COLLIER COUNTY FACILITIES MANAGEMENT DIVISION

VERTICAL STANDARDS
FOR
COLLIER COUNTY GOVERNMENT BUILDINGS

Revised January 18, 2023
The most recent version of this document can be found at:

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CONTACT INFORMATION

For questions regarding the CCFM Vertical Construction Standards, CCFM can be reached at:
Collier County Facilities Management Division

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For questions regarding the CCFM IT Construction Standards, CCIT can be reached at:
Collier County Information Technology 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.

1. The intent of this document is to establish minimum standards for the selection and use of appropriate materials and equipment which are user-friendly, durable, and sustainable. Selections must consider total cost of ownership including costs of utilities and ongoing maintenance for the anticipated life of the facility.

2. Generic non-proprietary materials and systems are preferred to allow routine maintenance by staff and locally available vendors. Selections of proprietary materials and systems for special circumstances must be evaluated and approved by CCFM prior to implementation.

3. In general, materials and equipment selections shall be based on longevity and value, considering ease of maintenance and repair a top priority. Extensive use of trendy proprietary materials and systems shall be avoided in favor of materials and systems that are readily available from multiple sources. For example, damage repairs to special products may easily require replacement of an entire assembly or system, if proprietary replacement components are unavailable or cost prohibitive.

4. Products or systems requiring proprietary maintenance contracts, special software licenses, or similar long-term contracts must be approved by the County on a case-by-case basis.

B. 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 phaseto ensure that the County Standards are being followed.

C. 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.

D. **Green Design:** In addition to compliance with the Florida Energy Code, the Design Professional shall incorporate appropriate additional sustainable design features into all new projects and major renovations. These design features may include bicycle racks, bus shelters, and operable windows when appropriate. Utilize energy efficient appliances and equipment, place trees to reduce solar heat gain, orient structures to reduce solar heat gain, provide structural shading whenever practical, and utilize other similar energy saving features.

1. When required by contracts, construction shall be designed and built to indicated sustainability target level. Specified sustainability points and associated costs shall be reviewed and approved by CCFM prior to completion of 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. In addition to mandatory compliance with the Florida Building Code (FBC) and ASCE-7, all new facilities shall be designed to meet the following additional minimum standards:

1. The finish floor elevation of all new Collier County buildings, including vehicle bay areas, shall be not less than 18" above the base flood elevation established by FEMA unless specifically approved otherwise by CCFM.

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

3. 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:** All networked equipment shall 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. Building Automation System controls are required in construction of new enclosed occupied buildings, major renovations, and other buildings as may be determined by CCFM. See Section 255000 – BUILDING AUTOMATION CONTROLS for further details.

E. **Fire Department Lock Box:** Provide a lock box approved by the AHJ at the mainentrance. If applicable, provide additional lock box at door to FACP and other rooms as deemed necessary by AHJ.

F. Access Control Systems shall be installed at new enclosed occupied buildings and major renovations, and as directed by CCFM. See Section 291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS) for further details.

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

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

I. **Uninterrupted Power Supply (UPS) Systems:** When required on a project, UPSshall be monitored in the CCFM Operations Center. See Section 255000 – BUILDING AUTOMATION CONTROLS for further details.

J. **Recycling Provisions:** Commercial recycling is mandatory in Collier County. Tothat end, any area that would generate recyclable materials should have sufficientspace 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 lunchrooms, etc. Design Professional shall consider locations of trash receptacles, recycle bins, and dumpsters to facilitate ease of use.

1. Provide enclosures for recycle and trash dumpsters at each occupied enclosed building unless indicated otherwise in pre-design program.

K. **Renderings:** Design Group shall provide a color rendering for building projects of $1,000,000 or larger, unless indicated otherwise in Design Contract. 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 JPG and PDF format.
5. Deliver rendering and digital copy to CCFM prior to completion of Construction drawings unless directed otherwise by CCFMstaff.

014200 – REFERENCED CODES AND STANDARDS

A. **Accessibility:** All buildings and related sitework shall be designed and constructed to comply with all provisions of the Americans with Disabilities Act (ADA) applicable to government facilities.

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

a. Provide automatic door openers at main entrances of new and renovated buildings with daily public visitors, ie. Procurement, Tax Collector, Elections, Human Resources, Libraries, etc., unless directed otherwise.

b. Provide areas of refuge at stairs.

B. **Codes and Ordinances:** Comply with the current adopted edition of the Florida Building Code including appendices, and all Federal, State, and **Collier County Ordinances** and **Land Development Codes** legally adopted by the authoritieshaving jurisdiction. In case of differences between these Codes, the most stringent shall govern.

1. 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.

C. Referenced Standards: Comply with applicable portions of the Referenced Standards listed in the FBC Ch 35 and NFPA 1 Ch. 2, including but not limited to AAMA, ACI, AISC, ANSI, ASCE, ASHRAE, ASTM, FM, GA, OSHA, SJI, LEED, USGBC, ADA, IES, and UL standards.

1. **Acronyms:** Refer to FBC Chapter 35, NFPA 1 Ch. 2, and publications ofthe referenced standards.

D. **Permits:** Design Team and Contractors shall provide all documents required forpermit applications. Permit application fees shall be paid by the County unless indicated otherwise in the Contract.

E. **Work in Occupied Buildings:** Comply with FBC Ch.33 and NFPA 1 and NFPA 101, and requirements of the local AHJ. Maintain continuous operation of existing life safety systems to the extent possible. Interruptions to operation of fire alarm or protection systems must be coordinated with local AHJ and building occupants.

1. Provide barricades, dust-proofing measures, traffic control signs, etc. to completely isolate work areas from occupied areas.
2. Do not operate unfiltered HVAC systems at any time during construction.
3. Do not use VOC materials in buildings occupied by staff or public.
4. Schedule meeting onsite with AHJ/Fire Inspector before commencing construction operations.

F. **Jobsite Safety:** Contractor is solely responsible for jobsite safety.

017700 – CLOSEOUT DOCUMENTS

A. Comply with Contract Documents including completing all items required by Procurement Checklist.

B. Contractor shall provide 2 printed 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.

C. Upon acceptance and approval of completed Closeout Documents, provide PDF copy organized and index tabbed by document type including Division, Section, Plan Discipline, etc.

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. **Asset Management Data:** Provide manufacturers name, model number, serial numbers, warranty start date, and warranty end date for the following equipment:

Access Control Equipment
AED units
Audio/Visual Equipment
Automatic Doors
Automatic Transfer Switches
Cameras
Chairlifts
Code Blue units
DVR/NVR Recorders
Electrical Generators
Elevators
Fire Alarm Panels
Fire Pumps
Fire Suppression Systems
Fountains and Pumps
Geothermal Equipment
Fuel Storage Tanks
Heat Pumps
HVAC Equipment (see Division 23)
Lift Stations
Lightning Alert Equipment
Motorized Traffic Gates
Muffin Monster
Roll- Up Doors
Roofing Systems
Septic Systems
Septic Tanks
Shutters
Swimming Pool Controls, Equipment and Pumps
UPS units
Water Heaters- Point of Use
Water Heaters-Tanks
Water Pumps
Other installed equipment provided by Contractor

E. 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.

F. 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/DVDs to CCFM and Design Professional prior to application for final Payment.

G. 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.). 017840 – PROJECT CORRESPONDENCE

B. **Email Correspondence Subject Line**: All emails shall accurately indicate the project name or acronym, followed by a brief description of the correspondence topic in the subject line.

1. Start new emails with a correct subject line for each new topic.
2. Do not 'reply' or 'reply to all' for new topics using previous email subject line, Update subject line with correct description of new topic.

DIVISION 2 – EXISTING CONDITIONS

022600 – HAZARDOUS MATERIAL ASSESSMENT

A. If required for renovation projects, the County will furnish a hazardous material report.

023200 - GEOTECHNICAL REPORTS

A. Geotechnical report may be provided for the Contractors use but is not a guarantee or warranty of subsurface conditions, or basis for claims for change orders. Contractors may provide supplemental subsurface exploration and reports.

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 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 6” above finish grade.

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

2. CCIT 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. Do not place concrete when temperature is anticipated 33d F or freezing is anticipated within 3 days.

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

3. Do not add water or calcium chloride to concrete on-site. Field modifications to concrete mix are not allowed. Concrete watered-down or otherwise modified 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.

D. Slope floors towards floor drains at not more than 2% in any direction.

033010 – EXTERIOR CONCRETE SLABS AND WALKWAYS

A. All exterior concrete slabs and walkways shall be not less than 6 inches thick with 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.

1. Walkway slope in direction of travel: Do not exceed 5%

2. Walkway cross-slope: Do not exceed 2%

B. Reinforce slabs and walkways with not less than 6x6 W 1.4 x 1.4 WWF ASTM A185 (10 ga. wire mesh). Provide engineered reinforcing for traffic areas.

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 sawcut or tooled.

D. Exterior walkways shall not be painted.

E. Provide concrete stoop at each exterior door. Slope not less than 1 percent and not more than 2 percent away from door for not less than 5 ft from face of door.

F. No steps are allowed at doors or gates.

G. Parks and Recreation walkways may be concrete or asphalt pavement and shall be not less than 10 ft wide.

H. Construction shall include an accessible route from public road and parking areas to each enclosed building and each type of staff and public activity area.

I. Provide the tactile warning surfaces at all pedestrian sidewalk crossings.

DIVISION 4 – MASONRY

040000 – GENERAL

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

042000 – UNIT MASONRY

A. Where concrete unit masonry (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 within1/4" in 8'-0" when checked with a straightedge in any direction.

B. Single-wythe wall construction used for enclosed buildings shall include exterior cement plaster finish or rain-screen panels with waterproofing system. Other materials must be approved by CCFM on a case-by-case basis.

C. Single-wythe ribbed, split-face, or ground-faced CMU is prohibited for exterior walls of enclosed buildings.

D. Except as a design feature in limited quantities at or near grade, the use of stone or tile as an exterior cladding material is prohibited on single-wythe CMU exterior walls of enclosed buildings.

E. Brick veneer or decorative masonry in double-wythe walls may be used with appropriate waterproofing materials and drainage plane flashing, subject to compliance with Collier County Ordinances and CCFM approval.

DIVISION 5 – METALS

050000 – GENERAL

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

1. All metal components exposed to the environment shall be corrosion resistant. Approved materials include grades 304 and 316 austenitic 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 any exterior location, or in interior locations subject to dampness, corrosive fumes, or other

conditionslikely to corrode ferrous materials.

3. Provide austenitic stainless-steel materials at areas storing or processing corrosive materials, i.e., swimming pool areas, water treatment equipment, etc.
4. Do not use steel materials near reclaimed water irrigation systems. Provide concrete, prefinished aluminum, or similar corrosion resistant materials, posts, fences, benches, etc. at these locations.

B. 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 stainless-steel or galvanized. Shop and touch-up primer to be "10-99 Tnemec Primer" or Rust-O-leum 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 pecifications 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.

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 20-gauge 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.

061753 – WOOD ROOF TRUSSES

A. When pre-engineered wood trusses are used, the Contractor shall provide truss shop drawings and sealed truss engineering not more than 30 days from notice to proceed and shall include adequate time in the construction schedule for processing of shop drawings and permit documents. Failure to do so will not be accepted as a reason for an extension of the contract time.

B. **Delegated Engineering:** Prefabricated structural components shall be designed andsealed 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.

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 stainless-steel 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 in10'-0" when measured with a 10'-0" straightedge.

064023 – CASEWORK

A. **General Casework Standards:** Comply with AWI standards for custom work in office and public areas:

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

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

3. Plastic laminate all exposed casework surfaces.

4. Provide solid surface or quartz countertops in public areas. Plastic laminate ¾” plywood countertops may be used only at staff areas.

5. Backsplash material shall match countertop. Provide splash at back and side walls.

6. Unless instructed otherwise by County, cabinets shall 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 100 lb. (minimum) 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.

B. Casework and countertop specifications in Laboratories and other special-useareas shall be determined on a case-by-case basis and included in the scope ofwork prior to bid.

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, i.e. collect plumbing vent lines in attic to minimize vents through roof, usesoffits 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 CCFM. 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, i.e.Zonolite or equal, sloped at not less than 1/4" per ft. to insure proper drainage.

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

D. In addition to warranty and closeout documents, provide roof manufacturer's representative daily field reports for roof projects over 5,000 sf area.

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. Attic insulation installed on suspended acoustic ceilings 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 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. Warranty: 20-yr. NDL

2. Do not use BUR systems on or adjacent to occupied buildings.

075216 – SBS MODIFIED BITUMEN ROOFING

A. Where approved for use by Facilities, provide premium 20-yr. APP or SBS modified bitumen roof system. Comply with NRCA and SMACNA standards to insure a complete and proper roofing system.

1. Approved manufacturers: Firestone, Soprema, C-Plast, or approved equal.

2. Warranty: 20-yr. NDL

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. **New Construction:** Standing seam roof system with no exposed fasteners.

2. **Historic Structures:** V-crimp metal roofing may be used at Museum locations to match historically correct materials, and to patch or repair small sections of existing v-crimp roofing at other locations. Otherwise, metal re-roofing materials shall be installed as a standing-seam system specified below.

3. **CCSO Structures:** All new CCSO facilities require sloped hip-roofconfiguration with standing seam roof systems, unless approved otherwise.

B. **General:** Provide standing seam metal roof with ridge trim, edge flashing, wall flashing, counterflashing, 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 0.040” Aluminum with Kynar 500 or equivalent factory-applied coating. Panels shall be not more than 16” wide. Standing seam shall be not less than 1" high with 180d folded seam. Fastener clips shall be completely concealed, spaced as required to withstand design wind pressures but not more than 12" oc. 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.

    a. **Coastal Zones:** Use prefinished aluminum roof panels and flashing within 5 miles of coast.

    b. **Aquatic Centers and adjacent facilities:** Use prefinished aluminumroof panels and flashing.

    c. **Other inland Locations:** Use prefinished aluminum, galvalume, orgalvanized steel roof panels and flashing where located more than5 miles from coast.

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 pre-molded 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.

6. The roof installer shall be responsible for installation and warranty of all roof-related flashing, penetrations, gutters, and roof-related accessories

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 weatherproof, and waterproof 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. Provide membrane flashing or fluid applied waterproof coating at head, jambs, and sills of fenestration openings at doors, windows, louvers, etc. Do not use details that rely solely on sealant or paint to prevent the intrusion of water into the building.

3. In addition to above, provide prefinished aluminum or stainless-steel sill flashing (pan flashing) with jamb ends and inside edge turned up one inch, extending full width of opening and extending to face of wall with front edge turned down. Set sill flashing in a full bed of non-staining elastomeric sealant at all window and louver 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 counter flashed and constructed in a manner whichwill allow re-roofing without damage to adjacent finishes.

C. Gutters and Leaders: Commercial grade box gutters and downspouts, fabricated from same materials as roof panel if applicable. Prefinished gutter to match roof colors and downspouts to match wall color. Provide concrete splash block where draining at landscaped areas. Connect downspouts to storm water drainage system where located at walkways or pavement.

1. Gutters are required at all Parks and Recreation buildings except picnic pavilions.

D. **Quality Assurance:** The Contractor shall provide not less than two (2) 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 fitted with fall safety device for access to upper roof areas, i.e., elevator penthouse roof, stair roof, etc. Steel stairs and fixed ladders used in exterior locations shall be constructed from non-corroding materials, not less than 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 20-year or better products manufactured by Dow, GE, SW, 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. Minimum Basis of Design: Tremco, Vulkem #116, One-Part, High-Performance, Polyurethane Sealant, with Vulkem Primer #171 on masonry/concrete/stucco surfaces, and 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 at enclosed structures 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. 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 galvanneal material and factory primed.

    b. Wipe coat galvanized steel (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. Knock-Down (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 3’-0” wide and 7’-0” high.

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

B. Wood veneer doors may be used only where approved by CCFM 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-corrodingmaterial 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 standardtools and/or equipped with lockable, flush mounted latch.

3. Roof access hatches and doors shall be lockable from the inside and equipped with door contact position switches connected to access control monitoring system whenever feasible.

081116 – ALUMINUM DOORS AND FRAMES

A. Provide aluminum storefront doors and frames at public entrances and other exterior locations, except as allowed below:

1. Flush FRP face panel aluminum doors may be used as exterior doors in exterior public restrooms and utility areas. Approved manufacturers include but are not limited to Kawneer and Cline.

2. Exterior A60 or G60 galv. steel doors and stainless-steel doors may beused at CCSO facilities, secure locations, and/or where fire ratings arerequired.

3. Use only aluminum or stainless-steel doors at swimming pools, or locationswhere corrosive materials are handled or stored

083323 – OVERHEAD COILING DOORS

A. General: 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.

1.. Swimming pool areas, corrosive material handling areas, and locations within 1 mile of coastline: All stainless-steel materials including slats, guides, chains, housing, operating mechanisms, and fasteners.

2. Other locations: Galvanized steel or other approved corrosion resistant materials listed above.

B. Provide submittal certifying 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 or equivalent. 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 Ch. 16 and ASCE 7.

086200 – ROOF SKYLIGHTS

A. Roof skylights are not allowed in new construction. Use clerestory windows, roof monitors with vertical windows, or other methods if daylight harvesting is required.

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. Prior to substantial completion Contractor shall test and certify compliance including door push and pull pressure. Check and readjust closers, exit devices, and other hardware 11 months after substantial completion. Replace defective hardware before expiration of warranty.

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, keyed to match County keying system. 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. Panic-bar exit devices: Avoid concealed bars wherever possible.

a. Interior, basis of design: Von Duprin, model 99 or CCFM approved equal.

b. Exterior, preferred basis of design: Von Duprin model 99, with hurricane shutter.
c. Exterior, use of manufacturers standard Grade-1 exit device with impact testing and state product approval requires CCFM approval
d. Use of removable astragal is encouraged at exterior pair doors to minimize maintenance of exit device vertical rods

6. Exterior threshold shall be Pemko 2005 with raised vinyl seal, or identical ADA compliant CCFM approved equal with raised vinyl seal. Set threshold in full bed of sealant. Do not use flush or saddle-type threshold at exterior locations.

7. Automatic door bottom seals: Provide at doors to offices requiring privacy, i.e., Administration, Directors, Accounting, Interview Rooms, etc.

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 conflict with fire codes or direction from the local AHJ.

2. Provide electrified strike locksets at access-controlled doors. Required egress hardware shall always be unlocked from the inside unless special arrangements for delayed egress or restrained occupancy are approved by CCFM and AHJ. Passive Infrared Sensors (PIR) shall not be used where the security of occupants may be compromised by an occupant's proximity inadvertently unlocking the door.

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

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". Discardconstruction keys and re-key entrance lock after final acceptance.

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

G. Adjust hardware for proper operation, including adjustment of levers and closersto 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.

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

B. Exterior glazing shall be tinted. Provide energy efficient glazing features in widow design where applicable, i.e., low-e glazing. Reflective glazing is not allowed by LDC however limited used may be requested where required forsecurity purposes.

C. 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.

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 Ruskin “Hurricane Louvers”.

B. Locate louvers to minimize water intrusion. Provide sill flashing, gutters, and curbs as needed to prevent rainwater 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 exterior grade ASTM C932 bonding agent at all concrete and CMU substrates.

2. Use galv. self-furring lath with two layers of 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 level 5 finish suitable for painting on all exposed surfaces in lobbies, corridors, offices, restrooms, and similar public areas. Visible tape or sanding marks in work will not be accepted. Contractor may provide smooth hard coat 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 North America (TCNA) 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 wet areas.

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 grouts 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 floor drains at not more than 2% in any direction.

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 (VCT) may be used in service areas. Use upgrade materials and 16” x 16”, 18” x 18”, or plank sizes where vinyl is used in public areas.

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

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

B. Stair Treads: Provide rubber treads and risers at enclosed stairs in new construction and major remodel projects.

096513 – RESILIENT WALL BASE AND ACCESSORIES

A. Wall Base: Provide 4" or 6” vinyl base in finished spaces with vinyl or carpet floors. Use pre-molded corner pieces at all outside corners. Provide 5% extra stock material.

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

C. Corner Guards: 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. At areas scheduled to receive carpet in renovations and new construction with modular office furniture, provide static and soil resistant Carpet Tile unless directed otherwise by CCFM staff:

1. Product: Open Specification
2. Fiber: 100% Dupont Antron Legacy or equal
3. Yarn Weight: not less than 25 oz./sq. yd.
4. Flammability: Class 1
5. Warranties: 20 yr. wear warranty w/ no edge ravel, delamination or static.

096816 – SHEET CARPET

A. Where approved by CCFM, product may be a glue-down broadloom carpet complying with Tile Carpet requirements above.

097200 – WALL COVERINGS

A. Vinyl wall coverings are not allowed in County buildings.

B. Acoustic wall fabrics without vinyl backing may be used in limited areas, ie wainscots or acoustic control.

099100 – PAINTING

A. Basis of Design: Sherwin-Williams “Super paint”, Pro-Industrial Pre-CatalyzedWater-Based Epoxy, Pro-Industrial Anti-Graffiti Coating, Industrial Enamel, Paint Shield Microbicidal Latex, or approved equivalent products.

1. For renovations and work inside occupied buildings, use similar no-VOC products.

2. All color selections shall be standard SW colors.

3. 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. Back prime all exposed wood materials scheduled for paint finish prior toinstallation.

C. Provide primer plus two finish coats on all wood, gypsum board, concrete, andstucco 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 eggshell, semi-gloss, or full gloss. Restroom walls shall be either semi-gloss or full gloss. Do not use flat paint as topcoat 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.

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. Typical Interior Signs: Vista Systems WFP156 U and WFP80U, or approved equal, with 0.625-inch Helvetica Font and Collier County logo.

2. Typical Interior Frames: 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”, or similar approved equal mfr. complying with Collier County signage standards.

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 occupied buildings shall have a bronze dedication plaque unless directed otherwise. Typical content shall include the year opened, contractor's firm name, architect's and/or engineer's firm name, Commissioners at time of conception / approval (alphabetical), County Manager, etc. Include Constitutional Officer if they are the prime occupant. See CCFM for plaque layout and content during the initial building design process.

2. Locate dedication plaques inside 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 plaquewith security system contact switch.

102113 – TOILET COMPARTMENTS

A. Provide stainless steel or solid plastic toilet compartments. Solid plastic materials shall be 1 inch thick, manufactured by Santana, Capitol Partitions, or approved equal. Do not use steel or plastic laminated materials.

1. Restroom stall partitions shall be ceiling braced, floor mounted systems. Provide soffit framing to brace toilet partitions where ceiling is over 8 ft high.

2. All fasteners and hardware shall be stainless steel, aluminum, or chrome plated brass. Plastic or steel 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 from floor to ceiling at the face of partitions and doors. Size bracing components as needed to eliminate overhead perpendicular braces.

6. Provide full-privacy compartments with tight joints and no-sightline components, i.e., piano hinges, astragals, and full height angle connectors.

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, coat hooks, etc.

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

3. Soap dispensers shall be hands-free automatic operation, hard-wired, not battery operated.

    a. Paper towel dispensers may be installed at staff break room sinks, maintenance shop hand sinks, and similar locations.
    b. Parks and Recreation does not use paper-towels dispensers.
    c. Unless approved otherwise by CCFM staff, paper towel dispensers shall not be used in public restrooms.

4. Approved manufacturers are Bobrick, Bradley, and Excel Dryer, Inc. or equivalent manufacturer approved by County

D. In general, all accessories dispensing consumables will be furnished and installed by a third-party vendor. The following items shall be scheduled and located in the design documents, and identified as not in contract (NIC):

1. Soap dispensers at each lavatory and sink
2. Toilet paper dispensers at each toilet
3. Paper towel dispensers where determined by CCFM

E. The current dispensers installed throughout the county are as follows:

1. GOJO FMX-20 Push style foam soap dispenser
2. Georgia Pacific #54338A Push Paddle Roll Towel Dispenser
3. San Jamar SJMR4090TBK Twin 9" JBT Dispenser #R4090TBK, Black Pearl

F. Contractor shall coordinate the work of all trades including accessories furnished and installed by third-party vendors. Scheduling, cutouts, recesses, blocking, electrical connections, etc. is the responsibility of the Contractor.

G. 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.

1. Provide polished stainless steel or unbreakable units only where required by CCSO program. Do not use stainless steel mirrors at public facilities.

2. Do not install mirrors at unsupervised Parks and Recreation facilities.

104300 – EMERGENCY AID SPECIALTIES

A. All new construction and major remodeling projects shall have Automated External Defibrillator (AED) equipment and cabinets furnished by County and installed by Contractor. 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. AED Unit: Cardiac Science Powerheart Model G5

2. AED Cabinets:

a. **Interior locations:** Wall mounted cabinet with built-in alarm.

b. **Exterior locations:** Wall mounted cabinet with built-in alarms and interactive voice communication device, Cardiac Science model CB-

2EAED or approved equal.

c. Accessibility: Cabinet may not protrude more than 4 inches from face of wall. Use recessed or semi-recessed cabinets whereapplicable.

3. Contractor shall coordinate schedule, delivery, and installation of equipment with vendor. Include wall required electrical / data connections, blocking, etc.

4. Safety Station: Fire extinguisher, AED, and First Aid cabinets shall be grouped together at one convenient safety station.

a. Alarms: Provide local audible and visual alarm system and contacts for remote monitoring indicating when emergency aid cabinets are opened. See SECTION 291000 – SECURITY AND INTRUSION ALARMS for further details.

b. CCTV cameras: Provide camera to monitor the AED cabinets for networked facilities. See SECTION 292300 – CCTV VIDEO SURVEILLANCE.

c. All equipment, wiring, controls, etc. shall be compatible with the access control system used in the facility. See SECTION 291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS) for further details.

5. Emergency evacuation devices “Stryker Chairs” shall be provided at stairs at each floor above grade in multistory buildings.

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. Where impact resistant opening protection is required, provide motorized coiling overhead shutters constructed entirely of corrosion resistant materials. Do not use steel or galvanized steel within one mile of coastline or near corrosive material handling areas.

B. Removable hurricane panels, accordion shutters, and fabric screens are not allowed.

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 CCFM 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 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, continuous treads with heavy-duty carpet strips.

1. Top Surface: Fusion-bonded level-cut-pile nylon carpet insert; DuPont “Antron III" or equal 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. Replace defective installations.

129300 – SITE FURNISHINGS

A. General: All products shall be intrinsically durable, vandal-resistant, and constructed on corrosion resistant materials, ie concrete, stainless steel, galvanized steel, or prefinished aluminum. Provide the following:

1. Benches fabricated from concrete and recycled plastic, locate near each public and staff entrance to new occupied buildings.
2. Bicycle rack(s) at new buildings near residential neighborhoods.
3. Picnic table(s) for staff use at new facilities
4. Flagpole(s) as directed at new facilities
5. Refuse containers (2) near public and staff entrances to new occupied buildings.

B. Refuse containers shall be constructed of concrete with aggregate finish and vandal resistant spring- loaded top.

1. Manufacturer: Wausa or approved equal
2. Total weight not less than 280 lbs empty.
3. Bottom profile: Square; no round cans allowed
4. Top, trash container: Green color
5. Top, recycle container: Yellow color

C. Do not use steel or galvanized steel products at the following locations:

1. Within 5 miles of coastline
2. At swimming pools, water slides, or splash pads.
3. Where subject to reclaimed water from landscape irrigation spray

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, utility, 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 and Delegated Engineer are responsible for the coordination, design, and installation of anchor bolts. To eliminate change orders related to foundation design, the coordination of foundation sizes shall be accomplished during bidding and all costs for foundation labor and materials included in the bid.

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 or walls, 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 serviced by any elevator manufacturer without the assistance of any proprietary diagnostic tools.

C. Asset Management System: Include manufacturer model and serial numbers for each unit in warranty section of closeout documents.

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

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

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

G. 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.

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

I. 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 and monitoring include:
    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
    2.6. Routine maintenance schedule

J. Connect Elevators to UPS and/or standby generator and program to automatically return to first floor upon loss of normal power. System shall include all safety features required by AHJ, FAC, FBC, and NFPA.

K Limited Use Limited Access Elevators (LULA) may be used only for retrofit applications subject to case-by-case review by CCFM.

144000 – WHEELCHAIR LIFTS

A. Wheelchair Lift may not be used except with prior written approval from CCFM 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 Ordinances related to 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. Do not install wet fire sprinkler lines above electrical panels, data or communication equipment.

F Provide clean-agent FM 200 fire protection system in Data Centers.

G. 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; Buildings over 1,000 sf enclosed area shall have at least one (1) hose bib each 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 with tapcon fasteners. Provide recessed unit where installed in public areas subject to vandalism and 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 near restrooms. The Janitors Closet will contain a floor mop sink with hot and cold water, 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.

6. Provide Symmons tempered hot water valves at restroom lavatories and sinks in public areas

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

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

9. Flush valves shall be hands-free automatic units. Provide low volume, water flush urinals, with “low flow” valves.

10. New Construction: Automatic faucets and automatic flush valves shall be hard wired. Retrofit and renovations may use battery operated units. Conceal all wiring inside walls or removable covers. Provide access panel for all units located inside walls.

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

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

13. All sanitary lines shall have sufficient cleanouts installed to expedite maintenance. Back-to-back cross-tee assemblies shall have cleanouts above or below cross-tee.

14. Electric Water Coolers: ADA compliant, dual height, vandal resistant, with bottle filler.

15. Drinking Fountains: ADA compliant, dual height, vandal resistant. Provide aggregate, weather stone, or acid etch concrete finish at exteriorlocations.

16. Maintenance and Shop Areas: Provide the following fixtures:

    1. Utility sink
    2. Emergency Shower and Eyewash
    3. Hose bibs not more than 30 ft oc.
    4. Floor drains
    5. Mop sink, if requested

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

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

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

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

G. 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.

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

I. Do not install water lines above electrical panels, data, or communication equipment.

224000 – PLUMBING FIXTURES

A. Acceptable Product Manufacturers:

1. Lavatories, Service Sinks, Water Closets, Urinals, Bathtubs:

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

2. Stainless Steel Sinks:

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

3. Faucets:

   a. Sloan.
   b. Symmons
   c. T & S Brass

4. Urinal 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
e.	Approved equal product	Sloan “Royal” series

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
e.	Approved equal product	Sloan “Royal” series

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. Approved Manufacturers: Kohler and Sloan
b. Full size urinal; Kohler, Bardon K-4991-ET-0. HEU washout, wall hung 0.125 – 1.0 GPF
c. Small urinal; 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.; Hydromechanics Div.

9. Electric Water Coolers (EWC):

a. Elkay Manufacturing Co.
b. Halsey Taylor

10. Drinking Fountains (DF)

a. Elkay Manufacturing Co.
b. Haws
c. Wausa Made

B. All interior plumbing fixtures shall be white color or stainless steel.

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, Lochinvar or approved equal. Units requiring 480-volt service or special heating elements may not be used without prior written approval by CCFM. Temperatures are to be pre-set to 120°F.

B. Point of Use Heaters limited to single-fixture use, requires prior approval by Facilities.

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 ensure 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 BAS control system, and the electrical services. Equipment, devices, and accessories not covered by Codes 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, sequence of operations, controls, 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 independent third-party 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 ensure access panels are provided at allrequired 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 outside air intakes shall have Hurricane Wind/Water shedding louvers. Locate intake louvers in protected locations or in horizontal exterior soffits or ceilings wherever possible. Where an intake location on a wall cannot be avoided, provide a weather cap to cover the top, front, and sides of the louver. Slope intake ducts towards louvers to allow wind-driven rain to drain to the exterior of the building. Provide aluminum sill flashing and sealant to prevent water intrusion at head, jambs, and sills of louvers.

I. CCIT Data Centers, IDF equipment rooms, and general services electrical equipment rooms shall be air conditioned to maintain 70d F, with not less than 125% excess capacity to cool equipment.

J. CCIT Data Centers and IDF equipment rooms shall include an independent redundant HVAC system.

K. All general building services rooms including mechanical rooms shall be air-conditioned.

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

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

N. Do not use micro channel coils.

O. 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.

P. 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 Building Automation System.

Q. Corrosion Protection: Factory coat coils at the following equipment:

1. All air-cooled chillers
2. All condensing units over 10 tons
3. All CU equipment within 1 mile of coastline.

230020 – AS-BUILT RECORD DOCUMENTS

A. Contractor shall 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.

B. Asset Management Data. Provide manufacturers name, model number, serial numbers, warranty start date, and warranty end date for the following equipment:

AHU-R	Air Handling Unit- Refrigerant
AHU-W	Air Handling Unit- Water
BOILER	Boiler (Water Heater)
CHIL-AC	Air Cooled Chiller
CHIL-WIC	Water Cooled Chiller
CHWP -2ND	Chilled Water Pump Secondary
CHWP-PRI	Chilled Water Pump-Primary
CRAC	Computer Room A/C
CT	Cooling Tower
CU	Condenser Unit
CWP	Chilled Water Pump
DDC	Digital Controls
DH	Dehumidifier
EXFAN	Exhaust Fan
FC-R	Fan Coil Refrigerant
FC-W	Fan Coil Water
HEX	Heat Exchanger
HP	Heat Pump
ICEMACH	Ice Machine
ICE-TANK	Ice Tank
CUP	Condenser Water Pump

MAU FAN	Make Up Air Fan
MINISS	Mini Split System
MWP	Mwp – Water Pump
OAU	Outside Air Conditioning
PACKG	Package A/C Unit
SF	Supply Fan
WU	Window Unit
WMU	Wall Mount Unit
MRU	Moisture Removal Unit
SMK-EF	Smoke Exhaust Fan

C. CCFM Project Manager will verify accuracy of record documents.

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 BAS 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 CCFM. Use either neatly stenciled signs painted directly on equipment, or plastic signs with 1" high engraved letters permanently fastened to the units.

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 to design specifications. 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 closedduring 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 airstream. 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” unless approved otherwise by CCFM.

234000 – AIR FILTERS

A. Locate filters at all return air openings, fresh air intakes, and AHU as applicable. Provide pleated filters, min 2" thick, 40% MERV 8 efficient per ASHRAE 52.

B. Provide temporary filters at each return air grille during construction. Do not allow operation of HVAC system during construction operations involving cutting, sanding, VOC materials, demolition or other operations that may contaminate ductwork and coils.

236400 – CHILLER EQUIPMENT AND PIPING

A. Standby Power: Chiller equipment and related equipment including pumps, cooling towers, and controls used to provide HVAC to essential services facilities shall be connected to an ATS and standby generator sized to provide 100% required HVAC loads.

B. 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, Carrier, and Daikin.
2. Factory coat coils in all air-cooled chillers.
3. Do not use microchannel coils.

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

D. 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.

E. Alarms: All chiller rooms shall be equipped with a carbon monoxide sensor and alarm.

F. 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. Use2" 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 framework 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 Air coil, 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 ensure 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 Trane and Carrier.

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 in a dry, dust-free environment separated from landscaping and maintained lawns and not confined in an enclosed area. Provide “Bronze glow” 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 aroof 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 in unconditioned rooms or attic spaces. Locate AHU equipment in dedicated mechanical rooms whenever possible. Avoid locating AHU equipment above ceilings. Provide unobstructed access to AHU equipment and filters. Do not locate AHU equipment more than 10 ft above finished floor, or directly above workstations, communication or data equipment, casework, or other fixedequipment.

3. Provide double-wall Air Handler Units with sloped drain pans. Provide a light fixture and convenience outlet near each unit for maintenance.

237400 – ROOFTOP UNITS

A. Avoid rooftop units whenever possible. When located on roof, units shall not be visible from the ground. Approved manufacturers are Trane and Carrier, and Weather King. Provide “Bronze glow” 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 shall be sized to maintain 50% (or lower) relative humidity level. Manufacturer shall be Greenheck, or CCFM approved equal.

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

DIVISION 25 – INTEGRATED AUTOMATION

255000 – BUILDING AUTOMATION CONTROLS

A. Collier County is in the process of eliminating unsupported proprietary controls and installing non-proprietary BACnet controls conforming to ASHRAE Standard 135.

1. At this time, proposed building automation controls for all new buildings and renovations will be considered on a case-by case-basis.

2. Preferred controls systems include Computrols, Delta, and Reliable.

B. Building Automation Systems (BAS)

1. All buildings will be evaluated for application of Building Automation Systems and intent will be included in the scope of design services. In general, all enclosed occupied buildings over 4,000 square feet will include a 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 BAS system.

2. Temperature sensors and controls may 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. Warnings shall be configured for temperatures greater than two (2) degrees above or below setpoint. 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%. Warnings shall be configured for relative humidity greater than 65%. Critical alarms with e-mail and pop-up functionality shall be configured for relative humidity greater than 70%.

6. Temperature, CO^2, 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. 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 ofall furniture and other obstructions 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 airlocations due to dust collecting as an insulator and location of the return near an outside doorway. Any deviation from the standard of room sensorsneeds to be explained and approved by the Director of CCFM.

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

8. All computer, electrical, and IDF rooms will have temperature sensors with alarmed ranges monitored and page able.

9. CCFM Building Automation Supervisor 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.

    1. CCFM Building Automation Supervisor may designate staff for delegated tasks indicated throughout these standards.

10. All alarm points shall include detailed descriptions of the type of alarm and location with naming conventions provided by CCFM Building Automation Supervisor.

11. 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.

12. 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 ANSI, ASTM, IES, 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 building automation system, unless otherwise approved by CCFM. See Section 255000 – BUILDING AUTOMATION CONTROLS for further details.

C. Buildings designated for essential emergency services shall include a diesel standby generator capable of powering the entire facility including HVAC. Run time shall be not less than 30 hrs. at half load or 60 hrs. at full load. Generator shall be protected by an impact rated enclosure capable of withstanding 200 mph wind speed. ATS shall be protected inside the building.

D. Design program for major buildings shall include an evaluation of a standby generator and related costs. Provide a pin and sleeve connection for temporary portable generator where a permanent generator is not provided at the following locations: Community Centers, Libraries, Maintenance Buildings over 5,000 sf., Warehouses, General Aviation Terminals, and similar facilities.

E. Light fixtures shall be selected based on maintenance and longevity, and generic replacement lamps must be locally available. For standardization purposesand to avoid replacing fixtures when special lamps are unavailable, fixtures must accept standard GE or equivalent replacement lamps

F. All light fixtures shall utilize energy efficient LED technology to the extent possible. Except with specific approval on a case-by-case basis, do not use incandescent or fluorescent lamps in new construction.

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

H. 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.

I. To the extent possible, use non-proprietary systems to allow service by CCFM.

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

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

L. Electrical panels and switchgear shall be located inside electrical rooms or locked fenced service areas unless approved otherwise by CCFM. Front panels in any area open to the public or staff shall be locked.

260010 – AS-BUILT RECORD DOCUMENTS

A. The Contractor shall provide accurate and updated as-built drawings detailing all electrical installations, to include circuits, fixtures, devices, and equipment illustrated as they are installed.

1. Include locations of buried conduits and rough-in locations for future work.

B. Asset Management System: Include manufacturers model and serial numbers for each Standby Generator in the warranty section of closeout documents.

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 considering light obstruction due to equipment, provide approximately 100 Foot Candles of illumination.

C. Where required by CCIT for communications and data equipment, provide 2 separate electrical rooms; one for building power and one for low voltage systems. The intent is to physically separate functions while maintaining 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.

C. Provide panel and circuit identification at each outlet, control devices, and connection in new construction and major remodeling projects.

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: Install separate neutrals with circuits.

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 sherardized or otherwise rust proofed, and sized in accordance withthe 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 platesor 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 galvanized 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 eight (8) feet long

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

E. Cable trays shall be bonded to building ground.

260536 – CABLE TRAYS

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

B. 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 bolt-on 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.

1 Do not allow device boxes to be mounted back-to-back or in shared studspace with boxes in adjacent rooms.

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.

C. Exterior Weatherproof Outlet Covers: Use hinged extra-duty die-cast metal in-use waterproof outlet covers by Intermatic or equivalent. Do not use plastic covers.

D. 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. Provide a complete UL listed lightning protection system at all new enclosed occupied buildings, and at facilities with security cameras or pump motors.

B. 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.

C. Lightning Alarms: Thor Guard Inc. Lighting prediction and detection system or approved equal.

264300 – TRANSIENT VOLTAGE SUPPRESSION

A. Provide appropriate surge suppression device for all buildings.

265100 – INTERIOR LIGHTING

A. New and replacement fixtures types shall be limited to LED and LED compatible fixtures to facilitate maintenance.

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

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

3. Design lighting to the levels recommended by the Illumination Engineering Society.

4. To the extent possible, minimize the number of different fixture types used on a project.

5. Use vandal-resistant fixtures in all unsupervised public areas, ie Parks and Recreation projects. Use institutional grade fixtures where applicable. Use aluminum and non-corroding materials at exterior locations.

6. If replacement lamps or parts are anticipated, replacements must be available locally.

265200 – EMERGENCY LIGHTING

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

1. Provide Surelight CU-1, Beghelli Deco 6, or similar low-profile LED 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 have brushed aluminum faces. Stencils shall be green.

265600 – EXTERIOR LIGHTING

A. "Collier County Lighting Standards" are incorporated into the Vertical Standards by reference. A copy of the current version is available at the following link:

http://www.colliergov.net/lighting-standards

B. "Collier County Lighting Standards- Special Considerations" are incorporated into the Vertical Standards by reference. A copy of the current version is available at the following link:

http://www.colliergov.net/your-government/divisions-a-e-county-manager-office/standards

C. Provide recommended lighting levels published by the Illumination Engineering Society.

D. Provide LED exterior fixtures to the extent possible.

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

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

G. Buried up light or well fixtures are not allowed

H. Flagpole lights: LED equivalent of 100W MH unless approved otherwise.

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

J. Exterior wraparound fixtures are not allowed; use vapor proof fixtures in exterior environments.

K. Check security lights for proper aim, controls, and operation prior to request for substantial completion. Re-aim lights at night to provide coverage required by County staff

DIVISION 27 – COMMUNICATIONS

A. 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. Do not allow boxes to be mounted back-to-back or in shared stud space with boxes in adjacent rooms. 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 only at the direction of the CCIT Division. Unauthorized devices will be immediately disconnected and may be confiscated.

E. Open CCIT equipment racks shall be in secure rooms with card access. Open CCIT racks may 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.

F. Closed locked CCIT equipment racks may be in shared equipment rooms with card access.

272010 – FIBER OPTIC LINES

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

B. Single-Mode Fiber Optic cabling shall be used for building automation and security equipment. Single-Mode fiber must conform to the CCIT Construction Standards.except for wavelengths used (and the specifications relatedto single-mode wavelengths and transmission distances). Additionally:

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

2. Fiber patch cables shall be labeled “Collier County BCC FM” at both ends and 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 the 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 all costs associated with replacing non-standard (unauthorized) equipment.

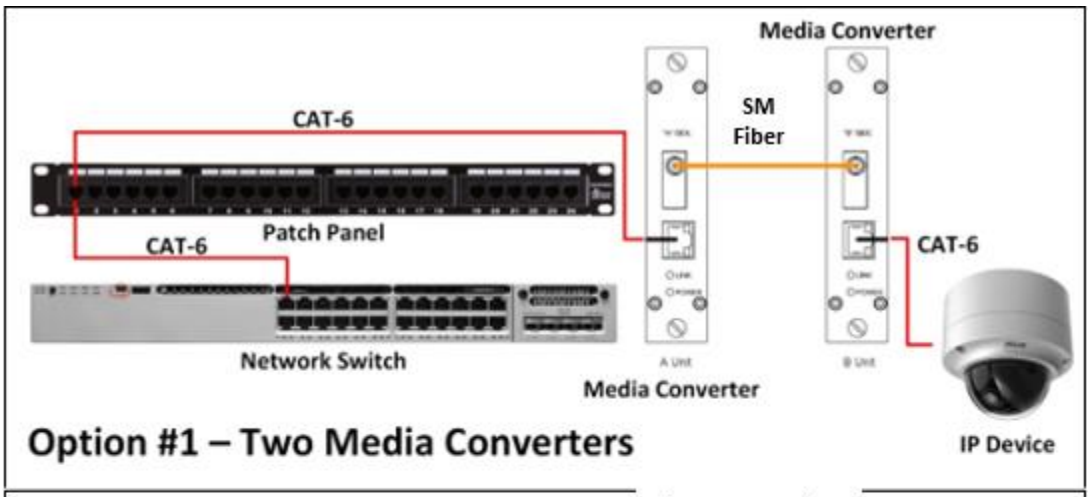
C. Network port security (MAC address restriction) is implemented for all building automation and security devices. Device installations and replacements must be coordinated in advance with the CCFM – Building Automation Supervisor (or designee) to ensure that the necessary ports are active and properly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

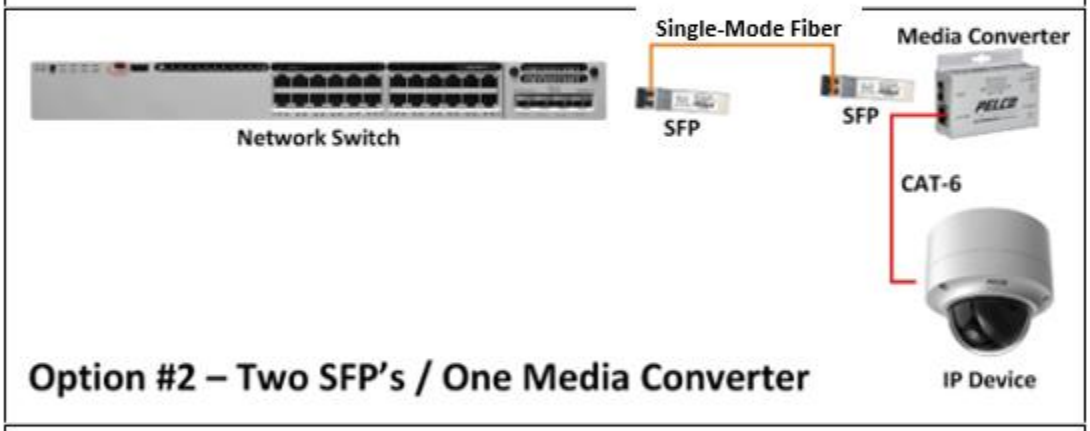
D. Upon receiving network-based devices, the Contractor shall provide CCFM with a list of the make, model, serial number, and MAC address information for those devices. Contractor shall utilize the electronic **CCFM Project Equipment List Form** when providing the above-mentioned information.

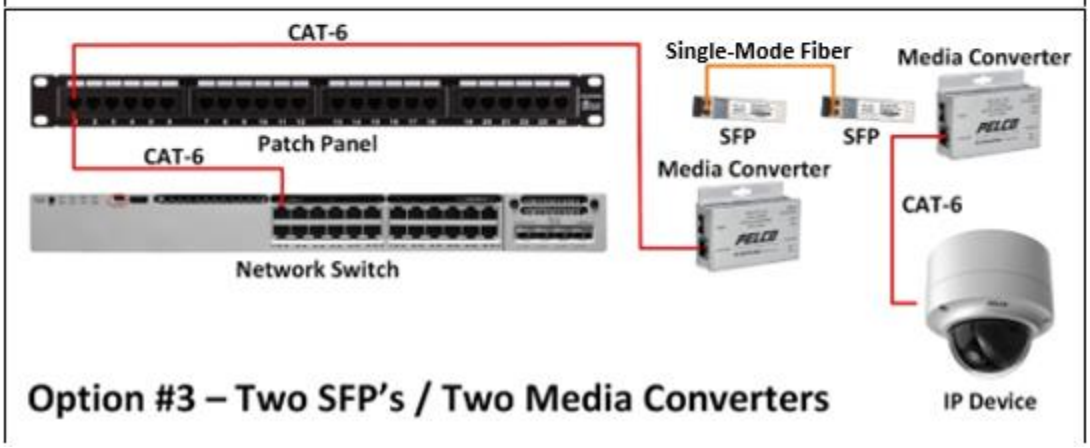
E. The use of multi-mode fiber for building automation and security equipment will require express written approval from CCIT prior to use and is generally discouraged without a compelling business case.

281000 – EXTERIOR AND UNDERGROUND WIRING

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


Media Converter
CAT-6
SM
Fiber
Patch Panel
CAT-6
CAT-6
Network Switch
Media Converter
Option #1 – Two Media Converters
IP Device


Single-Mode Fiber
Media Converter
Network Switch
SFP
SFP
CAT-6
Option #2 – Two SFP's / One Media Converter
IP Device


CAT-6
Single-Mode Fiber
Media Converter
Patch Panel
SFP
SFP
CAT-6
Media Converter
CAT-6
Network Switch
Option #3 – Two SFP's / Two Media Converters
IP Device

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 28 – SECURITY

DESCRIPTION	PREFERRED EQUIPMENT
281300 Access Controls	LENEL
283111 Fire Alarms	
1.08 Materials Maintenance	Furnish extra materials that match products installed and that are packaged with submittals to include protective covering for storage and identified with labels describing contents. Quantity equal to 10 percent of the amount installed, but no fewer than 1 unit.
2.01 Fire Alarm Manufacturers	Silent Knight, EST (Edwards) Notifier

Note: Close out documents must include alarm panel manual and matrix of operations at the alarm panel and one set for the County Life safety Officer

DIVISION 29 – ELECTRONIC SAFETY AND SECURITY

291000 – SECURITY AND INTRUSION ALARMS

A. The installation of an intrusion detection system may be required at off-campus non-secure sites without access control systems, ie Parks and Recreation buildings. Coordinate security requirements with CCFM during pre-design development of project scope, before design or construction. For major renovations or new buildings without access control system or cameras, a new integrated security system shall be installed unless directed otherwise by CCFM 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 exterior doors and roof hatches shall be monitored by the security system.

291001 - ACCESS CONTROL SYSTEMS (CARD ACCESS)

A. Provide access control system at new and renovated buildings unless directed otherwise by CCFM staff.

1. Provide LENEL card access at the following locations:

    a. Exterior Doors
    b. CCIT Equipment Rooms
    c. Mechanical and Electrical Rooms
    d. Secure Storage Rooms, ie CCSO
    e. Where required to separate public from non-public staff areas.
    f. Hazardous Material Storage or Handling Areas
    g. Security Gates
    h. Other locations as may be determined by design program.

1. At new enclosed buildings where access control is not provided, include rough-in conduits, junction boxes, and provisions for future card access at exterior doors and equipment rooms.
2. The following at a minimum is required for new card access implementations:
    a. Controllers
        i. Lenel LNL-X4420 Controllers
        ii. Lenel LNL-1320-S3 Dual card reader Interface panels
    b. For each Card Access door

i. HID Reader part # 5355AGN00
ii. Recessed Door Contacts
iii. Door Strikes or Electrified Door Locks
iv. REX devices
v. Avoid Mag locks when possible

3. Provide card access on all new and remodeled elevators:

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

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

c. 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).

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

G. 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.

H. 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.

1. 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.

I. All external hardware shall have tamper proof screws.

J. Provide position contacts at roof hatches. All roof hatches shall be monitored by the security system.

K. 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.

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

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 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. i. Lenel LNL-X4420, LNL-1320-S3 Controllers

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 the 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 issuing plans for bids.

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. License plate recognition cameras are required at vehicular entrances to the following facilities:

1. Essential Services Facilities including CCSO and Public Utilities
2. Community and Regional Parks

J. 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.

K. All IP cameras shall be Pelco branded cameras that shall support ONVIF v1.0+ and multicast video streams. Contact CCFM for exceptions.

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

M. 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.

N. Camera locations illustrated on plans indicate general location of camera and intended direction of view. Exact location of rough-in shall be coordinated onsite with contractors prior to installation of any nearby trade to avoid conflicts with other devices or obstructions, ie sprinkler heads, ceiling fans, floodlights, etc. Proposed adjustments to locations shall be coordinated and approved to avoid code violations, obstructed views, etc.

O. 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.

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

1. Software-based (on CCIT PC's). There shall be 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.

Q. Poles: Use only concrete poles for cameras, not fiberglass or metal. Pole height minimum 25 ft for PTZ cameras.

R. Provide two (2) weatherproof electrical outlets in locked panel on poles used for CCTV panel.

S. Exterior enclosures shall be stainless steel, not fiberglass or steel.

T. Locate equipment rack for security and cameras in the same room as CCIT communication and data rack. Optically isolate security/camera rack from CCIT rack with fiber cables. Provide open racks if equipment room is solely used for no other purposes, ie electrical panels. Provide locked racks if room is shared with other trades.

1. Do not allow water lines, sanitary lines, sprinkler pipes or heads, ductwork, HVAC equipment, etc. to be mounted above equipment racks.

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 non-proprietary. Approved manufacturers include Firelite, Silent Knight, or approved equal as directed by FM staff. System shall be

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 addressable, and UL listed. Provide all required components for wireless monitoring. Utilize campus system where applicable, otherwise 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 a cad dwg file for new or revised alarm systems.

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 public areas including Lobby and Entrance area Fire Pull Stations.

G. Where suspended acoustic ceilings available and allowed for mounting notification appliances, 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.

H. FA system shall be equipped with back-up batteries and provisions for future expansion and modifications.

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 thefront/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 6" 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

321400 – INTERLOCKING CONCRETE UNIT PAVERS

A. Mortar set pavers over concrete slabs may be considered on a case-by-case basis. CCFM approval required.

B. Sand set pavers are not allowed in courtyards, walkways, or any area subject to pedestrian traffic.

323100- FENCES

A. Fences shall be constructed from durable non-corroding materials. Do not use Styrofoam in construction of exterior walls or fences. Galvanized steel may be used at inland locations except as noted below. Provide vinyl coated aluminum or powder coated aluminum fences where required at the following locations:

1. Within 5 miles of beaches or coastlines
2. Where reclaimed water is used for lawn and landscape irrigation.
3. Swimming pools, splash pads, aquatic features

B. Provide security fences and gates at all maintenance and storage facilities, and other locations as determined in pre-design program.

328090- LANDSCAPE IRRIGATION

A. Irrigation system shall tie into existing system where applicable. Provide

connection to reclaimed water system if available. Provide separate meter where connected to domestic water.

1. Do not use well water in spray zones adjacent to buildings.
2. Do not use well or reclaimed water in spray zones adjacent to swimming pools and decks.

B. System Components:

1. Grade: Commercial
2. Manufacturer: Rainbird or approved equal
2. Controls: Maxicom Central Control System or approved equal.

C. Provide accurate as-built plans of irrigation system and controls.

329300 – LANDSCAPING

A. 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. Trees may not be planted in pavers or tree grates.

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.

E. Do not use Bermuda grass under trees.

F. Completely remove all compacted base and subbase material from all areas intended for landscaping and trees. Add topsoil to all areas prior to installation of plant material.

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

G. Grading and landscaping shall be sloped away from building, walkways, pavement, equipment, etc., and water runoff shall drain into site drainage systemwithout 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 be 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. Portable Generator Pin & Sleeve Connection

24. Lightning Protection

25 Fire Alarm System- review with local AHJ

26. Special Insurance Requirements if any

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)

2018 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	168	200
Attorneys	Closed	168	200
Manager Level	Closed	144	175
Professional Level	Closed	144	175
Superintendent Level	Closed	144	175
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,	Closed	2000	2000

Arraignment)			
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

Design programs shall allocate sufficient storage space for storage of general supplies including office and janitorial supplies. Specific building area and storage requirements for various departments must be determined during pre-design program phase, before starting design phase.