COLLIER COUNTY FACILITIES MANAGEMENT DIVISION

VERTICAL STANDARDS
FOR
COLLIER COUNTY GOVERNMENT BUILDINGS

Revised March 10, 2016
The most recent version of this document can be found at:
http://bit.ly/CCFM_Vertical_Standards

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CONTACT INFORMATION

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Collier County Facilities Management Division

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REFERENCED COLLIER COUNTY DOCUMENTATION

For the convenience of the Design Professional / Contractor, the Collier County documentation referenced in the Vertical Standards can be found at http://bit.ly/CCFM_Vertical_Standards .

DIVISION 1 – GENERAL REQUIREMENTS

010000 – GENERAL PROVISIONS

A. The Collier County Division of Facilities Management (CCFM) is assigned the responsibility of publishing building standards that are to be followed by all Divisions and design teams for new buildings, repairs, remodels, and modernizations. Any exceptions to these standards must be approved in writing by CCFM. All construction design drawings are to be approved by CCFM prior to commencement of the project. The Division responsible for the construction of the project will invite the CCFM to visit the site during the construction phase to insure that the County Standards are being followed.

B. These guidelines shall be considered minimum standards which do not relieve the Design Professional or Contractor from mandatory code compliance or coordination with specific project requirements. These standards may be used only as the basis for specifications written for specific County projects. No portion of this document may be copied and used as the sole specification for any project.

C. Currency: The "Vertical Standards for Collier County Government Buildings" document is **valid until six (6) months after the latest revision date** indicated on the top of Page 1. After six (6) months has passed from the latest revision, it is the responsibility of the Design Professional/Contractor to request or locate the latest version. While Collier County reserves the right to revise and enforce the guidelines discussed in this document at any time, it will be the responsibility of the County to notify the Design Professional/Contractor if they are required to adhere to the latest revision prior to the six (6) month expiration date.

D. Green Design: The Design Professional shall incorporate sustainable design features into all new projects and major renovations. These design features must include: Bicycle racks, bus shelters when appropriate, operable windows when appropriate, energy efficient appliances and equipment, placement of trees to reduce solar heat gain, orientation of structures to reduce solar heat gain, structural shading whenever practical, and other similar energy saving features.

E. Design Professional will design to a "Green Standard", minimally to a "certified green" level. Design Professional shall deliver contract documents including design and specifications for LEED certified projects(s) when required by the RFQ, preliminary design program, or contracts. LEED target level (gold, platinum, etc.) and specific recommended LEED points shall be reviewed with

and approved by Facilities prior to completion of required written design program.

010020 – SPECIAL DESIGN REQUIREMENTS

A. The Design Professional shall complete a Project Data Form for each project. The Project Data Form shall include the following information:

1. Name of Project
2. Address or Location of Project
3. Enclosed S.F. Area Tabulation listing all floors and total
4. Project Budget
5. Summary of Program Requirements
6. Project Checklist

The Project Checklist must be reviewed with the CCFM Project Manager. A copy of a sample Project Data Form and Checklist is attached to the end of the Vertical Standards Document, and may be expanded as needed to suit the project. The Project Data Form must be submitted to CCFM with a written Program for each project. The form shall be updated at the completion of Schematic Plans, Design Development Plans, Construction Documents, and Closeout Documents.

B. All new public safety facilities (EMS, Fire, Sheriff, Designated Shelters, Public Utilities, Emergency Management, etc.) shall be designed to meet the following minimum standards:

1. All public safety building structures shall be designed to withstand wind pressures resulting from not less than 140 mph winds (fastest mile), or 160 mph 3-second gust.

2. Components, cladding, doors, windows, and opening protection coverings used at new public safety buildings shall be designed to withstand wind pressures resulting from not less than 140 mph winds (fastest mile). All openings shall be protected to withstand impacts from wind-borne debris in accordance with FBC section 1606.1.4 except test or design velocities shall be increased 25%.

3. The finish floor elevation of all public service buildings, including vehicle bay areas, shall be not less than 12" above the base flood elevation established by FEMA unless specifically approved otherwise by Facilities.

4. The first floor elevation of all enclosed portions of public service buildings used for offices, habitable areas, or essential equipment and maintenance areas shall be raised or flood-proofed to a height not less than 36" above the base flood elevation established by FEMA.

5. The Contractor shall furnish the County a signed and sealed Flood Elevation Certificate certifying the finished floor elevations for all new construction and leased property.

C. Communications (IT): All networked equipment must follow the Collier County Information Technology Division (CCIT) standards as discussed in **Division 27 – Communication**. Networked security and building automation equipment must also follow the standards discussed in **Division 28 – Networked Security & Automation Devices**.

D. Johnson Controls is the County approved sole source provider for Pegasys P2000 and Metasys building automation control systems. ** All items to be provided by Johnson Controls (JCI) shall be colored RED. **

E. *Building Automation System*: Johnson Controls Metasys system shall be provided in all new buildings, subject to a case-by-case review to be performed by CCFM, which will consider building size and location. See **Section 255000 – BUILDING AUTOMATION CONTROLS** for further details.

F. *Fire Department Lock Box*: A Fire Dept. approved lock box shall be installed in close proximity to the front door.

G. *Access Controls*: Johnson Controls P2000-compatible system shall be installed on new buildings constructed as directed by CCFM staff. See **Section 291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS)** for further details.

H. *Emergency Assistance Phones*: Provide emergency/assistance phones where designated by CCFM – Building Automation Supervisor (or designee). See **SECTION 294001 – EMERGENCY CALL BOXES** for further details.

I. *Video Surveillance (CCTV)*: Each building will have appropriate security camera coverage as directed by CCFM. See **SECTION 292300 – CCTV VIDEO SURVEILLANCE** for further details.

J. *Uninterrupted Power Supply (UPS) Systems*: When required on a project, UPS' shall be monitored with existing software in the CCFM Operations Center. Monitoring shall be compatible with the Johnson Controls Metasys system. See **Section 255000 – BUILDING AUTOMATION CONTROLS** for further details.

K. Commercial recycling is mandatory in Collier County. To that end, any area that would generate recyclable materials should have sufficient space to place a suitable container to handle the type and quantity of waste generated. Typical examples would be large trashcan near copiers and a metal / glass / paper

separator in break or lunch rooms, etc. Design Professional shall consider locations of trash receptacles, recycle bins, and dumpsters to facilitate ease of use.

L. Design Group shall provide a color rendering for building projects of $1,000,000 or larger, unless directed otherwise by FM staff. Rendering shall be matted and framed to match existing projects.

1. Frame size: 24” x 36”
2. Frame finish: Chrome, polished face, brushed sides
3. Matt color: Match existing, unless directed otherwise by FM staff
4. Provide digital copy of rendering, 600 dpi, in TIF, BIM, and CAD format.
5. Deliver rendering and digital copy to CCFM prior to completion of Construction drawings.

014200 – REFERENCED CODES AND STANDARDS

A. All buildings must be designed to meet all ADA standards as they apply to government buildings.

1. FM policy encourages user-friendly design with accessibility features above the minimum level of standards established by the ADA.

a. Provide automatic door openers at main entrances of new and renovated public buildings, ie. Tax Collector, Elections, etc.

b. Provide areas of refuge at each stairs.

B. All work installed is to comply with the latest Florida Building Code and all Federal, State, and Collier County Ordinances and Codes legally adopted by the authorities having jurisdiction, including applicable appendices and editions. In case of differences between these Codes, the most stringent shall govern.

C. All work shall comply with applicable portions of the Referenced Standards listed in the FBC including but not limited to AAMA, ACI, AISC, ANSI, ASCE, ASHRAE, ASTM, FM, GA, OSHA, SJI, LEED, USGBC, ADA, IES, and UL standards.

D. All work shall comply with the latest edition of all adopted **Collier County Ordinances** and **Land Development Codes**.

E. It is the responsibility of the Design Professional to contact the appropriate Authority having Jurisdiction (AHJ) to confirm adopted rules, codes, editions, and subsequent amendments, revisions and/or additional codes and ordinances.

F. Provide all documents required for permit applications including but not limited to:

1. Fire Protection Plan Submittal, required by Collier County Fire Official.

2. Building permit application checklist.

017700 – CLOSEOUT DOCUMENTS

A. Contractor shall provide 2 copies of Closeout Documents at the time of final completion for review at least five (5) days prior to application for final payment. Closeout Documents include all warranties, user's manual, written maintenance instructions for all materials and equipment, and Record Documents. All materials except as-built plans shall be organized by specification section number and bound in 3-ring binders and electronic format as specified in Sections 017839 and 017823.

017839 – PROJECT RECORD DOCUMENTS

A. Record Documents include as-built plans, supplemental drawings and diagrams, as-built specifications, approved submittals, and records of all changes, including but not limited to Addenda and Change Orders.

B. Upon submittal for permitting, Design Professional shall provide (1) CD/DVD containing Floor Plan drawing(s) in AutoCAD format (DWG Files) to CCFM.

C. The Contractor shall maintain and regularly update 'as-built' drawings and shop drawing/submittal file indicating exact locations, material, equipment, etc., as installed. Include locations of buried sleeves, hidden piping and conduits, sizes, etc. not specifically shown on the Drawings.

D. Keep one set of record documents at the site for the duration of construction. Do not use record documents for daily construction use. Clearly identify, date, and initial all changes with a red pencil on the plans, specifications, and submittals. Transfer all changes to the final as-built documents at the completion of construction.

E. Contractor shall provide two (2) sets of final as-built drawings and two (2) CD/DVD's containing a set of final as-built drawings in PDF format upon completion of work. Deliver as-built drafting and CD/DVD's to FMS Design Professional prior to application for final Payment.

F. Upon approval of Record Documents received from Contractor, the Design Professional shall update the Floor Plan(s) to include as-built information.

Provide one (1) CD/DVD with AutoCAD file of revised Floor Plan(s) to FM prior to close-out of contract.

017823 – OPERATION AND MAINTENANCE DATA

A. Prior to Contractors application for final payment, Contractor shall provide manufacturers operation and maintenance manuals for all equipment, fixtures, and all materials requiring maintenance as part of the Closeout Documents. Provide one (1) set in 3-ring binder(s) and two (2) CD/DVD copies in PDF format. Each section should include a table of contents/index that lists documents, systems, equipment spare parts, product data (model and serial numbers, styles, sizes, etc.).

DIVISION 2 – EXISTING CONDITIONS

022600 – HAZARDOUS MATERIAL ASSESSMENT

A. Unless indicated otherwise for renovation projects, a hazardous material report may be provided by an independent firm currently under a continuing services contract with the County.

023200 - GEOTECHNICAL REPORTS

A. Geotechnical report may be provided for the Contractors use, but is not a guarantee or warranty of subsurface conditions.

024200 – SALVAGE

A. Unless indicated otherwise as salvage material, items indicated or scheduled for demolition shall become property of the Contractor and shall be removed from the jobsite.

DIVISION 3 – CONCRETE

030000 – GENERAL

A. ACI, CRSI, WRI, FBC and Division 1 requirements apply to all concrete work.

B. Testing: Unless specifically indicated otherwise in the contract documents, the Contractor shall provide an adequate allowance for the services of a licensed materials testing laboratory to measure slump and test compressive strength of concrete used in footings, slabs, and beams. Provide tests daily for each batch mix and as required by Code, Building Official, and Contract Documents.

Concrete not meeting specified strength requirements shall be removed and replaced.

030010 – DESIGN REQUIREMENTS

A. Floor slabs shall be designed not less than 8” above finish grade.

1. All floor slabs shall be designed for not less than 125 psf live load.

2. IT room floors shall be designed for not less than 200 psf live load.

B. Delegated Engineering; Structural components such as precast panels shall be designed and sealed by a Structural Engineer licensed in the State of Florida. All shop drawings shall be reviewed and approved by the Design Professional of Record prior to fabrication.

033000 – CAST-IN-PLACE CONCRETE

A. Comply with ACI 318 standards. Ready-mix concrete is to comply with ASTM C94.

1. Do not place concrete more than 90 minutes after batch mix at the plant, and do not place concrete more than 60 minutes after batch mix when the temperature exceeds 90d F.

2. Do not use concrete mix containing fly-ash in floor slabs or walkways.

3. Do not add water to concrete on-site. Field modifications to concrete mix are not allowed. Concrete watered-down on-site shall be removed.

B. All slabs shall be finished to a tolerance of not over 1/4" depressions in 10'-0" in any direction when checked with a 10' straightedge. Interior slab control joints may be sawcut or tooled.

C. Provide diagonal reinforcing in floor slabs at all reentrant corners. Cure all poured concrete to minimize cracking.

033010 – EXTERIOR CONCRETE SLABS AND WALKWAYS

A. All exterior concrete slabs and walkways shall receive a heavy broom finish texture to provide a slip resistant surface. Broom texture shall be perpendicular to the direction of travel. There shall be no steps in the accessible route from accessible parking stalls to the main building entrance.

B. Reinforce slabs and walkways with 6x6 WWF.

C. Provide expansion joints at not more than 20'-0" o.c., at each change of direction, and between exterior slabs and adjacent walls. Provide control joints at not more than 6'-0" o.c. Exterior slab edges, expansion joints, and control joints shall be neatly tooled.

D. Exterior walkways shall not be painted.

E. Provide concrete stoop at each exterior door.

F. No steps are allowed at doors.

G. Provide the tactile warning surfaces at all pedestrian sidewalk crossings per ADA requirements.

DIVISION 4 – MASONRY

040000 – GENERAL

A. FBC, NCMA, ACI, and Division 1 requirements apply to work of this section.

042000 – UNIT MASONRY

A. Where CMU construction is used, provide standard weight, ASTM C90, Grade N-1 units. CMU exterior load bearing walls are to be reinforced vertically and horizontally. All reinforced cells shall be grouted solid full-height. Provide inspection holes at bottom of all vertically reinforced block cells. Provide mortar and grout installed in strict compliance with provisions of the codes. Bottom course shall be laid in a full bed of mortar. Lay up walls plumb and true and with courses level, accurately spaced and coordinated with other work. Do not use chipped or broken units. Do not wet units or lay block in the rain. Properly dispose of excess mortar and materials off-site; do not bury materials on-site. Remove all loose mortar and repoint as needed prior to application of finishes. Masonry walls shall be straight, true, and plumb to within 1/4" in 8'-0" when checked with a straightedge in any direction.

B. Brick veneer or decorative masonry may be used with appropriate waterproofing materials, subject to compliance with Collier County Ordinances and FMS approval.

DIVISION 5 – METALS

050000 – GENERAL

A. FBC, AISC, AWS, and Division 1 requirements apply to work of this section.

1. All exposed metal components shall be stainless steel, galvalume, hot-dipped galvanized steel, copper, zinc, bronze, anodized aluminum, painted aluminum, or similar non-corroding metal.

2. Plain or painted steel shall not be used in exterior locations.

B. All steel construction shall comply with AISC Specifications for Structural Steel Buildings and Code of Standard Practice. Steel plates to comply with ASTM A36, anchor bolts to comply with ASTM A307, all fasteners to be s.s. or galvanized. Shop and touch-up primer to be "10-99 Tnemec Primer" or Rustoleum 5769 or equal.

C. Structural steel construction shall be designed by a Structural Engineer licensed in the State of Florida. Delegated Engineering for structural components shall be the responsibility of the manufacturers Structural Engineer licensed in the State of Florida. All shop drawings shall be reviewed and approved by the Design Professional of Record prior to fabrication.

D. Aluminum construction shall comply with the Aluminum Association Specifications for Aluminum Structures, Aluminum Design Manual, Part 1 and the FBC.

DIVISION 6 – WOOD AND PLASTICS

060000 – GENERAL

A. FBC, AITC, APA, AWI, AF&PA, NDS, TPI, NFOPA, and Division 1 requirements apply to work of this section.

B. Delegated Engineering; Prefabricated structural components shall be designed and sealed by the manufacturers Structural Engineer licensed in the State of Florida. All shop drawings shall be reviewed and approved by the Design Professional of Record prior to fabrication.

C. When pre-engineered wood trusses are used, the Contractor shall provide truss shop drawings and sealed truss engineering within 14 days of notice to proceed. Failure to do so will not be accepted as a reason for an extension of the contract time.

061000 – ROUGH CARPENTRY

A. Provide pressure treated wood where sills, nailers, and/or furring are in contact with concrete or masonry. Produce joints that are tight, true, well nailed, with members assembled and fastened in accordance with the drawings and with pertinent codes and regulations. Provide solid wood blocking and/or shims for finish materials as required to maintain a tolerance of max. 1/4" deviation in 10'-0" when measured with a 10'-0" straightedge, plumb and true, for all substrate framing where finish materials will be exposed to view. Do not use warped members.

B. Stud framing and furring shall be not more than 16" o.c.

C. Provide blocking for all accessories, grab bars, wall mounted door stops, etc. Provide all necessary hardware such as nails, bolts, anchors, ties, etc., required for a complete and proper installation. Bolts, washers, nuts, etc., shall be noncorrosive material. Isolate dissimilar metals.

D. Interior Door Frame Blocking:

1. Metal Stud Partitions: Provide cont. 2 x 4 blocking fastened to 20gauge stud at the jambs of all interior door frames. Blocking shall be fire-treated where required by Code.

2. Wood Stud Partitions: Provide double 2 x 4 studs at the jambs of all interior door frames.

3. Vertical blocking at door jambs shall be full-height of partition, securely braced to the structure above.

4. Provide horizontal 2 x 4 cont. blocking at the head of all door frames

5. Increase size of blocking to 2 x 6 or larger as required to match size of partition studs.

062023 – FINISH CARPENTRY

A. WWPA recommendations apply. Select material for straightness and do not use warped members. Finished woodwork is to be properly framed, closely fitted, and accurately set to the required lines and levels and rigidly secured in place. Miters or other fitted joints shall be planed or sanded .Use only hot-dipped galvanized or s.s. fasteners .Countersink all finish nail fasteners. Staple fasteners will not be accepted. Provide solid wood blocking and/or shims for finish

materials as required to maintain a straightness tolerance of max. 1/4" deviation in 10'-0" when measured with a 10'-0" straightedge.

064023 – CASEWORK

A. Comply with AWI standards for custom work.

1. Cabinet material: not less than 5/8” plywood.

2. Cabinet base: Preservative-treated (PT) wood.

3. Countertop material: ¾” plywood.

4. Plastic laminate all exposed casework surfaces.

5. Solid surface or solid plastic countertops shall be used in high abuse areas.

6. Cabinets are to be true European-style full-overlay construction, with 1/8" joint between doors/drawers, without vertical styles between paired doors. Use concealed heavy duty 170-degree hinges, with white melamine liner inside cabinets and drawers. Use heavy duty drawer guides, and provide pull at each door/drawer.

7. Securely fasten all casework to blocking or solid substrates. Adjust and clean all casework prior to acceptance.

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

070000 – GENERAL

A. NRCA Roofing and Waterproofing Manual, SMACNA Architectural Sheet Metal Manual, and Division 1 requirements apply to work of this section.

B. Roof design shall comply with referenced standards and Documents shall include all details required for a complete, proper, and watertight roof assembly.

1. All new roof surfaces shall be sloped at not less than 1/4" per ft. to insure proper drainage.

2. Roof designs shall not rely primarily on internal roof drains for drainage unless approved by CCFM.

3. Penetrations through roof surfaces shall be minimized wherever possible, ie. collect plumbing vent lines in attic to minimize vents through roof, use soffits vents or wall louvers under overhangs where possible, and use curbed penetration details for multiple conduits and pipes wherever practical. Do not use pitch pans except where approved by FMS. Use NRCA and SMACNA details with curbs and hoods to protect roof penetrations from leaks.

4. Roof drains, scuppers, gutters, and downspouts shall be oversized. Provide piped underground collection system tied into the site storm water management system.

5. Reroofing of dead-flat roof structures shall include installation of appropriate tapered rigid insulation or sloped light-weight concrete fill, ie. Zonolite or equal, sloped at not less than 1/4" per ft. to insure proper drainage.

072100 – INSULATION

A. Comply with Florida Energy Code requirements. Provide required insulation at the building envelope of all conditioned areas.

1. Provide insulation at roof deck over all conditioned areas. Insulation at the ceiling or bottom of framing is not allowed.

072419 – EXTERIOR INSULATION FINISH SYSTEMS – EIFS

A. EIFS shall not be used as the primary exterior wall finish or as trim material.

075100 – BUILT UP ROOFING

A. Where applicable low-slope roofs are approved for use by facilities, provide premium 20-year 4-ply built-up roofing with premium APP or SBS modified bitumen granular, highly reflective cap sheet. Comply with NRCA and SMACNA standards to insure a complete and proper roofing system.

1. Roofing system shall be designed to withstand wind pressures indicated in the FBC for each specific building, location, and substrate. Provide manufacturers certificate and engineering data indicating that system is designed to meet all applicable code requirements.

B. Warranty shall be 20-yr. NDL. Provide copies of roofing system specifications and manufacturer’s warranty to FMS for review prior to issuing bid documents.

075216 – SBS MODIFIED BITUMEN ROOFING

A. Premium 20-year APP or SBS single-ply roof materials may be used for repairs and/or new buildings with limited flat roof areas when approved in advance by FMS.

1. Roofing system shall be designed to withstand wind pressures indicated in the FBC for each specific building, location, and substrate. Provide manufacturers certificate and engineering data indicating that system is designed to meet all applicable code requirements.

B. Provide copies of roofing system specifications and manufacturer's warranty to FMS for review prior to issuing bid documents.

075323 – EPDM ROOFING

A. EPDM, PVC, rubber roof systems, ballasted systems, and similar single-ply roof systems shall not be used.

076100 – METAL ROOFING

A. Standards: All work shall comply with SMACNA and NRCA recommendations.

1. Metal roofing shall not be used with less than 1/12 slope.

2. V-crimp metal roofing shall not be used except to patch or repair small sections of existing v-crimp roofing. Metal re-roofing materials must be installed as a standing-seam system specified below.

B. Where metal roofs are used, provide standing seam metal roof with ridge trim, edge flashing, wall flashing, counter-flashing, fasteners, clips, and all related components required for a complete and watertight assembly.

1. Roofing system shall be designed to withstand wind pressures indicated in the FBC for each specific building, location, and substrate. Provide manufacturers certificate and engineering data indicating that system is designed to meet all applicable code requirements.

2. Metal roofing material shall be not thinner than 24 gauge Galvalume. Panels shall be not more than 16" wide unless approved otherwise by FM staff. Panels shall be either 12" or 16" wide. Standing seam shall be not less than 1" high. Standing seam may be 180d folded seam, or covered with continuous clip. Fastener clips shall be completely concealed, spaced

at not more than 12" oc. Provide not less than 3 concealed fasteners through metal roofing at top end of panels, fastening panels to solid blocking. Cover seams at top end with ridge cap flashing or wall flashing. All metal roofing is to be smooth and straight without bends or kinks, properly flashed and counter-flashed with compatible materials.

3. Approved manufacturers include but are not limited to Englert and Berridge.

4. Installation is to be neat and straight; level and true to required lines. Hem all exposed flashing edges and use concealed fasteners wherever possible.

5. Use premolded rubber-boot flashing at vent stacks. Cover top of vent stack with insect screen, neatly fastened to stack with a galvanized metal draw band. Where flashing occurs at roof-to-wall locations, provide counter flashing that will allow replacement of either the roofing or wall finish without the damage or removal of the other material. Flashing is to be set in sealant.

076200 – METAL FLASHING AND ACCESSORIES

A. Comply with SMACNA and NRCA standards. Provide all details required to illustrate industry-standard assemblies suitable for intended use and capable of providing a complete, proper, durable weather proof, and water proof installation.

1. Use stainless steel, hot-dipped galvanized metal, galvalume, or suitably protected aluminum materials. Do not use plain or painted steel or mill finish aluminum.

2. Do not use details that rely solely on sealant or paint to prevent the intrusion of water into the building.

3. Provide sill flashing and a full bed of sealant at all window sills.

4. Isolate dissimilar metals to prevent galvanic deterioration of materials. All materials shall be non-corrosive.

5. Roof expansion joints shall be constructed with metal fabricated in accordance with referenced standards. Avoid prefabricated Expando-Flash details.

6. Provide details of terminations and corners of parapets, expansion joints, compression bars, and similar non-typical conditions.

B. Flashing assemblies shall be counterflashed and constructed in a manner which will allow re-roofing without damage to adjacent finishes.

C. Quality Assurance: the Contractor shall provide a five (5) year warranty for all flashing work including all materials and costs required to correct defective flashing work.

077200 – ROOF ACCESSORIES

A. Provide anchor points and safety tie-off hardware for ladders at each side of building, and not more than 50' o.c.

B. Provide guardrails at roof hatches.

C. Provide fixed ladders for access to upper roof areas; ie elevator penthouse roof, stair roof, etc. Fixed ladders shall be constructed from non-corroding materials, ie. G-90 galvanized steel.

079200 – JOINT SEALANTS

A. Provide and install one or two-part exterior polyurethane elastomeric sealant at all window and door jambs, sills, heads, surface joints, flashing edges, and wherever else required to provide a weather-tight building envelope and a neat and trim installation. All sealants shall be paintable premium grade 15 20-year or better products manufactured by Dow, GE, Tremco, Vulkem, or equal. Manufactures Sealant primer shall be applied to all joints before sealant is applied.

1. Provide all infiltration seals as required by the FBC and as stated in Energy Calculations.
2. Preferred material is Tremco, Vulkem #116, One-Part, High-Performance, Polyurethane Sealant, with Vulkem Primer #171 on masonry/concrete/stucco surfaces, or Tremprime Non-Porous Primer on metals and plastic surfaces.

B. Provide non-yellowing premium polyurethane grade caulking at all countertop and cabinet edges, trim edges, and at other interior conditions where required to provide a neat and trim installation.

C. Provide tested penetration system sealants and materials at all pipes, conduits, and misc. penetrations through rated walls and ceilings.

DIVISION 8 – DOORS AND WINDOWS

080000 – GENERAL

A. FBC, SDI, and requirements of Division 1 apply to work of this section.

B. Exterior Doors shall be impact rated in accordance with FBC Ch. 16.

C. The CCFM may require higher design standards for wind loads and storm protection than that required by the FBC Section 1626. As part of the design process, CCFM must be consulted to establish the design criteria.

D. New ADA doors and assisted operator retrofits shall be reviewed on a case-by-case basis by CCFM staff.

081113 – STEEL DOORS AND FRAMES

A. Comply with SDI standards. Use of steel doors and frames are limited to fire-rated applications and service areas only.

1. Provide corrosion resistant coatings:

a. Steel doors and frames shall be G60 galvanized or A60 galvaneal material and factory primed.

b. Wipe coat and WCGS products may not be used.

2. Doors and frames shall be not less than 16 gauge thick.

3. Frames in masonry construction shall be fully grouted. Provide not less than 3 anchors at each jamb.

4. Frames in stud construction shall be spot grouted at each anchor, min 3 per jamb.

5. All steel frames are to be fully welded for new construction. KD frames may be used only for retrofit installations.

6. Provide fire rated units where required to maintain integrity of rated assemblies.

7. All metal door frames shall have holes and accessible wire ways to permit electrification of hinges and door or frame mounted hardware.

081416 – PLASTIC LAMINATED FLUSH WOOD DOORS

A. Typical interior doors for Offices, Restrooms, Meeting Rooms, etc., shall be hinged, flush, solid core units with plastic laminate faces and edges.

1. Doors shall not be less than 36" wide.

2. Frame material shall be fully welded galv. steel or aluminum.

B. Wood veneer doors may be used only where approved by FM staff.

083113 – ACCESS DOORS

A. Provide access panels in floors, walls, ceilings, and/or soffits where required for maintenance access to all concealed valves, fixtures, and equipment.

1. All panels components and fasteners shall be constructed of non-corroding material limited to stainless steel, painted or anodized aluminum, or factory primed galvanized steel.

2. Unless required otherwise by program, all access panels shall be commercial grade units with a full length hinge, operable with standard tools and/or equipped with lockable, flush mounted latch.

3. Roof access hatches and doors shall be lockable from the inside and equipped with card access locking mechanisms and position switches connected to Operations Center whenever feasible.

081116 – ALUMINUM DOORS AND FRAMES

A. Exterior doors and frames shall be Aluminum except as noted below.

1. A60 or G60 galv. steel doors may be used where fire rating is required.

2. FRP doors may be used as exterior doors in utility and high-abuse areas.

B. Approved Manufacturers include but are not limited to Kawneer and Cline.

083323 – OVERHEAD COILING DOORS

A. Provide overhead coiling doors where required by program.

1. Lock mechanism shall be accessible from the exterior side.

2. All door components including fasteners, slats, guides, and housing shall be constructed of non-corroding material limited to stainless steel, painted or anodized aluminum, or factory primed galvanized steel.

B. Provide submittal indicating the units and attachment fasteners meet or exceed current FBC requirements.

085113 – ALUMINUM WINDOWS

A. All windows shall be fixed storefront, curtain wall, or commercial grade operable units.

1. All exterior components shall be extruded aluminum.

2. Finish shall be anodized or factory applied finish such as Kynar 500. Mill finish aluminum, residential units, or units with wood components exposed to the exterior may not be used.

3. To maintain proper indoor air quality, windows shall be fixed unless operable units are required otherwise by Code or design program approved by CCFM.

B. Provide submittal indicating the units, glazing, and attachment fasteners meet or exceed FBC requirements.

1. All openings shall be protected to withstand impacts from wind-borne debris in accordance with FBC sections 1606.1.4 and 1626.

2. Special requirements apply to public safety buildings. Opening protection in accordance with FBC section 1606.1.4 test or design velocities shall be increased 25% in all public safety facilities.

086200 – ROOF SKYLIGHTS

A. Roof skylights are not allowed.

087100 – DOOR HARDWARE

A. Provide all hardware needed for a complete and proper installation including but not limited to locks, levers, pulls, exit devices, closers, butts, weatherstripping, astragals, coordinators, door holders, kick plates, push plates, and silencers.

B. Minimum hardware standards:

1. ANSI Grade 1 hardware shall be provided.

2. Materials: All door hardware shall be non-ferrous; plain or painted steel hardware may not be used.

3. All hardware shall be ADA compliant.

C. Approved manufacturers are Schlage/Allegion, LCN, Von Duprin, Desco, Hager, Hes, Ives, and Rockwood.

1. Locks shall be Schlage/Allegion interchangeable core cylinders, #20-740 "Primus" High-Security Cores, no substitutions B-Series 6-pin cylinder with E-keyway only. Keyed to match County keying system. C-keyway may not be used. Standard keyway shall be "6-pin Everest" C145 for new master key systems and C123 for stock keys. County Project Manager and Contractor shall coordinate key schedule meeting with CCFM locksmith staff to ensure lock selection meets CCFM key system.

2. Standard locksets and lever-sets shall be Schlage/Allegion D-series. Use L-Series where required for security or other program requirements.

3. Standard pulls shall be Rockwood Barrier-Free series or CCFM approved equal.

4. Standard closers should be LCN 4040XP or CCFM approved equal.. Concealed closures shall not be used.

5. Exit Devices shall be Von Duprin, model 99 or CCFM approved equal.

6. Exterior threshold shall be Pemko 2005 with raised vinyl seal, or CCFM approved equal. Do not use flush or saddle-type threshold at exterior locations.

D. Additional Requirements for Access Controlled Doors:

1. All exterior doors shall be designed to Fail-Secure (Locked). Doors in high security areas shall also be designed to Fail-Secure (Locked). Unless otherwise directed by the County Project Manager, interior doors shall be designed to Fail-Safe (Unlocked). The above-mentioned standards do not apply if they are in conflict with fire codes or direction from the local AHJ.

2. Electrified strike locksets are the preferred hardware type for access controlled doors. Request to Exit (RTE) functionality included in the door

handles is preferred. Passive Infrared Sensors (PIR) shall be included if RTE functionality is not provided by the handle.

3. Electric power transfer hinges, which completely conceal the wiring while the door is closed, shall be used for new and replacement doors. Von Dupren EPT-2, EPT-10, or equivalent models are acceptable.

4. Magnetic locks (maglocks) shall only be used when electrified locksets are not compatible with the door type. All maglock hardware shall contain a battery back-up should utility power be lost temporarily. Under no circumstances shall magnetic locks be used for electrical, mechanical, or IT room doors.

5. Wireless locks are not permitted.

6. Delayed egress hardware is only permitted in areas occupied by law enforcement (e.g. Jail and Courthouse).

7. While card access is the CCFM preferred access control system, stand-alone electronic locks are permissible for areas where card access hardware is cost prohibitive. Schlage/Allegion CO-100 or CCFM approved locks shall be used for these applications.

E. All keys shall be brass. Stamp keys "DO NOT DUPLICATE". Discard construction keys and re-key entrance lock after final acceptance.

F. Provide grand-master, master, entrance, and office keys as directed by CCFM staff.

G. Adjust hardware for proper operation, including adjustment of levers and closers to comply with ADA and Florida Accessibility Code requirements.

H. Check adjustments after 90 days use and readjust as needed.

088000 – GLAZING

A. Glazing shall comply with referenced codes including FBC requirements for hazardous locations.

B. Exterior glazing shall be either tinted or reflective.

C. Exterior glazing shall be impact resistant laminated glass complying with FBC Ch. 16.

1. Shuttered applications may be used only with prior approval by County.

D. Small windows and narrow windows shall be avoided except where required by the building users design program. In general, windows shall be curtain wall or storefront glazing, generously sized in all offices, lobbies, work areas, etc. Windows shall be architecturally proportioned in a manner that is appropriate to the building design without the use of small or narrow windows. One example of an acceptable ribbon-window arrangement is the Development Services Center on Horseshoe Drive.

E. Provide energy efficient glazing features in widow design, ie low-e glazing.

089000 – LOUVERS AND VENTS

A. All louvers shall be storm resistant extruded aluminum with anodized or appropriate protective coating. Mill finish units or stamped metal louvers are not allowed. Acceptable products include but are not limited to the following:

1. Ruskin "Extruded Wind Driven Rain Resistant Louvers"

2. Ruskin "Hurricane Louvers"

B. Locate louvers to minimize water intrusion. Provide sill flashing, gutters, and curbs as needed to prevent rain water damage.

DIVISION 9 – FINISHES

090000 – GENERAL

A. Comply with codes and referenced standards listed in Division 1, including but not limited to FBC requirements.

1. Workmanship shall be proper and neat in appearance conforming to nationally recognized standards and specified tolerances.

2. Work that is not in compliance with referenced codes and standards shall be removed and replaced at no extra cost to the County.

092400 – PORTLAND CEMENT PLASTER

A. Standards: Comply with PCA 'Portland Cement Plaster Manual' and applicable ASTM/USG requirements and recommendations.

B. Use PVC accessories throughout, including corner beads, casing beads, expansion joints, and perforated vent strips. Metal trim shall not be used.

1. Provide bonding agent at concrete substrates.

2. Use galv. self-furring lath with 15# felt underlayment where over a framed substrate.

3. Fasteners shall be stainless steel.

4. Provide expansion joints as recommended in referenced standards, where abutting dissimilar materials, and as needed to prevent cracking. Lath shall be discontinuous at expansion joints and control joints.

C. Install all trim straight, plumb, and level. Install stucco finishes with a tolerance not to exceed 1/4" in 10'-0" or 1/8" in 4'-0" in any direction when measured with a 10'-0" straightedge.

1. Panels with visible rough textures or scaffold lines will not be accepted.

D. Thickness shall be not less than 5/8" thick (2-coat) on cmu and concrete, and not less than 7/8" thick (3-coat) on galv. metal lath

E. Styrofoam and/or EIFS trim may not be used on County buildings.

1. Exterior decorative moldings, if any, shall be cast stone or cement plaster.

092900 – GYPSUM BOARD ASSEMBLIES

A. Comply with FBC, Gypsum Association, USG, and UL requirements and recommendations, the requirements of Division 1, and manufacturers' specific instructions.

B. Materials:

1. Provide 5/8" type-X gypsum board at fire rated locations

2. Provide 5/8" or 1/2" gypsum board at typical interior locations.

3. Provide 1/2" cement board at all ceramic tile and wet locations.

4. Do not use green board.

5. Do not use gypsum board products at exterior locations.

6. All gypsum board materials shall be domestically produced.

C. Provide a smooth finish suitable for painting on all exposed surfaces. Visible tape or sanding marks in work will not be accepted. Contractor may provide smooth hardcoat in lieu of smooth drywall finish.

1. Use screw fasteners throughout.

2. Trim drywall at external corners with plastic corner beads.

093013 – CERAMIC TILING

A. Comply with Tile Council of America (TCA) standards and details.

1. Tile joints are to be aligned and straight, plumb, level, and true, with equally spaced cut units at ends.

2. Provide tile movement joints at the following locations:

a. Perimeter of each room

b. Risers, ramps, changes of and planes

c. Corridor corners and intersections

d. Spacing as determined by Design Professional

B. Provide tile finishes at the following locations:

1. Tile floors are required in all Restrooms and Janitors Closets.

2. Provide tile wainscot not less than 60” high in Restrooms, at mop sinks, and at drinking fountains.

3. Extend wainscot not less than 18" to each side of mop sinks and drinking fountains.

C. Floor tile shall be porcelain ceramic tile. All grout shall be sealed.

D. Provide product certificate indicating the coefficient of friction complies with ADA requirements for both wet and dry conditions.

E. Tile base and all corners shall be sanitary cove style.

F. Floors must slope towards drains.

G. Wall tile substrate shall be CMU, concrete, or cement board.

1. Do not use gypsum board as tile substrate.

H. Use aluminum or bronze edge strips where abutting carpet floor finishes.

095123 – ACOUSTICAL TILE CEILINGS

A. Standard acoustical tile shall be Armstrong World Industries #770 (flat tile) or #704A (reveal edge), white color, size 24" x 24".

B. Suspended grid shall be white color, Armstrong World Industries manufacturer system same as acoustic tile.

1. Installation shall comply with ASTM C635 and C636.

C. Alternate acoustical tile manufacturers and styles may be considered for special rooms with limited areas such as a Lobby, subject to FM approval and 15% extra stock tile material supplied to the FM in unopened boxes at the completion of construction.

096500 – RESILIENT TILE FLOORING

A. Standard 12" x 12" x 1/8" Vinyl Composition Tile shall be used in service areas.

1. Tile material and adhesives shall not contain asbestos materials of any kind.

B. Clean, wax, and polish tiles prior to final acceptance. Provide 5% extra stock material.

096513 – RESILIENT WALL BASE AND ACCESSORIES

A. Provide 4" vinyl base where scheduled. Use premolded corner pieces at all outside corners. Provide 5% extra stock material.

B. Provide matching transition strips where VCT floors abut tile or carpet floors.

C. Outside corners in all corridors and public spaces shall be fitted with paintable, vinyl or aluminum corner protectors from the top of the cove base extending to a height of 42”.

096812 – TILE CARPETING

A. Provide Carpet Tile unless directed otherwise by CCFM staff:

1. Product: ~~Mohawk Stati- Tuft III~~ Modular
2. Construction: Tufted/Ultra Performance System
3. Fiber: 100% Dupont Antron Legacy with Static Control and soil resistant
4. Yarn Weight: 28.3 oz./sq. yd.
5. Gauge: 1/8
6. Size: 17 5/8 x 17 5/8
7. Density: 7,898
8. Weight Density: 223,504
9. Stitches per inch: 8.4
10. Pile Thickness: 0.129"

11. Warranties: ~~Mohawk~~ Modular 20 yr warranty 20 yr. wear, 20 yr. no edge ravel, 20 yr. no delamination, Cushion Resiliency 20 yr., and Lifetime static.

096816 – SHEET CARPET

A. Where approved by FM Staff, provide one of the following broadloom carpet products:

1. Mohawk Commercial Carpet “Stati-Tuft” UPS 16706

a. Construction: Tufted Loop Pile
b. Gauge: 1/8
c. Fiber: 100% Dupont Antron Legacy B.C.F. and soil resistant
d. Flammability: Class 1- Exceeds .45 watts per square CM
e. Total thickness: .234 in.
f. Yarn Weight: 28.30 oz. square yard
g. Backing Materials: Warp, stuffer, filling all synthetic
h. Total Weight: 61.8 oz. square yard
i. Density: 7,898
j. Weight Density: 223,504
k. Pitch: 216
l. Stitches Per Inch: 8.4
m. Pile Thickness: 0.129"
n. Stock width: 12"
o. Smoke density: NBS Smoke Density Chamber (NFPA-258): Less than 450
p. Static propensity: 70/20 AATCC- 134: Under 3.5 KV

q. Warranties: UPS Warranty Guaranteed 20 lb. tuft binds, Moisture resistant, Dimensionally stable, Guaranteed for 20 yrs., no delamination for 20 yrs., and Lifetime static

2. Mohawk Commercial Carpet “Regents Row”- 30663

a. Construction: Woven Cut and Loop
b. Pitch: 216 Equivalent
c. Pile Thickness: .192"
d. Rows per inch: 8.0
e. Fiber: 100% Dupont Antron Legacy BCF Nylon with Static control and soil resistant
f. Yarn Weight: 34.5 oz/ sq. yd.
g. Total Weight: 68.16 oz/ sq. yd.
h Total Thickness: .312 in.
i. Backing Materials: Synthetic
j. Density: 6,468
k. Weight Density: 223,146
l. Stock Width: 12'
m. Flammability: Class 1- Exceeds .45 watts per sq. CM
n. Smoke Density: NBS Smoke Density Chamber (NFPA-258) Less than 450
o. Static propensity: 70/20 AATCC-134: Under 3.5 KV
p. Warranties: Lifetime Limited Woven Wear, and Lifetime Static

097200 – WALL COVERINGS

A. Wall coverings are not allowed in County buildings.

099100 – PAINTING

A. Provide Sherwin-Williams “Superpaint”, S-W Industrial Enamel, and related premium S-W products throughout.

1. All color selections shall be standard SW colors.

2. Provide a typed Paint and Color schedule for each building. This record shall include the job name, job location, date contractors name, the material manufacturer's name, product name, color name and number, and color formula. A copy of this record shall be delivered to the CCFM Contract Manager at the end of the work. A duplicate copy shall be bound into the Closeout Documents.

B. Backprime all exposed wood materials scheduled for paint finish prior to installation.

C. Provide primer plus two finish coats on all wood, gypsum board, concrete and stucco finishes.

D. Provide two coats of rust inhibitive primer on all surfaces of metal doors and frames and prior to installation, then 2 finish coats of S-W industrial enamel on exposed metal surfaces.

E. Topcoat shall be either S-W eggshell, semi-gloss, or full-gloss. Restroom walls shall be either semi-gloss or full-gloss. Do not use flat paint as top coat at any wall location. Ceilings and soffits may have flat paint.

F. Deliver materials to site in unopened containers with manufacturers' labels. Protect adjacent finishes and materials, prepare surfaces, and apply materials in strict accordance with manufacturers' recommendations and instructions. Verify material compatibility with substrates. Do not apply paint to wet or damp materials. Do not paint exterior surfaces in the rain. All coats shall be thoroughly dry before applying succeeding coats.

1. Provide temporary barricades, 'WET PAINT' signs, and protect all work until dry. Remove masking when finished. Carefully remove paint from materials not intended for paint finish. Clean and touch-up as required.

2. All paint finishes must be evenly spread, free of runs, sags, or other defects.

G. Provide and install medium grey penetrating concrete sealer/stain on all Mechanical and Electrical Equipment Room floors.

DIVISION 10 – SPECIALTIES

100000 – GENERAL

A. FBC, ADA, and requirements of Division 1 apply to work of this section.

101400 – SIGNS

A. Interior Signs

1. Graphics Manufacturer shall be Images Graphics Specialties, Fort Myers, 1-800-321-3718, or 239-561-6406 ext.103, approved equal mfr. complying with Collier County signage standards.

2. Frames shall be extruded aluminum “Portrait Series, VLetter” frames, with clear anodized finish, size 8.5" x 8.5" or 5.5” x 8.5”, by “Vista Systems”, Sarasota, 1-800-468-4782, or approved equal mfr. complying with Collier County signage standards.

3. Typical Interior Sign Schedule:

Room	Vista Systems	Font/Size	Mounting	Copy/Remarks
Office Doors	WFP156 U	Helvetica/.625 inch	Door/wall	Room Name/Black Face White Letters
Service Rooms	WFP156 U	Helvetica/.625 inch	Door /wall	Room Name/Black Face White Letters
Rest Rooms	WFP80 U	Helvetica/.625 inch	Door /wall	3 inch Graphic/Men, Woman Black Face White Letters

B. Required signage at Parking Structures.

1. Directional signage required pointing to the locations of all Assistance "Blue" Boxes.

2. "Notice" posted that the parking deck is under Closed Circuit Television surveillance.

3. Low clearance warning signs utilizing tubular plastic materials, not metal.

4. Speed limit signs at each entrance and each deck; “5 MPH” and/or “Slow”

C. Bronze Plaques.

1. All new buildings shall have a bronze plaque installed showing the dedication of the building. Typical content will show the year opened, contractor’s firm name, architect’s firm name, Commissioners at time of conception / approval (alphabetical), County Manager, etc. May include Constitutional Officer if they are the prime occupant. See CCFM for plaque layout and content during the initial building design process. See end of standards for sample.

2. Locate dedication plaques in Lobby or secure area whenever possible.

3. Where exterior dedication plaques are used, locate plaques in area supervised by CCTV camera, i.e. near main entrance, or monitor plaque with security system contact switch.

102113 – TOILET COMPARTMENTS

A. Provide solid plastic 1" thick toilet compartments manufactured by Santana, Capitol Partitions, or approved equal.

1. Unless approved otherwise by FM staff, restroom stall partitions shall be ceiling and wall hung toilet partitions, not floor mounted systems.

2. All fasteners and hardware shall be stainless steel, aluminum, or chrome plated brass. Plastic accessories, hinges, latches, or similar components are not acceptable.

3. Provide latch, hinges, door stop, and coat hook for each door. Coat hook shall not project more than 2" from face of door.

4. In-swing doors shall remain slightly open when not latched. Accessible stall doors shall be self-closing.

5. Brace all compartments at the face of partitions and doors. Size bracing components as needed to avoid perpendicular braces.

102800 – TOILET ACCESSORIES

A. Comply with ADA requirements and minimum County standards established herein.

B. All accessories shall be commercial grade, brushed stainless steel, formed and welded with all exposed edges hemmed and ground smooth, with no sharp edges and no sharp corners.

C. Provide all accessories needed for a complete and proper installation including but not limited to grab bars, hand-dryers toilet paper holders, sanitary napkin receptacles, wall mounted soap dispensers, and coat hooks.

1. Hand Dryers shall be Excel Dryer, Inc. Model XL-W (automatic, white, 110/120V) with ADA compliant S.S. recess kit. Unit may protrude not more than 4" from face of wall. Separate 20A circuit required for each unit.

2. Unless approved otherwise by CCFM staff, paper towel dispensers shall not be used in restrooms.

3. Coat hooks shall be low-profile, projecting not more than 2" from face of wall or door, and located to prevent "reach-over" theft.

4. Approved manufacturers are Bobrick, Bradley, and Excel Dryer, Inc.

D. Coordinate with the work of other trades. Securely install accessories plumb and square, fastening units to solid wood blocking, studs, compartment partitions, or cmu walls. Do not use toggle bolts or expansion shields.

1. All accessories and grab bars shall safely support 250 lbs. L.L

2. All accessories shall be located and mounted to comply with ADA clearances.

102810 – MIRRORS

A. Comply with ADA requirements and minimum County standards established herein.

B. Standard mirrors shall be tempered glass with stainless steel frames. Provide tilted mirror at accessible stalls only. Use only stainless steel vandal resistant hardware and fasteners, concealed wherever possible. Provide polished stainless steel or unbreakable units where required by program and at all unsupervised public facilities.

104300 – EMERGENCY AID SPECIALTIES

A. All new construction and major remodeling projects shall have Automated External Defibrillator (AED) equipment and cabinets installed. Sole source is Medtronic Physio-Control Corp. Cardiac Science. See CCFM for location, quantity, and type of cabinets. Generally, the "Guidelines for Public Access Defibrillation Programs in Federal Facilities" will be followed.

1. Provide Power Heart Model AED G3 with AED cabinet from Cardiac Science with built-in alarm, wall mounted model CB-2EAED. Units shall be located adjacent to the fire extinguisher cabinets.

2. Provide first aid station at each AED location in a separate cabinet.

3. Fire extinguisher, AED, and First Aid cabinets shall be grouped together at one convenient safety station.

a. Provide alarm system contacts to indicate when any emergency aid cabinets are opened, monitored in the CCFM Operations Center using the access control system. See **SECTION 291000 – SECURITY AND INTRUSION ALARMS** for further details. Local audible alarms shall also be included.

b. CCTV cameras (as discussed in detail in **SECTION 292300 – CCTV VIDEO SURVEILLANCE**) shall be provided to monitor

the AED cabinets for networked facilities.

c. All equipment, wiring, controls, etc. shall be compatible with the existing JCI P2000 system. See **SECTION 291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS)** for further details.

4. Emergency evacuation devices – "Stryker Chairs" shall be provided at every other stair landing in buildings having more than two stories.

104400 – FIRE EXTINGUISHERS AND CABINETS

A. Comply with ADA requirements. Provide extinguishers of the types and sizes where required by NFPA 10 and local AHJ, but not less than one 2A:20B:C unit near each required egress door.

1. Use either semi-recessed or fully-recessed cabinets for all units located in occupied interior rooms. Interior cabinets shall have unlocked hinged door with tempered glass view panel.

2. Provide standard bracket-mounted extinguishers without cabinet at enclosed unoccupied utility rooms, mechanical rooms, storage rooms, and similar service areas.

3. Where required at exterior locations, use aluminum or heavy-duty all-plastic cabinets with clear safety-type break-plastic fronts. Steel cabinets shall not be used at exterior locations.

4. Provide alarm system contacts to indicate when any fire extinguisher cabinets are opened, monitored in the CCFM Operations Center using the existing card access system. See **SECTION 291000 – SECURITY AND INTRUSION ALARMS** for further details. Local audible alarms shall also be included.

5. All equipment, wiring, controls, etc. shall be compatible with the existing card access system. See **SECTION 291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS)** for further details.

107100 – STORM PANELS

A. New Construction and Additions: Provide impact rated doors and windows, not shutters.

B. Renovations and Alterations: Provide impact rated doors and windows, or,

provide low-maintenance, user-friendly impact rated shutters as follows:

1. Coiling overhead shutter

2. Accordian-style shutter

3. Fixed or hinged impact rated s.s. screens

C. Removable hurricane panels or fabric screens are not allowed.

D. Hurricane shutters, tracks, accessories, and fasteners shall be fabricated from corrosive resistant materials, rated to withstand pressures developed by140 mph wind speeds.

DIVISION 11 – EQUIPMENT

110000 – GENERAL

A. Comply with the requirements of Division 1.

B. All equipment shall be commercial grade.

112423 – WINDOW WASHING EQUIPMENT

A. All buildings over three stories in height shall have hangers anchored on the roof structure to facilitate exterior window washing equipment.

DIVISION 12 – FURNISHINGS

120000 – GENERAL

A. ADA, NFPA, OSHA, and the requirements of Division 1 apply to work of this section.

120010 – OFFICE FURNITURE

A. Contact FMS for current furnishing contract requirements.

124800 – RECESSED FOOT GRILLES

A. Provide recessed foot grilles at all interior building entrances. Provide “Pedigrid” entrance mats by Construction Specialties, Inc.; Muncy, PA or equivalent products by one of the following approved equal manufacturers:

1. Balco, Inc.; Wichita, KS
2. Reese Enterprises, Inc.; Rosemont, MN
3. Arden Architectural Specialties, Inc.
4. Kadee Industries, Inc.; Bedford, OH.
5. Pawling Architectural Products, Inc.

B. Provide one single unitized mat in each recessed frame, with heavy-duty carpet strips, Class A or B fire rating, color to be selected by the design team.

C. Entrance Mat Frames: Provide manufacturer's standard design, of size and style to mate with insert type and adjacent finish floor or wall construction, for permanent recessed installation in sub-floor; complete with corner pins or reinforcing, and installation anchorages.

1. Provide frames of extruded 6063-T5 alloy aluminum. Coat surface of frame which will contact cementitious material with zinc chromate paint or manufacturer's standard protective coating.

2. Provide frame members in single lengths or, where frame dimensions exceed available lengths, provide minimum number of pieces possible, with hairline joints equally spaced, and with pieces spliced together by means of straight connecting pins.

D. Rigid-Type Foot Grilles: Provide manufacturer's standard extruded aluminum floor grid of top surfaced tread rails and spacer cross bars, 6063-T5 or 6061-T6 alloy and mill finish, 1-5/16" wide continuous treads spaced 1-1/2" o.c. (3/16" openings), top surfaces as indicated with heavy-duty carpet strips. 1-5/8" maximum overall thickness of grid system.

1. Top Surface: Fusion-bonded level-cut-pile nylon carpet insert; DuPont “Antron III" filament, 1/4" high, 28 oz. per sq. yd.

E. Level Bed Applications: Provide manufacturer's standard vinyl cushion support system.

F. “Pedimat” or similar loose-lay matts in recessed frames shall not be considered equal to approved “Pedigrid” recessed foot grilles

G. Matts and frames shall utilize rigid connections to prevent movement or noises generated by foot grilles during use.

DIVISION 13 – SPECIAL CONSTRUCTION

130000 – GENERAL

A. FBC, MBMA, and the requirements of Division 1 apply to work of this section.

133419 – METAL BUILDING SYSTEMS

A. Pre-engineered metal buildings may be used for storage and maintenance buildings, and where approved by FM staff.

B. Delegated Engineering; Prefabricated structures shall be designed and sealed by the manufacturers Structural Engineer licensed in the State of Florida. All shop drawings shall be reviewed and approved by the Design Professional of Record prior to fabrication.

C. Contractor shall coordinate the design and installation of anchor bolts.

D. Provide rigid steel channel or framing at each door and window opening. Do not use door frame to support wall girt framing.

E. Provide concrete curb and flashing at bottom of metal siding, raised not less than 8" above Concrete floor slab.

DIVISION 14 – CONVEYING SYSTEMS

140000 – GENERAL

A. FBC, NFPA, OSHA, and the requirements of Division 1 apply to work of this section.

142000 – ELEVATORS

A. Comply with ANSI/ASME A17.1 and Addenda, CABO/ANSI A117.1, and all State of Florida codes and regulations for Elevators.

B. All elevators specified shall be of generic manufacture with no proprietary items included within the installation. The elevator shall have the capabilities of being served by any elevator manufacture or without the assistance of any manufacturers diagnostic tools.

C. Travel Cable: All new elevator travel cable shall include a minimum of three (3)

CAT-6 cables (or equivalent) rated for use in elevators. The three cables shall be reserved for use with the emergency telephone, card reader, and CCTV camera discussed below. If there are technical limitations preventing the use of CAT-6 cabling, coaxial cabling with IP converters shall be provided. See the **CCFM Standard Equipment List** for further information.

C. Elevator emergency telephones shall be provided in accordance with **Section 294001 – EMERGENCY CALL BOXES**.

D. Card readers shall be provided in accordance with **SECTION 291001 – ACCESS CONTROL SYSTEMS (CARD ACCESS)**.

E. CCTV camera(s) shall be provided in accordance with **SECTION 292300 CCTV VIDEO SURVEILLANCE**.

F. All 3-phase equipment shall have phase-loss protection.

G. Elevator Monitoring System shall be provided for remote monitoring of elevator status from CCFM Operations Center.

1. Elevator monitoring device shall be compatible with Integrated Display Systems (IDS) LiftNet Elevator monitoring software with no additional software required for communication between controller and LiftNet software.

2. Programming of the elevator monitoring device and Facilities Management LiftNet server (BCCLIFTNET01) shall be provided. Programming includes:
    2.1. Identifying Elevator Name(s) and Type (Passenger/Service)
    2.2. All Available Floors
    2.3. Elevator Cab Real-time Status
    2.4. Elevator Fault Reporting
    2.5. Automated Paging (E-mail) for Elevator Faults

144000 – WHEELCHAIR LIFTS

A. Wheel Chair Lift may not be used except with prior written approval from FMS and the Building Official.

DIVISION 21 – FIRE SUPPRESSION

211100 – FIRE SUPPRESSION SPRINKLER SYSTEM

A. Provide a complete automatic fire sprinkler system where required by Code or Ordinance. Refer to Division 1 for General Requirements, Codes, and Standards.

B. Comply with NFPA 13 and Collier County Ordinance 98-74 Fire Prevention and Protection Code for the design and installation of all Fire Suppression System work. The system shall be designed by a Professional Engineer licensed in the State of Florida. When the Contractors PE is responsible for the system design, the Engineer of Record for the building shall review and approve the installers shop drawings prior to permit application.

C. Sprinkler heads shall be recessed or semi-recessed in all occupied rooms, centered in acoustic ceiling tiles.

1. Maintain centerline alignment with adjacent fixtures in a neat, orderly, and workmanlike appearance.

D. Maintain accurate as-built plans of the work.

E. When required by code or specifically required in either these standards or the IT Standards, all computer rooms, hub rooms, and electrical rooms shall be protected by a gas fire suppression system, no wet sprinklers are allowed in these areas.

F. Pumps: 3-phase equipment, if any, shall have phase-loss protection.

DIVISION 22 – PLUMBING

220000 – GENERAL DESIGN REQUIREMENTS

A. Provide plumbing fixtures and restroom facilities as required by the Code, plus additional requirements as follows:

1. Exterior Requirements; Each building will have at least one (1) hose bib per exterior wall, spaced at not more than 100'-0" o.c. Hose bibs shall have removable metal T-handles, not plastic handles. All hose bibs shall have a vacuum breaker and shall be firmly secured to the building. Provide recessed unit where installed in exterior walls directly abutting exterior walkways. Isolate copper materials from cementitious materials to prevent deterioration.

2. HVAC Equipment Rooms; Provide at least one (1) hose bib and one (1) floor drain in each HVAC Equipment Room. Provide trap primer at FD unless FD is used as condensate drain.

3. All Mechanical Rooms shall be fitted with sufficient floor drains to allow for drainage of any leaks, condensation, or spillage.

4. Janitorial Closets; Each floor of each building shall have one (1) janitorial closet for every 10,000 sq. ft. and located at each set of restrooms. The Janitors Closet will contain a water heater, floor mop sink, shelves, floor drain, a hose bib, at least one (1) electrical outlet, and sufficient lighting to illuminate room.

5. Restroom Floor Drains; All restrooms, public and private, are to be fitted with floor drains, number and location of which will be determined by size and layout of restroom. Floor drains may be omitted in private restrooms only when located at the first floor.

6. Restroom lavatories and sinks in public areas shall be supplied with cold-water only.

7. Provide flush valve fixtures where adequate water pressure is available. Provide pressure-assist tank type water closets where low water pressure occurs.

8. Provide at least one (1) hose bib at each deck level in parking garages, not more than 100'–0" oc.

9. Lavatory faucets in restrooms shall be hands-free automatic faucets.

10. Flush valves shall be hands-free automatic units.

11. Unless approved otherwise by FM staff, automatic faucets and automatic flush valves shall be hard wired, not battery operated units. Conceal all wiring inside walls or removable covers. Provide access panel for all units located inside walls.

12. Provide low volume, water flush urinals, with "low flow" valves.

13. Pumps: All 3-phase equipment shall have phase-loss protection.

14. Water closets with a max of 1.6 gallons/flush, shower heads – 2.5 gpm, and faucets with a 0.5 gpm.

15. Wherever temperature mixing valves are required, they shall be Symmons valves ONLY.

221000 – WATER DISTRIBUTION PIPING

A. All pipes shall have appropriate shutoff valves located near fixtures to allow for shutoff without shutting down entire systems. Locate valve at fixture, at access panel, or above readily accessible ceiling tile.

B. All pipes and fixtures shall have immediate and sufficient access through walls and obstructions to facilitate maintenance and repair.

C. All pipes shall have sufficient cleanouts installed to expedite maintenance. Back to back cross-tee assemblies shall have cleanouts above or below cross-tee.

D. Insulate all hot water lines. Exposed insulation shall be white color; concealed insulation shall be black or white color.

E. Exposed pipes and valves in public restrooms shall be chrome plated. Insulate all exposed pipes and fittings, etc. under lavatories and sinks.

F. Wrap and protect all buried lines to inhibit corrosion where in contact with concrete.

G. All main valves shall be brass full-ported ball valves.

H. All valves shall be numbered and tagged. Provide typewritten chart indicating each valve number and location, laminated in clear plastic cover and posted in Equipment Room.

I. Provide re-circulating pump and return lines for hot water lines over 75' developed length.

224000 – PLUMBING FIXTURES

Acceptable Product Manufacturers:

1. Lavatories, Service Sinks, Water Closets, Urinals, Bath Tubs:

    a. American Standard.
    b. Crane Co.
    c. Eljer Plumbingware Div.
    d. Kohler Co.

2. Stainless Steel Sinks:

    a. American Standard.
    b. Elkay Mfg. Co.
    c. Dayton.

3. Faucets:

a. Chicago Faucet Co.
b. Kohler Co.
c. Sloan.
d. T & S Brass

4. URNINAL Flushometer Valves:

a.	New Construction, with A/C:	Moen 8316AC
b.	New Construction, with NO A/C:	Moen 8312M0125
c.	Retro-fit Construction, with A/C:	Moen 8316
d.	Retro-fit Construction, with NO A/C:	Moen 8312M0125

5. TOILET Flushometer Valves:

a.	New Construction, with A/C:	Moen 8310ACDF16
b.	New Construction, with NO A/C	Moen 8313M16
c.	Retro-fit Construction, with A/C	Moen 8310DF16
d.	Retro-fit Construction, with NO A/c:	Moen 8313M16

6. Water Closet Seats: open front;

a. Bemis Mfg. Co.
b. Beneke Corp.
c. Forbes-Wright Industries, Inc.; Church Products.
d. Olsonite Corp.; Olsonite Seats.

7. Urinals:

a. Full size; Kohler, Bardon K-4991-ET-0. HEU washout, wall hung 0.125 – 1.0 GPF
b. Smaller; Kohler, Dexter K-5452-ET-0. Washout wall mount, .0125 GPF

8. Fixture Supports:

a. Josam Mfg. Co.
b. Kohler Co.
c. Tyler Pipe.
d. Zurn Industries, Inc.; Hydomechanics Div.

B. All plumbing fixtures shall be white color.

C. Faucets and trim shall be chrome-plated brass

224010 – WATER HEATERS

A. Provide commercial grade water heaters using only industry standard components and sizes, limited to 110, 208, and 240-volt units manufactured by State or Lochinvar ONLY. Units requiring 480-volt service or special heating elements may not be used without prior written approval by FMS. Temperatures are to be pre-set to 120°F.

DIVISION 23 – HVAC

230000 – GENERAL

A. Requirements of Division 1, Standard Plumbing and Mechanical Codes, NEC, NFPA, AMSE, State Board of Health Sanitary Code, OSHA, ASHRAE, AMCA, SMACNA, UL, Florida Energy Code, and Collier County Government Vertical Construction Standards apply to work of this section.

B. All materials and equipment provided shall be assembled, erected, and installed in such a manner as to insure proper operation of the system of which they are a part, including air-handlers, direct-expansion units, temperature controls, chillers, cooling towers, condenser pumps, brine pumps, the chilled water primary and secondary pumping systems, the EMS control system, and the electrical services. Equipment, devices, and accessories, not covered by Codes and/ or Standards governing their installation shall be installed in strict accordance with the manufacturers' printed instructions.

C. All design concepts and drawings, shop drawings submittals, equipment listings, etc. will be reviewed by Facility Management for their approval.

D. After the installation is complete, CCFM shall review the contractor's commissioning plan and testing and balancing results. After tests and commissioning work is approved the equipment shall be officially accepted by Collier County, warranty and guarantee periods shall begin, and the equipment shall be turned over to Collier County in operating condition.

230010 – MECHANICAL SYSTEM DESIGN REQUIREMENTS

A. The HVAC system shall be designed in accordance with the above referenced codes and standards and the requirements and specifications of the building.

B. The system shall be designed to operate at and maintain interior humidity levels at 45% to 50% relative humidity.

C. The system shall be designed to provide heating sufficient to maintain room/space temperatures of 72°F when the outside air temperature is 35°F.

D. Indoor Air Quality; All buildings shall be designed in accordance with the latest issue of ASHRAE Standard 62, Ventilation for Acceptable Air Quality for building outdoor air. Where the requirements of the Vertical Standards are more stringent than the referenced ASHRAE standards, the Vertical Standards shall be used.

E. The system shall be capable of scaling back CFM and outside air when maximum quantities are not required for maintaining acceptable Indoor Air Quality Standards, ie. Demand Controlled Ventilation.

F. Air conditioning system must provide a positive pressure throughout the building.

G. Coordinate with the work of other trades to insure access panels are provided at all required locations and that the access panels are unobstructed by other equipment. VAV boxes and their access panels shall NOT be located above furniture work cubicles. The preferred location for access to these units is above corridors and hallways.

H. All mechanical rooms are to be air-conditioned.

I. All outside air intakes shall have Hurricane Wind/Water shedding louvers installed on the exterior and have duct drains installed immediately on the interior adjacent to the louvers with duct work designed to direct any water entering thru the louvers to the drains. The drains shall be piped directly to floor drains.

J. Electrical equipment rooms shall be air conditioned to maintain 70d F, with not less than 125% excess capacity to cool equipment.

K. Exhaust fans in vehicle areas shall be controlled with manual switch and CO detector.
   a. CO detector overrides manual switch.

L. All 3-phase equipment shall have phase-loss protection.

M. The overall system shall be designed to operate at maximum electrical energy efficiency while maintaining Indoor Air Quality Standards and Collier County Air Quality Standards under all load conditions.

N. ALL HVAC air handlers, exhaust fans, supply fans, and cooling equipment shall be equipped with magnetic starters or VFDs to enable connection and control by the JCI Building Automation System (Metasys).

230020 – AS-BUILT DRAWINGS

A. Contractor must provide accurate and updated as-built drawings detailing all mechanical installations accurately as they are installed. See **SECTION 017839 – PROJECT RECORD DOCUMENTS** for further details.

230021 – FINAL CLEANING AND ACCEPTANCE

A. Special care should be taken during construction as to not let any foreign particles into the occupied area air stream.

1. The Contractor shall clean all AHU coils and replace all filters prior to final acceptance.

2. The Contractor shall maintain filter media on all open ducts during the entire construction period until the system is in normal operation.

B. The Owner, Engineer, and Contractor shall meet on-site and review the As-built Plans, Test and Balance Report, the Manufacturers Operation manuals, and the Maintenance manuals and instructions prior to acceptance.

230548 – VIBRATION AND NOISE CONTROL

A. All units shall be equipped with proper vibration control springs and/or pads specified by manufacturer to minimize vibration and noise.

B. Mechanical rooms adjacent to offices must be quiet operating and sound levels shall be abated and subdued with insulation and silencers so that the pressure levels within three feet from any surface on the chiller and within the mechanical room do not exceed 90DB.

C. Coordinate with the work of other trades as required to insure adequate sound attenuation of all equipment. Provide full height partitions and sound batt insulation at all mechanical room walls. Seal all wall penetrations, and provide continuous seal at top, bottom, ends and all edges of mechanical room walls.

230553 – MECHANICAL IDENTIFICATION

A. All supply and return grilles shall be marked with vinyl letters to identify the grille and corresponding air handling units and as directed by CCFM Staff. All grilles will be assigned a number by the Senior HVAC technician and included on the master ventilation plan. These numbers will coincide with METASYS identification numbers for ease of identification for remote use.

B. All condensers, air handler units, fans, and other major components of the mechanical system shall be identified with the same designation used on the

drawings and supplemental numbers as designated by FMS. Use either neatly stenciled signs painted directly on equipment, or plastic signs with 1" high engraved letters permanently fastened to the units.

230563 – ANTI-MICROBIAL TREATMENT

A. Not Required.

230593 – TESTING, ADJUSTING, AND BALANCING

A. All air handlers shall be properly balanced at designed static pressure of the unit manufacturer prior to occupancy. Each air handler shall be balanced at: 1 Maximum Cooling Conditions, 2 Minimum Cooling (satisfied) Conditions, and 3 Maximum Heating Conditions. Each zone should be properly balanced, each diffuser should have proper amount of CFM making up the total for each individual VAV box. The total CFM of all VAV boxes should equal the CFM output of their air handler to be properly balanced. This must be achieved for acceptance of the air testing and balancing report.

1. Provide written qualifications of all personnel used to perform any testing, adjusting, or balancing on site. Provide written certification to the County that work was done on site.

2. Install clean filters at AHU and at all R/A grilles prior to testing and balancing.

3. All ceilings shall be installed and all doors and windows shall be closed during test and balance work.

B. Test and balance services shall be included in the contract for construction.

230713 – DUCT INSTALLATION

A. All ducts shall be externally insulated. There shall be no fiberglass material in the air stream.

232300 – REFRIGERANT PIPING

A. All piping shall be type "K" or type “L” copper piping. All elbow piping shall be of long radius to increase flow and prevent restrictions. Provide 45d elbows in lieu of 90d elbows wherever possible. All taps, tees, joints, oil-traps, and other connections shall be made only with appropriate fittings designed and selected for the use of the piping system. All connections shall have brazed joints.

233113 – METAL DUCTWORK

A. All supply and return ductwork shall be externally insulated galvanized sheet metal with no fiberglass insulation in the air-stream. All exhaust fan ducts and outdoor air ducts shall be aluminum with external insulation.

B. Ductwork Accessories; All materials needed such as anchors, hangers, screws, canvas connectors, "S" and "Drive" cleats, duct sealant shall be properly installed as to insure proper safe operation of system.

233116 – FIBROUS-GLASS DUCTWORK

A. Fiberglass duct systems are not allowed in new building or renovations.

233233 – PLENUM RETURN SYSTEMS

A. Plenum return systems are not allowed in new buildings.

233346 – FLEXIBLE DUCTS

A. Maximum length 6'-0".

234000 – AIR FILTERS

A. All air handling units should have clean pleated filters, min 2" thick, 40% MERV 8 efficient per ASHRAE 52.

B. Install filter grilles at all returns serving occupied spaces.

236400 – CHILLER EQUIPMENT AND PIPING

A. Chiller shall be an electric motor driven centrifugal or rotary screw liquid type, equipped with flooded evaporator, water cooled condenser, oil supply system for both lubrication and hydraulic capacity control, electrical disconnect, motor starter, and microcomputer control panel, and all related inter-connecting piping and electrical connections. Chiller shall be a factory assembled and packaged unit complete with full operating charge of oil and refrigerant. Refrigerant shall be R22, HCFC 123, or HFC 134A.

1. Chiller shall be manufactured by the Trane Company unless approved otherwise by FM Director.

B. Variable Frequency Drives for pumps and fans shall be manufactured by ABB. No substitutions

C. Chiller Room Safety Equipment; The contractors' chiller manufacturer shall furnish all necessary safety equipment as required to bring the existing or new chiller mechanical room up to the current ANSI/ASHRAE Standard No. 15-1992 requirements and in accordance with the furnished per Standard No. 32-1994. The requirement includes signage identifying the type, quantity, pressure, and installer of the refrigerant, oxygen deprivation and refrigerant sensors, monitoring panels, occupancy sensors for automatic activation of the ventilation systems, plus one normal use and one backup use approved self-contained breathing apparatuses with storage cabinets. Proper mechanical room ventilation should be sized for heat dissipation.

D. Alarms; All chiller rooms shall be equipped with a carbon monoxide sensor and alarm.

E. Pipes and Pipe- Fittings for Chilled Water Systems; Pipe shall be Schedule 40 black carbon steel type BCS-150 meeting requirements of ASTM A120 and A53 for chilled water, cooling tower water, brine water, and vent system usages. All piping shall utilize screw fittings for sizes 2" and smaller and butt welded joints and flange fittings for sizes 2 1/2" and larger as required to join associated valves and equipment flanges.

1. No PVC piping on any chilled water, cooling tower water, brine water and vent system usages.

F. Valves for Chilled Water Systems; Valves for isolation and shut-off services shall be gate type with dual supported rising stems for 125PSI working pressure service with bronze valve bodies and screw fittings for pipe sizes up to and thru 2-inches and with iron bodies and either flange or grooved fittings for all larger pipe sizes.

1. Balancing valves for fixing water flow rates shall be ball and/or globe type with calibrated orifices, indicating operating handles and flow rate gauge fittings as required for setting flow rates.

2. Variable water flow system control valves shall be globe and/or butterfly single- and two-way types with manual and motorized operators as required to operate within the BAS system. All valves shall be capable of providing smooth proportioning flow control. Spring returns shall be provided on all two positions and/or reversible modulating valves where required for fail-safe operation.

G. Piping Specialties for Chilled Water Systems; All required piping accessories shall be provided and shall include, but not be limited to, air vents, pressure relief valves, dielectric connectors, gauge piping, strainers, flexible connectors, temperature sensors and wells, pressure gauges and ports, gaskets, and wall and floor sleeves, expansion joints, pipe supports, and anchors and all other devices necessary for a complete and operable installation.

H. Thermal Pipe Insulation for use indoors on all chilled water piping and surfaces shall be minimum 1 1/2-inch thick fibrous glass insulation with vapor barrier. Use 2" foam glass insulation between chiller and ice tanks.

I. All chilled water piping shall be color coded with label and arrows identifying direction and contents of flow. Provide aluminum jacket over all insulated piping where exposed to view and/or exterior to building above grade.

J. Each building shall have both supply and return chilled water line shutoffs at the entrance to the building and at each floor of the building.

236500 – COOLING TOWERS

A. Cooling tower shall be an induced draft, cross flow, factory assembled. It shall consist of heavy gauge steel frame work cells housing bottom cold water basins, central water spillways, and top hot water basins, fans and speed reducing decks, fan cylinders, electric drive motors, etc. The tower shall include all accessories as required for safe and reliable operation. Structural framing, casing covers, basin, sump, and all fasteners shall be stainless steel.

1. Cooling Tower shall be manufactured by the Marley Company, Baltimore Aircoil, or a County approved equal.
2. Cooling Tower shall be CTI certified.

B. Pumps shall be centrifugal types of two mounting arrangements, in-line pipe mounted for secondary chilled water loop pumps and base mounted for all other applications.

1. Pumps shall be manufactured by Bell & Gossett, Armstrong, Aurora, EVAPCO, Peerless, or an approved equal.

2. Limit pump motors to nominal 1800 RPM wherever possible

3. All pumps shall be Horizontal models unless specifically approved by CCFM.

C. The base mounted pumps shall be installed on housekeeping pads which are installed in such a manner to insure accessibility to remove pump motors. The pumps should be located near accessible doors allowing a portable hoist into and accessing the pumps without any obstructions.

1. Locate motor out of airstream.

237300 – SPLIT – SYSTEM HVAC UNITS

A. Split-system HVAC units shall be matched units provided by the same manufacturer. Approved manufacturers are Carrier, Trane, and York.

B. Air Cooled Condensers

1. All air cooled condensers shall be concealed from view from the front or sides of the building. Condensers shall be located in a dry, dust-free environment separated from landscaping and maintained lawns and not confined in an enclosed area. Provide "Bronzeglow" factory applied protective finish (or approved equal) where units are located within one mile of the coast. Do not locate exterior units directly under the edge of a roof overhang or roof valley.

2. Provide sufficient clear area around the unit to for maintenance and free air circulation without recirculation. Confirm the manufacturer's minimum recommended clearances between units and walls prior to design. In no cases shall units be placed closer than two (2) feet from an adjacent wall nor closer than three (3) feet between units. Provide additional clear areas for servicing as recommended by the manufacturer, but not less than (5) feet on service side, plus a minimum five (5) foot by five (5) foot clear work area. The work area must be a hard surface such as on a concrete pad or pavement. Coil grill guards shall be installed on all air cooled condensing units 5 ton and larger.

C. Air Handling Units

1. All air handling units shall have not less than two (2) feet of clearance around the entire unit, plus not less than five (5) feet clear on the service side(s) of the equipment. Provide at least one five (5) foot by five (5) foot clear floor area in the equipment room for servicing and maintenance of the equipment. The clearances specified herein are minimum sizes and may need to be increased as necessary to accommodate the equipment used. The size and maintenance requirements of the unit shall be used to determine the required room size.

2. Air handlers shall not be located in attic space, but in mechanical rooms with duct leading into the ceiling. (Exception only if an existing system is installed in an attic space.

3. Provide double-wall Air Handler Units with sloped drain pans.

237400 – ROOFTOP UNITS

A. Avoid rooftop units whenever possible. When located on roof, units shall not be visible from the ground. Approved manufacturers are Carrier, Trane, York, and Weatherking. Provide "Bronzeglow" or equivalent, factory applied protective finish where units are located within one mile of the coast.

B. Comply with SMACNA and NRCA standards for flashing at all roof penetrations. Coordinate work with other trades. Provide prefabricated roof curbs under all roof mounted equipment. Pitch pans are not allowed. Provide walk boards at rooftop locations.

238400 – DEHUMIDIFICATION EQUIPMENT

A. Dehumidification equipment must be correctly sized to maintain 50% (or lower) relative humidity level. Manufacturer shall be Scorpion or CCFM approved equal.

B. Coordinate design requirements with other trades as required to meet this specification. Vestibules are recommended at all high-traffic entrances to the building.

DIVISION 25 – INTEGRATED AUTOMATION

255000 – BUILDING AUTOMATION CONTROLS

A. "BAS" Control systems

1. All buildings will be evaluated for application of Building Automation Systems, but in general, all buildings over 4,000 square feet will include a Johnson Controls Metasys Building Automation System. At projects where lift station(s), emergency generators, computer room A/C and large UPS systems are installed and where a building automation system is provided, the critical alarms for each piece of equipment shall be monitored remotely via existing CCFM BAS system. Included within the package will be all items currently being utilized by CCFM.

2. Temperature sensors and controls to be located in each private office, zone and/or open area as specified by engineer.

3. Zone and room temperatures to be controlled only by CCFM BAS, not by room occupant. *NON - adjustable sensors are to be used in all areas except when specifically exempted in writing by CCFM staff.*

4. Unless otherwise specified by CCFM, all temperature setpoints will be configured for 76 degrees Fahrenheit.. Metasys warnings shall be configured for temperatures greater than two (2) degrees above or below setpoint. Metasys critical alarms (with e-mail and pop-up functionality) shall be configured for temperatures greater than four (4) degrees above or below setpoint.

5. Unless otherwise specified by CCFM, all conditioned spaces shall have relative humidity setpoints of 50%. Metasys warnings shall be configured for relative humidity greater than 60%. Metasys critical alarms (with e-mail and pop-up functionality) shall be configured for relative humidity greater than 65%.

4. Temperature, CO2 and humidity sensors shall be located in space which is being controlled. The sensors shall be mounted on a wall 5 feet above the floor. An additional humidity sensor shall be located in the R/A ducts, and all RH sensors shall be connected to the BAS system. All humidity sensors installed in County facilities need to be installed in the space that it is monitoring (not in duct). The sensor needs to be installed per manufacturer's requirements. This is usually at the 4-1/2 to 5 foot level. It must be clear of all furniture and other obstructions so as to properly read the space RH%. The sensor must be installed on an inside wall of the space being monitored to avoid adverse readings from possible outside wall drafts. Sensors installed in return ducts can be easily forgotten about and be difficult to repair. Again, you may not get accurate readings from return air locations due to dust collecting as an insulator and location of the return near an outside doorway. Any deviation from the standard of room sensors needs to be explained and approved by the Director of CCFM.

5 Individual DDC controller for each major piece of mechanical equipment to insure operation in case of failure to our "BAS" system.

6. All computer, electrical, and IDF rooms will have temperature sensors With alarmed ranges monitored and page-able.

7. CCFM Building Automation Supervisor (or designee) shall provide a list of naming conventions (e.g. abbreviated building names) to be used when programming equipment. The provided naming conventions shall be

followed for all related configurations performed by the Contractor.

8. All alarm points shall include detailed descriptions of the type of alarm and location with naming conventions provided by CCFM Building Automation Supervisor (or designee).

9. System shall include lighting, heating, and cooling schedules provided by the CCFM. These schedules shall be accessible via "All Items" navigation, building navigation, and graphics navigation in Metasys.

10. BAS graphics shall be provided upon completion of project. The Design Professional/Contractor shall coordinate with the CCFM Building Automation Supervisor (or designee) to obtain maps/floorplans that meet the CCFM's graphics standards.
Graphics shall include (when applicable):
    9.1 Floor Plan(s) with HVAC and lighting status overlay
    9.2 AHU Summary
    9.3 Chiller/Chilled Water Information
    9.4 Exhaust Fan Status
    9.5 Fire System Information

B. "BAS" Network Design

1. System shall be designed to a fault tolerant distributed system with intelligence at each major piece of mechanical equipment.

2. Communication to all DDC controllers shall be by Network Automated Engine; (NAE) / Network Integrator Engine (NIE) in the building.

3. The NAE/NIE (Network Automation Engine/Network Integrate Engine) shall be connected to Collier County Information Technology Division (CCIT) network switch (for fiber-connected sites) or CCIT ASA/modem for remote sites. Sites without network connectivity will operate in stand-alone mode. All equipment connected to the CCIT network shall follow the CCIT standards enumerated in **SECTION 272000 – INFORMATION TECHNOLOGY (IT)**. System shall allow automatic e-mail notification of critical alarms as defined by CCFM prior to software generation.

DIVISION 26 – ELECTRICAL

260000 – GENERAL

A. Standards; Requirements of Division 1, the National Electric Code, NFPA, NEMA, and UL apply to work of this section.

B. All automated lighting control systems shall be monitored and controlled through the CCFM building automation system, unless otherwise approved by CCFM. See **Section 255000 – BUILDING AUTOMATION CONTROLS** for further details.

C. Underground copper communications wiring (e.g. RS-485) must be direct-burial cable (DBC) and suitable for wet/humid locations. Plenum cables are not permitted for use underground.

D. All 3-phase equipment shall have phase-loss protection.

E. All light fixtures must accept G.E. replacement lamps.

F. Lighting should be designed to recommend candle power readings of Illumination Engineering Society.

G. Wherever practical, high efficiency, LED lamps or Energy Star rated products should be used.

H. All private offices, bathrooms, break rooms, and other areas with intermittent occupancy during the normal work day, shall be equipped with occupancy/motion sensor light switches.

I. ALL HVAC air handlers, exhaust fans, supply fans, and cooling equipment shall be equipped with magnetic starters or VFDs to enable connection and control by the CCFM Building Automation System as described in **Section 255000 – BUILDING AUTOMATION CONTROLS**.

260010 – AS-BUILT DRAWINGS

A. The Contractor shall provide accurate and updated as-built drawings detailing all electrical installations, to include outlets, shown as they are actually installed.

260020 – RENOVATION AND RETROFIT WORK

A. For all renovation, retrofit, and building additions projects, the Design Professional and/or Contractor must consult with County maintenance personnel for tie-in to existing equipment.

260030 – SPECIAL EQUIPMENT ROOM REQUIREMENTS

A. All mechanical rooms and exterior equipment areas shall be fitted with at least two (2) one (1) 20 amp duplex electrical outlets, 115 volt single phase.

B. All mechanical rooms shall be fitted with sufficient lighting to properly illuminate all areas of the room taking into account light obstruction due to equipment, provide approximately 100 Foot Candles of illumination.

C. Provide 2 separate electrical rooms; one for building power and one for low voltage applications such as computer networks, phone etc. The intent is to physically separate functions while maintaining close proximity to each other.

D. If building is equipped with card access hardware, provide card reader at each equipment room.

260040 – IDENTIFICATION

A. Provide neatly typed panel schedules identifying all circuits in all new and renovated work.

B. All panels and switchgear shall be identified with engraved plastic signs indicating same designation shown on the as-built plans.

260500 – CONDUCTORS AND CABLES

A. Only T.H.H.N. or equivalent, insulated copper wire shall be used in all electrical wiring

B. Engineer shall design wiring with respect to the harmonic loads of the building.

C. Neutrals shall be installed using one of two approved methods:

1. Install separate neutrals with circuits.

2. Install oversized neutrals.

D. Raceways and Raceway Fittings shall be thin wall EMT type steel conduits for indoor use, and PVC for exposed outdoor use. All raceways shall be complete with fittings specifically designed for use with the associated raceways. Flexible metallic and PVC are acceptable.

E. Junction, Outlet, and Pull Boxes Shall be constructed of code gauge sheet steel, galvanized or sheradized or otherwise rust proofed, and sized in accordance with the NEC per number of devices and wires within the boxes or the number and sizes of conduits entering the boxes. Outlet boxes shall have suitable cover plates or devices mounting plates as required for its associated device and/or accessory. Junction and pull boxes shall have blank steel covers bolted to the boxes.

F. Sleeves for pipe and conduit penetrations through concrete or masonry walls shall be minimum No. 22 gauge sheet steel.

G. Underground wiring, low and high voltage, for card access, camera, and code blue phones. All wiring underground shall be rated for wet locations, regardless of whether they are in conduit, or they are direct burial. They shall have surge protection at both ends. When leaving and, or, entering a building; when terminating at any device installed outside; including: cabinets, camera poles, code blue poles, cameras, readers, card access units, gate controllers, etc.

260526 – GROUNDING

A. Pull ground wire with all circuits.

B. Grounds shall be cad welded to steel frame structures.

C. Ground rods shall be a minimum of twenty (20) feet long

D. Step down transformers for lighting and receptacle loads shall have grounded electrodes to each transformer.

260536 – CABLE TRAYS

A. Provide cable trays or hooks above corridor ceilings where required by Owners building design program.

C. Communication Cabling: . The insulation or outer jacket of all wiring shall be color coded by function according to the National Electric Code Standard.

CAT-6 Patch Cords

Connection Type	Color
Ethernet	Yellow
Critical Care (e.g. Security)	Red
Cross-Over	White
UPS	Green
Server	Blue
Division Owned Hardware	Black
PoE Connections (Wireless)	Orange
Voice Connectivity	Gray

Fiber Patch Cords

Connection Type	Color
MM Fiber (62.5 micron)	Orange
MM Fiber (62.5 micron)	White
MM Fiber (50 micron)	Aqua
SM Fiber	Yellow

260620.16 – DISCONNECT SWITCHES AND CIRCUIT BREAKERS

A. All circuit breakers shall be either Square D or ITE type breakers.

B. Wafer style breakers shall not be used in new construction.

260620.26 – DEVICES

A. All receptacles shall be twenty (20) amp combination devices.

B. Except as noted below, the color of all switches, cover plates, fixtures, devices, exit lights, emergency lights, etc. shall be either White or as scheduled by Design Professional. Trim shall be white color, aluminum, brushed aluminum, or chrome.

1. Computer/UPS outlets shall be orange color.

2. Emergency generator outlets shall be red color, unless entire facility is powered by emergency generator.

B. Firestop Wiring Devices: Furnish and install fire rated wiring devices in fire rated wall(s)/floor(s) for designed and future pathways.

1. Cables passing through fire-rated floors or walls shall pass through fire-rated wiring devices which contain an intumescent insert material that adjusts automatically to cable additions or subtractions. Preferred type is UL System CAJ3231, Easy-Path, by Specified Technologies, Inc.
2. The device (per code requirements) shall include both internal and external firestopping.
3. Cables penetrating through fire-rated floors or walls shall utilize fire-rated pathway devices capable of providing an F rating equal to the rating of the barrier in which the device is installed.
4. The device shall be tested for smoke leakage (L rating) and shall not require the use of any optional sealing materials to achieve the published rating.
5. The device shall utilize a fire and smoke sealing system that automatically adjusts to the addition or removal of cables.
6. Wiring devices shall be capable of allowing a 0 to 100-percent visual fill of cables.
7. Wire devices shall be of a sufficient size to accommodate the quantity and size of electrical wires and data cables required and shall be suitable for use with new or existing cable installations.

8. The installed device (in normal use) shall require no maintenance and shall accommodate future cable changes without mechanical adjustment and/or removal or replacement of protective materials.
9. Wire devices to be provided with steel wall plates allowing for single or multiple devices to be ganged together.
10. The device shall be modular and shall provide mechanical installation options for common wall and floor constructions as well as common construction conditions including over-sized or damaged openings or existing sleeves.

262200 – TRANSFORMERS

A. Provide non-linear load transformers where required.

264100 – LIGHTNING PROTECTION

A. Where required by building design program, provide a complete UL listed lightning protection system. Shop drawings shall be reviewed and approved by the Design Professional prior to installation. Minimize roof penetrations and coordinate the work with other trades as needed for a complete and proper leak-proof installation. Exposed pitch pans are not allowed.

264300 – TRANSIENT VOLTAGE SUPPRESSION

A. Provide appropriate surge suppression device for all buildings.

265100 – INTERIOR LIGHTING

A. Fixtures types shall be limited to listed standard fixtures to facilitate maintenance.

1. Basic interior lighting fixtures shall be 2' x 4' fluorescent lighting fixtures.

2. All lighting fixtures shall have electronic ballasts with T-5 fluorescent lamps with safety fuse, or LED equivalents

3. Recessed lamps shall use only standard PL 5, 7, 9, or 13 lamps. Do not use quad or non-standard lamps.

4. Special fixtures must be approved by the County prior to completion of design.

5. Tandem ballasts are not allowed.

6. Provide at least one non-switched fluorescent night light in Foyer, Lobby, Corridors, and large Open Office areas

7. Lighting must be energy efficient and designed to the recommended candle power readings of the Illumination Engineering Society.

265200 – EMERGENCY LIGHTING

A. Emergency lights shall be low-profile surface mounted dual head units, white color.

1. Provide Chloride Fusion 2, Surelight CU-1, Beghelli Deco 6, or approved equal.

2. Do not use EM backup units for recessed fixtures.

265300 – EXIT SIGNS

A. Provide LED exit signs with battery back-up for emergency egress requirements.

B. Exit signs shall not use fluorescent lamps and nor any radioactive materials.

C. Exit signs shall have brushed aluminum faces. Stencils shall be green.

265600 – EXTERIOR LIGHTING

A. Exterior fixtures shall utilize metal halide lamps with standard mogul bases. Acceptable sizes are limited to 150, 250, and 400 watt lamps.

B. Light poles shall be individually fused and numbered sequentially in order to confirm exact pole location for bulb maintenance. Call CCFM prior to installing numbers for approved number material, colors, and location on pole.

C. Exterior fixtures shall be all aluminum or heavy duty vandal resistant plastic construction with vandal resistant glass lenses.

D. Well or buried fixtures are not allowed

E. Flag pole lights: 100W MH.

F. Sign lights: LED equivalent to 70W MH unless approved otherwise.

G. Exterior wraparound fixtures: not allowed (use vapor proof fixtures in exterior environments).

DIVISION 27 – COMMUNICATIONS

All communication wiring and cabling shall be run in wire ways, troughs, or other approved supporting means according to NEC 70E. Fire wiring devices shall be used in all fire rated wall(s)/floors(s), refer to Section 26026.26 for requirements.

272000 – INFORMATION TECHNOLOGY (IT)

A. All Category 6 and Fiber Optic cabling must meet the standards set forth in the **CCIT Construction Standards**.

B. Use Category 6 wire for all data lines in new construction and renovations.

C. All offices and conference rooms shall have two IT Duplex Boxes on opposite walls. Each box to have two Cat-6 cables, terminated and certified. Open space areas to have two Cat-6 lines for each cubicle shown on the systems furniture layout.

D. Networking hardware (switches, routers, firewalls, etc.) connected to the CCIT network shall only be specified, provided, and installed at the direction of the CCIT Division. Unauthorized devices will be immediately disconnected and may be confiscated.

E. CCIT equipment racks shall not be accessed without an authorized County escort (e.g. CCIT staff and other County personnel with CCIT job classifications) unless provided with express written consent from an authorized County staff member.

272010 – FIBER OPTIC LINES

A. All Single-Mode Fiber Optic cabling must meet the standards set forth in the **CCIT Construction Standards**.

B. Multi-Mode Fiber Optic cabling may **only** be used for building automation and security equipment. Multi-Mode fiber must conform to the **CCIT Construction Standards** with the exception of wavelengths used (and the specifications related to single-mode wavelengths and transmission distances). Additionally:

1. All multi-mode CCFM fiber shall be ORANGE in color.

2. Fiber optic cable manufactured for specific projects shall contain a RED stripe & labeled “Collier County BCC FM” every 3 feet.

3. Fiber patch cables shall be labeled “Collier County BCC FM” at both ends and also include additional description unique to the attached equipment.

273000 – TELEPHONE SYSTEMS

A. All Telephone System cabling must meet the standards set forth in the **CCIT Construction Standards**.

B. Conceal all cables in walls, partitions, and ceiling spaces wherever possible. Run lines in conduit from telephone board to telephone company connection. Do not install unprotected lines or equipment on exterior walls of the building.

274000 – CABLE TV SYSTEMS

A. Pre-wire for standard cable TV service to all Conference Rooms, Training Rooms, Meeting Rooms, Lobbies, Executive Offices and where identified in the Owners building design program. Refer to the **CCIT Construction Standards**.

DIVISION 28 – NETWORKED SECURITY & AUTOMATION DEVICES

280000 – GENERAL PROVISIONS

A. Network-based (IP) devices connected to the CCIT network must comply with all CCIT standards. All devices must be terminated to a patch panel that matches cable type (e.g. CAT-6 cable to CAT-6 patch panel). No networked security & automation devices shall be daisy-chained; each shall have dedicated cabling. Cabling certifications for security and building automation devices shall be provided to the CCFM Building Automation Supervisor (or designee) in addition to the CCIT Division.

B. Only equipment contained in the **CCFM Standard Equipment List** shall be allowed to connect to the CCIT network, unless Contractor is provided with express written consent from the CCFM Building Automation Supervisor (or designee). Contractor shall be responsible for any and all costs associated with replacing non-standard (unauthorized) equipment.

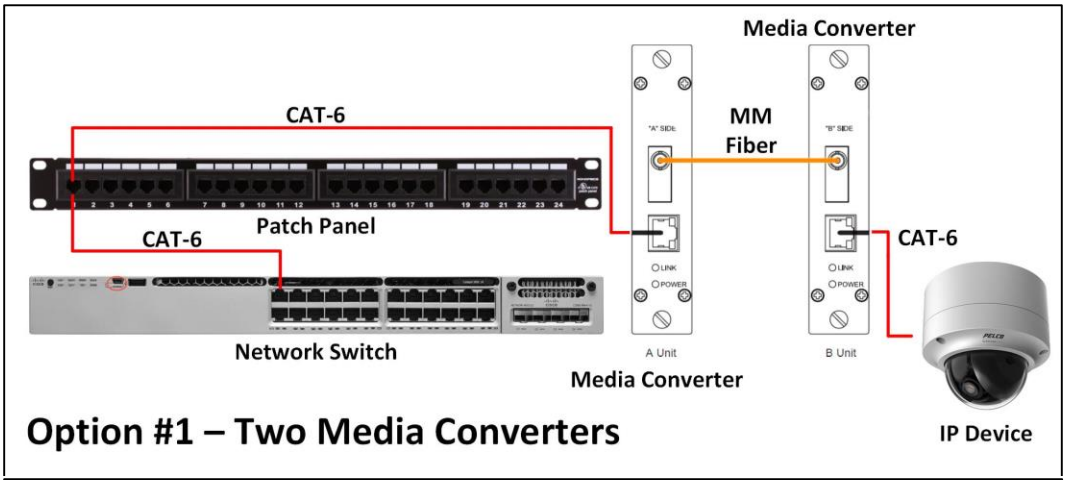
C. Network port security (MAC address restriction) is implemented for all building automation and security devices. Device installations and replacements must be coordinated in advance with the CCFM – Building Automation Supervisor (or designee) to ensure that the necessary ports are active and properly secured.

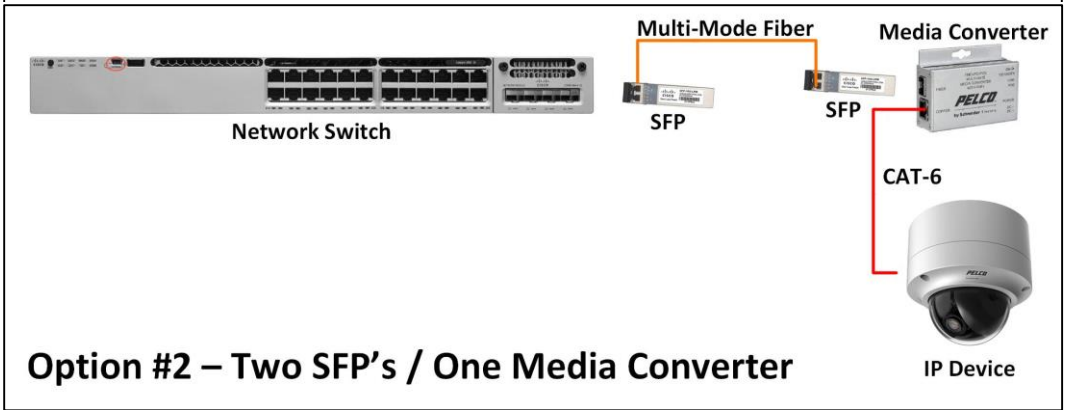
D. Upon receiving network-based devices, the Contractor shall provide CCFM with a list of the make, model, serial number, and MAC address information for those devices. Contractor shall utilize the electronic **CCFM Project Equipment List Form** when providing the above-mentioned information.

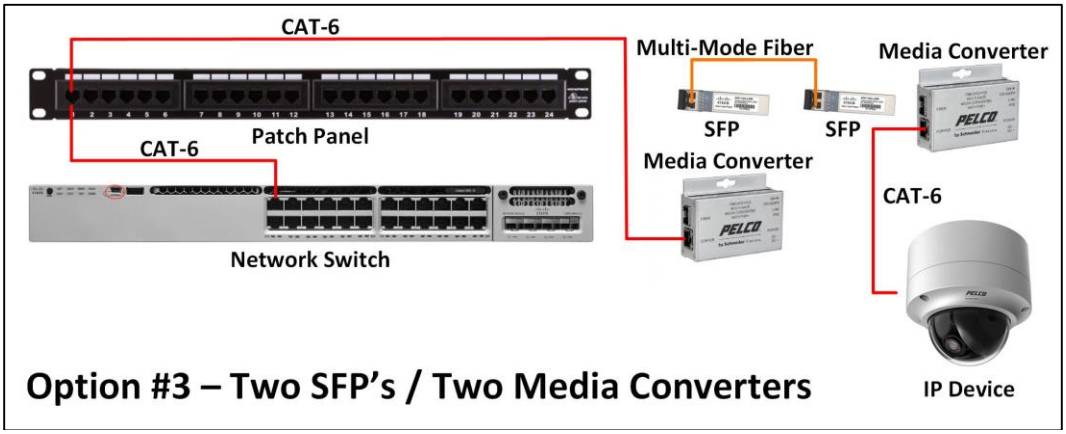
D. The use of single-mode fiber for building automation and security equipment will require express written approval from CCIT prior to use and is generally discouraged without a compelling business case.

281000 – EXTERIOR AND UNDERGROUND WIRING

A. Underground cable runs, as well as cable runs from one building to an adjacent structure, must utilize multimode fiber. The wiring design types shown below are acceptable for underground/exterior use and are ranked in order of preference. Please refer to the **CCFM Standard Equipment List** for further information.







282000 – SURGE PROTECTION

A. For exterior building automation and security equipment with copper cabling (e.g. CAT-6 or coaxial), surge protection equipment (specified in the **CCFM Standard Equipment List**) shall be used at both ends of the cable in a configuration that protects the interior equipment (e.g. network switch).

B. High quality grounding connections for surge protection shall be used for all exterior devices. Grounding systems shall provide an impedance to ground of less than 25ohms as specified in in NEC 250-56.

282000 – DEVICE PROGRAMMING

A. CCFM Building Automation Supervisor (or designee) shall provide a list of naming conventions (e.g. abbreviated building names) to be used when programming equipment. The provided naming conventions shall be followed for all related configurations performed by Contractor.

B. Contractor shall be responsible, at a minimum, for programming the IP address configuration for network-based equipment. The CCFM Building Automation Supervisor (or designee) will be responsible for requesting the IP address scheme from CCIT and providing it to the Contractor once received.

C. Contractor shall ensure that all device firmware is up-to-date with the manufacturer's latest production release prior to installing any new/replacement equipment in the field.

D. The CCFM Building Automation Supervisor (or designee) is responsible for changing the factory default username and passwords on devices. Contractor shall not add, modify, or remove any device login credentials.

DIVISION 29 – ELECTRONIC SAFETY AND SECURITY

291000 – SECURITY AND INTRUSION ALARMS

A. For new buildings or renovations where the security system is being removed, a new integrated system shall be installed. In existing buildings where the security system is not being replaced but monitoring is still requested, the CCFM access control system shall monitor the security system as noted below.

B. System shall perform as a stand-alone security system including all required control sequences per occupant's requirements including necessary keypads, card readers, motion detectors, door contacts, duress alarms, etc.

C. Security system shall communicate to the central station on contract to indicate at a minimum, zone by zone status.

D. When applicable, the CCFM Operations Center shall act as a secondary reporting station and shall not be a primary reporting station.

E. All external hardware shall have tamper proof screws.

F. All roof hatches shall be monitored by the security system.

291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS)

A. Card access shall be installed on newly constructed and renovated buildings as directed by CCFM staff. Additionally, card access shall be provided on all new and remodeled elevators:

1. Exterior: Each floor shall have a card reader at the near the elevator call button (s).

2. Interior: Each elevator cab shall have a card reader.

3. Programming: Access control shall be programmed to permit access-based restrictions per elevator per floor.

B. Security and intrusion alarms may be monitored via the CCFM access control system in lieu of a dedicated burglar alarm system as described in **SECTION 291000 – SECURITY AND INTRUSION ALARMS**.

C. All components of the system shall be backed up with a “building” UPS if available or, if not, a single UPS dedicated to the security and BAS systems, and by the generator if a generator is available.

D. Proximal readers are the current standard for access control. Proximal readers with keypads and/or biometrics are permissible with the express written consent of the CCFM – Building Automation Supervisor (or designee). Contractor is responsible for programming all access control equipment to the CCFM access control system.

E. All access controlled doors and gates shall be wired and configured to alarm in the CCFM access control system when the gates/doors are detected to be "propped" or "forced" (card access was bypassed).

E. Card access doors and associated hardware shall be fully compliant with **Section 087100 – DOOR HARDWARE**.

F. Doors controlled by card access shall use County approved subscription service cylinders supplying two (2) keys per door according to CCFM Standard Key System, with a copy inventoried electronically at the CCFM Operations Center. Contractor shall coordinate a meeting with the County Project Manager, CCFM – Building Automation Supervisor (or designee), and CCFM Locksmith to review the key schedule *prior* to ordering and installation of lock cylinders.

G. For newly constructed and newly acquired buildings, contractor shall provide a minimum of 2 HID cards per person in the projected staffing of the building. The CCFM – Building Automation Supervisor (or designee) will provide the card sequence numbers and ordering specifications.

H. Access control system shall be capable of operating in stand-alone mode should there be any temporary network connectivity issues between the access controller and CCFM access control system.

H. All external hardware shall have tamper proof screws.

I. All roof hatches shall be monitored by the security system.

J. Chain-link fences and other areas with Request-to-Exit (RTE) devices that are easily operated from the non-secure side shall contain additional tamper-resistant measures, such as a metal plate surrounding all sides of the device.

K. Contractor shall not add, modify, and/or delete card access for any cardholders (including themselves).

L. The Design Professional/Contractor shall coordinate with the CCFM Building Automation Supervisor (or designee) to obtain maps / floorplans that meet the CCFM's graphics standards. Graphics in the access control system shall include:

1. Terminals (doors)
2. Duress (panic) alarm inputs (when applicable)

3. Fire extinguisher alarm inputs (when applicable)
4. AED alarm inputs (when applicable)
5. Lockdown event triggers (when applicable)
6. CK7xx Controller/S321-IP Controller locations

292300 – CCTV VIDEO SURVEILLANCE

A. It is the intent of CCFM to remotely monitor all cameras maintained by the Division. This includes, but is not limited to, cameras located at sites occupied by the BCC Agency, Clerk of Courts, Public Defender, State Attorney, Property Appraiser, Supervisor of Elections, and Florida Department of Health. Agencies such as the Collier County Sheriff's Office, Court Administration (20th Judicial Circuit), Guardian Ad Litem, and Tax Collector's Office are exempt from the guidelines enumerated below.

B. All CCTV footage recording equipment shall meet or exceed the **Florida General Records Schedule GS1-SL** specifications for Surveillance Recordings (Item #302). As of the revision date of this standards document, the current minimum retention period is 30 days.

C. The County Project Manager shall ensure that appropriate CCTV footage recording and playback equipment is provided during the course of the project at the direction of the CCFM – Building Automation Supervisor (or designee).

D. The use of in-camera storage (e.g. SD card) is not permitted. Recording of CCTV footage will instead be handled by centralized network storage servers for networked sites. To comply with Collier County Board of County Commissioners' directives, no networked sites shall have the capability to export video footage with the exception of the CCFM Operations Center.

E. Sites without necessary network connectivity are permitted to use a stand-alone CCTV system, however the design of the stand-alone system will be determined on a case-by-case basis by the CCFM – Building Automation Supervisor (or designee) to ensure future compatibility should the site become networked at a later date. Local CCTV footage recording equipment (e.g. DVR) shall be installed in lockable secure cabinet in an air-conditioned and secure (preferably card-accessed) area.

F. The quantities and locations of CCTV cameras shall be reviewed and approved by the CCFM Building Automation Supervisor (or designee) *prior* to the ordering and installation of equipment.

G. With the exception of low security areas (e.g. office hallways), all IP cameras provided shall support, at a minimum. "motion" and "sabotage" analytics.

H. PTZ cameras are generally not advised to be used at unmanned sites or sites without on-site personnel assigned to continuously monitor the cameras. Instead, multiple fixed cameras should be used to provide the necessary camera coverage.

I. Power-over-Ethernet (PoE) 802.3af (802.3at Type 1 – 15W) is typically available for use with IP cameras (unless fiber cabling and/or specialized network switches are utilized). Cameras requiring PoE+ (802.3at Type 2) or higher, such as PTZ cameras, shall be provided with dedicated power or PoE injectors produced by the same manufacturer as the camera.

J. All IP cameras provided shall support ONVIF v1.0+ and multicast video streams.

K. All dome cameras shall have "smoked" [dark] lenses with vandal resistant mounts unless otherwise specified.

L. At a minimum, all interior camera views shall have even illumination that is sufficient for clear viewing/recording during the facility's hours of operation. High security (e.g. Courthouse, Water/Wastewater Plants, safe rooms, etc.) and exterior areas camera views shall have even illumination that is sufficient for viewing/recording on a continuous (24/7) basis. Whenever possible, lighting sources should not be visible in the camera's field of view.

1. Cameras with built-in infrared (IR) illumination are preferred when the existing lighting is not sufficient.

2. Supplemental LED illuminators may be used if they meet the following criteria: semi-covert (815-850nm) or covert (940-950nm) wavelengths with an angle of illumination that matches at least 70% of the camera's field of view (FoV).

3. Thermal cameras are acceptable for areas where built-in and supplemental illuminators are not feasible.

M. The Design Professional/Contractor shall coordinate with the CCFM - Building Automation Supervisor (or designee) to obtain maps/floorplans that meet the CCFM's graphics standards. Graphics in the CCFM CCTV system shall include the camera locations and respective camera views.

N. Two (2) local viewing options for viewing CCTV cameras are available:

1. Software-based (on CCIT PC's). There are no software licenses/fees required to use the CCTV monitoring software.

2. Hardware decoders. This option currently provides a view-only solution with no ability utilize the pan, tilt, or zoom functionality

of PTZ cameras. The hardware decoder option shall include a dedicated UPS device capable of sustaining the decoder for a minimum of ten (10) minutes during a power outage.

O. Two (2) weatherproof electrical outlets shall be installed in locked panel on poles used for CCTV panel.

293100 – FIRE ALARM

A. Provide a complete Fire Alarm system where required by Code or Ordinance. Refer to Division One for General Requirements, Codes, and Standards, including FBC and NFPA codes.

1. Fire Alarm systems shall be provided by Johnson Controls, GE-AST-III, Firelite, or approved equal as directed by FM staff.

B. Comply with the requirements of NFPA 72, National Fire Alarm Code for all work related to the design and installation of the system. The Engineer of Record shall review and approve the installers shop drawings prior to permit application.

C. The fire control panel shall be an addressable fire panel that is ULFM listed. A dual dialer with two (2) phone/Internet lines coming from the fire panel is required; two (2) lines per fire code to the primary monitoring company. System shall perform as a stand-alone fire alarm system including all required control sequences including Fire Department notification.

D. Maintain accurate as-built plans of all work.

1. Provide neatly typed zone schedule at the fire alarm panel.

2. Provide CAD discs of any new or revised alarm system.

E. Provide a lockable exterior “fire fighter key box” located near the main entry of each new building and containing the building’s master key or card access card for use during fire emergencies. Approval of the box type and final location shall be determined solely by the Fire Department and / or Fire Marshall for each fire district.

F. Provide a “Stopper II w/Horn Casing” (model # STI-1130 or equivalent) for all Lobby and Entrance area Fire Pull Stations.

G. All warning devices (Horn/Strobes etc.) shall be ceiling mounted and not located on the wall unless required by code. Center the device within individual ceiling tiles when possible. All warning devices shall be equipped with internal battery Back-up

294001 – EMERGENCY CALL BOXES

A. Emergency Call Boxes (Telephones) shall be conspicuously located inside of parking structures, with a quantity to be determined during the design meeting. At the request and direction of County staff, Emergency call boxes shall be furnished at the entrances for automated access-controlled gates and other areas where occupants and/or members of the public may need to call someone for assistance.

B. All emergency call boxes shall be programmed to call the CCFM Operations Center upon pressing the call buttons unless expressly directed otherwise by the Building Automation Supervisor (or designee).

C. Emergency call box enclosures shall be furnished with a standard blue exterior and white "ASSISTANCE" label running the length of the unit. Installation must follow manufacturer's guidelines in addition to the following items:

1. Concrete foundation for free-standing units shall be a minimum of 2-feet in diameter, 3-feet in depth, and have a 4-inch projection above finished grade

2. Electric and communications shall be stub up at the center of the foundation within 4-inch circle and 5-inch minimum projection above concrete.

3. Leveling nuts shall be used (when necessary) to position unit base Vertically between ½-inch minimum and ¾"-inch maximum above concrete to prevent condensation in the top of the unit.

4. For free-standing units, a ½-inch by 8-foot copper rod shall be inserted in the center of the foundation and tied to the steel bollard to ensure proper grounding.

5. Bollard(s) shall be installed for free-standing units if there are no existing bollards, curbs, or other barriers to protect the units.

D. Remote-mount LED beacon/strobe combination shall be provided on all exterior emergency call box enclosures unless otherwise directed by CCFM – Building Automation Supervisor (or designee).

E. When card access and/or CCTV cameras are specified to be included with the emergency call box enclosures, a dual (2) faceplate enclosure shall be provided. The camera and card reader shall be installed on the top faceplate.

1. For sites with frequent visits from large vehicles (e.g.

Water/Wastewater Plants), a quad (4) faceplate enclosure shall be provided. With a quad faceplate enclosure, the upper two faceplates shall contain the same equipment as the bottom two faceplates and provide identical functionality. See example design:

F. The standard button configuration for emergency call boxes is two-button, with one labeled “Push for Help” and the other labeled “Info”. Elevators shall be one-button models with a “Push for Help” label.

G. All emergency call boxes located near automated gates shall include wiring from the emergency call box’s secondary output (#2) to the gate controller. This configuration shall allow remote operation of the gate via the call receiver’s phone. Emergency call boxes with keypads will be programmed to only allow internal numbers to be called when used with this functionality.

H. All emergency call box replacements and installations shall be coordinated with the CCFM Building Automation Supervisor (or designee).

I. All emergency call boxes shall be tested and information verified before contractor leaves worksite.

295001 – DURESS (PANIC) ALARMS AND LOCKDOWN BUTTONS

A. For sites with CCIT network connectivity, all duress (panic) alarms shall be monitored via CCFM card access system .

B. High security buildings shall be furnished with a “lockdown” button located at the front/reception desk. This button shall physically override the exterior door hardware and prevent ingress until reset remotely by the CCFM Operations

Center. Egress shall be allowed via activation of Request to Exit (RTE) functionality at the door.

C. Duress (panic) alarms shall be furnished at card access facilities for any area that accepts payment (e.g. cash counters and ticket booths). Duress alarms shall also be furnished in offices of elected officials (e.g. judges, commissioners, top-level administrators, etc.).

D. Duress (panic) alarms shall be mounted in areas that do not allow for easy (unintentional) activation.

DIVISION 31 – EARTHWORK

310000 – GENERAL

A. Comply with the Collier County Land Development Code, FBC, and requirements of Division 1.

312000 – GRADING

A. Enclosed building floor slabs shall be at least 8" above exterior finish grade. Do not slope grades towards buildings. Final grading around the building is to be sloped evenly away from structures and slabs to insure positive drainage.

DIVISION 32 – EXTERIOR IMPROVEMENTS

329300 – LANDSCAPING

A. Except for grass, all landscaping must be at least three (3) feet away from any exterior wall. Plants and other foliage must have a three (3) foot clearance between outer limbs and each wall.

B. Trees are to be planted at least Fifteen (15) feet from any exterior wall. No Trees to be planted in pavers

C. Landscaping may not be planted within Four (4) feet of HVAC units, fire protection assemblies, mechanical or electrical equipment. Increase distance as needed to provide required clearance for anticipated full-grown size of landscaping.

D. Install not less than 10" wide border of gravel at the perimeter of exterior walls around each building. Gravel shall be not less than 4" thick, installed over weed

block fabric, with a suitable continuous edge trim. Top of gravel shall be at least 8" below the finish floor slab.

A. Completely remove all compacted base and sub base material from all areas intended for landscaping and trees. Add top soil to all areas prior to installation of plant material.

B. Facility Manager to approve all plant material prior to installation.

C. Irrigation system shall tie into existing system or follow standards. Provide connection to reclaimed water system if possible.

D. Grading and landscaping shall be sloped away from building, walkways, pavement, equipment, etc, and water runoff shall drain into site drainage system without standing water.

END OF VERTICAL STANDARDS DOCUMENT

PROJECT CHECKLIST

In addition to the items identified in the program for the project, the following specific items shall reviewed by the Design Professional and discussed with CCFM staff:

1. Design Criteria- Wind Speed _____
2. Floor Elevation _____
3. Flood-Proofing Method, if required _____
4. Local Architectural Standards, if applicable _____
5. Roof- type and color _____
6. Insulation- code -vs- increased R values _____
7. Exterior Doors- corrosion resistance _____
8. Window Glazing- laminated, tinted, etc. _____
9. Window Protection- shutters, if any _____
10. Hardware- card key access -vs- keys _____
11. Hardware- key schedule _____

12. Color Selections
13. Carpet Type- glue-down -vs- carpet tile
14. Carpet Specifications
15. Security System, if required
16. Security Cameras, if required
17. Card Access
18. Dehumidification Equipment
19. HVAC Units; evaluate SEER 12.0 or higher
20. Energy Management Control System
21. Telephone and Data Wiring
22. UPS and/or Emergency Generator
23. Lightning Protection
24. Fire Alarm System- review with local AHJ

PROJECT DATA FORM

Information listed on this form is to be submitted to the Collier County CCFM by the Design Professional for each project.

Changes, if any, should be reviewed with the County Project Manager during Schematic Design, Design Development, Construction Documents, and at the completion of Construction Administration Services.

1. Project Name
2. Project Address
3. Building Area
4. Project Budget
5. Design Schedule
6. Scope of Services
7. Scope of Project

8. Project Checklist — The attached checklist shall be completed and delivered to the CCFM during Schematic Design.

COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS
CCFM

1998 SPACE ALLOCATION AND UTILIZATION PLAN

OCCUPANT	**TYPE**	**SQUARE FEET** Standard	Circumstances
Chief Administrative Judge	Closed	350	400
Constitutional Officer	Closed	350	400
County Administrator	Closed	350	400
County Attorney	Closed	250	300
Assistant County Administrator	Closed	250	300
Circuit Judge	Closed	250	300
County Judge	Closed	250	300
Under Sheriff	Closed	250	300
Health Department Director	Closed	168	200
Department Administrators	Closed	168	200
Assistant County Attorney	Closed	168	200
Court Administrator	Closed	168	175

Division Directors	Closed	144	175
Attorneys	Closed	120	144
Manager Level	Closed	120	120
Professional Level	Closed	120	120
Superintendent Level	Closed	120	120
Administrative Assistant	Open / Closed	120	120
Supervisors	Open / Closed	100	100
Technical Positions	Open / Closed	100	100
Analysts	Open	100	100
Probation Officers	Closed	120	
Secretary	Open	80	100
Clerks	Open	80	100
Conference Rooms Seats 8-10	Closed	150	150
Conference Rooms w/ Library	Closed	200	200
Large Courtroom (Jury Trial , Arraignment)	Closed	2000	2000
Standard Courtroom	Closed	1800	1800
Small Courtroom	Closed	1400	1400
Hearing Rooms	Closed	870	870
Jury Deliberation Sets w toilets	Closed	300	300
Attorney Client Conference	Closed	120	120
Victim Witness Waiting	Closed	120	120
Courtroom Holding	Closed	120	120
Judicial Assistant	Open	100	100
Judicial Assistant waiting area	Open	60	60
Judges Area Support	Open	60	60
Judicial Library	Closed	500	500
Visiting Judge chambers w toilet	Closed	200	200