terraces and balconies) are permitted on a site-specific basis.

3404.8.3.2 Representational Housing must have space and power identified to accommodate a WTMD installation for large events.

3404.8.4 Staff Housing (SDA) - Single Family Houses and Townhouses

3404.8.4.1 Elevated Outdoor Functional Spaces (terraces and balconies) are permitted on a site-specific basis.

3404.8.5 Staff Housing (SDA) – Multifamily Apartment Buildings

3404.8.5.1 Safe Area. Staff Housing (SDA) Safe Area must be located on one floor and internally accessible from all individual units in the building. Some building configurations require additional safe areas to provide the required floor space and accessibility.

3404.8.5.2 Patios. Staff Housing (SDA) ground floor patios are prohibited in multi-family apartment buildings. A common use patio accessible from the building lobby is permitted.

3404.8.5.3 Lobbies. Staff Housing (SDA) must have a lobby guard station to monitor and control security equipment including controls for perimeter FE/BR doors.

3404.8.5.4 Lighting. Staff Housing (SDA) Provide minimum 21.5 lx or 14 lx if LED lighting at apartment hallways and unit entrances.

3404.8.5.5 Locker Rooms. Staff Housing (SDA) Provide locker room facilities, toilet facilities and other spaces for host nation guards where required by SRP on a site-specific basis.

3404.8.5.6 Elevated Outdoor Functional Spaces. Staff Housing (SDA) elevated outdoor functional spaces must be located more than 5 m (16.4 feet) above grade or accessible platform. Doors opening onto any occupied elevated exterior space must be rated for blast protection, usually achieved by using FE/BR doors. FE/BR protection is not required.

3404.9 Office Buildings

3404.9.1 Exterior

3404.9.1.1 Exterior Doors regardless of location, require 15-MIN FE/BR protection.

3404.9.1.2 Elevated Outdoor Functional Space (Terraces and Balconies) must not be accessed from CAA or the Executive Suite. Elevated Outdoor Functional Space (terraces and balconies) are permitted off non-CAA spaces.

Exception: On a project specific basis, additional compliance criteria (such as a terraces and balconies limitations to one level above grade) are required subject to the direction of OBO.

3404.9.1.3 Exterior Façade must be designed in accordance with climb resistance criteria such as smooth façades, e.g., free of handholds and footholds.

3404.9.1.4 Roofs require blast protection. Equipment mounted on the roof of the building are not required to meet blast criteria. Roof Parapet must be reinforced concrete and minimum 1.2 m (4 feet) high, same thickness as wall below for each building with blast protection. Roofs designated as exterior LAA must be designed to meet external LAA controlled space requirements. Roofs that contain both exterior LAA and GWA designations must be separated by a 2.75-m (9-foot) climb resistant wall or fence.

3404.9.1.5 Windows accessible from any occupied elevated exterior space within two stories of grade or accessible platform require 15-MIN FE/BR protection.

3404.9.2 Circulation

3494.9.2.1 Egress

3404.9.2.1.1 Egress Route. Design the fire egress route so that the path is always from the more secure areas to or through the less secure areas of the building. Thus, for example, a second egress out of a public space such as the Multi-Purpose Room could only be located so that it transits either to another public space or directly outside.

3404.9.2.1.2 Egress Route Hardline The fire egress route is not permitted to transit the hardline in the Consular section. Do not provide any doors in the Consular hardline. The egress path from any point must not pass through more than one delayed egress locking system. Emergency lighting must be provided on the egress side of the door.

3404.9.2.1.3 Egress Door Swing. The door must swing in the direction of egress. Coordinate potential conflicts between security door swing and fire life safety doors swing requirements especially assembly occupancies with occupant load over 50, including accessible terraces with OBO.

3404.9.2.1.4 Delayed Egress Systems. A DS and OBO approved delayed egress locking systems are permitted to be installed on doors serving Group A, B, F, I, M, R, S, and U occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907.

3494.9.2.2 Elevator Vestibules

3404.9.2.2.1 Design the circulation so that elevators do not cross a security zone boundary. For example, an elevator that originates in the GWA is not permitted to open into a CAA or controlled corridor adjacent to a CAA.

3404.9.2.2.2 Provide a vestibule with emergency egress (for life-safety requirements) to separate elevators from CAAs or controlled corridors adjacent to CAAs. The egress route from an elevator vestibule is not permitted to access the CAA or a controlled corridor adjacent to the CAA.

3404.9.2.2.3 All elevator control rooms, machinery space, and control space shall be located in GWA space.

3404.9.3 Block and Stack Adjacencies

3404.9.3.1 Matrix. Utilize the project specific block and stack matrix identified in the SOW.

3404.9.3.2 LAA use. Minimize the use of LAA spaces unless specially required by this code.

Exceptions

1: On a project specific basis, a compliance alternative (such as converting GWA Mechanical spaces to a LAA designation) is permitted subject to the approval of OBO.

2: On a project specific basis, a compliance alternative (such as converting GWA offices, dedicated for use by cleared Americans permanently, to a LAA designation) is permitted subject to the approval of OBO.

3: On a project specific basis, a compliance alternative (such as the use of LAA inspections spaces) is permitted subject to the approval of OBO

3404.9.3.3 Non-Office Function Programs. When facility types are combined or connected with the office building, the space must be considered PAA for purposes of blocking and stacking.

Example: If the MSGR is connected to the New Office Building (NOB) that MSGR spaces must be considered PAA for blocking and stacking adjacency requirements.

3404.9.4 Systems

3404.9.4.1 Routing. Route systems to minimize the locations where systems cross security partitions. This includes penetrations through floors and ceilings in areas where physical protection is required. Service and equipment may not be installed within or pass through the following spaces: PCC, Suite A of the PCC, Suite B or the PCC, Suite C of the PCC, CTF, Type II Conference Rooms, Core Suites, Unclassified computer rooms including the JUCR and the Interview Room including the vestibule.

3404.9.4.2 Acoustics. Where utilities or systems cross partitions that have acoustic requirements, provide sound protection to meet the acoustic requirement. This acoustic treatment is in addition to the physical protection required for the utility penetration.

3404.9.4.3 Wireless Technology. Permitted locations for use of WLAN. The use of WLAN and Wi-Fi capable devices is only permitted in GWA and PAA zones of office buildings and in areas such as the American Center, Multipurpose Room (MPR), Consular Waiting Area, and Recreation Centers of Office Buildings. Refer to Section OBO OTC Chapter 15 for office buildings with CAA.

3404.9.4.4 Permitted Devices. Phones, tablets, Wi-Fi -enabled installed equipment (e.g., light fixtures, etc.) or devices (e.g., refrigerators, microwaves, etc.) are only permitted within office buildings with CAA only if the Wi-Fi is capable of being disabled.

3404.9.4.5 Installation of Wi-Fi capable equipment and devices. Disable all Wi-Fi prior to installation within all Wi-Fi-enabled installed equipment (e.g., light fixtures, etc.) or devices (e.g., refrigerators, microwaves, etc.).

3404.9.4.6 Prohibited Communication Capability. Bluetooth or near-field communication enabled equipment or devices are strictly prohibited in office buildings with CAA. Mechanical equipment, components, and devices are prohibited from being wireless capable. Refer to OBO-ICS IMC Chapter 3. Compliance with this restriction must be accomplished by one of the options.

3404.9.4.6.1 Devices capable of being rendered inoperative without modification. Devices selected must be incapable of Bluetooth or near-field communication connectivity without modification (preferred option).

3404.9.4.6.2 Devices requiring modification to be rendered inoperative. Device must be permanently and irreversibly modified to be incapable of Bluetooth or near-field communication connectivity by one of the following methods

1. Fully remove antenna and communication devices from all circuitry.

2. Permanently disable the communication circuitry via mechanical means (e.g., physical damage to ensure disabling).

3404.9.5 GWA

3404.9.5.1 GWA Secondary Hardline FE/BR Doors must have SVS coverage at the Exterior side of interior secondary FE/BR doors.

3404.9.5.2 GWA Elevator control rooms, machinery space, and control space must be in GWA space.

3404.9.5.3 GWA Telecom Rooms are permitted for voice systems that utilize a separate CTS (call manager) for all CAA service.

3404.9.6. LAA

3404.9.6.1 LAA space as specified by the applicable block and stack matrix, require that the perimeter of the LAA must be built with substantial material, e.g., gypsum wallboard or greater criteria. Any penetrations to the perimeter of the LAA over 620 sq. mm (100 sq. inches) and one dimension is greater than 150 mm (6 inches) (man-passable) must be covered with metal grilling or expanded metal.

3404.9.6.2 Horizontal LAA Provide horizontal LAA space between CAA and GWA when required by blocking and stacking matrix. For blocking and stacking purposes, the LAA is required to be a minimum 600-mm (24-inch) inspectable void measured from the exterior face of CAA to the interior face of the LAA. The void cannot include the thickness of the partitions or slabs.

3404.9.6.3 Vertical LAA. Use of Vertical LAA is prohibited.

Exception: Under rare circumstances, on a project specific basis, a vertical LAA compliance alternative is permitted subject to the approval of OBO. This request must be presented for approval to the Director of Security of the agency occupying the office suite requiring the proposed vertical LAA space. Vertical LAA approval is a detailed process, with additional criteria requirements including a minimum clear vertical void of 1500 mm (60 inches), excluding structural beams if ability to inspect is maintained. The project must not proceed until the alternate LAA proposal (including detailed sketches, details, cut sheets, and cost justification is reviewed and approved by multiple stakeholders).

3404.9.6.4 LAA Telecom Rooms, not located in the CAA, which contain equipment serving the CAA including Computerized Telephone Systems (CTS), Main Distribution Frames (MDF) or Intermediate Distribution Frames (IDF), voice switches, or other VOIP equipment must be designed to meet LAA requirements. Service equipment must not be installed within or pass through the Computer Rooms (Unclassified or Classified) unless it specifically services that space.

3404.9.7. CAA

3404.9.7.1 Scope. CAA Spaces Reference the classified contract attachments for additional project specific CAA requirements

3404.9.7.2 Construction. CAA Spaces must have slab-to-slab wall construction surrounding each individual CAA suite, with tamper proof grille protection. An acoustic silencer is permitted to take the place of the tamper proof grille when acoustic silencer is located within the wall and the remaining opening within the duct is less than 62 000 mm^2 (100 square inches)..

3404.9.7.3 Contiguous. CAA Spaces must be contiguous to each other.

3404.9.7.4 Configuration. CAA Spaces must be configured to physically protect access by a person in

the PAA or GWA so that a person in the PAA or GWA is unable to determine which CAA office is being accessed. A CAA Corridor satisfies this requirement.

3404.9.7.5 CAA Space Equipment. CAA Spaces equipment such as vertical shaft, elevators, machine rooms, utility rooms, chase, telephone frame rooms, electrical closets, ductwork serving CAA spaces must be in non-CAA spaces, except for terminal units. Provide key-controlled access for maintenance personnel only.

Exception: On a project specific basis, existing facilities compliance alternatives are permitted subject to the approval of OBO.

3404.9.7.6 Interstitial Spaces. CAA Spaces with interstitial spaces above suspended ceilings, and interstitial spaces below raised flooring, and horizontal voids created during finish construction must be accessible for physical and visual inspection.

3409.9.7.7 Unique Construction Elements. CAA Spaces must limit the use of unique construction elements including finishes, assemblies and building systems due to security restrictions regarding procurement, shipping, storage, and installation of these items. Avoid custom pieces or finishes not commonly used throughout the building because of repair and replacement security restrictions.

3409.9.7.8 Glazing. CAA Spaces There are no security restrictions on the use of glazed walls within CAA areas, except for special areas in which glazing is not permitted.

3409.9.7.9 Skylights. CAA Spaces must not have skylights, when the outside area contiguous to or overlooking the skylight is accessible to unescorted LES or uncleared American personnel.

3404.9.8 CAA Circulation Area Requirements (Corridors and Stairs)

3404.9.8.1. Scope. CAA Circulation (Corridors and Stairs) is required between GWA and CAA suites. Provide continuous CAA circulation between CAA suites to include between CAA floors. The corridor must be built to CAA requirements including walls, penetrations, doors, door hardware and alarms. The corridor must not be used to store, process, or discuss classified information. Suite perimeter must be a minimum of slab-to-slab wall construction with tamper-proof grilles. Controlled dedicated access from the CAA to the roof must be included when required by and according to the project specific classified requirements.

3404.9.8.2 Cell Phone Lockers. CAA Circulation (Corridors and Stairs) must have locking pager / cell phone storage lockers outside of entrance(s) to the controlled corridor adjacent to the CAA. Provide the same number of pager / cell phone storage lockers as desks in the CAA, plus 10 percent. Provide various sizes of pager / cell phone storage lockers, to accommodate cell phones, notebook computers, pagers, and other electronic devices. Provide electrical outlets within each pager / cell phone storage locker for device recharging.

3404.9.8.3 Slab to Slab Protection. CAA Circulation (Corridors and Stairs) must not have louvers, access panels, hatches, or other openings in the perimeter of CAA suites, secure rooms, vaults, or other areas where security requires slab-to-slab partitions. When mechanical equipment inhibits human penetration in a duct at a CAA perimeter partition, a grille is not required provided the remaining opening within the duct is less than 62 000 mm^2 (100 square inches).

3404.9.8.4 Glazing. CAA Circulation **(**Corridors and Stairs) must limit the use of glass partitions in CAA perimeter boundary walls. Locate such glazing to minimize a direct line of sight to desks, computers, or work areas. Do not locate clerestory windows less than 2 m (6.6 feet) above floor level. Translucent glazing materials for partitions in CAA walls are acceptable. Glazed doors are prohibited in CAA partitions.

3404.9.9. CAA Systems

3404.9.9.1 HVAC Equipment located inside the restricted and core areas of the CAA must be controlled locally within each respective section of the CAA.

3404.9.9.2 Service and equipment (including HVAC ductwork, piping, and control wiring) must not be installed within or pass through the CAA Core Suites unless it specifically services that space.

3404.9.9.3 Connectivity. There must be no direct inter-connectivity between control wiring and equipment located in CAA spaces and controllers in non-CAA spaces. Control circuits serving non-CAA spaces must not traverse into CAA space. The wiring or cables must be installed in dedicated signal conduits or telecom raceway. No wireless technology must be permitted inside of the CAA; HVAC equipment in the CAA must have programmable stand-alone control panels.

3404.9.9.4 Utilities, Conduit, Raceways and Pipes are not permitted to be hidden, embedded, encased, or placed inside concrete or masonry.

Exception: Inspectable floor trenches and floor boxes are permitted in the CAA Executive Suite.

3404.10 Office Space Groups

3404.10.1 American Center Space Group (SG-ACS01) (with its sub-divided areas) requires a 15-MIN FE/BR door between American Center and General Work area.

3404.10.2 Consular Section Space Group (SG-CON03) must be designed in such a way that visitors clearly know that it is the consular entrance and not the main entrance. Provide a separate Consular entrance unless otherwise directed by OBO. Consular Section must not have a connection between the Consular Lobby/Waiting Area and the GWA. Design the fire egress so that it does not transit the Consular section teller line. Provide slab to slab partitions at the cashier booth.

3404.10.3 Information and Technology Space Group. Telecommunication Rooms not located in the CAA, which contain equipment serving the CAA including Computerized Telephone Systems (CTS), Main Distribution Frames (MDF) or Intermediate Distribution Frames (IDF), PBX Room, voice switches, or other VOIP equipment must be designed to meet LAA requirements. Service equipment must not be installed within or pass through the Computer Rooms (Unclassified or Classified) unless it specifically services that space.

Exception: On a project specific basis, when a second call manager is provided to separate CAA telephone from non-CAA telephone, the GWA Telecom Room is not required to be LAA.

3404.10.4 Main Entrance Lobby Space Group must be designed so that staff does not transit the lobby except for entering or exiting the building. All internal circulation is to be located behind the “secondary” interior hardline. Main Entrance Lobby must be column-free so that the MSG Post 1 has uninterrupted, unobstructed sight lines of activity in the lobby, and points of access to/from the lobby. The visitors waiting area must be located out of the line of circulation, but visible to Post 1. The PAC security screening must be located directly in front of the main entrance door, such that all personnel and visitors are directed toward the local guard and WTMD.

3404.10.5 MSG Suite Space Group must be located close to Post 1 and convenient to the MSGR entrance.

3404.10.6 Multipurpose Room (MPR) Space Group must have a 15-MIN FE/BR door between Multi-Purpose Room and General Work area. The MPR is considered the attack side for this door.

3404.10.7 PCC Suite Space Group requires a clear opening door width of not less than 1015 mm (40 inches) for doors located in the path between the service entrance and the PCC. The PCC Generator Room must be accessed from behind the GWA hardline.

3404.10.8 RSO Suite Space Group must have space near the technical workstations for one GFGC AV

equipment rack and GFGI video display with dedicated workstations.

3404.10.9 Service Entrance Space Group must be designed to meet GWA requirements. lobby must include a local guard screening area, WTMD, and must have MSG booth (Post 2) and secondary EC Room. Design the lobby so it is column-free, and the MSG has uninterrupted, unobstructed sight lines of all activity in the lobby and of all points of access to the lobby. Requirements described for the Main Lobby and EC Room also apply to the Service Entrance. Provide a clear door opening width of not less than 1015 mm (40 inches) for doors, including security doors located in service entrance, elevator vestibules, mailroom, and equipment rooms for operations and maintenance.

3404.11 Office Spaces

3404.11.1 Conference Rooms – PAA under 23 m^2 (250 sq. feet) are permitted. Conference Rooms in PAA larger than 23 m^2 (250 sq. feet) require 6-sided, 15-MIN protection and an exit to GWA behind the hardline. Provide an emergency egress directly to the exterior if the occupant load exceeds 50.

3404.11.2 EC Room

3404.11.2.1 EC Room must be rectangular in shape, with the smallest dimension not less than 2.5 m (8.2 feet). Size per the SRP.

3404.11.2.2 EC Room must have a direct connection to MSG Post 1.

3404.11.2.3 EC Room must have adequate ventilation and cooling. Do not meet this requirement by providing louvers to an adjoining room.

3404.11.3 Interview Room must have the Public Side of the Interview Room located off the Main Lobby Main Entrance Lobby and Staff Side of the Interview Room located off the protected GWA side. Provide STC-50 rated partitions surrounding and within the interview room. Glazing within the doors is not permitted. Doors within the hardline are not required to meet STC-50 requirement stated above. The two sides are separated by a secondary hardline and linked by a locking 15-MIN FE/BR door. The public side is considered the attack side for this door. The door between the Main Lobby and Interview Room shall swing out in the direction of egress into the Main Lobby.

3404.11.4 Offices. Facility Management Office (FMO), General Services Office (GSO) and Regional Security Office (RSO) must have DS-approved, wall mounted key cabinet(s)

3404.11.5 Post 1

3404.11.5.1 Post 1 must provide lobby oversight and control mechanism. The booth must be centrally located so that the MSG has total unobstructed line of sight of all activities in the lobby and can clearly see all hardline doors in the lobby.

3404.11.5.2 Post 1 requires a deal drawer between the Main Entrance Lobby and Post 1 for communication and another between must be provide between the protected GWA side and the Post 1 for communication outside the circulation path.

3404.11.5.3 Post 1 must be configured so that its door opens into the GWA, behind both the primary and secondary hardlines.

3404.11.5.4 Post 1 must have a finished floor level to match the Lobby and GWA finished floor level, opaque walls from the floor to a height of 1130 mm (44.5 inches), a suspended (removable) ceiling, adequate lighting with a dimmer switch and a minimum of 760-mm (30-inch) clearance in front of the

technical security equipment racks for maintenance.

3404.11.5.5 Post 1 must have direct visual oversight of the key management system, located behind the hardline on the protected GWA side.

Exception: On a project specific basis, existing facilities compliance alternatives (such as additional SVS coverage) are permitted subject to the approval of OBO.

3404.11.6 Secure Room Secure Rooms are typically used for CAA remote storage areas, and at some conference rooms. Glazing is not permitted in a secure room partition. The requirements of this section assume that there will be a Marine Security Guard or a 24-hour cleared American guard present in the building. If this is not the case for a particular project, changes may be required, and OBO will provide revised instructions regarding the application of Secure Rooms.

SECTION 3405
SATELLITE (OFF-COMPOUND) REQUIREMENTS: WHERE USG IS THE SOLE OCCUPANT

3405.1 General. This section addresses the requirements for Satellite (Off-Compound) office facilities. A stand-alone office facilities or compound that is not a Chancery or Consulate facility. Refer the Satellite (Off-Compound) Physical Security (AW) Requirements Matrix in Section 3403.2.3.

3405.2 Safe Haven (Office). USG Sole Occupant Offices Under Chief of Mission require a Safe Haven (Office).

3405.3 Safe Area. USG Sole Occupant Public Facilities (Libraries and Cultural Centers) require a Safe Area.

SECTION 3406
SATELLITE (OFF-COMPOUND) REQUIREMENTS: TENANT OF COMMERCIAL OFFICE (TCO)

3406.1 General. This section addresses the requirements for Satellite (Off-Compound) office facilities. A stand-alone office facilities or compound that is not a Chancery or Consulate facility. Refer the Satellite (Off-Compound) Physical Security (AW) Requirements Matrix in Section 3403.2.4.

3406.2 Facilities Preferences. Preferred TCOs include a building with a Pedestrian Access Control (PAC), local guards, no underground parking, and lease space above the second floor.

3406.3 Blast Vulnerability Assessment. Tenant of Commercial Office (TCO) leases must include a Blast Vulnerability Assessment.

SECTION 3407
SATELLITE (OFF-COMPOUND) REQUIREMENTS: RESIDENTIAL HOUSING (MULTI-FAMILY) AND RECREATIONAL (REC) COMPOUNDS

3407.1 General. This section addresses the requirements for Satellite (Off-Compound) office facilities. A stand-alone compound that is not a Chancery or Consulate facility. Refer the Satellite (Off-Compound) Physical Security (AW) Requirements Matrix in Section 3403.2.5.

3407.2 Parking. Satellite (Off-Compound) facilities must provide off-street parking or secure parking garage(s). Facilities that have armored vehicles must provide covered garages or all-weather parking cover to protect the vehicles from the elements. Parking for pre-approved visitors is permitted on Satellite (Off-Compound) facilities for representational and staff housing visitors.

3407.3 Blast - Must comply with the Primary (On-Compound) criteria for new construction and the Blast Vulnerability Assessment for existing or NAB structures

SECTION 3408

SATELLITE (OFF-COMPOUND) REQUIREMENTS: Specially Designated Residences (SDR), Representational Residences and Staff Housing (SDA)

3408.1 General. This section addresses the requirements for Satellite (Off-Compound) facilities. A stand-alone residential facility that is not a Residential Compound, Chancery or Consulate facility. Refer the Satellite (Off-Compound) Physical Security (AW) Requirements Matrix in Section 3403.2.6.

3408.2 Central Alarm Monitoring System. Specially Designated Residences (SDR) must have a Central Alarm Monitoring Systems (CAMS) connected to all operable windows, doors, and other man passable openings. The systems must be connected to a phone or radio signal to monitoring station capable of emergency response. Representational SDRs must have space and power identified to accommodate a WTMD installation for large events.

Exception: On a project specific basis, alternate compliance enhancements (such as a stand-alone alarm system) are permitted subject to the direction of OBO.

SECTION 3409

SATELLITE (OFF-COMPOUND) REQUIREMENTS: SUPPORT FACILITIES AND UNCLASSIFIED WAREHOUSE (WHE)

3409.1 General. This section addresses the requirements for Satellite (Off-Compound) facilities. A stand-alone unclassified warehouse facility or compound that does not contain offices under Chief of Mission. Refer the Satellite (Off-Compound) Physical Security (AW) Requirements Matrix in Section 3403.2.7.

SECTION 3410

SATELLITE (OFF-COMPOUND) REQUIREMENTS: AMERICAN BROADCAST BUREAU (ABB) RELAY STATION

3410.1 General. This section addresses the requirements for Satellite (Off-Compound) facilities. Refer the Satellite (Off-Compound) Physical Security (AW) Requirements Matrix in Section 3403.2.8.

Sections 3411 through 3419 are reserved.

SECTION 3420

SPECIAL USE AND OCCUPANCY

3420.1 General. This section provides detailed requirements for special use spaces. This section is organized as follows:

1. Compound Emergency Sanctuary (CES)

2. Safe Area

3. Safe Haven (Office)

4. Safe Haven (Residential)

5. Lock and Leave (L&L)

6. Emergency Residential Response Room (ERRR)

7. Hardened Alternative Trailer Systems (HATS)

8. Culvert Alternative Protection System (CAPS)

9. Guard Towers

3420.2 Compound Emergency Sanctuary (CES)

3420.2.1 General

3420.2.1.1 Scope. CES designated spaces must be provided for the average number of employees (non-desk positions) normally occupying the unprotected functional areas not located in a 15-MIN FE/BR protected building during established work hours. Guards are counted separately and accommodated in the guard booth CES with a separate minimum floor area allowance calculation. The quantity and location of CES designated spaces must be provided on a project specific basis as directed by OBO. CES designated spaces in residential applications must be provided on a site-specific basis when directed by OBO. At small posts, a single CES area is sufficient, while larger posts with multiple office buildings on a compound, two or more are required.

3420.2.1.2 Area - General. CES designated spaces minimum floor area allowance per occupant must be not less than 1.0 m^2 (10.76 sq. feet) per occupant, excluding space for any equipment or unusable space.

> **Exception**: Under certain circumstances existing facilities compliance alternatives (such as a reduction in minimum floor area per occupant) are permitted on a project specific basis subject to the approval of OBO.

3420.2.1.3 Area – Guard Booth CES. CES designated spaces minimum floor area allowance per occupant in a guard booth CES must be not less than 0.6 m^2 (6 sq. feet) per occupant for number of guards assigned to the CAC, plus two additional occupants.

3420.2.2 Layout

3420.2.2.1 Egress. CES designated spaces must have secondary means of remote escape (e.g., door/ escape hatch) to provide a safe evacuation route away from the primary entrance regardless of the occupant load.

3420.2.2.2 Use. CES designated spaces are permitted to be used for other purposes daily. Where areas utilized for other life safety purposes are also used as CES spaces (e.g., exit stairs, corridors), the required egress width must be maintained, and these areas are not permitted to be used for CES occupant capacity. CES are permitted to consist of an entire floor or wing of a building.

3420.2.2.3 Location. CES designated spaces must not be in mechanical, electrical, generator, or similar equipment rooms that contain shock risks, or rooms where the equipment produces high ambient noise levels.

3420.2.3 Systems (M, P, FP, FA, E, EG, EL, EP and T)

3420.2.3.1 Plumbing, Water and Sanitary. CES designated spaces do not require water and sanitary facilities.

3420.2.3.2 Fire Resistant Materials. CES designated spaces must be constructed of fire-resistant materials.

3420.2.3.3 Electrical Lighting and Power. CES designated spaces must have power for lighting and ventilation (provide adequate ventilation; refer to OBO-ICS IMC for specific requirements) connected to the post back-up power system or provided with an alternative protected power source capable of delivering one-hour of light and ventilation. The power supply is not required to meet FE/BR standards.

3420.2.3.4 Telecommunications. CES designated spaces must have a telephone. Refer to OBO OTC for additional requirements.

3420.2.4 Physical Security (AW)

3420.2.4.1 General. CES designated spaces require 15-MIN FE/BR walls, floor, ceiling slab, windows, doors, opening, and penetration protection.

3420.3 Safe Area

3420.3.1 General

3420.3.1.1 Scope. Safe Area designated spaces must be provided for the principal office building on all compounds regardless of the presence of a PCC or classified operations. Safe Area designated spaces must be provided for the average number of employees (non-desk positions) normally occupying the unprotected functional areas not located in a 60-MIN FE/BR protected space during established work hours. The quantity and location of Safe Area designated spaces must be provided on a project specific basis as directed by OBO. At small posts, a single Safe Area is sufficient, while larger posts with multiple office buildings on a compound, two or more are required.

3420.3.1.2 Area. Safe Area designated spaces minimum floor area allowance per occupant must be not less than 1.0 m^2 (10.76 sq. feet) per occupant, excluding space for any equipment or unusable space. Safe Area population is calculated based on the total desk population, minus the number of staff to be sheltered in the (PCC) Safe Haven, plus 10% (staff allowance factor). The total safe area population is multiplied by 1.0 m^2 (10.76 sq. feet) per person, plus 15% (furniture/equipment factor).

Exception: Under certain circumstances existing facilities compliance alternatives (such as a reduction in minimum floor area per occupant) are permitted on a project specific basis subject to the approval of OBO.

3420.3.2 Layout

3420.3.2.1 Egress. Safe Area designated spaces must have a secondary means of remote escape (e.g., door/ escape hatch) to provide a safe evacuation route away from the primary entrance regardless of the occupant load requirement. Occupant loads of 50 or more must also comply with the International Building Code (IBC) assembly egress requirements.

3420.3.2.2 Use. Safe Area designated spaces are permitted to be used for other purposes daily. Where areas utilized for other life safety purposes are also used as safe areas (e.g., exit stairs, corridors), the required egress width must be maintained, and these areas are not permitted to be used for safe area occupant capacity.

3420.3.2.3 Location. Safe Area designated spaces must not be in mechanical, electrical, generator, or

similar equipment rooms that contain shock risks, or rooms where the equipment produces high ambient noise levels. Where areas utilized for other life safety purposes are also used as safe areas (e.g., exit stairs, corridors), the required egress width must be maintained, and these areas are not permitted to be used for Safe Area occupant capacity. Safe areas in single story buildings or buildings with 2 levels that each level opens at grade are permitted on the ground floor, in single story buildings, and on either floor in 2 story buildings that have both floors opening at grade.

Exception: Under certain circumstances facilities compliance alternatives (such as a basement safe areas) are permitted on a project specific basis subject to the approval of OBO.

3420.3.2.4 Glazing. Safe Area designated spaces must avoid the use of glazing to prevent visual access of embassy personnel.

3420.3.2.5 Storage. Safe Area designated spaces must have a dedicated storage room to accommodate medical supplies, safety equipment, water (potable water is normally provided by bottled water), and food, and other emergency equipment.

3420.3.2.6 Equipment Closet and Rack. Safe Area designated spaces must have an equipment closet and equipment rack, with lockable bi-fold closet doors, to house one technical security equipment rack. The equipment rack must conform to ANSI/TIA standards and must have minimum dimensions of 560 mm (22 inches) width by 1830 mm (72 inches) height.

3420.3.3 Systems (M, P, FP, FA, E, EG, EL, EP and T)

3420.3.3.1 Mechanical and Ventilation. Safe Area designated spaces must have a ventilation system with emergency power on the protected generator to produce a minimum of six air changes per hour. Outside air intake and discharge vents must be located not less than 5 m (16 feet) above grade/climbable feature. Refer to the OBO-ICS IMC for additional requirements.

3420.3.3.2 Plumbing, Water and Sanitary. Safe Area designated spaces do require water and sanitary facilities. *A chemical toilet is permitted on a project specific basis as directed by OBO.*

3420.3.3.3 Fire Resistant Materials. Safe Area designated spaces must be constructed of fire-resistant materials.

3420.3.3.4 Fire Rating – Structural. Safe Area designated space structural system support must be designed to meet 1 ½ -hour fire resistance

3420.3.3.5 Fire Rating – Perimeter. Safe Area designated spaces must have 1-½ hour fire-rated construction for entire perimeter with 1-½ -hour fire and smoke damper at all duct openings.

3420.3.3.6 Electrical Lighting and Power. Safe Area designated spaces must have power for lighting and ventilation connected to the post emergency power supplied generator(s). Either one or separate generators are permitted to be used, and they must be protected to the higher level of FE/BR protection being served by the generator. If the power feed between the Safe Area and the emergency generator runs directly through an Uninterruptible Power Supply (UPS) with no alternate power feed, the UPS room also must be provided with the same FE/BR protection required by the Safe Area. Provide rigid steel conduit for Safe Area utility lines between the generator room and the Safe Area. If the generator room is in a separate building, buried Schedule 80 rigid nonmetallic conduit are permitted to be used to protect the power transmission lines.

3420.3.3.7 Telecommunications. Safe Area designated spaces must have interconnectivity via communications links. Normally, both VHF/UHF radio and physically protected telephone communications

provide this link. Safe areas must have not less than one direct outside telephone line that bypasses the post switchboard. Refer to OBO OTC for additional requirements.

3420.3.4 Physical Security (AW)

3420.3.4.1 Primary Facilities. Safe Area designated spaces in Primary facilities require 15-MIN FE/BR walls, floor, ceiling slab, windows, doors, opening, and penetration protection.

3420.3.4.2. **Satellite Facilities.** Safe Area designated spaces in Satellite facilities must have slab-to slab walls of substantial construction (masonry units, masonry, brick, or concrete) around the entire safe area and 5-MIN FE protection for doors, window openings and non-window man-passable openings.

3420.3.4.3 Infrastructure. Safe Area infrastructure systems located outside the safe areas must be concealed, inaccessible, or otherwise protected. Duct and pipe penetrations of safe area perimeter require FE/BR protection.

3420.3.5 Technical Security (SY)

3420.3.5.1 General. Safe Area designated spaces must have an equipment rack with video monitors.

3420.4 Safe Haven - Office

3420.4.1 General

3420.4.1.1 Scope. Safe Haven (Office) designated spaces must be provided for all principal office buildings regardless of the presence of a PCC, or classified operations.

3420.4.1.2 Application. Safe Haven (Office) designated spaces must be provided for all assigned desk staff at posts with less than 50 total desk staff. For larger Posts with greater than 50 total desk staff, the Safe Haven must be designed to accommodate 50 people. The Safe Area(s) must accommodate the remaining personnel.

3420.4.1.3 Area. Safe Haven (Office) designated spaces minimum floor area allowance per occupant must be not less than 1.0 m^2 (10.76 sq. feet) per occupant, excluding space for any equipment or unusable space. Safe Haven (Office) population is calculated based on the total desk population, plus 10% (staff allowance factor). The total Safe Haven population is multiplied by 1.0 m^2 (10.76 sq. feet) per person, plus 15% (furniture/equipment factor).

Exception: Under certain circumstances existing facilities compliance alternatives (such as a reduction in minimum floor area per occupant) are permitted on a project specific basis subject to the approval of OBO.

3420.4.2 Layout

3420.4.2.1 Egress. Safe Haven (Office) designated spaces must have a secondary means of remote escape (e.g., door/ escape hatch) to provide a safe evacuation route away from the primary entrance regardless of the occupant load requirement. Occupant loads of 50 or more must also comply with the International Building Code (IBC) assembly egress requirements.

3420.4.2.2 Use. Safe Haven (Office) designated spaces are permitted to be used for other purposes daily.

3420.4.2.3 Location. Safe Haven (Office) designated spaces must not be in mechanical, electrical, generator, or similar equipment rooms that contain shock risks, or rooms where the equipment produces high ambient noise levels. Where areas utilized for other life safety purposes are also used as Safe Havens (e.g., exit stairs, corridors), the required egress width must be maintained, and these areas are

not permitted to be used for Safe Haven - Office occupant capacity. Safe Havens must not be located on the basement of ground floor of new construction.

Exception: Under certain circumstances existing facilities compliance alternatives (such as a basement of ground floor solution) are permitted on a project specific basis subject to the approval of OBO.

3420.4.2.4 Glazing. Safe Haven (Office) designated spaces must not contain perimeter glazing.

3420.4.3 Systems (M, P, FP, FA, E, EG, EL, EP and T)

3420.4.3.1 Mechanical and Ventilation. Safe Haven (Office) designated spaces must have a ventilation system with emergency power on the protected generator to produce a minimum of six air changes per hour. Outside air intake and discharge vents must be located not less than 5 m (16 feet) above grade/climbable feature. Refer to the OBO-ICS IMC for additional requirements.

3420.4.3.2 Plumbing, Water and Sanitary. Safe Haven (Office) designated spaces do require water and sanitary facilities. Chemical toilets are acceptable.

3420.4.3.3 Fire Resistant Materials. Safe Haven (Office) designated spaces must be constructed of fire-resistant materials.

3420.4.3.4 Fire Rating - Structural. Safe Haven (Office) designated space structural system support must be designed to meet 2-hour fire resistance.

3420.4.3.5 Fire Rating – Perimeter. Safe Haven (Office) designated spaces must have 1-½ hour fire-rated construction for entire perimeter with 1-½ -hour fire and smoke damper at all duct openings.

3420.4.3.6 Electrical Lighting and Power. Safe Haven (Office**)** designated spaces must have power for lighting and ventilation connected to the post emergency power supplied generator(s). Either one or separate generators are permitted, and they must be protected to the higher level of FE/BR protection being served by the generator. If the power feed between the Safe Haven and the emergency generator runs directly through an Uninterruptible Power Supply (UPS) with no alternate power feed, the UPS room also must be provided with the same FE/BR protection required by the Safe Haven. Provide rigid steel conduit for Safe Haven utility lines between the generator room and the Safe Haven. If the generator room is in a separate building, buried Schedule 80 rigid nonmetallic conduit is permitted to be used to protect the power transmission lines.

3420.4.3.7 Telecommunications. Safe Haven (Office) designated spaces must have interconnectivity via communications links. Normally, both VHF/UHF radio and physically protected telephone communications provide this link. Safe areas must have not less than one direct outside telephone line that bypasses the post switchboard. Refer to OBO-ICS OTC for additional requirements.

3420.4.4 Physical Security (AW)

3410.4.4.1 General. Safe Haven (Office) designated spaces require 60-MIN FE/BR walls, floor, ceiling slab, windows, doors, opening and penetration protection.

3410.4.4.2 Infrastructure. Safe Haven (Office**)** designated space infrastructure located outside the Safe Haven must be concealed, inaccessible, or otherwise protected.

3410.4.4.3 Safe Haven Generator Equipment ATS (or other critical equipment for the protected generator) must be designed to meet LAA requirements. The entire perimeter, including the walls, floor, ceiling, and penetrations, of the protected generator equipment require 60-MIN FE/BR protection. Glazing

is not permitted.

3420.4.5 Technical Security (SY)

3406.4.5.1 General. Safe Haven (Office) designated spaces must have equipment rack with override equipment

3420.5 Safe Haven – Residential

3420.5.1 General

3420.5.1.1 Scope. Safe Haven (Residential) designated spaces must be provided for the average number of people normally occupying the unit. Residential safe havens are usually located in the master bedroom suite or the master bath.

3420.5.2 Layout

3420.5.2.1 Egress. Safe Haven (Residential) designated spaces must have a secondary means of remote escape (e.g., door/ escape hatch or window) to provide a safe evacuation route away from the primary entrance regardless of the occupant load requirement.

Exception: Under certain circumstances existing facilities compliance alternatives (such as an alternate second means of egress) are permitted on a project specific basis subject to the approval of OBO.

3420.5.2.2 Location. Safe Haven (Residential) designated spaces must not be in mechanical, electrical, generator, or similar equipment rooms that contain shock risks, or rooms where the equipment produces high ambient noise levels.

3420.5.3 Systems (M, P, FP, FA, E, EG, EL, EP and T)

3420.5.3.1 Water and Sanitary Requirements. Safe Haven (Residential) designated spaces do not require water and sanitary facilities.

3420.5.3.2 Power Requirements. Safe Haven (Residential) designated spaces must have power for lighting and ventilation connected to the back-up power system or provided with an alternative power source capable of delivering one-hour of light and ventilation.

3420.5.3.3 Telecommunications Requirements. Safe Haven (Residential) designated spaces must have a telephone. Refer to OBO OTC for additional requirements.

3420.5.4 Physical Security (AW)

3420.5.4.1. General. Safe Haven (Residential) designated spaces require substantial construction, with substantial doors. Windows and man-passable openings must be secured with grilles, substantial roll-down doors, or hinged shutters on a project specific basis as directed by OBO. Provide solid core wood or hollow metal doors with one inch throw deadbolt hardware.

3420.6 Lock and Leave (L&L)

3420.6.1 General

3420.6.1.1 Scope. L&L facility must have two exterior doors to satisfy the “Lock and Leave” function. The first is a special access (SA) door (the primary lock and leave door) and a second bypass door. Only the special access (SA) door must be utilized for entry and exit after office hours. Specific locking hardware requirements for these doors is identified in the OBO Specification Section 087145.

3420.6.2 Layout

3420.6.2.1 Horizontal Control. L&L facility must establish a U.S. control area of at least 600 mm (24 inches) horizontal control area between the CAA and the general work areas.

3420.6.2.2 Alarm Keypad Location. Wall, Door, Window, Penetration and Roof Element Requirements must have an alarm system keypad located at the interior wall adjacent to the L&L door, positioned to preclude visual compromise from the building exterior and protected by a volumetric detection device.

3420.6.2.3 Control Panels Location. L&L facility must have the IDS control panels, L&L access control system panels, keypads used for programming systems and the associated power supplied located in the EC room. Additionally, all IDS control panels must be protected by a volumetric sensor.

3420.6.2.4 Control Panels Protection. L&L facility must have all IDS control panels protected by a volumetric sensor.

3420.6.3 Systems (M, P, FP, FA, E, EG, EL, EP, and T)

3406.6.3.1 Dedicated Power Supply. L&L Doors must have a dedicated power supply (with backup battery).

3410.6.4 Physical Security (AW)

3420.6.4.1 LAA Protection. L&L facility LAA designated area perimeter wall must provide slab-to-slab construction with 5-MIN FE protection. The LAA door must be a 5-MIN FE door with external keyway forced entry locks, and the keys stored in an adjacent DS- approved lock box.

3420.6.4.2 CAA Protection. L&L facility without post communications centers (PCCs), must protect and establish a CAA Core Area to house the core area where the classified server, encryption equipment, and keying material are secured to a minimum 15- MIN FE/BR protection with a GSA -approved Class 5 Vault.

3420.6.4.3 PCC Protection. L&L facility with a post communications centers (PCCs) constituted by one or more parties normally housing PCC, must reference the PCC standards in other portions of the OBO-ICS and in other OBO standard documents apply.

3420.6.5 Technical Security (SY)

3420.6.5.1 Automated Access Control System. L&L facility must contain an automated access control system (AACS) that records entry of personnel to the facility and the entry of cleared U.S. citizens to LAA and CAA areas.

3420.6.5.2 Ingress and Egress Protection. L&L facility must have door and DS-approved detection technology to protect all ingress and egress points of the area to be protected (generally the suites within the building).

3420.6.5.3 Detection Technologies. L&L facility must have a minimum of two detection technologies (ex: door contact and PIR) must protect all ingress / egress points of the protected area.

3420.6.5.4 Door Control. L&L facility must have all building exterior doors and interior office doors under control of the U.S. Government (USG) must be monitored by the IDS.

3420.6.5.5 SVS Coverage. L&L facility must have all points of entry or exit to / from CAA spaces covered

by SVS and recorded to a dedicated DVR. DVR must be in a lockable container located in the Main EC room

3420.6.5.6 Alarm Wiring. L&L facility must have all wiring for L&L alarm system, at a minimum, in electrical metallic tubing (EMT) conduit.

3420.6.5.7 Alarm systems – Other. L&L unclassified facilities with high-value assets must have an installation of separate DS-approved alarm system dedicated to L&L for purpose of monitoring designated alarm points.

3420.7 Emergency Residential Response Room (ERRR)

3420.7.1 General

3420.7.1.1 Use. Emergency Residential Response Room (ERRR) is in addition to the main react room located in the primary office building and serves a complementary function.

3420.7.2 Layout

3420.7.2.1 Location. Emergency Residential Response Room (ERRR) must be in the MSGR.

3420.7.2.2 Equipment. Emergency Residential Response Room (ERRR) must contain a GSA-approved class V or Class VI security weapons container with three-position combination lock sized for on M-9 9mm pistol, on M-4 carbine rifle and a standard combat load of ammunition, a set of standard issue body armor and with wall mounted hanging device for each Marine Security Guard assigned to post, one two-way portable radio and battery recharging device, one dedicated telephone line to Post One, and one clearing barrel for weapons clearing.

3420.7.3 Physical Security (AW)

3420.7.3.1 General. Emergency Residential Response Room (ERRR) require slab-to-slab secure wall construction.

3420.7.3.2 Roof Access. Provide roof access from or adjacent to the Emergency Residential Response Room (ERRR)

3420.7.4 Technical Security (SY)

3420.7.4.1 General. Emergency Residential Response Room (ERRR) must have an Intrusion Detection System (IDS), consisting of a door contact and PIR within the room and camera coverage of interior side of door and all monitored at Post One.

3420.8 Hardened Alternative Trailer Systems (HATS)

3420.8.1 General

3420.8.1.1 Use. Hardened Alternative Trailer Systems (HATS) must be used where modular or rapidly deployable buildings are required on a project specific basis when directed by OBO, or for temporary non-permanent use.

3420.8.1.2 Transportation. Hardened Alternative Trailer Systems (HATS) are shipping container (ISO) compliant for transportation.

3420.8.1.3 Modifications. Hardened Alternative Trailer Systems (HATS) modifications must be reviewed and approved by OBO.

3420.8.2 Layout

3420.8.2.1 Sizes. Hardened Alternative Trailer Systems (HATS) meet multiple ISO dimensions ranging from 6.1 m x 2.4 m (20 feet x 8 feet to 16.2 m x 2.9 m (53 feet x 9.5 feet).

3420.8.2.2 Configurations. Hardened Alternative Trailer Systems (HATS) open, stacked, multi-stories configurations with interior and / or exterior stair circulation are permitted.

3420.8.3 Physical Security (AW)

3420.8.3.1 Wall, Door, Window, Penetration and Roof Element Requirements. Hardened Alternative Trailer Systems (HATS) performance equivalency require 60-MIN FE / BR protection for walls, doors, window, penetrations, and roof elements.

3420.8.3.2 Blast Requirements. Hardened Alternative Trailer Systems (HATS) performance equivalency must be designed to meet blast requirements and resistant to progressive collapse under blast loading.

3420.8.4 Technical Security (SY)

3420.8.4.1 General. Hardened Alternative Trailer Systems (HATS) performance equivalency must comply with Technical Security requirements based on space type and use.

3420.9 Culvert Alternative Protection System (CAPS)

3420.9.1 General

3420.9.1.1Use. Culvert Alternative Protection System (CAPS) must be used to cast individual concrete sections in local environments without complicated concrete forms on a project specific basis when directed by OBO.

3420.9.1.2 Modifications. Culvert Alternative Protection System (CAPS) modifications must be reviewed and approved by OBO.

3420.9.2 Layout

3420.9.2.1 Sizes. Culvert Alternative Protection System (CAPS) are available in 500-mm (20-inch) thick sections and a variety of sizes – scalable to meet post requirements.

3420.9.2.2 Preparation. Culvert Alternative Protection System (CAPS) requires a level bed of granular material as foundational support and is mechanically connected to achieve the desired length.

3420.9.3 Physical Security (AW)

3420.9.3.1 General. Culvert Alternative Protection System (CAPS) structures must comply with the physical security requirements based on space type and use.

3420.9.4 Technical Security (SY)

3420.9.4.1 General. Culvert Alternative Protection System (CAPS) structures must comply with Technical Security requirements based on space type and use.

3420.10 Guard Towers and Modular Guard Tower System 2 – Heavy (MGTS2-H)

3420.10.1 General

3420.10.1.1 General. Modular Guard Tower System 2- Heavy (MGTS2-H) must be used when a rapidly deployable modular guard tower is needed. They are blast tested and provide FE/BR and anti-ram

protection.

3420.10.1.2 Modifications. Modular Guard Tower System 2- Heavy (MGTS2-H) modifications must be reviewed and approved by OBO and DS.

3420.10.2 Layout

3420.10.2.1 Panelized System. Modular Guard Tower System 2- Heavy (MGTS2-H) panelized system is mechanically assembled.

3420.10.2.2 Height. Modular Guard Tower System 2- Heavy (MGTS2-H) must be adjusted in height and clad to accommodate site and project specific compound perimeter barrier aesthetic requirements.

3420.10.2.3 Location. Provide tower(s) as required to provide continuous visual observation of the entire exterior of the site. Provide 360-degree unobstructed lines of sight.

3420.10.2.4 Interior Access Ladder. Provide a ladder for access to the upper level. The ladder must be installed and bolted to the sidewall. Ladder must extend a minimum of 1070 mm (42 inches) above the second floor.

3420.10.2.5 Access Hatch. Provide an access hatch in the floor of the upper level. The access hatch must be locked and alarmed. Provide small openings in the hatch as required to allow the hatch to close around the ladder extension above the second floor.

3420.10.3 Physical Security (AW)

3420.10.3.1 Wall, Door, Window, Penetration and Roof Element Requirements. Modular Guard Tower System 2- Heavy (MGTS2-H) performance equivalency requires 60-MIN FE and AP BR protection for walls, doors, windows, penetrations, and roof elements.

3420.10.3.2 Blast Requirements. Modular Guard Tower System 2- Heavy (MGTS2-H) performance equivalency must be designed to meet blast requirements on a project specific basis and resistant to progressive collapse under blast loading. No spalling to the interior from fenestration or structural systems is permitted. Maximum infill pressure at gun port. Maximum permitted infill pressure at upper level of 2 psi assuming open gun port.

3420.10.3.3 Charge Weight Values. Reduce the required charge weight values as follows:

3420.10.3.3.1 0.5 times the NEC charge weight at 6.1 m (20 feet) [height of burst is 914 mm (36 inches)].

3420.10.3.3.2 0.025 times the NEC charge weight at 457 mm (18 inches) [height of burst is 152 mm (6 inches)].

3420.10.3.4 Climb-Resistance and Anti-Ram. Modular Guard Tower System 2- Heavy (MGTS2-H) performance equivalency must be designed to meet climb resistance and anti-ram protection.

END OF CHAPTER IBC-34

CHAPTER 35
REFERENCED STANDARDS

Add the following reference standard under ACI:

350-20	**Code Requirements for Environmental Engineering Concrete Structures**

END OF CHAPTER IBC-35 AMENDMENTS

APPENDIX H
SIGNS

SECTION H105
DESIGN AND CONSTRUCTION

Delete subsection H105.2 in its entirety and replace with the following:

H105.2 Permits, drawings and specifications. Refer to OBO-ICS IBC Chapter 1 for requirements.

Delete subsection H105.5 in its entirety and replace with the following:

H105.5 Working stresses. Not adopted.

SECTION H106
ELECTRICAL

Replace section H106.1 in its entirety with the following:

H106.1 Illumination. A sign must not be illuminated by other than electrical means, and electrical devices and wiring must be installed in accordance with the requirements of the OBO-ICS NEC. Any open spark or flame shall not be used for display purposes unless specifically approved.

SECTION H108
ANIMATED DEVICES

Delete Section H108 in its entirety and replace with the following:

H108.1 Animated devices. Animated devices are not permitted.

SECTION H110
ROOF SIGNS

Delete Section H110 in its entirety and replace with the following:

H110.1 Roof signs. Roof signs are not permitted.

SECTION H113
MARQUEE SIGNS

Delete Section H113 in its entirety and replace with the following:

H113.1 Marquee signs. Marquee signs are not permitted.

END OF APPENDIX H AMENDMENTS

APPENDIX J
GRADING

SECTION J106
EXCAVATIONS

Delete and replace section J106.1 with the following:

J106.1 Maximum compound site slope. The slope of cut surfaces must be no steeper than is safe for the intended use, and no steeper than identified below for the anticipated type of vegetation maintenance. Slope stabilization must be as required by the soil study or slope stabilization study. Refer to OBO-ICS IZC Section 811 for more detailed grading requirements.

J106.1.1 Low-Maintenance Areas. Vegetated areas that are not maintained with machines must have a maximum slope of 2 horizontal to 1 vertical (50 percent).

J106.1.2 Maintained Areas. Vegetated areas that are maintained with machines must have a maximum slope of 3 horizontal to 1 vertical (33 percent).

Exceptions.

1. A cut surface may be at a slope of 1.5 horizontal to 1 vertical (67 percent) provided that all the following are met:
   A. Unless a soil study or hydro-geologic conditions justify steeper slopes.
   B. It is not intended to support structures or surcharges.
   C. It is adequately protected against erosion.
   D. It is no more than 2438 mm (8 feet) in height.
   E. It is approved by OBO/PDCS/DE/CSE and the local building official.
2. A cut surface in bedrock is permitted to be at a slope of 1 horizontal to 1 vertical (100 percent).

SECTION J107
FILLS

Delete and replace section J107.4 with the following:

J107.4 Fill material. Fill material must not include organic, frozen or other deleterious materials. No rock or similar irreducible material greater than 100 mm (4 inches) in any dimension must be included in fills. Refer to project specifications for engineered fill requirements. Where conflicts occur between this section and project specifications, the project specifications shall govern.

Delete and replace section J107.6 with the following:

J107.6 Maximum slope. The slope of fill surfaces must be no steeper than is safe for the intended use, and consistent with the requirements for excavations above.

END OF APPENDIX IBC-J

APPENDIX W
CORROSION-RESISTANT CONSTRUCTION

SECTION W101
GENERAL

W101.1 Corrosion risks. Corrosion protection must respond to risk level and exposure:

W101.1.1 General corrosion risks. Provide appropriate corrosion-resistant protection for materials subject to the corrosion risks of each site.

W101.1.1.1 Minimum baseline atmospheric corrosivity level. The minimum baseline atmospheric corrosivity level (ACL) must not be less than identified in Table W101 - Atmospheric Corrosion Risk for the project site location or as otherwise identified on a site-specific basis by OBO. OBO categorizes this corrosivity in three levels: Low, Moderate, and Extreme. Each of these three levels correspond to the more severe limit of ISO 9223:2012 categories of corrosivity of atmosphere of C2, C3, and CX for Low, Moderate, and Extreme respectively.

W101.1.1.2 Risks due to other corrosion causes. Evaluate corrosion risks on a site-specific basis associated with other factors such as subsurface corrosive agents, contact with brackish water or seawater, contact with deicing salts, and fluidic corrosive agents within piping. The presence of subsurface corrosive agents shall be informed by a site-specific subsurface geotechnical investigation or environmental site assessment.

W101.1.2 Specific atmospheric corrosion risk for exposure type. Corrosion protection must also include the exposure risk types identified below for assemblies, equipment, and devices. Provide protection for exposed surfaces.

W101.1.2.1 Direct exterior exposure. Direct exterior exposure to corrosive environment requires protection of all items, with appropriate protection tied to the risk for the specific post location.

W101.1.2.2 Indirect exposure to exterior. Indirect or intermittent exterior exposure to corrosive atmosphere (i.e., spaces not protected by either a vestibule or an air curtain). Protection required in locations with Extreme or Moderate risk.

W101.1.2.3 Interior exposure only. Infrequent or limited exposure to corrosive atmosphere (i.e., protected by either a vestibule or an air curtain), and interior spaces protected by second tier or higher pressurization: (e.g., GWA, PCC, MSGR bedrooms). These spaces do not require corrosion protection for atmospheric corrosion unless included in site specific requirements.

SECTION W102
REFERENCED CORROSION-RESISTANT REQUIREMENTS

W102.1 Corrosion protection requirements contained elsewhere in OBO codes. Refer to additional corrosion-resistant requirements in the OBO codes identified below. In addition, corrosion protection provisions in OBO-adopted model codes also apply.

W102.1.1 OBO Building Code. Refer to Sections 1801, 1810, and 1904.

W102.1.2 OBO Electrical Code. Refer to Section 110.95.

W102.1.3 OBO Fire Code. Refer to Section 324.

W102.1.4 OBO Mechanical Code. Refer to Section 315

W102.1.5 OBO Plumbing Code. Refer to Section 317

W102.1.6 OBO Residential Code. Refer to Section R337.

W102.1.7 OBO Zoning Code. Refer to Section 818.

W102.1.8 OBO Telecommunications Code. Refer to Section 307.

SECTION W103
CORROSION MITIGATION

W103.1 Systems, assemblies, and equipment to receive enhanced corrosion-resistant protection. Where the site is identified as an OBO Atmospheric Corrosivity Level of Moderate or Extreme in Table W101 - Atmospheric Corrosion Risk, the systems, assemblies, equipment, and their interfaces identified below must be provided with site-specific enhanced corrosion prevention and control measures for all capital construction projects at the bridging documents for design-build projects and with the design development documents for design-bid-build projects. Systems, assemblies, equipment, and their interfaces to receive enhanced protection for general corrosion risks identified in W101.1.1 and specific atmospheric corrosion risk for exposure type identified in W101.1.2 shall include the following: Additional locations may be identified within the project specific requirements.

1. Architectural concrete elements
2. Exposed structural elements
3. Structural supports, fasteners, and anchors, including those associated with systems and assemblies
4. Railings, handrails, and guards
5. Miscellaneous metal fabrications, including those associated with physical and technical security assemblies
6. Exterior cladding
7. Metal roofing
8. Flashing
9. Roof accessories such as roof hatches
10. Joint protection
12. Louvers, vents, grilles, and screens
13. Exterior stucco
14. Exterior specialties such as pylon exterior signage and building-mounted signage
15. Exterior-located functional equipment and appliances such as loading dock equipment, parking control equipment, patio kitchen appliances, and window washing systems and anchors
16. Shop and vehicle maintenance equipment
17. Entrance floor grilles
18. Mail screening facilities
19. Fire protection, plumbing, and mechanical equipment and components; this includes equipment such as chillers and outside AHU units, as well as components such as piping
20. Electrical and telecommunications equipment; this includes equipment such as MV transformers and MV automatic voltage regulators, as well as components such as conduits
21. Technical security systems.
22. Exterior pedestrian and vehicular paving
23. Metal fencing

24. Passive and active vehicle barrier systems
25. Site furnishings
26. Compound utility equipment such as well equipment and wastewater treatment plants, along with associated components such as piping and conduit.

W103.2 Vestibules. Provide vestibules at the primary entrances of all office buildings and SDA entry lobbies for posts at all atmospheric corrosivity levels. Vestibules are prohibited at CACs, unless specifically approved by OBO/PDCS/DE.

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Abidjan	Cote d'Ivoire	C5			X
Abu Dhabi	United Arab Emirates	C3		X	
Abuja	Nigeria	C3		X	
Accra	Ghana	C4			X
Adana	Turkey	C3		X	
Addis Ababa	Ethiopia	C3		X	
Aleppo	Syria	C2	X		
Alexandria	Egypt	C4			X
Algiers	Algeria	C4			X
Almaty	Kazakhstan	C2	X		
Amman	Jordan	C2	X		
Ahmedabad	India	C3		X	
Amsterdam	Netherlands	C5			X
Ankara	Turkey	C2	X		
Antananarivo	Madagascar	C3		X	
Antwerp	Belgium	C3		X	
Apia	Western Samoa	C5			X
Ashgabat	Turkmenistan	C2	X		
Asmara	Eritrea	C3		X	
Astana	Kazakhstan	C2	X		
Asuncion	Paraguay	C3		X	
Athens	Greece	C3		X	
Auckland	New Zealand	C5			X
Baghdad	Iraq	C2	X		

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Baku	Azerbaijan	C4			X
Bamako	Mali	C3		X	
Bandar Seri Begawan	Brunei	C5			X
Bandung	Indonesia	C4			X
Bangkok	Thailand	C4			X
Bangui	Central African Republic	C3		X	
Banja Luka	Bosnia-Herzegovina	C3		X	
Banjul	The Gambia	C5			X
Barcelona	Spain	C4			X
Barranquilla	Colombia	C4			X
Basseterre	St. Kitts & Nevis	C5			X
Basrah	Iraq	C2	X		
Beijing	China	C2	X		
Beirut	Lebanon	C3		X	
Belem	Brazil	C4			X
Belfast	United Kingdom	C3		X	
Belgrade	Serbia	C2	X		
Belize City	Belize	C5			X
Belmopan	Belize	C4			X
Belo Horizonte	Brazil	C3		X	
Bengaluru	India	C3		X	
Berlin	Germany	C2	X		
Bern	Switzerland	C3		X	
Bilbao	Spain	C4			X
Bishkek	Kyrgyzstan	C2	X		
Bissau	Guinea-Bissau	C5			X
Bogota	Colombia	C3		X	

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Bonn	Germany	C3		X	
Bordeaux	France	C3		X	
Brasilia	Brazil	C3		X	
Bratislava	Slovakia	C3		X	
Brazzaville	Republic of Congo	C4			X
Bridgetown	Barbados	C4			X
Brisbane	Australia	C5			X
Brussels	Belgium	C3		X	
Bucharest	Romania	C2	X		
Budapest	Hungary	C2	X		
Buenos Aires	Argentina	C4			X
Bujumbura	Burundi	C2	X		
Busan	South Korea	C3		X	
Cabinda	Angola	C5			X
Cairo	Egypt	C3		X	
Calgary	Canada	C2	X		
Canberra	Canberra	C3		X	
Cape Town	South Africa	C4			X
Caracas	Venezuela	C3		X	
Casablanca	Morocco	C4			X
Castries	St. Lucia	C5			X
Cebu	Philippines	C5			X
Chandigarh	India	C3		X	
Chengdu	China	C3		X	
Chennai	India	C4			X
Chiang Mai	Thailand	C2	X		
Chisinau	Moldova	C2	X		
Christchurch	New Zealand	C5			X
Ciudad Juarez	Mexico	C2	X		
Cluj	Romania	C3		X	
Colombo	Sri Lanka	C5			X
Conakry	Guinea	C4			X

TABLE W101 ATMOSPHERIC CORROSION RISK					
POST	**COUNTRY**	**ISO 9223 CATEGORY**	**OBO ATMOSPHERIC CORROSIVITY LEVEL**		
			LOW	**MODERATE**	**EXTREME**
Copenhagen	Denmark	C4			X
Cotonou	Benin	C5			X
Curacao	Netherlands Antilles	C5			X
Dakar	Senegal	C5			X
Damascus	Syria	C2	X		
Danang	Viet Nam	C4			X
Dar-Es-Salaam	Tanzania	C4			X
Dhahran	Saudi Arabia	C3		X	
Dhaka	Bangladesh	C4			X
Dhakla	Morocco	C4			X
Dili	Timor-Leste	C5			X
Djibouti	Djibouti	C4			X
Dodoma	Tanzania	C3		X	
Doha	Qatar	C3		X	
Douala	Cameroon	C4			X
Dubai	United Arab Emirates	C3		X	
Dublin	Ireland	C3		X	
Durban	South Africa	C5			X
Dushanbe	Tajikistan	C2	X		
Dusseldorf	Germany	C3		X	
Edinburgh	United Kingdom	C3		X	
El Fashir	Sudan	C3		X	
Erbil	Iraq	C2	X		
Florence	Italy	C3		X	
Fort de France	Martinique	C5			X
Frankfurt	Germany	C3		X	
Freetown	Sierra Leone	C4			X
Fukuoka	Japan	C3		X	
Gaborone	Botswana	C2	X		
Gaziantep	Turkey	C3		X	

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Geneva	Switzerland	C3		X	
Genoa	Italy	C4			X
Georgetown	Guyana	C5			X
Goma	Democratic Republic of Congo	C3		X	
Goteburg	Sweden	C3		X	
Guadalajara	Mexico	C2	X		
Guangzhou	China	C3		X	
Guatemala City	Guatemala	C3		X	
Guayaquil	Ecuador	C4			X
Halifax	Canada	C3		X	
Hamburg	Germany	C3		X	
Hamilton	Bermuda	C5			X
Hanoi	Vietnam	C3		X	
Harare	Zimbabwe	C2	X		
Havana	Cuba	C5			X
Helsinki	Finland	C3		X	
Herat	Afghanistan	C2	X		
Hermosillo	Mexico	C3		X	
Ho Chi Minh City	Vietnam	C5			X
Hong Kong	Hong Kong	C5			X
Honiara	Solomon Islands	C5			X
Hyderabad	India	C3		X	
Islamabad	Pakistan	C3		X	
Istanbul	Turkey	C3		X	
Izmir	Turkey	C3		X	
Jakarta	Indonesia	C4			X
Jalalabad	Afghanistan	C3		X	
Jeddah	Saudi Arabia	C3		X	
Jerusalem	Israel	C3		X	
Johannesburg	South Africa	C2	X		

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Juba	South Sudan	C2	X		
Kabul	Afghanistan	C2	X		
Kaduna	Nigeria	C2	X		
Kampala	Uganda	C2	X		
Kandahar	Afghanistan	C2	X		
Kano	Nigeria	C2	X		
Kaohsiung	Taiwan	C5			X
Karachi	Pakistan	C4			X
Kathmandu	Nepal	C3		X	
Khartoum	Sudan	C2	X		
Kigali	Rwanda	C3		X	
Kingston	Jamaica	C5			X
Kingstown	St. Vincent & The Grenadines	C5			X
Kinshasa	Democratic Republic of Congo	C3		X	
Kirkuk	Iraq	C2	X		
Kolkata	India	C4			X
Kolonia	Micronesia	C5			X
Koror	Palau	C5			X
Kota Kinabalu	Malaysia	C5			X
Krakow	Poland	C3		X	
Kramatorsk	Ukraine	C2	X		
Kuala Lumpur	Malaysia	C4			X
Kuwait	Kuwait	C2	X		
Kyiv	Ukraine	C2	X		
La Paz	Bolivia	C2	X		
Lagos	Nigeria	C5			X
Lahore	Pakistan	C3		X	
Leipzig	Germany	C3		X	
Libreville	Gabon	C5			X
Lilongwe	Malawi	C2	X		

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Lima	Peru	C4			X
Lisbon	Portugal	C4			X
Ljubljana	Slovenia	C3		X	
Lomé	Togo	C4			X
London	United Kingdom	C3		X	
Luanda	Angola	C5			X
Lubumbashi	Democratic Republic of Congo	C2	X		
Lucknow	India	C3		X	
Lusaka	Zambia	C2	X		
Luxembourg	Luxembourg	C3		X	
Lyon	France	C3		X	
Madrid	Spain	C2	X		
Majuro	Marshall Islands	C5			X
Malabo	Equatorial Guinea	C5			X
Malé	Maldives	C5			X
Managua	Nicaragua	C4			X
Manama	Bahrain	C3		X	
Manila	Philippines	C5			X
Maputo	Mozambique	C5			X
Maracaibo	Venezuela	C5			X
Marrakech	Morocco	C3		X	
Marseille	France	C3		X	
Maseru	Lesotho	C3		X	
Matamoros	Mexico	C4			X
Mazar-e-Sharif	Afghanistan	C2	X		
Mazatlán	Mexico	C4			X
Mbabane	Swaziland	C4			X
Medan	Indonesia	C4			X
Melbourne	Australia	C5			X

TABLE W101 ATMOSPHERIC CORROSION RISK					
POST	**COUNTRY**	**ISO 9223 CATEGORY**	**OBO ATMOSPHERIC CORROSIVITY LEVEL**		
			LOW	**MODERATE**	**EXTREME**
Merida	Mexico	C5			X
Mexico City	Mexico	C3		X	
Milan	Italy	C3		X	
Minsk	Belarus	C2	X		
Mogadishu	Somalia	C5			X
Mombasa	Kenya	C5			X
Monrovia	Liberia	C5			X
Monterrey	Mexico	C2	X		
Montevideo	Uruguay	C5			X
Mont Ferrier	France	C3		X	
Montreal	Canada	C3		X	
Moroni	Comoros	C5			X
Moscow	Russia	C2	X		
Mostar	Bosnia-Herzegovina	C3		X	
Mosul	Iraq	C2	X		
Mumbai	India	C5			X
Munich	Germany	C3		X	
Muscat	Oman	C4			X
Nagoya	Japan	C3		X	
Naha	Japan	C4			X
Nairobi	Kenya	C3		X	
Nanjing	China	C3		X	
Naples	Italy	C4			X
Nassau	Bahamas	C5			X
Naypyidaw	Burma	C3		X	
N'Djamena	Chad	C3		X	
New Delhi	India	C3		X	
Niamey	Niger	C2	X		
Nicosia	Cyprus	C3		X	
Nogales	Mexico	C2	X		
Nouakchott	Mauritania	C3		X	
Nuevo Laredo	Mexico	C3		X	

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Nuku'alofa	Tonga	C5			X
Nur-Sultan	Kazakhstan	C2	X		
Nuuk	Greenland	C2	X		
Oporto	Portugal	C4			X
Oran	Algeria	C4			X
Osaka	Japan	C3		X	
Oslo	Norway	C3		X	
Ottawa	Canada	C2	X		
Ouagadougou	Burkina Faso	C2	X		
Palermo	Italy	C5			X
Panama City	Panama	C5			X
Papeete	French Polynesia	C5			X
Paramaribo	Suriname	C5			X
Paris	France	C3		X	
Perth	Australia	C3		X	
Peshawar	Pakistan	C3		X	
Phnom Penh	Cambodia	C4			X
Playa Del Carmen	Mexico	C5			X
Podgorica	Montenegro	C3		X	
Ponta Delgada, Açores	Portugal	C5			X
Port Louis	Mauritius	C5			X
Port Moresby	Papua New Guinea	C5			X
Port of Spain	Trinidad & Tobago	C5			X
Port Vila	République de Vanuatu	C5			X
Port-au-Prince	Haiti	C4			X
Porto Alegre	Brazil	C4			X
Poznan	Poland	C2	X		
Prague	Czech Republic	C3		X	

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Praia	Cape Verde	C5			X
Pretoria	South Africa	C2	X		
Pristina	Kosovo	C2	X		
Pyongyang	North Korea	C4			X
Quebec	Canada	C2	X		
Quito	Ecuador	C3		X	
Rabat	Morocco	C4			X
Rangoon	Burma	C4			X
Recife	Brazil	C4			X
Reykjavik	Iceland	C2	X		
Riga	Latvia	C2	X		
Rio de Janeiro	Brazil	C4			X
Riyadh	Saudi Arabia	C2		X	
Rome	Italy	C3		X	
Roseau	Dominica	C5			X
Saipan	Saipan	C4			X
Salzburg	Austria	C2	X		
San Jose	Costa Rica	C3		X	
San Salvador	El Salvador	C4			X
Sana'a	Yemen Arab Republic	C2	X		
Santa Cruz	Bolivia	C4			X
Santiago	Chile	C2	X		
Santo Domingo	Dominican Republic	C4			X
Sao Paulo	Brazil	C3		X	
Sapporo	Japan	C3		X	
Sarajevo	Bosnia-Herzegovina	C2	X		
Seoul	South Korea	C3		X	
Seville	Spain	C3		X	
Shanghai	China	C3		X	
Shenyang	China	C2	X		
Singapore	Singapore	C5			X

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Skopje	North Macedonia	C2	X		
Sofia	Bulgaria	C2	X		
Songkhla	Thailand	C5			X
St George's	Grenada	C4			X
St John's	Antigua & Barbuda	C5			X
St Petersburg	Russia	C2	X		
Stockholm	Sweden	C2	X		
Strasbourg	France	C3		X	
Stuttgart	Germany	C2	X		
Surabaya	Indonesia	C5			X
Suva	Fiji	C5			X
Sydney	Australia	C3		X	
Taipei	Taiwan	C4			X
Tallinn	Estonia	C2	X		
Tangier	Morocco	C4			X
Tarawa	Kiribati	C5			X
Tashkent	Uzbekistan	C2	X		
Tbilisi	Georgia	C2	X		
Tegucigalpa	Honduras	C3		X	
Tehran	Iran	C2	X		
Tel Aviv	Israel	C3		X	
The Hague	Netherlands	C3		X	
Thessaloniki	Greece	C3		X	
Tijuana	Mexico	C3		X	
Tirana	Albania	C3		X	
Tokyo	Japan	C3		X	
Toronto	Canada	C3		X	
Toulouse	France	C3		X	
Tripoli	Libya	C4			X
Tromso	Norway	C2	X		
Tunis	Tunisia	C3		X	

TABLE W101
ATMOSPHERIC CORROSION RISK

POST	COUNTRY	ISO 9223 CATEGORY	OBO ATMOSPHERIC CORROSIVITY LEVEL		
			LOW	MODERATE	EXTREME
Turin	Italy	C3		X	
Udon	Thailand	C4			X
Ulaanbaatar	Mongolia	C3		X	
Valletta	Malta	C4			X
Vancouver	Canada	C3		X	
Varna	Bulgaria	C4			X
Vatican City	Holy See	C3		X	
Venice	Italy	C3		X	
Victoria	Seychelles	C5			X
Vienna	Austria	C3		X	
Vientiane	Laos	C4			X
Vilnius	Lithuania	C2	X		
Vladivostok	Russia	C4			X
Warsaw	Poland	C2	X		
Wellington	New Zealand	C3		X	
Windhoek	Namibia	C2	X		
Winnipeg	Canada	C2	X		
Wuhan	China	C3		X	
Xiamen	China	C4			X
Yaoundé	Cameroon	C3		X	
Yekaterinburg	Russia	C2	X		
Yerevan	Armenia	C2	X		
Yokohama	Japan	C3		X	
Zagreb	Croatia	C3		X	
Zanzibar	Tanzania	C5			X
Zhengzhou	China	C3		X	
Ziguinchor	Senegal	C4			X
Zurich	Switzerland	C3		X	

END OF APPENDIX IBC-W

APPENDIX X
PHYSICAL SECURITY REFERENCE MATERIAL

X101.1 Scope. The following attachments to this appendix must apply to the construction of building physical security features for U.S. Diplomatic Mission compounds.

Attachment X1 Climb-Resistance Diagrams and Criteria are hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement of climb resistance elements.

Attachment X2 Building Separation Diagrams are hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement of security elements.

Attachment X3 Forced-Entry Decorative Grille Criteria is hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement of security elements.

Attachment X4 Permitted Locations for Office Compound Underground Parking are hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement of underground parking.

END OF APPENDIX IBC - X

ATTACHMENT X1
CLIMB-RESISTANCE DIAGRAMS AND CRITERIA

X1.1 Scope. The provisions of this appendix must apply to the design of climb resistance of site barriers, perimeter walls and fences, and exterior building surfaces where required by this code.

X1.2 Climb-resistant surfaces. Surfaces required to be climb-resistant must conform to the requirements of vertical reach and horizontal reach as defined herein to prevent creation of a climbable route.

Figure X1.1 Hold Type and Exterior Applications Matrix

Figure X1.2 Climbable Element: Sloper and Edge Diagrams

Figure X1.3 Climbable Elements: Pocket and Pinch Diagrams

Figure X1.4 Climbable Elements: Crimper and Jug Diagrams

Figure X1.5 Climbable Route Diagrams

X1.3 Structures required to be climb-resistant. Refer to OBO-ICS IBC Chapter 34 for structures required to be climb-resistant. Refer to OBO-ICS IZC Chapter 6 for site elements required to be climb-resistant.

X1.3 Requirements for FE/BR protection. Refer to OBO-ICS IBC Chapter 34 for requirements for 15-minute FE/BR protection.

X1.4 Surfaces required to be climb-resistant. Surfaces required to be climb-resistant must conform to the requirements of vertical reach and horizontal reach to prevent creation of a climbable route. If denial of a climbable route is not achievable, provide 15-minute FE/BR protection for all portions of the building envelope that are climbable, accessible via a climbable route, or within vertical or horizontal reach of a climbable route. Facilities with climbable routes in the vicinity of internal areas that require a security separation are subject to additional requirements.

X1.5 Climb-resistant fences. Fences must be completely free of Slopers, Jugs, Pockets and Crimpers to prevent creation of a climbable route. Pinches and Edges are inherent in fence design and construction and are unavoidable. Refer to the OBO Physical Security Detail Handbook (Attachment A to OBO Project Requirements (OPR) Physical Security) for approved security details and additional guidance on fence design.

X1.6 Climb-resistant walls. Walls required to be climb resistant must be completely free of all hand and foot holds. Slopers, edges, pockets, pinches, crimpers, and jugs as defined herein are not permitted at any wall required to be climb-resistant. Refer to the OBO Physical Security Detail Handbook (Attachment A to OBO Project Requirements (OPR) Physical Security) for approved security details and additional guidance on perimeter wall designs.

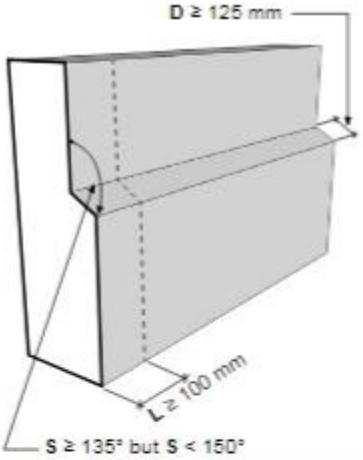
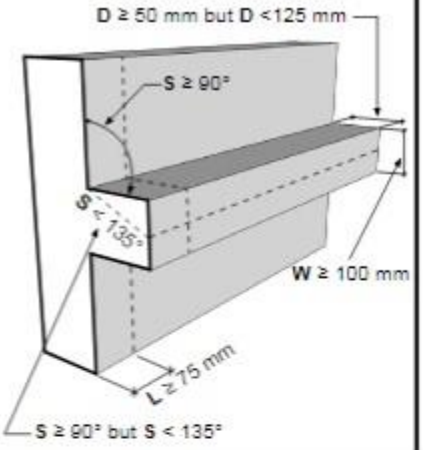
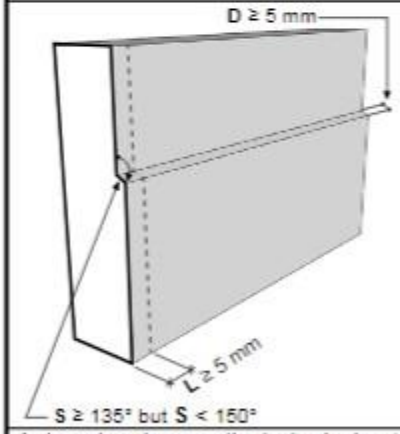
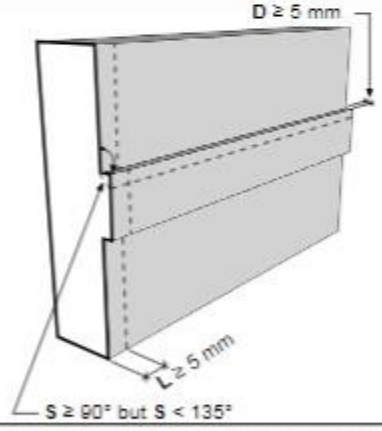
X1.7 Climb-resistance required for attack side of CACS: CAC surface(s) on the attack side must be climb- resistant and conform to the requirements of vertical reach and horizontal reach to prevent creation of a climbable route.

FIGURE X1.1 HOLD TYPE AND EXTERIOR APPLICATIONS MATRIX

Hold Types at Exterior Applications				
Hold Type	Perimeter Wall	Perimeter Fence	CAC	NOB / NAB / NOX/ MSGQ And On-Compound Staff Housing
Crimpers	X	X	X	X
Jugs	X	X	X	X
Pockets	X	X	P	P
Slopers	X	X	P	P
Pinches	X	Inherent in fence design but should be minimized. See OBO Physical Security Detail Handbook for guidance on fence design.	P	P
Edges	X	Inherent in fence design but should be minimized. See OBO Physical Security Detail Handbook for guidance on fence design.	P	P

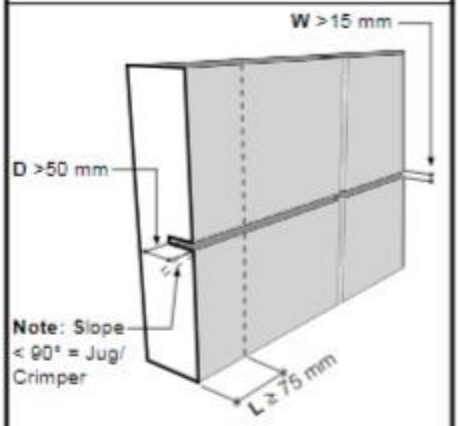
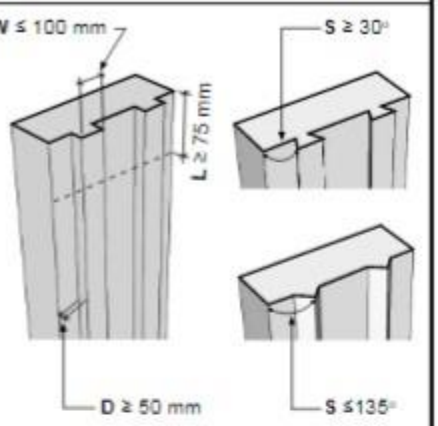
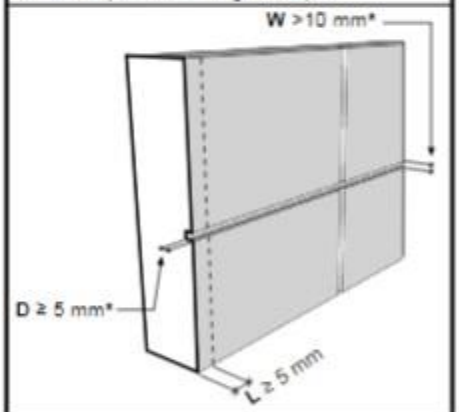
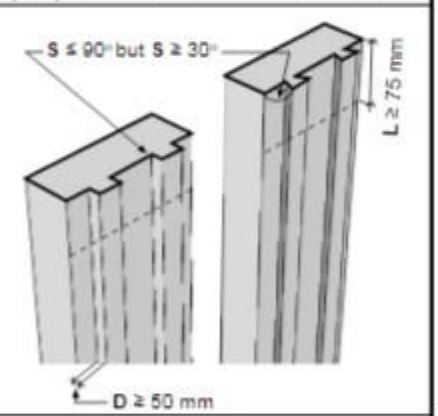
X = Not permitted at exterior application
P = Permitted if not creating climbable route

FIGURE X1.2 CLIMBABLE ELEMENT: SLOPER AND EDGE DIAGRAMS

Element	SLOPER	EDGE
		
Hand Hold	A <u>sloper</u> is a downwardly sloping horizontal surface that is a hand hold **IF ALL** of the following criteria are met: 1) **D**epth ≥ 125mm 2) **L**ength ≥ 100mm 3) **S**lope ≥ 135°, but < 150° (measured from the vertical surface)	An <u>edge</u> is a horizontal surface that is a hand hold **IF ALL** of the following criteria are met: 1) **D**epth ≥ 50mm, but < 125mm 2) **L**ength ≥ 75mm 3) **W**idth ≥ 100mm 4) **S**lope ≥ 90°, but < 135° (measured from the vertical surface) **NOTE**: If S < 90°, then = jug/crimper
		
Foot Hold	A <u>sloper</u> is a downwardly sloping horizontal surface that is a foot hold **IF ALL** of the following criteria are met: 1) **D**epth ≥ 5mm 2) **L**ength ≥ 5mm 3) **S**lope ≥ 135°, but < 150° (measured from the vertical surface)	An <u>edge</u> is a horizontal surface that is a foot hold **IF ALL** of the following criteria are met: 1) **D**epth ≥ 5mm 2) **L**ength ≥ 5mm 3) **S**lope ≥ 90°, but < 135° (measured from the vertical surface)

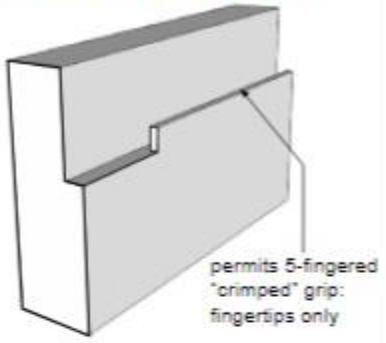
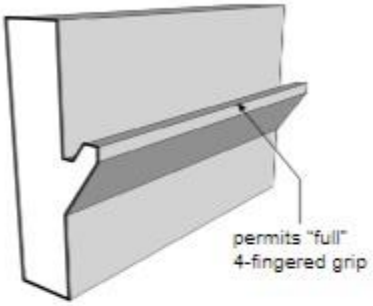
SYMBOL KEY:
(≤) Less than or equal to (≥) Greater than or equal to (<) Less than (>) Greater than (°) Degrees (mm) Millimeters
(**D**) Depth (**L**) Length (**W**) Width (**S**) Slope

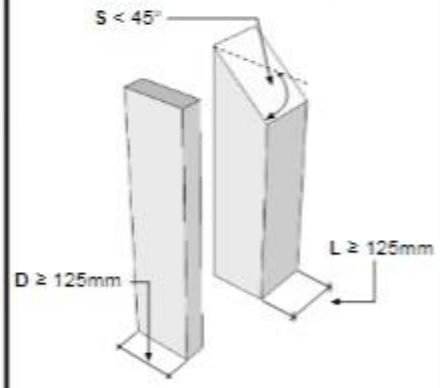
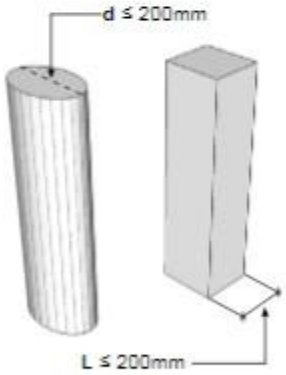
FIGURE X1.3 CLIMBABLE ELEMENTS: POCKET AND PINCH DIAGRAMS

Element	POCKET	PINCH**
		
Hand Hold	A pocket is a horizontal or vertical gap that is a hand hold **IF ALL** of the following criteria are met: 1) **D**epth > 50mm 2) **W**idth > 15mm 3) **L**ength ≥ 75mm **Note**: Slope < 90° = Jug / Crimper	A pinch is a hand hold **IF ALL** of the following criteria are met: 1) Allows a 5-finger grip 2) **D**epth ≥ 50mm 3) **W**idth ≤ 100mm 4) **L**ength ≥ 75mm 5) **S**lope of vertical surface ≥ 30°, but ≤ 135°
		
Foot Hold	A pocket is a horizontal or vertical gap that is a foot hold **IF ALL*** of the following criteria are met: 1) **D**epth ≥ 5mm* 2) **W**idth > 10mm* 3) **L**ength ≥ 5mm * At perimeter wall, the threshold for meeting the definition of a foothold is lower. Meeting either dimension constitutes a pocket foot hold and is not permitted.	A pinch is a foot hold **IF ALL** of the following criteria are met: 1) **D**epth ≥ 50mm 2) **L**ength ≥ 75mm 3) **S**lope of vertical surface ≥ 30°, but ≤ 90° **Vertical pinches within horizontal reach of each other are considered footholds since they provide a means to "shimmy" upward.

SYMBOL KEY:
(≤) Less than or equal to (≥) Greater than or equal to (<) Less than (>) Greater than (°) Degrees (mm) Millimeters
(**D**) Depth (**L**) Length (**W**) Width (**S**) Slope

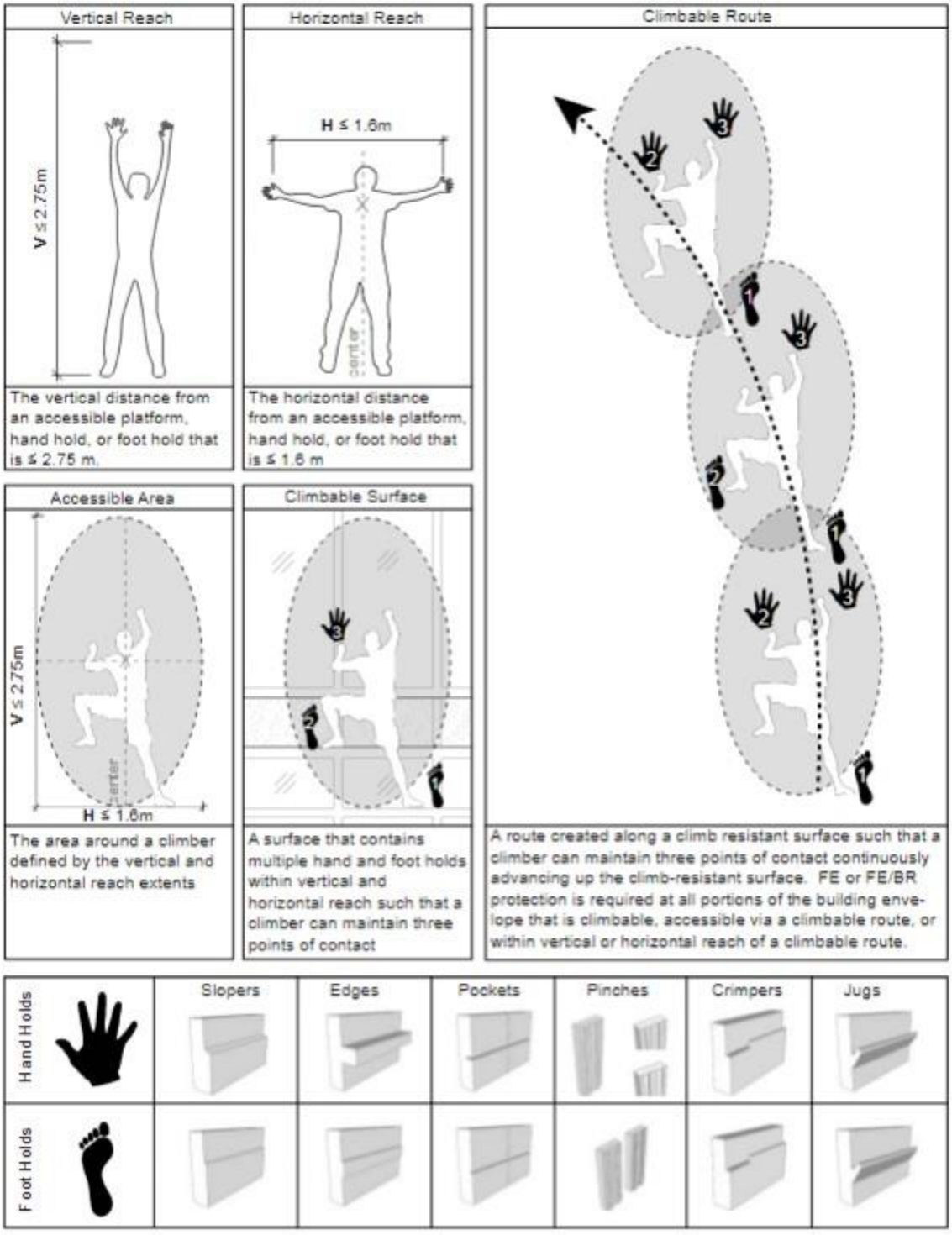
FIGURE X1.4 CLIMBABLE ELEMENTS: CRIMPER AND JUG DIAGRAMS

Element	CRIMPER	JUG
	NOT PERMITTED ON CLIMB RESISTANT SURFACES 	**NOT PERMITTED ON CLIMB RESISTANT SURFACES** 
Hand and Foot Hold	A crimper is a vertical edge that is just deep enough to fit the tips of fingers into and permits a 5-fingered grip in the crimped position	A jug is an element that permits a 4-fingered handle-like grip. These elements are typically large enough for both hands to fit on the hold and are considered hand and foot holds

Element	ACCESSIBLE PLATFORM	COLUMNS AND POLES
		
Hand and Foot Hold	An accessible platform is any platform, common roof, wall, tree, ledge, climbable object, or any other mostly horizontal surface **IF ALL** of the following criteria are met: 1) Depth ≥ 125mm *OR* Length ≥ 125mm 2) Slope < 45°	A column or pole is considered climbable **IF**: 1) diameter or any single dimension of the element ≤ 200 mm

SYMBOL KEY:
(≤) Less than or equal to (≥) Greater than or equal to (<) Less than (>) Greater than (°) Degrees (mm) Millimeters
(**D**) Depth (**L**) Length (**W**) Width (**S**) Slope (**d**) Diameter

FIGURE X1.5 CLIMBABLE ROUTE DIAGRAMS



END OF ATTACHMENT X1

ATTACHMENT X2
BUILDING SEPARATION DIAGRAMS

FIGURE X2.1 BUILDING SEPARATION DIAGRAMS – SECTION 1

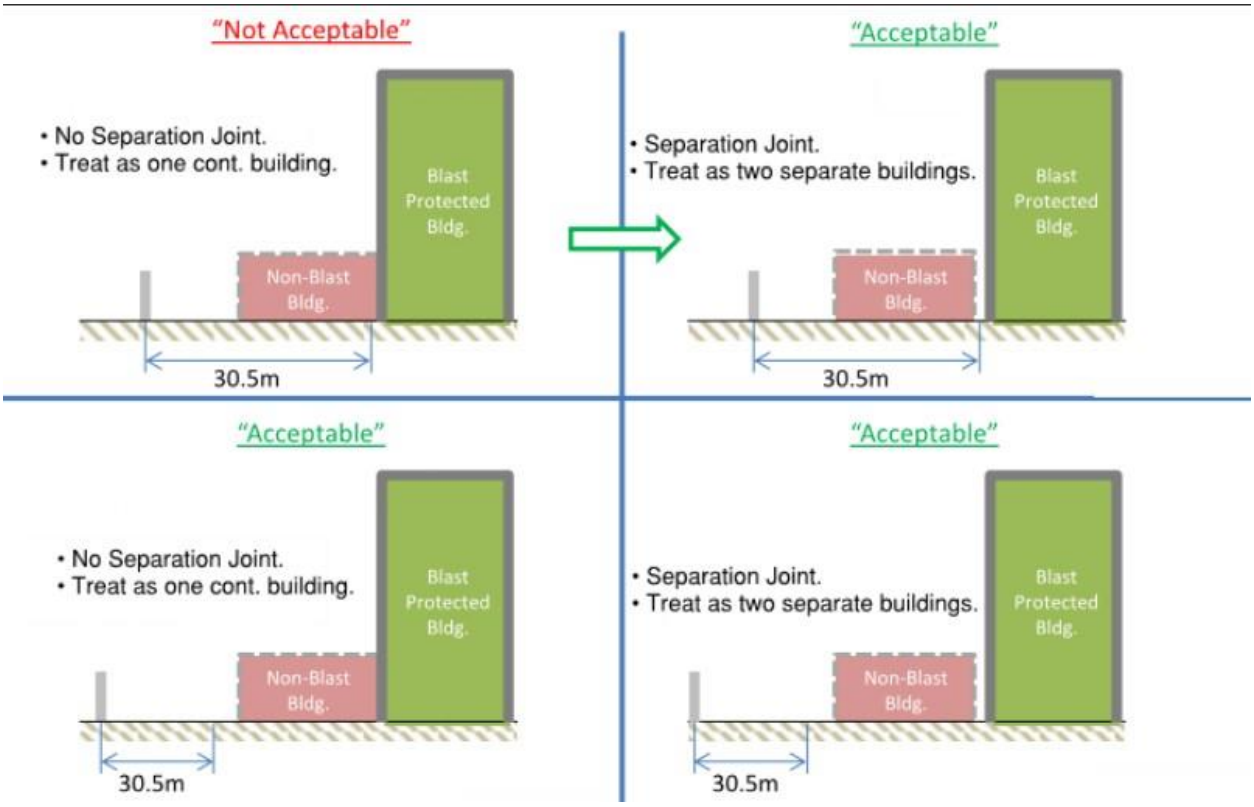
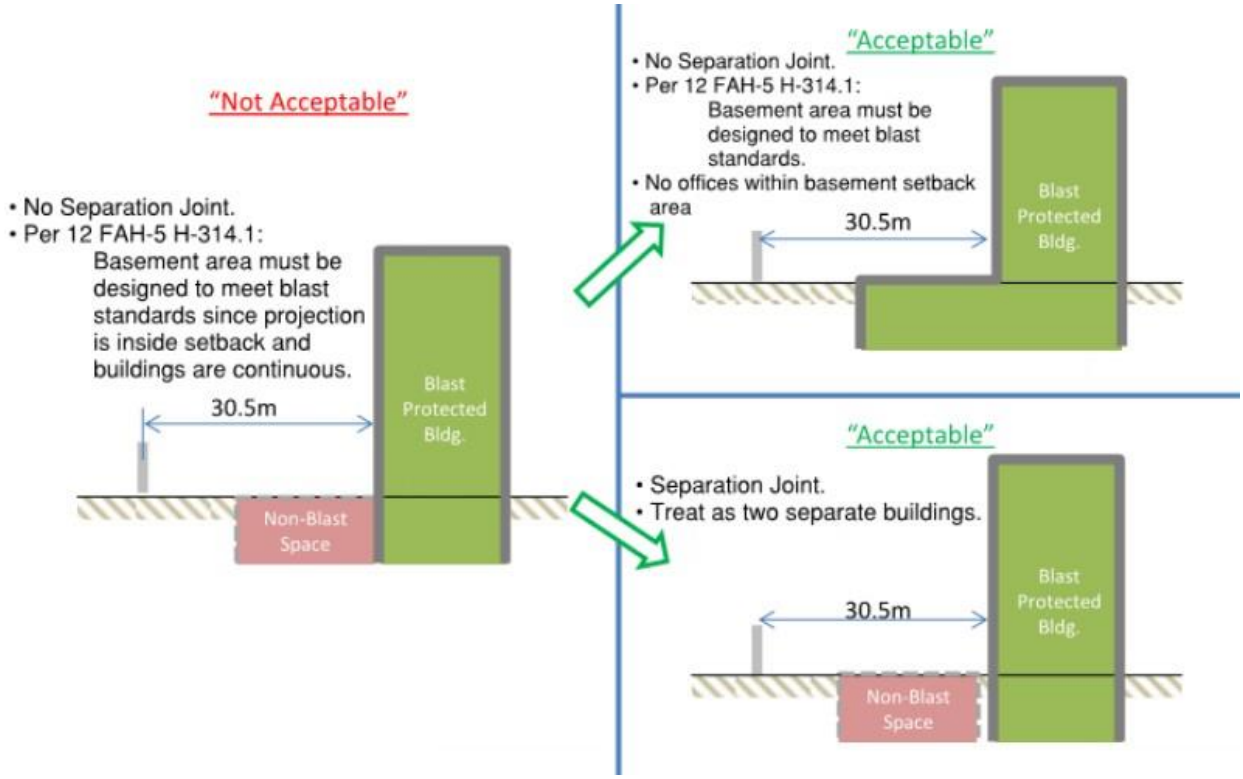


FIGURE X2.2 BUILDING SEPARATION DIAGRAMS – SECTION 2



END OF ATTACHMENT X2

ATTACHMENT X3
FORCED ENTRY DECORATIVE GRILL CRITERIA

See below and Figure X3.1 for requirements.

X3.1 Minimum 10-mm (3/8-inch) thick, A36 steel plate for grille area

X3.2 All framing members must be comprised of steel components with a wall thickness of 6 mm (1.25 inches) or greater

X3.3 Maximum panel size must not exceed 3 m (10 feet) in any direction

X3.4 No single opening must exceed 400 mm^2 (16 sq. inches)

X3.5 All openings must have a minimum separation of 50 mm (2 inches)

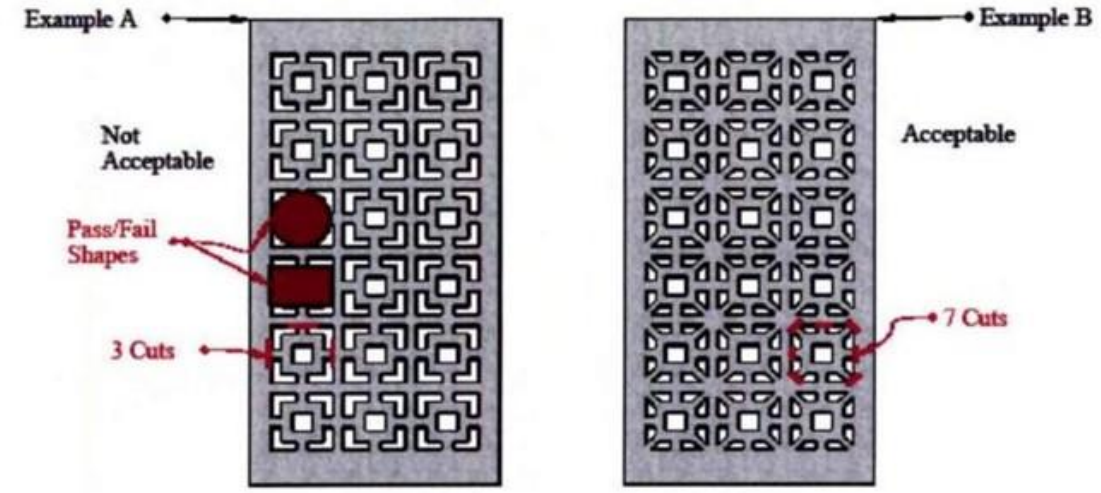
X3.6 A total minimum cross-sectional area of 115 mm^2 (4.5 sq. inches) must be required where "cut(s)" could occur that would create an Opening sufficient to cause failure.

X3.7 Minimum system anchors must be 10 mm x 90 mm (3/8 inches x 4 inches) Hilti HY 20 or equivalent. Anchors spacing must not exceed 200 mm (8 inches) OC and must not exceed 225 mm (9 inches) at the comers (Reference GGL-15N-DOS-02)

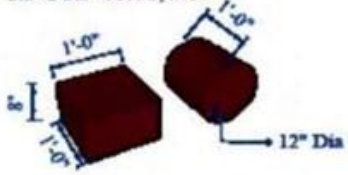
X3.8 Minimum grille connections must be 10 mm (3/8 inches), Grade 8, hex head cap screw or equivalent. Grille connection spacing must not exceed 200 mm (8 inches) OC (Reference GGL-15N-DOS-02)

X3.9 All exposed hardware on "attack side" of system must be tack welded, protected, or tamper resistant as to prevent disassembly of the system from the attack side

Figure X3.1 Forced Entry Decorative Grill Diagram

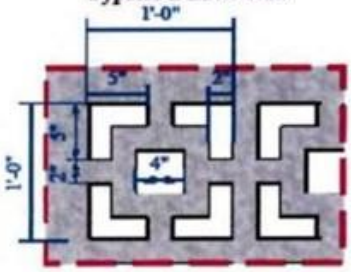


Pass/Fail Shapes per SD-STD-01.01, Rev G

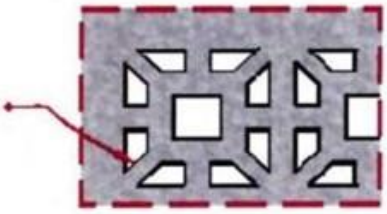


-Both made from 3/8" A36 steel
-Both A and B meet dimensional requirements for clear openings, other criteria
- Example A is not acceptable because only three cuts would be required before an opening could be created to create failure.
  - 2"x0.375"=0.75sq"
  - 0.75sq"x3(cuts)= 2.25sq"
  - 2.25sq" cut area is less than the required 4.5sq"
- Example B would be acceptable because you would need to cut 7 sections before an opening could be created to create failure.
  -2"x0.375"=0.75sq"
  -0.75sq"x 3(cuts)= 2.25sq" (same as above)
  -Addition of (4)1.5" corners, 4x1.5"x0.375"= 2.25sq"
  -2.25sq"+2.25sq"= 4.5sq", Meets Criteria

Typical Dimensions



Note: all openings 16sq" maximum and all openings are separated by 2"



END OF ATTACHMENT X3

ATTACHMENT X4
PERMITTED LOCATIONS FOR OFFICE COMPOUND UNDERGROUND PARKING

Figure X4.1 Site Plan

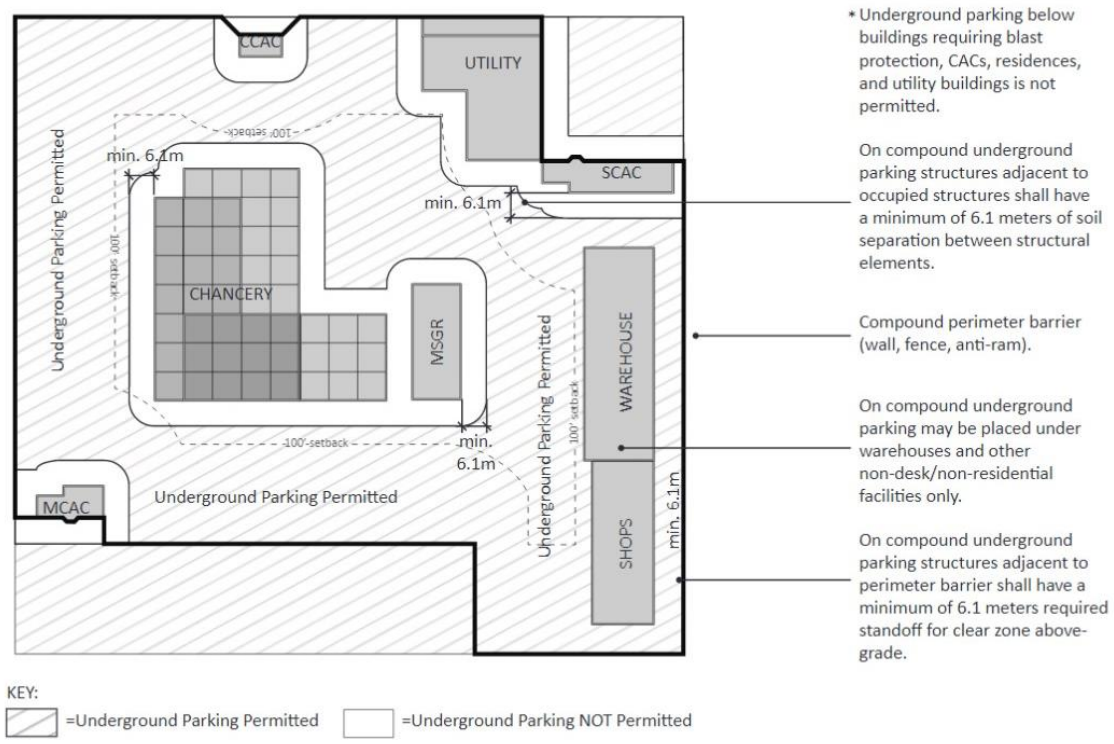
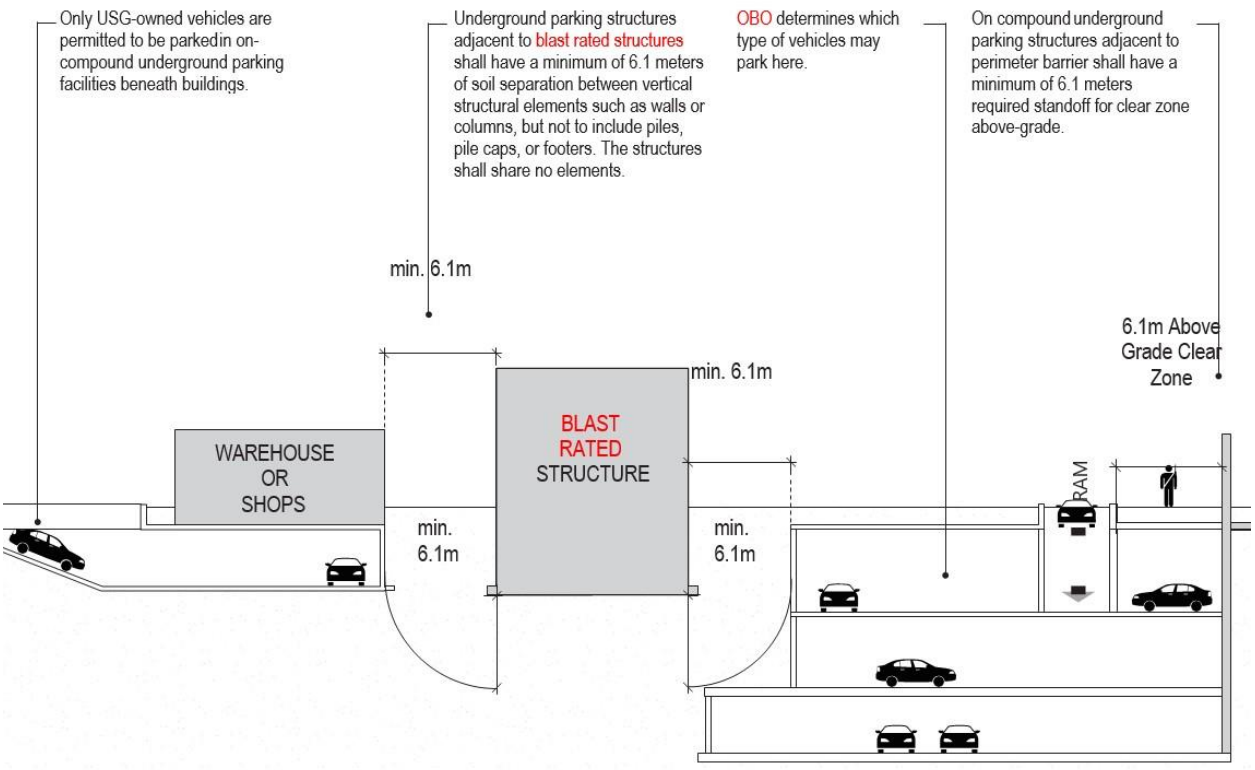


Figure X4.2 Site Section



END OF ATTACHMENT X4

APPENDIX Y

SECURITY DETAILS FOR BUILDING CONSTRUCTION

SECTION Y101
GENERAL

Y101.1 Scope. The provisions of this appendix must apply to the construction of building physical security walls and penetrations for U.S. Diplomatic Mission compounds.

Y101.2 - ***2021 Physical Security Detail Handbook (Red Book)*** is hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement of security elements. See Attachment A to OBO Project Requirements (OPR) Physical Security.

Y101.3 - ***2012 Diplomatic Security Perimeter Barriers Calculation Guide*** is hereby incorporate by reference and must apply to the design, installation, alteration, repair and replacement of site physical security site barriers, site perimeter walls and fences both passive and active. See Attachment C to OBO Project Requirements (OPR) Landscape..

END OF APPENDIX IBC-Y

APPENDIX Z
DESIGN CRITERIA FOR SECURITY LIGHTING

SECTION Z101
GENERAL

Z101.1 Site Lighting.2013 OBO Site Lighting Guidelines and Criteria is hereby incorporated by reference and must apply to the design, installation, alteration, repair, and replacement lighting elements. See Attachment D to OBO Project Requirements (OPR) Landscape

Z101.2 Lighting Guidelines. 2005 OBO Site Lighting Guidelines and Criteria is hereby incorporated by reference and is available by request for projects originally designed using this Guideline

END OF IBC- APPENDIX Z

J.2.1

OBO International Existing Building Code

OBO-ICS IEBC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL EXISTING BUILDING CODE (IEBC)

The *OBO International Existing Building Code Supplement* (OBO-ICS IEBC) adopts the *2024 International Existing Building Code (IEBC)* and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted, as described. Sections named in the chapters below are amended or added by this supplement. Remaining (unnamed) sections are adopted with no amendments, or not adopted, as described. Named appendices are adopted, amended or added as indicated. Unnamed appendices are not adopted.

CHAPTER 1 SCOPE AND ADMINISTRATION
101 General
102 Applicability
103 Authority Having Jurisdiction
104 Not adopted
105 Permits
106-117 Not adopted

CHAPTER 2 DEFINITIONS
201 General
202 General Definitions

CHAPTER 3 PROVISIONS FOR ALL COMPLIANCE METHODS
301 Administration
302 General Provisions
303 No amendments
304 Structural Design Loads and Evaluation and Design Procedures
305 No amendments
306 Accessibility for Existing Buildings
307 – 309 No amendments
310 Electrical
311 Physical Security for Existing Buildings
312 Plumbing

CHAPTER 4 REPAIRS
401 General
402 – 405 No amendments
406 Electrical
407 No amendments
408 No amendments

CHAPTER 5 PRESCRIPTIVE COMPLIANCE METHOD
501 No amendments
502 Additions
503 Alterations
504 Fire Escapes
505 Windows & Emergency Escape Openings

506 No amendments
507 Historic and Culturally Significant Buildings

CHAPTER 6 CLASSIFICATION OF WORK
601 – 603 No Amendments
604 Alterations-Level 3
605 No Amendments
606 No Amendments
607 Historic and Culturally Significant Buildings

CHAPTER 7 ALTERATIONS-LEVEL 1
701 No Amendments
702 Building Elements and Materials
703 Fire Protection
704 – 707 No Amendments
708 Energy Conservation

CHAPTER 8 ALTERATIONS-LEVEL 2
801 General
802 Building Elements and Materials
803 Fire Protection
804 Means of Egress
805 No amendments
806 Electrical
807 No amendments
808 No amendments
809 Energy Conservation
810 Accessibility

CHAPTER 9 ALTERATIONS-LEVEL 3
901 No amendments
902 Special Use and Occupancy
903 – 906 No amendments
907 Energy Conservation
908 No amendments

CHAPTER 10 CHANGE OF OCCUPANCY
1001 General
1002– 1005 No amendments
1006 Structural
1007 Electrical
1008 –1010 No amendments
1011 Change of Occupancy Classification

CHAPTER 11 ADDITIONS
1101 –1103 No amendments
1104 Energy Conservation

CHAPTER 12 HISTORIC OR CULTURALLY SIGNIFICANT BUILDINGS
1201 General
1202 –1206 No amendments

CHAPTER 13 Not Adopted

CHAPTER 14 RELOCATED OR MOVED BUILDINGS
1401 General
1402 No amendments

CHAPTER 15 CONSTRUCTION SAFEGUARDS
No amendments

CHAPTER 16 REFERENCED STANDARDS
No amendments

APPENDIX A GUIDELINES FOR THE SEISMIC RETROFIT OF EXISTING BUILDINGS

CHAPTER A1 SEISMIC STRENGTHENING PROVISIONS FOR UNREINFORCED MASONRY BEARING WALL BUILDINGS
No amendments

CHAPTER A2 EARTHQUAKE HAZARD REDUCTION IN EXISTING REINFORCED CONCRETE AND REINFORCED MASONRY WALL BUILDINGS WITH FLEXIBLE DIAPHRAGMS
No amendments

CHAPTER A3 PRESCRIPTIVE PROVISIONS FOR SEISMIC STRENGTHENING OF CRIPPLE WALLS AND SILL PLATE ANCHORAGE OF LIGHT, WOOD-FRAME RESIDENTIAL BUILDINGS
No amendments

CHAPTER A4 EARTHQUAKE RISK REDUCTION IN WOOD-FRAME RESIDENTIAL BUILDINGS WITH SOFT, WEAK OR OPEN FRONT WALLS
No amendments

CHAPTER A5 REFERENCED STANDARDS
No amendments

APPENDIX B SUPPLEMENTARY ACCESSIBILITY REQUIREMENTS FOR EXISTING BUILDINGS AND FACILITIES
No amendments

APPENDIX C GUIDELINES FOR THE WIND RETROFIT OF EXISTING BUILDINGS
No Amendments
CHAPTER C1 GABLE END RETROFIT FOR HIGH –WIND AREAS
No amendments
CHAPTER C2 ROOF DECK FASTENING FOR HIGH WIND AREAS
No amendments
CHAPTER C3 Referenced Standards
Not adopted

APPENDIX D Not adopted

APPENDIX E Not adopted

RESOURCE A GUIDELINES ON FIRE RATINGS OF ARCHAIC MATERIALS AND ASSEMBLIES
No amendments

END OF IEBC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
GENERAL

Delete and replace section 101.1 with the following:

101.1 Title. These regulations shall be known as the *OBO Existing Building Code* (OBO-ICS IEBC) hereinafter referred to as "this code."

101.1.1 This code incorporates by adoption the *2024 International Existing Building Code* of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

Delete and replace section 101.2.1 with the following, but retain subsection 101.2.2 and sections 101.3 through 102.6:

101.2.1 Appendices. Refer to the OBO-ICS IBC Chapter 1 for requirements.

SECTION 102
APPLICABILITY

Delete and replace sections 102.1 through 102.5 with the following:

102.1 Applicability. Refer to the OBO-ICS IBC Section 102 for requirements.

Delete and replace section 103 in its entirety with the following:

SECTION 103
AUTHORITY HAVING JURISDICTION

103.1 General. The provisions of the *OBO Building Code* Chapter 1 – Scope and Administration of the *OBO Building Code*, apply to this code.

103.2 Authority Having Jurisdiction. The OBO Office of Design and Engineering (OBO/PDCS/DE) shall be the "Authority Having Jurisdiction" (AHJ) unless noted otherwise within the code. Refer to OBO-ICS IBC Chapter 1.

Delete Sections 104 in its entirety.

SECTION 105
PERMITS

Delete Section 105 in its entirety and replace with the following:

105.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

Delete Sections and 106 through 117 in their entirety.

END OF CHAPTER IEBC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

Delete section 201 in its entirety and replace with the following:

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO or in the OBO Design Standards, such terms shall have the meanings ascribed to them as in those codes.

201.3 Terms not defined. Where terms are not defined through the methods authorized by this chapter, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202
GENERAL DEFINITIONS

Replace this definition with the following:

HISTORIC BUILDING. Where used in this code, the term “historic building” shall be defined to mean “historic or culturally significant building.” See “Culturally Significant Buildings” in OBO-ICS IBC Chapter 2.

Add the following definition:

MAJOR RENOVATION. Project type identified by OBO where the work area exceeds fifty percent of the building area. Refer to Chapter 6, Alteration-Level 3 for requirements.

END OF CHAPTER 2 AMENDMENTS

CHAPTER 3
PROVISIONS FOR ALL COMPLIANCE METHODS

SECTION 301
ADMINISTRATION

Delete and replace Section 301.1 with the following and retain the exceptions:

301.1 General. The repair, alteration, change of occupancy, addition or relocation of all existing buildings must comply with one of the methods listed in Sections 301.3.1 or 301.3.2.

Delete the subsection 301.3.3.

SECTION 302
GENERAL PROVISIONS

Delete and replace section 302.2 with the following:

302.2 Additional codes. Alterations, repairs, additions and changes of occupancy, or relocation of, existing buildings and structures must comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in this code and other codes listed in OBO-ICS IBC Sections 101.4.1 and 101.4.2.

302.2.1 Additional codes in health care. In existing Group I-2 occupancies, ambulatory health care *facilities*, outpatient clinics and hyperbaric *facilities*, *alterations*, *repairs*, *additions* and *changes of occupancy* to, or relocation of, *existing buildings* and structures must also comply with NFPA 99.

302.2.2 Fire pumps. Refer to OBO-ICS IBC Chapter 9 for requirements related to new or replacement fire pumps.

SECTION 304
STRUCTURAL DESIGN LOADS AND EVALUATION AND DESIGN PROCEDURES

Add the following to 304.1:

304.1.1 General Work Area (GWA) and residential spaces in existing buildings. Evaluate and analyze office space in existing buildings where designated as general work area, existing residential buildings, and existing housing areas designated as residential representational space based on the minimum live load requirements of the Model IBC.

304.1.2 CAA, PCC, and other secure spaces in existing buildings. Evaluate and analyze office areas designated as CAA, CAA storage, and PCC, to comply with the minimum load requirements in the Model IBC

Add the following Subsection:

304.3.3 BSE earthquake hazard values. BSE earthquake values will be provided by OBO/PDCS/DE/CSE for post locations as described in OBO-ISC IBC section 1613.

SECTION 306
ACCESSIBILITY FOR EXISTING BUILDINGS

Delete and replace the last sentence in subsection 306.7.5 with the following:

306.7.5 Entrances

"Provide signs complying with accessibility requirements identified in OBO-ICS IBC Chapter 11."

Delete and replace the first sentence in subsection 306.7.7 with the following:

306.7.7 Elevators.

"Altered elements of existing elevators must comply with the elevator code identified in project-specific information and accessibility requirements identified in OBO-ICS IBC Chapter 11."

Delete and replace subsection 306.7.9 with the following:

306.7.9 Platform lifts.

306.7.9.1 Existing lifts. Where existing platform lifts are used in the existing building to facilitate accessible circulation, those lifts may continue to be used to achieve accessible routes. There is no requirement to remove those lifts.

306.7.9.2 Addition of new lift. Do not add platform lifts to achieve accessible routes.

Exception. Platform lifts may be used as an alternative only when expressly permitted by OBO when the lifts provide the only means to stay within the cost limits identified in Exception 1 of IEBC Section 306.7.1. OBO permission must come from both the OBO/PDCS/DE/AD accessibility group and OBO/CFSM/FAC.

Delete and replace subsection 306.7.10 and replace with the following:

306.7.10 Stairways and escalators in existing buildings. Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route must be provided between the levels served by the escalator or stairway in accordance with accessibility requirements identified in OBO-ICS IBC Chapter 11.

Delete and replace subsection 306.7.11.1 with the following:

306.7.11.1 Accessible dwelling or sleeping units. Where Group R-1, R-2, or R-4 dwelling or sleeping units are being altered or added, the requirements of OBO-ICS IBC Chapter 11 for accessibility apply only to the quantity of spaces being altered or added.

Delete and replace subsection 306.7.11.2 with the following:

306.7.11.2 Type A dwelling or sleeping units. Where more than 20 (twenty) R-2 dwelling or sleeping units are being altered or added, the requirements of OBO-ICS IBC Chapter 11 for accessibility apply only to the quantity of spaces being altered or added.

Delete and replace subsection 306.7.11.3 with the following:

306.7.11.3 Type B dwelling or sleeping units. Where four or more R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of OBO-ICS IBC Chapter 11 for accessibility apply only to the quantity of spaces being altered or added. Where four or more R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of OBO-ICS IBC Chapter 11 for accessibility apply only to the quantity of spaces being altered or added.

Delete and replace first sentence in subsection 306.7.12 with the following:

306.7.12 Toilet and bathing rooms.

"Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with the requirements of OBO-ICS IBC Chapter 11 for accessibility is permitted."

Delete subsection 306.7.13 Bathing rooms.

Delete and replace subsection 306.7.14 with the following:

306.7.14 Additional toilet and bathing facilities. In assembly and mercantile occupancies, where additional toilet fixtures are added, not fewer than one accessible family or assisted-use toilet or bathing room must be provided where required by the accessibility requirements of OBO-ICS IBC Chapter 11. In recreational facilities, where additional bathing rooms are being added, not fewer than one accessible family or assisted-use bathing room must be provided where required by the accessibility requirements of OBO-ICS IBC Chapter 11.

Delete and replace first sentence in subsection 306.7.16 with the following:

306.7.16 Locker rooms.

"Where it is technically infeasible to provide accessible locker rooms at the same location as similar rooms, one accessible room on the same level must be provided."

Delete subsection 306.7.17 in its entirety.

Delete and replace the title of subsection 306.7.18 with the following:

306.7.18 Historic or culturally significant buildings.

Add exception to 306.7.18.

Exception.

"3. Type B dwelling or sleeping units required by the accessibility requirements of OBO-ICS IBC Chapter 11 are not required to be provided in historic or culturally significant buildings."

Delete and replace the final sentence in 306.7.18.3 Entrances with the following:

"Signs complying with OBO-ICS IBC Chapter 11 must be provided at the public entrance and the accessible entrance."

Delete and replace subsection 306.7.18.4 with the following:

306.7.18.4 Toilet and bathing rooms. Where toilet and bathing rooms are provided, not fewer than one accessible family or assisted-use toilet and bathing room complying with OBO-ICS IBC Chapter 11 must be provided.

Delete subsection 306.7.18.5 Bathing facilities.

Add the following section 306.8:

306.8 FE/BR door installation or replacement. Where any project involves the installation or replacement of an FE/BR door, each such door must have a minimum clear opening width of 815 mm (32 inches).

Exception. Where existing conditions make the required minimum width infeasible, the door width may be reduced to not be less than 795 mm (31.25 inches)

Add the following Section:

SECTION 310
ELECTRICAL

310.1 Applicability. This section applies to the additions to, or renovations of, electrical infrastructure and devices required for existing food preparation areas, food serving areas, and any other food service locations where walls require regular washing. This section applies to new infrastructure installed to transit food service areas.

310.1.1 Concealed electrical infrastructure. New infrastructure and devices (e.g., conduit, boxes, raceways, fittings, etc.) must be concealed within construction for ease of cleaning of finished surfaces, to prevent dirt accumulation, and to prevent mold.

310.1.2 Exposed electrical infrastructure. Where concealed infrastructure is infeasible, installation must comply with the following:

310.1.2.1 Mounting of exposed electrical infrastructure. Exposed conduit, boxes, raceways, and fittings, must be mounted with a minimum of a 6-mm (0.25-inch) airspace between the device item and the wall, or other supporting surface.

310.1.2.1 Material of exposed electrical infrastructure. All exposed electrical materials must be stainless steel.

310.1.3 Repairs. Refer to Section 406.1 for requirements for electrical repairs.

Add the following Section:

SECTION 311
PHYSICAL SECURITY FOR EXISTING BUILDINGS

311.1 General. Refer to OBO-ICS IBC Chapter 34.

Add the following Section:

SECTION 312
PLUMBING

312.1 Applicability. This section applies to the additions to, or renovations of, plumbing infrastructure and fixtures.

312.2 Water distribution piping and fittings. For projects governed by OBO-ICS IEBC, the acceptable piping materials and associated standards must be in accordance with either Model IPC Tables 605.4 and Table 605.5, or the more restrictive provisions of OBO-ICS IPC Combined Table 605.4 and 605.5. The determination of the applicable Tables will be made by OBO/PDCS/DE/ME considering the extent and continuity of new piping and fittings in the project, as well as the material and types of fittings in the existing building.

END OF CHAPTER IEBC-3 AMENDMENTS

CHAPTER 4
REPAIRS

SECTION 401
GENERAL

Delete and replace the second sentence in subsection 401.1 with the following:

401.1 Scope.

"Repairs to historic or culturally significant buildings need only comply with Chapter 12."

SECTION 406
ELECTRICAL

Delete and replace section 406 in its entirety with the following:

406.1 Material. Existing electrical wiring and equipment undergoing repair must be allowed to be repaired or replaced with like material.

Exception. Exposed electrical infrastructure and devices used in kitchen, food preparation areas, and any other food service areas where walls require regular washing must comply with section 310.

406.1.1 Receptacles. Replacement of electrical receptacles must comply with the applicable requirements of OBO-ICS NEC section 406.4(D).

406.1.2 Plug fuses. Plug fuses of the Edison-base type must be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of OBO-ICS NEC section 240.51(B).

406.1.3 Non-grounding type receptacles. For replacement of non-grounding type receptacles with grounding type receptacles and for branch circuits that do not have an equipment grounding conductor, in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet must be permitted to be grounded to any accessible point on the grounding electrode conductor in accordance with OBO-ICS NEC section 250.130(C).

406.1.4 Health units. Non-hospital grade receptacles in patient bed locations of Group I-2 must be replaced with "hospital grade" receptacles as required by NFPA 99 and Article 517 of the OBO-ICS NEC.

406.1.5 Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the existing branch circuitry for these appliances must be permitted to be grounded to the grounded circuit conductor in accordance with OBO-ICS NEC section 250.140.

END OF CHAPTER IEBC-4 AMENDMENTS

CHAPTER 5
PRESCRIPTIVE COMPLIANCE METHOD

SECTION 502
ADDITIONS

Add the following section 502.1.1 Application:

502.1.1 Application. Work of this nature is subject to the OBO building permit process.

SECTION 503
ALTERATIONS

Add the following section 503.1.1 Application:

503.1.1 Application. Work of this nature is subject to the OBO building permit process.

SECTION 504
FIRE ESCAPES

Add the following section 504.1.5 Application:

504.1.5 Application. Work of this nature is subject to the OBO building permit process.

SECTION 505
WINDOWS AND EMERGENCY ESCAPE OPENINGS

Add the following section 505.5 Damaged Blast-Resistant and Forced Entry/Ballistic Resistant (FE/BR) windows:

505.5 Damaged Blast-Resistant and Forced Entry/Ballistic Resistant (FE/BR) windows. Work involving repair of damaged blast-resistant windows and Forced-Entry/Ballistic Resistant (FE/BR) windows is subject to the OBO building permit process.

Delete Section 507 and replace with the following:

SECTION 507
HISTORIC AND CULTURALLY SIGNIFICANT BUILDINGS

507.1 Scope. Historic or culturally significant building provisions shall apply to buildings classified as historic or culturally significant unless specifically required by this section.

507.2 Application. Except as specifically provided for in Chapter 12, historic or culturally significant buildings must comply with applicable provisions of this code for the type of work being performed.

END OF CHAPTER IEBC-5 AMENDMENTS

CHAPTER 6
CLASSIFICATION OF WORK

SECTION 604
ALTERATION-LEVEL 3

Add the following subsection 604.1.1 Major renovation:

604.1.1 Major renovation. Where the renovation of a building is identified by OBO as a Major Renovation, the work performed on the existing building must comply with the requirements for Alteration Level 3.

Exception. Regardless of the size of the building area affected, the following must not be classified as major renovation projects:

1. Single or limited scope projects, including repairs and the replacement of existing building systems, materials, elements, equipment or fixtures using new materials.

2. Single scope projects such as information technology (IT) systems, telecommunications systems replacement, chiller replacement, replacement of fire protection systems, etc.

Delete and replace section 607 with the following:

SECTION 607
HISTORIC AND CULTURALLY SIGNIFICANT BUILDINGS

607.1 Scope. Historic or culturally significant building provisions must apply to buildings classified as historic or culturally significant unless specifically required by this section.

607.2 Application. Except as specifically provided for in Chapter 12, historic or culturally significant buildings must comply with applicable provisions of this code for the type of work being performed.

END OF CHAPTER IEBC-6 AMENDMENTS

CHAPTER 7
ALTERATIONS-LEVEL 1

SECTION 702
BUILDING ELEMENTS AND MATERIALS

Delete and replace section 702.7 with the following:

702.7 Materials and methods. All new work must comply with the materials and methods requirements in the *OBO-ICS IBC,* as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

SECTION 703
FIRE PROTECTION

Add the following subsections:

703.1.1 FE/BR Upgrades. Where the work involves modifying existing windows to make them no longer operable or replacing operable windows with non-operable units, provide automatic sprinkler protection for the entire floor on which the work area is located.

703.1.1.1 Sprinkler system water supply. Where the existing water supply is not sufficient to supply the sprinkler system provide a fire pump per OBO-ICS IFC Section 913 and NFPA 20.

703.1.1.2 Reliability of water supply. Where the water supply is deemed to be not reliable by OBO/OPS/FIRE, provide a fire water tank per OBO-ICS IFC Section 507.2.2 and NFPA 22.

SECTION 708
ENERGY CONSERVATION

Delete and replace section 708.1 with the following:

708.1 Minimum requirements. Level 1 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the *OBO-ICS IBC*. The alterations must conform to the energy requirements of the *OBO-ICS IBC* as they relate to new construction only.

END OF CHAPTER IEBC-7 AMENDMENTS

CHAPTER 8
ALTERATIONS-LEVEL 2

SECTION 801
GENERAL

Add the following section 801.1.1, 801.1.2, and 801.1.3:

801.1.1 Reconfiguration.

801.1.1.1 Non-CAA area limited reconfiguration. Limited reconfiguration within non-CAA office areas is not subject to the OBO building permit process.

Exception: Contiguous to CAA spaces, and any alteration to any fire-rated construction, egress access, means of egress, or security hardlines

801.1.1.2 CAA reconfiguration. Any reconfiguration in CAA restricted or CAA core area is subject to the OBO building permit process.

801.1.1.3 Other reconfiguration. Other reconfiguration of space, involving modifications of fire-rated construction, egress access, means of egress, or security hardlines is subject to the OBO building permit process.

801.1.2 Building systems.

801.1.2.1 Building systems Work under this section includes the removal and replacement of building systems, including but not limited to electrical, fire protection, mechanical, physical security, plumbing, technical security, and telecom systems.

801.1.3 Application. Work under this section is subject to the OBO building permit process.

SECTION 802
BUILDING ELEMENTS AND MATERIALS

Delete and replace the first sentence of the second paragraph in Subsection 802.6 with the following:

802.6 Fire-resistance ratings.

"Plans, investigations and evaluation reports, and other data must be submitted to the authority having jurisdiction indicating which building elements and materials the applicant is requesting review and approve for determination of applying the current building code fire-resistance ratings."

SECTION 803
FIRE PROTECTION

Delete and replace subsection 803.2.1 in its entirety with the following:

803.2.1 High-rise buildings. In high-rise building work areas provide the following:

803.2.1.1 Enclosure of U.S. Government-leased work areas. U.S. Government-leased suite must be enclosed by 2-hour fire-resistance rated barriers.

803.2.1.2 Approved automatic sprinkler protection required. Provide approved automatic sprinkler protection for the entire U.S. Government-leased suite, and egress corridors and/or egress access corridors to exit stairs.

803.2.1.3 Sprinkler system water supply. Where the existing water supply is not sufficient to supply the sprinkler system provide a fire pump per OBO-ICS IFC Section 913 and NFPA 20.

803.2.1.4 Reliability of water supply. Where the water supply is deemed to be not reliable by OBO/OPS/FIRE, provide a fire water tank per the OBO-ICS IFC Section 507.2.2 and NFPA 22.

Delete and replace subsection 803.2.2 in its entirety with the following:

803.2.2 Group A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1, and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1, and S-2, where the U.S. Government occupies a suite or entire floor on which the work area is located, when the work area exceeds 25 percent of the floor area, provide the following:.

803.2.2.1 Enclosure of U.S. Government-leased work areas. U.S. Government-leased suite must be enclosed by 2-hour fire-resistance-rated fire barriers.

803.2.2.2 Approved automatic sprinkler protection required. Provide automatic sprinkler protection for the entire suite, or entire floor if the U.S. Government occupies the entire floor.

803.2.2.2.1 Sprinkler system water supply. Where the existing water supply is not sufficient to supply the sprinkler system provide a fire pump per IFC Section 913 and NFPA 20.

803.2.2.2.2 Reliability of water supply. Where the water supply is deemed to be not reliable by OBO/OPS/FIRE, provide a fire water tank per the OBO-ICS IFC Section 507.2.2 and NFPA 22.

Delete and replace subsection 803.2.4 in its entirety with the following:

803.2.4 Windowless stories. Where the U.S. Government occupies a suite or entire floor on which the work area is located when the work area is located in a windowless story, as determined in accordance with the OBO-ICS IBC, provide the following:

803.2.4.1 Enclosure of U.S. Government-leased work areas. U.S. Government-leased suite must be enclosed by 2-hour fire-resistance rated barriers.

803.2.4.2 Approved automatic sprinkler protection required. Provide automatic sprinkler protection for the entire suite, or entire floor if the U.S. Government occupies the entire floor.

803.2.4.2.1 Sprinkler system water supply. Where the existing water supply is not sufficient to supply the sprinkler system provide a fire pump per OBO-ICS IFC Section 913 and NFPA 20.

803.2.4.2.2 Reliability of water supply. Where the water supply is deemed to be not reliable by OBO/OPS/FIRE, provide a fire water tank per the OBO-ICS IFC Section 507.2.2 and NFPA 22.

SECTION 804

MEANS OF EGRESS

Delete and replace Exception 2 in section 804.2 with the following:

2. Means of egress conforming to the requirements of the building code under which the building was constructed must be considered compliant means of egress if, in the opinion of the authority having jurisdiction they do not constitute a distinct hazard to life.

SECTION 806
ELECTRICAL

Delete and replace subsection 806.4.4 with the following:

806.4.4 Ground fault circuit interruption. Newly installed receptacle outlets must be provided with ground fault interruption as required by the OBO-ICS NEC.

SECTION 809
ENERGY CONSERVATION

Delete and replace section 809.1 with the following:

809.1 Minimum requirements. Level 2 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the OBO-ICS IBC. The alterations must conform to the energy requirements of the OBO-ICS IBC as they relate to new construction only.

Add the following section 810:

SECTION 810
ACCESSIBILITY

810.1 Stairways and escalators in existing buildings. In alterations where an escalator or stairway is added where none existed previously, an accessible route must be provided in accordance with accessibility requirements identified in OBO-ICS IBC Chapter 11.

810.2 Accessible areas of refuge. Provide accessible areas of refuge in accordance with OBO-ICS IBC Section 1009 requirements for stairways, areas of refuge, and two-way communication from each floor with U.S. Government occupancy.

Exceptions.

1. Existing or newly created vestibules for stairs or elevators may serve as an accessible area of refuge. Fire rating for these vestibules must be in accordance with OBO-ICS IBC Chapter 7 provisions for fire resistance.

2. Accessible areas of refuge are not required in either stairways or stair/elevator vestibules where the associated cost exceeds the limits identified in OBO-ICS IEBC Section Exception 1.

END OF CHAPTER IEBC-8 AMENDMENTS

CHAPTER 9
ALTERATIONS-LEVEL 3

SECTION 902
SPECIAL USE AND OCCUPANCY

Delete and replace the last sentence in subsection 902.1.2, with the following:

902.1.2 Elevators.

"New elevators must be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with the elevator code identified in project-specific information and accessibility requirements identified in OBO-ICS IBC Chapter 11."

SECTION 907
ENERGY CONSERVATION

Delete and replace section 907.1 with the following:

907.1 Minimum requirements. Level 3 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy conservation requirements of the OBO-ICS IBC. The alterations must conform to the energy requirements of the OBO-ICS IBC as they relate to new construction only.

END OF CHAPTER IEBC-9 AMENDMENTS

CHAPTER 10
CHANGE OF OCCUPANCY

SECTION 1001
GENERAL

Delete and replace section 1001.2 with the following:

1001.2 Certificate of occupancy. A change of occupancy or a change of occupancy within a space where there is a different fire protection system threshold requirement shall not be made to any structure without the approval of the authority having jurisdiction.

SECTION 1006
STRUCTURAL

Delete and replace the first exception in Subsection 1006.3.1, with the following:

Exceptions:

"1. Where approved by the authority having jurisdiction, specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced Code-level seismic forces as specified in OBO-ICS IEBC Section304.3.1."

SECTION 1007
ELECTRICAL

Delete and replace the first sentence in section 1007.1 with the following and retain the list of occupancies that follows:

1007.1 Special occupancies.

"Where the occupancy of an existing building or part of an existing building is changed to one of the following special occupancies as described in the OBO Electrical Code, the electrical wiring and equipment of the building or portion thereof that contains the proposed occupancy must comply with the applicable requirements of the OBO-ICS IBC whether or not a change of occupancy group is involved:"

Delete and replace section 1007.2, with the following:

1007.2 Unsafe conditions. Where the occupancy of an existing building or part of an existing building is changed, all unsafe conditions must be corrected without requiring that all parts of the electrical system comply with the OBO Electrical Code.

Delete and replace section 1007.3 with the following:

1007.3 Service upgrade. Where the occupancy of an existing building or part of an existing building is changed, electrical service must be upgraded to meet the requirements of the OBO Electrical Code for new occupancy.

Delete and replace section 1007.4 with the following:

1007.4 Number of electrical outlets. Where the occupancy of an existing building or part of an existing building is changed, the number of electrical outlets must comply with the OBO-ICS NEC for new occupancy.

SECTION 1011
CHANGE OF OCCUPANCY CLASSIFICATION

Delete and replace section 1011.2.1 with the following:

1011.2.1 Automatic sprinkler system. Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the OBO-ICS IFC that requires an automatic fire sprinkler system to be provided based on the new occupancy, one of the following will apply:

1011.2.1.1 U.S. Government is sole building owner or occupant. An approved automatic sprinkler system must be provided based on the new occupancy in accordance with Chapter 9 of the OBO-ICS IFC, throughout the entire building.

1011.2.1.2 U.S. Government is tenant in a multi-tenant building. An approved automatic sprinkler system must be provided based on the new occupancy in accordance with Chapter 9 of the OBO-ICS IFC, throughout the area where the change of occupancy occurs.

Delete and replace the second exception in Subsection 1011.5.1 with the following:

2. Existing stairways including handrails and guards complying with the requirements of Chapter 9 are permitted for continued use subject to approval of the authority having jurisdiction.

END OF CHAPTER IEBC-10 AMENDMENTS

CHAPTER 11
ADDITIONS

SECTION 1104
ENERGY CONSERVATION

Delete and replace section 1104.1 with the following:

1104.1 Minimum requirements. Additions to existing buildings must conform to the energy requirements of the OBO-ICS IBC as they relate to new construction only.

END OF CHAPTER IEBC-11 AMENDMENTS

Delete the section title and replace with the following:

CHAPTER 12
HISTORIC OR CULTURALLY SIGNIFICANT BUILDINGS

SECTION 1201
GENERAL

Delete and replace the exceptions to section 1201.4 with the following:

Exception. If an historic or culturally significant building will continue to be a historic or culturally significant building after the proposed work is completed, the proposed work is not considered a substantial improvement. For purposes of this exception, an historic or culturally significant building is:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places or The Secretary of State's Register of Culturally Significant Property.

2. Determined by the Secretary of the U.S. Department of Interior or Secretary of State to contribute to the historical significance of a registered historic district or a district preliminarily determined to qualify as a historic district; or

3. Designated as historic or culturally significant under a local historic preservation program.

END OF CHAPTER IEBC-12 AMENDMENTS

CHAPTER 14
RELOCATED OR MOVED BUILDINGS

SECTION 1401
GENERAL

Delete and replace the first sentence of section 1401.2 with the following and retain the rest of the section:

1401.2 Conformance.

"The building must be safe for human occupancy as determined by the OBO-ICS IFC."

END OF CHAPTER IEBC-14 AMENDMENTS

J.2.1

OBO International Fire Code

OBO-ICS IFC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL FIRE CODE (IFC)

The *OBO International Codes Supplement* adopts the *2024 International Fire Code (IFC)* and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted as described. Sections named in the chapters below are amended or added by this supplement. Remaining (unnamed) sections are adopted with no amendments, or not adopted, as described. Named appendices are adopted, amended, or added as indicated. Unnamed appendices are not adopted.

CHAPTER 1 SCOPE AND ADMINISTRATION
101 General
102-104 Not adopted
105 Permits
106-115 Not adopted

CHAPTER 2 DEFINITIONS
201 General
202 ICC Definitions
203 Occupancy Classification and Use
204 OBO Terms, Acronyms, and Abbreviations

CHAPTER 3 GENERAL REQUIREMENTS
301–322 No amendments
323 Wastewater Treatment and Collection Facilities
324 Corrosion-Resistant Protection

CHAPTER 4 EMERGENCY PLANNING AND PREPAREDNESS
No amendments

CHAPTER 5 FIRE SERVICE FEATURES
501 No amendments
502 No amendments
503 Fire Apparatus Access Roads
504–506 No amendments
507 Fire Protection Water Supplies
508 Fire Command Center
509 No amendments
510 Emergency Responder Communications Enhancement Systems

CHAPTER 6 BUILDING SERVICES AND SYSTEMS
601 No amendments
602 No amendments
603 Electrical Equipment, Wiring and Hazards
604–610 No amendments

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES
No amendments

CHAPTER 8 INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS
801 – 804 No amendments
805 Upholstered Furniture and Mattresses in New and Existing Buildings
806 – 808 No amendments

CHAPTER 9 FIRE PROTECTION AND LIFE SAFETY SYSTEMS
901 General
902 No amendments
903 Automatic Sprinkler Systems
904 No amendments
905 Standpipe Systems
906 Portable Fire Extinguishers
907 Fire Alarm and Detection Systems
908–912 No amendments
913 Fire Pumps
914–917 No amendments

CHAPTER 10 MEANS OF EGRESS
1001 Administration
1002–1032 No amendments

CHAPTER 11 CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS
No amendments

CHAPTER 12 ENERGY SYSTEMS
1201 –1204 No amendments
1205 Solar Photovoltaic Power Systems
1206 –1207 No amendments

CHAPTERS 13 through 19 RESERVED

CHAPTER 20 AVIATION FACILITIES
No amendments

CHAPTER 21 DRY CLEANING
No amendments

CHAPTER 22 COMBUSTIBLE DUST-PRODUCING OPERATIONS
No amendments

CHAPTER 23 MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES

No amendments

CHAPTER 24 FLAMMABLE FINISHES
No amendments

CHAPTER 25 FRUIT AND CROP RIPENING
No amendments

CHAPTER 26 FUMIGATION AND INSECTICIDAL FOGGING
No amendments

CHAPTER 27 SEMICONDUCTOR FABRICATION FACILITIES
No amendments

CHAPTER 28 LUMBER YARDS AND AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES
No amendments

CHAPTER 29 MANUFACTURE OF ORGANIC COATINGS
No amendments

CHAPTER 30 INDUSTRIAL OVENS
No amendments

CHAPTER 31 TENTS, TEMPORARY SPECIAL EVENT STRUCTURES AND OTHER MEMBRANE STRUCTURES
No amendments

CHAPTER 32 HIGH-PILED COMBUSTIBLE STORAGE
No amendments

CHAPTER 33 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION
No amendments

CHAPTER 34 TIRE REBUILDING AND TIRE STORAGE
No amendments

CHAPTER 35 WELDING AND OTHER HOT WORK
No amendments

CHAPTER 36 MARINAS
No amendments

CHAPTER 37 COMBUSTIBLE FIBERS
No amendments

CHAPTER 38 HIGHER EDUCATION LABORATORIES
No amendments

CHAPTER 39 PROCESSING AND EXTRACTION FACILITIES
No amendments

CHAPTER 40 STORAGE OF DISTILLED SPIRITS AND WINES
No amendments

CHAPTER 41 TEMPORY HEATING AND COOKING OPERATIONS
No amendments

CHAPTERS 42 through 49 RESERVED

CHAPTER 50 HAZARDOUS MATERIALS-GENERAL PROVISIONS
No amendments

CHAPTER 51 AEROSOLS
No amendments

CHAPTER 52 RESERVED

CHAPTER 53 COMPRESSED GASES
No amendments

CHAPTER 54 CORROSIVE MATERIALS
No amendments

CHAPTER 55 CRYOGENIC FLUIDS
No amendments

CHAPTER 56 EXPLOSIVES AND FIREWORKS
No amendments

CHAPTER 57 FLAMMABLE AND COMBUSTIBLE LIQUIDS
No amendments

CHAPTER 58 FLAMMABLE GASES AND FLAMMABLE CRYOGENIC FLUIDS
No amendments

CHAPTER 59 FLAMMABLE SOLIDS
No amendments

CHAPTER 60 HIGHLY TOXIC AND TOXIC MATERIALS
No amendments

CHAPTER 61 LIQUEFIED PETROLEUM GASES
No amendments

CHAPTER 62 ORGANIC PEROXIDES

No amendments

CHAPTER 63 OXIDIZERS, OXIDIZING GASES AND OXIDIZING CRYOGENIC FLUIDS
No amendments

CHAPTER 64 PYROPHORIC MATERIALS
No amendments

CHAPTER 65 PYROXYLIN (CELLULOSE NITRATE) PLASTICS
No amendments

CHAPTER 66 UNSTABLE (REACTIVE) MATERIALS
No amendments

CHAPTER 67 WATER-REACTIVE SOLIDS AND LIQUIDS
No amendments

CHAPTERS 68 through 79 RESERVED

CHAPTER 80 REFERENCED STANDARDS
Additional Standards Referenced by OBO

APPENDIX A BOARD OF APPEALS
Not adopted

APPENDIX B FIRE-FLOW REQUIREMENTS FOR BUILDINGS
No amendments

APPENDIX C FIRE HYDRANT LOCATIONS AND DISTRIBUTION
C101 General
C102 Not adopted
C103 Fire Hydrant Spacing
C104 Not adopted
C105 Not adopted

APPENDIX D FIRE APPARATUS ACCESS ROADS
No amendments

APPENDIX E HAZARD CATEGORIES
No amendments

APPENDIX F HAZARD RANKING
No amendments

APPENDIX G CRYOGENIC FLUIDS-WEIGHT AND VOLUME EQUIVALENTS
No amendments

APPENDIX H HAZARDOUS MATERIALS MANAGEMENT PLAN (HMMP) AND HAZARDOUS MATERIALS INVENTORY STATEMENT (HMIS) INSTRUCTIONS

No amendments

APPENDIX I FIRE PROTECTION SYSTEMS-NONCOMPLIANT CONDITIONS
No amendments

APPENDIX J BUILDING INFORMATION SIGN
No amendments

APPENDIX K CONSTRUCTION REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES
No amendments

APPENDIX L REQUIREMENTS FOR FIRE FIGHTER AIR REPLENISHMENT SYSTEMS
No amendments

APPENDIX M HIGH-RISE BUILDINGS—RETROACTIVE AUTOMATIC SPRINKLER REQUIREMENT
No amendments

APPENDIX N INDOOR TRADE SHOWS AND EXHIBITIONS
No amendments

APPENDIX O VALET TRASH AND RECYCLING COLLECTION IN GROUP R-2 OCCUPANCIES
No amendments

END OF IFC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
GENERAL

Delete and replace section 101 with the following:

101.1 Title. These regulations shall be known as the *OBO Fire Code (OBO-ICS IFC)* hereinafter referred to as "this code."

1. This code incorporates by adoption the *2024 International Fire Code* of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

101.2 General. The provisions of Chapter 1 - Administration of the *OBO-ICS IBC* apply to this code.

Delete Sections 102, 103, 104, and 106 through 115 in their entirety.

SECTION 105
PERMITS

Delete Section 105 and replace with the following:

105.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

END OF CHAPTER IFC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

Delete and replace section 201.3 in its entirety with the following:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

Add Section 202.1 and retain the remainder of section 202:

SECTION 202
ICC DEFINITIONS

202.1 General. Refer to OBO-ICS IBC Section 202 for definitions of terms used where not defined in this code. Where terms are defined here use the meaning ascribed to the terms in this code if different.

SECTION 203
OCCUPANCY CLASSIFICATION AND USE

Add the following to the list of occupancies in section 203.2.7:

203.2.7 Assembly Group A-2

"Representational spaces in on-compound and off-compound representational housing in accordance with OBO-ICS IBC section 433."

Add the following to the list of occupancies in section 203.9.2:

203.9.2 Residential Group R-2.

"Marine Security Guard Residence (MSGR)."

Add the following to the list of occupancies in section 203.9.3:

203.9.3 Residential Group R-3.

"Chief of Mission Residence (CMR)."

Add the following Section 204:

SECTION 204

OBO TERMS, ACRONYMS, AND ABBREVIATIONS

204.1 General. Refer to OBO-ICS IBC section 203 for definitions of terms used.

END OF CHAPTER IFC-2 AMENDMENTS

CHAPTER 3
GENERAL REQUIREMENTS

Add the following Sections 323 through 324:

SECTION 323
WASTEWATER TREATMENT AND COLLECTION FACILITIES

323.1 General. Wastewater treatment and collection facilities must comply with NFPA 820.

323.2 Combustible gas detection. Where combustible gas detection is required by NFPA 820, the combustible gas detection must be monitored by the building fire alarm system and annunciated on the FACU located at Post 1 or other constantly attended location approved by OBO/OPS/FIRE/FPE.

323.3 Ventilation monitoring. Where ventilation monitoring is required by NFPA 820, the ventilation monitoring must be monitored by the building fire alarm system and annunciated on the FACU located at Post 1 or other constantly attended location approved by OBO/OPS/FIRE/FPE.

SECTION 324
CORROSION-RESISTANT PROTECTION

324.1 Corrosion-resistant protection. Corrosion-resistant protection must comply with the requirements of OBO-ICS IBC Appendix W – Corrosion-resistant protection and the requirements of this section.

324.2 Fire protection systems. Fire protection systems required to receive enhanced corrosion-resistant protection include but are not limited to the following:

1. Fire protection water tanks.
2. Fire protection site distribution system.
3. Site fire hydrant system.
4. Standpipes in open parking structures.
5. Fire pumps and exposed piping in the Utility building.

Exception. Where shops and utility building openings are protected by air curtains and/or vestibules.

END OF CHAPTER IFC- 3 AMENDMENTS

CHAPTER 5
FIRE SERVICE FEATURES

SECTION 503
FIRE APPARATUS ACCESS ROADS

Add the following sentence to the end of subsection 503.1.1 prior to the exceptions:

"New buildings must be sited on the property so that the fire department has unobstructed access under all weather conditions, on at least two sides, by way of permanent designated routes."

Add the following subsection 503.1.1.1:

503.1.1.1 Designated compound fire apparatus entrance. Designated compound fire apparatus entrance must be through the Main CAC.

Exception. The Service CAC may be used as the designated fire apparatus entrance only upon written approval of OBO/OPS/FIRE/FPE.

Delete and replace subsections 503.2 and 503.2.1 with the following:

503.2 Requirements. Fire apparatus access roads must be installed and arranged in accordance with Sections 503.2.1 through 503.2.8 and Appendix D.

503.2.1 Dimensions. Fire access roads must be installed in accordance with the following:

503.2.1.1 Compound fire apparatus access roads. Compound fire apparatus access roads must meet the following minimum dimensions:

1. Minimum unobstructed width: 6.1 m (20 feet).

2. Minimum unobstructed vertical clearance: 4.0 m (13 feet).

503.2.1.2 CAC sallyports. CAC sallyports must meet the following minimum dimensions:

1. Horizontal clearance at the CAC sallyport traffic lanes: 4.0 m (13 feet) maximum, 3.7 m (12 feet) minimum.

2. Minimum unobstructed vertical clearance: 4.0 m (13 feet) or the height of fire vehicles expected to respond to the site, whichever is greater.

Add the following sentences to the end of subsection 503.2.3 Surface:

"Fire department vehicular access may be constructed of soft landscape elements such as stone, sod over gravel base, as well as grass and unit pavers. Designated routes must be capable of supporting fire department apparatus weighing 20 000 kg (44 000 pounds) or as determined in the Initial Planning Survey (IPS) or in a contract attachment."

Delete and replace section 503.2.4 with the following:

503.2.4 Turning radius. All curve or turn radii from the public right of way to the designated compound fire apparatus entrance CAC must be sufficient to accommodate the turning profile of the local responder's largest emergency apparatus.

SECTION 507
FIRE PROTECTION WATER SUPPLIES

Add the following subsections 507.1.1 and 507.1.2:

507.1.1 Fire protection water distribution treatment. Where on-compound treatment of water is provided for the fire protection water source a chlorine residual of 0.2 - 0.5 mg/L and a Langelier Saturation Index (LSI) between 0.01 and 0.3 must be maintained within the fire protection water distribution system.

507.1.2 Prevention of biofilms. The water in the fire protection tanks must be continuously stirred to prevent thermal layering and dead zones.

Delete and replace section 507.2 with the following:

507.2 Type of water supply. Compound fire protection systems must be supplied from the compound fire protection water storage tanks. The fire protection water storage tanks must be supplied and receive make-up from the compound raw water inlet tanks; refer to OBO-ICS IPC Chapter 6 for those systems.

Delete and replace subsection 507.2.2 with the following:

507.2.2 Water tanks. Compound fire protection water storage tanks must be installed in accordance with NFPA 22.

507.2.2.1. Capacity. Calculated fire protection water supply capacity for the largest demand of an automatic sprinkler system presented by any one compound building based on the requirements of OBO-ICS IBC Chapter 9. Capacity must include the total combined inside and outside hose allowances required by NFPA 13. The duration of the water supply must use the higher duration value in NFPA 13.

507.2.2.2. Fire protection water distribution system. Where the general water storage is supplied from the municipal source, and where the municipal source water has been treated by the municipality, the fire protection water distribution system must be designed to maintain a minimum chlorine residual of 0.2 - 0.5 mg/L and a LSI between 0.01 and 0.3.

507.2.2.3. Split tank. The fire protection water storage tank must be designed as a split tank with two approximately equal tanks in order to facilitate maintenance of a portion of the tanks without removing all of the system capacity. The combined size of both tanks must provide the required capacity. Both portions of the split tank must function independently, with both fed from the compound raw water storage tank, and both feeding the site fire protection distribution system.

507.2.2.4. Configuration with compound fire pump. The compound fire protection water storage tank must be located for use of a horizontally mounted, split case fire pump.

507.2.2.5. Interior tank equipment and components. Piping, couplings, vortex plates, valves, ladders, and similar equipment and system components installed within the fire water storage tanks must be stainless steel.

507.2.2.6. Access to tank interior. Provide two access hatches in the top of each water tank for maintenance, ventilation, and rescue access. Locate access hatches diagonally as far apart as possible. Provide access

hatches sized not less than 1000 mm by 1000 mm (39 inches by 39 inches). Provide access hatches locks to prevent tampering and must remain locked except when in use. Where hinged access hatches are provided, hatches must be provided with 180-degree hinges.

507.2.2.7. Fill time. The minimum tank fill time stipulated in NFPA 22 shall not apply.

Add the following subsection 507.2.3:

507.2.3 Fire pumps. Where fire pumps are not located in standalone structures, openings within exterior walls, floors, or roofs must be provided that allow a 2300-mm (90-inch) long by 4450-mm (175-inch) wide skid to pass through. Doors, hatches, or removable louvers are all acceptable openings.

Delete and replace subsection 507.5.1 with the following:

507.5.1 Where required. Provide site fire hydrant distribution system and fire hydrants in accordance with OBO-ICS IFC Appendix C on all new compounds.

Exception. Site fire hydrant distribution system and fire hydrants may be omitted where directed by OBO/OPS/FIRE.

Add the following Exception to subsection 507.5.4:

Exception. Compound entrance through Compound Access Control (CAC) facilities obstructions must be limited to those identified in OBO-ICS IBC Chapter 34 and OBO-ICS IFC Section 503.

SECTION 508
FIRE COMMAND CENTER

Delete and replace subsection 508.1 with the following:

508.1: General. Where required by other sections of this code and in all buildings classified as high-rise buildings by the International Building Code and in all F-1 and S-1 occupancies with a building footprint greater than 46,452 m2 (500,000 square feet), a fire command center for fire department operations shall be provided and comply with Sections 508.1.1 through 508.1.8.

The local fire department shall be consulted regarding the requirements of the fire command center. Where local fire department provides additional requirements or local building / fire code requirements exceed the requirements of this code, the final design shall be coordinated to meet all applicable requirements, including location, size, features, etc. with OBO/FIRE and DS approval.

Delete and replace subsection 508.1.1 with the following:

508.1.1 Location. The fire command center must be located with the CAC designated for primary fire department access. Location must be approved by OBO/OPS/FIRE.

Delete and replace subsection 508.1.3 with the following:

508.1.3 Size. The fire command center shall have a minimum size of 9 m2 (96 square feet) of clear usable space with the minimum room dimension of 2.4 m (8 feet).

Delete and replace subsection 508.1.4 with the following:

508.1.4 Layout approval. A layout of the fire command center and all features required by this section to be contained therein must be submitted for review and approval by OBO/OPS/FIRE prior to installation.

Delete and replace subsection 508.1.6 with the following:

508.1.6 Required features. The required features of the fire command center shall be split between Post 1 and fire command center as identified within this Section. The fire command center must comply with NFPA 72 and must contain the following features:

508.1.6.1 Post 1 Required features. Post 1 must contain the following features:

1. Emergency Notification System (ENS) control unit.
2. Annunciator unit visually indicating the location of the elevators and whether they are operational
3. Fire detection and alarm system annunciators at Post 1 and at Post 2. Where both Post 1 and Post 2 are included, Post 1 will be the designated primary unit.
4. The fire fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
5. Status indicators and controls for air distribution systems.
6. Controls for unlocking electronically locked doors.
7. Sprinkler valves and water-flow detector display panels.
8. Emergency and standby power status indicators.
9. Fire pump status indicators.
10. Generator supervision devices, manual start and transfer features.
11. Elevator fire recall switch in accordance with ASME A17.1/CSA B44.
12. Elevator emergency or standby power selector switch(es) in accordance with ASME A17.1/CSA B44.

508.1.6.2 Fire Command Center Required features. The fire command center must comply with NFPA 72 and must contain the following features:

1. Fire department communications system in accordance with OBO-ICS IBC Chapter 9 Fire department communication system.
    a. Provide monitoring capability in Post 1, allowing MSG to monitor all conversations on this system.
2. Fire detection and alarm system annunciator with global supervision without any control functions.
3. A telephone line for fire department use with direct connection capabilities to Post 1 and the public telephone system.
4. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access, and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions. Building plan spaces must be labeled by generic terminology (e.g., office, restroom, mechanical space) for Set A areas only
5. An approved Building Information Card provided by the post facility manager and including the following information.
    a. General building information that includes property name, address, the number of floors in the building (above and below grade), use and occupancy classification (for mixed uses, identify the different types of occupancies on each floor), approximate building population.
    b. Building emergency contact information that includes: a list of the building's emergency contacts.

c. Building construction information that includes: the type of building construction (e.g., floors, walls, columns, and roof assembly).
d. Exit stair information that includes: number of exit stairs in building, each exit stair designation and floors served, location where each exit stair discharges, exit stairs that are pressurized, exit stairs providing roof access; elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve, location of elevator machine rooms, location of sky lobby, location of freight elevator banks.
e. Building services and system information that includes: location of mechanical rooms, location of building management system, location of fuel oil tanks, location of emergency generator(s), location of natural gas service.
f. Fire protection system information that includes: locations of standpipes, location of fire pump room, location of fire department connections, floors protected by automatic sprinklers; sprinkler isolation valves, and
g. Hazardous material information that includes: location of hazardous material, quantity range of hazardous material.

Add the following subsection 508.1.8:

508.1.8 Emergency Power. Fire Command Center must be connected to the emergency power system. Provide emergency backup lighting on the emergency power system to provide a minimum illuminance 540 lux (50 FC).

SECTION 510
EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEMS

Delete and replace Exception 2 to Paragraph 510.1 as follows:

Exceptions.

2. Where it is determined by the OBO Authority Having Jurisdiction that communications coverage is not needed in all or part of a building.

END OF CHAPTER IFC- 5 AMENDMENTS

CHAPTER 6
BUILDING SERVICES AND SYSTEMS

SECTION 603
ELECTRICAL EQUIPMENT, WIRING AND HAZARDS

Delete and replace section 603.1 in its entirety with the following:

603.1 General. Refer to OBO Electrical Code (OBO-ICS NEC) for additional requirements.

END OF CHAPTER IFC- 6 AMENDMENTS

CHAPTER 8
INTERIOR FINISH, DECORATIVE MATERIALS, AND FURNISHINGS

SECTION 805
UPHOLSTERED FURNITURE AND MATTRESSES IN NEW AND EXISTING BUILDINGS

Delete and replace Section 805.4 with the following:

805.4 Upholstered furniture for all other occupancies. All upholstered furniture must bear the Upholstered Furniture Action Council (UFAC) label with certification that the furniture is constructed in accordance with UFAC methods to provide cigarette ignition resistance.

805.4.1 U.S. furniture. Furniture purchased in the U.S. must meet the requirements of the *California Bureau of Home Furnishings and Thermal Insulation, Technical Bulletin No. 117: "Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture."*

805.4.2 Non-U.S. furniture. When non-U.S. furniture purchase is necessary, standards compatible with U.S. testing procedures must be followed to maintain the fire protection features of the building.

805.4.3 Existing furniture. When existing furniture is re-upholstered, it must meet all the following requirements of NFPA 260:

1. Welt cord, filling/padding components, decking material, and barrier materials classifications are to be Class I.

2. Class I cover fabrics are permitted to be used in contact with other Class I materials.

3. Class II cover fabrics should only be used when used in conjunction with Class I barriers.

Add the following section 805.5:

805.5 Residential facilities. The following requirements shall apply to residential facilities.

805.5.1 Mattress and bedding. Comply with DOC 16 CFR Part 1632 (FF 4-72), flammability standard.

END OF CHAPTER IFC-8 AMENDMENTS

CHAPTER 9
FIRE PROTECTION AND LIFE SAFETY SYSTEMS

SECTION 901
GENERAL

Add the following section 901.11:

901.11 Additional requirements. For additional requirements, refer to the OBO-ICS IBC – Chapter 9 – *Fire Protection and Life Safety Systems.*

END OF CHAPTER IFC- 9 AMENDMENTS

CHAPTER 10
MEANS OF EGRESS

SECTION 1001
ADMINISTRATION

Add the following Sections 1001.3 – 1001.4:

1001.3 Additional requirements. For additional requirements, refer to the OBO-ICS IBC – Chapter 10 – *Means of Egress.*

1001.4 Conflict clarification of the model code. Section 1030.14.1 of the model IFC erroneously references IFC Section 1108.2. The correct reference is 1109.2 (as correctly referenced in 1030.14.1 of the model IBC).

END OF CHAPTER IFC- 10 AMENDMENTS

CHAPTER 12
ENERGY SYSTEMS

SECTION 1205
SOLAR PHOTOVOLTAIC POWER SYSTEMS

Delete and replace subsection 1205.3.2 with the following:

1205.3.2 Interior pathways. Refer to OBO-ICS NEC Article 690 for dimensional requirements for photovoltaic arrays.

Delete subsection 1205.3.3 Smoke ventilation.

END OF CHAPTER IFC- 12 AMENDMENTS

CHAPTER 80
REFERENCED STANDARDS

ADDITIONAL STANDARDS REFERENCED BY OBO

Add the additional standards for organizations included in IFC Chapter 80:

NFPA

820-24: Standard for Fire Protection in Wastewater Treatment and Collection Facilities

END OF CHAPTER IFC-80 AMENDMENTS

APPENDIX C
FIRE HYDRANT LOCATIONS AND DISTRIBUTION

SECTION C101
GENERAL

Add the following subsections C101.2 and C101.3:

C101.2 External source. Fire hydrants must be designed to be supplied from an external source (e.g., city water main).

C101.3 Compatibility. Fire hydrants must be compatible with local fire service operations and equipment.

SECTION C103
FIRE HYDRANT SPACING

Delete and replace section C103.1 with the following:

C103.1 Hydrant spacing. Fire apparatus access roads providing required access to buildings in accordance with Section 503 must be provided with one or more fire hydrants as determined by Section C102.1. Where more than one fire hydrant is required, the distance between required fire hydrants must be in accordance with Section C103.2 and C103.3.

C103.1.1 Maximum distances to hydrants. Fire hydrants must be spaced so that hose laid by the responding vehicles does not exceed 15.24 m (50 feet) from the vehicle to the nearest hydrant.

C103.1.2 Maximum distances from buildings. Fire hydrants must be located within 12 m (40 feet) of residential buildings and within 90 m (300 feet) of office, warehouse, shop, vehicle maintenance facilities, and similar buildings.

END OF CHAPTER IFC- APPENDIX C AMENDMENTS

J.2.1

OBO International Mechanical Code

OBO-ICS IMC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL MECHANICAL CODE (IMC)

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CHAPTER 1 SCOPE AND ADMINISTRATION
101 Scope and General Requirements
102 Not adopted
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104 Not adopted
105 Permits
106-115 Not adopted

CHAPTER 2 DEFINITIONS
201 General
202 ICC Definitions
203 OBO Terms, Acronyms and Abbreviations

CHAPTER 3 GENERAL REGULATIONS
301 General
302 No amendments
303 Equipment and Appliance Location
304 No amendments
305 No amendments
306 Access and Service Space
307–311 No amendments
312 Heating and Cooling Load Calculations
313 HVAC System Design
314 HVAC Controls
315 Corrosion-Resistant Protection

CHAPTER 4 VENTILATION
401 General
402 No amendments
403 Mechanical Ventilation
404-407 No amendments

CHAPTER 5 EXHAUST SYSTEMS
501 No amendments
502 Required Systems
503 No amendments
504 Clothes Dryer Exhaust
505 Domestic Cooking Exhaust Equipment
506 No amendments
507 No amendments
508 Commercial Kitchen Makeup Air
509 Hazardous Exhaust Systems
510 Dust, Stock and Refuse Conveying Systems
511 No amendments
512 No amendments
513 Energy Recovery Ventilation (ERV)

CHAPTER 6 DUCT SYSTEMS
601-604 No amendments
605 Air Filters
606-608 No amendments

CHAPTER 7 COMBUSTION AIR
No amendments

CHAPTER 8 CHIMNEYS AND VENTS
No amendments

CHAPTER 9 SPECIFIC APPLIANCES, FIREPLACES, AND SOLID FUEL-BURNING EQUIPMENT
No amendments

CHAPTER 10 BOILERS, WATER HEATERS, AND PRESSURE VESSELS
No amendments

CHAPTER 11 REFRIGERATION
1101 No amendments
1102 System Requirements
1103 - 1111 No amendments

CHAPTER 12 HYDRONIC PIPING
1201 General
1202 Material
1203 No amendments
1204 No amendments
1205 Valves
1206 Piping Installation
1207 - 1210 No amendments

CHAPTER 13 FUEL OIL PIPING AND STORAGE
1301 General
1302 –1304 No amendments
1305 Fuel Oil System Installation
1306 –1308 No amendments
1309 Vehicle Fuel Dispensing Systems

CHAPTER 14 SOLAR THERMAL SYSTEMS

No amendments

CHAPTER 15 REFERENCED STANDARDS
No amendments

APPENDIX A CHIMNEY CONNECTOR PASS-THROUGHS
No amendments

APPENDIX B Not adopted

APPENDIX C Not adopted

APPENDIX D Not adopted

APPENDIX E Not adopted

END OF IMC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
SCOPE AND GENERAL REQUIREMENTS

Delete and replace Section 101 in its entirety with the following:

101.1 Title. These regulations shall be known as the *OBO Mechanical Code* hereinafter referred to as "this code."

1. This code incorporates by adoption the *2024 International Mechanical Code* of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

101.2 General. The provisions of Chapter 1 - Administration of the OBO-ICS IBC, apply to this code.

Delete Sections102 through 104 and 106 through 115 in their entirety.

SECTION 105
PERMITS

Delete and replace Section 105 in its entirety with the following:

105.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

END OF CHAPTER IMC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

Delete Section 201.3 in its entirety and replace with the following:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

Add Section 202.1 and retain the remainder of section 202:

SECTION 202
ICC DEFINITIONS

202.1 General. Refer to OBO-ICS IBC Section 202 for definitions of terms used where not defined in this code. Where terms are defined here, use the meaning ascribed to the terms in this code if different.

Add the following Section 203:

SECTION 203
OBO TERMS, ACRONYMS, AND ABBREVIATIONS

203.1 General. Refer to OBO-ICS IBC section 203 for definitions of terms used.

END OF CHAPTER IMC-2 AMENDMENTS

CHAPTER 3
GENERAL REGULATIONS

SECTION 301
GENERAL

Add new subsection 301.1.1 after 301.1:

301.1.1 Mechanical requirements for wireless technology on office compounds. Wireless equipment on office compounds must comply with the following.

301.1.1.1 Prohibited Wi-Fi capable mechanical equipment, devices, and components. Mechanical equipment devices and components are prohibited from being Wi-Fi capable.

301.1.1.2 Prohibited Communication Capability for Devices. Bluetooth or near-field communication enabled equipment or devices are strictly prohibited in office buildings with CAA. Compliance with this restriction must be accomplished per OBO OTC Chapter 3 Prohibited Communication Capability for Devices.

301.1.1.3 Requirements contained elsewhere in OBO codes. Refer to OBO OTC for additional specific requirements. Refer to OBO-ICS IBC Chapter 4 and OBO-ICS NEC Chapter 1 for other requirements.

Replace Section 301.2 with the following:

301.2 Energy utilization. Heating, ventilating and air-conditioning systems of all structures must be designed and installed for efficient utilization of energy. Refer to OBO-ICS IBC Chapter 13 for requirements.

SECTION 303
EQUIPMENT AND APPLIANCE LOCATION

Add the following subsection 303.10:

303.10 Equipment location. Locate equipment as required by this section.

303.10.1 Access for service and maintenance. Refer to OBO-ICS IBC Chapter 12 for access requirements.

303.10.2 Air-handling units (AHUs) requirements. Air handling units must comply with the requirements of this section.

303.10.2.1 Conditioned mechanical rooms. Air handling units must be located in conditioned mechanical rooms. Air handling units may be located on floor served by air handling unit or located on an adjacent floor immediately above or below the floor served by the air–handling unit.

303.10.2.2 Outside air AHUs for buildings subject to blast. Outside air AHUs for office buildings and other buildings subject to blast requirements must be fully ducted from a roof intake and must be located either in a conditioned Mechanical Equipment Room (MER) on the floor below the roof or in a conditioned penthouse.

303.10.2.3 Air-handling unit room size requirements. Individual air-handling unit rooms must be sized based upon the actual floor area served. AHUs must be dedicated to a single security zone: PAA, CAA without

PCC, and 2 or more for the GWA, and must follow the general guideline of: Floor Area < 500m^2 = 37.8m^2, 501m^2 – 1420 m^2 = 48.6 m^2, and 1421 m^2 – 1895 m^2 = 64.8 m^2 for single side access AHUs.

1. Sizes indicated are the minimum spaces required for the for air-handling unit equipment installation and include maintenance area.

2. A single air handler is not permitted to serve spaces on both sides of a gallery or an atrium.

3. Provide multiple air-handling units as required to serve each area. Project-specific space modifications may be required based on quantities and types of equipment chosen.

4. HVAC equipment area does not include space required for elevators, duct chases, generators, communications equipment, and uninterrupted power systems (UPS).

303.10.2.4 Minimum equipment clearance. Provide the following access clearances for service and maintenance, and coil pull space at indoor air-handling units:

1. Sides and rear provide the greater of the following:
   A. 600 mm (24 inches) minimum
   B. Not less than manufacturer's minimum clearance required.

2. Front: Refer to IMC Section 306 for front clearance.

303.10.2.3 Provide not less than manufacturer's minimum clearance required for maintenance of coil pulls, etc.

303.10.3 Condenser (chiller) and boiler locations. Chillers and boilers must be located as required by this section.

303.10.3.1 Air-cooled chillers and condenser placement. Air-cooled chillers and condenser placement must comply with the following.

1. Critical air-cooled chillers must be located on the roof level of the building served. Critical chillers are defined as chillers serving the PCC.

2. Comfort air-cooled chillers may be located in the following locations, subject to final approval by OBO/PDCS/DE/ME and listed in order of preference: grade-level, roof of the utility building, roof of other support buildings. OBO may require locations on a site-specific basis. Comfort chillers must not be located on the roof unless approved by OBO/PDCS/DE/ME.

3. Both critical and comfort air-cooled chillers must be located to facilitate maintenance and required conditions for performance. Comfort chillers at grade must be enclosed in a lockable fenced-in service yard.

4. Chillers must not be enclosed by solid walls, walls with louvers that restrict airflow beyond manufacturer's requirements, or located in a pit or other location where airflow to the unit is restricted.

5. Clearances on all sides of air-cooled equipment located in a fenced or enclosed area must be the greater of the manufacturer's requirements for service, unadjusted performance, and unobstructed air flow, and the below minimum distances. Fan discharge must be at or above the top of adjacent walls or partitions – this must be achieved by combination of structural platforms to raise the equipment, and if needed, the addition of condenser outlet extension collars.

   a. **Building or Wall (Un-louvered) on One Side of Unit:** Equipment must maintain a minimum of 2.44 m (8 feet) from a solid wall of any height.

   b. **Two or More Units, Side-by-Side**: Multiple units must maintain a minimum of 3.7 m (12 feet) between units when placed side-by-side for 3 units or 2.5 m (8.2 feet) for 2 units.

c. **Screened or Louvered Wall Enclosures**: Chillers placed in an enclosure with screened or louvered walls will maintain a minimum distance of 3.75 m (12.3 feet) between all sides of unit and walls. Enclosure partitions must provide a minimum total free area equal to the total face area of each portion of the coil geometry which makes up the condenser assembly.

6. If installed on roofs, the equipment must be mounted on a structural platform a minimum of one meter above the roof deck for sites where the ASHRAE 1% ambient summer temperature exceeds 35 °C (95 °F).

7. Chillers located on structural platforms must be provided with a maintenance catwalk. Refer to OBO-ICS IBC Section 505 – Mezzanines, Equipment Platforms and Catwalks for requirements.

303.10.3.2 Boiler placement. Boiler placement must comply with the following:

1. Boilers must be located in a Mechanical Equipment Room (MER) or in the utility or support buildings.

2. Boiler removal routes and maintenance envelopes must be designed and indicated on the drawings and must permit complete removal and replacement of the boiler without disturbing equipment, piping, or ductwork unrelated to the boiler, and without disturbing interior or exterior structure.

3. Provide all required manufacturer's maintenance clearances and envelopes.

303.10.4 CAC HVAC equipment prohibited location. CAC exterior HVAC equipment is not permitted to be located on CAC roofs.

Exception. Where permitted by Diplomatic Security on a site-specific basis.

SECTION 306
ACCESS AND SERVICE SPACE

Add the following to subsection 306.5 after item 11:

12. Provide an OSHA-compliant personal fall arrest system at all permanent ladders exceeding 7315 mm (24 feet) in height.

SECTION 312
HEATING AND COOLING LOAD CALCULATIONS

Replace all Section 312 content with the following:

312.1 Load calculations. Heating and cooling systems must be sized in accordance with the ASHRAE Handbook of Fundamentals at the ASHRAE defined 99% heating and 0.4% cooling conditions for office buildings, MSGRs, and central plants to maintain interior design temperatures of 22°C (72 °F) heating and of 24°C (75 °F) for cooling at 50 percent relative humidity; Heating and cooling systems must be sized in accordance with the ASHRAE Handbook of Fundamentals at the ASHRAE defined 99% heating and 1% cooling conditions for CACs, warehouses, and other outbuildings to maintain interior design temperatures of 22°C (72 °F) heating and of 24°C (75 °F) for cooling at 50 percent relative humidity.

312.2 Energy Recovery Ventilation (ERV). Whenever ERV is used, size the outside air AHU coil without taking credit for the contributions of the ERV (i.e., size outside air AHU coil as if there is no ERV).

Add the following sections 313, 314, and 315:

SECTION 313
HVAC SYSTEM DESIGN

313.1 HVAC system considerations.

313.1.1 Air systems. Office buildings and on-compound housing where the office buildings and on-compound housing are built to blast standards must be served by air handlers with all-air variable-volume distribution systems incorporating Environmental Security Protection Systems (ESPS). Outside air ventilation for these buildings must be provided in accordance with OBO-ICS IMC Chapter 4 – Mechanical Ventilation. Chilled Beam air distribution devices are prohibited unless approved on a project specific basis by OBO/PDCS/DE/ME. If approved, chilled beams must be on a separate chilled water loop dedicated to the chilled beams.

313.1.2 Building hydronic (water) systems. Provide the following:

1. Provide variable speed pumps, differential pressure controllers, and modulating two-way valves at building hydronic distribution systems. Provide pumping capacity and redundancy based on system's capacity, redundancy, and configuration requirements.

Exception. PCC system. Refer to PCC requirements.

2. Provide pressure independent (automatic balancing) valves or a reverse-return piping system to simplify balancing. Hydronic piping must be designed for a maximum pressure not to exceed 1034 kPa (150 psi).

313.1.3 District utility systems. Utilize District Utility Systems (e.g., steam, hot water, chilled water) where available and life cycle cost effective unless otherwise directed by OBO. Utilize the district system to feed a heat exchanger to transfer energy to a secondary circulation system serving the compound. Where district utility cooling and/or heating plant are employed, provide a single backup system at 100 percent of design load unless directed otherwise by OBO.

313.2 HVAC cooling systems. Provide air cooled chillers.

Exceptions:

1. Water cooled chillers where approved by OBO.

2. Cooling towers where approved by OBO. Provide cooling tower capacity and redundancy based on system's capacity, redundancy, and configuration requirements.

313.2.2 PCC chiller. Design of PCC chiller must conform to requirements of PCC Critical Cooling Applications contained in Specification 236424, Modular Scroll Air Cooled Water Chillers.

313.3 Heating systems. Provide heating and humidification systems (capable of maintaining 50 percent RH) for buildings where the 99% winter design conditions are less than 15 °C (59 °F).

313.3.1 PCC heating. Heating hot water systems are prohibited in the PCC.

313.4 System capacity, redundancy, and configuration. Provide block heating and/or cooling capacity as required by this section.

313.4.1 Cooling plant. Cooling plant system must be designed with chillers, pumps, piping, and accessories such that in the event of failure of any one component, the remainder of the system must maintain not less than 100% of block cooling capacity. Dedicated Heat Recovery Chillers must not factor into cooling plant capacity. Where chillers are to be installed on a roof structure at sites having an ASHRAE defined cooling condition >= 35 °C (95 °F), the design temperature must be increased by 3 °C (5.4 °F) for calculations to support equipment selection.

313.4.1.1 Cooling plant sizing. The chiller plant system must be comprised of at least two separate chillers with the ability to maintain 100 percent of the block cooling load with one chiller offline (PCC chillers do not count as one of the offline chillers). Size compound chillers for block load minus PCC load.

313.4.1.2 Heating plant. Heating plant system must be designed with boilers, pumps, piping, and accessories such that in the event of failure of any one component, the remainder of the system must maintain not less than 100 percent of block heating capacity. Dedicated Heat Recovery Chillers must not factor into heating plant capacity.

313.4.2 Minimum winter block load condition. For all chiller plant configurations, the plant must be capable of turndown to minimum winter block load condition.

313.4.3 Selective operation. Piping must be configured and sized for operating dual pumps in parallel with piping cross-connections and with normally open automatic isolation valves to enable selective operation of each pump and chiller or boiler.

313.5 Server room redundancy. Provide 100 percent redundant cooling at all server rooms, including but not limited to EC, JUCR, and MTER (PBX). Redundant split systems must be automatically and regularly alternated by the BAS. BAS must alarm on failure to run, or if backup system runs longer than a designated operating time.

313.6 Cooling for equipment and telecommunications rooms. Provide cooling in accordance with 313.6.1 through 313.6.4 for all electrical, switchgear, and all telecommunications rooms.

313.6.1 Minimum cooling capacity.

313.6.1.1 EC. Provide a minimum cooling capacity of 3.5 kW (12 000 Btu/hr) per installed rack unless otherwise noted.

313.6.1.2 JUCR. Provide a minimum cooling capacity of 3.5 kW (12 000 Btu/hr) per installed rack unless otherwise noted.

313.6.1.3 MTER (PBX), RNER, CAER, TR, Telecommunications Demarcation Room, TSEF, and Telecommunication Systems Rooms. Provide cooling capacity based on power distribution requirements as required in the UPS specification but not less than 1.2 kW (4 000 Btu/hr) per installed rack.

313.6.2 Cooling load less than 7 kW. System/server rooms must be cooled by VAV terminal units only. Size VAV terminal units to have 25 percent spare capacity.

313.6.3 Cooling load of 7 kW or more. System/server rooms must be cooled by chilled water computer room air conditioning unit and provided with a VAV terminal unit sized for ventilation air only.

313.6.4 JUCR requirements. JUCR must be served by a minimum of two 100 percent capacity computer room air conditioning units located in the JUCR mechanical room. One computer room air conditioning unit must have chilled water cooling and the other unit must have direct expansion or fluid cooler coil. Supply air must be ducted into the JUCR in a common duct to ensure that all racks have required cooling. The supply air and return air must be arranged to provide “cold” and “hot” air aisles around the JUCR equipment racks.

313.6.5 Hydronic piping. Provide condensate piping and chilled water supply and return piping at every JUCR, JUCR mechanical room, and MTER room.

313.6.5.1 Size. Condensate piping and chilled water supply and return must be sized for the greater of:

1. 32 mm (1.25 inches) minimum or

2. Required load plus 25 percent [e.g., for a 40-kW (137 000-Btu/hr) load, provide pipe sized for 50 kW (170 000 Btu/hr)].

313.6.5.2 Rooms cooled by VAV terminal units only. Provide condensate, chilled water supply, and return pipes capped and with isolation valves for future use.

313.6.6 RSO Suite Requirements. Calculate cooling load for RSO Suite per standard procedures (lights, personnel, transmission, etc.) and add minimum technical load of 3 kW (10 000 Btu/hr) (2.1 kW base load plus 0.9 kW growth) for small RSO Suite and minimum technical load of 5 kW (17 000 Btu/hr) (4.1 kW base load plus 0.9 kW growth) for medium and large RSO Suite. Room must be cooled with VAV only if under 7 kW (24 000 Btu/hr). If over 7 kW (24 000 Btu/hr), provide VAV for ventilation load and to meet 4 ACH requirement and remaining load is permitted to be served by FCU. Verify minimum technical load with DS/SSI/SIM AV designer via the COR and ensure a minimum of 0.9 kW (3000 Btu/hr) of growth is provided.

313.7 Densification requirements. To account for potential future densification of workstations, the HVAC system design for office buildings must include the following features:

313.7.1 Dedicated Outside Air System (DOAS) sizing. The DOAS unit and associated ductwork and dampers/VAV boxes supplying the AHUs must be sized to meet the anticipated peak densification load for ventilation.

313.7.2 Chilled water system sizing. The chiller(s), chilled water pumps, and piping must be sized to meet the anticipated peak densification cooling load. Stub-outs [38 mm (1½ inch)] for future installation of FCUs must be provided on every floor in areas where potential densification is identified. The design must anticipate and deconflict the location of the future FCUs and these locations must be shown on the drawings.

313.7.3 Supplemental chilled water piping. In areas where potential densification is identified, and no chilled water is available, supplemental chilled water supply and return risers with stub-outs must be provided. The design must anticipate and deconflict the location of the future FCUs and these locations must be shown on the drawings.

SECTION 314
HVAC CONTROLS

314.1 Timers, event-based, and temperature set-back controls. Use to reset room temperatures during summer and winter months to reduce energy usage without compromising pressurization, humidity, or indoor air quality control. Time delays must be designed into HVAC equipment startup schedules to stagger peak current start-up loads after power loss or during normal daily operations. BAS systems must be programmed to implement temperature set back and subsequent energy efficient warm up during normally unoccupied hours.

314.2 Room occupancy sensors. Provide in offices and public areas of residences to control HVAC setback operation. Occupancy sensors provided as part of the Lighting Control System may be used to serve this purpose. When Lighting Control System occupancy sensors are used, they must include an extra set of contacts for point wiring from the BAS.

314.3 Building Automation System (BAS). Provide Building Automation Systems to all buildings on the compound and associated compounds as follows.

314.3.1 Single manufacturer requirement. The Building Automation Systems serving the compound must be provided by one common manufacturer. Multiple manufacturers are not permitted to be used on the same compound and associated compounds.

314.3.2 Non-CAA Building Automation Systems required. Provide one system for equipment in non-CAA spaces and buildings on the compound and associated compounds. Provide a separate system serving only the CAA areas.

314.3.3 CAA Building Automation System separation. The CAA Building Automation System including all control wiring and equipment located in CAA spaces must be entirely separate from and is not permitted to be connected to the system serving the rest of the compound.

314.3.4 Prohibited BAS equipment. BAS hardware is not permitted to be Wi-Fi capable.

SECTION 315
CORROSION-RESISTANT PROTECTION

315.1 Corrosion-resistant protection. Corrosion-resistant protection must comply with the requirements of OBO-ICS IBC Appendix W – Corrosion-resistant protection and the requirements of this section.

315.2 Mechanical systems, assemblies, equipment, and devices. Mechanical systems, assemblies, equipment, and devices required to receive enhanced corrosion-resistant protection include but are not limited to the following:

1. Exterior and interior surfaces of louvers, dampers, control dampers and actuators, air intakes, ductwork, rooftop exhaust and make-up fans, OAHUs, FCUs with direct OA, and rooftop condensers.

2. Interior duct surfaces and equipment exposed to contaminated airflow.

3. Hydronic site distribution system piping.

315.3 Mechanical requirements for exterior exposure. Provide the following enhanced corrosion protection features for mechanical equipment at exterior exposure locations:

1. Exterior mechanical devices, equipment, and assemblies. Exterior mechanical devices, equipment, and assemblies must be fabricated from stainless steel 316 construction, and all exposed surfaces must be protected with epoxy paint or powder coating.

2. Interior mechanical devices, equipment, and assemblies. Interior mechanical devices, equipment, and assemblies exposed to unconditioned outdoor air must be fabricated from stainless steel 316/304 construction.

3. Protection of coils and fins. Provide copper coils with copper fins protected with thin film, modified baked phenolic dipped coating at heat exchanging equipment.

4. Exterior enclosures. Provide NEMA 4X or 6P type enclosures with enhanced corrosion protection.

5. Electric motors. Provide Totally Enclosed, Fan-Cooled (TEFC) and Totally Enclosed, Air Over (TEAO) electric motors.

6. Outdoor piping. Must be shop-painted with vapor barrier and factory-installed insulation.

7. Equipment insulation. Provide flexible, elastomeric, puncture/tear/UV-resistant laminated jacketing.

8. Cooling towers. Where instructed by OBO, provide non-metallic corrosion-resistant cooling towers consisting of polyethylene tower body and sump.

315.4 Mechanical requirements for indirect exposure. Provide the following enhanced corrosion protection features for mechanical equipment at indirect exposure locations (e.g., vestibules in pressurized buildings, non-pressurized buildings such as CACs, SPX, WHE, UTL):

1. Mechanical devices, equipment, and assemblies. Exterior mechanical devices, equipment devices, equipment, and assemblies: fabricated from stainless steel 304 construction and all exposed surfaces must be protected with epoxy paint or powder coating.

2. Ducts, hangers, and appurtenances. Provide stainless steel 316.

3. AHUs/FCUs. Provide copper coils/copper fins protected with thin film, modified baked phenolic dipped coating. Provide clear and accessible condensate drain traps and stainless-steel drain and secondary drain pans with overflow protection and alarm.

4. Piping insulation. Lightweight rigid sealed glass cell insulation with vapor barrier.

5. Equipment and duct insulation. Flexible elastomeric duct and equipment insulation with vapor barrier.

6. Panels. Provide NEMA 4X panels with enhanced corrosion protection.

7. Electric motors. Provide Totally Enclosed, Fan-Cooled (TEFC) electric motors.

8. Water-cooled chillers (where allowed by OBO). Provide copper-nickel alloy (Cu-Ni) condenser tubes, ceramic coated water boxes, HDPE condenser water piping, and side stream condenser water filter system.

9. Protection of entrances. Provide air curtains and/or vestibule at entrances to these spaces: Lobbies, CACs, SPX, Utility, and at all Warehouse overhead doors.

315.5 Mechanical requirements for interior exposure. Provide the following enhanced corrosion protection features for mechanical equipment at interior exposure locations:

1. Ducts, hangers, and appurtenances. Provide stainless steel 304 ducts, hangers, and appurtenances.

2. AHUs. Provide copper coils with copper fins on indoor recirculating AHUs.

END OF CHAPTER IMC-3 AMENDMENTS

CHAPTER 4
VENTILATION

SECTION 401
GENERAL

Add the following subsection 401.7:

401.7 Air supply protection. Office buildings and residences built to blast criteria with non-functioning windows must meet the following requirements.

1. Intake opening location. Air Intakes must be located above the roof level.

2. Filtration. Provide environmental security (particulate/gaseous) filtration. Refer to section 605.1.

3. Pressurization. Provide zone pressurization. Refer to section 403.1.6.

SECTION 403
MECHANICAL VENTILATION

Add the following subsection to 403.1:

403.1.1 Outdoor air supply for buildings subject to blast requirements. All outdoor air for office and residential buildings must enter through dedicated Outside Air Handling Units (OAHUs) in accordance with the following:

1. Tempered air. OAHUs must provide tempering of the outdoor air to prevent coil freeze. OAHUs must precondition outside air to a specific humidity of no more than 12 g of water per kg of dry air and to a relative humidity less than 70 percent measured prior to the pollution (carbon) filter section. At a minimum, MERV 14 HEPA and activated carbon HEGA filters, with a residence time of no less than 0.1 seconds, are required for the outside air. For locations with particular air quality issues, specific outdoor air filters may be necessary to address particular contaminants.

2. Pollutant and particulate protection. OAHUs must remove local air pollutants (e.g., PM10, PM2.5, Lead, VOCs) in compliance with US EPA NAAQS and IAQ guidelines, dust, and sand, and to maintain operability in high snow and/or sand conditions. Provide a combination of louvers, dampers, inertial separators, washable and disposable media filters, and bag filters required to protect OAHUs and ventilation air.

3. Output ducting. OAHU output must be fully ducted to zone air handling units.

4. PCC OAHU alternate outside intake. Provide an alternate outside air intake source independent from primary intake source. Alternate outside air intake must be damper-controlled, and dampers must open automatically upon a loss of airflow from primary intake. Alternate outside air intake dampers must close automatically after airflow is sensed from primary OAHU intake.

5. CMR/CGR and MSGRs. All outdoor air must enter the building through an OAHU at Posts with high humidity 12 g water per kg of dry air at any time of the year, and/or Posts with unacceptable levels of air pollutants (per USEPA NAAQS/IAQ guidelines) at any time of the year.

At locations where humidity and outdoor pollution levels are benign (e.g., no air pollutants and specific humidity always less than 12 g water per kg dry air at recirculation AHU ASZM-TEDA carbon adsorber), OA may be fully ducted from a roof intake to the mixing plenum on the air return side of the air handling units. Provide additional fan power to guarantee adequate outdoor air is delivered to the system for space pressurization and exhaust make-up.

403.1.2 HVAC Air Distribution System. Air distribution system for office buildings and residences built to blast criteria with non-functioning windows must meet the following requirements.

1. HVAC air distribution systems must be fully ducted from the zone air handler(s) to the supply diffusers or registers serving each conditioned space.

2. Return air must be routed through the plenum to the originating zone air handling unit. Return fans must not be used.

Exception: MSGR sleeping rooms must be provided with fully ducted return air back to the AHU serving the sleeping rooms. Refer to OBO-ICS IBC Chapter 7 – Fire Partitions requirements for ducts that penetrate fire partitions.

3. Return air must not be mixed with return air from spaces served by other zone air handling units.

4. Carbon dioxide sensors. Provide carbon dioxide (CO_2) sensors in the main return air ducts of AHUs to control outside air supply.

A. The amount of ventilation air must be adjusted appropriately within each air distribution system to maintain building pressurization requirements and match changes in building occupancy based upon a maximum CO_2 concentration of 900 ppm in occupied spaces.

B. Building ventilation or pressurization requirements (whichever is greater) must establish the minimum air to be supplied for each system.

C. Conference rooms designed for more than 12 people must have separate CO2 sensors.

5. VAV box requirements. VAV boxes must meet the following requirements.

A. VAV boxes must be pressure-independent type and provide complete temperature control.

B. VAV boxes must not permit recirculation of plenum air to occupied spaces.

C. VAV boxes must be provided with minimum air supply settings to maintain zone ventilation and pressurization requirements, whichever is higher.

D. Provide accessible balancing dampers at the branch duct tap for VAV system diffusers when there is more than one diffuser per VAV box.

6. Duct insulation must meet the following requirements.

A. Non-encapsulated fibrous internal duct liners are not permitted.

B. Ductwork must have adequate insulation, to prevent any mold growth, internal or external condensation, and must have a vapor barrier on the warm side.

C. In corrosive environments (see Section 315), duct insulation must be flexible elastomeric with vapor barrier on the warm side.

7. Supply diffusers and returns in occupied zones must be arranged to provide a minimum ventilation effectiveness of 80 percent.

8. Supply diffusers in occupied office spaces must have a minimum ADPI of 80 with $T_{0.25}/L$ between 0.9 and 1.2.

403.1.3 Ventilation Requirements for Marine Security Guard Posts and CAC Guard Booths.

1. Marine Security Guard Posts. Outside air must be supplied to the MSG Posts in the following sequence:

A. From the Outside Air AHU.

B. Through an AHU incorporating special filtration system not supplying a PAA space.

C. To a dedicated VAV terminal serving each space.

D. MSG Posts must be positively pressurized relative to the surrounding spaces (GWA and PAA).

2. CAC guard booths.

A. Booth must be positively pressurized relative to the Guard Station/Screening/Vestibule.

B. Positive pressurization must be provided by a supply fan located in the outside air duct which is connected via a gooseneck pipe in roof directly above the guard booth.

403.1.4 Ventilation Requirements for Safe Havens/Areas. When called for, ventilation system meeting the requirement for six air changes per hour must be provided in the following sequence:

1. "Safe Mode" must be invoked by a BAS command initiated by an illuminating pushbutton, clearly labelled "Emergency Air Supply," located within the safe haven/area.

2. The AHU serving the Safe Haven/Area and adjacent spaces in normal mode must be used to solely serve the Safe Haven/Area when in Safe Mode.

3. The Safe Haven/Area must be isolated by closing dampers on branch supply ducts and return plenums to other floor areas. Returns must be fully ducted back to the AHU from the Safe Haven/Area boundary.

4. If the number of occupants for the Safe Haven/Area requires a greater amount of outside air than required by the AHU serving the floor area that the Safe Haven/Area is located within, then the AHU serving the Safe Haven/Area must have an additional outside air damper which is activated during Safe Mode and must be modulated to increase airflow by CO_2 sensor to provide OA for the specified Safe Haven/Area population; OA supply must not be less than 2.4 L/sec (5 CFM) / person.

5. To maintain temperature conditions during increased occupancy, the Safe Area must have additional VAV terminal boxes which are activated during safe mode. The normal occupancy VAV terminals are not to be oversized to account for the additional occupants during the Safe Mode as this may result in inability to modulate properly during part load conditions.

6. If located in building built to blast criteria (with environmental security filtration), all ventilation air provided during safe mode must also pass through the environmental security filtration system.

7. All equipment required to operate during safe mode must be on an emergency power system (with required FE/BR protections as required by OBO-ICS IBC).

8. The sequence of operations for Safe Haven/Area emergency ventilation must comply with the following:

A. All equipment associated with the Safe Haven/Area must fail to "Safe Mode."

B. A single controller must control Normal and "Safe Mode."

C. The Safe Haven/Area emergency pushbutton must be hardwired to controller and any failure must cause the controller to go into "Safe Mode."

D. "Safe Mode" or loss of power at the AHU controller must cause:

1) AHU fan VFD must go to "Safe Mode" speed via hardwired interlock.

2) Associated exhaust fan VFD must go to "Safe Mode" speed via hardwired interlock.

3) Associated Safe Area VAVs must go to "Safe Mode" CFM via hardwired interlock.

4) Interruption of power to associated damper actuators, thus modulating the dampers to required positions for "Safe Mode" operation.

403.1.5 Ventilation Requirements for Compound Emergency Sanctuary (CES). Areas designated as CES have no additional HVAC requirements beyond what is already required for that area based on its other intended function.

403.1.6 Zone Pressurization. Provide zone pressurization at office buildings and residences built to blast criteria with non-functioning windows must meet the following requirements. Zone air handling units must meet ventilation and zone pressurization requirements.

403.1.6.1 Zone pressurization for principal office buildings.

1. Provide dedicated HVAC air handling units for spaces within each security boundary (Public Access Area (PAA), General Work Area (GWA), Controlled Access area (CAA), and PCC).

2. The chancery office buildings must have three levels of pressurization higher than ambient pressure. The three pressure levels serve:

A. PCC/safe haven/safe area (highest pressure).

B. The remaining portions of the controlled access area and the general work area GWA (intermediate pressure).

C. The public access areas PAA (lowest pressure).

3. There must be a minimum pressure differential of 2.5 Pa between each pressure area.

4. Differential pressure sensors for each zone must reference the adjacent pressure zone. Note: The PAA AHU may be omitted and the air from Public Access spaces exhausted to the outside if LCC modeling based on hours of space occupancy and after-hours pressurization requirements indicate a savings. The relief air from the PAA must be exhausted to the outside where a separate PAA AHU is not provided.

403.1.6.2 Zone pressurization for other buildings.

1. Annex buildings (NOX and GSO) must have two areas of pressurization: the office area (highest pressure) and the other areas of the building, unless a Safe Haven/Area is included in the building, in which case there would be an additional highest area of pressurization designed in accordance with section 403.1.6.1.

2. Residences must have two levels of pressurization: the private living quarters (highest pressure) and the public space. The pressure will be controlled in the highest pressure zone and the other areas will be monitored to remain higher than outside ambient pressure. The relief air must be taken from the public space. These conditions are based on manually closed doors.

3. Lease Fit-Out (LFO) Buildings: LFO Buildings must have positive pressurization relative to ambient where possible and practical. For consular offices, airflows must be balanced to achieve positive airflow across interview windows from interviewer to interviewee.

403.1.6.3 Zone pressurization - general

1. The pressure controls and Building Automation System (BAS) must be installed and calibrated with sufficient signal filtering (PID Loop) to diminish the effects of temporary fluctuations occurring when doors are opened.

2. Air locks are not required between pressure zones.

3. Pressure differential sensors must be provided between the pressure zones to maintain the proper pressure relationships. Other balancing devices (e.g., air flow measuring devices, low leakage control

dampers, controlled pressure relief fans) must be provided as necessary to maintain the pressure relationships.

4. A pressure controlled VAV box with reheat may be used in each zone; but it should be located in a hallway away from occupied space.

5. Deal tray windows must be equipped with latched covers to reduce the loss of airflow through the deal trays when not in use.

Add the following to the end of the paragraph in 403.3 and before 403.3.1:

"Mechanical ventilation is required for all occupied spaces (circulation spaces are to be treated as occupied spaces for the requirements of this subsection). Air velocities in occupied spaces must not exceed 0.23 m/sec (0.5 mph). Supply air (i.e., make-up plus recirculated air) must be able to maintain a minimum circulation of at least 4 air changes per hour in occupied spaces during occupied hours for buildings built to blast criteria (with the Environmental Security Protection System). During unoccupied hours, ventilation rates must be reduced to a minimum to maintain overall building pressurization and maintain setback temperatures.

Exception. Four (4) ACH is not required when ESPS is not required (buildings not built to blast criteria and/or off-compound buildings). For these buildings, follow the requirements of OBO-ICS IMC Section 403."

Add the following subsection 403.4:

403.4 Air Handling Units (AHUs). Special environmental security air handling units are required for office spaces (NOB, NOX, GSO) and residences (CMR/CGR, MSGR, SDA). Individual air handling unit capacity must not exceed 10 000 L/sec (21 000 CFM). An NOB air handling unit will only serve one of the following areas: Public Access Area (PAA), General Work Area (GWA), the Controlled Access Area (CAA), or the PCC. For small office buildings, or when CAA comprises an entire floor, the AHU serving the CAA may be used to provide conditioned air to the GWA spaces (e.g., elevator lobby, bathrooms, etc.) on the same floor, provided that:

1. The ductwork serving GWA space is separate from the CAA ductwork at the AHU.

2. The ductwork serving the GWA space does not enter into or return from the CAA space.

3. No return air is taken from the GWA space.

4. A single air handler must not serve spaces on both sides of the gallery/atrium. Multiple air handling units may be required to serve each area.

403.4.1 Fan selection. Fan motor sizes and configurations must be determined by the supply, return, or exhaust flow rate and the duct design at maximum system (e.g., dirty filter) pressure drop. Variable Frequency Drive (VFD) controllers are standard to allow a large range of operating conditions. AHU VFD Controllers must include capability of continuous energy usage monitoring and reporting of this data to the BAS.

403.4.2 Heating coils. The air velocity over the heating coils must not exceed 4.0 m/sec (8.9 mph). Coil water flow velocity must be sufficiently high to prevent laminar flow.

403.4.3 Humidifiers. Provide for air systems to meet the temperature and humidity requirements of OBO-ICS IMC Section 313.

END OF CHAPTER IMC-4 AMENDMENTS

CHAPTER 5
EXHAUST SYSTEMS

SECTION 502
REQUIRED SYSTEMS

Add the following subsection 502.1.5:

502.1.5 Dedicated exhausts. Provide the following dedicated exhausts.

502.1.5.1 Residential. Provide either an individual exhaust fan in each private bathroom, and laundry room or provide a central exhaust system for these spaces.

502.1.5.2 Office buildings. Restroom exhausts may be combined vertically.

Add the following sentence to the end of the subsection:

502.3 Battery-charging areas for powered industrial trucks and equipment.

"Provide dilution ventilation to reduce concentration of vapors below lower explosive limit and discharge to the atmosphere. Refer to Dilution Ventilation for Fire and Explosion - The American Conference of Governmental Industrial Hygienists (ACGIH*) Industrial Ventilation: A Manual of Recommended Practice*."

Add the following paragraph to the end of the subsection:

502.7.3.3 Air velocity.

"At spray booths, control airborne pollutants, flammable and combustible liquids, and residues in accordance with Painting Operations - The American Conference of Governmental Industrial Hygienists (ACGIH*) Industrial Ventilation: A Manual of Recommended Practice*."

Add the following subsection 502.7.3.7:

502.7.3.7 Paint spray booths and rooms. Spray booths and rooms must be configured to permit proper air flow around object, to provide adequate room to work, and to enable smooth, controlled airflow in accordance with Painting Operations - The American Conference of Governmental Industrial Hygienists (ACGIH*) Industrial Ventilation: A Manual of Recommended Practice*. Locate spray booth away from the room entrance doors in a location approved by OBO.

Add the following line to the subsection at the end of the first paragraph prior to the exceptions:

502.14 Motor vehicle operation.

"Provide a source capture system to connect directly to the vehicle and exhaust above the roof. – The system must conform to the requirements of The American Conference of Governmental Industrial Hygienists (ACGIH*) Industrial Ventilation: A Manual of Recommended Practice,* current edition. Equipment must include exhaust extraction connection hoses for each exhaust pipe, on each vehicle, in each maintenance bay. A general area exhaust fan must remove and replace air in the bays to maintain the CO below 35 ppm. Provide Carbon Monoxide (CO) alarm system to alert occupants if the CO level rises above the OSHA limit of 50 ppm."

SECTION 504
CLOTHES DRYER EXHAUST

Add the following sentence to the end of Section 504.3:

"Add secondary lint trap in either laundry room or mechanical room."

SECTION 505
DOMESTIC COOKING EXHAUST EQUIPMENT

Delete Exception 1. of subsection 505.3:

SECTION 508
COMMERCIAL KITCHEN MAKEUP AIR

Add the following subsection 508.3:

508.3 Kitchen hood make-up air. Provide make-up air to all kitchen hoods in accordance with sections 508.3.1 and 508.3.2. Refer to section 507 for Type I and Type II commercial kitchen hoods requirements.

508.3.1 Commercial kitchen exhaust hoods. Provide make-up air in accordance with the following for Type I and Type II commercial kitchen exhaust hoods in office buildings and the main kitchen commercial hood in all residence(s) subject to blast requirements.

508.3.1.1 Make-up air sources. Make-up air for commercial kitchen exhaust hoods must be supplied as follows:

1. Provide a minimum of 50 percent of the make-up air from transfer air and/or relief air.

A. Transfer and relief air must be supplied from GWA spaces only; the use of air from PAA spaces is prohibited.

2. The balance of the make-up air must be supplied from the building Outside Air Handling Unit (OAHU). All outside make-up air must be pre-filtered in accordance with section 403.1.1.

508.3.1.2 Kitchen exhaust system requirements. Kitchen exhaust systems must comply with the following.

1. Kitchen exhaust system must meet the requirements of ASHRAE 90.1.
2. OBO building pressurization zone requirements must be maintained during kitchen hood operation.
3. A Demand Controlled Kitchen Ventilation (DCKV) system must be incorporated to reduce exhaust and make-up air system airflow rates.
4. Kitchen exhaust air and make-up air control must be interlocked to hood operation in automatic mode and controlled via timer in manual mode. The exhaust hood must not function without operation of the makeup air supply.
5. Kitchen space must be maintained at a negative pressure during operation to prevent food odors from escaping the space.

508.3.2 Residential-type kitchen exhaust hoods. Residential-type kitchen exhaust hoods must comply with the following.

1. Residential-type kitchen hoods must be vented to the exterior at all kitchen facilities where range units are to be installed.

2. Provide makeup air for residential kitchen hoods over 190 L/s (400 CFM).

SECTION 509
HAZARDOUS EXHAUST SYSTEMS

Add the following subsection 509.3.1:

509.3.1 Specialized exhaust systems. Provide specialized exhaust systems in the following locations:

509.3.1.1 Health Unit Lab. Reserved.

509.3.1.2 Mail screening facilities. Refer to OBO-ICS IBC Chapter 34 and Specification 115355 for requirements. Recirculation of air from this space is prohibited.

509.3.1.3 Mail distribution rooms in buildings. Provide a dedicated exhaust fan to keep the space negatively pressurized with respect to office spaces and exhaust to building exterior. Recirculation of air from this space is prohibited.

509.3.1.4 Disintegrator Rooms. Provide a dedicated exhaust system at disintegrator rooms.

1. System must consist of dedicated ceiling cabinet exhaust fans sized to produce an exhaust flow rate of 10 air changes per hour. Fans must be switched at the room entrance.

2. Fans must discharge to the roof via schedule 40 steel pipe(s), maximum pipe diameter: 150 mm (6 inches).

3. Discharge must terminate at a gooseneck extension with flattened expanded metal 15-mm (0.6-inch) mesh, 16-gauge discharge cover. All fittings and the discharge cover must be welded. The discharge cover must be minimum 450 mm (18 inches) above the finished roof surface or roof ballast.

509.3.1.5 Shops. In addition to specialty exhaust systems, provide an exhaust system for general exhaust.

509.3.1.5.1 System must consist of manually controlled roof or wall-mounted exhaust fans sized to produce an exhaust flow rate of 6 ACH. Exhaust fan(s) for these spaces must be used for smoke purge.

509.3.1.5.2 Shops may share a common exhaust fan.

Exception. Any shop required to have a dedicated exhaust.

509.3.1.5.3 Where shop is conditioned by the building HVAC system, provide damper(s) on the return air duct(s) and interconnection to automatically close return air damper(s) upon activation of manually controlled shop exhaust.

509.3.1.6 Vehicle Maintenance Shops. Provide manually controlled vehicle exhaust system sized for the number of maintenance bays in the shop.

509.3.1.7 Welding Shop. Provide dedicated exhaust system in accordance with section 509.3.1.5.

509.3.1.7.1 Welding local exhaust systems, where installed, must conform to the requirements in Welding and Cutting - Painting Operations - The American Conference of Governmental Industrial Hygienists (ACGIH*) Industrial Ventilation: A Manual of Recommended Practice*.

509.3.1.8 Carpentry Shop. Provide with a dedicated exhaust system in accordance with section 509.3.1.5.

SECTION 510
DUST, STOCK AND REFUSE CONVEYING SYSTEMS

Add the following subsection 510.3:

510.3 Carpentry Shop. Provide the following dust collection systems:

510.3.1 Self-contained dust collection system designed for woodworking equipment to include the following:

1. Self-contained fabric collector.
2. Collection drums.
3. Provide individual connection to each working machine.

510.3.2 Comply with the requirements of Woodworking - Painting Operations - The American Conference of Governmental Industrial Hygienists (ACGIH) *Industrial Ventilation: A Manual of Recommended Practice for Design* for design of Carpentry Shop ventilation system. At a minimum, provide the following.

1. Recirculation filtration unit to collect airborne sawdust.
2. Particulate filter
3. Fan sized for 10 ACH.

510.3.2.1 For Carpentry Shops designated as “high use”, design ventilation system to accommodate the following:

1. Table saw with 400-mm (16-inch) diameter blade.
2. Single planer with 500-mm (20-inch) knives.
3. Jointer with 250-mm (10-inch) knives.

510.3.2.2 For Carpentry Shops designated as “normal use”, design ventilation system to accommodate the following.

1. Table saw with 400-mm (16-inch) diameter blade.

SECTION 513
ENERGY RECOVERY VENTILATION (ERV)

Add after the last sentence of Section 513.1:

“Refer to Section 312.2 when sizing ERV systems.”

END OF CHAPTER IMC-5 AMENDMENTS

CHAPTER 6
DUCT SYSTEMS

SECTION 605
AIR FILTERS

Delete and replace subsection 605.1 with the following:

605.1 Filtration system requirements. Air supplied to offices and residences must be filtered to provide Environmental Security protection except as noted below.

605.1.1 Outside air filtering for buildings subject to blast requirements. For new or renovated office buildings, or residences subject to blast requirements, provide a dedicated outside (ventilation) air handling unit to supply pre-filtered and preconditioned ventilation / pressurization air to all the other air handling units, conditioned per OBO-ICS IMC Section 403.1 and filtered per section 605.1.1.2 filter sequence below.

605.1.1.1 MSGR and representational residences. For MSGRs and representational residences (CMR/CGR), provide a dedicated outside (ventilation) air handling unit to supply pre-filtered and pre-conditioned ventilation / pressurization air or provide outside air fully ducted from a roof intake to the mixing plenum on the air return side of the air handling unit(s); in the latter case, only section 605.1.1.3 from below applies.

605.1.1.1.1 Additional fan power requirements. Refer to section 403.1.2.5 for additional fan power requirements when outside air is fully ducted from a roof air intake.

605.1.1.2 Outside air handling unit required filter sequence. For buildings subject to blast requirements, outside air must be filtered in the dedicated outside air unit in the following sequence:

1. Pre filters (washable and bag filters)
2. Second particulate filters (to reduce PM10 and PM2.5 pollution)
3. High-efficiency gas adsorption (HEGA) filters (adsorption media to be determined based on local pollutants)
4. Final (post filters)

605.1.1.3 Recirculation filtering. Mixed return (re-circulated) and ventilation air must be filtered at the air handling units in the following sequence:

1. Pre-filters
2. HEPA filters
3. V-bed HEGA filters with ASZM-TEDA carbon
4. Final (post filters)

605.1.2 Outside air filtering for buildings not subject to blast requirements. Renovations of office or residential buildings not built to OBO blast standards do not require Environmental Security (ASZM Carbon HEGAs) filtration protection. Off-compound buildings do not require Environmental Security Protection Systems (ESPS). Provide a minimum MERV 13 level of filtration at all air handling units and other pollution control mechanisms (e.g., particle and gas filters, air curtains, vestibules, building/zone pressurization, raised intakes, etc.) to control indoor air contaminant levels. Filters must not require change out more frequently than every 90 days.

END OF CHAPTER IMC-6 AMENDMENTS

CHAPTER 11
REFRIGERATION

SECTION 1102
SYSTEM REQUIREMENTS

Delete and replace section 1102.2 with the following:

1102.2 Refrigerants. The refrigerant must be that which the *equipment* or *appliance* was designed to utilize or converted to utilize. Selected refrigerant must be acceptable for use in both the United States and the host country. Thusly, refrigerant must be acceptable per United States Environmental Protection Agency (USEPA) Significant New Alternatives Policy (SNAP) program, which implements section 612 of the amended Clean Air Act of 1990; and the refrigerant must be acceptable for use in the host country per the host country's environmental laws/requirements.

Exception. In the event that no refrigerant meets both USEPA SNAP and host country requirements, refer to OBO/PDCS/DE Mechanical Engineer for direction.

Retain all subsections (1102.2.1 through 1102.3) thereafter.

END OF CHAPTER IMC-11 AMENDMENTS

CHAPTER 12
HYDRONIC PIPING

SECTION 1201
GENERAL

Add the following subsection 1201.2.1.

1201.2.1 Maximum flow rates for hydronic piping. Maximum flow rates for hydronic piping must not exceed the values in Table 1201.2.1.

TABLE 1201.2.1
HYDRONIC PIPE
MAXIMUM FLOW RATE BY PIPE SIZE

Flow (L/s)	Pipe Dia (mm)	Flow (GPM)	Pipe Dia (in)
0.03	15	1	½”
0.2	20	3	¾”
0.4	25	6	1”
0.8	32	12	1 ¼”
1.2	40	19	1 ½”
2.3	50	37	2”
3.8	65	60	2 ½”
6.6	80	104	3”
13.8	100	218	4”
22.1	125	350	5”
32.9	150	522	6”
62.0	200	982	8”
103.9	250	1646	10”
151.3	300	2397	12”
189.8	350	3008	14”
251.5	400	3985	16”
330.9	450	5244	18”
429.3	500	6803	20”
592.8	600	9394	24”

NOTE:
* For water flow above 593 l/s, fluid velocities are not to exceed 2.2 mps.

SECTION 1202
MATERIAL

Delete and replace Tables 1202.4 Hydronic pipe and 1202.5 Hydronic pipe fittings with the following combined Table 1202.4 and Table 1202.5 Hydronic piping and pipe fittings:

TABLE 1202.4 AND 1202.5
HYDRONIC PIPING AND PIPE FITTINGS

Application	Nominal Diameter (Nominal Pipe Size)	Material	Fittings	Joints
Condensate-Drain (when not specified in another section)	All	Type K or L**, seamless copper ASTM B75 or ASTM B88 or ASTM B251	(ASME B16.18 or ASME B16.22 or ASME B16.23 or ASME B16.24 or ASME B16.29 or ASME B16.50) and ASTM B75	Soldered, Brazed, or Dual-crimp press-connect
Chiller Connection	DN 50 (NPS 2) and larger	Sch. 40 black steel, ASTM A53 or ASTM A106	Sch. 40 steel (ASTM A234 or ASTM A420), Ductile Iron Castings ASTM A536 Grade 65-45-12 and ASTM F1476 and ASTM F1548	Mechanical groove joint
Chilled-Water, Hot-Water Heating***, Dual Temperature Heating and Cooling Water, Condenser-Water, Glycol Cooling-Water, Makeup-Water	DN 50 (NPS 2) and smaller	Sch. 40 black steel, ASTM A53 or ASTM A106	Malleable iron ASME B16.3 Class 150	Threaded
	DN 15 (NPS 1/2) thru DN 50 (NPS 2)	Sch. 40 black steel, ASTM A53 or ASTM A106	(Malleable iron ASME B16.3 or wrought steel ASTM A420) with EPDM sealing element, 1379 kPa (200 psi)	Dual-crimp press-connect
	DN 65 (NPS 2-1/2) and larger	Sch. 40 black steel, ASTM A53 or ASTM A106	Sch. 40 wrought steel ASTM A234 or ASTM A420	Butt or socket welded
	DN 15 (NPS 1/2) to DN 50 (NPS 2)	Type K or L**, seamless copper tube ASTM B88	(ASME B16.18 or ASME B16.22 or ASME B16.51) with EPDM sealing element, 1379 kPa (200 psi)	Dual-crimp press-connect
	DN 50 (NPS 2) and smaller	Type K or L**, seamless copper tube ASTM B88	ASME B16.22 or ASME B16.50, 1034kPa (150 psi)	Soldered, Brazed
	DN 15 (NPS 1/2) thru DN 100 (NPS 4)	Sch. 40 stainless steel, 304 or 316, ASTM A312 or ASTM A554	Stainless steel 304 or 316 with EPDM sealing element, 1379 kPa (200 psi), ASTM A312 or ASTM A554	Dual-crimp press-connect
	DN 65 (NPS 2-1/2) and larger	Sch. 40 stainless steel, 304 or 316, ASTM A312 or ASTM A554	Sch. 40 wrought austenitic stainless-steel ASTM A403	Butt or socket welded
Chilled Water (See NOTES *)	All sizes	* Sch. 80 polyvinyl chloride (PVC) ASTM D1785	* Sch. 80 PVC ASTM D2467	* Solvent Weld

NOTES:
* Schedule 80 PVC allowed only for chilled water when approved specifically by OBO on a project-specific case-by-case basis and must not be used in Set A areas. Schedule 40 PVC not permitted.
** Type L not permitted below-ground or in concrete slab.
*** Plastic pipe prohibited in Hot-Water Heating pipe. Exception: ASTM F441 CPVC Schedule 80, 4120-06 for non-conductive breaks in piping systems that do not contain glycol.

SECTION 1205
VALVES

Add the following subsections1205.3, 1205.4, and 1205.5:

1205.3 Gate valves. Gate valves are not permitted.

1205.4 Butterfly valves. Wafer-style butterfly valves must not be used as pipe ends or end-of-line service, however lug-style butterfly valves are suitable for this purpose.

1205.5 Control valves. Valves that combine the functionality of a standard control valve and a balancing valve, typically referred to as pressure independent control valves (PICV) are not permitted.

SECTION 1206
PIPING INSTALLATION

Insert new subsection 1206.1.1:

1206.1.1 Prohibited locations. Hydronic piping must not be installed within or pass through server rooms and/or electrical rooms unless it specifically services that space. In those instances, hydronic piping must be installed in accordance with NEC (e.g., not directly above electrical and/or telecommunication equipment).

END OF CHAPTER IMC-12 AMENDMENTS

CHAPTER 13
FUEL OIL PIPING AND STORAGE

SECTION 1301
GENERAL

Add the following subsection 1301.1.1:

1301.1.1 Fuel oil storage requirements. Provide minimum fuel storage in accordance with the following.

1301.1.1.1 Fuel oil compound storage capacities. Provide a minimum of two compound fuel tanks sized to contain the larger of:

1. Adequate fuel to run site generators and boilers, simultaneously operating at full load capacity for a minimum of seven-day, 24-hour operation; or

2. Additional capacities as required on a site-specific basis.

Each tank must not be sized larger than 38 000 L (10 000 gal).

1301.1.1.2 Required day tank storage capacities. Provide a day tank for each piece of equipment (generator, boiler). Each day tank must be sized to provide an 8-hour fuel supply for the equipment being served.

1301.1.1.3 3 Fuel polishing system. Provide fuel polishing system to extend service life of stored fuel oil used by generators.

Add the following subsection 1301.6:

1301.6 Propane, Butane, or Other Liquefied Flammable Gases. Propane, butane, or other liquefied flammable gases in portable containers must not be stored or used in any occupancy used for office or living purposes. They may be used, as permitted by the OBO-ICS IFC in workshops for approved industrial purposes.

1301.6.1 Piping. When specifically approved for use by OBO, all piping for liquefied flammable fuel must be rigid or semi-rigid and approved by a recognized testing laboratory for such use.

1301.6.2 Residential occupancies. In Group R occupancies liquefied flammable gas storage cylinders must not be stored or located inside a dwelling.

1301.6.2.1 Cylinder storage. Cylinders must be located a minimum of 7.62 m (25 feet) away from any source of ignition.

1301.6.2.2 Appliances. All natural gas or liquefied flammable gas appliances must be rated and equipped by the manufacturer for the specific type of fuel to be used.

SECTION 1305
FUEL OIL SYSTEM INSTALLATION

Add the following section 1305.2.2:

1305.2.2 Additional requirements. Provide the following.

1305.2.2.1 Fuel line minimum slope. All fuel lines must be sloped to drain into either the underground storage tank or a vault with the capacity to store the line displacement.

1305.2.2.2 Storage vault. Where a storage vault is installed, provide the following.

1. Leak detection system to detect fuel and communicate alarm to Post 1 and FM office.
2. Alarm activation must disable the supply pump.
3. Vault must be constructed to prevent run-off and to prevent groundwater from entering the vault.
4. Vault must be equipped with a lockable cover.

Add the following section 1305.4.1:

1305.4.1 Additional requirements for return piping. Provide the following:

1. All day tanks must be equipped with gravity-feed return lines connected to the main fuel oil storage tank to protect against over-filling.
2. Return line suction must be connected to the day tank at a point below the level of the vent connection to the tank and below any other tank openings, so that any excess fuel oil will be returned to the main storage tank before reaching overflow level in the day tank.
3. Return lines must be sized to handle the maximum flow from the supply pump.
4. When gravity return is not possible due to site issues (e.g., hilly site and underground fuel storage tanks buried at elevation above the day tank) provide pumped return lines from the day tank to the underground fuel oil storage tanks with fuel oil return pump sized at 150 percent - 200 percent of the design flowrate of the fuel oil supply pump.

Add the following section 1309:

SECTION 1309
VEHICLE FUEL DISPENSING SYSTEMS

1309.1 Dispensing island. All dispensing devices must be protected against physical damage from vehicles by mounting on a concrete island a minimum of 150 mm (6 inches) in height, with 1300-mm (51-inch) high bollards at each end of the island.

1309.2 Emergency breakaway devices. Provide UL-listed devices for each hose.

1309.3 Emergency shutoff valve. Install UL-listed valve in the supply line of each dispensing device incorporating a fusible or other thermally actuated device as a protection against impact or seismic occurrences.

1309.4 Electrical controls. Controls must be provided with standard U.S. safety features. The controls must permit the pump to operate only when a dispensing nozzle is either removed from its bracket or is in normal position with respect to the dispensing unit, and the switch is manually actuated. This control must also stop the pump when all nozzles have been returned, either to their brackets or to the normal dispensing position. In addition, electrical controls must comply with the following:

1. Primary (master) Switch. A clearly labeled manually operated pump primary switch must be provided in an approved location within 30 m (100 feet) of but not nearer than 6 m (20 feet) to any dispenser. Where such primary switch is not visible from all dispensers, the location must be indicated by approved signs.

2. Provide signs identifying the pump primary switch labeled "EMERGENCY FUEL SHUTOFF."

END OF CHAPTER IMC-13 AMENDMENTS

J.2.1

OBO International Plumbing Code

OBO-ICS IPC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL PLUMBING CODE (IPC)

The *OBO International Codes Supplement* adopts the *2024 International Plumbing Code (IPC)* and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted as described. Sections named in the chapters below are amended or added by this supplement. Remaining (unnamed) sections are adopted with no amendments, or not adopted, as described Named appendices are adopted, amended or added as indicated. Unnamed appendices are not adopted.

CHAPTER 1 SCOPE AND ADMINISTRATION
101 General
102 Not adopted
103 Not adopted
104 Not adopted
105 Permits
106 - 115 Not adopted

CHAPTER 2 DEFINITIONS
201 General
202 ICC Definitions
203 OBO Terms, Acronyms and Abbreviations

CHAPTER 3 GENERAL REGULATIONS
301 No amendments
302 No amendments
303 Materials
304 No amendments
305 Protection of Pipes and Plumbing System Components
306 – 311 No amendments
312 Tests and Inspections
313 - 316 No amendments
317 Corrosion-Resistant Protection

CHAPTER 4 FIXTURES, FAUCETS AND FIXTURE FITTINGS
401 General
402 No amendments
403 Minimum Plumbing Facilities
404 Accessible Plumbing Facilities
405 – 409 No amendments
410 Drinking Fountains
411 Emergency Showers and Eyewash Stations
412 No amendments
413 Floor and Trench Drains
414 – 420 No amendments
421 Showers
422 Sinks
423 No amendments

424 Urinals
425 Water Closets
426 No amendments
427 Wall Hydrants and Hose Bibbs

CHAPTER 5 WATER HEATERS
501 General
502 Installation
503 – 505 No amendments

CHAPTER 6 WATER SUPPLY AND DISTRIBUTION
601 General
602 Water Required
603 Water Service
604 Design of Building Water Distribution System
605 Materials, Joints and Connections
606 Installation of the Building Water Distribution System
607 Hot Water Supply System
608 Protection of Potable Water Supply
609 No amendments
610 No amendments
611 Drinking Water Treatment Units
612 No amendments
613 No amendments
614 Raw Water Inlet and Potable Water Storage Tanks

CHAPTER 7 SANITARY DRAINAGE
701 General
702 – 707 No amendments
708 Cleanouts
709 – 711 No amendments
712 Sumps and Ejectors
713 – 718 No amendments

CHAPTER 8 INDIRECT/SPECIAL WASTE
No amendments

CHAPTER 9 VENTS
901 General
902 No amendments
903 No amendments
904 Outdoor Vent Extensions
905 Vent Connections and Grades
906 – 916 No amendments
917 Single-Stack Vent System
918 Air Admittance Valves
919 No amendments
920 No amendments

CHAPTER 10 TRAPS, INTERCEPTORS AND SEPARATORS
No amendments

CHAPTER 11 STORM DRAINAGE
1101 General
1102 –1104 No amendments
1105 Not adopted
1106 Not adopted
1107 Not adopted
1108 Secondary (Emergency) Roof Drains
1109 No amendments
1110 No amendments
1111 Subsoil Drains
1112 No amendments
1113 Sumps and Pumping Systems

CHAPTER 12 SPECIAL PIPING AND STORAGE SYSTEMS
No amendments

CHAPTER 13 NONPOTABLE WATER SYSTEMS
Not adopted

CHAPTER 14 SUBSURFACE GRAYWATER SOIL ABSORPTION SYSTEMS
Not adopted

CHAPTER 15 REFERENCED STANDARDS
No amendments

APPENDIX A Not adopted

APPENDIX B Not adopted

APPENDIX C STRUCTURAL SAFETY
No amendments

APPENDIX D Not adopted

APPENDIX E SIZING OF WATER PIPING SYSTEM
E101 Not adopted
E102 Not adopted
E103 Selection of Pipe Size
E104 Not adopted
E105 Not adopted

APPENDIX F Not adopted

Resource A Not adopted

END OF IPC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
GENERAL

Delete and replace section 101 with the following:

101.1 Title. These regulations shall be known as the *OBO Plumbing Code* hereinafter referred to as "this code."

1. This code incorporates by adoption the *2024 International Plumbing Code* of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

101.2 General. The provisions of Chapter 1 - Administration of the OBO-ICS IBC apply to this code.

Delete Sections 102 through 104 and 106 through 115 in their entirety.

SECTION 105
PERMITS

Delete Section 105 and replace with the following.

105.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

END OF CHAPTER IPC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

Delete Section 201.3 in its entirety and replace with the following:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

Add Section 202.1 and retain the remainder of section 202:

SECTION 202
ICC DEFINITIONS

202.1 General. Refer to OBO-ICS IBC Section 202 for definitions of terms used where not defined in this code. Where terms are defined here, use the meaning ascribed to the terms in this code if different.

Add the following Section 203

SECTION 203
OBO TERMS, ACRONYMS, AND ABBREVIATIONS

203.1 General. Refer to OBO-ICS IBC section 203 for definitions of terms used.

END OF CHAPTER IPC-2 AMENDMENTS

CHAPTER 3
GENERAL REGULATIONS

SECTION 303
MATERIALS

Delete and replace section 303.1 with the following:

303.1 Identification. Each length of pipe and each fitting, trap, fixture, material, and device utilized in a plumbing system must bear the identification of the manufacturer. Provide metal tags for identification of valves. Plastic labels or tags are not permitted.

SECTION 305
PROTECTION OF PIPES AND PLUMBING SYSTEM COMPONENTS

Add the following subsection:

305.1.1 Optimized protection. Optimize the design for protection and treatment of corrosion/scale based upon corrosivity analysis in Section 312.13.

Delete the last sentence and replace that sentence with the following:

305.4 Freezing.

"Exterior water supply system piping must be installed not less than 300 mm (12 inches) below the frost line and not less than 1 m (3.3 feet) below grade."

Delete the subsection and replace with the following:

305.4.1 Sewer depth. Sewer pipes must be installed not less than 300 mm (12 inches) below frost depth and not less than 1 m (3.3 feet) below grade.

Add the following sections and subsections:

305.9 Insulation. Cold water plumbing piping must have a vapor barrier wrapped on the warm side of the insulation to prevent condensation.

305.10 Piping and plumbing equipment supports. Supports for plumbing systems equipment and piping, whether located in a building interior, exterior, or on the roof, must be constructed of steel, aluminum, or fiberglass. Exposed wood is prohibited. Plumbing equipment must be supported in accordance with the manufacturer's installation instructions.

305.11 Required new insulation for existing piping. Provide new insulation on existing piping where new connections are made, asbestos insulation has been removed, or insulation damaged or missing. Fill all voids and seal joints between new and existing insulation.

305.12 Requirements to protect pipes from freezing. Pipes are not permitted to be located in the following locations: unheated spaces, outside of buildings, attics, crawl spaces, or in any other locations subject to freezing.

305.12.1 Heat tracing. Heat-tracing is not acceptable for protection of piping.

Exceptions. Where approved by OBO/PDCS/DE/ME on a project-specific basis and all of the following conditions are met:

1. Provide automatic temperature control sensors capable of adjustments to on/off operating range.
2. Provide alarm notification to BAS upon heat-trace failure.

305.13 Insulation requirements for storm drainage piping. Provide insulation on storm piping running horizontally from roof drains to the vertical storm leaders. Roof drains bodies must also be insulated.

SECTION 312
TESTS AND INSPECTIONS

Add the following to the end of sections 312.6, 312.7, and 312.8 as described:

312.6 Water supply system pressure test.

"This test applies to the systems in OBO-ICS IZC Section 813. Pressure calculations must factor in the storage capacity requirements in Section 614 and must assess the reliability of the pressure"

312.7 Gravity sewer test.

"This test applies to the systems in OBO-ICS IZC Section 813."

312.8 Forced sewer test.

"This test applies to the systems in OBO-ICS IZC Section 813."

Add the following sections 312.12 and 312.13:

312.12 Water quality analysis and characteristics. Water for potable use must be analyzed and characterized by an ISO 70125 accredited laboratory for water quality in accordance with the *National Primary Drinking Water Regulations 40 CFR Parts 141 – 142.and* the Safe Drinking Water Act *(PL 93-523, PL 104-182, etc. as amended) as well as the secondary standards.* Potable water must be analyzed for the regulated containments, generally categorized as follows:

1. Microorganisms
2. Disinfectants
3. Disinfection Byproducts
4. Inorganic Chemicals
5. Organic Chemicals
6. Radionuclides

312.13 Corrosivity Analysis. Provide corrosivity calculations and analysis of the source water using the Langelier Saturation Index (LSI), or other AWWA method where approved by OBO/PDCS/DE/ME.

Add the following section 317:

SECTION 317
CORROSION-RESISTANT PROTECTION

317.1 Corrosion-resistant protection. Corrosion-resistant protection must comply with the requirements of OBO-ICS IBC Appendix W – Corrosion-resistant construction and the requirements of this section.

317.2 Plumbing systems, assemblies, equipment, and devices. Plumbing systems required to receive enhanced corrosion-resistant protection include but are not limited to the following: Piping systems and components, devices, equipment and water tanks in Utility building and any other building or space not pressurized with conditioned and filtered air. Include structural supports, interconnects, hangers, anchors, couplings, and fasteners.

317.3 Plumbing requirements for exterior exposure. Plumbing systems required the following enhanced corrosion protection at exterior exposure: All external piping, equipment, devices, and related appurtenances including supports, couplings, and fasteners.

END OF CHAPTER IPC-3 AMENDMENTS

CHAPTER 4
FIXTURES, FAUCETS, AND FIXTURE FITTINGS

SECTION 401
GENERAL

Add the following section 401.4:

401.4 Enlarged plans required. Provide enlarged toilet rooms plans at a scale no less than 1:50 indicating code approved clearances and access for cleaning and repair to all plumbing fixtures and devices.

SECTION 403
MINIMUM PLUMBING FACILITIES

Delete section 403 in its entirety and refer to OBO-ICS IBC Section 2902.

SECTION 404
ACCESSIBLE PLUMBING FACILITIES

Delete Section 404.2 Accessible fixture requirements.

SECTION 410
DRINKING FOUNTAINS

Delete and replace sections 410.1 through 410.3 with the following:

410.1 General. Refer to OBO-ICS IBC Section 2902.5 for requirements for electric water coolers.

410.2 Reserved

410.3 Reserved

SECTION 411
EMERGENCY SHOWERS AND EYEWASH STATIONS

Delete section 411 in its entirety and replace with the following:

411.1 General. Refer to OBO-ICS IBC Section 2904 for requirements for emergency showers and eyewash stations.

SECTION 413
FLOOR AND TRENCH DRAINS

Delete and replace section 413.3 with the following:

413.3 Size of floor drains. Floor drains must have a drain outlet not less than 75 mm (3.0 inches) in diameter.

Add the following section 413.5:

413.5 Floor drain required locations. Provide floor drains at all spaces equipped with hose bibb(s) including, but not limited to restrooms, janitorial closets, mechanical equipment rooms, plumbing equipment rooms (e.g., water heater rooms, water service rooms, water treatment rooms), pump rooms, foodservice kitchens, public laundries, trash rooms, and shops.

Exception. Floor drains are not required at residential bathrooms, SDA common spaces (toilet rooms for meeting/multipurpose rooms, etc.), MSGR public area, and executive suite toilet room.

413.5.1 Floor drain location for maintenance. Locate floor drains to provide easy access for maintenance and clean out.

413.5.2 Floor drain traps. Floor drains must be equipped with P-traps providing a minimum 100 mm (4 inches) trap seal depth.

413.5.3 Floor drain trap primers. Provide the trap seal primers supplied from toilet flush valve at all floor drains.

Exception. Where floor drain is located remotely from toilet room fixtures and where trap seal is subject to loss by evaporation (e.g., mechanical rooms or similar) provide an electronic-type water-supplied trap seal primer valve with timer installed in accordance with the manufacturer's instructions. Battery operated trap primers are not permitted except where approved by OBO/DE/ME for individual specific conditions.

413.5.4 Prohibited floor drain-seal protection devices. Waterless trap-seal protection devices (TSPDs) are not permitted for use on floor drains.

413.5.5 Floor drains subject to reverse flow. When floor drain is subject to reverse flow of sewage or liquid waste, drain must be equipped with an approved backwater valve.

413.5.6 Floor drain lines below slab on grade. All drain lines below slab on grade must be a minimum of 75 mm (3 inches).

413.5.7 Floor drains subject to freezing. For locales subject to freezing, floor drains must be protected from freezing.

413.5.8 Floor slope for drains. In all rooms with a floor drain, the entire floor area must be sloped to the drain. Refer to OPR 3-101-01.

SECTION 421
SHOWERS

Add the following section 421.7:

421.7 Shower fixture and accessories mounting heights.

1. Shower head: 1980 mm (6.5 feet) minimum, 2100 mm (7 feet) maximum above finished shower floor.
2. Shower rod: 1980 mm (6.5 feet) above finished shower floor.

SECTION 422
SINKS

Add the following section 422.4:

422.4. Service sink locations. Refer to OBO-ICS IBC Chapter 29 for requirements.

SECTION 424
URINALS

Add the following sentence to the end of section 424.1:

424.1 Approval.

"All urinals must be ultra-low flow [0.473 L (1 pint) per flush minimum]."

SECTION 425
WATER CLOSETS

Add the following subsections to section 425.2:

425.2.1 Public or employee toilet facilities. Water closets for office buildings (except private executive bathrooms), support buildings, recreational buildings, and public spaces in staff housing must be flushometer type.

425.2.2 Residential facilities. Water closets for residential units (MSGR bedrooms, staff housing, and private executive bedrooms must be gravity-type tank operation.

Add the following section 425.5:

425.5 Accessories. Provide additional accessories in accordance with Sections 425.5.1 through 425.5.2.

425.5.1 Local religious practices. Where required by local religious practices provide personal washing fixture and accessories at each toilet in accordance with the following:

425.5.1.1 Required fixture and accessories. Toilet bowls with built-in bidets are not allowed. Provide one of the following types:

1. Water supply with actuating valve, wall mounting bracket, hand-actuated spray nozzle with wall mounting bracket connected to high pressure flexible hose sufficiently long for use by a person seated on the toilet without allowing spray nozzle to come into contact with water in the toilet bowl.

2. Toilet seat with integrated bidet, equipped with spray nozzle and retractable sprayers that cannot come in contact with either the water in the toilet or the user. Toilet seat assembly must not prevent proper operation of typical flushometer-type automatic sensor or flush valve. Accessories must be installed in accordance with manufacturer's instructions, plumbing, and electrical code.

425.5.1.2 Mounting locations of wall bracket and actuating valve. Locate wall bracket and actuating valve at 750 mm (30 inches) above the floor and within reach of a person using the toilet. Install per manufacturer's instruction; mount on right side of toilet, referenced to seated user.

425.5.2 Single-user toilet facilities. See OBO-ICS IBC Section 2902.1.2.

Add the following section 427:

SECTION 427
WALL HYDRANTS AND HOSE BIBBS

427.1 Exterior wall and roof hydrants. Exterior hydrants must be provided at every building.

427.1.1 Required locations.

427.1.1.1 Wall hydrants. At least one wall hydrant on the four major sides of the building at ground level, and as applicable for each upper floor terrace. Spacing between hydrants must not exceed 45 meters.

Exception. CACs must have hydrant(s) on the compound side only.

427.1.1.2 Roof hydrants. Provide for roof surface at all low-slope roofs, for all levels of those roofs, all vegetated roofs, and roofs with solar panels. Maximum spacing between hydrants must not exceed 45 m (150 feet). Provide suitable support for roof hydrants and associated piping.

427.1.2 Additional requirements. Provide the following.

427.1.2.1 Vacuum breakers. Each hydrant must be equipped with a vacuum breaker.

427.1.2.2 Freeze-proof design. Provide freeze-proof design where hydrant is subject to freezing.

427.2 Interior hose bibbs.

427.2.1 Required locations. Provide hose bibb in each public area restroom, janitorial closet, public/staff laundry room, food service kitchen, mechanical equipment rooms, plumbing equipment rooms (e.g., water heater room, water service room, water treatment room), wastewater treatment plants located inside buildings, pump rooms, trash room, loading dock, pool deck and vehicle maintenance bays. Provide hose bibb adjacent to any water storage tank access hatch.

427.2.2 Additional requirements. Each hose bibb must be equipped with a vacuum breaker.

END OF CHAPTER IPC-4 AMENDMENTS

CHAPTER 5
WATER HEATERS

SECTION 501
GENERAL

Add the following subsection 501.1.1:

501.1.1 Definition.

Domestic hot water. Water used for domestic purposes (e.g., drinking, food preparation, personal hygiene).

Add the following subsection 501.8.1:

501.8.1 Hot water system temperature. Hot water system temperature (e.g., after leaving tank) must be designed to minimize the risk of burn injury and thermal stress to plumbing system components. Temperature regulating thermostat or control for electric water heaters must be factory set to meet UL Standards regulation.

Add the following sections and subsections 501.10, 501.11, and 501.12:

501.10 Certification of storage tanks. Provide NSF-61 compliant, ASME-rated storage tank commercial type water heaters. Storage tank water heaters must be provided with ASME rated expansion tank to control thermal expansion.

501.11 Domestic hot water supply. Domestic hot water must be supplied to all plumbing fixtures and equipment used for bathing, clothes washing, laundry, building maintenance, food preparation, and dishwashing.

501.11.1 Only potable water must be used in the domestic hot water system.

501.11.2 Dishwashers must be provided with heating elements to increase the temperature supplied from the central domestic water heater system. Residential dishwashers must comply with NSF-184.

501.11.3 Domestic hot water must not be used for space heating or swimming pool heating.

501.12 Domestic water heating system types.

501.12.1 Office buildings. Domestic hot water system design must utilize both point-of-use heaters (for individual lavatories and sinks) and tank type commercial water heaters for larger demand.

Exception. Where alternative design is approved by OBO/PDCS/DE/ME.

501.12.2 On-compound residences. MSGR and staff apartments (SDA) must be served by central recirculating-type domestic hot water systems.

501.12.3 Space heating boilers. Space heating boilers are not permitted to be utilized for the purpose of providing domestic water heating during summer months.

SECTION 502
INSTALLATION

Add the following sentences to the end of this subsection:

502.1 General.

"All tank type water heaters and expansion tanks must be installed on the housekeeping concrete pad and must be accessible for maintenance, servicing, and replacement of all components. Provide independent support for thermal expansion tank in accordance with manufacturer's installation requirements. Thermal expansion tanks are not permitted to be supported by water piping serving tanks and mounting on walls or ceiling spaces is not permitted. Construction documents must include floor plan at a minimum scale of 1:50, water heater detail, and piping arrangement."

END OF CHAPTER IPC-5 AMENDMENTS

CHAPTER 6
WATER SUPPLY AND DISTRIBUTION

SECTION 601
GENERAL

Delete and replace Section 601.4 with the following:

601.4 Tests. Refer to OBO-ICS IPC Section 312 and OBO-ICS IZC Section 813.

SECTION 602
WATER REQUIRED

Delete and replace Section 602.3 only with the following, but retain the subsections:

602.3 Water supplies from wells. Refer to OBO-ICS IZC Section 813.

Add the following subsection to 602.3.2 Minimum quantity:

602.3.2.1 Water quantity and pressure analysis. Sources for potable water must be analyzed to evaluate if reliability is sufficient for the water quantity and pressure identified in OBO-ICS IPC Section 614 and OBO-ICS IFC Section 507. Refer to OBO-ICS IPC Section 312 for the associated test requirements.

Add the following subsection to 602.3.3 Water quality:

602.3.3.1 Water quality analysis. Refer to OBO-ICS IPC Section 312 for the associated test requirements.

SECTION 603
WATER SERVICE

Delete and replace section 603.1 in its entirety with the following:

603.1 Water service systems. The design of the compound water service from the municipal connection and including piping from the potable water storage tank, the routing of the site potable water supply loop on the compound must be coordinated between Civil and Plumbing engineers. Pipe system sizing, capacity, and system pressure required to supply water service to each structure and facility on the compound must comply with the requirements of OBO-ICS IZC Section 813. The water service pipe must be not less than 19.1-mm (3/4-inch) in diameter.

603.1.1 Water pressure within buildings. Water pressure within a building potable water distribution system must not exceed 552 kPa (80 psi) as required by ICC IPC Chapter 6.

Delete and replace section 603.2 with the following:

603.2 Separation of water service and site sanitary conveyance. Water service and site sanitary conveyance pipe must have a minimum horizontal separation of 3 meters. Water service pipe is not permitted to be located in the same trench as any site sanitary pipe. Refer to OBO-ICS IZC Section 813 for additional requirements.

SECTION 604
DESIGN OF BUILDING WATER DISTRIBUTION SYSTEM

Delete and replace section 604.1 with the following:

604.1 General. The design of the water distribution system must conform to accepted U.S. engineering practice. Methods utilized to determine pipe sizes must be approved.

Delete and replace the flow rates in Table 604.4 for the fixtures listed below with no change to other fixture flow rates:

TABLE 604.4
MAXIMUM FLOW RATES AND CONSUMPTION
FOR PLUMBING FIXTURES AND FIXTURE FITTINGS.

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Urinal	Ultra-low flow: 0.473 L (1 pint) per flush; waterless urinals are not permitted
Water Closet	4.8 L (1.25 gal) per flush

Add the following to the end of the paragraph:

604.7 Inadequate water pressure.

"Boost water system pressures to a minimum of 275 kPa (40 psi) and a maximum of 400 kPa (58 psi) provided that at the farthest point and/or the highest point in the water system, a minimum pressure of 172 kPa (25 psi) at peak flow (non-fire-protection demand) is maintained."

SECTION 605
MATERIALS, JOINTS AND CONNECTIONS

Add new subsection following section 605.4 Water distribution pipe:

605.4.1 Prohibited material. Galvanized steel piping is not permitted to be used for any domestic water system.

Revise Tables 605.4 Water Distribution Pipe and Table 605.5 Pipe Fittings to reference the following acceptable materials:

TABLE 605.4 AND TABLE 605.5 WATER DISTRIBUTION PIPE AND PIPE FITTINGS

Application	Nominal Diameter (Nominal Pipe Size)	Material	Fittings	Joints
Water Distribution Pipe and Fittings*	All	Type K or L**, seamless copper tube ASTM B88/B88M	Cast copper ASME B16.18** or Wrought copper ASME B16.22	Soldered or brazed
	All	Type K or L**, seamless copper tube ASTM B88/B88M	ASTM B75/B75M C12200 or ASTM B152/B152M C1100 and ASME B16.22** for wrought copper; or per ASTM B584 copper alloy CDA 836 per ASME B16.18 for cast copper	Roll-groove
	All	Type K or L**, seamless copper tube ASTM B88/B88M	ASME B16.51 with EPDM sealing element, 1379 kPa (200 psi)	Dual-crimp press-connect
	DN 15 (NPS 1/2) thru DN 100 (NPS 4)	Sch. 40 stainless steel, 304, 304L,316 or 316L, ASTM A312 pipe or ASTM A554 tubing	Stainless steel 304, 304L, 316, or 316L with EPDM sealing element, 1379 kPa (200 psi), ASTM A312 pipe or ASTM A554 tubing	Dual-crimp press-connect
	All	Sch. 40 stainless steel, 304, 304L, 316, or 316L, ASTM A312 pipe or ASTM A554 tubing	Wrought austenitic stainless-steel ASTM A403	Butt or socket welded
	All	Sch. 40 Chlorinated Polyvinyl Chloride (CPVC) plastic pipe and tubing***; ASTM D2846/D2846M or ASTM F441/F441M (Sch 40 and 80) or ASTM F442/F442M (SDR-PR) or CSA B137.6	ASSE 1061 or ASTM D2846/D2846M or ASTM F437 or ASTM F438 (Sch 40) or ASTM F439 (Sch 80) or CSA B137.6	Solvent cement ASTM F493

Notes
* This table limits materials to be used for water distribution pipe and pipe fittings in Model IPC Tables 605.4 and 605.5. Other piping materials and fittings may be allowed on a project-specific basis, when approved in writing by OBO/PDCS/DE/ME. All pipes and fittings must be NSF 61 and NSF 372 certified.
** Neither Type L nor cast ASME B16.18 fittings permitted below-ground or in concrete slab.
*** Only allowed in certain areas or transition applications as approved by OBO/PDCS/DE/ME

Add new subsection following section 605.7 Valves:

605.7.1 Valves for building interior systems use. Provide ball and gate valves on building interior water distribution systems. Plastic valves and plastic components such as seats and disks are not permitted.

SECTION 606
INSTALLATION OF THE BUILDING WATER DISTRIBUTION SYSTEM

Replace item 4 of section 606.1 with the following:

4. On the base of every water riser, at each floor branch, and at each restroom group using a full port ball valve.

Add the following sections and subsections:

606.7 Gauges and instrumentation.

606.7.1 Provide non-mercury type pipe thermometers with glass window on entering and leaving of all water heaters and heat exchangers conforming to ASTM E1 Standards for Liquid-in-Glass Thermometers. Acrylic thermometers are not permitted.

606.7.2 Provide pressure gauges on all inlet and outlets of all water heaters, tanks, and the suction and discharge of all pumps.

606.8 Meter. Provide turbine type meter with a total and instantaneous system flow measuring system, with each portion of the system capable of reporting to the central compound building automation system (BAS). The full system must monitor the following:

606.8.1 Building metering: Each building must be capable of reporting on hot water and potable water use to the central compound building automation system (BAS).

Exception. CACs do not require separate metering due to insignificant demand. Where CACs serve facilities for host nation toilets, locker rooms, and conference rooms, provide metering.

606.8.2 Office Buildings: Sub-meters indicating instantaneous, and system flows outside of the CAA area must be incorporated as a part of the building automation/control system.

606.8.3 Main meter for compound: Refer to OBO-ICS IZC Section 813 for requirements.

606.8.4 Irrigation system sub-meters: Refer to OBO-ICS IZC Section 813 for requirements.

SECTION 607
HOT WATER SUPPLY SYSTEM

Add the following sentence to the end of the subsection 607.1.2 after existing text:

607.1.2 Tempered water temperature control.

"Fixtures used for handwashing must limit the tempered water to a maximum of 43 °C (110 °F)."

Add the following subsections:

607.1.3 Hot water temperature control. Hot water for laundry, culinary purposes, and building maintenance purposes must be supplied to fixtures and equipment at a maximum of 49 °C (120 °F). Refer to Section 412 for protective shower/bathing faucet temperature requirements.

607.1.4 Dishwashing temperature. Dishwashing equipment must have heating elements to increase their supplied temperature to 71 °C (160 °F). Confirm required hot water temperature requirement with selected manufacturer. Residential dishwashers must comply with NSF-184.

SECTION 608
PROTECTION OF POTABLE WATER SUPPLY

Delete and replace subsection 608.7.1 with the following:

608.7.1 Water supplies from wells. Refer to OBO-ICS IZC Section 813.

Delete and replace subsection 608.17.4 with the following:

608.17.4 Connections to automatic fire sprinkler systems and standpipe systems. Refer to OBO-ICS IBC Chapter 9.

Add the following to the end of the paragraph:

608.17.5 Connections to irrigation systems.

"Refer to OBO-ICS IZC Section 813."

Delete and replace section 608.18 with the following:

608.18 Protection of wells. Refer to OBO-ICS IZC Section 813.

Delete the subparagraph and replace with the following:

608.18.1 Well locations. Refer to OBO-ICS IZC Section 813.

SECTION 611
DRINKING WATER TREATMENT UNITS

Add the following section and subsections:

611.4 Potable water testing and treatment. Potable water treatment system must treat water to comply U.S. Environmental Protection Agency National Primary Drinking Water Regulations (NPDWRs) and the National Secondary Drinking Water Regulations (NSDWRs). Treated water may not exceed any NPDWR or NSDWR values.

Exception. Where it is technically infeasible to meet all of the required NPDWR and NSDWR values, submit tested values and proposed remedial treatment plan in writing to OBO/PDCS/DE/ME for review and approval.

611.4.1 Raw water and well water testing & treatment. Refer to OBO-ICS IZC Section 813.

611.4.2 Potable water treatment. Treat potable water downstream of the raw water storage to comply with the following.

611.4.2.1 Treatment system components for isolation and maintenance. Provide all potable water treatment system components with parallel modules and component isolation valves to allow continual operation during maintenance.

611.4.2.2 Water system residual disinfection. Provide water system, inclusive of raw and potable water tanks, residual disinfection using a sodium hypochlorite, calcium hypochlorite, or OBO/PDCS/DE/ME approved on-site disinfectant generation-based system.

611.4.2.3 Design of treatment processes. Design treatment processes for lowest life cycle cost and local availability of equipment, spare parts and required chemicals, environmental and safety requirements of the chemicals, and chemical treatment processes.

611.4.2.4 Required treatment for water sources of varying quality. Water sources of varying quality must receive individually tailored treatment as required to address the specific contaminants shown in the respective water quality testing.

611.4.2.5 Potable treatment module requirements. Provide potable water treatment modules (parallel/redundant) in the following order:

1. Less than 30-micron filtration (multimedia),

2. Ion exchange resin as required for specific inorganic contaminants and quality,

3 Granular activated carbon filtration for removal of organic contaminants, and maintain TTHM/HAA5 to less than 0.08/0.06 mg/L respectively,

4 Less than 1 micron cartridge filtration for removal of cysts, bacteria, and viruses as required (e.g., Giardia Lambia, Cryptosporidium, Viruses, Coliform, Legionella inactivation, etc.),

5 Chlorine dosing required to maintain residual between 0.2 and 0.5 mg/L everywhere in potable water storage and the distribution system.

6 Membranes (e.g., nano-filtration, reverse osmosis, etc.) may be used only where approved in writing on site-specific basis by OBO/PDCS/DE/ME (only as necessary - preferably side-stream).

611.4.2.6 Prohibited potable water treatment methods. UV and Ozone disinfection are prohibited to be used as treatment methods.

Exception. These treatment methods may be used when approved by OBO/PDCS/DE/ME to satisfy a specific local condition/code but must not be used without a chlorine-based treatment system as described in 'Water System Residual Disinfection.

611.4.2.7 Potable water in storage. Treat potable water in storage to maintain required level of residual chlorine. Monitor all potable water storage tanks to limit the volume to an average one-day supply volume to maintain the required chlorine residual. Adjust float valves as required.

611.4.2.8 BAS connections and monitoring. Provide required hard-wired connections to monitor, local water treatment system for alarm/notifications on incoming source water turbidity, T, pH, TDS, and flow / pressure difference at each treatment module, pumps, water tank levels, and chlorine residuals. BAS must indicate when filter / media / chemical changes are required. Wireless (to include Wi-Fi) functionality is prohibited.

Add the following section 614:

SECTION 614
RAW WATER INLET AND POTABLE WATER STORAGE TANKS

614.1 General. The requirements of this section apply to all water storage tanks including raw water tanks, and potable water storage tanks. Refer to OBO-ICS IFC Chapter 5 for fire protection water tank requirements.

614.1.1 Coatings. Tank coatings, including sealing compounds and other materials, must be certified by NSF Standard No. 61.

614.1.2 Primary compound water equipment room. The primary compound domestic water pump(s) and fire pump(s) must be located in room(s) adjacent to the general water storage tanks. As necessary, the Pump Room must be provided with stairs and equipment support rail for maintenance personnel to access and service the equipment. Water Treatment Equipment rooms plan at a scale of no less than 1:25 must be shown on the construction documents indicating adequate clearance and accessibility for maintenance and removal/replacement of all equipment and components. Provide a utility sink, cabinets, and countertop adjacent to the utility sink, to accommodate field water quality testing equipment and manuals, reagents, and operational logbooks.

614.1.3 Raw and Potable Water Pumps. Vertical turbine pumps are not permitted for raw or potable water tanks. Provide horizontal split case type pumps unless other pump types are approved on a project-specific, case-by-case basis by OBO/PDCS/DE/ME.

614.2 Potable water storage. In new compound water supply systems, provide storage for post-treatment potable water.

614.2.1 Capacity. The potable water storage capacity must be adequate to meet peak demand requirements and not less than the average daily demand. Provide a split tank or two independent tanks. Each side of a split tank or both independent tanks must provide 50 percent of the required capacity to maintain operations with one while the other is being repaired, inspected, or cleaned.

614.2.2 Disinfection. Disinfection must be maintained as required in Section 611.4.

614.2.3 Tank location. Potable water tanks must be located above grade.

Exception. Potable water tanks may be located in a basement where approved by OBO/PDCS/DE/ME on a site-specific basis. Tanks must be located above basement finished floor level.

614.3 Raw water inlet tank. In new compound water supply systems, provide storage for raw water unless the adequacy and reliability of a back-up well water supply can be certified to meet the quality standards identified in Section 602.

614.3.1 Capacity. The raw water inlet tank must provide seven-day (168 hour) capacity for domestic use. Provide a split tank or two independent tanks. Each side of a split tank or both independent tanks must provide 50 percent of the required capacity to maintain operations with one while the other is being repaired, inspected, or cleaned. Storage requirements for fire protection are separate; refer to OBO-ICS IFC Chapter 5.

614.3.2 Calculations. The raw water inlet tank capacity must be based upon the greater of the following:

1. 200 L/day (53 gal/day) per desk (based upon total desks as indicated on the project Space Requirements Program).

2. 378 L/compound resident/day (100 gal/compound resident/day) + 76 L/employee/day (20 gal/employee/day) + 38 L/consular visitor/day (10 gal/consular visitor/day).

614.4 Required water tank features. Provide the following for all tanks:

1. Level gauge.

2. Overflow drain.

3. Tank drain.

4. Means of access into tank for maintenance, including separate access for ventilation.

5. Circulation or mixing- sufficient to turn the tank over every 48 hours.

6. Disinfection to maintain the residual in accordance with Section 611.4.2.2.

614.5 Water tank protection and safety. Tanks must comply with the following to minimize the possibility of contamination.

1. Vents and overflows must be protected stainless steel screen to prevent entry by birds, insects, and rodents.

2. Vents must be rain-proofed by using goosenecks or vandal-proof vent caps. Vents must extend outdoors and terminate to the open air. Vent pipe material must be Schedule 40 Stainless Steel 304.

3. Overflows and drainpipes must have a check valve to prevent tampering with the water supply.

4. Overflows and drainpipes must not be directly connected to sewers.

5. Top of manholes must be set at a minimum of 150 mm (6 inches) above the higher of final grade or 100-year flood level.

6. Provide two access hatches in the top of each tank, minimum of 1000 mm by 1000 mm (40 inches by 40 inches), for maintenance, ventilation, and rescue access. Access hatches must be locked except when in use. Provide 180-degree hinges for all hatches.

7. Provide additional 1000-mm by 1000-mm (40-inch by 40-inch) hatch for confined space ventilation for tanks greater than 8 m (26 feet) in length.

8. Pipe penetrations must be protected by pipe sleeves against stormwater infiltration, fuel spillage, or other contamination to the higher elevation of 150 mm (6 inches) above grade or 50 mm (2 inches) above the 100-year flood level.

8.1. Provide waterproof seal between the pipe sleeve and tank.

8.2. Provide waterproof seal for the annular space between the pipe and sleeve.

9. Provide a hose bibb located in the vicinity of water tanks for maintenance activities inside tanks.

10. Provide electrical outlets with ground fault circuit protection located in the vicinity of water tanks for maintenance activities inside tanks.

11. Water tanks ladders and anchors:

11.1. ladders and anchors must be of materials NSF-61 certified or fabricated from approved materials known to not change water taste, odor, color and will not impact water potability in tanks;

11.2. ladders must not be made from dissimilar metals; and

11.3. ladders and anchors must be of approved materials that are corrosion-resistant and will not promote galvanic action.

614.6 Gravity water tanks. Gravity tanks, sized for one-day nominal usage, may be used for residences and small buildings to provide a relatively constant distribution system pressure when the utility system pressure is inadequate or when utility system flow is periodic.

Exception. Gravity tanks are not permitted to be used on office compounds.

END OF CHAPTER IPC-6 AMENDMENTS

CHAPTER 7
SANITARY DRAINAGE

SECTION 701
GENERAL

Add the following sentence to the end of the paragraph:

701.4 Sewage treatment. Refer to OBO-ICS IZC Section 813 for compound sewage treatment requirements.

Add the following subsection:

701.8 Sanitary system discharge. The pH of discharges to the sanitary system must not be less than 5.0 pHu or more than 10.0 pHu. Temperatures of discharges must not exceed 60°C. Other prohibited discharges include flammables, reactives, hazardous wastes, storm water, glycols, or any materials that may solidify or become so viscous as to interfere with or pass-through the treatment system.

SECTION 708
CLEANOUTS

Delete and replace Section 708.1.1 with the following:

708.1.1 Cleanout locations. Provide building cleanouts not more than 15 m (50 feet) apart in horizontal drainage lines of nominal 100-mm (4-inch) diameter or less, and not more than 30 m (100 feet) apart for pipe sizes greater than 100 mm (4 inches) nominal diameter. Accessible cleanouts must be provided at each change in direction that is greater than 45 degrees for horizontal drainage lines of 150 mm (6 inches) and smaller. Accessible cleanouts must be provided at the base of each vertical drainage stack at a minimum of 455 mm (18 inches) above finished floor, and at a maximum of 1220 mm (48 inches) above finished floor. Cleanouts in underground or underfloor building drainage systems must be extended vertically and installed flush with finished floor or grade. Cleanouts in ceiling spaces are not permitted in multi-story buildings; cleanouts must be extended to the floor above for accessibility.

Exception. Horizontal fixture drain piping serving a non-removeable trap shall not be required to have a cleanout for the section of piping between the trap and the vent connection for such trap.

Add the following subsections:

708.1.8.1 Manholes at building interiors. For under-slab piping 200 mm (8 inches) in diameter or larger, provide manholes conforming to the requirements in OBO-ICS IZC Section 813.

708.1.8.2 Additional requirements. Building sewers 200 mm (8 inches) in diameter and larger must have manholes located at intervals of not more than 120 m (394 feet). Provide metal covers of sufficient weight to meet traffic and loading conditions. Interior manhole covers must be gas-tight, locking type. Provide internal steps at all manholes or other entryways into subsurface structures with an internal depth greater than 1220 mm (48 inches).

SECTION 712
SUMPS AND EJECTORS

Delete and replace section 712.1 with the following:

712.1 Building subdrains. Building subdrains that cannot be discharged to the sewer by gravity must be discharged into a tightly covered and properly vented sump, located to receive the sewage or waste by gravity flow. The sump must lift and discharge the sewage or waste into the gravity drainage system by sewage pumps, sewage ejectors, or other equally efficient methods. Where pumping is required, only the lower-floor facilities must drain to the ejectors.

Delete and replace section 712.3 with the following:

712.3 Sump design. Where the sanitary sewer system design requires a sump, the sump pump, pit, and discharge piping must conform to the requirements of Sections 712.3.1 through 712.3.5. Where sumps are required, upper-floor plumbed facilities must drain by gravity to the main sewer located below the outside grade level via a building drainage system piping.

Add the following subsections:

712.3.1.1 Pump requirements. Where six or more water closets discharge into the sump, provide submersible duplex pump sized for the full flow, with an alternator starter for lead/lag operation.

712.3.1.2 Required sump pump type. Provide grinder type pumps.

Exception. Solids handling type pumps may be used only when written justification and proposed pump selections for review and approval to OBO/PDCS/DE/ME. Each duplex pump must be sized for the full flow, with an alternator starter for lead/lag operation.

712.3.1.3 Disconnects. Provide a quick disconnect pump system when sump pits are deeper than 1200 mm.

712.3.1.4 Check valve. Provide non-slam check valve on pump discharge line.

Add the following to the end of the paragraph:

712.3.2 Sump pit.

"Sump pits must be sized to provide a storage capacity of a minimum of 2.5 minutes lead pump runtime under peak flow to prevent excessive pump cycling. The maximum storage period of the sump must be not greater than 12 hours. The pit must be a minimum depth of 900 mm (36 inches) below the inlet pipe elevation. Where simplex sewage pumps are installed, the pit must be not less than 900 mm in diameter. Where duplex sewage pumps are installed, the pit must be not less than 1200 mm (48 inches) in diameter. All pits must have gas-tight, accessible, and removable metal covers of sufficient design to support anticipated loads and must be properly vented."

Add the following sections 712.5 and 712.6:

712.5 Alarm system. Provide alarm notification for power failure at sump pumps and ejectors. High water alarm level must be set at a minimum of 50 mm (2 inches) below the inlet pipe elevation. Alarm signal must be sent to a BAS system.

712.6 Room infrastructure for sumps and ejectors. Rooms that house sumps and ejectors must be provided with a hose bibb, floor drain, electrical receptacle, and ventilation to the building exterior.

END OF CHAPTER IPC-7 AMENDMENTS

CHAPTER 9
VENTS

SECTION 901
GENERAL

Delete and replace section 901.3 with the following:

901.3 Chemical waste drainage vent systems. The vent system for a chemical waste drainage system must be independent of the sanitary drainage vent system and must terminate separately through the roof to the outdoors. Air admittance valves are not permitted.

SECTION 904
OUTDOOR VENT EXTENSIONS

Delete and replace section 904.3 with the following:

904.3 Vent termination. Vent stacks or stack vents must terminate outdoors to the open air. Air admittance valves are not permitted.

SECTION 905
VENT CONNECTIONS AND GRADES

Delete and replace section 905.1 with the following:

905.1 Connection. Individual branch and circuit vents must connect to a vent stack, stack vent, or extend to the open air. Air admittance valves are not permitted.

SECTION 917
SINGLE-STACK VENT SYSTEM

Delete and replace the last sentence in section 917.6 with the following:

917.6 Additional venting required.

"The dry vent extensions for the additional venting must connect to a branch vent, vent stack, stack vent or must terminate outdoors. Air admittance valves are not permitted."

SECTION 918
AIR ADMITTANCE VALVES

Delete and replace the entire section 918 with the following:

918.1 General. Vent systems utilizing air admittance valves are not permitted.

Exception. On a project-specific basis and for a limited project requirement, OBO/PDCS/DE/ME may approve the use of air admittance valves upon prior written request by the A/E.

END OF CHAPTER IPC-9 AMENDMENTS

CHAPTER 11
STORM DRAINAGE

SECTION 1101
GENERAL

Delete and replace section 1101.1 with the following:

1101.1 Scope. The provisions of this chapter shall govern the materials, design, construction, and installation of storm drainage associated closely with individual buildings. Refer to OBO-ICS IZC Chapter 8 for storm drainage requirements for compound sites.

Delete and replace section 1101.2 with the following:

1101.2 Disposal. All roofs, as well as canopies, paved areas, yards, courts and courtyards adjacent to buildings, must drain into a storm sewer system or to an approved place of disposal. Building downspouts must be connected directly to the site storm drainage system; spillage onto the ground must not be permitted unless approved by OBO/PDCS/DE/CSE.

> **Exception:** For one-and two-family dwellings and where approved by OBO/PDCS/DE/CSE, storm water is permitted to discharge onto flat areas, such as streets or lawns, provided that the storm water flows away from buildings.

Add the following section 1101.10:

1101.10 Washout pipes. Where applicable, provide washout pipes at appropriate points for flushing out the drainage system.

SECTION 1108
SECONDARY (EMERGENCY) ROOF DRAINS

Delete and replace the last sentence from Subsection 1108.1 with the following:

1108.1 Secondary (emergency overflow) drains or scuppers.
"Provide separate roof drains for primary and secondary (overflow) systems."

SECTION 1111
SUBSOIL DRAINS

Add the following section 1111.2:

1111.2 Subsoil drain discharge. Where applicable, provide washout pipes at appropriate points for flushing out the drainage system. Subsoil drainage pipe must be discharged by gravity to the building storm sewer or into a sump. Where a subsoil drainage pipe connects to a building storm sewer, install an accessible for maintenance backwater valve with an access cover to finish floor or finish grade.

SECTION 1113
SUMPS AND PUMPING SYSTEMS

Delete and replace section 1113.1 with the following:

1113.1 Pumping system. The sump pump, pit, and discharge piping shall conform to sections 1113.1.1 through 1113.1.6.

Add the following subsections 1113.1.5 and 1113.1.6:

1113.1.5 Elevator pits. Provide sump with a pump system discharging to grade, a floor drain, a floor sink, or an open drain with an air gap. Minimum sump pit dimensions must be 610 x 610 x 610 mm (24 inches x 24 inches x 24 inches) deep.

Exception. Hydraulic elevators, provide discharge to oil-water separator in accordance with OBO-ICS IZC Chapter 8.

1113.1.6 Alarm system. Sump pumps must be provided with notification system for power failure and high-water level. High water level alarm must be set at a minimum of 50 mm (2 inches) below the inlet pipe elevation. The alarm signals must be sent to the compound Building Automation System (BAS) operator's workstation.

END OF CHAPTER IPC-11 AMENDMENTS

APPENDIX E
SIZING OF WATER PIPING SYSTEM

SECTION E103
SELECTION OF PIPE SIZE

Add the following text to the end of section E103.2.1:

E103.2.1 Pipe size selection.

"Recommended pipe sizing for water distribution and sanitary/storm pump discharge piping must be based upon a design flow velocity of 1.8 m/s. (6 feet/s). Piping size may be based upon a higher design flow velocity not to exceed 2.4 m/s (8 feet/s) as required by codes in areas where building occupants will not be impacted by piping system noise as demonstrated by an acoustical noise analysis."

END OF IPC APPENDIX E AMENDMENTS

J.2.1

OBO International Residential Code

OBO-ICS IRC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL RESIDENTIAL CODE (IRC)

The *OBO International Codes Supplement* adopts the *2024 International Residential Code (IRC)* and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted, as described. Sections named in the chapters below are amended or added by this supplement. Remaining (unnamed) sections are adopted with no amendments, or not adopted, as described. Named appendices are adopted, amended, or added as indicated. Unnamed appendices are not adopted.

PART I – ADMINISTRATIVE

CHAPTER 1 SCOPE AND ADMINISTRATION

R101	Scope and General Requirements
R102	Applicability
R103	Authority Having Jurisdiction
R104	Not adopted
R105	Permits
R106	Design and Submittal Standards
R107	Temporary Structures and Uses
R108	Not adopted
R109	Not adopted
R110	Certificate of Occupancy
R111	Not adopted
R112	Not adopted
R113	Not adopted
R114	Not adopted

PART II – DEFINITIONS

CHAPTER 2 DEFINITIONS

R201	General
R202	Definitions
R203	OBO Terms and Abbreviations

PART III – BUILDING PLANNING AND CONSTRUCTION

CHAPTER 3 BUILDING PLANNING

R301	Design Criteria
R302	Fire-resistant Construction
R303	Foam Plastic
R304 – R309	No amendments
R310	Smoke Alarms
R311 – R317	No amendments
R318	Means of Egress
R319	Emergency Escape and Rescue Openings
R320 – R324	No amendments
R325	Light, Ventilation and Heating

R326 – R332 No amendments
R333 Furniture
R334 Wall Coverings
R335 Walls and Ceilings
R336 Mattress and Bedding
R337 Corrosion-Resistant Construction
R338 Carpeting
R339 Draperies and Window Treatments

CHAPTER 4 FOUNDATIONS
No amendments

CHAPTER 5 FLOORS
No amendments

CHAPTER 6 WALL CONSTRUCTION
R601 – R608 No amendments
R609 Exterior Windows & Doors
R610 No amendments

CHAPTER 7 WALL COVERING
No amendments

CHAPTER 8 ROOF-CEILING CONSTRUCTION
No amendments

CHAPTER 9 ROOF ASSEMBLIES
No amendments

CHAPTER 10 CHIMNEYS AND FIREPLACES
No amendments

PART IV – ENERGY CONSERVATION

CHAPTER 11 [RE} ENERGY EFFICIENCY
N1101 General
N1102-N1113 Not adopted

PART V – MECHANICAL

CHAPTER 12 MECHANICAL ADMINISTRATION
Not adopted

CHAPTER 13 GENERAL MECHANICAL SYSTEM REQUIREMENTS
M1301 General
M1302 No amendments
M1303 No amendments
M1304 No amendments
M1305 Appliance Access
M1306 No amendments

M1307 No amendments
M1308 No amendments

CHAPTER 14 HEATING AND COOLING EQUIPMENT AND APPLIANCES
M1401–M1415 No amendments
M1416 Air Handling Units

CHAPTER 15 EXHAUST SYSTEMS
M1501 No amendments
M1502 No amendments
M1503 Domestic Cooking Exhaust Equipment
M1504 No amendments
M1505 Mechanical Ventilation

CHAPTER 16 DUCT SYSTEMS
M1601 No amendments
M1602 No amendments
M1603 Air Filtration

CHAPTER 17 COMBUSTION AIR
No amendments

CHAPTER 18 CHIMNEYS AND VENTS
No amendments

CHAPTER 19 SPECIAL APPLIANCES, EQUIPMENT AND SYSTEMS
No amendments

CHAPTER 20 BOILERS AND WATER HEATERS
No amendments

CHAPTER 21 HYDRONIC PIPING
No amendments

CHAPTER 22 SPECIAL PIPING AND STORAGE SYSTEMS
No amendments

CHAPTER 23 SOLAR THERMAL ENERGY SYSTEMS
No amendments

PART VI – FUEL GAS

CHAPTER 24 FUEL GAS
No amendments

PART VII – PLUMBING

CHAPTER 25 PLUMBING ADMINISTRATION
No amendments

CHAPTER 26 GENERAL PLUMBING REQUIREMENTS
P2601 No amendments
P2602 No amendments
P2603 Structural and Piping Protection
P2604–P2609 No amendments

CHAPTER 27 PLUMBING FIXTURES
P2701–P2704 No amendments
P2705 Installation
P2706 No amendments
P2707 No amendments
P2708 Showers
P2709–P2711 No amendments
P2712 Water Closets
P2713–P2716 No amendments
P2717 Dishwashing Machines
P2718 No amendments
P2719 Floor Drains
P2720–P2725 No amendments
P2726 Hose Bibbs

CHAPTER 28 WATER HEATERS
P2801 General
P2802–P2804 No amendments

CHAPTER 29 WATER SUPPLY AND DISTRIBUTION
P2901 General
P2902 No amendments
P2903 Water Supply System
P2904–P2912 No amendments
P2913 Reclaimed Water systems

CHAPTER 30 SANITARY DRAINAGE
P3001–P3011 No amendments
P3012 Cleanouts

CHAPTER 31 VENTS
No amendments

CHAPTER 32 TRAPS
No amendments

CHAPTER 33 STORM DRAINAGE
No amendments

PART VIII – ELECTRICAL

CHAPTER 34 GENERAL REQUIREMENTS
E3401 General
E3402–E3407 No amendments

CHAPTER 35 ELECTRICAL DEFINITIONS
No amendments

CHAPTER 36 SERVICES
No amendments

CHAPTER 37 BRANCH CIRCUIT AND FEEDER REQUIREMENTS
E3701 General
E3702–E3706 No amendments

CHAPTER 38 WIRING METHODS
No Amendments

CHAPTER 39 POWER AND LIGHTING DISTRIBUTION
E3901 Receptacle Outlets
E3902 Ground-fault and Arc-fault Circuit-interrupter Protection
E3903 Lighting Outlets
E3904–E3909 No amendments

CHAPTER 40 DEVICES AND LUMINARIES
No amendments

CHAPTER 41 APPLIANCE INSTALLATION
No amendments

CHAPTER 42 SWIMMING POOLS
E4201 General
E4202–E4209 No amendments

CHAPTER 43 CLASS 2 REMOTE-CONTROL, SIGNALING AND POWER-LIMITED CIRCUITS
No amendments

PART IX – REFERENCE STANDARDS

CHAPTER 44 REFERENCE STANDARDS
Additional Standards Referenced by OBO

APPENDIX AA Not adopted

APPENDIX AB Not adopted

APPENDIX AC – RESERVED

APPENDIX BA MANUFACTURED HOUSING USED AS DWELLINGS
BA101-BA103 No amendments
BA104-BA108 Not adopted
BA109-BA126 No amendments

APPENDIX BB Not adopted

APPENDIX BC Not adopted

APPENDIX BD Not adopted

APPENDIX BE RADON CONTROL METHODS
No amendments

APPENDIX BF PATIO COVERS
No amendments

APPENDIX BG SOUND TRANSMISSION
BG101 General
BG102–BG104 No amendments

APPENDIX BH AUTOMATIC VEHICULAR GATES
No amendments

APPENDIX BI Not adopted

APPENDIX BJ Not adopted

APPENDIX BK Not adopted

APPENDIX BL Not adopted

APPENDIX BM 3D-PRINTED BUILDING CONSTRUCTION
No amendments

APPENDIX BN Not adopted

APPENDIX BO Not adopted

APPENDIX CA SIZING AND CAPACITIES OF GAS PIPING
No amendments

APPENDIX CB SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS. CATEGORY I APPLIANCES AND APPLIANCES LISTED FOR USE WITH TYPE B VENTS
No amendments

APPENDIX CC RECOMMENDED PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION
No amendments

APPENDIX CD PIPING STANDARDS FOR VARIOUS APPLICATIONS
No amendments

APPENDIX CE VENTING METHODS
No amendments

APPENDIX CF SIZING OF WATER PIPING SYSTEM
No amendments

APPENDIX CG Not adopted

APPENDIX CH PRIVATE SEWAGE DISPOSAL
No amendments

APPENDIX NA RESERVED

APPENDIX NB (Rb) SOLAR-READY PROVISIONS – DETACHED ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES
No amendments

APPENDIX NC (Rc) Not adopted

APPENDIX ND (Rd) Not adopted

APPENDIX NE (Re) Not adopted

APPENDIX NF (Rf) Not adopted

APPENDIX NG(Rg) Not adopted

APPENDIX NH (Rh Not adopted

APPENDIX NI (Ri) Not adopted

APPENDIX NJ (Rj) Not adopted

APPENDIX NK (Rk) Not adopted

APPENDIX NL (RL) Not adopted

Resource A Not adopted

END OF IRC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION R101
SCOPE AND GENERAL REQUIREMENTS

Delete and replace Section R101.1 with the following:

R101.1 Title. These regulations shall be known as the *OBO Residential Code* hereinafter referred to as "this code."

R101.1.1 ICC International Residential code and OBO International Code supplements. This code incorporates by adoption the *2024 International Residential Cod*e of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

Delete and replace Section R101.2 with the following:

R101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached staff housing classified as detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above-grade in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

R101.2.1. The provisions of this code must apply to staff housing.

Exceptions. The following residential structures must be designed according to the OBO-ICS IBC:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above-grade in height with a separate means of egress and their accessory structures as noted in the OBO-ICS IBC, Chapter 4, *Special Detailed Requirements Based on Use and Occupancy*, Section 427, *Staff Housing*, or Section 428, *Representational Housing.*

2. Housing structures which are not detached one- or two-family dwellings or townhouses such as the MSGR or staff housing structures (SDA).

3. Structures designed to resist blast effects including, but not limited to, structures designated by OBO to have equivalent blast protection to that provided for on-compound office buildings. Refer to the Statement of Work (SOW) for additional information and the classified requirements for further blast requirements. Refer to OBO-ICS IBC Chapter 16 “Blast Analysis and Design.”

R101.2.2 Physical security. Refer to OBO-ICS IBC Chapter 34.

Add the following subsections:

R101.4 Effective dates of codes and supplements. Refer to OBO-ICS IBC Chapter 1 for effective dates of codes and supplements.

R101.5 Host country codes and standards. Refer to OBO-ICS IBC Chapter 1.

R101.6 Marginal markings indicating updates. Refer to OBO-ICS IBC Chapter 1.

SECTION R102
APPLICABILITY

Delete section R102.6 and subsection R102.6.1 in its entirety and replace with the following:

R102.6 Existing structures. Refer to OBO-ICS IBC Chapter 1 Section 102 Applicability. See additional requirements in OBO-ICS IEBC.

Add the following section R102.7

R102.7 Appendices. The OBO-IRC "Table of Contents" indicates which Appendixes are adopted by OBO.

Delete and replace section R103 in its entirety with the following:

SECTION R103

AUTHORITY HAVING JURISDICTION

R103.1 Creation of enforcement office. Refer to OBO-ICS IBC Chapter 1 Section 103.

SECTION R105
PERMITS

Delete and replace section R105 in its entirety with the following:

R105.1 Required. Refer to OBO-ICS IBC Chapter 1 Section 105.

Delete and replace section R106 in its entirety with the following:

SECTION R106
DESIGN AND SUBMITTAL STANDARDS

R106.1 Required. Refer to OBO-ICS IBC Chapter 1 Section 107.

SECTION R107
TEMPORARY STRUCTURES AND USES

Delete and replace section R107 in its entirety with the following:

R107.1 General. Refer to OBO-ICS IBC Chapter 1 Section 108.

Delete and replace section R110 in its entirety with the following:

SECTION R110
CERTIFICATE OF OCCUPANCY

R110.1 Use and occupancy. Refer to OBO-ICS IBC Chapter 1 Section 111.

END OF CHAPTER IRC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION R201
GENERAL

Delete and replace section R201.2 with the following:

R201.2 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

Add new Section R203:

SECTION R203
OBO TERMS AND ABBREVIATIONS

R203.1 Refer to the definitions in OBO-ICS IBC Chapter 2 “OBO Terms and Abbreviations.”

END OF CHAPTER 2 AMENDMENTS

CHAPTER 3
BUILDING PLANNING

SECTION R301
DESIGN CRITERIA

Delete and replace Subsection R301.1.1 with the following:

R301.1.1 Alternate provisions. As an alternative to the requirements in Section R301.1 the following standards are permitted subject to the limitations of this code and the limitations therein. Where engineered design is used in conjunction with these standards, the design must comply with the OBO-ICS IBC. All structures designed to withstand blast, progressive collapse or as designated in Section R101.2 must be engineered and designed according to the OBO-ICS IBC including all references therein.

1. AWC *Wood Frame Construction Manual* (WFCM)

2. American Iron and Steel Institute (AISI) *Standard for Cold-Formed Steel Framing – Prescriptive Method for One- and Two-Family Dwellings (AISI S230) with Supplement to Standard for Cold-Formed Steel Framing-Prescriptive Method for One- and Two-Family Dwellings.*

Add the following Subsection after subsection R301.1.2:

R301.1.2.1 Prohibited construction systems. The following construction systems are prohibited:

1. Precast, prestressed systems or precast-prestressed components in combination with cast-in-place systems must not be used unless specifically allowed by OBO

2. Lightweight concrete must not be used in structural members resisting forces generated by earthquake motions or blast.

Delete and replace the first paragraph of Section R301.2 with the following:

R301.2 Climatic and geographic design criteria. Buildings must be constructed in accordance with the provisions of this code as limited by the provisions of this section. Wind, Seismic and Snow provisions must be in accordance with Sections R301.2.1, R301.2.2, and R301.2.3 and all of the subsections under those sections including the revisions below unless specifically modified by OBO site-specific requirements.

Delete and replace the second sentence in Subsection R301.2.1 *Wind design criteria* with the following, but retain the remaining requirements in the section:

Basic wind speeds must be determined from OBO-ICS IBC Table 1609 when such data is not specifically given in the SOW. The minimum basic wind speed (3 second gust) must be 40 m/s (90 mph).

Delete and replace the first sentence of the second paragraph in Subsection R301.2.1.1 *Wind limitations and wind design required* with the following, but retain the remaining requirements in the section:

Construction in regions where the basic wind speeds from *OBO-ICS IBC* Table 1609 equal or exceed 45 m/s (100 mph) in hurricane-prone regions, or 49 m/s (110 mph) elsewhere, must be designed in accordance with one of the following:

Delete and replace Subsection R301.2.2.1 with the following:

R301.2.2.1 Determination of seismic design category. Residential structures designed in accordance with this code must be assigned a Seismic Design Category in accordance with R301.2.2.1.1 "Alternate determination of seismic design category.

Delete and replace Subsection R301.2.2.1.1 with the following:

R301.2.2.1.1 Alternate determination of seismic design category. Maximum considered earthquake spectral response acceleration at short periods, S_s, and at 1-second period, S_1, must be in accordance with OBO-ICS IBC Table 16.15-1 unless noted otherwise. Using site-specific site class information provided in the SOW, the Short Period Design Spectral Response Acceleration, S_{DS}, must be determined in accordance with Section 1613 of the OBO-ICS IBC. The value of S_{DS} determined in accordance with Section 1613 of the 2006 International Building Code is permitted to be used to set the seismic design category according to Table R301.2.2.1.1, and to interpolate between values in Tables R602.10.1, R603.7, and other seismic design requirements of this code.

Delete and replace Section R301.2.3 with the following:

R301.2.3 Snow loads. Ground snow loads must be determined from OBO-ICS IBC Table 1609 when such data is not specifically given in the SOW. Wood framed construction, cold-formed steel framed construction and masonry and concrete construction in regions with ground snow loads 3.35 kPa (0.5 psi) or less, must be in accordance with OBO ICS IRC Chapters 5, 6, and 8. Buildings in regions with ground snow loads greater than 3.35 kPa must be designed in accordance with accepted engineering practice and in accordance with the OBO-ICS IBC.

SECTION R302
FIRE-RESISTANT CONSTRUCTION

Add Exception 2 to Subsection R302.9.1 as follows:

2. The requirements for maximum flame spread must be based on *OBO-ICS IBC Section 803*

SECTION R303
FOAM PLASTIC

Add Exception to Subsection R303.1 as follows:

Exception. Foam plastics must not be used as an interior finish. Foam plastic thermal insulation (urethane, polystyrene, or others having a flame spread rating not exceeding 25 and a smoke density not to exceed 450) may be used only when completely covered by a minimum of 13-mm (1/2-inch) thick layer of gypsum wallboard or the equivalent. The covering must also be applied in concealed spaces.

SECTION R310
SMOKE ALARMS

Add Subsection R310.8 with the following:

R310.8 Alarm systems. When used in residences on embassy compounds, the smoke alarm system must interface with the compound alarm system.

SECTION R318
MEANS OF EGRESS

Delete Subsection R318.2 in its entirety and replace with the following:

R318.2 Door type and size.

R318.2.1 Door type. Exterior doors for off-compound housing must be of substantial construction. Outward swinging doors must have the external door hinges made non-removable. Exterior doors for on-compound housing must be hollow metal or solid core wood doors.

Exception. Steel plate or heavy-gauge hollow metal doors as required on a project specific basis.

R318.2.2 Door size. The required exit door must be a side-hinged door not less than 915 mm (3 feet) in width and 2032 mm (6 feet 8 inches) in height. Other doors must not be required to comply with these minimum dimensions.

Add the following Exception to Subsection R318.2:

Exception. For exit doors serving any space other than a representational space in representational housing, a double cylinder is permitted to be installed if the deadbolt is within 1000 mm (40 inches) of a door window or glass sidelight.

SECTION R319
EMERGENCY ESCAPE AND RESCUE OPENINGS

Replace Exception 3 to Subsection R319.1 as follows:

3. Detached one- and two-family dwellings and multiple-single family dwellings less than three stories in height and that are located on an embassy compound, are not required to have emergency escape and rescue openings.

Add Exception to Subsection R319.4.4:

Exception. The requirement for grilles on all residential housing governed by the *International Residential Code* will be identified on a project-specific basis. Where grilles cover windows of occupied bedrooms below the fourth floor, the bedrooms must have a second means of egress in accordance with Section R319.

Add the following after Subsection R319.4.4:

R319.4.4.1 Existing structures. Where grilles are recommended or required on a site-specific basis, grilles deemed adequate by the RSO for local conditions may be considered for accessible window openings.

SECTION R325
LIGHT, VENTILATION, AND HEATING

Add the following to Exceptions included in Subsection R325.1.1:

5. When natural ventilation cannot be provided due to the requirements of blast resistant construction, ventilation requirements are to meet OBO-ICS IMC, Chapter 4 Ventilation.

Add the following SubsectionR325.3.1:

R325.3.1 Indoor air. Refer to OBO-ICS IMC, Chapter 3, for indoor air design conditions. All storage areas in residences including Family Storage, Linen Storage, Pantries, Food Storage, and Wine Storage should be fully ventilated and conditioned to prevent mildew. Each storage space is to be provided with supply air from the main conditioning system.

Add Subsection R325.9:

R325.9 Comfort and performance control. Provide separate thermostat controls for private residence areas and for representative function areas. Each bedroom is to have independent temperature controls.

SECTION R333
FURNITURE

Add new Section R333 as follows:

R333.1 Furniture. All upholstered furniture must bear the Upholstered Furniture Action Council (UFAC) label for cigarette ignition.

R333.1.1 US furniture. Furniture purchased in the US must meet the requirements of the California Bureau of Home Furnishings Bulletin No. 117-75 as referenced in NFPA Standard 260.

R333.1.2 Non-US furniture. When non-US furniture is necessary, standards compatible with US testing procedures must be followed to maintain the fire protection features of the building.

R333.1.3 Existing furniture. When existing furniture is to be re-upholstered, it is required to meet the requirements of NFPA 260, *Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture*. Welt cord, filling/padding components, decking material, and barrier materials classification are to be Class I. Class I cover fabrics must only be used when used in conjunction with Class I barriers.

SECTION R334
WALL COVERINGS

Add new Section R334 as follows:

R334.1 Wall coverings. When used as interior wall finish, textile wall coverings, including material such as those having napped, tufted, looped, non-woven, or similar surface must comply with one of the following:

1. Class I flame spread. Textile wall coverings must have a Class I flame spread and must be protected by automatic sprinklers, or

2. Acceptance criteria. The textile wall covering must meet the acceptance criteria of the OBO_ICS IBC Section 803.2.1 when tested using a product mounting system, including adhesive, representative of actual use.

SECTION R335
WALLS AND CEILINGS

Add new Section R335 as follows:

R335.1 Walls and ceilings. The maximum flame spread ratings for ceilings and walls must not exceed 75 (Class II) except in exit corridors and stairs which must not exceed 25 (Class I).

R335.2 Ceilings. Acoustical panel ceilings are not permitted within individual residential units.

SECTION R336
MATTRESS AND BEDDING

Add new Section R336 as follows:

R336.1 Mattress and bedding. Mattresses and bedding must comply with DOC FF 4-72 Flammability Standard.

SECTION 337
CORROSION-RESISTANT PROTECTION

Add new Section R337 as follows:

R337.1 Corrosion-resistant protection. Provide corrosion-resistant protection must comply with the requirements of OBO-ICS IBC Appendix W– Corrosion-resistant protection.

SECTION R338
CARPETING

Add new Section R338 as follows:

R338.1 Carpeting. Carpets, carpet tile, and rugs used for floor covering must comply with NFPA Class I-ASTM E-648 (direct glue), NFPA 253, *Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source*, Class I, 0.45 watts/cm^2 or greater. If padding is used, carpet and pad must be successfully tested as a unit.

SECTION R339
DRAPERIES AND WINDOW TREATMENTS

Add new Section R339 as follows:

R339.1 Draperies and window treatments. Draperies and window treatments must be generally inherently flameproof. In limited enclosed representational areas, a flameproof finish may be applied upon approval by OBO. All draperies and window treatments must meet the requirements of NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*.

END OF CHAPTER IRC-3 AMENDMENTS

CHAPTER 6
WALL CONSTRUCTION

SECTION R609
EXTERIOR WINDOWS AND DOORS

Insert the following Subparagraph after R609.1:

R609.1.1 Prohibition of PVC windows and PVC-clad windows and door frames. PVC or PVC-clad windows and door frames are prohibited for use in OBO facilities.

Exception. PVC windows or PVC-clad windows and door frames may be permitted on a project-specific basis where the products comply with the other requirements of this chapter and where specifically approved by OBO/PDCS/DE/AD.

END OF CHAPTER IRC-6 AMENDMENTS

CHAPTER 11
ENERGY EFFICIENCY

Replace Chapter 11 Energy Efficiency with the following:

SECTION N1101
GENERAL

N1101.1 Low-rise residential buildings. Design and construction of buildings three stories or less in height above grade that include sleeping accommodations where the occupants are primarily permanent in nature (30 days or more) must be in accordance with Code of Federal Regulations 10 CFR 435 Energy Efficiency Standards for the Design and Construction of New Federal Low-Rise Residential Buildings (this includes compliance with the *International Energy Conservation Code* – see 10 CFR 435 for details).

END OF CHAPTER IRC-11 AMENDMENTS

CHAPTER 13
GENERAL MECHANICAL SYSTEM REQUIREMENTS

SECTION M1301
GENERAL

Add Subsection M1301.6, HVAC System Design.

M1301.6 HVAC System Design. Refer to OBO-ICS IMC Chapter 3 HVAC System Design for design requirements.

Add Subsection M1301.7, Air Supply Protection.

M1301.7 Air Supply Protection. Refer to OBO-ICS IMC Chapter 4 Air supply protection for special system requirements.

SECTION M1305
APPLIANCE ACCESS

Add Subsection M1305.2, Equipment Clearances.

M1305.2 Equipment Clearances. Refer to OBO-ICS IMC Chapter 3 Equipment and Appliance Location (Access for service and maintenance) for equipment clearances.

END OF CHAPTER IRC-13 AMENDMENTS

CHAPTER 14
HEATING AND COOLING EQUIPMENT AND APPLIANCES

Add the following Section M1416:

SECTION M1416
AIR HANDLING UNITS

M1416.1 Air handling units. Refer to OBO-ICS IMC Chapter 4 Air Handling Units for equipment requirements.

END OF CHAPTER IRC-14 AMENDMENTS

CHAPTER 15
EXHAUST SYSTEMS

SECTION M1503
DOMESTIC COOKING EXHAUST EQUIPMENT

Delete Section M1503.3, Exception.

Delete Section M1503.4, Exception.

SECTION M1505
MECHANICAL VENTILATION

Delete and replace section M1505.1 with the following:

M1505.1 General. All toilet rooms, locker and changing rooms, trash storage rooms, and bathrooms must be mechanically ventilated.

Add section M1505.6

M1505.6 Kitchen ventilation. Kitchen ventilation rates must be the larger of the values indicated in Table M1505.5 Minimum required local exhaust rates for one-and two-family dwellings or that required by the manufacturer's recommendations for the equipment to be installed in the kitchen.

END OF CHAPTER IRC-15 AMENDMENTS

CHAPTER 16
DUCT SYSTEMS

Add the following Section M1603:

SECTION M1603
AIR FILTRATION

M1603.1 Air filtration. Refer to OBO-ICS IMC Chapter 6 Air Filters for air filtration requirements.

END OF CHAPTER IRC-16 AMENDMENTS

CHAPTER 26
GENERAL PLUMBING REQUIREMENTS

SECTION P2603
STRUCTURAL AND PIPING PROTECTION

Add the following section P2603.5.2:

P2603.5.2 Insulation. Cold water pipes must have a vapor barrier wrapped on the warm side of the insulation to prevent condensation.

END OF CHAPTER IRC-26 AMENDMENTS

CHAPTER 27
PLUMBING FIXTURES

SECTION P2705
INSTALLATION

Add item 9 to subsection P2705.1 General:

9. Plumbing fixture mounting heights.

9.1. Shower Head: 1980 mm (6.5 feet) minimum, 2130 mm (7 feet) maximum, above finished shower floor.

9.2. Shower Rod: 1980 mm (6.5 feet) above finished shower floor.

SECTION P2708
SHOWERS

Add Subsection P2708.6 Fixture Mounting Heights:

P2708.6 Fixture mounting heights. See Section 2705 Installation for shower fixture mounting heights.

SECTION P2712
WATER CLOSETS

Add Subsection P2712.10, Additional Requirement:

P2712.10 Additional requirement. Provide hand-held bidet spray unit where required by local religious practices. Refer to OBO-ICS IPC, Chapter 4 for requirements.

SECTION P2717
DISHWASHING MACHINES

Add Subsection P2717.3 Additional Requirement:

P2717.3 Additional Requirement. Dishwashing machines must comply with NSF-184.

SECTION P2719
FLOOR DRAINS

Add Subsection P2719.2 Locations:

P2719.2 Locations. At representational residences, provide floor drains in service pantries, main kitchens, trash collection areas, laundry rooms or closets, mechanical rooms, utility rooms, janitor's closets, guest toilets serving representational areas, and outdoor representational areas.

Add Section P2726, Hose Bibbs:

SECTION P2726
HOSE BIBBS

P2726.1 Hose bibbs. Provide hose bibbs in all trash collections areas. Provide one hose bibb in a discrete location on each building façade. Hose bibbs must be frost-proof where subject to freezing or where required by local building codes.

END OF CHAPTER IRC-27 AMENDMENTS

CHAPTER 28
WATER HEATERS

SECTION P2801
GENERAL

Add Subsection P2801.9 Domestic hot water.

P2801.9 Domestic hot water. Refer to OBO-ICS IPC, Chapter 5 Domestic hot water, for system requirements.

Add Subsection P2801.10 Water heating system types.

P2801.10 Water heating system type. Refer to OBO-ICS IPC Chapter 5 Water heater type for system requirements.

END OF CHAPTER IRC-28 AMENDMENTS

CHAPTER 29
WATER SUPPLY AND DISTRIBUTION

SECTION P2901
GENERAL

Add Subsection P2901.3, Characteristics.

P2901.3 Characteristics. Refer to OBO-ICS IPC Chapter 6 for potable water requirements.

SECTION P2903
WATER SUPPLY SYSTEM

Add Subsection P2903.9.4.1, Valve Types.

P2903.9.4.1 Valve Types. Refer to OBO-ICS IPC Section 605 for additional valving requirements.

Add Subsection P2903.13, Gauges and Instrumentation.

P2903.13 Gauges and Instrumentation. Provide non-mercury type pipe thermometers on supply and return piping at all water heaters and heat exchangers. See OBO-ICS IPC Chapter 6 Gauges and instrumentation for requirements for buildings on compounds.

SECTION P2913
RECLAIMED WATER SYSTEMS

Delete Section P2913 in its entirety, and replace with the following:

P2913.1 General. Refer to OBO-ICS IZC Chapter 8 - Reclaimed Water Reuse for requirements.

END OF CHAPTER IRC-29 AMENDMENTS

CHAPTER 30
SANITARY DRAINAGE

Add Section P3012 Cleanouts

SECTION P3012
CLEANOUTS

P3012.1 Cleanouts. Refer to OBO-ICS IPC Chapter 7 for cleanout requirements.

END OF CHAPTER IRC-30 AMENDMENTS

CHAPTER 34
GENERAL REQUIREMENTS

SECTION E3401
GENERAL

Add Section E3401.2.1 System Voltages:

E3401.2.1 System voltages. The provisions of this code are applicable to all single-phase, 0- to 400- ampere, country utilization voltage systems in locations where required by the nominal electrical service.

END OF CHAPTER IRC-34 AMENDMENTS

CHAPTER 37
BRANCH CIRCUIT AND FEEDER REQUIREMENTS

SECTION E3701
GENERAL

Add Subsection E3701.6 Branch circuit panels and locations:

E3701.6 Branch circuit panels and locations. Refer to OBO-ICS NEC Section 210 for requirements.

END OF CHAPTER IRC-37 AMENDMENTS

CHAPTER 39
POWER AND LIGHTING DISTRIBUTION

SECTION E3901
RECEPTACLE OUTLETS

Delete section E3901.2 and replace with the following:

E3901.2 General purpose receptacle distribution. In every kitchen, family room, dining room, living room, parlor, library, den, sunroom, bedroom, recreation room, garage and garden storage area, or similar room or area of dwelling units, outlets must be installed in accordance with the general provisions specified in Sections E3901.2.1 through E3901.2.4. (See Figure E3901.2)

Add section E3901.2.5:

E3901.2.5 Use of foreign regional receptacles. The use of foreign regional receptacles is subject to the following:

E3901.2.5.1 Acceptable locations. Foreign regional style receptacles, with prior approval of OBO/PDCS/DE/EE, may be used in residential units subject to the provisions of the OBO-ICS IRC including SDA, CMR, DCMR, and MSGRs not located on office compounds nor subject to blast requirements.

E3901.2.5.2 Minimum design requirements. Foreign regional style receptacles when installed must meet the requirements of the electrical system design for compatible equipment, and installation procedures. The entire electrical system for the building must be designed and installed to the same code standard as the receptacle selected. Requirements for all receptacles (e.g., either foreign regional or NEMA receptacles) are as follows:

1. Pin polarization (Hot, Neutral, and Ground);
2. Three prong configuration (Hot, Neutral, and Ground); and
3. Be Non-Reversible (Polarization).

E3901.2.5.3 Prohibited receptacle styles. The use of receptacle styles A, C, and K is not permitted. Each project location must select a receptacle and wiring system that meets these requirements, and this selection must be approved by OBO/PDCS/DE/EE.

E3901.2.5.4 Minimum receptacle rating. Local standard receptacles must be rated 220V, 16A minimum. Receptacles rated at 10A, 220V must not be used. Circuit breaker ratings must not exceed receptacle rating.

SECTION E3902
GROUND-FAULT AND ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION

Add section E3902.23 GFCI circuits:

E3902.23 GFCI circuits. For countries where the nominal voltage is greater than 220 volts, provide GFCI breakers within the distribution panelboard feeding the circuit. One GFCI breaker, rated at; 5mA (25ms), 60Hz, 125V locations or 10mA, 50Hz, 240V locations, ground fault trip, (line to ground) must be installed for each circuit to be GFCI protected This breaker will provide ground fault protection for all receptacles in the circuit.

SECTION E3903
LIGHTING OUTLETS

Replace the first sentence of Subsection E3903.3 with the following, but retain the remaining text:

E3903.3 Additional locations. At least one wall-switch-controlled lighting outlet must be installed in walk-in closets, hallways, stairways, attached garages, and detached garages.

END OF CHAPTER IRC-39 AMENDMENTS

CHAPTER 42
SWIMMING POOLS

SECTION E4201
GENERAL

Delete Section E4201 in its entirety and replace with the following:

E4201.1 Scope. The design, construction, alteration, movement, renovation, replacement, repair and maintenance of in-ground pools must conform to the requirements of the *OBO Swimming Pool and Spa Code (OBO-ICS ISPSC)***.**

E4201.1.1 Enclosures and safety devices. The design, construction, alteration, movement, renovation, replacement, repair and maintenance of enclosures and safety devices for aquatic vessels must conform to the requirements of the *OBO Swimming Pool and Spa Code (OBO-ICS ISPSC)***.**

END OF CHAPTER IRC-42 AMENDMENTS

CHAPTER 44
REFERENCED STANDARDS

Add the following to the chapter introduction:

Standards included in other code books and referenced in OBO ICS IRC shall be included in this code.

END OF CHAPTER IRC-44 AMENDMENTS

APPENDIX BG
SOUND TRANSMISSION

SECTION BG101
GENERAL

Add section BG101.2 Noise restrictions for equipment:

BG101.2 Noise restrictions for equipment. Noise reduction criteria to include those set forth in OBO-ICS IBC, Section 1206.

Add section BG101.3 Noise reduction.

BG101.3 Noise reduction. The following guidelines are required to prevent noise propagation.

1. Plumbing systems must not be located in walls adjoining bedrooms.

2. Mechanical rooms, staff quarters, laundry rooms, and exercise rooms must be acoustically isolated and must not share a common wall with a bedroom.

END OF IRC APPENDIX BG AMENDMENTS

J.2.1

OBO International Swimming Pool and Spa Code

OBO-ICS ISPSC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL SWIMMING POOL AND SPA CODE (ISPSC)

The *OBO International Codes Supplement* adopts the *2024 International Swimming Pool and Spa Code (ISPSC)* and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted, as described. Sections named in the chapters below are amended or added by this supplement. Remaining (unnamed) sections are adopted with no amendments, or not adopted, as described. Named appendixes are adopted, amended or added as indicated. Unnamed appendices are not adopted.

CHAPTER 1 SCOPE AND ADMINISTRATION
Part 1 Scope and Application
101 Scope and General Requirements
102 Not adopted
Part 2 Administration and Enforcement
103 Code Compliance Agency
104 Not adopted
105 Permits
106 Not adopted
107 Not adopted
108 Not adopted
109 Not adopted
110 Not adopted
111 Not adopted
112 Not adopted
113 Not adopted
114 Not adopted

CHAPTER 2 DEFINITIONS
201 No amendments
202 Definitions

CHAPTER 3 GENERAL COMPLIANCE
301 General
302 No amendments
303 Energy
304 No amendments
305 Barrier Requirements
306 No amendments
307 General Design
308 No amendments
309 No amendments
310 No amendments
311 No amendments
312 No amendments

313 Filters
314 Pumps and Motors
315 No amendments
316 No amendments
317 No amendments
318 No amendments
319 Water Supply
320 No amendments
321 Wastewater Disposal
322 No amendments
323 No amendments
324 No amendments
325 Equipment Rooms (and Chemical Storage Rooms)
326 No amendments

CHAPTER 4 PUBLIC SWIMMING POOLS
401 General
402 Diving
403 No amendments
404 No amendments
405 Wading Pools
406 Decks and Deck Equipment
407 No amendments
408 No amendments
409 Specific Safety Features
410 No amendments
411 Special Features
412 Signage
413 Visual Screening

CHAPTER 5 PUBLIC SPAS AND PUBLIC EXERCISE SPAS
No Amendments

CHAPTER 6 AQUATIC RECREATION FACILITIES
No amendments

CHAPTER 7 ONGROUND STORABLE RESIDENTIAL SWIMMING POOLS
No amendments

CHAPTER 8 PERMANENT INGROUND RESIDENTIAL SWIMMING POOLS
No amendments

CHAPTER 9 PERMANENT RESIDENTIAL SPAS AND PERMANENT RESIDENTIAL EXERCISE SPAS
No amendments

CHAPTER 10 PORTABLE RESIDENTIAL SPAS AND PORTABLE RESIDENTIAL EXERCISE SPAS
No amendments

CHAPTER 11 REFERENCED STANDARDS

No amendments

Appendix A **Board of Appeals**
Not adopted

END OF ISPSC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
GENERAL

Replace all Section 101 content with the following:

101.1 Title. These regulations shall be known as the *OBO Swimming Pool and Spa Code* hereinafter referred to as "this code."

1. This code incorporates by adoption the *2024 International Swimming Pool and Spa Code* of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

101.2 General. The provisions of Chapter 1 - Administration of the *OBO*-ICS IBC, apply to this code.

Delete Sections102, 103, 104 and 106 through 114 in their entirety.

SECTION 105
PERMITS

Replace all Section 105 content with the following:

105.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

END OF CHAPTER ISPSC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 202
DEFINITIONS

Delete and replace the following definitions:

CLASS A COMPETITION POOL. This type of pool is not used on OBO compounds.

CLASS B PUBLIC POOL. A pool intended for recreational use located on an office building or residential compound that is not identified in other classifications of public pools.

CLASS C SEMI-PUBLIC POOL. A pool operated solely for and in conjunction with CMR / DMR and principal officer residencies that is not identified in other classifications of public pools.

CLASS D POOL. This type of pool is not used on OBO compounds.

CLASS E POOL. This type of pool is not used on OBO compounds.

END OF CHAPTER ISPSC-2 AMENDMENTS

CHAPTER 3
GENERAL COMPLIANCE

SECTION 301
GENERAL

Delete the first sentence of subsection 301.1 and replace with the following:

301.1Scope. The provisions of this chapter must govern the general design and construction of Class B, Class C and Class F pools and spas on OBO compounds and related piping, equipment, and materials.

Add the following after subsection 301.1.1:

301.1.2 Subsurface design and construction requirements. Except as specified in this section, the requirements of the OBO-ICS IBC Chapter 18 Soils and Foundations are applicable to the work of this chapter.

301.1.2.1 Reports. Provide the following reports.

1. Geotechnical and groundwater report. Provide subsurface investigation and report.

A. Identify characteristics of subsurface soil and groundwater for the anticipated swimming pool location.

B. Provide analysis by geotechnical/structural engineer(s) to include adequacy of the pool design and provide recommendations to accommodate any special conditions necessary for the pool construction.

2 Water chemistry analysis report. Provide analysis and report of the swimming pool water supply. Water chemistry analysis must include:

A. Metals (Cu, Fe, Mn, and Ag) Analysis to determine chelating agents necessary to prevent pool staining.

B. Total Dissolved Solids to determine how frequently water will need to be changed to reduce consumption of disinfectant chemical.

C. Hardness (or calcium hardness) to determine scaling and plaster coat deterioration problems.

D. Total Alkalinity for pH control and reduction of use of disinfectant and pH balancing chemicals.

E. pH for determining water balancing and disinfectant treatment method.

301.1.2.2 Treatment system design. Design treatment system(s) as required to control scaling, algae, staining, corrosion, and disinfection in accordance with the American Public Health Association “Standard Method of Examination of Water and Wastewater.”

301.1.2.3 Placement of backfill and soil. Backfill and soil under pool and decking must be tamped in maximum 200 mm thick increments to 95% of maximum dry density.

301.1.2.4 Pool shell design and construction. Pool shell design and construction must be certified to meet structural requirements based upon local conditions and the results of the analysis in the Geotechnical and Groundwater Report.

SECTION 303
ENERGY

Delete and replace subsection 303.1.3 in its entirety with the following:

303.1.3 Covers. Provide covers for all pools or in-ground permanently installed outdoor spas that are heated, cooled, or not used on a year-round basis; and in-ground permanently installed spas.

1. Cover safety. Covers must conform to ASTM F 1346, unless waived by OBO/PDCS/DE/AD on a project specific basis.

2. Operation. Pool covers must be electrically operated, and spa covers must be manually operated.

Exception. Manual covers may be permitted for pool covers only where approved by the Authority Having Jurisdiction.

SECTION 305
BARRIER REQUIREMENTS

Delete subsection 305.2.4 in its entirety.

Delete subsections 305.2.5 and 305.2.5.1 and replace with the following:

305.2.5 Mesh Fence as a barrier. Mesh fence or removable barriers are not permitted to be used as a barrier for aquatic vessels.

Add subsection 305.2.10.1 after section 305.2.10:

305.2.10.1 Planting. Planting in clear zone must be limited to ground cover so that it cannot be used to climb the barrier.

Add subsection 305.2.11:

305.2.11 Poolside barrier setbacks. The aquatic vessel side of the required barrier must be not less than the following:

1. Long sides of the pool: 3.0 m (10 feet).

2. Ends of pool: 2.0 m (6.5 feet).

3. Wading pool decks. Wading pool decks must be 2.0 m (6.5 feet) or greater in width with limited portions at 1.5 m (5.0 feet) permitted.

4. Pool decks. Pool decks must not be so large as to invite activities not directly related to pool use.

Delete and replace Subsection 305.3 with the following:

305.3 Gates. Access gates must comply with the requirements of Sections 305.3.1 through 305.3.4 and must be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool or spa, must be self-closing and must have a self-latching device.

Add subsection 305.3.5.

305.3.5 Gate bottom clearance. The maximum vertical clearance between grade and the bottom of the barrier gate must be no greater than 100 mm (4 inches) measured on the side of the barrier that faces away from the swimming pool.

Delete and replace Subsection 305.4 in its entirety with the following:

305.4 Dwelling or building wall as a barrier. There must be no doors or access points from a dwelling or other building that lead directly to the pool area.

1. Where a wall of a dwelling or building serves as part of the barrier, a separation barrier must be built between the access point of the building or dwelling and the pool area.

2. Door alarms are not permitted as a substitute for an access gate complying with the provisions of Section 305.3.

3. A separation barrier is not required if the only entrance to the structure is from the pool area and the purpose of the structure is for pool related activities only. Examples include cabanas, change rooms, bathrooms.

Add Subsection 305.9.

305.9 Prohibited poolside uses. The following are not permitted inside the required pool barrier:

305.9.1 Tables and chairs for dining, lawns, or lawn areas for active sports and large gatherings, bar counters and grilles.

305.9.2 Non-pool-related events or structures, including but not limited to: food concessions; bars; play areas; picnic tables; barbecues; exercise facilities; or lawns.

SECTION 307
GENERAL DESIGN

Delete and replace subsection 307.1.5 in its entirety with the following:

307.1.5 Accessibility. All new swimming pools must be designed and constructed for accessibility to physically disabled persons in accordance with *OBO-ICS IBC* Chapter 11 – Accessibility.

Add Subsection 307.2.6:

307.2.6 Shell construction.

307.2.6.1 Shotcrete. Pool shell must be constructed of shotcrete. Except as specified in this section, shotcrete must conform to the requirements of the *International Building Code* Section 1908 for plain or reinforced concrete.

Exception. Vinyl and fiberglass liner systems may be used where approved by OBO.

307.2.6.1.1. Minimum strength. 304 MPa (44,000 psi) at 28 days with a maximum aggregate size of 19 mm (0.75 inch) and 100-mm (4-inch) slump.

307.2.6.1.2 Concrete reinforcement. Reinforcement must consist of the following:

1. 12 mm (1/2 inch) minimum rebar at 200 mm (8 inches) on center both ways with 300 mm (12 inches) minimum bar lap where necessary.

2. Reinforcing steel must be intermediate strength new billet deformed bars with a minimum yield strength of 304 MPa (44,000 kpsi).

3. Welded wire mesh must be cold drawn steel with a minimum yield strength of 420MPa (61,000 kpsi).

307.2.6.1.3 Shotcrete rebound. The reuse of shotcrete rebound as filler is prohibited. Shotcrete rebound must be discarded.

SECTION 313
FILTERS

Delete and replace subsection 313.3.1 in its entirety with the following:

313.3.1 Air release. All filters must contain automatic and manual air release capabilities. Filters must have one or more lids that provide a slow and safe release of pressure as part of the design.

SECTION 314
PUMPS AND MOTORS

Add subsection 314.4.1. after section 314.4:

314.4.1. Distance from pool main drains. Pool filtration pumps must not be installed more than 25 m (82 feet) from the pool main drains.

Exception. Filtration pumps may be installed more than 25 m (82 feet) from the pool main drains upon written approval by OBO. Pump head calculations must be provided.

SECTION 319
WATER SUPPLY

Add subsection 319.4:

319.4 Break-in procedures. Break-in procedures for the pool must be submitted in writing and must include the following:

1. The make-up water chemistry for providing chelating agents to reduce metal staining.
2. pH and calcium chloride adjustment for maintaining the plaster coat.
3. Schedules and procedures for introduction of the disinfectant chemicals.

SECTION 321
WASTEWATER DISPOSAL

Add subsection 321.1.1 after section 321.1:

321.1.1 Wastewater treatment. Water drained from pool filtration loop via backwash or other methods may not be sent to the on-site wastewater treatment plant. Backwash drainage connection priority to site sanitary vs. storm systems must be approved by the local code authority for the project.

SECTION 325
EQUIPMENT ROOMS (AND CHEMICAL STORAGE ROOMS)

Add subsection 325.13 & 325.14 after section 325.12:

325.13 Emergency eyewash stations. Provide emergency eyewash stations in accordance with OBO ICS IBC Section 2902.6 and provide a hose bibb within 7.5 m (25 feet) of both equipment rooms and chemical storage rooms.

325.14 Corrosion protection. Provide corrosion protection for equipment rooms and chemical storage rooms to comply with the following:

325.14.1 Corrosion risk level. Protect the rooms to resist extreme corrosion.

325.14.2 Materials and finishes. Provide corrosion resistant materials and finishes.

325.14.2.1 Metals. Provide stainless steel for all exposed metal within the rooms including but not limited to conduit, fasteners and supports, door hardware, electrical faceplates, light fixtures, etc.

325.14.2.2 Structural steel. Provide epoxy paint protective coating for all exposed metal deck, structural steel framing, fasteners, plates, etc.

325.14.2.3 Floors. Provide seamless epoxy surface impervious to chemicals, solvents, oils, acids, alkalis, and salts.

325.14.2.4 Walls and ceilings. Provide epoxy surface impervious to chemicals, solvents, oils acids, alkalis, and salts.

END OF CHAPTER ISPSC-3 AMENDMENTS

CHAPTER 4
PUBLIC SWIMMING POOLS

SECTION 401
GENERAL

Replace Subsection 401.1 in its entirety with the following:

401.1 Swimming pools. The provisions of this chapter must apply to all swimming pools.

401.1.1 Pool classification. All pools shall be classified as and must meet the requirements for Class B Public swimming pools.

Exception. Pools on representational housing compounds shall be classified as, and must meet the requirements for Class C, semi-public pools.

Replace Subsection 401.6 in its entirety with the following:

401.6 Pool depth requirements. Pools must be designed and constructed to provide the following depths.

401.6.1 Minimum depth. Minimum depth for pools must be 900 mm (3 feet).

Exceptions.

1. Accessible sloped entries or beach entry locations.
2. Class C pools: minimum depth must be 850 mm (2.75 feet).
3. Lap lanes minimum depth must be 1050 mm (3.5 feet).

401.6.2 Maximum depth. Maximum depth must be 1500 mm (5 feet).

SECTION 402
PROHIBITION OF DIVING AND DIVING EQUIPMENT

Replace Section 402 in its entirety with the following:

402.1 General. Diving is prohibited at Department of State facilities.

402.2 Installation. Installation of diving boards is prohibited.

402.3 Existing facilities. At newly acquired, leased or long-term rental facilities, existing diving boards must be removed prior to occupancy.

SECTION 405
WADING POOLS

Delete 405.1 and replace with the following:

405.1 Scope. Provide Class F wading pools on compounds which include SDA housing for families except where directed otherwise by OBO.

405.1.1 Wading pools are not required on office compounds except where directed otherwise by OBO.

405.1.2 Wading pools. Class F wading pools must be separate from main pool with an independent circulation system, must be physically separated from the main pool by a pool barrier providing isolation from other aquatic vessels, and must be constructed in accordance with Sections 405.2 through 405.6.

SECTION 406
DECKS AND DECK EQUIPMENT

Delete Subsections 406.3 through 406.11 in their entirety.

SECTION 409
SPECIFIC SAFETY FEATURES

Replace Subsection 409.2.2 with the following:

409.2.2 Marking of depth. The depth of the water in 300-mm (12-inch) increments and in one-foot increments must be plainly and conspicuously marked on the vertical pool wall at or above the waterline.

Insert subsection 409.5:

409.5 Lifeguard area. Provide an area where a lifeguard or designated responsible person can monitor all activities in the pool area.

SECTION 411
SPECIAL FEATURES

Add the following subsection:

411.6 Prohibited features. Islands or similar features that obscure clear, uninterrupted surveillance of the pool are prohibited.

SECTION 412
SIGNAGE

Add the following subsection:

412.5 Language. Signage required by Section 412.1 through 412.4 must be posted in English and the host country language.

412.6 Additional safety signage. Provide the following additional safety signage at swimming pools. Pictograph signs may be used in addition to text-only signs.

412.6.1 Safety Signage Type P1.

1. Text: "**DANGER – SHALLOW WATER. NO DIVING**"
2. Placement. Locate prominently at pool perimeter.
    a) All pools, locate on pool deck edge next to pool:
    b) Locate not greater than 7600 mm (300 inches) apart.
3. Graphic Requirements:
    a) Minimum height: 100 mm (4 inches).

b) Typeface must be in contrasting color to background.

c) Provide slip-resistant finish.

412.6.2 Safety Signage Type P2.

1. Text: "**POOL RULES**" See full text below.
2. Placement: Locate prominently at all pool access point(s).
3. Graphic requirements:
4. Sign Type, Wall Mounted Directional.
5. Full text of Safety Signage Type P2:

- **POOL RULES**
- **EVERY PERSON WITHIN THE POOL AREA MUST OBEY THE INSTRUCTIONS OF THE CERTIFIED LIFEGUARD/DESIGNATED RESPONSIBLE PERSON OR FACE DISMISSAL FROM THE POOL AREA.**
- **NO PERSON SHALL FRATERNIZE WITH OR OTHERWISE DISTRACT THE CERTIFIED LIFEGUARD/DESIGNATED RESPONSIBLE PERSON FROM PERFORMING THE TASK OF POOL SURVEILLANCE AND RULE ENFORCEMENT.**
- **PERSONS 16 YEARS OR UNDER MAY NOT BE IN THE POOL AREA UNLESS A CERTIFIED LIFEGUARD/DESIGNATED RESPONSIBLE PERSON IS ON DUTY.**
- **NO RUNNING, PUSHING, SHOVING, DUNKING OR OTHER HORSEPLAY IS PERMITTED IN THE POOL AREA.**
- **NO DIVING PERMITTED.**
- **NO ONE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL WILL BE ALLOWED IN THE POOL AREA.**
- **ONLY POOL RELATED ACTIVITIES SHALL TAKE PLACE WITHIN THE POOL AREA.**
- **NO GLASS OR LIGHTED CIGARETTES ARE ALLOWED INTO THE POOL AREA.**
- **PETS (EXCEPT SERVICE ANIMALS) ARE NOT PERMITTED WITHIN THE POOL AREA.**

412.6.3 Safety Signage Type P2A.

1. Text: Same as P2 with the following additional text where required by post policy:

- **CHILDREN UNDER THE AGE OF ___ MUST BE ACCOMPANIED BY A RESPONSIBLE, CARING ADULT CHARGED WITH THEIR SUPERVISION ANYTIME THEY ARE IN THE POOL AREA. CHILDREN GREATER THAN ___ YEARS OF AGE WHO HAVE DEMONSTRATED SWIMMING ABILITY MAY BE EXEMPTED.**

SECTION 413
VISUAL SCREENING

Add the following section:

413.1 Visual screening. The swimming pool, pool deck, and pool house (i.e. dressing, sanitary and utility structures) must be visually screened from the public areas of the compound, public streets and adjacent properties.

413.2 Screening methods. Visual screening must consist of one of the following:

1. Building walls.

2. Solid barrier fences.

3. Ornamental metal safety fencing, when used in conjunction with plantings placed immediately outside the fencing to create an opaque surface. Fencing and planting must be non-climbable in accordance with Section 305.

END OF CHAPTER ISPSC-4 AMENDMENTS

J.2.1

OBO International Zoning Code

OBO-ICS IZC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2024 INTERNATIONAL ZONING CODE (IZC)

The *OBO International Codes Supplement* adopts the *2024 International Zoning Code (IZC*) and amends its provisions on a chapter-by-chapter basis. Chapters are listed below as adopted with no amendments, amended, or not adopted as described. Sections named in the chapters below are amended or added by this supplement Remaining (unnamed) sections are adopted with no amendments or not adopted as described. Named appendices are adopted, amended, or added. Unnamed Appendices are not adopted.

CHAPTER 1 SCOPE AND ADMINISTRATION
101 Scope and General Requirements
102 Not adopted
103 Not adopted
104 Not adopted
105 Not adopted
106 Permits and Approvals
107 Not adopted
108 Not adopted
110 Not adopted
111 Not adopted

CHAPTER 2 DEFINITIONS
201 General 202 ICC Definitions
203 OBO Terms, Acronyms, and Abbreviations

CHAPTER 3 USE DISTRICTS
Not adopted

CHAPTER 4 AGRICULTURAL ZONES
Not adopted

CHAPTER 5 RESIDENTIAL ZONES
501 No amendments
502 Not adopted
503 Physical Security Requirements

CHAPTER 6 COMMERCIAL AND COMMERCIAL/RESIDENTIAL ZONES
601 No amendments
602 Not adopted
603 Physical Security Requirements
604 Site Utilization Standards
605 Physical Security for Off-Compound Office

CHAPTER 7 FACTORY/INDUSTRIAL ZONES
701 No amendments
702 Not adopted
703 Physical Security Requirements

CHAPTER 8 GENERAL PROVISIONS
801 On-Site Parking

802 No amendments
803 No amendments
804 No amendments
805 Landscaping Requirements
806 No amendments
807 Not adopted
808 Not adopted
809 – 810 Reserved
811 Grading and Excavation Regulations
812 Storm Drainage and Stormwater Management Systems
813 Site Utilities Requirements
814 Fire Apparatus Access Roads
815 Exterior and Compound Site Security Lighting
816 Harvested Rainwater and Reclaimed Water Reuse
817 Site Accessibility
818 Corrosion-Resistant Protection
819 Decorative Water Features

CHAPTER 9 SPECIAL REGULATIONS
Not adopted

CHAPTER 10 SIGN REGULATIONS
1001 No amendments
1002 No amendments
1003 No amendments
1004 General Provisions
1005 Exempt Signs
1005 Not adopted
1006 Not adopted
1007 Not adopted
1008 Not adopted
1009 Not adopted

CHAPTER 11 NONCONFORMING STRUCTURES AND USES
No amendments

CHAPTER 12 CONDITIONAL USES
Not adopted

CHAPTER 13 PLANNED UNIT DEVELOPMENT
Not adopted

CHAPTER 14 REFERENCED STANDARDS
No amendments

APPENDIX A DESIGN CRITERIA FOR EXTERIOR AND SITE LIGHTING
A101 General

END OF IZC TABLE OF CONTENTS

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
GENERAL REQUIREMENTS

Replace Chapter 1 in its entirety with the following:

101.1 Title. These regulations shall be known as the *OBO Zoning Code* hereinafter referred to as "this code."

1. This code incorporates by adoption the *2024 International Zoning Code* of the International Code Council as amended by the OBO International Codes Supplements (OBO-ICS).

101.2 General. The provisions of Chapter 1 - Administration of the *OBO-ICS IBC*, apply to this code.

Delete Sections 102 through 105 and 107 through 111 in their entirety.

SECTION 106
PERMITS AND APPROVALS

Delete Section 106 and replace with the following.

106.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 Permits apply to this code.

END OF CHAPTER IZC-1 AMENDMENTS

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

Delete Section 201.3 in its entirety and replace with the following:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

Add Section 202.1 and retain the remainder of section 202:

SECTION 202
ICC DEFINITIONS

202.1 General. Refer to OBO ICS IBC Section 202 for definitions of terms used where not defined in this code. Where terms are defined here use the meaning ascribed to the terms in this code if different.

Add the following Section 203

SECTION 203
OBO TERMS, ACRONYMS, AND ABBREVIATIONS

203.1 General. Refer to OBO ICS IBC section 203 for definitions of terms used.

203.2 Terms in OBO ICS IZC Chapter 8. Refer to section 816.3 Definitions for the meaning of additional terms used in section 816.

END OF CHAPTER IZC-2 AMENDMENTS

CHAPTER 5
RESIDENTIAL ZONES

Add the following section:

SECTION 503
PHYSICAL SECURITY REQUIREMENTS

503.1 General. Refer to OBO-ICS IBC Chapter 34.

END OF CHAPTER IZC-5 AMENDMENTS

CHAPTER 6
COMMERCIAL AND COMMERCIAL/RESIDENTIAL ZONES

Add the following section:

SECTION 603
PHYSICAL SECURITY REQUIREMENTS

603.1 General. Refer to OBO-ICS IBC Chapter 34.

SECTION 604
SITE UTILIZATION STANDARDS

Add the following sections:

604.1 Use of security setback. Portions of setback, outside 6.1-m (20-foot) clear zone, may be utilized for non-building functions such as retention ponds and official parking.

604.2 Site vehicular circulation. Provide a continuous vehicular access route from Main CAC entrance to Service CAC. Under certain circumstances and with approval of COR based on OBO/PDCS/DE input, the entire access route does not need to be paved with asphalt. However, the entire route must be capable of supporting Post vehicles. Place roadways in setback or clear zone. Vehicular route must not be combined with other functions, such as service area, loading zone, or parking spaces and aisles. Align compound drive with rows of shade trees and/or palms.

604.3 Visual screening requirements. Provide the following visual screening.

604.3.1 Parking inside the perimeter wall or fence. Visually screen parking from public view using landscaping, wall, or fencing. Chain link fence is not permitted.

604.3.2 Service areas. Visually screen service areas from representational areas (e.g., Entrance Arrival Court, NOB Entrance Plaza, Staff Garden, etc.) and from public view using landscaping.

604.3.4 Housing Privacy Fence. Privacy fences must be used to separate office buildings of compound with residential or housing buildings on same compound. When office and housing functions are conjoined, design must address the privacy of the housing from the office. When the fence is located in the clear zone, it must cross perpendicular to clear zone, be transparent, and have gate access for guard patrolling the compound perimeter.

604.4 Paved walks. Shade trees must be placed on one side of the path and spaced not more than 8 m (26 feet) apart. All paths must conform to accessibility requirements as identified in OBO-ICS IBC Section 1101.

604.4 Prohibited material for paved walks. The use of a stabilized crushed stone or decomposed granite is not permitted to be used on compound walkways unless specifically directed or approved by OBO.

604.5 Turning movements at Main CAC. Provide paved area in front of Main CAC for vehicular drop-off and rejection without blocking access to sallyport.

604.6 Main CAC Arrival Court. Main CAC arrival courts must comply with the requirements of this section.

604.6.1 Design requirements. The Main CAC arrival court is the main entrance to the compound for both pedestrians and vehicles. It must be visually and physically linked to the NOB Entrance Plaza.

604.6.2 Pedestrian and vehicular separation. Provide separation between pedestrians and vehicles at the entrance arrival court using vehicular control devices such as mushrooms, curb-height planters, and ornamental bollards.

604.6.3 Paving. Pave with stone or fired clay brick pavers. Provide concrete subbase.

604.7 NOB Entrance Plaza. NOB Entrance Plazas must comply with the requirements of this section.

604.7.1 Design requirements. Design NOB Entrance Plaza at main entrance to NOB so that it functions as a pedestrian space with infrequent vehicular traffic. NOB Entrance Plaza extends from protected side of MCAC all the way to the main entrance to NOB.

604.7.2 Pedestrian and vehicular separation. Provide separation between pedestrians and vehicles at the entrance arrival court using vehicular control devices such as mushrooms, curb-height planters, and ornamental bollards.

604.7.3 Paving. Paving in NOB Entrance is subject to OBO-ICS IZC Section 604.6.3.

604.8 Staff Garden. Staff gardens must comply with the requirements of this section.

604.8.1 Covering. Provide tree-shaded or roof-covered sitting areas for employees outside or in the vicinity of, but out of direct view of, NOB main entrance. Locate minimum 15.2 meters (50 feet) from NOB main entrance. Connect to NOB Entrance Plaza with accessible paved walk.

604.8.2 Furnishings. Furnish garden with benches, trash receptacles, and stainless-steel drinking fountain.

604.8.3 Paving. Paving in Staff Garden shall match paving materials used in Main CAC Arrival Court.

604.9 Consular Arrival Court and Consular Garden. Consular Arrival Court and Consular Gardens must comply with the requirements of this section.

604.9.1 Vehicular Drop Off. Where permitted by local zoning, provide a vehicular drop-off lane at the public roadway for arriving Consular visitors.

604.9.2 Consular Arrival Court. Provide a paved, tree-shaded waiting area outside the perimeter wall adjacent to the Consular CAC to accommodate visitors arriving prior to operational hours, and to provide a safe environment for visitors prior to entering the Consular CAC. If space allows, a structured canopy is permitted to cover the waiting area. All climbable covers and main tree branches shall be placed 2.75 m (9 feet) away from the perimeter barrier to comply with climb resistance requirements.

604.9.3 Consular Garden. All compounds with Consular functions shall have a Consular Garden outside the entrance to the office building's Consular lobby. Gardens shall include plantings, shade trees, and roof-covered sitting area for Consular visitors. Gardens shall comply with security requirements in OBO-ICS IBC Chapter 34.

604.9.4 Paving. Paving in Consular Arrival Court and Consular Garden shall match paving materials used in Main CAC Arrival Court.

604.9.5 Furnishings. Furnish Consular Arrival Court and Consular Garden with benches, trash receptacles, and drinking fountain suitable for exterior application.

604.10 Covered Consular Walkway. Provide a dedicated pedestrian walkway from the Consular CAC to the exterior consular waiting area and consular entrance at the office building. Walkway must be covered from CAC to

Exterior Consular Waiting Area and to Consular entrance at office building. Covered walkway must comply with the requirements of this section and the requirements of OBO-ICS IBC Section 3404.5.1.1.

604.11 American Center Garden. All compounds with American Center functions shall have a continuous dedicated path and separation barrier from the CAC to the American Center's entrance. Provide a garden outside the entrance into the American Center with plantings and shade trees. American Center Garden shall not be combined with the Consular Garden but may be adjacent.

604.11.1 Paving. Paving in American Center Garden shall match paving materials used in Main CAC Arrival Court.

604.11.2 Furnishings. Furnish garden with benches, trash receptacles, and drinking fountain suitable for exterior application.

604.12 Swimming Pool Decks. Swimming pool deck shall comply with the provisions of OPR 2-601-01 Section 2-7.2.9.1. Pavers shall be a minimum of 100 mm thick.

SECTION 605
PHYSICAL SECURITY REQUIREMENTS FOR OFF-COMPOUND OFFICE FACILITIES

Add the following section 605.1:

605.1 Refer to OBO-ICS IBC Chapter 34

END OF CHAPTER IZC-6 AMENDMENTS

CHAPTER 7
FACTORY/INDUSTRIAL ZONES

Add the following section:

SECTION 703
PHYSICAL SECURITY REQUIREMENTS

703.1 General. Refer to OBO-ICS IBC 34.

END OF CHAPTER IZC-7 AMENDMENTS

CHAPTER 8
GENERAL PROVISIONS

SECTION 801
ON-SITE PARKING AND ROADWAYS

Add the following clauses at the beginning of the following subsections:

801.2.1 Required number.

"The minimum number identified as a project requirement may not be less than the number conforming to local jurisdiction standards or as otherwise agreed upon in writing with the Host Country."

801.2.3 Official visitor and staff parking.

"Parking designated for Official Visitors and Staff must be located in close proximity to the Main CAC."

Delete and replace the last sentence of Section 801.2.4 with the following:

801.2.4 Accessible spaces.

"Provide accessible parking in accordance with the accessibility requirements in OBO-ICS IBC 11.

Exception: Official vehicles."

Add the following Subsection:

801.2.5 Carpool and vanpool spaces. For office compounds where staff parking is provided, a minimum of 5 percent of the spaces must be designated for carpool or vanpool preferred parking. Carpool/vanpool parking spaces must be clearly marked as carpool/vanpool-only parking.

Exception. Where directed otherwise by OBO.

Add the following subsection:

801.2.6 Parking for staff residences (SDA) & MSGR vehicles.

801.2.6.1 Staff Residents. Provide one space per unit for each staff residence unit, whether the SDA is located on an office compound or a residential compound. See OBO-ICS IZC Section 603 for location where SDA is on an office compound.

801.2.6.2 MSGR. Provide all weather cover designed to blend with the MSGR architecture. See OBO-ICS IZC Section 603 for location on office compound.

Delete and Replace Subsection 801.3.1 with the following:

801.3.1 Width: Minimum width 2743 mm (108 inches).

Exceptions. Variance to width as follows:

1. Compact Spaces minimum 2438 mm (96 inches) in width.
2. When there is an obstruction on either side of the space, additional 254 mm (10 inches) added to width.

Delete and replace subsections 801.3.2 and 801.3.4 with the following:

801.3.2 Length. A minimum length of 5.5 m (18 feet) must be provided for each parking stall.

Exceptions. Variance to the maximum allowable ratio is allowed where directed by OBO.

1. Compact stalls must be a minimum of 5.0 m (16 feet) in length.

2. Parallel parking stalls must be a minimum of 7.0 m (23 feet) in length.

801.3.4 Shade. Provide one shade tree for every six parking spaces. Structured canopies may be substituted for shade trees and be used to support photovoltaic panels. Refer to Landscape OPR for Shade Tree Requirements.

Replace subsections 801.4.1, 801.4.2, 801.4.4, 801.4.5 and 801.4.7 with the following. Subsections 801.4.3 and 801.4.6 are adopted without amendment.

801.4 Design of parking facilities. The design of parking facilities must be in accordance with Sections 801.4.1 through 801.4.11.

801.4.1 Parking aisle minimum width. Provide the following minimum widths:

1. Minimum aisle width for two-way traffic must be 7.0 m (23 feet).
2. Minimum aisle width for one-way traffic must be 5.5 m (18 feet).
3. Only angled (60 degree or 45 degree) parking is permitted on one-way streets of width less than 7.0 m (23 feet).
4. Minimum aisle width for fire access roads is 6.1 m (20 feet).

801.4.2 Driveway and ramp slopes. The difference in intersecting grades shall not exceed 6 percent for driveways and ramps.

801.4.4 Compact-to-Standard Stall ratio. The maximum compact-to-standard stall ratio shall be as directed by OBO.

801.4.5 Parking aisles. Parking aisles may not be shared with or utilized for compound drive aisles that connect two means of vehicle egress.

801.4.7 Lighting. Conform to OBO-ICS IZC Appendix B, Design Criteria for Exterior and Site Security Lighting.

Add the following subsections:

801.4.8 Roadway and parking pavement sections. Site concrete compressive strength must be a minimum of 25 MPa (3626 psi).

801.4.9 Geometric design of site roadway systems. Design of on-site roadway systems must conform to the AASHTO *A Policy on Geometric Design of Highways and Streets,* ("Green Book") current edition.

Exception. Where otherwise directed by OBO.

801.4.10 Truck access and maneuvering. Provide a minimum maneuvering area on the attack side of the Service CAC apron of 30 m by 30 m (100 feet by 100 feet) for container trucks to maneuver within the apron and access the loading dock without the need for the trucks to re-enter the municipal street. This area must be enclosed with opaque screen walls or fences and opaque vehicle gates.

801.4.10.1 Roadway design requirements for truck access and maneuvering at Service CAC. The on-site roadway serving the Service CAC and the Service CAC maneuvering apron must be designed to accommodate the following:

1. Vehicle size: WB-50 container truck.
2. Axle loading: 30,000 Equivalent Single Axle Loads (ESALs) of 80 kN (8 tons) per year.
3. Remaining compound drive aisles must be designed for 20,000 ESALs of 80 kN (8 tons) per year
4. Service life: 20 years.
5. Provide a pavement subgrade drainage system.
6. Required subgrade: Prepared subgrade with a California Bearing Ratio (CBR) value of at least 6.

801.4.10.2 Truck access and maneuvering within compound. Design on-site roadway serving the Service CAC and the Service CAC maneuvering apron to accommodate the following:

1. Vehicle bearing capacity: Provide WB-50 bearing from entrance to within 30 m (100 feet) of NOB. Provide WB-50 bearing capacity.
2. WB-50 must be able to access 50 percent of compound.

801.4.11 Roadway and parking curbs and gutters. Roadway curbs and gutters must comply with the requirements of this section.

801.4.11.1 Curbs. Curbs must be 150-mm (6-inch) high concrete.

Exception. Where otherwise required by accessibility requirements. Refer to OBO-ICS IBC Chapter 11.

801.4.11.2 Gutters. Gutters must be 450 mm (18 inches) wide concrete gutter and are required for asphalt roadways.

801.4.11.3 Precast wheel stops. Precast wheel stops are prohibited.

Exceptions:

1. NOB Entrance Plaza.
2. Where directed by OBO.

Delete the entire sections 802, 803, and 804.

SECTION 805
OTHER SITE ELEMENT REQUIREMENTS

Delete the entire section and replace with the following:

805.5 Landscape planting. Provide the following categories of landscape planting on office compounds.

805.5.1 Priority level planting for representational areas. Representational areas include:

1. Perimeter zone.

2. Office zone including immediate area around office building; main arrival court, main entrance plaza, representational open space, future office building expansion areas if appropriate, consular arrival court, consular garden; and staff garden.

3. CMR/DCR areas and MSGR terrace.

805.5.1.1 Planting for representational areas. Provide manicured planting using the native and well-adapted plants for all representational areas.

805.5.1.2 Irrigation for representational areas. Provide water-efficient and fully automatic irrigation system.

805.5.2 Transitional level areas. Areas that are contiguous to, and visible from, representational areas and include buffer areas, recreational zones, and non-representational residential zones.

805.5.2.1 Planting for transitional areas. Provide planting using the native and well-adapted plants for all areas that are visible from representational areas.

805.5.2.2 Irrigation for transitional areas. Provide water-efficient and fully automatic irrigation system.

805.5.3 Secondary level planting for service zones and back-of-compound open areas. Service zones include service access court and areas surrounding Service CAC, utility building, warehouse, official vehicle parking lot, and support annex.

805.5.3.1 Planting for service zones and back-of-compound open areas. Provide naturalized native landscape planting using the native plants for all service zones and back-of- compound open spaces. Use of gravel field instead of planting is approved on case-by-case basis for service zones. The gravel shall be in accordance with OBO-ICS IBC Section 3403.2 Physical Security (AW) Requirements.

805.5.3.2 Irrigation for service zones and back-of-compound open areas. Provide water-efficient temporary irrigation system for plant establishment and for drought conditions use. Temporary irrigation system shall remain in place instead of being removed in case of unexpected extreme draughts, if gravel field is approved, irrigation system is not needed for those areas.

805.5.4 Rooftop, terrace, and interior plantings. Where an irrigation system is required for interior planting, refer to OBO-ICS IBC Chapter 29.

805.5.5 Planting Specification. Refer to OBO Specification Section 329300.

805.5.5 Landscape Irrigation Specification. Refer to OBO Specification Section 328400.

805.6 Site Improvements.

805.6.1 Children's play areas.

805.6.1.1 Playground surfacing. Playground surfacing must conform to ASTM F2223.

805.6.1.2 Playground fence. Provide 1.2-m (4 feet) fence enclosing the playground. All fall zones of play equipment defined by the manufacturers must fit within the fence enclosure without any obstructions. Fence must include outward swinging gate with self-closing, self-latching, lockable device. Where this device is located less than 1370 mm (54 inches) from the bottom of the access point, the release mechanism must be located on the playground side of the gate at least 75 mm (3 inches) below the top of the access point and not higher than 1.875 m (6 feet) above grade.

805.6.1.3 Shaded benches and drinking fountains. Provide shaded benches and drinking fountains within the fence enclosure, but not within the fall zones, for supervising adults.

Delete the entire sections 806, 807, and 808.

SECTION 811
GRADING AND EXCAVATION REGULATIONS

Add the following section:

811.1 Temporary preventative measures. Provide preventative temporary erosion & sedimentation control and stormwater pollution prevention preventative measures necessary to protect adjacent properties from damage from water erosion, flooding, or deposition of mud or debris originating from the site. Submit the following:

1. Submit phased Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Controls in accordance with the current Construction General Permit (CGP) requirements for the National Pollution Discharge Elimination System (NPDES) prepared by the U.S. Environmental Protection Agency (EPA). Enforcement of these requirements is by OBO. Maintain operational documentation of erosion and sediment controls during construction in accordance with the SWPPP.

2. Update the SWPPP and erosion and sediment controls during construction as conditions change to maintain conformance with the NPDES CGP.

3. Refer to the following EPA document for guidance on choosing appropriate stormwater management measures. All devices must include provisions to desilt water from excavations.

https://www3.epa.gov/npdes/pubs/sw_swppp_guide.pdf

811.2 Site grading. Site grading work on compounds must conform to the requirements below and must be coordinated with Section 812 requirements for surface drainage.

811.2.1 Ground floor elevations. Ground floor elevations for all buildings must be set 300 mm (12 inches) above the site stormwater levels that would be expected from a 100-year storm event.

Exceptions:

1. Buildings identified by OBO on a site-specific-basis technically infeasible, and where approved by DE Office Director.

2. Where site is located within a designated floodplain, refer to OBO-ICS IZC Section 811.3 Floodplains.

811.2.2 Minimum freeboard for primary utilities. Primary utilities, the utility building, pads for switch gear, transformers, well heads, and top of walls for sewage treatment plants, etc. must be located to provide 300-mm (12 inches) minimum freeboard above the expected 100-year storm event and remain operational during the 100-year storm event.

811.2.3 Building and site perimeters. Grade site away from buildings, perimeter walls, CACs, retractable barriers; and gate track operators and systems ensuring no ponding water around these structures. Direct surface runoff away from these structures to a suitable location in a non-erosive manner.

811.2.4 Runoff. Grading must not cause a concentrated erosive runoff onto neighboring properties and steep slopes.

811.2.5 Ponding prevention. Grading must not create nuisance ponding.

811.2.6 Erosive conditions. Grading must not create erosive conditions within or adjoining the site.

811.2.7 Collection towards rights-of way. Grading outside of compound perimeter walls and fences, including driveway access, sidewalks, berms, and acceleration/deceleration lanes, must direct surface water flow away from the USG property line toward the public roadway.

811.2.8 Protected side of perimeter wall / fence. Grading on the protected side of perimeter walls/fences must ensure minimum required wall height; see OBO-ICS IZC Chapters 5, 6, and 7.

811.2.9 Additional grading requirements. Refer to OBO-ICS IBC Section J106 for additional grading requirements.

811.2.10 Future planned development. Grading must be designed for the ultimate buildout based on the current compound master plan. Locations for future building pads must be graded to accommodate the planned finish floor elevations.

811.3 Site located within a designated floodplain. A designated floodplain is any land area susceptible to being inundated by floodwaters from any source. OBO/PDCS/DE/CSE will make the final determination as to whether a site is within a floodplain and assess the quality of available floodplain documentation. Generally, this determination will be made through the completion of a detailed, site-specific flood study acquired by OBO/PDCS/DE/CSE. However, OBO/PDCS/DE/CSE may authorize completion of such studies by others on a case-by-case basis. In these cases, OBO/PDCS/DE/CSE must be consulted for approval of hydrologic, hydraulic, and future conditions projections prior to initiation of the flood study.

811.3.1 Floodplain elevations and minimum freeboard. Floodplain elevations and minimum freeboard will be set by OBO/PDCS/DE/CSE on a site-specific basis at one of the following elevations based upon studies performed by OBO or the contractor.

811.3.1.1Project-specific assessment. A project-specific assessment of the site incorporating hydrologic and hydraulic data, as well as methods that integrate current and future conditions for flooding based upon climate science.

1. Where such studies have been performed, and the extent and quality of the data supporting the study has been approved by OBO/PDCS/DE/CSE, the freeboard elevation for the lowest level of a building must be set at a minimum of 300 mm (12 inches) above the 100-year flood elevation.
2. Where such studies have been performed, but the extent and quality of the data supporting the study has been deemed incomplete by OBO/PDCS/DE/CSE, the freeboard elevation for the lowest level of a building must be set at a minimum of 600 mm (24 inches) above the 100-year flood elevation.

811.3.1.2 Other methods of determination. Where studies in 811.3.1.1 have not been performed for the site, flood elevations must be determined using the best available information for the area. In such cases:

1. The freeboard elevation for the lowest level of a building must be set at a minimum of 1000 mm (40 inches) above the 100-year flood elevation; or
2. The freeboard elevation for the lowest level of a building must be set at a minimum of 300 mm (12 inches) above the 500-year flood elevation.

811.3.1.3 Higher return period events and freeboard elevations. OBO/PDCS/DE/CSE may require consideration of higher return period events and/or freeboard elevations than those outlined above in locations deemed especially susceptible to current or future flooding.

811.3.2 Floodplain mitigation and protection. Floodplain mitigation and protection measures may include the following:

1. Perimeter walls that withstand hydrostatic pressures and scour
2. Flood barriers at portals
3. Backflow prevention on gravity sewer or storm conveying lines penetrating the perimeter
4. Raising the site
5. No occupied underground space
6. Stormwater diversion around site perimeter.

811.3.3 Utilities. Major system components for primary utilities must also meet the minimum 300 mm (12 inches) freeboard elevation requirements or meet other protective measure requirements to ensure continued operation during a 100-year flood event. This includes utility buildings, transformers, switchgear, generators, power distribution, well heads, hatches for water storage and wastewater treatment tanks, and other critical components.

811.3.4 Facilities not located in a floodplain. Facilities determined to be outside a floodplain must comply with 811.2.

811.4 Site slope requirements. Minimum and maximum permissible slopes are as identified below. For arid, warm weather climates, or severe site conditions, the following requirements should be reviewed for applicability. Some deviations may be allowed with prior approval from OBO/DE/CSE through the COR.

	Minimum	Maximum
Driveways and Site Roadways		
Longitudinal slope	1.0%	14.0%
Cross slope	2.0%	4.0%
Parking Areas		
Longitudinal slope	1.0%	5.0%
Cross slope	1.0%	5.0%
Walkways	0.5%	8.3%
Slope Away from Buildings		
Pervious surfaces	5.0%*	25.0%
Impervious surfaces	1.5%*	12.0%
*for a minimum of 3 meters adjacent to building		

	Minimum	Maximum
Usable open areas		
Pervious surfaces	2.0%	
*Note: 4% for areas with expansive or unconsolidated soils		
Impervious surfaces	1.5%	

SECTION 812
STORM DRAINAGE AND STORMWATER MANAGEMENT SYSTEMS

Add the following section:

812.1 General. The system for the conveyance of runoff and stormwater management must conform to the more stringent of this code or to host country codes and standards. Refer to OBO-ICS IBC Section 101.

1. Submit the site drainage design for approval to the local jurisdiction where required by the building/construction permit.

2. Incorporate a combination of Low Impact Development and piped stormwater drainage systems into the site design. Utilize Low Impact Development features for stormwater quality and flow management. Refer to EPA document "*Urban Runoff: Low Impact Development," (*https://www.epa.gov/nps/urban-runoff-low-impact-development).

812.1.1 Permanent outfall. Runoff must be directed outside the compound to a permanent outfall structure discharging into a permitted and adequate receiving channel or to an adequate public storm drain system for

which a permit to discharge into has been obtained. Provide outlet protection to reduce runoff velocity at a receiving channel to 1.5 m/s (5 feet/s).

812.1.2 Design methods. Use the Rational Method to design piped collection and conveying systems. Use the U.S. National Resources Conservation Service (NRCS) approach for runoff volume determinations and routing for stormwater management facilities.

812.1.3 Design rainfall. Storm drain systems must be designed to safely convey storm events. The Hydraulic Grade Line (HGL) for a 10-year storm event must be below the crown of the storm pipe. The HGL for the 20-year storm event must be below finished grade.

812.1.3.1 Absence of data. If rainfall data for a post is unavailable to prepare a storm drain and stormwater management design, then a location that has the same climatic characteristics as the post and has historical 24 hour and IDF data must be selected and rainfall data for that area must be assumed for design purposes. A review of all sources for project specific weather data must be exhausted before obtaining similar data. World Meteorological Organization (WMO) global normals publication, *WMO-No. 847: Climatological Normals (CLINO) For the Period 1961-1990* must be utilized to the maximum extent feasible for both the direct application of climatic data and for justification of selected US or locally-provided data.

812.1.3.2 Acceptable data. Data covering the previous 20 years is acceptable for use. If the only available data is older than 20 years, a safety factor of 30 percent must be added to all data concerning rainfall intensity duration curves and 24-hour total rainfall.

812.1.3.3 Rainfall information provided in design documentation. Information used to calculate rainfall values, including land cover, time of concentration, and intensity-duration-frequency curves, must be included in the storm design calculations.

812.1.3.4 Design time of concentration. Time of concentration must be determined based on local characteristics. Time of concentration must be determined utilizing the methods described in the most current release of NRCS TR-55, Urban Hydrology for Small Watersheds, Chapter 3. The minimum time of concentration must be 6 minutes.

812.1.3.5 Water surface elevation. The surface elevations of all buildings and structures must be 300 mm (12 inches) higher than the expected 100-year stormwater surface elevation unless site is located within a designated floodplain. Refer to OBO-ICS IZC Subsection 811.3. Stormwater flowing within an overland relief path during a one percent annual storm event must not come closer than 6 meters horizontally from an occupied floor space or a primary utility, 300 mm (12 inches) vertically from occupied finish floor elevation, or 300 mm (12 inches) vertically from any primary utility.

812.2 Piped storm sewer system requirements. The piped storm sewer system is defined as the portion of the collection and conveyance system downstream of any building roof leader and outside of the building battery limits [1.5 m (5 feet) outside of the building exterior wall]. Refer to the latest edition of the FHWA NHI HEC 22 for additional requirements.

Where minimums are identified below, those minimum levels may only be used to the extent that they do not affect the satisfactory performance of the whole system.

812.2.1 Maximum lateral length. Lateral length must not exceed 5 m (16 feet) before being connected to a storm drainage structure or to a collection and conveying line.

812.2.2 Minimum pipe size. Minimum pipe size for collection and conveying lines must be 300 mm (12 inches) diameter.

812.2.3 Pipe slopes. Minimum pipe slope must be 0.5 percent. Minimum drop in elevation across length of pipe must be 75 mm (3 inches). Should requirements be unattainable, OBO will consider a slope which will allow a

minimum velocity of 1.0 m/s (3.3 feet/s) with the pipe half full. For slopes greater than 18 percent, the use of restrained joints and/or tie downs will be required. Approved means and methods for energy dissipation at points of discharge will be required.

812.2.4 Minimum cover. Cover over the outside of all pipes must be no less than 150 mm (6 inches) below frost depth and a minimum of 300 mm (12 inches). Greater minimum cover may be required for traffic loading conditions.

812.2.5 Minimum separation from other utilities. Storm drainpipes must have a minimum horizontal separation from water lines of 1.5 m (5 feet). A minimum vertical separation of 300 mm (12 inches) between the outside walls of storm drainpipes and existing or proposed utility pipes must be provided. Storm drain may be located above a water line if the water line is steel cased for at least 1.5 m (5 feet) horizontally on either side of the crossing. Pipe crossing angles must not be less than 45 degrees. See Section 813 for clearance requirements associated with other utilities.

812.2.6 Maximum velocity. The partial flow velocity for the 10-year storm based on actual pipe slope must be a maximum of 4 m/s (13 feet/s) within the system and 3 m/s (10 feet/s) at the outfall structure, prior to energy dissipation measures.

812.2.7 Structure spacing and flow direction. All changes in flow direction must occur within storm drainage structures (catch basins or manholes). Minimum angle between inlet and outlet pipes must be 90 degrees. Access structures must be provided at all changes in direction, grade or elevation, and pipe size and at a maximum interval of 90 m (300 feet) apart.

812.2.8 Hydraulic gradient. Calculate the hydraulic gradient for the design storm for all pipes within the system. Calculations must include friction losses in pipes, losses in structures caused by differences in velocity, change in direction of flow, and the addition of runoff. Hydraulic Grade Lines: Calculated and tabulated for the 10-year storm event. The hydraulic grade line must be below the crown of the pipe for the 10-year design storm.

812.2.9 Pressure flow. All enclosed systems must be designed so that they will operate without hydrostatic pressure under design conditions.

812.2.10 Inlets. All inlets must be sized for the design runoff conforming to Section 812.1.

1. Calculation of inlet capacity and gutter spread must use the methods described in FHWA Hydraulic Engineering Circular No. 12 (HEC 12).

2. The 20-year storm must be contained within roadways and parking lots; gutter flow must not overtop curbs. Gutter spread must not exceed 3 m (10 feet), or the centerline of the travel lanes, whichever is less.

3. Curb opening inlets must intercept a minimum of 70 percent of the flow coming to them.

4. Curb inlets in a sump must have a throat width of at least 2 m (6.6 feet). Drop inlets in a sump must have a maximum ponding depth of 300 mm (12 inches) in the 100-year storm.

5. For the 100-year storm, overflow must flow overland to a point offsite. The overland relief flow path for the 100-year storm must be no closer than 6 m (20 feet) to any building or primary systems of primary utilities. In addition, the overland relief path will not flow off site through any CAC (Main CAC, Consular CAC, or Service CAC.)

812.2.12 Deep structures. The maximum vertical drop within a structure must not exceed 3 m (10 feet). Where the drop between inverts through a structure cannot be accommodated by a shaped channel at a 1.5 horizontal to 1 vertical slope, the design of the structure must incorporate materials to resist scour.

812.2.13 Downspouts and roof drains. Building downspouts and roof leaders direct discharge on the surface is prohibited.

Exception. Where the total roof area does not exceed twenty-five square meters; and the discharge is to a lawn or landscaped area, concrete splash blocks are permitted to direct water away from the building using elbows to transition to the splash blocks.

812.2.14 Access barriers on outlets. For outlets greater than 300 mm (12 inches) in height, provide outlet access barriers to prevent access by children and animals. Outlet access barrier bar spacing must be no greater than 150 mm (6 inches) apart. The access barrier must be designed to break away (rotate out of the flow) in the event of a sufficient pressure from design storm flow. Security performances of the barriers are not required.

812.2.15 Manholes and personnel access. Provide access to stormwater manholes, piping, and other underground structures in accordance with Section 813.1.

812.2.15.1 Manhole size. Where manhole depth exceeds 5 m (16 feet), manhole opening (lid) clear diameter must be a minimum of 900 mm (36 inches) and manhole minimum clear diameter must be a minimum of 1.8 m (6 feet).

812.2.15.2 Sumps. Sumps in storm manholes are prohibited.

Exception. Oil water separators and stormwater quality control devices.

812.2.15.3 Decorative Manhole Covers. Provide decorative manhole covers/trays filled with pavers to match adjacent pavement materials and patterns for the manholes within paved representational areas.

812.2.16 Fall protection and energy dissipation. Provide fall protection and energy dissipation provisions in accordance with the following:

812.2.16.1 Where pipe drop exceeds 2 m (6.6 feet), provide energy dissipation provisions.

Exception. Lateral with pipe size of 150 mm (6 inches) diameter or smaller.

812.2.16.2 Where vertical distance from manhole lid to bottom of structure exceeds 4.5 m (15 feet), add intermittent platform to ensure remaining depth does not exceed 3 m (10 feet).

812.3 Surface drainage

812.3.1 Storm drainage from outside of compound. Storm drainage from outside the compound perimeter walls is not permitted to flow to the inside of the secure compound either via surface sheet flow or an underground system. Stormwater generated off-site (e.g., regional watershed, streams, ditches, storm drain pipes) is not permitted to enter the on-site storm drain and stormwater management infrastructure. Off-site stormwater up to and including the 100-year event flow must be conveyed around the perimeter of the property to an adequate outfall under non-erosive velocities. If the facility is within a designated floodplain, or if the discharge of site outfalls may be submerged during heavy storms, backflow protection devices will be provided at all such outfalls pipes through the perimeter wall.

812.3.2 Overland emergency flow path. Provide an overland emergency flow path away from buildings and off the compound where the storm drainage system capacity is exceeded. The surface elevations of all buildings and structures must be 300 mm (12 inches) higher than the expected 100-year stormwater surface elevation unless site is located within a designated floodplain. Refer to OBO-ICS IZC Subsection 811.3. Stormwater flowing within an overland relief path during a one percent annual storm event must not come closer than 6 m (20 feet) horizontally from an occupied floor space or a primary utility, 300 mm (12 inches) vertically from occupied finish floor elevation, or 300 mm (12 inches) vertically from any primary utility.

812.3.3 Swales. Calculate swale capacity using Manning's formula.

1. Open swales must be designed for a 10-year storm event with a minimum freeboard of 300 mm (12 inches).

2. Paved swales must have a minimum slope of 0.5 percent.

3. Grass swales must have a minimum slope of 2.0 percent when conveying flows and 0.5 percent when used as stormwater quality systems. To prevent erosion, velocities in grass swales must not exceed 1.5 m (5 feet) per second.

812.3.4 Water reclamation and recycling at car wash areas. Provide water reclamation and recycling system at all car wash areas where the number of post-owned vehicles exceeds 25.

812.4 Stormwater Management

812.4.1. General. Stormwater management must limit runoff volume, temperature, and duration from the developed site to predevelopment levels in accordance with Section 438 of the U.S. Energy Independence and Security Act of 2007, hereinafter referred to as the "Section 438 Technical Guidance Document".

812.4.2 Applicability Development or redevelopment with a disturbed footprint exceeding 465 square meters must maintain or restore the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow in accordance with EPA 841-B-09-001 Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 Technical Guidance Document.

Exceptions:

1. Where full implementation of the requirements is technically infeasible in accordance with the Section 438 Technical Guidance Document - Part 1D, provide alternate stormwater practices to infiltrate, evapotranspire, and/or harvest and use on site the maximum amount of stormwater technically feasible. Confirmation of technical infeasibility and alternate stormwater practices requires approval by OBO/PDCS/DE/CSE.

2**.** Where projects consist of the addition of a new building on an existing site that already includes stormwater management measures, additional stormwater management facilities may not be required if the following conditions are met:

2.1. The existing stormwater management facility is shown to have adequate capacity to manage the increase in stormwater runoff produced from the additional impervious area.

2.2. The existing storm sewer system downstream of the new building is shown to be capable of conveying the additional stormwater produced from the building without the need for stormwater management detention.

812.5 Runoff retention and detention.

812.5.1 Stormwater retention. Stormwater retention must be designed and constructed to manage rainfall on site and prevent the off-site discharge of precipitation amounts up to and including the 95th percentile rainfall events in accordance with the Section 438 Technical Guidance Document "Estimated Volume Approach." Alternately, utilize the "Site-Specific Hydrologic Analysis Approach" identified in the Technical Guidance document.

812.5.1.1 Reuse of rainwater. Refer to OBO-ICS IZC Section 816 for reuse of rainwater.

812.5.2 Stormwater detention: Provide stormwater management to reduce the post-development peak discharge rate from the site for the 2- and 10-year design storm to the pre-development rate. Runoff rate increase from the compound to the adjacent streams, lakes, other water courses, public storm drains, and adjacent properties is not permitted.

Exception. On a project specific basis, OBO/PDCS/DE/CSE may consider reduction of stormwater management requirements for the following:

1. Adequate management of stormwater is provided by an off-compound regional facility.
2. Site outfall is in close proximity to a major receiving body of water.
3. Small project disturbance area, or small increase in impervious area associated with the project.

812.5.3 Emergency overflow. All stormwater management facilities must be designed to allow the 100-year storm event to safely bypass the facility and discharge away from any buildings to a permitted outfall location.

812.5.4 Surface stormwater management facilities.

812.5.4.1 Layout. Provide a minimum length to width ratio of 2:1 or surface stormwater management facilities. Inflow pipes must outfall at the bottom of the pond. Provide a readily accessible fore-structure/forebay to allow silt removal and maintenance.

812.5.4.2 Landscaping. Surface stormwater management facilities must be completely landscaped, with no bare or exposed soil.

812.5.4.3 Safety and access. Provide a minimum 3-m (10-foot) wide, relatively flat (less than 5 percent grade) safety bench around the surface stormwater management facility's top of bank. Provide an access route to the bottom of the facility for sediment removal. The access route must have a grade no steeper than 15 percent and must be at least 3 m (10 feet) wide.

Exception. Safety bench and access route are not required if depth is less than 500 mm and slopes are 3:1 or shallower.

812.5.4.4 Depth. The maximum active storage depth must not exceed 1.5 m (5 feet). The maximum permanent pool depth must not exceed 1.5 m (5 feet).

812.5.4.5 Low-flow channel. Provide a low-flow trickle channel at all surface stormwater management facilities. The bottom width of the channel must be equal to the diameter of the inflow pipe and must conform to the requirements for swales.

812.5.4.6 Freeboard. Provide a minimum of 300 mm (12 inches) of freeboard above the 10-year storm event water surface elevation.

812.5.4.7 Wet ponds. Wet or permanent pool, storage ponds may be permitted by OBO on a site-specific basis. See 812.6 for requirements.

812.5.4.8 Draw-down time. For detention basins the active water storage volume must be discharged via an adequate outfall in a period of not less than 24 hours and not more than 36 hours.

812.6 Surface stormwater management facility safety requirements. Surface stormwater management ponds must conform to the following:

812.6.1 Retention (wet) ponds. Where wet ponds are permitted, a shallow safety bench must be provided extending 3 m (10 feet) from the normal pool elevation edge. Bench must begin at least 150 mm (6 inches) below normal pool elevation to limit mosquito eggs. The maximum safety bench water depth must not exceed 450 mm (18 inches). The pond slope below the safety bench may not exceed 3:1. Wet ponds must be aerated and agitated to limit mosquito borne disease vectors.

812.6.2 Detention (dry) ponds. At the level of the design storage elevation, provide a 1.5-m (5 feet) safety bench. The maximum safety bench water depth must not exceed 450 mm (18 inches). The pond slope below the design storage elevation safety bench may not exceed 3:1.

812.6.3 Safety barriers. A safety barrier must be defined as a 1220-mm (48-inch) high impenetrable hedge, fence, or other non-passable device. Where ponds do not meet the provisions of 812.6.1 and 812.6.2, provide a safety barrier along the pond normal water edge.

812.6.4 Child-related activities. No playgrounds, day care centers, or similar child-related activities must be located within 30 m (100 feet) of the wet pond normal pool edge.

SECTION 813
SITE UTILITIES REQUIREMENTS

Add the following section:

813.1 Prohibited location for utilities. Site utilities are not permitted to cross under a building structure. Existing utilities located below a proposed building structure must be relocated prior to construction of proposed building.

Exception. Site utilities may be permitted to cross under a building structure where approved by OBO/PDCS/DE/CSE.

813.2 Access for water distribution vaults, sanitary sewer manholes, and storm utility catch basins. Provide steps unless the total depth from floor to finished grade is less than 1200 mm (48 inches). The steps must be made of fiber-reinforced plastic (FRP) or steel reinforced polypropylene and must be cast at 300- to 400-mm (12- to 16-inch) intervals. Refer to OBO-ICS IZC Section 811.2.14.

813.2.1 Structural design of underground structures. Cast-in-place water distribution vaults, sanitary sewer manholes, and storm utility catch basins must conform to ACI 350R-06. Precast structures must comply with applicable ASTM standards.

813.3 Compound site water distribution system.

813.3.1 Taps on raw water feed supply. Taps are not permitted on the raw water distribution system from the municipal source to the raw water inlet storage tanks.

Exception: Tap on raw water to feed official vehicle washing is permitted.

813.3.2 General.

813.3.2.1 Fire hydrant supply. Where permitted by local municipality, provide a separate connection to the municipal water supply and provide a dedicated water line feeding compound fire hydrant system. Refer to Section 813.5.

813.3.2.2 Calculations. Calculations used to determine pipe sizing, capacity, and water pressure required for site water distribution to each structure and facility on the compound must be submitted to OBO for approval. Utilize a maximum operating velocity of 2.5 m/s (8.2 feet/s) for these calculations. Refer to OBO-ICS IPC Chapter 6 for water quality, building metering, and water storage requirements.

813.3.2.3 Pipe materials. For pipe sizes of 100 mm to 300 mm (4 inches to 12 inches), pipe materials must conform to AWWA C-900 standards.

813.3.2.3.1 Limitation on use of solvent cemented joints. Solvent cemented joints are not permitted on site distribution piping larger than 50-mm (2-inch) diameter.

813.3.2.4 Restrained joint systems. At all pressurized water conveying and distribution piping systems, provide a restrained joint system either using integral joint systems or an integrated joint system compliant with ASTM F-1674-11 for all pipe and fitting joints.

813.3.3 Main meter for compound. Where municipal water supply system is used as a source for the entire compound, provide a main water meter separate from the utility company meter for the compound. Locate the local utility company water meter in the Water Demarcation Room located on the compound perimeter. Provide access

to the Water Demarcation Room from the exterior of the compound to allow access by the local utility without requiring access to the compound interior. For additional water meter requirements, refer to OBO IPC Section 606.

813.3.4 Irrigation Meters. Provide irrigation sub-meters for all irrigation point of connections including potable water, recycled water, city water, treated sewage effluent, and backup point irrigation water sources.

813.3.4.1 Interior Irrigation meters should follow OBO IPC Section 606.8 and report to BAS.

813.3.4.2 Exterior irrigation meters should follow OBO Civil and OBO Landscape Architecture requirements and report to BAS.

813.3.4 Valves. Provide the following:

1. Provide butterfly valves on water mains 300 mm (12 inches) or larger.

2. Provide full isolation valving at all branches and at any loops with a sectioning line valve.

813.3.5 Compound backflow prevention. Provide the primary water service connection from the municipal system with a reduced pressure zone (RPZ) type backflow prevention device.

813.3.6 Clearance of water distribution from other utilities.

813.3.6.1 Clearance from sewer pipes. Water lines and sanitary sewer pipes must have a minimum separation of 3 m (10 feet). Sanitary sewer must not be located above a water line.

813.3.6.2 Minimum separation from other utilities. Provide a minimum vertical separation of 450 mm (18 inches) between the outside walls of water lines and existing or future planned utility pipes. Provide adequate horizontal separation between water lines and all other utilities to accommodate future maintenance without impact to adjacent utilities.

813.3.6.3 Clearance from storm drains. Storm drain may be located above a water line if the water line is steel cased for at least 1.5 m (5 feet) horizontally on either side of the crossing or other means as approved by OBO/DE/CSE.

813.3.6.4 Pipe crossing angles. Pipe crossing angles must not be less than 45 degrees.

813.3.7 Protection from freezing (minimum cover). Refer to OBO-ICS IPC Chapter 3.

813.3.8 Water sources and treatment. Water sources and treatment must comply with the following.

813.3.8.1 Potable water sources. Primary and secondary sources of the potable water supply must be obtained from the following, in order of required preference:

1. Municipal or local water systems

2. Deep wells

3. Shallow wells

4. Trucked water only upon written certification prior to delivery from supplier certifying that both of the following requirements have been met.

    1. Water source is reliable.

    2. Water source is suitable for human consumption.

813.3.8.2 Well type selection. Well type selection for potable water must comply with AWWA Manual M21 and AWWA Standard A100. Refer to OBO-ICS IZC Chapter 8 - Water supplies from wells.

813.3.8.3 Prohibition on use of rainwater. Rainwater is prohibited to be used as a source for potable water.

813.3.8.4 Permitted uses of rainwater. Rainwater is permitted to be used for irrigation, or condenser supply and make-up water.

813.3.8.5 Required water supply testing during design and construction. Test and analyze water supplies during design and construction. Refer to OBO-ICS IPC Section 312 for testing and analysis requirements. Test water supplies not less than three times equally spaced over a year to validate potential contamination from pesticides, herbicides, fertilizers and associated seasonal water quality changes.

813.3.8.6 Treatment system design requirements. Potable water treatment system must treat water to comply U.S. Environmental Protection Agency National Primary Drinking Water Regulations (NPDWRs) and the National Secondary Drinking Water Regulations (NSDWRs). Treated water may not exceed any NSDWR values.

Exception. Where it is technically infeasible to meet all of the required NSDWR values, submit tested values and proposed remedial treatment plan in writing to OBO/PDCS/DE/ME for review and approval.

813.3.8.7 Raw water treatment and filtration requirements. Provide the following raw water treatment and filtration.

813.3.8.7.1 Treatment prior to storage. Prior to raw water storage: Filtration to less than 300-micron size particles with parallel filtration modules (multimedia, sand, or bag filters); disinfection / oxidation; and initial corrosion/scale control (0.01 < LSI <0.3).

813.3.8.7.2 Treatment during storage. Treat raw water, domestic, city or well, to maintain the following conditions.

1. Residual chlorine. Maintain residual free chlorine between 0.2 and 0.5 mg/L at the furthest point in the distribution system, and corrosion control (0.01 < LSI < .03).

2. Prevention of temperature stratification. Continuously stir at a rate to eliminate temperature stratification (+/- 1 °C) within the tank, but not less than one turnover per 48 hours.

813.3.8.7.3 Additional treatment processes during storage. Where it is necessary to exceed some primary or secondary contaminant levels, provide up to seven days treatment within the raw water tank to coagulate and precipitate contaminants. Specific treatment methods must be approved by OBO/PDCS/DE/ME on a site-specific basis and may include but are not limited to any or all of the following: enhanced oxidation with chlorine, aeration, coagulation/flocculation, or clarification.

813.3.9 Disinfection of site water distribution system. Treat potable water downstream of the raw water storage. Refer to ICC IPC Chapter 6.

813.3.10 BAS connections and monitoring. Provide connections for BAS to monitor and alarm/notify all water tank levels, pumps, pH, turbidity, TDS, hardness, alkalinity, temperature, pressure, and chlorine residuals.

813.3.11 Water Supplies from Wells.

813.3.11.1 Well Design and Construction. Groundwater wells must be constructed in general conformance with AWWA Manual M21 and The National Drilling Association Driller's Manual.

https://nda4u.com/wp-content/uploads/2016/01/DrillersManual-Chapters-1-12.pdf

813.3.11.2 Requirements for well drillers. Wells must be developed by registered professional well drillers. Drillers must submit a well driller's log upon completion of the installation of the wells.

813.3.11.3 Protection from contamination. Potable water wells must be located and constructed so as to be safeguarded against contamination.

813.3.11.4 Well locations. A potable well or pump suction line must not be located closer to potential sources of contamination than the distance shown in Table 813.3.11.4. In the event the underlying rock structure is limestone or fragmented shale, the local jurisdiction must be consulted on well site location. The distances required in Table 813.3.11.4 constitute minimum separation and must be increased in areas of creviced rock or limestone, or where the direction of movement of the ground water is from sources of contamination toward the well.

TABLE 813.3.11.4

DISTANCE FROM CONTAMINATION TO COMPOUND WATER SUPPLIES AND PUMP SUCTION LINES

SOURCE OF CONTAMINATION	MIN. DISTANCE (m)
Building Foundation – Non-Treated	3
Building Foundation - Treated	15
[1]Residential Sewer Line	15
Wastewater Treatment Plant or Sewage Lift Station	30
Individual Septic Tanks	15
Septic Tank Drainfields	30
Underground Fuel Storage Tanks	30
Cemetery	30
Non-Potable Water Well	30
Stormwater Detention Basin or Infiltration Beds	15
Any Property Line	15

Note for Table 813.3.11.4. Where sewer line is located within 15 m (50 feet) of potable water supply well, sewer line must be continuous and have permanently sealed joints. If sewer line is closer than 3 m (10 feet) to potable water supply well, encase sewer line in conductor pipe that is nominally two sizes larger than sewer line throughout 3-m (10-foot) distance from well. Seal casing to ends of sewer line with vent that extends above ground, and at least 3 m (10 feet) down gradient from well.

813.3.11.5 Flooding areas. Well heads must not be located within a 100-year floodplain.

Exception. Where existing well heads are located within the 100-year floodplain, well head must be extended to an elevation 1000 mm (40 inches) above the 100-year flood elevation.

813.3.11.6 Well closure. Where existing well is to be closed, cap and abandon in accordance with AWWA Standard A100.

813.3.11.7 Redundancy. Where a well is the primary water source for a compound, provide additional well or wells for 100 percent redundant capacity. Additional capacity well(s) must duplicate the primary well and must be cycled into service with the primary wells on an alternating basis.

813.3.11.8 Protection during construction. New wells must be protected from contamination at all times during construction projects. Suitable casings and temporary caps must be utilized to protect the aquifer from contamination.

813.3.11.9 Additional requirements. Refer to OBO-ICS IPC Section 608.17 for the following:

1. Elevation.
2. Depth.
3. Water-tight casings.
4. Drilled or driven well casings.
5. Dug or bored well casings.
6. Cover.
7. Draining

813.3.12 Irrigation system. Permanent underground irrigation systems must comply with the following minimum safety and health requirements.

813.3.12.1 Underground irrigation water storage tank. When a permanent underground irrigation system is installed, provide an underground storage tank to serve the system. This tank must be separate from the domestic/potable/fire protection water storage tank and must be designed to hold storage capacity to meet two days of peak daily irrigation demand.

813.3.12.2 Pumping system. A pumping system must be provided to distribute the water to an underground automatic irrigation system. It should be noted that generally a zoned system and central programmable control system will be required and the use of Tensiometers and Time Domain Reflectometry (TDR) instrumentation to monitor soil moisture levels will be considered to minimize the quantity of water utilized for the irrigation of the site.

813.3.12.3 Water quality. Water for irrigation must conform to the following minimum water quality standards.

1. Free Chlorine Residual must not exceed 1 mg/L.

2. Irrigation systems require water treated to class B standards when the irrigation source is effluent from an onsite wastewater treatment plant. Refer to Section 816.3 for reclaimed water classifications.

813.3.12.4 Spray irrigation restrictions. Where non-potable water source is used for irrigation within 30 m (100 feet) of the following areas, provide low trajectory nozzles or other approved means to minimize aerosol formation.

1. Outdoor eating or drinking.

2. Bathing facilities.

3. Reclaimed water from site wastewater treatment plant is prohibited to be used for spray irrigation.

813.4 Compound sanitary sewer system. Compound sanitary sewer systems must conform to the requirements identified below. For site underground collection and conveying lines the general requirements of the *10 States Standards* apply. The requirements for sanitary sewer collection and conveying systems within individual buildings are identified in OBO-ICS IPC Chapter 7.

813.4.1 On-compound wastewater treatment plants. On-compound wastewater treatment plants must comply with Subsections 813.4.1.1 through 813.4.1.3. Wastewater treatment plants are required when a municipal wastewater service is unavailable or when access to an operational municipal service is unavailable, unless otherwise instructed by OBO. At a minimum, wastewater treatment plant effluent shall meet the requirements outlined in Table 816.5.

813.4.1.1 Referenced standards for wastewater treatment. New compound wastewater treatment systems must conform to the following:

A. "*Recommended Standards for Wastewater Facilities – The Wastewater Committee of the Great Lakes, Upper Mississippi River*," also referred to as "*10-States Standards.*"

B. EPA Part 503 - Standards for the Use or Disposal of Sewage Sludge,

C. Supplemental standards. Where required by analysis, provide additional treatment required to provide effluent that meets local point source control of pollutants to the more stringent of local or USEPA Standards for the following:

1) Inorganics (e.g., Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Nickel, Silver, and Zinc)
2) Total Toxic Organics
3) Dissolved Solids
4) Suspended Solids
5) Total Solids
6) Chemical Oxygen Demand (COD)
7) Fats, oils, and grease.

813.4.1.2 Wastewater treatment plant minimum standards. Wastewater treatment plant design must comply with Table 813.4.1.2.

TABLE 813.4.1.2

WASTEWATER TREATMENT PLANT – INFLUENT DESIGN STANDARDS

Flows		
Unit Flow per Population Equivalent (P.E.)	L/day/P.E.	200
Influent Water Quality		
BOD5	mg/L	200-300
TSS	mg/L	200-300
Alkalinity	mg/L	60-120
TKN	mg/L	20-35
TP	mg/L	4-12
Ph	Standard	6.5-7.5

813.4.1.3 Loading calculations. Refer to the water loading demand requirements of the OBO-ICS IPC, and other contract requirements to ensure that all WWTP loads are accounted for. Wastewater treatment loading calculations must utilize 90 percent of the total loads from the following:

A. All staff including office, guards, cleaners, gardeners, cooks, and nighttime staff
B. Visitors including daily and TDY staff
C. Recreational and cabana usage
D. Food preparation

Note: Car wash and cooling tower blow down must bypass WWTP and require their own treatment system(s).

813.4.1.3.1 Cooling tower blow down. Cooling tower blow down must not enter WWTP; provide separate treatment for cooling tower blow down. Refer to OBO-ICS IMC Chapter 9 for requirements.

813.4.2 Site sanitary collection and conveying systems. Site sanitary collection and conveying systems must be designed in accordance with the latest edition of *10 States Standards*. Provide the following:

813.4.2.1 Lateral lines and cleanouts. The length of lateral lines 150 mm (6 inches) and less must be limited to 20 m (66 feet). Provide a cleanout.

813.4.2.2 Manholes. For pipes 200 mm (8 inches) in diameter or larger, provide manholes at every change in direction, grade, elevation, and pipe size, but not to exceed 90 m (295 feet) apart. Provide a 30-mm (1.2-inch) drop in elevation between the inlet and outlet at each manhole. Provide gas-tight, locking type covers. The need for backwater valves should be reviewed in cases where the capacity of the municipal system downstream of the site is problematic.

813.4.2.3 Manhole locks. Refer to Section 603 for locking requirements.

813.4.2.4 Clearance with other utilities. The minimum horizontal separation between sanitary sewer pipes and utilities other than potable water and fire protection water distribution must be that necessary for future maintenance without impact to adjacent utilities. A minimum vertical separation of 300 mm (12 inches) between the outside walls of sanitary sewer pipes and existing or master planned utility pipes must be provided. Pipe crossing angles must not be less than 45 degrees.

813.4.2.5 Pipe slope. Pipe slope must be adequate to maintain a minimum cleansing velocity of 0.6 meters per second at all times. Provide the following from the *10 States Standards* where steeper slopes are required:

A. 100-mm (4-inch) lines 2 percent.
B. 150-mm (6-inch) lines 1 percent.
C. 200-mm (8-inch) lines 0.5 percent.
D. 300-mm (12-inch) lines 0.32 percent.

813.4.2.6 Minimum pipe depth. All pipes must be installed at a depth of not less than 300 mm (12 inches) below local frost depth and not less than 1 m (3.3 feet) below grade.

813.4.2.7 Deep structures. Where vertical distance from manhole lid to bottom of structure exceeds 4.5 m (15 feet), add intermittent platform to ensure remaining depth does not exceed 3 m (10 feet).

813.5 Fire protection systems. Refer to OBO-ICS IFC for:

1. Fire protection water tanks.
2. Fire protection site distribution.
3. Fire protection site fire hydrant system.

813.6 Site Electrical system. Refer to OBO–ICS NEC for:

1. Site electrical distribution.
2. Site service equipment, transformers, and outdoor substations.
3. Site mounted solar photovoltaic systems.
4. Requirements to prevent water entering the building through duct bank or other penetrations.

813.7 Site fuel system. Refer to OBO-ICS IMC Chapter 13 for requirements for:

1. Site fuel and gas piping.
2. Site gas storage.
3. Underground fuel storage.
4. Vehicle fuel dispensing.

813.8 Oil spill prevention, containment, and countermeasure provisions. Provide spill control, containment, and countermeasures for hydrocarbons from fuel oils and grease in all areas where spills could be conveyed into rainwater and/or sanitary sewage collection and conveying systems.

813.8.1 Required containment areas. Areas requiring spill control and containment include, but are not limited to, the following:

1. Oil drum storage facilities.
2. Vehicle maintenance areas.
3. Vehicle fueling areas.
4. Fuel delivery areas (Service CAC truck maneuvering apron).

813.8.2 Gravity-baffled oil water separators. Gravity-baffled oil water separators are permitted in all areas requiring spill control and containment.

813.8.2.1 Design of gravity-baffled oil water separators. Provide conventional gravity oil water separators designed in accordance with API guidelines. Size separator to accommodate the expected (design) rainfall rate of flow through the oil water separator.

813.8.3 Spill containment at fuel delivery area. Provide a concrete spill containment system for the fuel oil tanker truck delivery area in accordance with the following:

1. Design basis for containment. The delivery truck tank volume basis of design for calculating containment must be ½ of actual vehicle tank volume up to a maximum of 5,000 L (1,321 gal).

2. Separator. Separator must be in-line with no valve and for 5,000 L (1,321 gal) must have 150-mm (6-inch) inlet and outlet and connected to stormwater outfall.

SECTION 814
FIRE APPARATUS ACCESS ROADS

Add the following section:

814.1 General. Refer to OBO-ICS IFC Chapter 5.

SECTION 815
EXTERIOR AND COMPOUND SITE LIGHTING

Add the following section:

815.1 Scope. The provisions of this section must apply to the design and construction of exterior building and compound site lighting for U.S. Diplomatic Mission compounds.

815.1.1 Applicability. The provisions of OBO-ICS IZC Appendix A1 "*2013 OBO Site Lighting Guidelines & Criteria,*" Part 2 is hereby adopted and must apply to the design and construction of exterior building and compound site lighting systems, including equipment, and assemblies.

Exception. Modifications to existing exterior and compound site lighting systems and where directed by OBO, must comply with the requirements of OBO-ICS IZC Appendix A2, "*Overseas Buildings Operations - Design Criteria for Site Lighting, May 2005"* Part 2.

815.2 Power sources. Exterior building and compound site lighting must be fed from the essential section of the compound electrical system and from an automatically starting standby generator. Site lighting system branch circuits must be arranged so that no single circuit failure will cause any two adjacent lighting fixtures to fail.

Exception. Lighting that is purely aesthetic does not need to be circuited in this manner.

815.3 Light source. All exterior building and compound site lighting must utilize LED as the sole light source.

Exception. Existing compounds / installations where directed by OBO.

815.4 Light characteristics. All exterior building and compound site lighting must meet the following characteristics:

815.4.1 Color temperature. Lighting must have Correlated Color Temperature (CCT) values between 3000K and 4500K and be consistent across a site.

815.4.2 Color rendering index. Lighting must have a CRI (Color Rendering Index) of 70 or higher.

815.4.3 Scotopic/photopic (S/P) ratios. Maintained Scotopic/Photopic (S/P) ratios for lighting must be as follows: 1.3 for 3000K, 1.5 for 3500K, and 1.7 for 4000K.

815.4.4 Glare rating. Lighting fixtures must have a Glare rating of G2 or lower per IESNA BUG (Backlight, Uplight, Glare) classification standards based on IESNA 10th edition Lighting Handbook.

815.5 Lighting control. Exterior building and compound site security lighting must be controlled as follows:

815.5.1 Normal operation. Provide automated control of daily lighting operation.

815.5.1.1 Sports lighting. Sports lighting must be controlled by local timer with max 60-minute operation before reset is required.

815.5.2 Manual control. At Post 1, provide manual control of each lighting zone.

815.5.3 Emergency manual override. At Post 1, provide switching to extinguish all exterior building and compound site lighting by a single operation to provide a total blackout.

815.6 Minimum restrike requirements. Following a power outage, all exterior building and compound site lighting (Zones 4 & 5) must be restored to full illumination in less than 90 seconds including generator start time. All exterior aesthetic lighting (Zones 1, 2, & 3) must be restored to full illumination in less than 5 minutes.

815.7 Pole footing. Pole footings must not provide climbable platform or foothold adjacent to anti-climb walls. The height of the pole footing above grade shall be in accordance with OBO-ICS IBC, Chapter 34, Section 3404.5 Compound Clear Zone, Setbacks, and Exterior Spaces.

815.8 Flag Illumination requirements. Provide LED spot or flood fixtures specifically directed illuminate the United States official flag, and any other official flag(s) displayed on the site at night. Provide security override control from the site lighting control panel in Post 1.

815.9 Site Adjacent Lighting. Light from outside of the perimeter wall that is not controlled by the compound site lighting power and control system (e.g., fixtures in adjacent municipal parks or public roads) must not be included in the site lighting calculations.

SECTION 816
HARVESTED RAINWATER AND RECLAIMED WATER REUSE

Add the following section:

816.1 Applicability. This section must govern the direct reuse of harvested rainwater and reclaimed water.

816.2 Harvested rainwater. Harvested rainwater must comply with the following.

816.2.1 Source. Rainwater to be harvested must be sourced from roof drainage systems only. The reuse of stormwater is not permitted.

Exception. In critical water scarce regions, stormwater sourced elsewhere on site except roofs may be reclaimed subject to OBO approval and is subject to critical use treatment as defined in Section 816.3.3.

816.2.2 Permitted uses. The reuse of harvested rainwater is limited to non-potable uses.

Exception. In critical water scarce regions, harvested rainwater may be used as a potable source subject to OBO approval, with minimum treatment requirements as defined in Section 813.3.3.5 and with additional treatment as required by the OBO Mechanical Engineer.

816.2.2.1 Permitted non-potable, non-critical uses of harvested rainwater. Reclaimed water may be used for the following non-potable, non-critical water uses:

1. Non-spray irrigation
2. Water features – Non-spray and non-splash applications only.

816.2.2.2 Permitted non-potable critical uses of harvested rainwater. Non-potable critical uses of harvested rainwater are limited to the following:

1. Spray irrigation
2. Water features using spray or splash
3. Toilet flushing
4. Vehicle and building washing
5. Fire protection
6. Boilers
7. Cooling towers where use of cooling towers is approved by OBO.
8. Street cleaning and site dust control

816.2.3 Treatment for harvested rainwater. Harvested rainwater must be treated in accordance with this section.

816.2.3.1 Pre-treatment. Provide a debris and vermin screen with maximum 1.5-mm (1/16-inch) openings. Following the screen, the first 10 mm (13/32 inches) of rainfall must be discarded from the system prior to entering the next filtration.

816.2.3.2 Minimum treatment for non-critical uses. Provide the following:

816.2.3.2.1 Filtering: 200-micron filtering.

816.2.3.2.2 Agitation: Provide continuous agitation of tank where water will be stored and undisturbed for greater than 48 hours.

816.2.3.3 Additional treatment for critical uses. Provide the following in addition to the treatment required in 816.2.3.2:

816.2.3.3.1 Filtering: 10-micron filtering.

816.2.3.3.2. Disinfection: Ultraviolet or chlorination disinfection.

816.3 Definitions.

DIRECT REUSE. The beneficial use of reclaimed wastewater for a purpose specifically allowed by this Section.

DIRECT REUSE SITE. An area permitted for the application of reclaimed wastewater.

DISINFECTION. The destruction, inactivation, or removal of pathogenic microorganisms by chemical, physical, or biological means. Disinfection may be accomplished by chlorination, UV radiation, ozonation, other chemical disinfectants, membrane processes, or other processes. The use of chlorine as defining the level of disinfection does not preclude the use of other disinfection processes as an acceptable means of providing disinfection for reclaimed wastewater and harvested rainwater for non-potable uses.

FILTRATION. The passing of reclaimed wastewater or harvested rainwater through natural undisturbed soils or filter media such as sand and/or anthracite, filter cloth, or the passing of wastewater through microfilters or other membrane processes.

HARVESTED WATER. Water that has been collected for reuse from a building roof.

IRRIGATION. The beneficial use of domestic water, reclaimed wastewater, or harvested rainwater for growing crops, turf, or landscaping as regulated under 813.4.

NTU. Nephelometric Turbidity Unit.

ON-SITE NONPOTABLE WATER REUSE SYSTEM. A water system for the collection, treatment, storage, distribution, and reuse of non-potable water generated on site, including but not limited to a gray water system. This definition does not include a rainwater harvesting system.

RECLAIMED WASTEWATER. Water that has been treated or processed by a wastewater treatment plant or an onsite wastewater treatment facility.

SECONDARY TREATMENT. A biological treatment process that achieves the minimum level of effluent quality defined by the federal secondary treatment regulation at 40 CFR § 133.102.

816.4 Reclaimed water classifications. Reclaimed wastewater must be classified by its treatment level as follows:

Class A reclaimed wastewater is wastewater that has undergone secondary treatment, filtration, and disinfection. Chemical feed facilities to add coagulants or polymers are required to ensure that filtered effluent before disinfection complies with the 24-hour average turbidity criterion prescribed in Table 816.5.

Class B reclaimed wastewater is wastewater that has undergone secondary treatment and disinfection.

Class C reclaimed wastewater is wastewater that has undergone secondary treatment in a series of wastewater stabilization ponds, including aeration, with or without disinfection.

816.5 Reclaimed wastewater quality requirements. Reclaimed wastewater must meet the criteria in Table 816.5 before discharge to a reclaimed water distribution system. All water quality testing must be conducted in accordance with the US EPA Approved General-Purpose Methods as promulgated under the authority of Section 304(h) of the Clean Water Act at 40 CFR 136.

Table 816.5 Wastewater Effluent Quality Standard Classes			
	Class C	**Class B**	**Class A**
Min. Treatment Required	Primary, Secondary	Primary, Secondary, and disinfection	Primary, Secondary, filtration, and disinfection
BOD_5 (mg/L)[1]	<30 mg/L (30-Day Average)	<20 mg/L	<10 mg/L
	<45 mg/L (7-Day Average)		
TSS (mg/L)	<30 mg/L (30-Day Average)	<20 mg/L	<10 mg/L
	<45 mg/L (7-Day Average)		
Turbidity (NTU)[2]			2 NTU (24-Hour Average)
			5 NTU (Max)
Free Chlorine Residual[3]	N/A	>1 mg/ L	>1 mg/ L
Helminths (egg/L)	N/A	< 1 egg / L	<0.1 egg/L
Fecal Coliform (CFU)[4]	< 240/100 ml (7-Day Average)	< 2.2/100 ml (7-Day Average)	None Detectable (4 of Last 7 Daily Tests)
	< 800/100 ml (Max in 30 Days)	< 235/100 ml (Max in 30 Days)	< 23/100 ml (Max in 30 Days)

Notes for Table 816.5:

1. Determined from the 5-day BOD test.

2. The turbidity limit must be met prior to disinfection. The average turbidity should be based on a 24-hour time period.

3. Total chlorine residual must be met after a minimum contact time of 30 minutes.

4. Coliform limits are median values determined from the bacteriological results of the last 7 days for which analyses have been completed.

816.6 Minimum class of reclaimed wastewater on a direct reuse site. The minimum class of reclaimed wastewater on a direct reuse site must be based on the type of direct reuse permitted in Table 816.6.

816.6.1 Use of Class A reclaimed wastewater. Use of Class A reclaimed wastewater is not permitted without approval of OBO/PDCS/DE/CSE.

Table 816.6 Minimum Wastewater Effluent Quality Requirements for Direct Reuse	
Type of Direct Reuse	**Minimum Class of Reclaimed Wastewater Required**
Outdoor Spray Irrigation	A
Outdoor Irrigation of food crops	A
Toilet and urinal flushing	A
Fire protection systems	A

Vehicle and equipment washing (does not include self-service vehicle washes)	A
Outdoor Drip Irrigation	B
Dust control	B
Soil compaction and similar construction activities	B
Concrete and cement mixing	B
Street cleaning	B
Outdoor Sub-Surface Irrigation	C

Note for Table 816.6: Nothing in this section prevents a reclaimed water system from using a higher quality reclaimed water class for a type of direct reuse than the minimum class of reclaimed water listed in Table 816.6.1.

816.7 Reclaimed wastewater quality standards for unlisted type(s) of direct reuse. OBO may prescribe reclaimed wastewater quality requirements for a type of direct reuse not listed in Table 816.6. Before permitting a direct reuse of reclaimed water not listed in Table 816.6, OBO must, using its best professional judgment, determine and require compliance with reclaimed wastewater quality requirements needed to protect public health and the environment.

816.8 Warning signs. Warning signs stating, "Caution – Non Potable water – Do Not Drink" and IPC Figure 608.9.1 must be prominently displayed at the perimeter of the direct reuse site, and at any **plumbing fixtures** (e.g., hose bibbs, etc.) utilizing reclaimed wastewater or harvested rainwater. Signs must be constructed of corrosion resistant, waterproof material intended to last the lifetime of the reclaimed water distribution system. Signs must be in English and in the local language and letters must be a minimum of 12.7mm height.

816.9 Minimum setbacks for direct reuse sites. Provide the following minimum setback distances from any direct reuse site:

1. Class A and B: 15 m (50 feet) from the direct reuse site to well supplying water that may come in contact with or be consumed by humans.

2. Class C: 90 m (300 feet) from the direct reuse site to well supplying water that may come in contact with or be consumed by humans and 30 m (100 feet) from the direct reuse site to areas utilized by the public.

816.10 Safety systems requirements. Provide the following safety systems to prevent the accidental use of reclaimed wastewater not meeting the water quality standards of this section**:**

1. Automated diversions. Provide all necessary sensors, instruments, valves, and other devices to enable fully automatic diversion to the approved overflow location or emergency storage. The reset process must be manually operated to prevent automatic restart.

2. Alarms required. Provide alarm systems for all reclaimed water systems. Alarm systems must provide emergency notification to Facility Manager's office for all of the following conditions:

2.1. Loss of power from the primary power supply.

2.2. Failure of required treatment units.

2.3. Interruption of required chemical feeds.

2.4. TSS and/or Turbidity exceeding requirements of Table 816.5.

2.5. Free Chlorine Residual below requirements of Table 816.5.

3. Backup power. Provide backup power for the safety systems for the reclaimed water plant.

816.11 Bypassing prohibited. Bypassing of untreated or partially treated wastewater not meeting the quality requirements in this section, from the approved reclaimed water or harvested rainwater plant to the distribution system or

to the point of use is prohibited. Reclaimed water plants and harvested rainwater plants must either store inadequately treated wastewater for additional treatment; or discharge the wastewater to an approved overflow, or both.

816.12 Emergency storage. Storage used for diversion of untreated or partially treated wastewater not meeting the quality requirements in this section must:

1. Provide adequate capacity for 48 hours.
2. Be reserved for the intended purposes.
3. Include all the necessary diversion works, conduits, and pumping and pump back equipment.

816.13 Freeze protection. Where sustained freezing temperatures occur, provisions shall be made to keep storage tanks and the related piping from freezing.

SECTION 817
SITE ACCESSIBILITY

Add the following section:

817.1 Accessible site routes. Provide the following accessible site routes:

1. Where the compound site includes buildings housing office, living or occupancies, provide an accessible route from the entrance CAC(s) to each such space.
2. Provide accessible route(s) connecting office, living and recreational occupancies.
3. Provide accessible route(s) connecting spaces and elements required to be accessible and other elements such as shops and service buildings.
4. The accessible site path of travel must coincide with the path most people use at external locations. The accessible route must not significantly exceed the distance taken by able bodied personnel.

817.2 Compound Access Control (CAC). Compound Access Control (CACs) screening facilities must be accessible when they serve staff and visitors.

Exception. When a screening facility serves as a dedicated service entrance only.

817.3 MSGR. Where the compound site includes an MSGR, provide an accessible route for visitors from the entrance CAC directly to the MSGR.

817.4 Minimum coefficient of friction for walking surfaces. Provide the following minimum static coefficient of friction for exterior walking surfaces in accordance with OBO-ICS IBC Chapter 8**.**

SECTION 818
CORROSION-RESISTANT PROTECTION

Add the following section:

818.1 Corrosion-resistant protection. Corrosion-resistant protection must comply with the requirements of OBO-ICS IBC Appendix W – Corrosion-resistant protection and the requirements of this section.

818.2 Site construction, systems, and equipment. Site construction, systems and equipment required to receive enhanced corrosion-resistant protection include but are not limited to the following:

1. Decorative fencing.
2. Site furnishings.

3. Decorative bollards.
4. Interior metals in the Utility building.
5. Metallic site stormwater structures, wastewater, and water conveyance appurtenances.
6. Grounding systems.

Exception. Where Utility building openings are protected by air curtains and/or vestibules.

SECTION 819
DECORATIVE WATER FEATURES

Add the following section:

819.1 Decorative water features. Decorative water features such as fountains and aquatic gardens must comply with the requirements of this section.

819.2 Depth of water must not exceed 450 mm (18 inches) as measured from static water level to solid surface at base of water feature.

Exception. Where additional water depth is required for aquatic vegetation, the depth of water may be increased to 600 mm (24 inches) if there is a 1,000-mm (40-inch) clear zone measured from the edge of water to water depth exceeding 450 mm (18 inches).

END OF CHAPTER IZC- 8 AMENDMENTS

CHAPTER 10
SIGN REGULATIONS

SECTION 1004
GENERAL PROVISIONS

Delete and replace Section 1004 in its entirety with the following:

1004.1 Conformance to codes. Any sign hereafter erected must conform to the provisions of this ordinance and the provisions of the OBO-ICS IBC and regulation of the local jurisdictions.

1004.2 Signs in rights-of-ways. No signs other than an official traffic sign or similar sign must be erected within 600 mm (2 feet) of the lines of any street, or within any public way, unless specifically authorized by other ordinances or regulations of the local jurisdiction or by specific authorization of the local official.

1004.3 Security requirements. Signs must not be mounted on perimeter walls or fences [minimum height of 3 m (10 feet)] or on the exterior surfaces of buildings [minimum height of 5 m (16 feet)] in such a manner as to provide hand or foot holds. Freestanding pylon signs should not be installed closer than 3 m (10 feet) to these same structures.

1004.4 Speed limit signage on compound. Provide on-compound signage to limit maximum speed to 25 kph (15 mph).

Exception. Use lower speed value where required by local jurisdiction.

SECTION 1005
EXEMPT SIGNS

Delete and replace Section 1005.1 in its entirety with the following:

1005.1 Exempt signs. The following signs shall be exempt from the provisions of this chapter.

1. Official notices required and authorized by local authorities.

END OF CHAPTER IZC- 10 AMENDMENTS

APPENDIX A
DESIGN CRITERIA FOR EXTERIOR AND SITE LIGHTING

SECTION A101
GENERAL

A101.1 General. The provisions of this appendix apply to exterior building and site lighting regarding energy and light quality requirements. Host country requirements for glare and allowable light levels exterior to the compound or building site boundaries are identified on a project-specific basis. Refer to OBO-ICS IBC Appendix Z for security requirements associated with exterior building and site lighting.

A101.2 Referenced lighting criteria. The provisions of the *2013 OBO Site Lighting Guidelines & Criteria,*" – Part 2.are hereby incorporated by reference and shall apply to the design, installation, alteration, repair and replacement of exterior and site lighting. On a site-specific basis as directed by OBO the following criteria may be required: *Overseas Buildings Operations - Design Criteria for Site Lighting, May 2005,"* – Part 2.

END OF IZC- APPENDIX A

J.2.1

OBO National Electrical Code

OBO-ICS NEC

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO Supplement to 2020 NATIONAL ELECTRICAL CODE (NEC)

The *OBO Electrical Code (OBO-ICS NEC)* adopts the *2020 National Electrical Code (NEC)* except as amended by this supplement on a chapter-by-chapter basis. Sub-articles named in the chapters below are adopted, amended, added by this supplement, or not adopted as described. Where entire chapters or annexes are not adopted or adopted without amendments or additions it is noted in the Table of Contents below.
Refer to NEC for explanation of informative annex.

Administration and Enforcement (Refer to Annex H)

ARTICLE 90 Not Adopted

CHAPTER 1 GENERAL
100 No amendments
110 Requirements for Electrical Installations
111 Prohibited Communications Equipment, Devices and Systems
120 Power System Equipment Rooms

CHAPTER 2 WIRING AND PROTECTION
200 No amendments
210 Branch Circuits
215 No amendments
220 Branch-Circuit, Feeder, and Service Calculations
225 Outside Branch Circuits and Feeders
230 Services
240 Overcurrent Protection
242 Overvoltage Protection
250 Grounding and Bonding

CHAPTER 3 WIRING METHODS AND MATERIALS
300 General Requirements for Wiring Methods and Materials
310 No amendments
311 No amendments
312 Cabinets, Cutout Boxes, and Meter Socket Enclosures
314-326 No amendments
330 Metal-Clad Cable: Type MC
332-344 No amendments
348 Flexible Metal Conduit: Type FMC
350 Liquidtight Flexible Metal Conduit: Type LFMC
352-356 No amendments
358 Electrical Metallic Tubing (EMT)
360-399 No amendments

CHAPTER 4 EQUIPMENT FOR GENERAL USE
400-404 No amendments
406 Receptacles, Cord Connectors, and Attachment Plugs (Caps)
408-409 No amendments
410 Luminaires, Lampholders, and Lamps
411 No amendments
422 Appliances
424-445 No amendments
450 Transformers and Transformer Vaults (Including Secondary Ties)
455-470 No amendments
480 Storage Batteries
490 No amendments

CHAPTER 5 SPECIAL OCCUPANCIES
No Amendments

CHAPTER 6 SPECIAL EQUIPMENT
600-604 No amendments
605 Office Furnishings
610 No amendments
620 Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts and Stairway Chairlifts
625 Electric Vehicle Power Transfer System
626-640 No amendments
645 Information Technology Equipment
646-685 No amendments
690 Solar Photovoltaic (PV) Systems
691-694 No amendments
695 Fire Pumps
698 Technical Security Systems

CHAPTER 7 SPECIAL CONDITIONS
700-701 No amendments
702 Standby Power Systems
705-770 No amendments
790 Condensation Protection

CHAPTER 8 COMMUNICATIONS SYSTEMS
800 General Requirements for Communications Systems
805-840 No amendments

CHAPTER 9 TABLES
No Amendments

ANNEX A PRODUCT SAFETY STANDARDS
No Amendments

ANNEX B APPLICATION INFORMATION FOR AMPACITY CALCULATION
No Amendments

ANNEX C CONDUIT AND TUBING FILL TABLES FOR CONDUCTORS AND FIXTURE WIRES OF THE SAME SIZE
No Amendments

ANNEX D EXAMPLES
No Amendments

ANNEX E Not Adopted

ANNEX F **AVAILABILITY AND RELIABILITY FOR CRITICAL OPERATIONS POWER SYSTEMS; AND DEVELOPMENT AND IMPLEMENTATION OF FUNCTIONAL PERFORMANCE TESTS (FPTs) FOR CRITICAL OPERATIONS POWER SYSTEMS**
No Amendments

ANNEX G **SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)**
No Amendments

ANNEX H **ADMINISTRATION AND ENFORCEMENT**
80 General

ANNEX I **RECOMMENDED TIGHTENING TORQUE TABLES FROM UL STANDARD 486-B**
No Amendments

ANNEX J Not Adopted

END OF NEC TABLE OF CONTENTS

CHAPTER 1
GENERAL

ARTICLE 110
REQUIREMENTS FOR ELECTRICAL INSTALLATIONS

110.2 Approval

Add the following sub article (A) and exception to 110.2:

(A) Electrical and electronic device enclosure ratings. Provide electrical and electronic enclosures rated for appropriate ingress protection, degree of protection, and protection from hazardous components in accordance with NEMA standard.

Exception: International Electrotechnical Commission (IEC) standard 60529 may be used provided the appropriate ratings of the enclosed is within a ± 10% voltage tolerance range of the NEMA standard.

Delete and replace 110.3 sub-article (C) with the following:

(C) Required approved listing authorities. Provide listed or labeled equipment where required by this code or other OBO requirements. Provide equipment approved by one of these approval authorities:

(1) Underwriters' Laboratory (UL)

(2) Canadian Standards Association (CSA)

(3) Curtis-Straus LLC

(4) FM Approvals LLC (formerly Factory Mutual Research Corporation)

(5) Intertek Testing Services NA Inc.

(6) MET Laboratories, Inc.

(7) TUV SUD America, Inc.

(8) Other qualified authorities subject to prior approval by OBO/PDCS/DE/EE.

Add the following subsection (D) to 110.3:

(D) Documents required for listed and labeled products. Submit identification of each product including a control number, file number, issue number, lot number or serial number for verification by OBO. This requirement applies to listed or labeled equipment where required by this code or other OBO requirements.

(1) All electrical equipment, devices, wiring, raceways, fittings, and associated appurtenances installed on the interior/exterior of a prefabricated building or non-permanent facilities such as Hardened Trailer Office (HATS), guard shacks/booths, mail screening facilities or similar building/facility must have the required approved listing.

(2) All electrical devices, wiring, raceways, fittings, and associated appurtenances installed in modular wall systems, demountable partitions or systems furniture must have the required approved listing.

Add the following paragraph at the end of sub-article (3) Personnel Doors of 110.26 (C):

For OBO buildings, the egress door hardware requirement applies to larger electric equipment rooms (e.g., main switchgear rooms for office buildings and utility buildings). Designer of record must specify required egress devices for electric rooms containing equipment of 800 amperes or greater.

Add the following sub-article 110.26 (G):

(G) Prohibited operations and / or equipment. Operations and / or equipment not related to the direct support of equipment rooms must not be installed in, pass through, or enter the equipment rooms. Equipment rooms include dedicated electrical spaces such as switchgear, utility, power, etc.

(1) Permitted Systems. Systems associated with the room, e.g., ventilation, drainage, fire protection, etc., must not be installed directly above electrical equipment such as switchgear, switchboards, panelboards, transformers, UPS, etc.

(2) Telecommunications rooms. Refer to OBO-OTC Chapter 3 for prohibited operations and / or equipment in telecommunications rooms.

Delete and replace sub article 110.34 (B) with the following:

(B) Separation from Low-Voltage Equipment. High voltage (>1000V) equipment must be physically separated from the low voltage (<1000V) equipment. All transformers, switchgears, and associated electrical equipment rated for high voltage (>1000V) must be located in a separate dedicated high voltage room and provided with a separate dedicated entrance raceway.

Add the following sub article 110.75 (F):

(F) Covers. Refer to OBO-ICS IBC Chapter 34 for locking requirements.

Delete and replace sub article 110.79 with the following:

110.79 Ladders. For the facility, provide UL-listed ladders made of fiberglass and which are designed for used in electrical manholes. The minimum length must equal distance from deepest manhole floor to grade plus 900 mm (3.0 feet). Refer to site utility infrastructure requirements for additional information.

Add the following sub articles 110.80, 110.81 and 110.90 through 110.94:

110.80 Sumps. Provide a sump for drainage cast into the bottom of all electrical and telecommunications manholes and vaults. Provide clear vertical access area to allow insertion and removal of a portable pump to drain manhole prior to the start of work. Cables and supports must not be located within, or intrude upon, pump access area.

110.81 Locating Underground Structures

(A) Provide where any of the three following conditions exists:

(1) Where splices are required,

(2) Where duct lines change direction unless the field manufactured long sweep bends having a minimum radius of 7.6 m (25 feet) can be used for a change of direction of more than 5 degrees, either horizontally or vertically, using a combination of curved and straight sections with the maximum manufactured curved sections of no more than 30 degrees,

(3) Within 30 m (100 feet) of every riser pole, pad mounted transformer, or unit substation. The distance must not exceed 60 m (200 feet).

(B) Separation on straight runs must not exceed 90 m (300 feet).

110.90 Cable and Conductor Racking. All cabling and conductors located in manholes and utility trenches must be racked against the manhole or trench wall(s). Cables and conductors are not permitted to intrude into the center of the manhole preventing safe personnel access. Racking must be fiberglass, listed for the use, and installed to limit cable sag.

(A) Thermal imaging. Upon completion of the installation, and full energization of the system all racking must be examined with thermal imaging to ensure minimal heating from Electromagnetic Interference.

110.91. Cable Splices in Manholes. The use of cable splices must be limited in exterior applications. Splices must be UL listed for the application. Splices must be performed and documented by trained splice technician. Splices are not permitted in ductbanks or conduits. All splices must have identification tags, visible in the manhole where the splice occurs.

110.92. Duct Sealing. All penetrations into manholes, hand holes, or buildings (through wall, trench, or floor), must be sealed against the entrance of moisture and debris both around installed cabling and spare and empty conduits and ducts.

110.93 Corrosion-Resistant Protection. Corrosion-resistant protection must comply with the requirements of OBO-ICS IBC Appendix W – Corrosion-resistant protection and the requirements of this section.

(A) Electrical Systems. Electrical systems required to receive enhanced corrosion-resistant protection include but are not limited to the following:

(1) Site electrical distribution.
(2) Site service equipment, transformers, exterior automatic voltage regulators and outdoor substations.
(3) Site lighting.
(4) Solar photovoltaic system.
(5) Exposed electrical equipment.
(6) Equipment located in the utility building, including generators and associated equipment, exposed conduit hangers and fittings

Exception. Where shops and utility building openings are protected by air curtains and/or vestibules.

110.94 Spare Ductbank Capacity. Provide spare ducts within each ductbank reserved for OBO's future use:

(A) Minimum Quantity. Provide 20 percent spare ducts but not less than one within each ductbank. At the end of construction, the electrical contractor must ensure all spare power feeder ducts, which were designated during design, and in all ductbanks and manhole / handhole systems are reserved for OBO's future use and must not be utilized for contractor's use during construction. If spare ductbanks are found to have been used improperly, contractor shall be responsible for corrections at its risk and expense.

(B) Size. Ducts must be sized consistent with other ducts in the ductbank.

(C) Protection. Spare ducts must be capped to prevent entry of water, debris, rodents, insects, or other vermin.

(D) Field Identification. Identify routing and extent of all spare ducts with stamped, stainless-steel tags where ducts terminate at other structures such as handholes, manholes, pullboxes, or buildings.

Add the following Article 111:

ARTICLE 111
PROHIBITED COMMUNICATIONS EQUIPMENT, DEVICES AND SYSTEMS

111.1 General. The following equipment, devices, applications, and systems are prohibited.

(A) Prohibited Communication Capability for Electrical Systems. Physical plant systems, including but not limited to, lighting control systems, power quality and management system, etc. must not be interconnected to the internet (World Wide Web) without prior approval of DOS. Comply with requirements for Telecommunication requirements for telecommunication systems connections.

Exceptions.

(1) Photovoltaic (PV) Data Acquisition System (DAS) may be remotely monitored with ensured one way read-only connection (e.g., monitor only).

(2) Where required by local provider, install raceway in the utility Demarcation room to accommodate wireless remote monitoring of utility-owned equipment.

(B) Wireless Local Area Network (WLAN) on office compounds. WLAN systems are permitted on office building compounds. Refer to OBO OTC Chapter 3 – Requirements for Wireless Technologies.

(1) Permitted devices. Phones, tablets, Wi-Fi -enabled installed equipment (e.g., light fixtures, etc.) or devices (e.g., refrigerators, microwaves, etc. are permitted only within office buildings with CAA only if the Wi-Fi is capable of being disabled. Refer to Section OBO OTC Chapter 15 for office buildings with CAA.

(2) Prohibited Wi-Fi capable mechanical equipment. Refer to OBO-ICS IMC Chapter 3.

(3) Installation of Wi-Fi capable equipment and devices. Disable Wi-Fi prior to installation within all Wi-Fi -enabled installed equipment (e.g., light fixtures, etc.) or devices (e.g., refrigerators, microwaves, etc.).

(C) Prohibited Communication Capability for Devices Within the CCA. Bluetooth or near-field communication enabled equipment or devices are strictly prohibited within CAA. Device selected must be incapable of Bluetooth or near-field communication connectivity without modification.

(D) Embedded Conduits in CAA. Embedding of conduit within concrete is prohibited in, or surrounding areas designated as CAA. All conduit and pathways must remain accessible for inspection.

Exception. In the Executive Suite, raceway may be located in trenches in the floor slab covered with a trench cover and floor finishes provided the trench cover and finishes are easily removable for inspection of the raceway**.**

Add the following Article 120:

ARTICLE 120
POWER SYSTEM EQUIPMENT ROOMS

120.1 General. Power systems equipment rooms are defined as any room that houses switchgear, switchboards, panelboards, generators, switching equipment, transformers, UPSs, or Automatic Voltage regulators (AVRs). Water pipes, ducts, or other foreign systems not associated with the electrical power systems room must not enter or transit the room. In addition, any rooms storing or serving water (e.g., bathrooms, kitchens, kitchenettes) must not be located above any power systems equipment room.

Exception. Systems (e.g., cooling, ventilation, drainage, fire protection) serving the power system equipment room are allowed however these systems must not be installed over electrical equipment (e.g., switchgear, transformers, racks, panels).

120.2 Switchgear Room. Provide the appropriate FE/BR rating when switchgear room provides power to a Safe Haven or Safe Area. Refer to OBO-ICS IBC Chapter 34 for additional electrical requirements for Safe Areas and Safe Havens.

(A) The switchgear rooms provided with automatic sprinkler protection must be enclosed with one-hour fire resistive construction. Provide three-hour fire resistive construction when automatic sprinkler protection is not installed.

(B) Refer to OBO-ICS IBC Chapter 12 - Access for service and maintenance.

(C) Provide one telephone outlet and one OpenNet outlet (for MeterNet) in the switchgear room.

END OF CHAPTER NEC-1 AMENDMENTS

CHAPTER 2
WIRING AND PROTECTION

ARTICLE 210
BRANCH CIRCUITS

Add the following sub article to 210.4 (A):

(1) Neutral and Ground Conductor. Provide a dedicated full size neutral conductor and a ground conductor for every branch circuit to avoid harmonics in multiwire systems.

Exception. Sharing of neutral conductor is only allowed in multiwire connection to systems furniture.

Delete and replace in its entirety the sub article 210.5 (C) with the following:

(C) Means of Identification. Identification must be by color coding as follows:

(1) For phase identification of 1000 V and less, the two categories must be as follows:

1. Circuits 120 V to 250 V (120/208/240) identify the phases with the following colors:
   Line: Black, Red, Blue
   Neutral: White/Gray
   Ground: Green

2. Circuits over 250V (380/220, 400/230, 415/240, 480/277) V and above (under 1000V) identify the phases with the following colors:
   Line: Brown, Orange, Yellow
   Neutral: White/Gray
   Ground: Green

   Note: Where a facility utilizes voltage combinations differing from 1. and 2. above, provide a separate color coding for differing voltage levels in accordance with NEC 210.5.C.1.

3. Colors for Power over Ethernet (POE): Lighting and lighting control
   Cable Jacket - Gray

(2) Accessible raceways of auxiliary systems must be color coded as identified in Table OBO-ICS NEC 210.5 (C) 2. Provide self-adhesive vinyl tape applied in bands, or snap-around color-coding bands.

TABLE OBO-ICS NEC 210.5 (C) 2	
SYSTEM	**REQUIRED COLOR(S)**
Fire alarm system	Red
Fire suppression supervisory & control system	Red and yellow
Combined fire alarm & security system	Red and blue
Security system	Blue and yellow.
Mechanical & electrical supervisory system	Green and blue
Telecommunications system	Green and yellow
Control wiring	Blue
Power systems	Orange
Grounding system raceway	Green
Direct Current (DC) power (PV)	Red and white

Delete and replace the first sentence of 210.8 (A) with the following paragraphs, but retain the items 210.8 (A) (1) through 210.8 (A) (11)

(A) Dwelling Units.

"The following is applicable to 120V/208Y, 60Hz locations: All 125-volt through 250-volt receptacles installed in the locations specified in 210.8(A)(1) through (A)(11) and supplied by single-phase branch circuits rated 150-volts or less to ground must have ground-fault-circuit interrupter protection for personnel**.**

The following is applicable to 220V/380Y, 230V/400Y, and 240V/415Y, 50Hz locations: All 220/230/240-volt receptacles installed in the locations specified in 210.8(A)(1) through (A)(11) and supplied by single-phase branch circuits rated 250-volts or less to ground must have ground-fault-circuit interrupter protection for personnel**.**

All 220/230/240-volt GFCI circuit breakers used for personal protection are required to trip at 10 mA maximum. GFCI circuit breaker, rated for 10mA ground fault trip, 50Hz, 240V (line to ground) must be installed in an enclosure adjacent to the panel or the first receptacle in the branch circuit. This breaker must provide ground fault protection for all receptacles in the circuit."

Delete and replace the first sentence of 210.8 (B) with the following paragraphs, but retain the items 210.8 (B) (1) through 210.8 (B) (12) as revised below:

"(B) Other Than Dwelling Units.

The following is applicable to 120V/208Y, 60Hz locations: All 125-volt through 250-volt receptacles, supplied by single-phase branch circuits rated 150-volts or less to ground, 50 amperes or less, and all receptacles supplied by three-phase, branch circuits rated 150 volts or less to ground. 100 amperes or less, installed in the locations specified in 210.8(B)(1) through (B)(12) must have ground-fault-circuit interrupter protection for personnel**.**

The following is applicable to 220V/380Y, 230V/400Y, and 240V/415Y, 50Hz locations: All 220/230/240-volt receptacles, supplied by single-phase branch circuits rated 250-volts or less to ground, 20 amperes or less, installed in the locations specified in 210.8(B)(1) through (B)(12) must have ground-fault-circuit interrupter protection for personnel**."**

Add the following sub article (a) to 210.8 (B) (5) before the Exceptions:

a. Prohibited Location. Electrical receptacles are not permitted to be exposed directly behind or above sinks, basins or lavatories.

Add following sub article (a) under 210.8 (B) (6):

a. Floor outlets (flush and recessed) at interior locations without carpet finish must be considered wet locations due to wet mopping.

210.12 Arc-Fault Circuit-Interrupter Protection.

Add the following sentences to the beginning of sub article (A):

(A) Dwelling units.

"Applicable to locations having 120-Volts, 60Hz. 220/230/240-Volt, 50Hz locations do not require Arc-Fault protection."

Add the following sentence to the end of sub article (B):

(B) Dormitory Units (such as MSGR, SDA, or similar type of building).

"Applicable to locations having 120-Volts, 60Hz. 220/230/240-Volt, 50Hz locations do not require Arc-Fault protection."

Add the following sentence to the end of sub article (C):

(C) Guest Rooms and Guest Suites

"Applicable to locations having 120-Volts, 60Hz. 220/230/240-Volt, 50Hz locations do not require Arc-Fault protection."

Add the following sentence to the end of sub article (D):

(D) Branch Circuit Extensions or Modifications – Dwelling Units, Dormitory Units, and Guest rooms and Guest Suites.

"Applicable to locations having 120-Volts, 60Hz. 220/230/240-Volt, 50Hz locations do not require Arc-Fault protection."

Add the following sub articles 210.80 and 210.90:

210.80 Branch circuit panel locations. Install panels near the loads to keep branch circuits as short as possible. Always keep step-down/isolation transformers near panels. Circuit breakers in panelboards or switchboards serving transformers and located in the same room qualifies as the disconnecting means.

210.90 Circuit breakers. Except for special applications, circuit breakers must be used for circuit protection rather than fusible disconnect switches. Combination starters must be circuit breaker type, using magnetic-only circuit breakers with adjustable trips (motor circuit protectors) in conjunction with thermal overload devices. All circuit breakers in panelboards and switchboards must be bolt on type.

ARTICLE 220
BRANCH-CIRCUIT, FEEDER, AND SERVICE CALCULATIONS

220.12 Lighting Load for Non-Dwelling Occupancies.

Add the following sentence to the end of sub article 220. 12 (B)(2)

(B) Energy Code

(2)

"Not applicable to US Embassy Compounds or US Consulate Compounds."

Add the following sub article 220.70:

220.70 Service transformer, compound generator plant, transformer and building feeder calculations. The demand load calculation of the service transformer(s) and generator plant kVA rating supplying embassy compounds must be as follows:

Lighting Load at 100 percent Demand Factor
Receptacle Load at 100 percent first 10 kVA or less
Remainder Receptacle Load at 50 percent Demand Factor
All Other Loads at 70 percent Demand Factor
Total demand load plus 20 percent for future growth.

ARTICLE 225
OUTSIDE BRANCH CIRCUITS AND FEEDERS

Add the following sub article 225.41:

225.41 Fuel piping. Electrical conductors, raceways, and devices must not be installed in proximity to fuel piping. This includes utility trenches, ductbanks, or direct buried installations.

> **Exception:** Circuits and raceways that by their very nature monitor or control the fuel system must be allowed to be co-located.

ARTICLE 230
SERVICES

Add the following sub article to 230.1:

(A) Overhead Service conductors. Overhead service conductors are not permitted.

Exception. Non-permanent facilities.

Add the following to the end of sub article 230.62 (B)

(B) Guarded.

(1) Where site-mounted transformers, automatic voltage regulators or load banks are located adjacent to vehicular movement areas, provide bollards to protect equipment from vehicular impacts.

(a) Locate bollards to as required to provide working space around transformer.

(b) Locate bollards to as required to allow transformer cabinets to be opened without interference from bollards.

(2) Where outside rated medium voltage equipment is located, provide barriers from personnel access with lockable gates. Barriers may be fencing or solid walls. Barriers may not intrude in the working clearances of the equipment per article 110.

Add the following sentences to the end of sub article 230.67 (A):

230.67 Surge Protection.

(A)

"All medium-voltage equipment supplying services to dwelling unit(s) rated over 1000V must be equipped with a station class lightning arresters appropriately sized to the distribution voltage class. All low-voltage (1000V and less) switchgear, switchboards, and panelboards supplying services to a dwelling unit(s) must be provided with a Surge Protective Device installed internally or externally."

Add the following sub-article 230.213:

230.213 Non-conductive matting. Provide non-conductive, electrical-grade, dielectric switchboard matting on the floors of all areas enclosing switchgear equipment at all working space where accessible for maintenance to insulate workers from electrocution by interrupting the path to ground. Mats must be provided at all working spaces.

(A) Switchboard mats must meet the requirements of ASTM D-178-01, Type II, Class 2.

ARTICLE 240
OVERCURRENT PROTECTION

Delete and replace sub article 240.6 (A) with the following:

(A) Fuses and Fixed-Trip Circuit Breakers. The standard ampere ratings for fuses and inverse time circuit breakers must be considered 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250, 300, 350, 400, 450, 500, 600, 700, 800, 1000, 1200, 1600, 2000, 2500, 3000, and 4000 amperes.

(1) Additional standard ampere ratings for fuses must be 1, 3, 6, 10, and 601, however limit the use of fuses.

(2) The use of fuses and inverse time circuit breakers with nonstandard ampere ratings is not permitted.

(3) The use of 5000 and 6000 ampere ratings to limit ratings to reduce the size of electrical systems is prohibited. Where larger systems are required, provide two main post-transformer double-ended distribution systems.

(a) Limit single utility transformer sizes to 3.0 MVA to prevent the use of 5,000A and 6,000A circuit breakers. Where larger systems are required, provide a 3MVA provide a double ended transformer system to reduce the size of circuit breakers and to reduce arc fault hazards.

(b) Where system requires greater than 3.0 MVA, provide a double-ended distribution system for high demand loads of the compound exceeding the largest available low voltage circuit breaker of 4000A. Size each transformer to handle 66 percent of the compound demand load.

ARTICLE 242
OVERVOLTAGE PROTECTION

Add the following sentences to the end of sub article 242.1.

242.1 Scope.

"All low-voltage (1000V and less) switchgear, switchboards, and panelboards must be provided with a Surge Protective Device installed internally or externally. All equipment rated over 1000V must be equipped with a station class lightning arresters appropriately sized to the distribution voltage class."

ARTICLE 250
GROUNDING AND BONDING

250.6 Objectionable Current

Add the following sub articles to 250.6:

(F) Ground current testing report and mitigation. All ground conductors must be tested for objectionable currents (>10 milliamps) and must be documented for mitigation. These currents must be removed prior to occupancy.

(1) Testing For Objectionable Currents. Testing for objectionable currents must take place prior to substantial completion, with building under test loads. Testing must include:

(a) Service Entry Grounding Electrode Conductor

(b) Service Entry Ground Bus Conductor

(c) All Switchgear Grounding Conductors

(d) Switchgear Grounding Electrode Conductor

(e) All Panelboard Grounding Electrode Conductors

(f) 10 percent branch Circuits tested for Net Current.

i. Net Current is defined as objectionable currents present during testing of all conductors (Single Phase, Neutral, and Ground in a single phase circuit for combined currents above 10mA.)

(G) Removal of factory bonding. All neutral ground bonds of service rated equipment must be removed prior to installation. Neutral ground bonds must only be applied as per this code supplement, identified in section 250.31.

Add the following sub article 250.31:

250.31 Grounding. Diplomatic Facilities have specific bonding requirements for separately derived systems that are maintained outside the base National Electrical Code and identified here.

(A) General grounding.

(1) All transformers must have neutral ground bonding on secondary of wye connected transformers.

(2) All neutral ground bonds of service rated equipment must be removed prior to installation with exception of locations identified in this code supplement

(3) Provide labeling at all neutral ground bonding locations, visible and accessible from normal operation locations. This is to include where bonding occurs in generators, switchgear, equipment, and generators.

(B) Separately derived systems.

(1) ATS: All Automatic Transfer Switch (ATS) installations for emergency or backup power must be 4-pole such that phase conductors and neutral conductors are switched.

(a) Neutral Ground bonding for generators applied in an ATS must occur at the generator/excitor.

(2) Paralleling: For paralleling generation installations grounding and bonding must follow sections 250.30 with the addition of central grounding of paralleling main buss.

(a) Generator Grounding: Generators as part of paralleling lineup must not be individually neutral ground bonded at the generator/excitor. The neutral ground bond must occur only at the paralleling main buss (Switchgear) only.

(b) Provide neutral isolation between service transformer/utility service and paralleling switchgear main breakers. This must be accomplished by the use of 4-pole (neutral switching) circuit breakers. (Reference IEEE 446-1995-7.9.2.C)

i. The paralleling switchgear main breakers are the only approved 4-pole circuit breakers that may be used. All other breakers, including engine generator breakers, in the system must be 3-pole (phase conductors only).

(c) Ground Fault sensing protection must be applied to each individual generator breaker to detect leakage current. Internal to Gear the levels for alarm and fault must be:

i. Alarm: All currents detected above 10.0 amps must initiate alarm.

(d) There must be no ground currents present on the system in excess of 10A outside of enclosed switchgear or boards.

(**C) Photovoltaic protection**: The presence of high frequency switching in photovoltaic inverters (2 kHz to 150 kHz) can cause leakage currents to be present in switching power supplies throughout the electrical distribution system. In all AC photovoltaic combiner panels and/or power insertion points into the grid power, provide a power line filter tuned to the switching frequency of the inverter.

Delete and replace sub-article 250.109 with the following:

250.109 Metal Enclosures. Metal enclosures must not be permitted to be used to connect bonding jumpers or equipment grounding conductors, or both, together as part of the effective ground-fault path. OBO requires a continuous equipment-grounding conductor to be installed in all raceways.

Add the following sub article 250.200:

250.200 Additional grounding requirements.

(A) General. Provide a grounding electrode system, also referred to as the earth electrode subsystem (EES).

(1) The electrode system grounds all structural steel building columns, exposed steel structures, and is a system ground for separately derived electrical systems, as required by NEC.

(a) The electrode system must provide the ground terminal for lightning protection systems as required by NFPA 780.

(b) The electrode system must consist of a network of ground rods, plates, mats, grids, concrete-encased wires or rebar, and their interconnecting buried bare conductors to form a building perimeter ground loop. Refer to MIL-STD 188-124A and MIL-HDBK 419, Chapter 2 of Volume I and Section 1.2 of Volume II.

(c) The electrode system must have a resistance not to exceed 10 ohms to ground, measured by the fall of potential method.

Exception. The design resistance value may be the lowest possible resistance-to-ground value when approved by OBO. Refer to MIL-HDBK 419, Sections 2.6 and 2.9 of Volume I and Section 1.2 of Volume II.

(B) Typical configurations. Provide electrode system(s) in accordance with one of the configurations below.

(1) Regular building configuration. Provide in accordance with the configuration shown in Figure 250.200-(B)-1. Locate the rods from 0.6 to 1.8 m (2 to 6 feet) outside the dripline of the building to take maximum advantage of moisture from roof runoff.

(2) Irregular building configuration. Provide in accordance with the configuration shown in Figure 250.200-(B)-2.

(3) Number of ground rods. Provide number and length of ground rods required to address building configuration, and the soil resistivity.

(4) Ground rod spacing. Provide a ground rod spacing of one to two times the length of the ground rods. Provide a ground rod at each lightning protection down-conductor. Down-conductor must be connected directly to the ground rod.

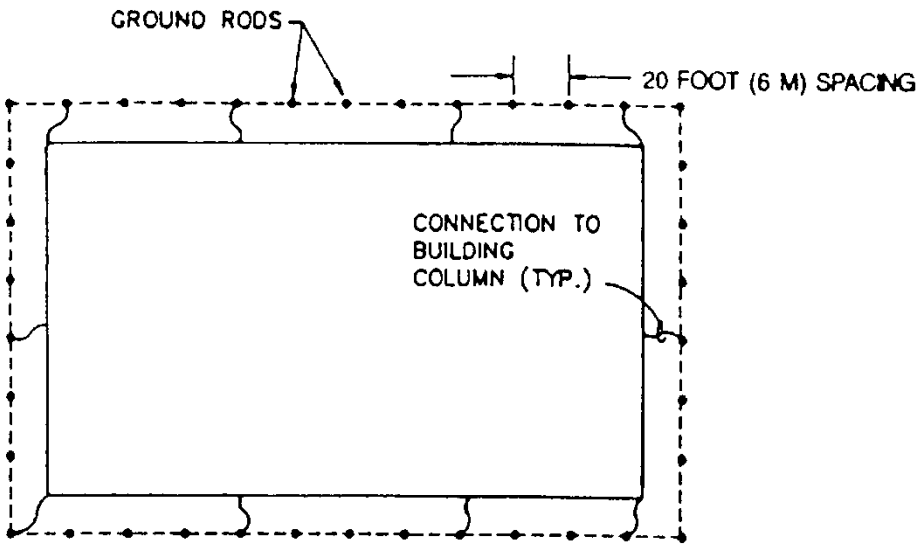


Figure 250.200-(B)-1 Typical Earth Electrode Subsystem Configuration For Rectangular Shaped Building

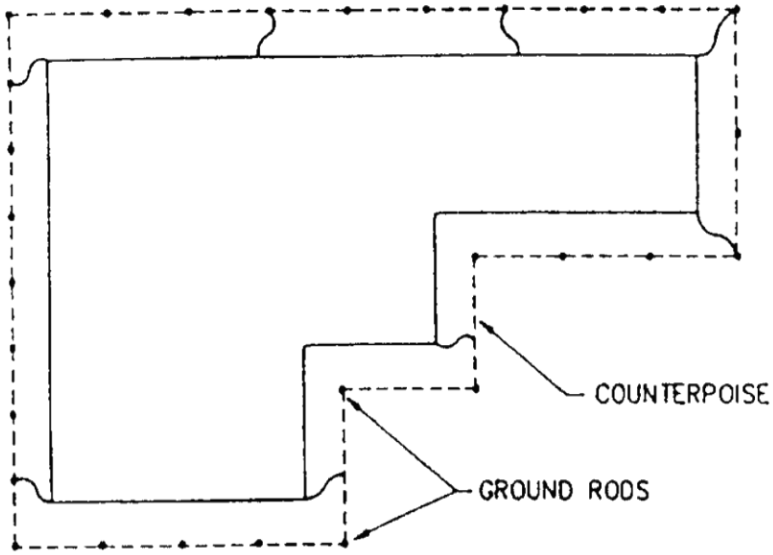


Figure 250.200-(B)-2 Typical Earth Electrode Subsystem Configuration for Irregular Shaped Building
For Irregular Shaped Building

(C) Building columns. All corner building columns must be connected to the EES. All steel must be electrically continuous and connected to the EES via intermediate columns or ground wires.

(D) Multiple structures. All structures on the compound connected with power, signal, control, or monitor circuits, all EESs must be interconnected with buried bare cables to minimize voltage differentials between the structures. Structures spaced closer than 6 m (20 feet) must have a common ground system that encircles both as shown in Figure

250.200-(D)-1. For separations greater than 6 m (20 feet), provide a configuration in accordance with Figure 250.200-(D)-2.

Figure 250.200-(D)-1 Electrode Configuration for Adjacent Structures

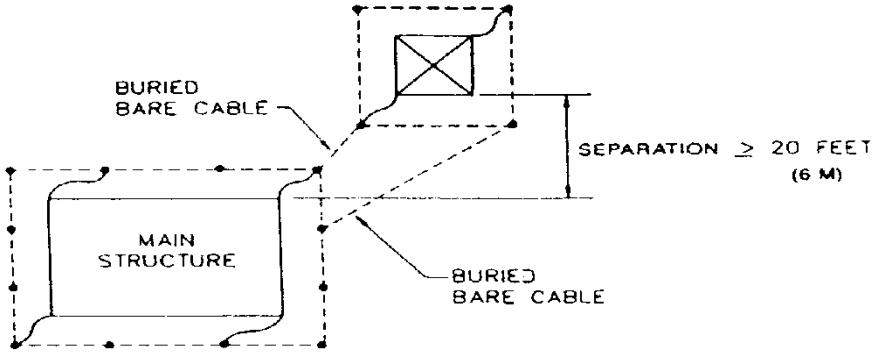
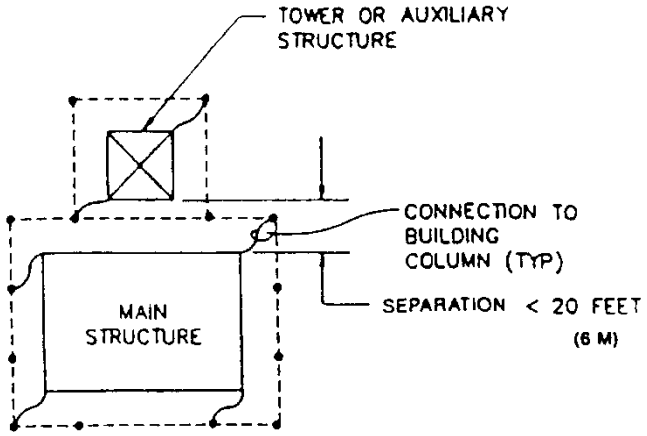


Figure 250.200-(D)-2 Electrode Configuration for Closely Spaced Structures



(E) Minimum depth of ground rods and interconnecting wire. Provide minimum depth to top of ground rods and interconnecting wire in accordance with Figure 250.200-(E).

(1) Interconnecting wire. The interconnecting wire must be bare stranded copper, 70 mm² (#2/0 AWG) or larger.

(2) Underground connections. Underground connections must be exothermic or irreversible connection.

(a) Irreversible connection is defined as that with mechanical clamp, that when applied, cannot be removed. Irreversible connections must be listed for the application and provided with certification.

(3) Ductbank protection. Provide minimum stranded copper, 70 mm² (#2/0 AWG) or larger buried 300 mm (12 inches) above all ductbanks, interconnected to the building counterpoise where intersections occur.

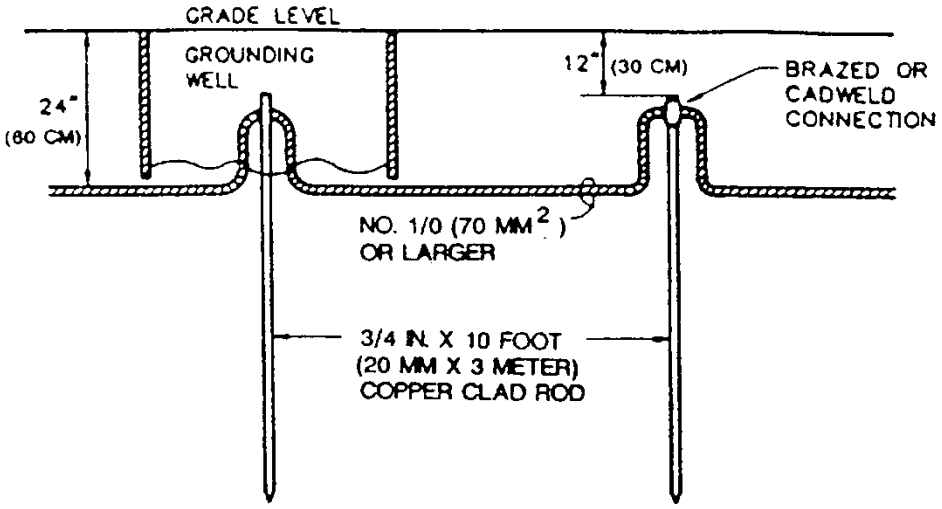
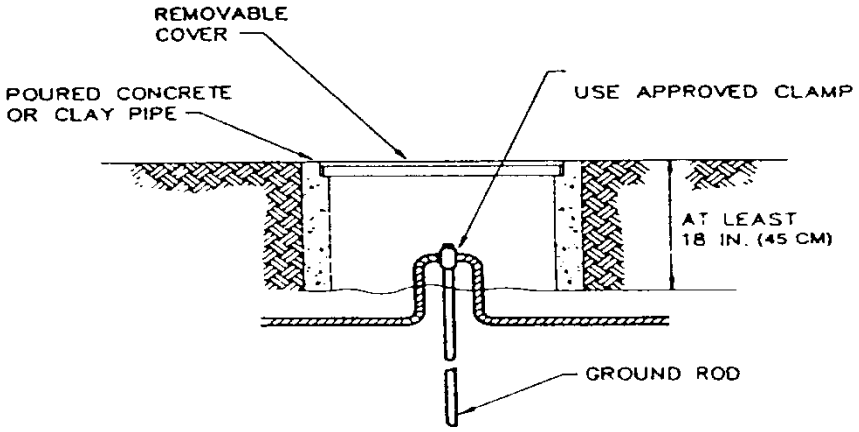


Figure 250.200-(E) Details of Ground Rod Installation

(F) Test wells. Provide test wells to access the EES for inspection and resistance testing in accordance with Figure 250.200-(F). Locate top of grounding rod at 150 mm (6 inches) below top of cover. Test wells must not be placed inside buildings. Provide a minimum of two test wells at each building. Test wells must be large enough to allow test equipment to be used to access the conductor and ground rod. Test wells must have open bottom for proper drainage

Figure 250.200-(F) Concrete Test Well



(G) Equipment grounding conductor. Each piece of electrical equipment with a metal enclosure surrounding current-carrying parts or conductors must be grounded with an equipment grounding conductor that connects the equipment to the system power source. Equipment grounding conductors must be run along with the power conductors that serve the equipment, in the same conduit.

(H) Ground buss. Provide solid copper ground bars/buss in each electrical room, switchgear room, telecommunications entrance facilities, fire pump room, equipment rooms and telecommunications rooms, and

security equipment (EC) room. Provide terminated and protected conductor extension ("pigtail") within room for grounding buss connection to building grounding system.

(I) Lightning protection. Provide lightning protection at all office buildings. For all other buildings on the site, provide lightning protection analysis and recommendation(s). Isokeraunic maps and local weather data must be used to support lightning protection analysis. *Vaisala (http://www.vaisala.com)* has worldwide isokeraunic maps for use in this analysis; utilize the latest version of the "GLD360 Density Map". OBO will make the final decision for the use of lightning protection for buildings other than office. The design for the lightning protection system must be in accordance with *NFPA 780 "Standard for the Installation of Lightning Protection Systems"*, designed utilizing the rolling sphere method.

(J) Lightning protection for Security Video Systems (SVS) equipment. Provide lightning protection for Security Video Systems (formerly CCTV) equipment in accordance with the following:

(1) SVS Camera Poles: Provide a copper or copper-clad steel grounding rod at each SVS pole location. Provide a continuous grounding electrode conductor from the base of the pole to the ground rod. Bond all metallic conduits/raceways, equipment grounding conductor, poles, camera mounts, and all non-current carrying metallic objects to the grounding electrode conductor at the base of the pole.

(2) Perimeter Wall-Mounted SVS Cameras: Where a SVS camera or bracket is prominently higher than the top of a perimeter wall; connect the bracket to ground via conductor to a ground rod.

(3) Building-Mounted SVS Cameras: SVS cameras/mounts mounted on/above building parapets must be attached to the building roof lightning conductors. Where no building lightning roof conductor is accessible provide a discrete down conductor and grounding rod in accordance with "SVS Camera Poles" above.

(4) Air Terminals: The addition of air terminals (lightning rods) to the SVS poles/brackets/mounts must be made when the installation meets the criteria of "Moderate to Severe" (or higher) of the NFPA 780 Risk Assessment Guide, Appendix H.

(5) Ground rods: Ground rods must be minimum 13 mm (1/2 inch) in diameter and 2.4 m (8 feet) in length. Ground rods must be driven to earth, with top of ground rod not less than 300 mm (12 inches) below finished grade.

(6) Grounding conductors: Grounding conductors must be a minimum of 25 mm^2 bare copper. Connect grounding conductor to the ground rods by exothermic welding, brazing, irreversible connection, or an approved clamp suitable for direct burial to earth. Where down conductor is coursed in reinforced concrete, it must be connected to the reinforcing steel at its upper and lower extremities. Such connection must be made by using listed clamps, irreversible connection, or welding/brazing.

(K) Roof mounted conductive materials. All electrically conductive materials located on all roofs of the compound must be connected to the grounding system and down conductors. This grounding is to protect against lightning side flash and to limit transient voltages on conductive materials. Materials to include but not be limited to conduit, steel supports, door frames, mechanical equipment, access stairs, etc. Electrically continuous materials (e.g., runs of conduit connected to support steel) require only one connection to the grounding down conductors.

(L) Antenna grounding. Provide grounding plate at all antenna bases, interconnected to the roof grounding system. Plate must be utilized for connecting grounding to the antenna mast, and for ease in disconnection and reconnection in the future. Antenna mast connections must be mechanical.

(M) Fire Pump Grounding. Provide ground conductor from frame of fire pump assembly to ground bus located in room.

(N) Thru-roof penetrations are prohibited for buildings that have roof parapet walls. At these locations, down-conductors must enter side of parapet wall and run down in conduit concealed in wall or between structural wall and cladding. Buildings with other roof styles must be provided with an approved thru-roof penetration method, or (with written approval to OBO/EE) must have exposed down conductors.

END OF CHAPTER NEC-2 AMENDMENTS

CHAPTER 3
WIRING METHODS AND MATERIALS

ARTICLE 300
GENERAL REQUIREMENTS FOR WIRING METHODS AND MATERIALS

300.1 Scope.
Add the following sub article to 300.1(A):

(1) All raceway materials installations. Where a conduit enters a box, fitting, or other enclosure, provide a bushing to protect the wires from abrasion. Bushing must be screw-on type. Split bushings are prohibited in all raceway applications.

300.6 Protection Against Corrosion and Deterioration.
Add the following sub article to 300.6:

(E) Electrical Infrastructure and Devices in Kitchen and Food Preparation Areas. This section applies to the electrical infrastructure and devices required for food preparation areas, food serving areas, and any other food service locations where walls require regular washing.

(1) Infrastructure and devices must be concealed within construction for ease of cleaning of finished surfaces, to prevent dirt accumulation, and to prevent mold.

(a) Where electrical connections are required between finished surface and equipment, all exposed conduit, and fittings, must be stainless steel and mounted with a minimum of a 6-mm airspace between the device item and the wall, or other supporting surface.

(b) Refer to OBO-ICS IEBC 306 for requirements for repairs to existing or renovated kitchen and food preparation areas.

300.7 Raceways Exposed to Different Temperatures.
Delete and replace sub article 300.7 (A) with the following:

(A) Sealing. Seal conduits with an approved material at all locations where conduits transit temperature barriers, including from exterior high temperature to interior conditioned spaces. An explosion proof seal must not be required for this purpose. Identify all locations and penetrations on construction documents, provide details within construction documents.

300.50 Underground Installations.
Add the following sentence to the end of the sub article 300.5 (B):

"Conduits must be sloped to drain toward manholes at a minimum rate of 0.1 percent per meter. Refer to OBO-ICS NEC 110.91 for additional site electrical infrastructure requirements in site distribution."

Add the following sentence to the beginning of sub article 300.5 (D):

"Above all underground cables, conductors, and ducts/ductbanks, bury detectable warning tape with aluminum backing to make it detectable by a non-ferrous metal detector."

ARTICLE 312
CABINETS, CUTOUT BOXES, AND METER SOCKET ENCLOSURES

312.5. Cabinets, Cutout Boxes, And Meter Socket Enclosures
Add the following sub article to 312.5:

(D) EC cabinet surge protection. Provide surge protection at all EC cabinets.

ARTICLE 330
METAL-CLAD CABLE: TYPE MC

330.10 Uses Permitted.
Add the following item to the list in 330.10 (A):

(13) MC Cable is permitted to be installed 152 mm (6 inches) above the top of the wall or ceiling connected to a j-box down to a receptacle or switching device. Applicable to 20A and 30A branch circuits only. All branch circuits must be in EMT above ceiling.

ARTICLE 348
FLEXIBLE METAL CONDUIT:
TYPE FMC

348.10 Uses Permitted.
Add the following sentence to the end of 348.10:

"FMC must be permitted to be used in concealed locations not to exceed 1.8 m (6 feet) long. Uses in exposed locations not to exceed 1.8 m (6 feet) long may be permitted at AHJ discretion."

ARTICLE 350
LIQUIDTIGHT FLEXIBLE METAL CONDUIT:
TYPE LFMC

350.10 Uses Permitted.
Add the following item to the end of the list in sub-article 350.10:

"(5) LFMC must be permitted to be used in concealed locations not to exceed 1.8 m (6 feet) long. Uses in exposed locations not to exceed 1.8 m (6 feet) long may be permitted at AHJ discretion."

ARTICLE 358
ELECTRICAL METALLIC TUBING:
TYPE EMT

358.42 Couplings and Connectors.
Add the following sub article to 358.42:
(A) Materials. The use of die cast or set screw couplings and connectors is strictly prohibited.

END OF CHAPTER NEC-3 AMENDMENTS

CHAPTER 4
EQUIPMENT FOR GENERAL USE

ARTICLE 406
RECEPTACLES, CORD CONNECTORS, AND ATTACHMENT PLUGS (CAPS)

Add the following sentence to the end of sub article 406.8:

406.8 Noninterchangeability.

"**Exception:** For existing installations utilizing NEMA style receptacles, it is permissible to use high quality polarized adapters procured from a reputable firm that are manufactured to plug into a NEMA receptacle and convert the three-prong arrangement to the preferred foreign regional style. This does not change the voltage, only the receptacle configuration."

Add the following sentence to the end of sub article 406.12:

406.12 Tamper-Resistant Receptacles.

"Applicable to 50Hz locations with nominal voltages of 220V/380Y, 230V/400Y, and 240V/415Y."

(9) Provide 250V, NEMA 6-20R tamper-resistant receptacles in any area specified in 406.12 (1) through 406.12 (8) otherwise any area where children could insert foreign objects into receptacles e.g., consular waiting (both interior and exterior) areas, and residential applications.

ARTICLE 410
LUMINAIRES, LAMPHOLDERS, AND LAMPS

Add the following sub articles 410.161 through 410.166:

410.161 General. Lighting for interior spaces is regulated for use and security.

(A) Work Task Lighting. Task lighting for office function must be maintained at a minimum illuminance level of 500Lux. Required illuminance level may be provided with a combination of general illumination and task illumination.

410.162 Luminaires.

(A) Broad Band Filters. Provide broad band filters for suppression of radio interference noise that may be conducted through power line fluorescent fixtures in all shielded areas.

(B) Prohibited Lighting Type. Incandescent fixtures and/or lamps are not permitted without prior approval of OBO/PDCS/DE/EE through the COR.

410.163 Daylighting. Daylighting is required for general work areas and open office spaces.

Exception. Daylighting is not permitted in the PCC.

410.164 MSG Post 1 Lighting. MSG Post interior lighting output must be dimmer controlled. Dimmer must provide continuous dimming range from one percent (1%) to one hundred percent (100%) brightness. Provide 540 lux (50-foot candles) general illuminance at the full brightness level. Provide low profile task lighting to illuminate the work surface adjacent to the computer workstation. Provide manual switch and dimming control. Occupancy/vacancy controls are not permitted in Post 1.

410.165 Emergency Lighting. Provide emergency lighting at all post buildings in accordance with this sub article. All means of egress including exterior areas measuring a safe distance from the means of building egress are part of the emergency system. Maintain a minimum of 20 lux (minimum maintained average) in all corridors during emergency situations. Public toilets must have a dedicated emergency lighting fixture at all points of entry/egress.

(A) Minimal Emergency Illuminance. Provide battery-powered emergency lights adequate to provide minimal emergency Illuminance during evacuation of personnel and to allow orderly shutdown of equipment in post buildings during failure of the normal power and standby generators. The design must be in accordance with *NEC* Articles 700 and 701, NFPA 101, and the applicable section of the IES *Lighting Handbook*.

(B) Placement. Battery-powered emergency lights must be provided in all large open office spaces, Facility Manager (FM) office, warehouses, machinery and electrical rooms, gatehouses, UPS rooms, PBX rooms, generator rooms, stairwells, hallways and other public areas such as lobby, waiting rooms, conference rooms, and in public foyers to provide Illuminance for a minimum of 90 minutes.

(C) Battery power. Battery powered emergency lighting must conform to UL 924 requirements for "unit Equipment" with sealed rechargeable batteries rated for 10-year life, and must provide emergency lighting during generator startup, and maintain emergency lighting for 90 minutes should the generator system not start.

(D) Charger. Charger must be fully automatic solid-state type, with a sealed transfer relay. The unit must automatically turn the lamp on when supply circuit voltage drops below 80% of nominal, protect battery from damage, recharge battery in shortest time, and maintain the charge when normal voltage is restored.

(E) Exit Signs. Exit signs must be LED type and in accordance with NFPA requirements with red lettering on white background unless otherwise required by the applicable local law.

410.166 Lighting Controls. Provide separate lighting control systems for security zone (GWA, CAA, CAA+) for lighting control to integrate daylight and electric light. No control system may cross security zone boundaries. Provide vacancy controls for ambient and task lighting. Provide dimming and automatic shutoff for time of use areas. Allow for flexible use of space through preset scene controls and plug-and-play digital controls. Provide a Digital Addressable Lighting Interface (DALI) lighting control system which manages, monitors and reports on lighting usage through a central processor, and which minimizes the need for line voltage wiring with the use of digital ballast and control devices.

(A) Levels of Illuminance. Where luminaires have three, four or more lamps, dim lamps continuously or switch the lamps symmetrically for two or three levels of illuminance. Provide automatic daylight dimming for luminaires adjacent to windows to achieve a uniform lighting level with daylighting.

(B) Three or Four-Way Switching. Provide three- or four-way switching or dimming combination of all room lights where two- or three-room entrances are not immediately adjacent to each other.

(C) Automatic Controls. Occupancy sensors must be used to control lighting in hallways, open bay areas and other areas in the interest of energy conservation. Single technology occupancy sensors will be required in lieu of ultrasonic motion sensors in Controlled Access Areas. Occupancy sensors in office buildings must have local floor over-ride “off” controls located in Post 1 for use during certain security situations at night.

(D) Architectural Lighting Controls. Scene dimming in combination with daylight dimming and occupancy sensors.

(E) Night Control. The same general work area and general circulation (corridors, stairwells) occupancy sensors for regular work hours must also be in operation during night-time security sweeps through the building. Provide occupancy sensor override switches for each office building floor in MSG Post 1.

(F) Lighting control by security zone. Provide automatic lighting control in the GWA, CAA Restricted and CAA Core areas in accordance with the following:

(1) General lighting control.

(a) Provide tunable white color temperature control.

(b) Lighting controls must not be placed in telecom, TR rooms, or mechanical rooms.

(2) General Work Areas

(a) Digital control of each luminaire based on construction drawings.

(b) Multi-Purpose Room: Lighting control must accommodate different pre-set scenes.

(3) CAA Restricted

(a) Digital control using block diagrams, use of floor plan configurations is not permitted.

(b) Provide passive infrared occupancy sensors. Ultrasonic and/or dual sensing is not permitted in CAA.

(4) CAA Core.

(a) Provide basic lighting control by individual suite. Control systems must not cross suite boundaries.

(b) Lighting must be controlled by line voltage or analog control only. Ultrasonic sensing is not permitted.

(c) Reporting of status lights to indicate load status is not permitted.

(d) Interconnection to any building automation system is not permitted.

(G) Teller Window Illumination Level Controls. Provide dimming controls on protected side of teller window to allow staff to have independent control of illumination levels on each side of teller window.

(H) Lighting Control Panels. Locate lighting control panels in electrical rooms/closets on each floor as required. Lighting control panels are not permitted in Telecom rooms/closets.

ARTICLE 422
APPLIANCES

Delete and replace sub article 422.5 (A) with the following:

422.5 Ground-Fault Circuit-Interrupter (GFCI) Protection for Personnel.

(A) General. Appliances identified in 422.5(A)(1) through (A)(5) rated 250 volts or less to ground and 60 amperes or less, single- or 3-phase, must be provided with GFCI protection for personnel. Multiple GFCI protective devices must be permitted but must not be required.

(1) Automotive vacuum machines provided for public use.

(2) Drinking water coolers and bottle fill stations.

(3) High-pressure spray washing machines – cord-and-plug connected.

(4) Tire inflation machines provided for public use.

(5) Vending machines.

(6) Not Used.

(7) Not Used.

ARTICLE 450
TRANSFORMERS AND TRANSFORMER VAULTS (INCLUDING SECONDARY TIES)

Add the following to the end of sub article 450.1:

(A) Maximum size of utility transformers. Maximum size of utility transformers to 3.0 MVA or less.

Add the following list of items to the end of sub article 450.8 (A):

450.8 Guarding.

(**A) Mechanical Protection.**

(1) Where site-mounted transformers are located adjacent to vehicular movement areas, provide bollards to protect transformer from vehicular impacts.

(2) Locate bollards to as required to provide working space around transformer.

(3) Locate bollards to as required to allow transformer cabinets to be opened without interference from bollards.

(4) Locate bollards as to not interfere with clear working space as required in Article 110.

ARTICLE 480
STORAGE BATTERIES

Add the following to the end of sub article 480.1:

480.1 (A) Storage for backup electrical power. Provide commercial-off-the-shelf (COTS) energy storage for backup electrical power for all buildings and occupied spaces, photovoltaic systems, and residential emergency or backup energy systems.

Exception. The use of non-commercial, constructed-in-place battery systems are only permitted for industrial occupancies (e.g., utility and switchgear backup systems).

Add the following sentence into sub article 480.7(E):

480.7 (E)

"DC busways are not permitted in residential occupancies."

Replace sub article 480.8 with the following:

480.8 Racks, Trays, and Cabinets. Racks and Trays must comply with 480.8 (A) and (B) for industrial applications and 480.8 (D) for Electrical Power Backup systems. Individual battery trays and racks are not permitted for Electrical Power

Backup systems. All battery systems for Electrical Power Backup must be fully enclosed in Cabinets listed for the application in accordance with 480.8 (D).

Add sub article 480.8 (D):

480.8 (D) Cabinets. Cabinets must be self-contained and must be approved for use in occupied spaces. Cabinets must comply with the following:

(1) The cabinet must contain individual, factory-sealed, interior battery compartments.

(2) The cabinet must require no field applied interconnection of battery cells.

(3) The cabinet must have a single point of connection to the DC disconnecting means, or inverter.

(4) Separate Battery disconnecting is not required if integral disconnecting means is included in the cabinet.

(5) The batteries and the cabinet must be approved for the expected ambient conditions of the installation location, including temperature minimums and maximums, humidity, corrosive environments, and insect infiltration.

(6) The cabinet must be properly secured to the floor or wall as applicable and follow all manufacturer's requirements.

(7) There must be no combustible or flammable materials inside the defined working space as defined in 480.9 (C).

END OF CHAPTER NEC-4 AMENDMENTS

CHAPTER 6
SPECIAL EQUIPMENT

ARTICLE 605
OFFICE FURNISHINGS

Add the following Sections 605.10 through 605.16:

605.10 Additional office furnishings requirements. Comply with the following:

(A) Power poles. Power poles are not permitted for power or telecommunication distribution.

(B) Receptacle configuration for non-electrified furniture. The non-electrified configuration for the 220V installations must utilize wall mounted NEMA 6-20R receptacles and 120V installations must utilize NEMA 5-20R receptacles.

(C) Receptacle configuration for electrified furniture.

1. Modular electrified furniture in non-CAA areas must be circuited so that it can be densified from a six-person workstation cluster to an eight-person workstation cluster. Provide two power junction boxes at each end of a workstation cluster to connect to workstation power whips.

2. Modular electrified furniture In the CAA areas must be circuited so that it can be densified from a four-person workstation cluster to a six-person workstation cluster. Provide two power junction boxes at each end of a workstation cluster to connect to workstation power whips.

605.11 Requirements for Electrical Work at Modular Furniture

1. Modular furniture may be electrified or non-electrified.

2. Power and data may be provided to electrified modular furniture via wall, column, raised floor system or floor mounted junction boxes.

3. Floor mounted junction boxes are not permitted in CAA spaces. Modular furniture in private offices must be non-electrified.

4. The receptacle configuration for all furniture must be provided with host country utilization voltages. For 220V installations receptacles must utilize NEMA 6-20R receptacles. For 120V installations receptacles must utilize NEMA 5-20R receptacles. All receptacles (electrified furniture and non-electrified furniture) must utilize UL listed receptacles.

5. Receptacles must match plug configurations for “Government-Furnished Equipment (GFE)” office furniture. Cord and plug set must match equipment requirements.

605.12 Receptacles for Non-Electrified Modular Furniture

(A) Provide two quads (double duplex receptacles) to serve each non-electrified workstation. Receptacles must be mounted on an adjacent wall or column. Receptacles must be mounted at a height of 380 mm (15 inches) AFF. Provide a minimum of two circuits at each workstation for computers, lights, and other equipment.

605.13 Typical Wiring Scheme for Electrified Modular Furniture

(A) Coordinate the wiring scheme selected with DE/ID prior to construction of the building power system (8 vs. 10 Wire).

1. The electrified configuration must consist of one of the following configurations:

a) 10 wire configuration consisting of four phase conductors, four neutral conductors, with one dedicated to each phase and two shared grounds (shared by two conduits); or

b) 8 wire configuration consisting of four phase conductors with two upsized (10AWG) neutral conductors, with one shared with two phases and two shared grounds (shared by two conduits).

2. Two circuits will be used for computers, and two circuits will be used for lighting and general-purpose receptacles.

3. Power is normally a factory assembled GFE wiring harness (infeed or "whip") to connect the power conductors at the junction box for each electrified modular furniture cluster.

4. At the junction box, the four circuits from the modular furniture must be wired to at least four separate branch circuits.

605.14 Maximum Stations on Circuit for Modular Furniture

(A) For 220-240V branch circuits:

1. A maximum of eight (8) workstations, with 32 duplex receptacles, must be connected to four (4) 20A branch circuits.
2. Each branch circuit must power eight (8) 20A receptacles (6-20R).
3. This applies to both 4-4-2 and 4-2-2 configurations.
4. The design must include two (2) junction boxes, one at each end of the cluster, for two (2) power infeed (whip) connections.

(B) For 110-120V branch circuits:

1. A maximum of four (4) workstations, with 16 duplex receptacles, must be connected to four (4) 20A branch circuits.
2. Each branch circuit must power four (4) 20A receptacles (5-20R).
3. This applies to both 4-4-2 and 4-2-2 configurations.
4. The design must include two (2) junction boxes, one at each end of the cluster, for two (2) power infeed (whip) connections.

605.15 Power for Modular Furniture

The power infeed for the systems furniture is Government-Furnished and the contractor must receive, ship, stage, install and execute the hardwire connection to the building. Furniture and equipment hardwired to electrical, and telecommunications are considered part of the body of the building's systems. Each CAA and non-CAA work area must have eight plug points (or four duplex receptacles). The furniture requirements do not override the building codes established for electrical and telecommunications requirements.

605.16 Lighting for Modular Furniture

Task lighting is included in the systems furniture. This lighting will be specified and ordered by the U.S. government, and must be received, shipped, staged, and installed by the contractor as GFCI.

ARTICLE 620
ELEVATORS, DUMBWAITERS, ESCALATORS, MOVING WALKS, PLATFORM LIFTS AND STAIRWAY CHAIRLIFTS

Delete and replace sub article 620.51 (C) with the following:

620.51 (C) Elevator disconnect location. Elevator disconnects must be located in the machine room for that elevator car.

ARTICLE 625
ELECTRIC VEHICLE POWER TRANSFER SYSTEM

Delete and replace the definitions for Electric Vehicle Power Export Equipment (EVPE) and Electric Vehicle Supply Equipment (EVSE) with the following definition:

625.2 Definitions.

Electric Vehicle Power Export Equipment (EVPE). The use of EVPE or sometimes referred as bidirectional Electric Vehicle Supply Equipment (EVSE) is prohibited on US Embassy and US Consulate Compounds. OBO prohibits electrical supply equipment that is capable of exporting power back onto the power grid.

Delete and replace sub-Article 625.4 with the following:

625.4 Voltages. The nominal AC system voltages in 60Hz locations must be 120V/208Y and 277V/480Y must be used to supply equipment covered in this article. In addition, the nominal AC system voltages in 50Hz locations must be 220V/380Y, 230V/400Y, and 240V/415Y must be used to supply equipment covered in this article.

Add the following sub articles 625.200 and 625.210:

625.200 Electric Vehicle charging infrastructure (EV Capable). Provide electric vehicle charging-capable charging infrastructure to accommodate Electric Vehicle Supply Equipment (EVSE) furnished and installed by post that will comply with 625.210.

(A) Infrastructure requirements. Provide electric vehicle capable infrastructure for charging at all official (motor pool) parking spaces and vehicle maintenance bays. Infrastructure required includes dedicated panelboards and capacity, dedicated branch circuits, handholes, continuous raceway from the panel(s), supports, mounting infrastructure, and protection for the locations where EVSE chargers will be provided and installed by post. Infrastructure for each charging station must include two conduits, one for power and one for communications, each conduit must terminate in an independent hand-hole enclosure.

(B) Charger locations. Provide infrastructure for post-provided chargers in the following locations. Do not locate EV chargers in areas prone to flooding.

(1). Official (motor pool) parking spaces.

a. Single row of parking spaces: Provide one charger location for each two parking spaces, centered between parking spaces.

b. Double row of parking spaces: Provide one charger location for each four spaces, centered between rows and parking spaces.

(2) Vehicle maintenance bays. Provide for one charger location for each two bays, centered between bays.

a. Interior vehicle maintenance bays: Provide for wall-mounted chargers.

b. Exterior maintenance bays: Provide for site mounted chargers. Refer to (G) Exterior charger mounting infrastructure for requirements.

(C) Electric vehicle charger power capacity required. Provide the following estimated demand load for each parking space being served at local 3 phase utilization voltage and frequency. DC or AC chargers will be utilized on a site-specific basis depending on site conditions.

(1) DC Level 3 chargers - 75kW - 125kW three phase for each DC charger.

(2) AC Level 2 chargers - 10kW - 50kW single phase for each AC charger.

(D) Panelboard requirements. Provide panelboards must complying with the following.

(1) Locations. Provide panelboards to serve:

a. Motor pool -Single location in proximity to chargers.

b. Motor pool -Multiple locations and panelboards for official parking located more than 75 m (246 feet) from single location.

c. Vehicle maintenance bays.

(2) Panelboard placement. Place panelboard(s) in one of the following locations.

a. Building interior – Place panelboards serving EV chargers within buildings where building is less than 75 m (246 feet) from the chargers.

b. Site location Place panelboards serving EV chargers on exterior infrastructure in proximity to official parking location(s) where building is greater than 75 m (246 feet) from charger. Provide weather enclosure and pylon for mounting panelboards. Provide bollards as required to protect panelboards from damage by vehicles.

(E) Conduits and cabling. Provide conduits and cabling from EV Charging panelboards to serve stub-ups as required at all charger locations and as required to interface with other systems. Size conduit as required for site-specific conditions.

(F) Handholes. Provide handholes at parking stalls complying with the following.

a. Single row of parking spaces: Provide one charger location for each two parking spaces, centered between parking spaces.

b. Double row of parking spaces: Provide one charger location for each four spaces, centered between rows and parking spaces

(G) Exterior charger mounting infrastructure. Provide support and protection for the charger(s).

(1) Bollards. Provide steel bollards a minimum of 1500 mm (59 inches) high, 150 mm (6 inches) diameter to protect charger from vehicle impact. Ensure that charger and associated controls will not be more than 1200 mm (48 inches) above grade to center.

(2) Anchor bolts. Provide anchor bolts. Coordinate required anchor bolt pattern, size, and locations.

(3) Conduit stub-ups. Terminate stub-up locations with equipment being provided by post. Stub-ups must be capped at a minimum of 20 mm (3/4 inch) above the top of the concrete.

(H) Systems infrastructure. Coordinate requirements and provide systems infrastructure from generators to connect and configure charging equipment to automatically disconnect chargers when compound is operating on backup generators. Manually reconnect EV power back to generator power, only if spare generator capacity is available after all other loads are connected. EV loads must not initiate operation of an additional generator.

(9) Metering infrastructure. Provide metering infrastructure from EV Charging panelboards to interconnect to:

a. Facility Electrical Power Monitoring System (EPMS) to monitor charging at the individual circuit level.

b. MeterNet system (by others) measuring the entire panelboard load. Provide 19-mm (3/4-inch) raceway from EV Charging panelboard(s) Main Circuit Breaker Current Transformer location to the MeterNet head unit. Location of MeterNet head unit as determined by site-conditions.

c. Metering must have user interface for direct reading of usage.

(I) Signage. Provide signs at every EV charger parking space. Provide sign type SA6 with the following text:

ELECTRIC VEHICLE
CHARGING ONLY

a. Refer to OBO Signage & Wayfinding Guide for required size, support, material, and color.

625.210 Electric Vehicle Supply Equipment (EVSE). Chargers furnished and installed by post must comply with these requirements for the safety of users.

(A) Requirements for post-provided Electric Vehicle Supply Equipment (EVSE). EVSE will be provided and installed by the USG upon completion of the capable infrastructure. Refer to the project scope. EVSE equipment provided by post must comply with the following.

(1) Cables and Connectors. Provide EV charging cables and connectors with EV charger. EV charging cable must be single piece. Mid-cord couplings are not permitted. Provide an interlock in the vehicle-end connector to de-energize under any of the following conditions:

a. When connector is unplugged from the vehicle

b. When connector is subjected to stress that may rupture or break it

c. When it becomes a shock hazard.

ARTICLE 645
INFORMATION TECHNOLOGY EQUIPMENT

Add the following sub article to 645.10:

(C) EPO Disconnect for JUCR.

(1) General. Provide a single combined operation emergency power off (EPO) switch at the strike side on the interior (room side) of all exit doors.

(2) HVAC and Electrical Disconnect. EPO must simultaneously disconnect both the room dedicated HVAC system and electrical feeds to all electrical telecommunications equipment. EPO switch must disconnect all normal and UPS power from all telecommunication equipment independent of UPS KVA battery rating.

(3) Protective Cover. Provide a clear plastic flip up protective cover at all EPO switches to prevent accidental activation.

(4) Required Emergency Signage. Provide emergency placard sign, laminated, mounted directly above each EPO. Minimum size: 150 mm W x 50 mm H (6 inches W x 2 inches H). Colors: red background with minimum 12 mm (1/2 inch) white block letters. Text: "EMERGENCY POWER OFF SWITCH."

(5) Additional Requirements. Refer to classified attachments for additional requirements.

ARTICLE 690
SOLAR PHOTOVOLTAIC (PV) SYSTEMS

Add the following subarticles to 690.4 General Requirements.

(G) Raceway and conductor labeling requirements. Provide warning labels and/or permanently affixed marking tape on raceways, junction boxes, pullboxes, and manhole/handhole covers to identify the DC maximum voltage of the enclosed conductors. Labels must be displayed prominently on raceways at a maximum spacing of 5 m (16 feet). Refer to OBO-ICS NEC Chapter 2 Identification for Branch Circuits.

(H) Access requirements for PV systems. PV arrays or equipment must have full access for testing, operation, and maintenance. For walking access, limit the number of rows in any PV array to five (5) modules between access, provide a minimum clearance of 915 mm (36 inches) between PV arrays.

(1) Roof Access. Arrange PV arrays, group conduits, and consolidate conduit groupings to limit the number of roof penetrations. At roof levels, provide access below the conduits and PV arrays to allow for inspection, maintenance, replacement, and repair of roofing as necessary without removal of equipment including racking and conduits.

(2) Canopy Access.

a. Canopies must be designed to allow for underside access of all serviceable components including but not limited to wiring and modules. Systems must not require overhead access for module replacement.

b. Canopies which are designed without underside access must be treated as a roof with an unprotected edge regarding temporary railings, access pathways and personnel fall protection. The hierarchy of controls must be followed to mitigate fall hazards.

(I) Micro Inverters. The use of micro inverters is prohibited.

Exception. Micro inverters are permitted for small residential system installations.

Add the following sub article to 690.41 System Grounding:

(C) Arc-Fault Protection. Provide arc-fault protection on all inverter DC inputs from the arrays.

Add the following sub article 690.101:

690.101 Solar Photovoltaic Battery Energy Storage System. Provide a complete solar photovoltaic battery energy storage system complying with this article.

(A) General. Provide a containerized battery energy storage system to function as a stand-alone micro-grid for operations of the facility.

(B) Location. Locate container(s) exterior to the utility building on a concrete pad. Containers must be physically spaced from each other as well as from any buildings to prevent fire from spreading in the event of a run-away battery fire.

(C) System power and information connections. Connect battery energy storage system into the facility power system for charging and energy supply. Connections must have short circuit protection and coordination.

1. Power. Provide stand-alone switchboard or switchgear as required. This equipment may be exterior mounted for combining multiple container(s). Individual containers and interconnection must be capable of disconnection and replacement or disconnection and re-connection without disruption to facility power.

2. Information. Battery energy storage system must include PV DAS for monitoring of the PV production, BESS charging and discharging, and utility purchase monitoring. System must provide the following information and load flow calculations at the location of the infeed:

(i) PV/BESS interaction with Utility,

(ii) PV/BESS interaction with generator operations, and

(iii) PV/BESS self-commutation and facility operation without generator operation

(iv) Excess PV for charging BESS for nighttime discharge.

(v) BESS for peak-shaving during high load operation.

(D) Battery container systems. Provide required building systems including fire suppression, HVAC, and battery monitoring system (BMS). Provide inverters and controllers within each container for the batteries located in that container.

(E) Environmental Protection of Battery System. Environmental conditions for power units must not exceed 30 ºC (86 ºF) or drop below -5 ºC (24 ºF).

1. Power Units Located in Building. Where units are located inside a building, required environmental conditions may be achieved either by using HVAC equipment for the space, or by using an enclosure for power unit with heating and cooling unit accessories required to maintain the environmental conditions within the enclosed container.

(a) Severe weather and exposure to harmful elements. Where battery system could be exposed to severe weather or intensive exposure to dirt, sand, or other harmful elements, provide protection for battery system space to limit exposure to harmful elements. Provide locking system as required to accept a DS approved padlock.

2. Power units Located on Site. Where power unit is located on site, provide an enclosure to maintain required environmental conditions. Provide heating and cooling units required to maintain environmental conditions. provide enclosure for power unit.

(a) Severe weather and exposure to harmful elements. Where battery system could be exposed to severe weather or intensive exposure to dirt, sand, or other harmful elements. enclosure must be constructed of minimum 3-mm (1/8-inch) thick plate steel. Provide locking system as required to accept a DS approved padlock.

(F) Coordination. Coordinate installation with the local utility.

ARTICLE 695
FIRE PUMPS

695.1 Scope.

Add the following to sub article 695.1:

(C) Electric Fire Pumps. Electric fire pumps are prohibited on US Embassy and US Consulate compounds.

Exception. The use of electric motor-driven fire pumps may be permitted only on a project-specific basis. Contractor must submit written justification for approval. Approval must be submitted to and approved by both OBO/PDCS/DE/EE and OBO/OPS FIRE. Electric motor driven fire pumps where specifically approved, must comply with the requirements of this article.

Add the following Article 698

ARTICLE 698
TECHNICAL SECURITY SYSTEMS

698.1 General.

(A) Components. Only DS-certified components are permitted in TSS systems.

(B) Separation of security signal conductors. Security signal conductors and power conductors must not share same conduit. Only TSS cable and wires are permitted in the handholds, electrical cabinets, and conduit. Non-security signal conductors and power conductors can share the same manholes only.

698.2 Electrical Cabinets (EC) and Sub-ECs for TSS.

(A) TSS EC. Install TSS ECs and sub-ECs in EC and sub-EC Room for each building.

(B) Termination Point. The Main EC must be central termination point for TSS conduits and signal wiring.

Exception. Chemical dispensing system.

(C) Physical Security. Locate ECs and Sub-ECs in rooms with lockable doors.

(D) TSS Cable Path. TSS cabling in each building must run from the end device to EC or Sub-EC for the building and then connect to guard post equipment for the building. For TSS systems which in buildings other than the Chancery require monitoring or override capability in MSG Post 1, provide cabling between Sub-ECs and Chancery Main EC.

(E) Equipment permitted in EC and Sub-EC rooms. Only TSS equipment, power, and cabling is permitted in EC Rooms and Sub-EC Rooms. No other systems or support infrastructure (i.e., conduit).

698.3 Signal Support Infrastructure for TSS.

(A) Conduits.

(1) Inside Building Hardline: Electrical metallic tubing (EMT) or flexible metal conduit (FMC).

(2) Outside Building Hardline in Above Grade Installations: Liquid-tight Flexible Metal Conduit (LFMC), intermediate rigid metallic conduit (RMC) or Intermediate Metal Conduit (IMC).

(3) Outside Building Hardline in Below Grade Installation: Rigid non-metallic conduit (RNC) such as Schedule 40 heavy wall PVC with an inside diameter of 50 mm (2 inches) or larger. Use metallic elbow when leaving conduction or ductbank to go above grade and change to metallic conduit.

(4) Where conduit transits spaces between building hardlines, embed conduit in concrete or provide another acceptable means of securing conduit.

(5) Cable Management: Provide a depressed slab between the Main EC Room and Post 1. This is not a plenum rated area.

(6) Underground conduit installed in slab within any specific building must not exceed 45 m (150 feet). from pull box to pull box.

(B) Termination (Junction) Boxes.

(1) **Security Door Control Terminations.** Install short conduit from the termination box positioned above door directly into door lintel. Termination boxes must be on secure side of door, and above accessible ceiling where possible.

(2) When FE/BR doors are surrounded by a window wall or a transom above the door, the tubing must not be used as conduit or a delivery system for TSS related cable or hydraulic tubing. Delivery from the slab below into the frame will be required.

(C) Security Management System Enterprise (SMSe) Infrastructure. Provide conduit and cable infrastructure from the Main EC Room to MSG Post 1, I.D. Badge Office (GLID), RSO office, ESO office, IRM (OpenNet) room and Safe haven rack workstation locations. Provide power at I.D. Badge, RSO Office and ESO workstations from the TSS Panel EU or dedicated standalone UPS per workstation.

(D) Hardened Carrier System (HCS):

(1) Conduit: Electrical metallic tubing (EMT) or rigid metallic conduit (RMC), as well as elbows, couplings, nipples, and connectors of the same material.

(2) Pull Boxes: Hardware (hinges, hasps, hinge pins) attached to the ferrous metal pull box must be either concealed within the enclosure or rendered immovable. If the hinge pins are removable, the hinge pins must be sealed with a metallic-based epoxy to make removal difficult.

(3) Inspectable Installation: To ensure that tampering or unauthorized access will be detected, it must be possible to visually inspect the HCS over the entire length of its run.

a. Provide the above HCS requirements for Lock and Leave posts for unencrypted signal lines transiting from CAA into GWA and PAA and terminates in a Main EC Room.

b. Provide the above for non-encrypted SMSeNet local area network (LAN) signal lines transiting general work area (GWA), or public access area (PAA) spaces must be in a hardened carrier system (HCS).

(E) Door Control System. Route cables to EC Room.

(F) Duress Buttons and IDNS. Route cable to EC Room.

(G) SVS System. Route cables from cameras to SVS cabinet located in EC Room and then to SVS control equipment in EC Room and MSG Post 1.

(H) ENS. Loop speaker cable from speaker to speaker.

(I) Security Intercom. Cabling for CAA suite intercom must be contained within the suite served for the intercom.

(J) Safe Haven and Safe Area TSS. Cabling must run between the Safe Haven / Safe Area to the EC Room serving the building.

698.4 Electrical Power Infrastructure for TSS.

(A) Location. Locate power equipment, regulators, UPS units, and panels for TSS systems in EC Rooms or Sub-EC Rooms.

(B) Distribution Panels. Install two separate, surface mounted, lockable TSS distribution panels in main compound EC Room as identified below. Additional panels may be required in ancillary buildings.

(1) Panel E: Panel receives power from main distribution panel (MDP), which is on essential generator bus. Panel must be three-phase with three phase feed have Main circuit breaker.

(2) Panel EU: Panel receives power from Panel E through an UPS via an UPS bypass switch.

(C) UPS Bypass Switch. In the event of UPS failure, provide switch to facilitate ability to provide power to panel EU.

(D) Emergency Power Configuration. Refer to classified attachments.

(E) Prohibited connections. Non-TSS systems are not permitted to draw power from TSS power panels.

(F) IDS backup power. IDS power supplies must have battery-backup.

END OF CHAPTER NEC-6 AMENDMENTS

CHAPTER 7
SPECIAL CONDITIONS

ARTICLE 702
STANDBY POWER SYSTEMS

Delete and replace 702.4 (B) with the following:

(B) System Capacity. The calculations of load on the standby source must be made in accordance with (1) through (8) as well as Article 220 or by another approved method.

(1) Engine-generators must be sized so that the minimum load served by each generator is 50 percent of its prime rating.

(2) Engine-generators must be sized to maintain stable voltage and frequency during the maximum expected load swings.

(3) Voltage transients in the electrical system must be limited to 15 percent, and the frequency deviation must be limited to 0.5 Hertz.

(4) Engine-generators must be sized per manufacturer's sizing calculations for actual motor starting requirements.

(a) Provide reduced-voltage motor starters or other methods to minimize generator voltage drop.

(5) Generator sets must be de-rated per the manufacturer's recommendation due to altitude and ambient temperature.

(6) Generators must have block size not to exceed 650kW.

(7) Connected Loads:

(a) Single Building: Size the generator set for 100 percent of the demand load plus 20 percent for future demand.

(b) Multiple Building Facility: Loads to be connected to Post generators must be approved by OBO/PDCS/DE/EE.

(8) Compounds with loads over 6 MVA, must have diversity for demands among building feeders and transformers making the actual maximum load on the generator system less than the sum of the multiple building demand loads. Generator block sizing may be considered larger than identified in OBO-ICS NEC 702.4 (B)(6).

Add the following sub articles to 702.4:

(C) Automatic Transfer Equipment. Where automatic Transfer equipment is used the generator must automatically start within 10 seconds and transfer all systems to backup power within 10 seconds of failure of the normal power supply for a single/dual generator system, or within 30 seconds for larger multiple generator systems.

(D) Generator Control Panel. Generator control panel must be mounted at 1220 mm AFF to center of LCD screen/control panel for legibility. Remote or adjustable unit is acceptable to meet height requirement. Alternate platform for legibility is acceptable.

Add the following sub articles 702.13 and 702.14:

702.13 Emergency Power Systems

(A) Emergency power is provided by end use equipment, in the form of battery back-up. Emergency power must be provided to the following systems:

(1) Fire Detection, Alarm and Supervisory System.

(2) Exit Signs. Emergency power must be provided for exit signs in accordance with OBO-ICS IBC Chapter 10.

(3) Means of Egress Illumination. Emergency power must be provided for exit signs in accordance with OBO-ICS IBC Chapter 10 and OBO-ICS NEC Supplement Article 410.

(4) Elevators. Fire service elevators and elevators that are part of an accessible means of egress in accordance with IBC Chapter 10. Standby power for elevators must be provided as set forth in OBO-ICS IBC Section 3003.1.

(5) Generator Louvers. Enable generator louvers to operate for fast start up by providing backup power or fail safe open for generator operation.

(6) Vehicle barriers and gates. Provide emergency power to perimeter vehicle barriers, gate actuators, and other active perimeter security devices.

702.14 Engine-Generator Sizing.

(A) Paralleled systems. Paralleled systems must be used for generator system loads at 650 kW and above.

(1) Reduced load operation. If the day/night or weekday/weekend power demand is less than 50 percent of one generator, provide a small unit sized for the light load operation.

(B) Prime power. Paralleled systems must be used for prime power generator supplied facility.

(C) Fire Pumps. Fire pumps must be diesel engine driven.

> **Exception.** The use of **e**lectric motor-driven fire pumps may be permitted only on a project-specific basis. Contractor must submit written justification for approval. Approval must be submitted to and approved by both OBO/PDCS/DE/EE and OBO/OPS FIRE. Electric motor driven fire pumps where specifically approved, must comply with OBO-ICS NEC Article 695.

(1) Temporary automatic load shedding may be utilized to accommodate the starting of electric motor driven fire pumps. Refer to classified criteria.

(2) Compound engine-generators must be sized to accommodate electric motor driven fire pumps including the locked-rotor ampere rating per NEC Article 695 Fire Pumps.

Add the following article:

ARTICLE 790
CONDENSATION PROTECTION

790.1 Space Heaters. Equipment subject to large swings of temperature and frequent de-energization must have thermostatically controlled space heaters to prevent condensation. The space heater power source must not depend primarily on the equipment served.

END OF CHAPTER NEC-7 AMENDMENTS

CHAPTER 8
COMMUNICATIONS SYSTEMS

ARTICLE 800
GENERAL REQUIREMENTS FOR COMMUNICATIONS SYSTEMS

Add the following to the end of paragraph in Article 800.1:

800 Part I. General.

800.1 Scope. Refer to OBO Telecommunications Code (OBO-OTC) for electrical power requirements for telecommunications equipment and rooms and spaces.

END OF CHAPTER NEC-8 AMENDMENTS

ANNEX H
ADMINISTRATION AND ENFORCEMENT

ARTICLE 80
GENERAL

Replace Annex H in its entirety with the following:

80.1 Title. These regulations shall be known as the *OBO Electrical Code* hereinafter referred to as "this code."

(1) This code incorporates by adoption the *2020 National Electrical Code (NEC)* of the National Fire Protection Association as amended by the OBO International Codes Supplements (OBO-ICS).

80.2 General. The provisions of Chapter 1 - Administration of the *OBO*-ICS IBC, apply to this code.
80.3 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

END OF NEC-ANNEX H AMENDMENTS

J.2.1

OBO Telecommunications Code Volume A

OBO OTC Volume A

FY26
October 1, 2025

Overseas Buildings Operations
U.S. DEPARTMENT of STATE

TABLE OF CONTENTS

OBO TELECOMMUNICATIONS CODE (OTC)

VOLUME A (*Unclassified)*

CHAPTER 1 SCOPE AND ADMINISTRATION (*Unclassified)*
101 Scope and General Requirements
102 Permits

CHAPTER 2 DEFINITIONS (*Unclassified)*
201 General
202 Definitions

CHAPTER 3 GENERAL REQUIREMENTS (*Unclassified)*
301 General
302 System Architecture
303 Electrical Requirements for Telecommunications
304 Lightning and Surge Protection
305 Telecommunications Grounding and Bonding
306 Common Telecommunications Requirements
307 Requirements for Corrosion Resistance
308 Requirements for Wireless Technology on Office Compounds
309 Prohibited Communication Capability for Devices on Office Compounds

CHAPTER 4 SERVICE ENTRANCE AND SITE DISTRIBUTION (*Unclassified)*
401 General
402 Requirements for Service from Local Service Provider
403 Telecommunications Demarcation Room
404 Telecommunications Site Distribution
405 Site Distribution Ducts and Cabling
406 Exterior Weatherproof Telephones

CHAPTER 5 TELECOMMUNICATIONS EQUIPMENT SPACES (*Unclassified)*
501 General
502 Enclosure of Telecommunications Equipment Spaces
503 Interior Requirements for Telecommunications Equipment Spaces
504 Telecommunications Grounding Bus Bar
505 General Connectivity
506 Telecommunications Service Entrance Facilities
507 Telecommunications Rooms

CHAPTER 6 GENERAL TELECOMMUNICATIONS CABLING FOR BUILDINGS (*Unclassified)*
601 General
602 System Requirements
603 General Cabling Requirements
604 General Backbone Cabling
605 UTP Backbone Cabling
606 Fiber Backbone Cabling

607 Coaxial Backbone Cabling
608 Horizontal Cabling
609 Cable Terminations and Terminators
610 Pathway Installation
611 Cable Administration

CHAPTER 7 TELECOMMUNICATIONS FOR SUPPORT BUILDINGS (*Unclassified)*
701 General
702 Compound Access Control Buildings
703 Recreation Facilities
704 Utility Buildings
705 Warehouses
706 Shops
707 Parking Structures
708 Commissaries

CHAPTERS 8-10 Reserved

CHAPTER 11 TELECOMMUNICATIONS FOR RESIDENTIAL BUILDINGS (*Unclassified)*
1101 General
1102 Telecommunications Services
1103 Sub-TSEF
1104 Distribution Devices
1105 Telecommunications Infrastructure
1106 Fixed Devices
1107 Outlet Requirements
1108 Cable Pathways
1109 Reserved
1110 Audio/Visual Cabling Systems and Outlets
1111 Door Chime and Intercom Systems
1112 Roof Penetrations
1113 Electrical
1114 Wireless Local Area Network Systems – Residential Off Office Compound

CHAPTERS 12-14 Reserved

CHAPTERS 15-20 See content under separate document OBO Telecommunication Code (OTC)-Vol B (SBU)

CHAPTER 21 REFERENCED STANDARDS*(Unclassified)*
Referenced Standards

END OF OTC TABLE OF CONTENTS – VOLUME A

CHAPTER 1
SCOPE AND ADMINISTRATION

SECTION 101
SCOPE AND GENERAL REQUIREMENTS

101.1 Title. This regulation consists of two volumes and is the *OBO Telecommunications Code (OTC)* hereinafter referred to as "this code." Where only one of the two volumes is intended, it will be referred to as OBO Telecommunication Code – Volume A (OTC-A) or OBO Telecommunication Code – Volume B (OTC-B). Unless called out specifically as a single volume, all references to OTC shall refer to both volumes

101.1.1 - The OTC consists of Volume A & B. Both Volumes shall be incorporated into OBO Telecom designs and during construction for all projects related to office buildings.

101.2 General. The provisions of Chapter 1 - Administration of the *OBO*-ICS IBC, apply to this code.

101.3 Scope. Design and construct the telecommunications installation for new office compounds and on-compound residential installations, including components, equipment, systems, cabling infrastructure and spaces in accordance with this code. Consult OBO-ICS IBC Chapter 1 - Administration for requirements related to other project types.

101.3.1 Off-compound requirements. The OTC applies in full to off-compound projects. As the AHJ, OBO/PDCS/DE/EE/Telecom can provide site-specific exceptions to the OTC, if applicable.

101.3.2 Other technology systems. Associated disciplines including but not limited to TSS, Fire Alarm, BAS, etc. are independent from Telecom. Telecom equipment, pathways and spaces shall be independent and separate from these disciplines.

101.3.2.1 Telecommunications. Telecommunications includes voice, data, unclassified DOS data (OpenNet), classified local area networks (CLAN), audio/visual systems, television, satellite, Spare 1 and Spare 2 systems, Wireless Local Area Network (WLAN), and all antennae systems. Application of Spare systems will be project and / application dependent.

PERMITS

102.1 Permits. The requirements for permits in OBO-ICS IBC Section 105 apply to this code.

END OF CHAPTER OTC-1

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms for the purpose of this code have the meanings shown in this chapter.

201.2 OBO terms and definitions. Refer to OBO-ICS IBC Chapter 2 for OBO definitions of terms used where not defined in this code. Where terms are defined here use the meaning ascribed to the terms in this code if different.

201.2 Terms not defined. Terms not defined by this chapter and code, have ordinarily accepted meanings as the context implies.

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the codes adopted by OBO, such terms shall have the meanings ascribed to them as in those codes.

SECTION 202
DEFINITIONS

Backbone Cabling. Backbone cabling system provides intra-building connections between the telecommunications rooms, equipment rooms, main terminal space and the Telecommunications Service Entrance Facility in the telecommunications cabling system infrastructure. Backbone cabling also extends between buildings in the compound environment (inter-building connections).

Bonding Backbone Conductor (BBC). When there are multiple telecommunications bonding backbones (TBBs), the BBC interconnects them through the associated busbars, either on the same floor in a multi-story building or in the same general area of a single-story building**.**

CLAN. See Classified Local Area Network.

Classified Local Area Network (CLAN). Refer to classified attachments for requirements.

Classified Computer Room (CCR). Refer to classified attachments for requirements.

Common Transmission Facility (CTF). Refer to classified attachments for requirements.

Consular Affairs Equipment Room (CAER) – A Telecommunications Equipment Room which houses the Consular queue management (Q-Flow) and Intercom systems This room contains both Telecommunications and AV infrastructure which must be designed and coordinated with each other.

Consular Audio System (Intercom and Paging). This system facilitates communication between the Consular Affairs staff and consular visitors related to the communication challenges associated with distance from staff, volume of visitors, hardline wall teller window interface, and inside/outside waiting areas. The system is integrated with the Consular Queue Management System.

Consular Queue Management System. The consular queue management system (Q-Flow) managed at Post by Consular Affairs (CA). The software and primary system equipment are Government-Furnished Government-Installed (GFGI) and Government-Furnished Contractor-Installed (GFCI) items.

Copper UTP. Copper unshielded twisted pair, Category X (or CAT X) cable.

Demarcation Room. Positive demarcation between the host country's local telecommunications utilities and the U.S. government-controlled building(s).

Distribution Device (DD). Distribution device - a manufactured and industry standard approved cross-connect facility for the termination and connection of outlet cables, distribution device cords and equipment cords within each residential unit. Under no circumstance shall a direct cable splice be considered a Distribution Device

Equipment Rooms (ER). Centralized spaces for telecommunications equipment, (e.g., servers, routers, radio connections, etc.), and transition points for internal communications and connectivity to off compound systems. Equipment rooms include Demarcation Room, office building TSEF, Sub-TSEFs, MTS, MTER, JUCR, CAER, Systems Rooms, CCR and RNER. Equipment rooms contain more complex processing electronic equipment than a Telecommunications Room.

Fiber Optics (FO). Long, thin strands of very pure glass arranged in bundles used to transmit light signals over long distances.

Fiber Optic Cable Set. A minimum of 12 strands of multimode fiber optic cabling.

Horizontal Cabling. Horizontal cabling is the portion of telecommunication cabling which extends from work area / telecommunication outlet connector to the telecommunication room.

Intermediate cross-connect. A secondary cross-connect in the backbone cabling. Typically located in the telecommunications room (TR).

Joint Unclassified Computer Room (JUCR) The Joint Unclassified Computer Room (JUCR) is a shared equipment room housing multiple tenant and Department of State computer servers and telecommunications equipment.

Main Telephone Equipment Room (MTER). The Main Telephone Equipment Room (also known as private branch exchange (PBX) room) contains the main telephone switching (voice over internet protocol (VoIP) equipment. It i the main cross-connect (MC) for all the voice backbone cables distributed with the compound including connectivity from the Demarcation Room.

Main Terminal Cabinets (MTC). Main Terminal Cabinets must be located within the JUCR. The cabinets provide cross-connections and routing from all equipment rooms, with the exception of the classified computer room(s) and Telephone Equipment Room, to all telecommunication rooms.

OpenNet. The Department of State internal network providing access to State-specific web pages, email, and other resources.

Outside Plant (OSP). Outside Plant Telecommunications Cabling includes the cabling installation between separate structures and includes the termination of connecting hardware at or within the structure.

Primary Bonding Busbar (PBB). The PBB serves as the dedicated extension of the building grounding electrode system for the telecommunications infrastructure. The PBB also serves as the central attachment point for the telecommunications bonding backbone(s) (TBB(s)) and equipment.

Private Branch Exchange (PBX). See Main Telephone Equipment Room.

Radio Network Equipment Room (RNER). The Radio Network Equipment Room (RNER) houses the HF/VHF/UHF base stations.

Residential Telecommunications Cabling. Any cabling installed in a residential unit (e.g., single family, multi-tenant, etc.) to provide telecommunications services to support telephone, television, data, audio, visual, and home automation.

Secondary Bonding Busbar (SBB). Common central point of connection for the telecommunications systems and equipment in the locations served by the telecommunications room or equipment room.

Sub-TSEF. Location where cables from the TSEF in the primary office building enter other buildings on compound.

Telecommunications Bonding Backbone (TBB). The TBB is a conductor that interconnects all secondary bonding busbars SBBs with the primary bonding busbar **(**PBB). The intended function of a TBB is to reduce or equalize potential differences.

Telecommunications Equipment Spaces. Generic term for any room containing telecommunications equipment including the ER, TR and MTER.

Telecommunications Service Entrance Facility (TSEF). Location where cables from the Demarcation Room and antennae enter the primary office building, and are distributed within the primary office building, and to other compound buildings via their sub-TSEFs.

Telephone Equipment Room. Renamed Main Telephone Equipment Room.

Telecommunications Room (TR). Provides a connection point between the backbone and horizontal cabling serving a single floor or a single tenant. Also used to connect to CCR's, Tenant Systems Rooms, or smaller outbuilding. TRs may also refer to equipment located in the same room with Sub-TSEF (Outbuildings & Residential buildings only).

Telephone Operators Room. The telephone operator's room (attendant console operator.)

Tenant Classified Computer Rooms. Refer to classified attachments for requirements.

Tenant Systems Rooms. Refer to classified attachments for requirements.

Unshielded Twisted Pair (UTP). A cable that contains one or more pairs of twisted cables without an metallic shielding. A cable that consists of 2 to 1800 unshielded twisted pairs surrounded by an outer jacket. The cable does not have an outer shield.

Very Small Aperture Terminal (VSAT). A satellite communications system that serves home and business users. See antenna schedule for locations of VSAT in office buildings.

Work Area Outlet (WAO). Work area outlet components extend from the telecommunication outlet connector end of the horizontal cabling system to the workstation equipment. WAO's include but are not limited to outlets which are located in offices, at workstations, functional spaces where work takes place such as TDY stations, warehouse cages/touchdown areas, guard stations as well as other areas which require telecommunications infrastructure.

END OF CHAPTER OTC-2

CHAPTER 3
GENERAL REQUIREMENTS

SECTION 301
GENERAL

301.1 Scope. The provisions of this chapter shall govern the general design and construction requirements for telecommunications systems.

SECTION 302
SYSTEM ARCHITECTURE

302.1 General system architecture. Provide a fully functional telecommunications infrastructure that includes both copper and fiber optic horizontal and backbone cabling.

302.2 Topologies. The system must utilize a hierarchical star topology for both unclassified and classified networks and allowing for future growth.

SECTION 303
ELECTRICAL REQUIREMENTS FOR TELECOMMUNICATIONS

303.1 Electrical systems. Design and construct electrical components, equipment, and systems in accordance with the OBO-ICS NEC.

303.1.1 Additional electrical requirements.

303.1.1.1 Dedicated power panel. Provide a dedicated power panel mounted in all telecommunications rooms (TR), Telecom Demarc, CAER and equipment rooms (ER) on the essential power system. Connect convenience outlets and each dedicated equipment cabinet to the dedicated power panel.

303.1.1.1.1 Utility loads. Utility loads (HVAC, lighting, etc.) are not permitted to be connected to the dedicated power panels.

303.1.1.1.2 Dedicated circuits for cabinets. Provide two dedicated circuits from the dedicated power panel to each telecommunication equipment cabinet.

303.1.1.2 Additional requirements. Refer to ANSI/TIA-569 for additional requirements.

303.1.1.3 A duplex receptacle outlet shall be provided within 300mm (12-in) of data/TV outlet.

303.2 Standby power. Provide the following at all telecommunications equipment and support systems:

303.2.1 UPS power. Provide UPS power for all telecommunications equipment and systems supporting telecommunications equipment.

303.2.1.1 Required locations for UPS. Provide a rack mounted UPS at the bottom of every CFCI equipment cabinet in all TR/ERs except the JUCR and MTER. The MTER UPS shall be coordinated with Reference drawing MTER Cabinet Front Elevation NOB T201. Refer to the Specification Division 263354 for additional UPS requirements.

303.2.2 Generator. Provide backup generator power for all telecommunications equipment and systems supporting telecommunications equipment.

303.3 Lighting. Provide the following at all telecommunications and equipment rooms.

303.3.1 General lighting requirements. Refer to ANSI/TIA-569 for telecommunications spaces light level requirement. Additionally, lights shall be designed such they are not directly above equipment cabinets/rows. Lighting fixtures shall be designed such that they provide illumination to the aisles between equipment cabinets/rows, and to the front /rear of cabinets. The minimum Lighting level shall be 500 lux at 1m above the finish floor.

303.3.2 Light fixture control. Control light fixtures by a wall-mounted switch located inside the room adjacent to the personnel access door.

303.3.3 Emergency lighting. Provide emergency lighting in all ERs.

303.4 Convenience outlets. Provide convenience AC duplex receptacles around the perimeter walls placed at 1.8-m (6-foot) intervals. Connect outlets to the dedicated power panel installed within telecommunications rooms (TR) and equipment rooms (ER) on the essential power system.

303.4.1 Outlet type. Provide U.S.A.-type (NEMA 5-20R and NEMA 6-20R) receptacles using local country/compound voltage/Hz (20 Amp, 120-volt, 60 Hz or 20 Amp, 220-240 V, 50 Hz).

303.5 Conduits and sizing of pathways. All conduits and sizing of the pathways must be in accordance with the National Electric Code (NFPA 70) and ANSI/TIA-569.

303.5.1 Empty conduits. Provide pull-strings in all empty conduits and pathways.

SECTION 304
LIGHTNING AND SURGE PROTECTION

304.1 Lightning and surge protection. Install primary protectors at each building entrance facility, as close as possible to the building ground in order to allow ground conductor connection at the same point as the building ground. Route grounding conductor as straight as possible to building ground.

304.1.1 Primary protectors. Install primary protectors immediately adjacent to exposed cable plant point of entry.

304.1.2 Primary and secondary protection. Both primary and secondary overvoltage protection must be OSP (outside plant) cable where exposed. Utilize secondary protection to protect equipment from currents exceeding 0.35 amperes (sneak currents). Comply with NFPA 70 Article 805 for primary and secondary surge protection requirements for communications circuits.

304.1.2.1 Protector Units. Provide a combined primary and secondary overvoltage and overcurrent protection in lieu of two protector fields to protect personnel and equipment.

304.1.2.2 Protector Panels. Provide in-service test points so that defective modules can be identified without disengaging a working circuit.

SECTION 305
TELECOMMUNICATIONS GROUNDING AND BONDING

305.1 Building telecommunications grounding and bonding. Provide telecommunications grounding and bonding to follow all telecommunications pathways throughout every building to reduce or equalize potential differences between systems.

305.1.1 Grounding and bonding systems. Design and construct grounding and bonding for components, equipment, and systems in accordance with the OBO-ICS NEC and ANSI/TIA 607.

305.1.2 Main building telecommunications ground. Provide a telecommunications grounding connection to the electrical service entrance ground connected to the electrical ground electrode system.

305.1.3 Telecommunications Bonding Conductor (TBC). Provide a **b**onding conductor between electrical service entrance ground and the secondary grounding busbar in the Demarcation Room. The TBC must bond the primary bonding busbar (PBB) to the service equipment (power) ground.

305.1.4 Primary Bonding Busbar (PBB). Provide a **t**elecommunications main grounding busbar in the NOB TSEF connected to the telecommunications bonding backbone. The PBB must be a dedicated extension of the building grounding electrode system for the telecommunications infrastructure.

305.1.5 Telecommunications bonding backbone (TBB). Provide continuous conductor(s) from the primary bonding busbar (PBB) to the secondary bonding busbars (SBBs) located in all telecommunications spaces (ERs, TRs, etc.). The TBB is a conductor that shall interconnect all SBBs with the PBB. The TBB must reduce or equalize potential differences. Do not use the TBB to function as a ground fault current return path. The TBB must originate at the PBB, extend throughout the building using the telecommunications backbone pathways, and connect to the SBBs in termination fields.

305.1.6 Secondary Bonding Busbar (SBB). Provide a secondary bonding busbar to function as a common central point for grounding and bonding connection in all telecommunications spaces (ERs, TRs, etc.) for equipment, electronic components, racks, cabinets, metallic raceways, conduits, etc. via the telecommunications bonding backbone conductor (BBC). The SBB must be the bonding connection point for telecommunications systems and equipment in the area served by a termination field. Cabinets, racks, and other enclosures shall have their own dedicated bonding conductor to the SBB, PBB or Telecommunications Equipment Bonding Conductor (TEBC).

305.1.7 Backbone Bonding Conductor (BBC). Provide backbone bonding conductors where there are multiple TBBs, in order to interconnect them through the associated busbars. Locate BBCs on the same floor in a multi-story building or in the same general area of a single-story building.

305.1.8 Testing of grounding system. Test entire grounding system in accordance with OBO requirements.

305.1.9 Rack Bonding Busbar (RBB). Provide RBBs for each cabinet/rack inside each TR, ER, etc.... Provide homerun bonding conductor (minimum size is 16mm^2 - #6 AWG) from each RBB to SBB. Daisy-chaining of these conductors is not allowed.

SECTION 306
COMMON TELECOMMUNICATIONS REQUIREMENTS

306.1 Prohibited operations and / or equipment. Do not install operations and / or equipment not related to the direct support of telecommunications equipment spaces, to enter into, or pass through the telecommunications equipment spaces.

306.2 Location. Do not locate telecommunications equipment spaces in areas subject to water infiltration, including but not limited to, basements, adjacent to water storage tanks or swimming pools, restrooms/bathrooms, etc. Locate TRs and ERs to allow for expansion; do not locate in areas that limit access and expansion such as elevators, building core (e.g., toilet rooms, etc.), exterior walls, or other fixed building elements.

306.3 Elevator telephones. Provide a standard voice telephone cable to the elevator machine equipment for voice service in all elevator cabs.

SECTION 307
REQUIREMENTS FOR CORROSION RESISTANCE

307.1 General. Provide corrosion protection on a site-specific basis. Refer to OBO-ICS IBC Appendix W for requirements.

307.1.1 Subsurface. Provide cathodic protection for underground distribution systems based upon the corrosivity of the soils on steel and the soil resistivity.

SECTION 308
REQUIREMENTS FOR WIRELESS TECHNOLOGY ON OFFICE COMPOUNDS

308.1 Wireless Local Area Network (WLAN) on office compounds. WLAN systems installed on office building compounds must comply with the requirements of this section. Refer to OBO OTC Section 1114 for residential requirements when not located on office compounds.

308.1.1 Scope. Provide WLAN system to all buildings on the compound(s) including office buildings, CACs, warehouse, utility, shops, residential buildings, parking garages, pool deck/outdoor assembly areas, outdoor representational spaces, public meeting/presentation areas, etc. in accordance with the requirements of this code.

308.1.2 Off compound residential requirements. Refer to OBO OTC Section 1114 for residential requirements when not located on office compounds. Also comply with **308.6.**

308.1.3 Requirements contained elsewhere in OBO codes. Refer to OBO-ICS IBC Chapter 4, OBO-ICS IMC Chapter 3 and OBO-ICS NEC Chapter 1 for other requirements.

308.2 System designer requirements. System design must be performed by an individual with professional certification as an Ekahau Designer (ECSE) or higher and with a minimum of 5 years of experience with installation and analyzing wireless network infrastructure using Ekahau Pro.

308.3 Permitted radio frequency bands for operation. Wireless access points are only permitted to operate on the following US Federal Communications Commission - Unlicensed National Information Infrastructure (UNII) bands:

1. UNII Low
2. UNII 1
3. UNII Mid
4. UNII 2A and 2B
5. UNII Worldwide/UNII 2C/UNII 2 (extended channels), UNII 2e
6. UNII Upper
7. UNII 3
8. DSRC/ITS/UNII 4 (Dedicated Short-Range Communications/Intelligent Transport System)

308.4 Permitted devices. GFE, Internet of things (IoT) devices such as light fixtures, refrigerators, microwave ovens, etc. When this equipment has Wi-Fi or Bluetooth capability, it shall be disabled in CAA spaces.with Bluetooth capability shall be disabled in CAA spaces

Exception. Mechanical equipment, components, and devices are prohibited from being wireless capable. Refer to OBO-ICS IMC Chapter 3.

308.5 Installation of Wi-Fi capable equipment and devices. Disable Wi-Fi prior to installation within all Wi-Fi - enabled installed equipment (e.g., light fixtures, etc.) or devices (e.g., refrigerators, microwaves, etc.).

308.6 Signal performance. Signal performance is limited to Institute of Electrical and Electronics Engineers (IEEE) 802.11a/n/ac (5GHz) technology to minimize Radio Frequency (RF) leakage outside of the intended wireless coverage area.

Minimum signal strength. Minimum signal strength must be -67dbm (for Primary and Secondary signals) in PAA and GWA. Additionally provide:

a. 25 dB Signal to Noise Ratio.

b. 24 Mbps Data Rate with 50% or better channel utilization rate.

c. 100% network health in required coverage areas (i.e. zero network issues).

d. Use Cisco model 9130 WAP's to model all predictive designs.

e. Do not place WAPs in stairwells or inside restrooms to meet minimum signal strength requirement.

SECTION 309
PROHIBITED COMMUNICATION CAPABILITY FOR DEVICES ON OFFICE COMPOUNDS

309.1 Prohibited Communication Capability for Devices. Bluetooth, any wireless technology or near-field communication enabled equipment, or devices are strictly prohibited within CAA. These types of equipment may be permitted within the GWA only if the wireless technology can be turned off by the user.

END OF CHAPTER OTC-3

CHAPTER 4
SERVICE ENTRANCE AND SITE DISTRIBUTION

SECTION 401
GENERAL

401.1 Scope. The provisions of this chapter shall govern the design and construction of service entrances and site distribution.

401.2 General. Select site cables to comply with the following:

401.2.1 Cable selection factors. Select cables based on all aspects of cable operation, the installation environment, including corrosion, ambient heat, rodent attack, pulling tensions, potential mechanical abuse, and seismic activity.

401.2.2 Cathodic protection for corrosivity. Provide cathodic protection for underground distribution systems based upon the corrosivity of the soils on steel and the soil resistivity.

401.3 Additional standards. Refer to Chapter 21 for additional standards with additional requirements.

SECTION 402
REQUIREMENTS FOR SERVICE FROM LOCAL SERVICE PROVIDER

402.1 Site connection to local service provider service. Furnish and install conduit duct bank and manholes from the telecommunications demarcation room to the local service provider's (LSP) pathway located at or near the U.S. government property line. The service provider shall access the manhole outside the compound to reach the demarcation room (i.e., CMPD TSEF). The service provider's cabling shall enter the demarcation room exclusively through an exterior perimeter pathway. Conduit with LSP cabling shall not transit (other than the above location) the compound without approval from OBO/PDCS/DE/EE.

402.1.1 Service-provider incoming cables. The service-provider must provide cabling from the street to the Demarcation Room and terminate copper on lightning protectors.

SECTION 403
TELECOMMUNICATIONS DEMARCATION ROOM

403.1 Service entrance room. Space for local service provider must be located at the compound perimeter in the telecommunications demarcation room, also referred to as the telecom demarcation room.

403.1.1 Service entrance location. Compound telecommunications demarcation room must be located at the CAC (typically the Service CAC located closest to the local service provider's (LSP) pathway located at or near the U.S. government property line.

Exception. Compound telecommunications service entrance facility may be located at other locations on the compound where directed by OBO/PDCS/DE/EE-Telecommunications.

403.2 Access to telecommunications demarcation room. Locate personnel access to the compound telecommunications Demarcation Room on the compound side of compound perimeter.

403.2.1 Local service provider access to the telecommunications demarcation room. LSP technical personnel are required to be escorted to the telecommunications demarcation room to service and maintain their interface equipment, patch panels, UTP terminating blocks, lightning protectors and other equipment.

403.2.2 Access. The door to the demarcation room shall open into a common corridor. Access to the door shall not require transiting through any utility, electrical or mechanical space.

403.3 Roof penetration. Provide one 50mm (2 inches) penetration with sleeve entering the telecommunications demarcation room from the roof area.

SECTION 404
TELECOMMUNICATIONS SITE DISTRIBUTION

404.1 Distribution from telecommunications demarcation room to the compound. Distribution from the telecommunications demarcation room to the compound must be routed to the NOB TSEF and then from the NOB TSEF to other compound buildings.

Exceptions.

1. Where directed otherwise by OBO.

SECTION 405
SITE DISTRIBUTION DUCTS AND CABLING

405.1 Site distribution ducts. Install all outside plant (OSP) telecommunications cable in dedicated concrete encased duct banks for new construction. Telecommunication cables and electrical cables are prohibited from sharing common ducts. Comply with the BISCI Outside Plant Design Reference Manual (OSPDRM) for outside plant telecommunications cabling pathways design requirements.

Exception. At existing installations currently utilizing direct burial of telecommunications distribution cables, direct burial of new cables may be permitted where approved by OBO/PDCS/DE/EE and only where there is a minimum separation of 300 mm (12 inches) from electrical cables.

405.2 Combining telecommunication and electrical ducts. Dedicated telecommunications ducts may be combined with dedicated electrical ducts within the same duct bank only where the dedicated ducts are separated by not less than the distances required in Table 603.1.4.

405.3 Manholes and handholes. Provide dedicated manhole and handhole access to telecommunication site distribution systems. Telecommunication distribution and electrical distribution are not permitted to share common manholes and handholes. Refer to OB-ICS IBC Chapter 34 for requirements for locking manhole covers and OBO ICS NEC Chapter 1 for Manhole/Handhole space.

405.3.1 Manhole/Handhole locations and quantities. The maximum spacing between manholes/handholes shall not exceed 182m (600 ft). Manholes/handholes shall be located at vertical transition points and such that there is not more than 180-degrees of cabling/pathway bend offset between pull points.

405.4 Conduits. Provide conduits within underground ductbanks connecting all buildings.

405.5 Site distribution cabling. Provide continuous cabling (without cable breaks or splices) from the Demarcation Room to the NOB TSEF. Provide installation complying with ANSI/TIA Standards 568.0 and 758.

405.5.1 OSP data backbone cabling. All OSP data backbone inter-building cabling must be multi-mode fiber optic. Where the length of the run exceeds the requirements for multi-mode fiber optic, provide single-mode fiber optic.

405.5.1.1 OSP cabling type and size. OSP cabling must consist of UTP, coaxial and fiber optic cabling between TSEFs (to include the CMPD TSEF and individual building TSEFs). The primary compound service tie from the CMPD TSEF to the main building TSEF must consist of X pairs of Cat 3 UTP, X number of coaxial cables, and X strands of MM/SM fiber optic cabling.

405.5.2 OSP voice backbone cabling. OSP voice backbone cabling must be a combination of multi-pair UTP CAT3 complying with ANSI/TIA Standard 568.2 and fiber optic cables complying with ANSI/TIA Standard 568.3 for inter-building and intra-building.

405.5.2.1 OSP voice cabling type and size. Required OSP cabling between the Demarcation Room and TSEF must match size and type of tie cables installed in office building from the TSEF to the Telephone Equipment Room.

405.5.3 Conduit pathway from Demarcation Room to a manhole outside the perimeter wall. Provide a conduit pathway from the Demarcation Room to a manhole usually located approximately 20 meters (65.6 feet) from the perimeter to allow connection to service providers cabling.

405.5.3.1 Pathway enclosure. Provide ductbank with a minimum of four 100-mm (4 inch) conduits, encased in concrete and buried.

405.5.4 Conduit pathway from Demarcation Room to TSEF. Provide a conduit pathway from the Demarcation Room to the principal office building.

405.5.4.1 Pathway enclosure. Provide ductbank 100-mm (4 inch) conduits, encased in concrete and buried.

405.5.5 Conduit pathway from TSEF to other compound buildings. Provide conduit pathways for telecommunication services to all other compound buildings originating from the principal office building TSEF.

405.5.5.1 Pathway enclosure. Provide ductbank 100-mm (4 inch) conduits, encased in concrete and buried.

405.5.6 Grounding. Bond all OSP telecommunications copper or metal sheathed cables on lightning protectors in accordance with OBO-OTC Chapter 3.

SECTION 406
EXTERIOR WEATHERPROOF TELEPHONES

406.1 General. Location and placement of exterior weatherproof telephones must be coordinated with and approved by OBO.

406.1.1 Required locations. Locations include but are not limited to Service CAC, Main CAC, Principal office building main and service entrances, office building roof entrance(s), warehouse entrance, parking garages on each level and MSGR main entrance. Provide other locations as directed by OBO

406.1.2 Mounting. Mount all weatherproof phones within a weatherproof enclosure.

406.2 Accessibility. Mounting, installation and devices must be accessible. Refer to OBO-ICS IBC Chapter 11 for Architectural Barrier Act (ABA) compliance.

406.3 Connectivity. Provide a CAT X voice cable from the nearest TR to each exterior telephone location using OSP-rated cable.

END OF CHAPTER OTC-4

CHAPTER 5
TELECOMMUNICATIONS EQUIPMENT SPACES

SECTION 501
GENERAL

501.1 Scope. The provisions of this chapter govern the design and construction of all telecommunications equipment spaces.

501.2 Access control. Provide access control, room construction, doors, door controls and locks to limit access to authorized personnel to all telecommunications equipment spaces complying with OBO-ICS IBC Chapter 34. Consult OBO-ICS IBC Chapter 34 for GWA/ and LAA provisions.

501.3 Prohibited operations and / or equipment within telecommunications equipment spaces. Refer to OBO OTC Chapter 3 for requirements.

501.4 Environmental control. Provide environmental control for all telecommunications equipment spaces 24 hours per day, seven days per week. Refer to OBO-ICS IMC Chapter 3 for requirements.

501.5 Access to telecommunications spaces. Access to telecommunications equipment spaces via stairs is not permitted.

SECTION 502
ENCLOSURE OF TELECOMMUNICATIONS EQUIPMENT SPACES

502.1 Scope. Enclose all interior telecommunications equipment spaces in accordance with this section.

502.2 Extent of enclosing partitions. Provide full-height enclosing partitions extending from structural slab to the underside of the structure above for all partitions enclosing telecommunications equipment spaces.

502.3 Door swing. Doors shall swing out into a common corridor only, unless restricted by OBO Fire Code. No doors permitted on the exterior of buildings. Refer to OBO-ICS IBC Chapter 10 for requirements.

502.4 Smoke and fire-rated construction. Provide smoke and fire-rated construction where required complying with OBO-ICS IBC Chapter 7 and ANSI/TIA-569 including at all conduit penetrations and cable raceway penetrations.

502.5 Room Construction. Irregular shaped rooms are prohibited. Rooms shall be shaped per the SRP-M. All other shapes must receive prior written concurrence form OBO/PDCS/DE/EE.

SECTION 503
INTERIOR REQUIREMENTS FOR TELECOMMUNICATIONS EQUIPMENT SPACES

503.1 Interior requirements. Provide the following at all telecommunications equipment spaces.

503.1.1 Minimum clear height. Minimum clear height within ERs must be 3050 mm (10 feet) between the finished floor and the lowest point of the structure.

503.1.1.1 Ceilings. Do not install any type of suspended ceiling in telecommunications equipment spaces; leave open to structure.

503.1.2 Minimum Working Space - The working space between the leading edge (front, rear and open side) of an equipment cabinet/telecommunications equipment and the nearest obstruction (wall, conduit, junction box, etc.) shall not be less than the distance reflected in the SRP-M. Where not prescriptive, the space shall be no less than 914mm (36 inches).

503.1.3 Interior columns. Interior of telecommunications equipment spaces must be free of columns. At perimeter wall of spaces, columns are not permitted to reduce required clearances within equipment room or reduce usable wall space for required equipment.

503.1.4 Interior finishes. Finishes for telecommunications equipment spaces, must be dust-resistant. Finishes must be light in color to enhance room lighting.

503.1.4.1 Prevention of dust and moisture migration. Apply concrete sealer to all exposed concrete including walls, floors and exposed structure to prevent dust and moisture migration.

503.1.4.2 Floor covering. Provide static-control resilient floor covering on the floors of all telecommunications equipment spaces. Refer to OBO-ICS NEC Chapter 2 - Non-conductive matting.

503.1.4.3 Other surfaces. Paint all other exposed surfaces (e.g. walls, exposed structure, etc.). Color: white for light reflectance.

503.1.5 Plywood surfaces. A minimum of two walls in telecommunications equipment spaces must be covered with 20 mm 0.75 inch) thick, void-free (A/C grade), fire-retardant-treated plywood.

503.1.5.1 Plywood finish. Paint all plywood.

Exception. Do not paint over stamps indicating the fire rating of the plywood. Stamps indicating the fire rating of the plywood must always remain visible.

503.1.5.2 Plywood support. Plywood support must comply with the following:

1. Mounting hardware used for the fire-rated plywood must be hot-dipped zinc-coated galvanized steel, or stainless steel.

2. Design and install mounting hardware to support the applied static and dynamic loads from the telecommunications components. Refer to the OBO-ICS IBC for structural requirements.

3. Install mounting hardware must be flush with plywood surface so that it does not interfere with the mounting of telecommunications cabling and equipment.

SECTION 504
TELECOMMUNICATIONS GROUNDING BUS BAR

504.1 Telecommunications grounding bus bar. Provide a secondary bonding busbar in telecommunications equipment spaces that complies with the material, size, and hole-spacing requirements for a SBB as defined in ANSI/TIA-607.

504.1.1 Connections to telecommunications grounding bus bar. Provide connections from the secondary bonding busbar to all of the electronic components, racks, cabinets, metallic raceways, conduits, etc. in the room. Cabinets, racks, and other enclosures shall have their own dedicated bonding conductor to the SBB or PBB.

504.1.1 Grounding and bonding general. Refer to OBO OTC Section 305 Telecommunications Grounding and Bonding.

SECTION 505
GENERAL CONNECTIVITY

505.1 General connectivity. Provide a voice outlet for a wall phone at all telecommunications equipment spaces.

SECTION 506
TELECOMMUNICATIONS SERVICE ENTRANCE FACILITIES

505.1 General. Provide a Telecommunications Service Entrance Facility or Sub-TSEF at every building in accordance with this section.

505.1.1 Sub-Telecommunications Service Entrance Facility (Sub-TSEF). Provide sub-TSEFs at all support buildings (CACs, MSGQ, UTL, WHE, SDA, REC, etc.), representational residences, and staff housing.

505.1.1 1 Sub-TSEF requirements. Sub-TSEF may be a dedicated space, room or NEMA box as directed by OBO/PDCS/DE/EE-Telecommunications. Provide Sub-TSEF to house and terminate all outside plants (OSP) cables from the NOB TSEF or from ground-mounted antenna(s), Sub-TSEF may also be utilized as a telecommunications equipment room in support buildings.

505.1.2 Telecommunications Service Entrance Facility (TSEF) for Office Buildings. Provide a Telecommunications Service Entrance Facility at every office building. Refer to Chapter 16 for requirements.

SECTION 507
TELECOMMUNICATIONS ROOMS

507.1 Telecommunications Room (TR). Telecommunications rooms must comply with the requirements of this section.

507.1.1 Office building telecommunications rooms. Refer to Chapter 16 for telecommunications rooms in office buildings.

507.2 Minimum number of telecommunication rooms. Provide a minimum of one telecommunications room for each non-controlled access area on every floor.

507.3 Vertical configuration of telecommunication rooms. TRs must be stacked one above another in multi-story buildings in order to allow vertical runs for conduit risers.

507.3.1 Vertical protection of cabling. Provide protected vertical chase(s) between any telecommunications rooms.

507.4 Maximum permitted distance from telecommunication rooms to work area. Maximum horizontal distance from telecommunications room to work area served must not exceed 80 m (262 feet). Provide additional telecommunications rooms as required to accommodate maximum distance on a floor.

END OF CHAPTER OTC-5

CHAPTER 6
GENERAL TELECOMMUNICATIONS CABLING FOR BUILDINGS

SECTION 601
GENERAL

601.1 Scope. The provisions of this chapter shall govern the Installation and testing of telecommunications cabling infrastructure in buildings.

601.1.1 Residential building requirements. Refer to Chapter 11 for residential building telecommunications cabling requirements.

601.1.2 Additional requirements. Refer to ANSI/TIA Standard 568.1 for additional requirement.

601.1.2.1 Additional office building requirements. Refer to Chapter 17 for additional office building telecommunications cabling requirements.

SECTION 602
SYSTEM REQUIREMENTS

602.1 System requirements. Provide a structured cable system utilizing hierarchical star topologies for unclassified networks.

602.1.1 System elements. The Cable system includes the following elements:

1. Telecommunications service entrance facilities (TSEF) and Sub-TSEFs.
2. Telecommunications rooms (TR).
3. Joint Unclassified Computer Room (JUCR).
4. Main Terminal Cabinets (MTC).
5.. Main Telephone Equipment Room (Previously called PBX)
6. Consular Affairs Equipment Room (CAER).
7. Work areas (WA).
8. Pathways.
9. Termination fields.

.

602.1.2 Separate backbone cables for each system. Provide separate backbone cables for each system (e.g., Voice, OpenNet, Spare, Spare 2, Local Service Provided (LSP), and TV).

602.1.3 Element links. Electronically link all elements via the structured cabling system.

602.1.4 Common distribution. Voice, data, WLAN and television cables are permitted to be installed in the same raceway, cable tray and/or conduit. Voice, data, and television cables must not share the same cable sheathing.

SECTION 603
GENERAL CABLING REQUIREMENTS

603.1 Cabling requirements. Provide the following.

603.1.1 Structured cabling system. Provide for independent networks using common building pathways.

603.1.2 Transmission media. Provide a combination of SM and MM fiber optics (FO), copper CATx, F/UTP, and 75 ohm coaxial cables.

603.1.3 Minimum bandwidth. Provide the following minimum bandwidths.

603.1.3.1 Backbone cables. Provide backbone cables capable of supporting 10G bps applications.

603.1.3.2 Horizontal cables. Provide horizontal cables capable of supporting 1G bps applications.

603.1.4 Minimum separation distance for unshielded copper communications cabling from sources of EMI. Provide minimum separation for all unshielded copper communications cabling from sources of EMI in accordance with Table 603.1.4.

Table 603.1.4

Minimum Separation Distance for Unshielded Copper Communications Cabling from Possible Sources of EMI

	<2 kVA	2-5 kVA	>/= 5KVA
Unshielded power lines or electrical equipment in proximity to open or nonmetal pathways	127mm (5-in)	305mm (12-in)	610mm (24-in)
Unshielded power lines or electrical equipment in proximity to a grounded metal conduit pathway	127mm (5-in)	305mm (12-in)	610mm (24-in)
Power lines enclosed in a grounded metal (or equivalent shielding) in proximity to a grounded metal conduit pathway	--	152mm (6-in)	305mm (12-in)
Electrical motors and transformers	--	--	1220mm (48-in)
Fluorescent light fixtures	--	--	305mm (12-in)

603.1.5 Future expansion for all system networks. Provide future expansion for all system networks.

603.1.5.1 Capacity expansion categories. Capacity for two future expansion categories must include:

1. Rapid increase of bandwidth requirements
2. Increase in personnel.

603.1.5.2 Future expansion requirement. Design and install backbone cabling and associated system elements (pathways, termination fields, etc.) to accommodate 50 percent future expansion. Design the horizontal cabling scheme to accommodate 25 percent future expansion for associated system elements (pathways, terminations, OpenNet client switches, etc.).

SECTION 604
GENERAL BACKBONE CABLING

604.1 Backbone cabling. Backbone cabling must comply with the requirements of this section.

604.2Future expansion. Design and construct all backbone cabling and associated accessories (e.g., punch blocks, patch panels, media converters, switches, rack size) to accommodate 50 percent future expansion.

604.3 Media types. Backbone cabling must be comprised of UTP, fiber optic and coaxial for distribution of voice, data, television, and audio/visual.

604.4 CAA backbone cabling patch panels. Do not combine backbone cabling supporting CAA spaces on the same patch panel as cabling supporting non-CAA spaces.

604.4.1 Separate patch panels serving CAA from non-CAA serving patch panels by 150mm (6 inches) minimum.

SECTION 605
UTP BACKBONE CABLING

605.1 UTP backbone cabling. UTP backbone cabling must comply with the requirement of this section.

605.2 Cable terminations. Terminate all voice UTP backbone in rack-mounted copper patch panels. Terminate one pair per port on pins 4 & 5.

605.3 Voice UTP backbone cable sizing. Provide a twenty-five pair CAT 5 cable to all TRs in the building from the PBX.

Exception. For TRs Located in CAA, provide a twenty-five pair CAT 5 cable from the CAA TR near the PCC to all additional TRs in the CAA.

SECTION 606

FIBER BACKBONE CABLING

606.1 Fiber backbone cabling. Fiber backbone cabling must comply with the requirements of this section.

606.2 Cable termination. Terminate all fiber backbone in rack-mounted fiber optic patch panels.

606.3 Prohibited network connections. Do not combine different network systems into a single network. Backbone systems must be independent and must not be shared or be combined into a single network.

606.4 Size of fiber backbone cable required. Provide the number of fiber backbone strands resulting from the total number of data patch panel ports in accordance with the following formula:

$$\text{Number of backbone strands required}^{**} = (N \div 24) \times 2^{*}$$

N = total number of patch panel ports

* Indicates 50 percent increase for future growth.

** Round any resulting number up to the next 12-strand cable size.

SECTION 607
COAXIAL BACKBONE CABLING

607.1 Coaxial backbone cabling. Coaxial backbone cabling must comply with the requirements of this section.

607.3 Cable termination. Terminate coaxial backbone cable in a signal splitter in each telecommunications room (TR), Public Affairs Room, and video control room.

607.4 Splitter(s). Provide a signal splitter to pass the signal to other telecommunications rooms and to serve designated rooms.

607.5 Signal amplifiers. Provide signal amplifiers as necessary to sustain required signal levels.

607.6 Cable termination. Provide cable terminator plugs on all unused ports of each splitter/tap.

SECTION 608
HORIZONTAL CABLING

608.1 Horizontal cabling. Horizontal cabling must comply with the requirements of this section.

608.1.1 Topology. Install horizontal cabling in a star topology.

608.1.2 Maximum horizontal link distance. The maximum horizontal link distance must not exceed 80 m (262 feet).

608.1.3 Cable types. Provide one of the following for the horizontal cable system:

1. Category X-four-pair 100-ohm unshielded twisted pair UTP, F/UTP, SF/UTP.
2. Minimum of two strands or more multi-mode (MM) fiber optic cable.
3. 75-ohm coaxial cable.

608.1.4 Maximum length of horizontal channel. For each horizontal channel, the total length allowed for the horizontal channel to the Work Area including patch cords must not exceed 100 m (328 feet).

608.1.5 Patch cords. All patch cords must meet or exceed the performance requirement in ANSI/TIA 568.2 for copper and ANSI/TIA568.3 for fiber.

608.1.6 Common requirements for horizontal cabling.

608.1.6.1 Coordinate locations of Work Area outlets with the furniture plans.

608.1.6.2 Voice. Provide one Category X UTP cable from the TR to each Work Area outlet location. Each cable must be terminated in a RJ-45 modular jack on both ends using a T568A wiring scheme.

608.1.6.3 Unclassified Data (OpenNet). Provide one Category X UTP cable from the TR to each Work Area outlet location. Each cable must be terminated in a RJ-45 module jack on both ends using a T568A wiring scheme.

608.1.6.3.1 Printer infrastructure. Provide one typical work area outlet to support a shared network printer for every five Work Area locations. Coordinate shared network printer locations with furniture layout and SRP.

608.1.6.4 Spare and Spare 2. Provide two Category X UTP cable from the TR to each Work Area outlet location. Spare 2 is not required in the GWA. Each cable must be terminated in a RJ-45 module jack on both ends using a T568A wiring scheme. These cables will be re-configured for special configurations and

applications where identified in the project-specific requirements. See project specific tenant systems room requirements for possible uses.

608.1.6.5 Television. Provide one Cat 6 F/ UTP from the TR to each television location. Terminate each F/UTP cable in a RJ-45 module jack on both ends using a T568A wiring scheme. In the TR, terminate cables on patch panels within the Spare or Spare 2 cabinets. Group terminations for television together on the patch panel. Distribute the F/ UTP cables to a single outlet box at the designated locations. Provide a TV outlet in all branch chief offices, conference rooms, cafeterias, waiting areas, lobbies etc. Coordinate all TV outlet locations with the interior design of the project, and site-specific requirements.

608.1.6.6 Audiovisual. Provide STP Cat 6 shielded cabling for audiovisual infrastructure cabling. The cables color must be gray. Alternate colors may be submitted to OBO/PDCS/DE/EE via the COR for approval.

608.1.6.7 WLAN (Wi-Fi). Provide one (1) Cat 6a cable from the TR to each WLAN outlet location. Each cable must be terminated on Cat 6a RJ-45 modular jacks utilizing the TIA568-A wiring scheme. WLAN outlets shall be installed at a maximum height of 3m (10') above the finished floor.

SECTION 609
CABLE TERMINATIONS AND TERMINATORS

609.1 Cable terminations and terminators. Cable terminations and terminators in building spaces must comply with the requirements of this section.

609.1.1 Voice terminations in Telecom Rooms and Telephone Equipment Room (PBX). Provide voice cabinets with patch panels for all voice terminations unless instructed otherwise. All horizontal CAA voice cables shall be terminated inside CAA TR.

609.1.2 Terminations for copper UTP. Provide the following.

609.1.2.1 Module jacks. Provide RJ45 module jacks for each four-pair cable terminations using termination configuration T568A at both Work Area outlets and TR.

609.1.2.2 Patch panels. Provide a RJ-45 patch panel in the TR to terminate all cables from the Work Area.

609.1.2.3 Angled jacks at modular systems furniture. Provide angled RJ-45 module-angled jacks in faceplates including in the modular systems furniture.

609.1.2.4 Dust covers. Provide dust covers at outlets in Work Area to prevent dust from entering the terminations until users are ready to install patch cables.

609.1.3 Terminations for fiber optic cable. Provide the following.

609.1.3.1 Connectors for fiber optic terminations. Provide connectors for all fiber optic terminations, in accordance with *ANSI/TIA* 568.3 at both ends with protective covers, unless directed otherwise.

609.1.3.2 Rack mounted fiber optic patch panels. Provide rack mounted fiber optic patch panels for multi-strand terminations with fully populated pre-assembled non-angled multi-mode Duplex SC style adapter plates in the Telecommunications Equipment Spaces.

609.1.3.3 Angled terminations in faceplates. Provide angled terminations in all faceplates including modular systems furniture.

609.1.3.4 Dustcovers. Provide dust covers at outlets in Work Area and TRs to prevent dust from entering the terminations until users are ready to install patch cable.

609.1.4 Terminations for Coaxial Cable. Provide 75-ohm F-series or N-type connectors for cable terminations unless directed otherwise by OBO. Provide signal splitters with terminator caps in the telecommunications rooms.

SECTION 610
PATHWAY INSTALLATION

610.1 Pathway Installation. Office building pathways must comply with the requirements of this section.

610.2 Backbone pathways. Backbone pathways must comply with the requirements of this section.

610.2.1 Risers. Provide multiple riser conduits between telecommunications rooms. Riser conduits must not be less than 50 mm (2 inches) in diameter.

610.2.2 Prohibited location. Do not install backbone pathways within or under the ground floor slab.

610.2.3 Inner duct for fiber optic cables. Provide an inner duct to protect fiber optic cables.

610.3 Horizontal pathways. Horizontal pathways must comply with the requirements of this section.

610.3.1 Main pathway routing. Route main pathway(s) above common corridors and open office spaces. The contractor shall provide and coordinate ceiling access panels with the interior design. Provide access panel at a maximum of 15m apart and at 90-degree conduit bends.

610.3.2 Prohibited routing. Main pathway(s) prohibited from transiting from one suite to another.

610.3.3 Work Areas. Provide the following for Work Areas.

610.3.4.1 Outlet boxes - general. Provide each Work Area with an appropriate-sized outlet box capable of providing termination for all cables designated for that location.

610.3.4.2 Outlet boxes and faceplate sizing. Size outlet boxes and faceplates for the typical voice, data, spare, and DIN Work Area locations to accommodate expansion to seven cables per location.

610.3.4.3 Pathway sizing. Size pathways in accordance with fill ratio requirement in ANSI/TIA-569.

610.3.5 Television termination. Terminate television distribution to a standard size outlet box.

610.3.6 Bend radius. Do not exceed bend radius of the cables to ensure optimum and uncompromised cable performance.

610.3.7 Transitions from the cable tray to the Work Area drops. Make transitions from the cable tray to the Work Area drops using conduit in the wall cavity. J-hooks may be used to connect the cable tray to the cable drop only when plenum-type cable is used.

SECTION 611
CABLE ADMINISTRATION

611.1 Cable administration. All cable administration must comply with the requirements of this section.

611.1.1 Administration of the telecommunications infrastructure. Administration of the telecommunications infrastructure must include documentation, (e.g., labels, records, drawings, reports, work orders) of cables, termination hardware, patching and cross-connect facilities, pathways, equipment, and telecommunications

spaces. The cabling administration system shall comply with the requirements in ANSI/TIA-606, current revision, for a Class 3 infrastructure system.

END OF CHAPTER OTC-6

CHAPTER 7
TELECOMMUNICATIONS FOR SUPPORT BUILDINGS

SECTION 701
GENERAL

701.1 Scope. Provide telecommunications for support buildings or functional areas in combined buildings in accordance with this section.

701.1.1Applicability. Support buildings / functions include Compound Access Control (CAC) facilities, Recreational Facility, Utility Building, Parking Structures, and Warehouse (including shop, motor pool, and break room functions) and commissary functions.

701.2 General. Refer to Chapter 3 for the following general requirements:

1. General electrical requirements for telecommunications.
2. Lightning and surge protection.
3. Common telecommunications requirements.
4. Telecommunications grounding and bonding.

701.3 Site distribution. Refer to Chapter 4 for site distribution to support buildings**.**

701.4 Telecommunications equipment spaces. Refer to Chapter 5 for requirements for equipment spaces in support buildings**.**

701.4.1 Cabinets. Provide fully enclosed full-size, freestanding lockable equipment cabinets.

701.4.1 Support buildings with fewer than forty-eight outlet locations. In support buildings that have fewer than 48 outlet locations, it is acceptable to provide full-size, freestanding, lockable, two-compartment co-location cabinets.

701.4.2 Voice and data terminations in co-location cabinet. Do not combine voice and data terminations in the same compartment of the co-location cabinet.

701.4.3 Support buildings with voice, data, and spare systems. If the support building requires voice, data and spare systems terminations, provide a minimum of three full-size cabinets or as directed by. OBO/PDCS/DE/EE.

701.5 Break rooms. Provide voice, WLAN and television services in break areas.

701.6 Backbone services. Provide backbone cabling from the TSEF, Main Telephone Equipment Room (PBX), and MTC for general and special telecommunication services required in support buildings.

701.6.1 Voice networks. Voice networks from the primary office building to the support buildings must originate from the Main Telephone Equipment Room (PBX). Note: WLAN shares the voice backbone.

701.6.2 Data networks. Data networks from the primary office building to the support buildings must originate from the MTC.

701.7 Backbone cabling. Provide the following cabling to support buildings:

701.7.1 Voice cabling. Telephone cabling must be a combination of multi-pair UTP and fiber optic cables.

701.7.2 Data cabling. Data cabling must be optical fiber. Provide additional fiber backbone cables to support spare or other network in addition to ULAN as required.

701.7.3 Television cabling. Television cabling must be coaxial and/or SM fiber based on local service provider requirements and cable distance.

701.7.4 Audio/visual cabling. Provide audio/visual cabling meeting the requirements of the audio/visual device(s) served and the manufacturer's recommendations.

701.8 Outlets for support buildings.

701.8.1. Provide WLAN, voice, and data outlets as required. Provide Spare outlets if building supports spare systems.

701.8.2 Common areas. Provide outlets for WLAN, voice and television. Quantity of outlets and their exact location for WLAN must be based on WLAN design heatmap. WLAN cables must terminate in the voice cabinet.

701.8.3 Electric Vehicle (EV) Charging Stations. EV charging stations may require an Ethernet connection for network operations and updates. Exact requirements of the EV chargers will be site specific and depend on the EV equipment manufacturer. The following provisions shall govern the design and construction of EV charging infrastructure when a network connection is required for operation:

701.8.4 One (1) two-strand MM fiber for the primary connection and one (1) two-strand MM fiber as spare from the MTC/JUCR shall be installed for each EV charging station. Refer to Division 27 Specification 271305 for approved fiber types.

701.8.5 A cabinet in the MTC/JUCR shall be designated for EV cabling and the associated equipment.

Note – for projects where there is no MTC/JUCR and/or a lack of space in the existing MTS/JUCR, post-specific design requirements shall be developed by the Contractor and approved by OBO/PDCS/DE/EE Telecommunications.

EV charging network cabling and associated equipment shall not share cabinet space with Department of State voice or data networks.

701.8.6 Media converters are required for each EV charger, one in the MTC/JUCR and one in the NEMA enclosure. See Division 27 Specification 272129 for media converter requirements.

701.8.7 A NEMA rated enclosure near each charging station is required. The enclosure shall be sized to accommodate:

1. fiber termination
2. media converter
3. power outlet for the media converter

701.8.8 Patch cables connect the EV charger to the media converter. See Division 27 Specification 271505-1.10 for EV charger patch cable requirements.

SECTION 702
COMPOUND ACCESS CONTROL BUILDINGS

702.1 Compound Access Control buildings networks. Provide infrastructure to support WLAN, voice and data networks to all CACs.

702.2 Required locations. Provide services to each workstation in the guard booth, each guard inspection station within the pedestrian screening area, and visa pass back booth within CAC buildings. Provide voice outlets in support spaces (e.g., TRs, Sub-EC rooms, etc.).

SECTION 703
RECREATION FACILITIES

703.1 Recreation building networks. Provide infrastructure to support voice, data, television, WLAN and audio/visual systems within recreation buildings and outdoor gathering areas.

703.2 Required locations. Provide networks to common areas, dining and group social areas, and ATMs. Locate voice outlets in support spaces (e.g., TRs, Sub-EC rooms, etc.).

703.3 Poolside communications. Provide a minimum of one (1) telephone/voice only outlet in a weatherproof enclosure within view of the pool area. Provide WLAN coverage and a minimum of one (1) TV outlet in the pool area and in/around any associated structure (i.e., pool house/gazebo/pavilion/etc.) Provide power receptacles near the WLAN and TV outlets for device power. All outlets shall be protected in weatherproof enclosures or outlet covers as needed for the environment in which they are installed.

SECTION 704
UTILITY BUILDINGS

704.1 Utility Buildings networks. Provide infrastructure to support voice, WLAN and data within utility buildings.

704.2 Required locations. Provide networks to all work areas, generator rooms, switchgear rooms, at fire pump rooms, and in each workshop. Locate voice outlets in support spaces (such as TRs, Sub-EC rooms, etc.).

SECTION 705
WAREHOUSES

705.1 Warehouse networks. Provide cabling infrastructure to support voice, WLAN and data within warehouse buildings.

705.2 Required locations. Provide networks to work areas to support the inventory operations. Provide voice outlets in support spaces (e.g., TRs, Sub-EC rooms, etc.).

SECTION 706
SHOPS

706.1 Shops networks. Provide infrastructure to support voice, WLAN and data within shops buildings.

706.2 Required locations. Provide networks in each shop.

SECTION 707
PARKING STRUCTURES

707.1 Parking Structures networks. Provide infrastructure to support voice, WLAN and data in the parking structure.

707.2 Required locations. Provide networks in locations required below.

707.2.1 Attendant booth. Provide voice, WLAN and data services in each attendant booth.

707.2.2 Parking structure stairways and exits. Provide voice services to each stairway main landing and/or exit on each floor.

707.2.3 Parking Spaces. Provide WLAN as required by the design heat map for complete coverage of all parking spaces or as directed by the COR with input from OBO/PDCS/DE/EE.

SECTION 708
COMMISSARIES

708.1 Commissary networks. Provide infrastructure to support voice, data, WLAN and television in Commissaries.

708.2 Required locations. Provide networks in locations required below.

708.2.1 Office areas. Provide voice, data, WLAN and television outlets in commissary office(s).

708.2.2 ATM. Provide data outlets at ATM.

708.2.3 Other locations. Provide outlets at other locations such as cash registers and as identified on a project-specific basis.

END OF CHAPTER OTC-7

CHAPTER 11
TELECOMMUNICATIONS FOR RESIDENTIAL BUILDINGS

SECTION 1101
GENERAL

1101.1 Scope. The provisions of this chapter shall govern the design and construction of telecommunications for residential buildings and associated areas.

1101.1.1 Applicability. Residential buildings include CMRs/DMRs, executive residences, staff officer residences, Staff Diplomatic Apartments (SDAs) and MSGRs.

1101.1.2 Required systems. Provide voice, data, WLAN, television, and audio/visual systems.

1101.2 General. Refer to Chapter 3 for the following general requirements:

1. General electrical requirements for telecommunications.
2. Lightning and surge protection.
3. Common telecommunications requirements.
4. Telecommunications grounding and bonding.

1101.3 Site distribution. Refer to Chapter 4 for site distribution.

1101.4 Telecommunications equipment spaces. Refer to Chapter 5 for requirements for telecommunications equipment spaces.

1101.5 Backbone cabling from primary office building. Provide backbone cabling from the primary office building TSEF or other locations approved by OBO/PDCS/DE/EE for general and special telecommunication services requirements.

1101.5.1 Data services. Provide data services from the primary office building to the residential buildings originating from the JUCR via the TSEF or other locations approved by OBO/PDCS/DE/EE.

1101.5.2 Voice services. Provide voice services from the primary office building to the residential buildings originating from the Main Telephone Equipment Room via TSEF or other locations approved by OBO/PDCS/DE/EE.

1101.6 Cabling. Provide the following cabling to residential buildings:

1101.6.1 Voice cabling. Voice cabling must be copper UTP and optical fiber.

1101.6.2 Data cabling. Data cabling must be both copper UTP and optical fiber.

1101.6.3 Television cabling. Television cabling must be copper CAT X UTP, optical fiber and coax. as approved by OBO/PDCS/DE/EE.

1101.6.4 Audio/visual cabling. Audio/visual cabling must be in accordance with manufacturer's recommendations.

1101.6.5 WLAN cabling. WLAN cabling shall be copper; one CAT 6A yellow cable per outlet.

1101.7 Outlets

1101.7.1 Bedrooms. Provide voice, data and television outlets in each bedroom.

1101.7.2 Common areas Provide outlets for satellite and cable television, voice and data.

SECTION 1102
TELECOMMUNICATIONS SERVICES

1102.1 Cabling. Provide minimum infrastructure to residential units in accordance with Table1102.1 – Minimum Telecommunications Services to Residential Units.

TABLE 1102.1 – MINIMUM TELECOMMUNICATIONS SERVICES TO RESIDENTIAL UNITS

Service		Cable Type	Cable Color	Connector Color
Voice	One 4-pair UTP	Category X	Blue	Blue
Data	One 4-pair UTP	Category X	Green	Green
Television	One 4-pair UTP	Category X	Purple	Purple
	One	Coax		
WLAN	Two 4-pair UTP	Category 6A	Yellow	Yellow

SECTION 1103
SUB-TSEF

1103.1 Sub-TSEF. Provide a Sub-TSEF for every residential building, single-family dwelling, townhouse block and multi-family building.

1103.1.1 Locate the Sub-TSEF in accordance with applicable local regulations and access provider's requirements.

1103.2 Maximum total length of cabling. Maximum length of cabling must not exceed the following:

1103.2.1 Maximum distance from the Sub-TSEF to the most remote outlet. The length of cabling from the Sub-TSEF to the most remote outlet must not exceed 80m (262 feet).

SECTION 1104
DISTRIBUTION DEVICES

1104.1 Distribution devices. Provide a distribution device (DD) inside each residence. Access providers will utilize the distribution device as the main connection point to the residence, to facilitate moves, additions to, and other changes of cabling within the residence. Distribution device may consist of a passive cross connect facility or an active cross-connect facility or both, based upon site-specific conditions and access provider's requirements.

1104.1.1 Space required. Provide space required for the distribution device based upon the number of telecommunications outlet/connectors installed in the residence. Refer to ANSI/TIA 570 for guidance and information on planning the wall space required for the distribution device and associated equipment.

1104.1.2 Location. Install distribution device in location that is accessible for maintenance and minimizes the length of outlet cables.

1104.1.3 Mounting. Flush-mount distribution device and associated equipment within wall construction.

Exception. Surface mounting is acceptable at existing construction and with approval of OBO/PDCS/DE/EE Telecommunications.

1104.1.4 Surge protection for distribution device. Provide space adjacent to or within the distribution device for the installation of a surge protection device for each copper cable entering or leaving the building.

1104.1.5 Interconnections or cross-connections. Use patch cords or jumpers for interconnections or cross-connections at the DD. For each channel, allow a total of 10 m (33 feet) for equipment cords and patch cords or jumpers.

1104.1.6 Outlet cables. Provide the transmission path from the DD to the telecommunications outlet/connector.

1104.1.6.1 Maximum length of outlet cables. The length of each outlet cable must not exceed 80m.

1104.1.7 Outlets and connectors. The telecommunications outlets and connectors must be compatible with the media supported at that location.

1104.1.8 Accessory devices. Where required by network or services, provide application-specific accessory devices**.** (e.g., splitters, amplifiers, and impedance matching devices) at the telecommunications outlet/connector.

1104.1.8.1 Accessory device locations. Locate application's specific accessory devices external to the telecommunications outlet/connector.

1104.1.8.1 Equipment cords. Provide equipment cords to extend from the telecommunications outlet/connector to the terminal/equipment connector or from the DD to electronic equipment.

SECTION 1105
TELECOMMUNICATIONS INFRASTRUCTURE

1105.1 Telecommunications infrastructure. Provide telecommunications infrastructure to support housing on a residential or office compound in accordance with this section.

1105.1.1 Topology. Coaxial, UTP and fiber optic backbone cabling must utilize star topology.

1105.1.2 Backbone spaces. Associated backbone spaces including the entrance facility, equipment room and floor serving terminal space.

1105.1.4 Telecommunications rooms. Provide a minimum of one telecommunications room per floor where backbone cables terminate. Provide additional telecommunications rooms as required to meet maximum allowable distance identified in Chapter 5.

1105.1.5 Other functional spaces. In other functional spaces where requirements are not included in this section, provide infrastructure in accordance with ANSI/TIA 570.

1105.1.6 Backbone pathways. The backbone pathways include intra-building backbone pathways and inter-building telecommunications backbone pathways.

1105.2 Telecommunications site distribution for townhouses. Provide the following:

1105.2.1 Site distribution in accordance with OBO OTC Chapter 4.

1105.2.2 Combined telecommunications room, and Sub-TSEF in residences. In single family townhouses, Telecom room, and Sub-TSEF may be located together in a single space.

1105.2.3 Sub-TSEF. Sub-TSEF in accordance with Chapter 5 at each contiguous multi-residential townhouse block. Sub-TSEF must connect to a distribution device located in each residence.

1105.3 Audio/visual for representational housing. Provide audio/visual cabling system in the representational portion at each representational residence. Audio/visual cabling system must include:

1. TVs.
2. Speakers.

SECTION 1106
FIXED DEVICES

1106.1 Fixed Devices. Fixed devices such as intercom, security system keypads, sensors and smoke detectors may be hard-wired to a fixed device controller.

1106.2 Topology. Use star, loop or daisy chain topology for fixed devices according to the manufacture's recommendations.

SECTION 1107
OUTLET REQUIREMENTS

1107.1 Telecommunications outlet requirements. Provide outlets within each residence in accordance with this section.

1107.1.1 Residence outlet locations. Provide voice, data, WLAN and television outlet(s) for each of the following rooms or functions within each staff or representational residence:

1. Family room / great room / living room
2. Kitchen
3. Each bedroom
4. Den / study
5. Staff Offices, service areas, etc.

1107.1.2 MSGR outlet locations. Provide voice, data, WLAN and television outlets cabling from the MSGR Sub-TSEF and any additional Telecom Rooms as required to each of the following rooms or functions within the MSGR:

1. Living room / recreation room
2. Each bedroom
3. Exercise room
4. Staff Offices, kitchens, service areas, etc.

1107.1.3 Single family / staff housing minimum number of outlets. Provide a minimum of one outlet location within each required room or function.

Exceptions.

1. Provide additional outlet(s) as required so that the maximum distance from an outlet along the floor line in any wall space does not exceed 7.6 m (25 feet), measured horizontally, from an outlet location in that space.

2. Provide sufficient number of telecommunications outlets to prevent the need for extension cords.

1107.1.4 Cable terminations at outlets. Provide the following terminations at outlets:

1107.1.4.1 Voice cabling terminations. Provide 8P8C RJ-45 compatible terminations.

1107.1.4.2 Data cabling terminations. Provide 8P8C RJ-45 compatible terminations.

1107.1.4.3 Television cabling terminations. Provide RJ-45 terminations and coax with F type terminations or as otherwise required on a site-specific basis.

1107.1.4.4 WLAN cabling terminations. Provide 8P8C RJ-45 compatible terminations.

1107.1.5 Outlet mounting height. Mount outlet in accordance with Architectural Barriers Act (ABA) compliance. Coordinate and mount power and telecommunications outlets at the same height within a space.

SECTION 1108
CABLE PATHWAYS

1108.1 Cable pathways. Install cable pathways fully concealed within the wall / partition / floor / ceiling construction from the distribution device to the outlet-mounting box. All telecom and AV cabling behind drywall or hard ceiling must be installed in conduit.

Exception. At existing construction, refer to ANSI/TIA 569 for other types of pathways.

SECTION 1109
RESERVED

SECTION 1110
AUDIO/VISUAL CABLING SYSTEMS AND OUTLETS

1110.1 Audio/visual cabling systems. Provide the following audio/visual cabling system and outlets at every residence.

1110.1.1 Antenna cabling pathways. Provide pathways and cabling for satellite television services in each residence from the roof of the residential building to the telecommunications space serving the residence(s).

1110.1.2 Cable television outlets. Provide cable television outlets in the following locations:

A. All Bedrooms.

B. Kitchen.

C. Family/Great Room.

D. Den/Study/Library.

E. Dining Room

F. Exercise Room/Gym

G. Sitting Room

H. Alternate Command Center

1110.2 Audio/visual for representational spaces. Provide audio/visual cabling system in the representational portion at each representational residence. Audio/visual cabling must support:

1. Music system.
2. Cable television.

SECTION 1111
DOOR CHIME AND INTERCOM SYSTEMS

1111.1 Door chime and intercom system. Provide door chime and intercom system at the main entrance at each staff and representational residence:

1. The door chime must be audible in all areas of the residence, including pool/patio at representational residences.
2. Provide a local control panel on each level of the residence.
3. At representational residences, provide a control panel in the pool/patio area and staff breakroom.
4. The residents must be able to communicate with visitors at the door from each level.
5. Remote door release functions are not permitted at any control panels.

SECTION 1112
ROOF PENETRATIONS

1112.1 Roof penetrations. Provide one (1) dedicated 52mm (2") conduit with weather head to the roof from the nearest TR. Provide one (1) dedicated 52mm (2") conduit with weather head to the roof from the Alternate Command Center (ACC), if present. These apply to all multi-tenant residential buildings (MSGR, SDA, CMR, DCMR). Also, provide a 2m antenna mast on a parapet mount or 1m x 1m square antenna pad.

Note - ACC requirements are site specific. The contractor shall develop these in coordination with direction from OBO/PCDS/DE/EE/CBT.

1112.1.1 Additional roof penetration. Provide two 52mm (2 inch) conduit with weather head to the roof from the MSGR Emergency Response Room (ERR). Provide a 53mm (2 inch) diameter, 2m (6.6 foot) antenna mast on a parapet mount or 1m (3.3 foot) x 1m (3.3 foot) square antenna pad. Refer to OBO standard detail in J.3.5.6 AS-3a Dual Purpose Pivot Base Mount – Pedestal or Wall Mount.

SECTION 1113
ELECTRICAL

1113.1 Electrical. Provide the following:

1113.1.1 Power for the distribution device. Provide an electrical outlet within the distribution device. Outlet must be a dedicated non-switchable duplex outlet rated at the host country's nominal voltage. The mounting height of the electrical outlet should be appropriate for the distribution device and associated equipment.

1113.1.2 Power at each telecommunications outlet. Provide an electrical power outlet convenient to each telecommunications outlet in the residence. Locate the power outlet in close proximity to the telecommunications outlet to eliminate the need for a power extension cord.

1113.1.3 Mounting height. Mount power and telecommunication outlets at the same height.

SECTION 1114
WIRELESS LOCAL AREA NETWORK SYSTEMS – RESIDENTIAL

1114.1 Wireless Local Area Network (WLAN) systems for all residential buildings. WLAN systems installed on residential buildings must comply with the requirements of this section.

1114.2 System designer requirements. System design must be performed by an individual with professional certification as an Ekahau Designer (ECSE) or higher and with minimum 5 years of experience with installation and analyzing wireless network infrastructure using Ekahau Pro.

307.3 Permitted radio frequency bands for operation. Wireless access points are only permitted to operate on the following US Federal Communications Commission - Unlicensed National Information Infrastructure (UNII) bands:

1. UNII radio bands for 2.4 and 5 GHz for off compound residences
2. UNII radio bands for 5 GHz for on-compound residences.

END OF CHAPTER OTC-11

CHAPTER 21
REFERENCED STANDARDS

2101.1 General. Standards within this section and within other chapters of the OBO Telecommunications Code reference latest adopted edition as of the contract award date for the project. These standards apply to all chapters of the OBO Telecommunications Code where applicable.

ANSI/TIA

ANSI/TIA Standard 526-7 - Measurement of Optical Power Loss of Installed Single-mode Fiber Cable Plant

ANSI/TIA Standard 526-14 - Optical Power Loss Measurement of Installed Multi-mode Fiber Cable Plant

ANSI/TIA Standard 568.0 - Generic Telecommunications Cabling for Customer Premises

ANSI/TIA Standard 568.1 - Commercial Building Telecommunications Infrastructure Standard Part 1: General Requirements

ANSI/TIA Standard 568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standard

ANSI/TIA Standard 568.3 - Optical Fiber Cabling and Components Standard

ANSI/TIA Standard 569 - Telecommunications Pathways and Spaces

ANSI/TIA 570 - Residential Telecommunications Infrastructure Standard

ANSI/TIA Standard 598 - Optical Fiber Cable Color Coding

ANSI/TIA Standard 606 - Administration Standard for Commercial Telecommunications Infrastructure

ANSI/TIA Standard 607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises

ANSI/TIA Standard 758 - Customer-Owned Outside Plant Telecommunications Infrastructure Standard

ANSI/BICSI

ANSI/BICSI N1, Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure

BICSI

BICSI Telecommunications Distribution Methods Manual (TDMM)

IEEE

IEEE C2 - National Electrical Safety Code

ISO/IEC

ISO/IEC-1 1180 Information Technology -Generic Cabling for Customer Premises and all addenda

NFPA

NFPA 70 National Electrical Code as amended by OBO

END OF CHAPTER OTC-21