CIP Building Design Standards & Guidelines

Introduction

These Capital Implementation Program (CIP) Building Design Standards & Guidelines are developed from lessons learned on past CIP building projects, facilities maintenance requirements and subject matter experts (SME) that are utilized throughout the design process. These Standards & Guidelines are written for Architects/Engineers (A/E's) that provide design services to the City of Albuquerque (COA) on CIP building projects. The goal of these Standards & Guidelines is to provide the design professional an efficient and effective way of developing contract bid documents for CIP building design and construction projects. The A/E design team is required to incorporate these Standards & Guidelines as they apply to the design and construction documents. Any deviation from these Standards & Guidelines will require approval from the City Architect.

Codes & Requirements

These design standards & guidelines are to be used in conjunction with the following:
Include in the contract documents all of the following requirements as they apply to the project:

COA – Current Building Code list

The list is located on the CABQ.gov website under the Codes portion of the Planning Department

COA - Design Review and Construction Forms

Forms, files and documents for the Design Review and Construction process
www.cabq.gov/planning/development-review-services/design-review-construction-forms

COA - Building Safety & Permit Requirements

The current review process is via ePlan electronic submission. Permit process can be found on the CABQ.gov website under the Planning Department

DOJ - 2010 ADA Standards for Accessible Design

www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards

ICC Public Access - ICC A117.1-2009 Accessible and Usable Buildings and Facilities

ICC Public Access – Use the 2015 I-Codes tab

https://codes.iccsafe.org/public/collections/I-Codes
Note: The City of Albuquerque is now using the 2018 International Energy Conservation Code

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State of NM - Handbook for New Mexico Building Officials

Manual on Uniform Traffic Control Devices 2009 (or current) Edition
https://mutcd.fhwa.dot.gov/kno_2009r1r2.htm
www.mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

Integrated Development Ordinance Requirements
http://www.cabq.gov/planning/codes-policies-regulations/integrated-development-ordinance

Civil Design

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Include in the contract documents all of the following building and site requirements:

Public Utility Requirements for All Disciplines
See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines as required.

General Requirements for Civil Design
Show roof drain points of discharge at ground level (NOTE: cannot discharge from balconies onto public Right of Way (ROW). Avoid discharge on north side of buildings and areas with shade during winter months.
Provide First Flush ponds on the site (see Predesign Criteria below)
Show removals and extents of removals
Must have approved easements
Must have approved Grading & Drainage plans
Provide a flood plain permit if work is in a SFHA Flood Hazard Zone
Provide Riprap or equal at discharge into ponds
Provide adequate water block, 0.83' is standard
Show valley gutters where needed
Provide slope treatment for slopes greater than 3:1
More than 2' grade difference requires a NM registered Design Professional to design the retaining wall system.
See Landscape Buffer Swale information in Landscape Design below.
See Predesign Criteria for General Hydrology Criteria below

Concrete Slabs, Sidewalks and Paving
Provide an expansion and control joint plan that clearly shows and labels all joints. All joints shall be spaced to meet the 1:1 ratio (or as close as possible). All exterior expansion joints shall have self-leveling sealant typical. Sidewalk finishes shall be a medium broom finish.

Gates and gate operators- Gates either track or cantilever shall be approved by the General Services Division.

Gate operators shall be approved by the General Services Department.

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General Hydrology Criteria (New drainage requirements may replace these requirements)

- Beyond 10' of a structure, all landscape beds to be depressed below grade. Runoff within 10' shall be directed away from the structure.

- All new development projects shall manage the runoff from precipitation which occurs during the 90th Percentile Storm Events, referred to as the "first flush." The Site Plan/Drainage Plan must indicate all areas and mechanisms intended to capture the first flush. For volume calculations, the 90th Percentile storm event is 0.44 inches. For Land Treatment D the initial abstraction is 0.1", therefore the first flush volume should be based on 0.44"-0.1"=0.34" and only consider the impervious areas.
    - State how the first flush will be managed and supporting calculations
    - State the area of Land Treatment D on the plan

- Conceptual or Final Grading and Drainage plans submitted to the Hydrology Section:
    - Provide a DTIS sheet – an information sheet required for all Hydrology and Transportation submittals
    - The engineer should research the Master Drainage Plan and/or adjacent sites – essentially practice due diligence prior to submitting. The narrative on the G&D plan should reference the master drainage plan or other sources that indicate the intended drainage for that area. **The applicant should provide excerpts from the supporting documents and/or grading plans.**
    - Final Drainage Reports should have an appendix with all supporting documentation. Supporting documentation should include the following information:
        - Allowable discharge from the site
        - Allowable discharge points

- When determining allowable discharge from a site
    - If a Master Drainage Report planned an allowable discharge for a site, determine if the basis for that discharge is still valid or if conditions have since changed.
    - If discharging to the street, determine if the street has capacity. Also determine if the storm drain has capacity.
    - If discharging to the back of inlets, determine if doing so will still provide capacity for the discharge from the street
    - When determining inlet capacity using the orifice equation (Sump), the area for a single grate should be 3.84 sq. ft.

- If there are improvements in the R.O.W. but project is **not** required to go thru the DRC process (Work Order)
    - show quarter point data for the curb returns
    - show flowline elevations for valley gutters
    - Side walk culverts need to be extended 2' past the back of Sidewalk. Note that bolts are to be tack welded to plate (SO-19 Permit required)

  - Show existing flowline elevations where new construction ties in

- An Erosion and Sediment Control (ESC) Permit will be required for all construction, demolition clearing and grading operations that disturb one acre or more of land. Forms are available from Curtis Cherne or the Hydrology Section. Prior to obtaining ESC Permit, approvals are required for the following:
  - ESC Plan
  - Grading/Paving plan
  - Flood Plain Permit (if construction is within a SFHA -Special Flood Zone)
  - Need to include the eNOI # on the application, which requires obtaining an NPDES General Permit form the EPA

- The Landscape Buffer Detail below in Landscape Design is a relatively new detail required for all new construction, which has not yet been published with the COA Standard Details.

Landscape Design

Include in the contract documents all of the following building and site requirements:

Landscape Design Information

Design information for Landscape can be found at the www.cabq.gov/planning/ webpage.

This update has also been incorporated in all bid projects after Oct. 1, 2015 (reference SS-1 of the project manual).

See Landscape Buffer Swale information below
See Predesign Criteria for General Hydrology Criteria above
Coordinate with Parks and Recreation when building is located on City Park

Planting and Irrigation

Do not place planting or irrigation within 5'-0" of the building foundation.

Trees shall be planted to prevent damage to building (from either branches or roots) an acceptable distance based on the type of tree.

Irrigation controllers shall be Rain Bird.
Irrigation shall have "hot boxes" enclosures included with their installation that may have above ground backflows and such enclosures shall have a dedicated circuit for heat tape.
Trees shall be planted to prevent damage to building (from either branches or roots) an acceptable distance based on the type of tree.

Irrigation controllers shall be Rain Bird.
Irrigation shall have "hot boxes" enclosures included with their installation that may have above ground backflows and such enclosures shall have a dedicated circuit for heat tape.

Weed Barrier overlap and Turn Down Edge Requirements

Provide weed barrier under all graver mulch. Weed barrier fabric shall have 3" min. edge overlap and 6" min. edge turn down 4" min. at concrete curbs and sidewalk edges typical.

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Gravel Mulch Requirements

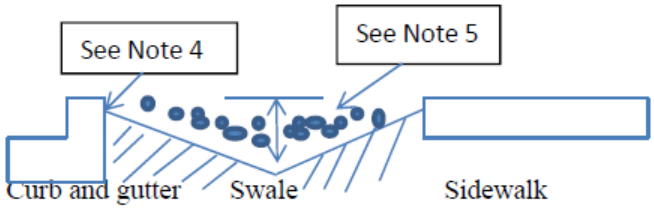
Use small gravel mulch and large boulders in landscape areas around building and site when design calls for this type of material. Do not place large rocks and cobble around building and site to avoid damage due to vandalism.

Downtown buildings shall be excluded from this.

No larger than 7/8” gravel allowed. (window breakers)

Provide 4” of gravel mulch in planting areas where gravel mulch is used. Gravel mulch shall be within 1/4" of top of curb/slab/sidewalk/pavement when used.

Landscape Buffer Swale - Revision to City Standard Drawing 2405A and 2405B



Landscape Buffer Swale Notes:

1. Swale to be 6” deep when the distance between back of curb and the sidewalk is 5 feet.
2. Swale to be 1” deeper than the distance in feet between the back of curb and the sidewalk for landscape buffers more than 5 feet wide.
3. For wide landscape buffers, greater than 10 feet, the maximum depth is 10 inches.
4. Final grade of dirt to be 1 inches below top of curb and top of sidewalk grade without gravel.
5. Surface between back of curb and sidewalk to be covered with gravel mulch (minimum 4”), cobbles or rip-rap per design requirements. Do not fill entire swale.
6. Provide a check dam for swales on steeper longitudinal slopes and for longer sections of swales. The engineer will determine the location.
7. Landscape fabric is required, between the dirt and the stone. When landscape fabric is to be used it is to be permeable.
8. Detail is to be built for all new construction. In the case where the sidewalk is existing and the landscape buffer is improved with landscaping and/or some form of erosion protection, this requirement does not apply.
9. See Integrated Development Ordinance Requirements.

Structural Design

Include in the contract documents all of the following building and site requirements:
Public Utility Requirements for All Disciplines
See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines.

UFER Grounding
UFER Grounding at foundation. See Electrical Design section for foundation requirement.

Metal Stud Framing
All metal framing that requires a slip track shall use the 2-1/2" or 3" slotted top track, depending on the design deflection and drift.

Roof Design Requirements
See Architectural Design section for roof design requirements concerning wind load, uplift and future photovoltaic roof loading.

Sleeve Penetrations
Provide framed or pipe sleeves at all Foundation wall, fire wall and sound wall penetrations. Use proper sealant, fire and sound caulk, with indicator coloring, inside sleeves and gang piping/conduit/duct frames.

Fire & Sound Rated Walls
Use 2" minimum labels above ceiling at every three feet that state "Fire Wall – Do Not Penetrate" or "Sound Wall – Seal Penetrations."

Concrete Slabs, Sidewalks and Paving
Provide an expansion and control joint plan that clearly shows and labels all joints. All joints shall be spaced to meet the 1:1 ratio. All exterior expansion joints shall have self-leveling sealant typical. Sidewalk finishes shall be a medium broom finish.

Special Inspections IBC
Special Inspection Services may be under the A/E contract as additional services
See architectural section of this document.

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Architectural Design

Include in the contract documents all of the following building and site requirements:

General Design Requirements

A/E design team shall provide all project design calculations to the City PM prior to proceeding with the construction document phase. The design calculations shall include, but are not limited to, civil, geotechnical, structural, power, gas, water, etc. This information will need to be neatly organized with the responsible design professional's seal, signature and date on the cover sheet of each calculation report. These documents will be filed as City records.

Demolition on Existing Buildings and Sites

Prior to any Design work, the A/E design shall Contact the Department of Technology & Innovation and General Services Department to coordinate all work.

Public Utility Requirements for All Disciplines

See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines.

ADA Requirements

Use the DOJ 2010 ADA Standards, with 2012 update, along with the ANSI A117.1 Accessibility Standards (referenced in the 2009 IBC) and transitioning into the 2009 to 2015 ANSI A-117.1

Metal Stud Framing

See Structural Design Section of this document.

Sleeve Penetrations

See Structural Design Section of this document.

Fire & Sound Rated Walls

See Structural Design Section of this document.

Concrete Slabs, Sidewalks and Paving

See Structural Design Section of this document.

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Knox-Box – Include as part of the bid documents the following: Contractor shall furnish, install and pay for all requirements, scheduling, documentation and keying for Albuquerque Fire Department (AFD) site and building access, AFD inspection and direct payment to supplier. Knox-Box locations on site and building shall be coordinate with the COA Fire Marshall's office by the Architect.

Door Hardware Keying – Include as part of the bid documents the following: Contractor shall furnish, install and pay for all building and site keying requirements, documentation, scheduling of work, keying plan/access control/schedule for COA review and approval. COA along with the Architect shall inspect all locksets upon completion of keying installation. General contractor will coordinate and provide direct payment to the COA approved Locksmith.
Sandia Safe & Lock is the current Locksmith vendor for the COA. The keyway shall be, Large or Small Format Interchangeable Core (LFIC or SFIC) depending on the needs of the Department. The designer is to verify which one is required for their specific project. Design team shall check with Sandia Safe & Lock for compatible lockset brands to include in the contract bid sets. Coordinate with City PM, Facilities Manager and City Architect for Grand Master/ Master/ Individual keying requirements.

A pdf is available to the Design Team that outlines the Allegion Steel Doors and Hardware requirements. Request the current version from the General Services Division.

Special Inspections IBC
Special Inspection Services may be required per the current Building Code
IBC Chapter 17 inspection by third party, paid for by the City through a third party inspection company.

COA Plan Check/Permit/Impact Fee Allowance
Include in bid set the GC Responsibilities to coordinate and pay for:
The entire fee shall be paid by the General Contractor after the preconstruction meeting. A/E will fill out all of the paperwork at the permit desk and include the entire cost in the project manual/bid documents as an allowance. Architect of record or representative will obtain the actual plan check/permit/impact fees at the permit desk prior to final permit and submission for bid. Architect may be required to sign a "promise to pay" form.

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Air Quality/Fugitive Dust Permit

Include in bid set the GC Responsibilities to coordinate and pay for:

Air Quality/Fugitive Dust Permit. General Contractor needs to fill out the form and pay the fee to the Environmental Health Department as part of the base bid. The permit needs to be paid and in place prior to commencing any earthwork on the site. See Environmental Heath for Air Quality/Fugitive Dust Permits requirements for disturbed land under 3/4 of an acre in size or building demolition under 75,000 cubic feet.

This includes air quality permitting for any emergency diesel power generators, or any item identified by Environmental Health as a recognized emissions generator including water heaters of a specific size.

Drawings & Specifications (Pre-Install Meetings) – include in the bid set mandatory pre-installation meetings on any special system and systems that have more than 2 trades on the installation. These meetings can occur during the weekly construction progress meetings. Ask for Mockups of systems that require a good installation and ask for manufacturer representatives to attend the construction progress meetings to answer material & installation questions. Prior to the final construction design documents (preferably before the DD level of design)- engineers and architects shall work with General Services Department in developing detail design using standard design criteria based on building type, occupancy, etc.

Drawings & Specifications (House Keeping) – include language within the specifications to not allow any tobacco products (including chewing tobacco and electronic cigarettes) on the building site and food or drinks within the building perimeter. We have found trash and debris in past constructed walls that get covered up and cause an odor later during occupancy. Provide a statement to clean the sub slab area daily of all debris to avoid left over construction material under the access floor.

Drawings & Specifications (Substantial Completion & Certificate of Occupancy (CO)) – Make it clear that the Certificate of Occupancy (CO) is the substantial completion date on CIP contract. This is the time that the City will take over site security and transfer insurance liability and utility payments from the General Contractor to the City (coordinate with the Energy and Sustainability Division). It is also the time when City customers can occupancy the building. Punch list corrections and commissioning may continue to project closeout. All site work, landscape planting and irrigation will need to be construction complete prior to CO.

Commissioning Will be required as described in the current IECC.
If required by the IECC, A Commissioning Agent (CxA) for non LEED buildings will be provided by the City. The A/E is to include specifications to support this effort with coordination with the Commissioning Agent.

The Design Team will need to work closely with the General Services Department to verify commissioning, verify functionality per the sequence of operations.

Casework Requirements
Provide heavy duty, well-made casework that will last heavy use.
All casework needs to be approved by COA prior to final design.
Do not use particle board, melamine or oriented strand board (OSB) for casework construction. Use veneer plywood and solid wood only for casework construction.
Doors and drawers pulls shall be integrated.
Hinges, drawer glides and locks shall be heavy duty, long lasting.
Kitchen sinks shall be deep and wide enough to allow for the washing of large pots and pans.
Kitchen faucet stem shall be high enough to allow for washing of large pots and pans.
Bathroom faucet stems need to extend out far and high enough to allow for easy hand & face washing. Touchless sensor type faucets for lavatories.
Bathroom sinks shall be stainless or solid surface with smooth edges.
Casework finish needs to resist stains and low impact.

Emergency Evacuation Plans - Include in bid set - Contractor will provide signage per Fire Marshall Requirements. Plans shall be mounted to the walls in prefabricated frames that will allow changes to the evacuation plans as needed. Locations of the evacuation plans shall be determined by the Architect and Fire Marshall. Plans will show evacuation routes, fire extinguishers locations, room names, exits, etc. Architect will provide floor plans electronically with evacuation routes for the evacuations plans.

Room Occupancy Load Signs – Include in bid set - Contractor will provide signage per Fire Marshall Requirements. These are only required in areas of assembly and mezzanines spaces. Architect will provide design and information for these signs.

CIP Building Design Standards & Guidelines

Room Labeling & Wayfinding - in those cases where room/office addressing and wayfinding signage is incomplete, the architect shall verify with the COA to improve the space by including wayfinding and room addressing.

As-built drawings - **Include in bid set as GC Responsibilities –** Update on a daily basis and to be reviewed weekly for completeness by A/E representative. As-built drawings will be provided to the Architect of Record and City PM at the end of the project in electronic format described below. Architect shall update and create record drawings and specifications for City PM records at project closeout.

Design Reviews – For each design review, at a minimum, provide both ½ sized hard copy and an electronic pdf copy (less than 10 MB).

Record Drawings - Once appropriate signatures have been obtained (if required by the City) an electronic digital copy (PDF & ACAD/REVIT/BIM Model) of the construction drawings shall be provided to the Department of Municipal Development/Construction Services/Maps and Records Section before construction begins.–At the end of construction the Sealed Record Drawings shall be submitted in PDF & ACAD/REVIT/BIM format to the Maps and Records Section the City PM and the Department of General Services. In each case the digital record criteria below shall be followed. Operations and Maintenance Manuals must be provided to the Department of General Services for all equipment.

1. A single pdf file, multiple page, image based, electronic pdf file containing one pdf sheet for each sheet of the project drawing plan set. File to be named Project Number.pdf.
2. Each sheet shall have the design professional's seal and the sheets shall be oriented as if reading the drawings on a desk (i.e. top to bottom, left to right; no rotated images).
3. Each sheet of the single multiple-paged pdf should be sequentially numbered and in order in accordance with the plan set.
4. The resolution should be no less than 300 dpi.

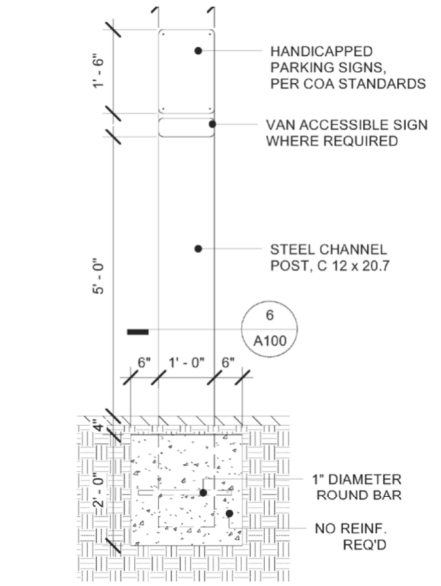
SWPPP (Storm Water Pollution Prevention Plan)

Include in bid set the GC Responsibilities to coordinate and pay for:

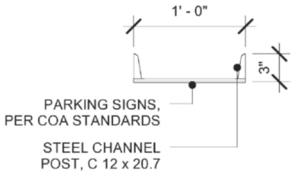
All work and fees related to the SWPPP as part of the base bid. Note that there is a NOI 14 day waiting period per EPA prior to any disturbance of earth. Tell the CG to limit the areas of construction and mobilization, including driving routes onto and around the site. These areas will have to be part of the SWPPP inspection and later soil stabilization sign off.
This will need to be mentioned at the Pre Bid and Pre Construction meeting since it will affect the construction schedule.
You may want to remind your consultant that the GC will have to submit his SWPPP to DMD Engineering for review and Engineering Manager sign-off. Note that the City may provide their own certified SWPPP inspector for periodic site visits.

Parking and other sign mounting detail

This detail is recommended for all sign that have to be mounted on a pole… See detail and photo below.



7 PARKING SIGN
1/2" = 1'-0"



6 PARKING SIGN - SECTION
1" = 1'-0"

Sample Parking Sign Post

Concrete Slabs, Sidewalks and Paving

Provide an expansion and control joint plan that clearly shows and labels all joints. All joints shall be spaced to meet the 1:1 ratio. All exterior expansion joints shall have self-leveling sealant typical. Sidewalk finishes shall be a medium broom finish.

Accessible Doors

Refer to the Department of General Services for standardized requirements for doors/hardware.

Sliding Door

Sliding doors are preferred for main building entry.
Recommend Stanley DURA-GLIDE™ 2000 and 3000: AUTOMATIC SLIDING DOOR SERIES
Web Site http://www.stanleyaccess.com/dura-glide
Provide all options to electronically secure door after hours.

Automatic Swing Door Operator

Recommended swing door operator is the Horton 7000 series Heavy Duty, ADA Low energy & Full Power Swing when the design requires an operator.
See Web Site http://www.hortondoors.com/products/products-swing-folding/Pages/home.aspx
Provide all options to electronically secure door after hours.

ADA Compliant Full Reach Range Switches

Recommended automatic door operator switch for swing doors is the INGRESS'R switch.
See Web Site http://www.wikk.com/sw_spec.html
Note that this switch is not required on sliding doors.
Mount bottom of switch 6" min. A.F.F. and no closer than 4'-0" from door with operator and no further than 15 feet from the door controlled.
Prefer mounting is on building wall. Use post/bollard mounting if wall is not adjacent to the door.
See attached cut sheet for device. Stainless steel finish is preferred.

Ingress'r 2pg.pdf

CIP Building Design Standards & Guidelines

Restroom Requirements

Toilet Partition Recommendation

See Flush Metal Partitions, LLC - http://flushmetal.com/flushung-ss-bathroom-partitions
Design floor mounted partitions with textured stainless steel or solid surface finish. Request finish samples for selection. Call out in the design to provide bracing above ceiling and in the walls to support partitions.

Toilet Accessories Recommendations (Coordinate with Facilities)

See **AJW Architectural Products or Bradley Washroom Accessories**
Provide accessories that do not extend more than the grab bar into the toilet area.
See example **U865 Waste Disposal & Toilet Tissue Dispenser Combination Unit** between partitions at partition installations.
See example **UX112 Double robe hook** with satin finish where robe hooks are needed.
See example **U984 Baby Changing Station** with satin finish where changing table is needed.
See **Dyson Airblade V Hand dryer** for hand dryer – http://airblade.dyson.com/hand-dryers/airblade-v/airblade-v.aspx and http://airblade.dyson.com/ Verify with General Services Department

Coat Hooks in Toilet Stalls – Specify coat hooks that do not protrude more than 2" and allow the toilet stall door to open a full 90 degrees into the stall. Hooks shall have a flat face similar to Bobrick B-671, B-6717, B-672, B-6727 and B-677. Other manufacturers with similar coat hooks will be acceptable as long as they do not have sharp edges, faces and follow the above requirements.

Solid Surfaces and Stainless Steel Surfaces

Provide solid surface material at all wet areas, break areas and lobby counters. All edges shall be 1-1/2" minimum thickness at the perimeter and 3/4" minimum in the field areas. Stainless steel surfaces may be used for wet areas if it meets the design intent and building type.

Ceramic Tile

Provide ceramic tile in restroom and public areas as required by the design team. Use epoxy grout instead of grout sealer as part of the installation. Slope to drain.
Coordinate with the Department of General Services for flooring and carpet options.

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Window Sills

Show full details in the bid set for construction. Do not rely on the contractor to figure out window details in the field.

Painting & Textures

Provide Semi-Gloss paints and light to medium textures (Knockdown finish preferred) on all interior gypsum board walls and ceilings to hide surface imperfections and for easy matching or touchup during maintenance. Provide gloss paint on all restrooms walls and ceilings. Flat and egg shell paint is not allowed on City projects unless approved by City Architect and PM. See attached standardize color options per the Department of General Services (at the back of the Guidelines) for walls and door frames.

Ceiling Tiles:

Per the Department of General Services all ceiling tiles shall be standard Armstrong 895 tiles.

Exterior Insulation and Synthetic Finish System

Provide light to medium textures to hide surface imperfections and for easy matching or touchup during maintenance. Use the mesh up to at least 8' AFF.

Roofing Standards for New and Replacement flat roofs

Systems:

- Provide 72 mil Minimum PVC for all new and replacement flat roofs. The system can be either fully adhered or heat inducted welded based on the deck type. Fleece backed membrane can be used in fully adhered systems.
- Insulation:
    - Insulation can be mechanically attached and or fully adhered depending on the deck type.
    - Insulation shall be Polyisocyanurate.
        - Tapered insulation may be required to provide a minimum 1/8" per foot to provide positive slope.
        - Crickets or saddles should be built to a 3 to 1 ratio and be at least ¼" greater than the slope of the deck.
        - R-value must meet the currant IECC and City requirements.
        - All insulation must be in a minimum of 2 layers & have a ½" DensDeck type cover board.

- Roofing design specifications for City approval require an FM Global approved roof assembly, minimum required assembly design is Class 1-75 wind uplift. The roof assembly must be listed with a RoofNav number and approval listing including specific cover, insulation, fastener, deck or substrate. Provide the full assembly listed under an FM Global approved manufacturer for both the basis of design specification and the contractors submittal packet, do not substitute FM Approved products listed in the RoofNav report.
    - Provide a roof assembly complying with the following:
    - For roof decks, securement requirements of the roof decking for minimum Class 1-75 wind uplift rated roofs are described in FM Global Property Loss Prevention Data Sheet 1-28.
    - For above deck components, securement requirements of the above deck components for minimum Class 1-75 wind uplift rated roofs are referenced in FM Global Property Loss Prevention Data Sheet 1-29.
    - For standing seam and panel roofs, provide securement requirements for corner, perimeter, and as appropriate roof peak, of standing seam and panel roof systems for minimum Class 1-75 wind uplift rated roofs, refer to FM Global Property Loss Prevention Data Sheet 1-31.
    - For preliminary insulation fastening, refer to Data Sheet 1-29, Table 6 for pre-securement fastening requirements.
    - For recover and reroof design, specification must include testing prior to installing fasteners for recovering and reroofing existing decks, fastener withdrawal tests are needed to confirm the adequacy of fasteners and fastening pattern. Refer to FM Global Property Loss Prevention Data Sheet 1-29 for details.
    - For system specification and quality control, include trial fasteners. Installations of row attached mechanically attached single ply roof covers over steel deck (new or recover) require that the roof cover be laid perpendicular to the ribs of the steel roof deck. This requirement is made to ensure that the mechanical fasteners are installed perpendicular to the steel deck ribs and take advantage of the steel deck rib module and engage the top flange of the steel deck. Specify in the design, before beginning the securement, that a trial fastener must be driven to determine that the fastener is in fact engaging the top flange of the steel deck. Engagement in the top flange of the steel deck is a requirement of all fasteners for Approval of all steel deck roof constructions.

  - As part of the design deliverables, provide a complete FM Global RoofNav Contractor Package for review and submission to the FM Global field office including a Contractors Checklist for Roofing Systems, FM Global RoofNav document form number X2688, summary of information for an FM Approved roof assembly with specific product selections, and information regarding securement patterns, corner and perimeter enhancements, perimeter flashing, and prescriptive safety information required for an insured's construction coverage applicability and responsibility review.

- All low slope copings, and roof edges must have wood nailers that are fire treated and meet ES-1 Code requirements.
- Provide coping flashing or snap on edge copings that meet SMACNA and ES-1 requirements, have a Kynar type finish with a 20-year paint warranty and factory finish color selected by the Architect/Owner.
- **No pitch pans allowed.**
- Provide 2-30" wide walking pads at entrance onto the roof, window cleaning rigging access and all working sides of units and a single 30" row to the mechanical units to the roof access.
- Use roofing manufacturer's recommended membrane premanufactured boots at all duct/pipe/conduit penetrations. Hand wrapped membrane boots maybe used when premanufactured boots are inaccessible.
- All curbs and penetrations must meet roofing manufacturer's requirements. All penetrations must be separated for proper flashing with membrane boots.
- Roof curb must be installed with the membrane wrapped onto the top of the curb and a new slip metal flashing installed.
- For reroofing projects design in all new equipment curbs.
- Provide continuous, fire rated, plywood backing at all parapet walls & fire rated decking. Provide continuous fire rated 2x nailer on top of parapet.
- On all scuppers provide membrane coated metal liners.
- All gutters must have bottom brackets and laps sealed with a peel and stick EPDM or Enteral bond type product following SMACNA standards.
- Provide pre-manufactured concrete splash blocks at drain and downspouts discharge areas typical.
- All drains must be water tested at project completion.
- All conduit, gas lines and other supported piping that runs on top of the roof must have manufactured pipe supports with slip flashing that has been fully adhered.

Use only pre-manufactured conduit/pipe supports. **Wood supports are not allowed.**

- Roofing manufacturer representative shall inspect final roof placement and may be required at the roofing preinstall meeting.
- Provided a 20 year NDL manufacturer's warranty with a contractor's 2 year warranty.
- Follow roofing manufacturer's recommendations for the installation or Architects/Roofing consultants' requirements which is ever more stringent.
- Roofing must meet currant Building code requirements, be a tested by FM, SMACNA ES-I ANSI SPRY, currant ASCE7, OSHA, energy star rated and have moderate hail resistance.
- Metal roofing systems shall be standing seam. Coping and metal roofing materials shall match in color. Coordinate with General Services Department on the warranty duration.

Solar Panel Roof Requirements

Design all new flat roof systems to support future photovoltaic panels.
Typical roof mounted solar modules weigh 20 to 50 pounds each and are distributed evenly across the roof along with the racking systems that support them. The design shall include the combined weight of solar modules and the racking that supports them to approximately 3-4 pounds of weight per square foot. Other consideration would need to be included such as wind and snow loads that are attributed to the solar panels.

Roof Hatch, Railing, Ladder & Safety Cage

The design of all roof hatches, railing, ladders and safety cages must comply with OSHA and all applicable building codes. The design will be assessed on a design by design basis.

Fire Protection

Include in the contract documents all of the following building and site requirements:

Fire Marshall Requirements

All designs will need to be reviewed by the COA Fire Marshall's office during design development phase, contract document phase and prior to submitting the plans for permit review. Any modifications to city maintained facilities that will affect the fire panel must be coordinated through the Department of General Services.

Sleeve Penetrations

Provide framed or pipe sleeves at all Foundation wall, fire wall and sound wall penetrations. Use proper sealant, fire and sound caulk, with indicator coloring, inside sleeves and gang piping/conduit/duct frames.

Wet Systems

Wet systems shall have a 1 year PM plan included in the installation to include any subsequent equipment including but not limited to fire pumps, fire pump controllers, monitoring devices, etc.

Dry Systems

Dry systems shall be pre-action type and have a 2 year PM package to cover maintenance on all subsequent equipment including compressor, diaphragms and pressure switches associated with system including fire alerting system.

If a project occurs in sprinkled space that has sprinkler heads that are at or near 80% life cycle shall be replaced in their entirety of the construction footprint.
General Services Department reserves the right to have fire sprinkler consultant review fire sprinkler design for input and approval.

Fire Alerting systems shall be approved prior to installation by General Services Department.

Fire Alerting systems installed shall have a 2 year PM plan as part of the installation.

Enterprise systems shall include- Simplex Grinnell

Plumbing Design

Include in the contract documents all of the following building and site requirements:

Public Utility Requirements for All Disciplines
See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines.

Water Service
All water service lines and connections, within the building, shall be copper. All valves shall be copper or brass. Any changes to this requirement will need prior approval from the City assigned PM and General Services Department.

No Hub Couplings
When No Hub couplings are used in the design of the plumbing system waste and drain, use stainless steel heavy duty coupling with 4 stainless steel clamps. This insures that the joint will stays together when the system is snaked. All waste water cast iron pipe must be epoxy coated inside and out.

Water Isolation Ball Valves
Isolate all water lines, hot and cold water, with ball valves at each restroom for one restroom shut down at a time during maintenance. Provide interior isolation valves at all exterior hose Bibbs and wall/rooftop hydrants. Locate all roof top hydrants along nearest parapet roof edge to provide a larger open roof area for future solar panels.

Toilet Mounting
Use floor mounted toilets only. Discuss, during the design process, which type of toilet mount is preferred. Note that Senior Center type buildings require all toilet heights to be 17" to 19" ADA height.

Flush Valves Water Closets & Urinals:
Sloan side mount flush valve EBV 500A Optima plus

Sink Faucets:
T&S brand for custodial sinks, model# is B-0665-BSTR

CIP Building Design Standards & Guidelines

Access Panels
Provide access panels at all concealed valves. Provide valves within 6” of ceiling and walls for easy maintenance access. Access panels shall be sized for maintenance staff access during the design process. 18”x18” minimum size.

Trap Guards
Provide trap guards at all interior sanitary sewer drains.

Sleeve Penetrations
Provide framed or pipe sleeves at all Foundation wall, slab, fire wall and sound wall penetrations. Use proper sealant, fire and sound caulk, with indicator coloring, inside sleeves and gang piping/conduit/duct frames.

Fire & Sound Rated Walls
Use 2” minimum labels above ceiling at every three feet that state “Fire Wall – Do Not Penetrate” or “Sound Wall – Seal Penetrations”.

All drinking fountains shall have bottle filler option with filtration.

Water heating systems may be on demand tankless type with circulating loop and pump. Verify current requirements with the City General Services Division.

Mechanical Design

Refer to the standardized guidelines for HVAC prepared by Energy & Sustainability Management Division. All new facilities shall include Automated Logic Controls for compatibility into the City's monitoring system and shall not be propriety. Existing controls shall be evaluated for rehab work to determine the life expectancy and removed and replaced with Automated Logic Controls when deemed unsalvageable.

Include in the contract documents all of the following building and site requirements:

Public Utility Requirements for All Disciplines
See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines.

HVAC Systems
During design, provide a comparative list of HVAC systems with energy savings and cost information to allow the City to choose the right system for the building type.
Provide energy efficient mechanical systems that have a proven record of at least 5 to 10 years of operation with little or no breakdown issues and obsolete replacement parts.
HVAC units must meet the current IECC requirements.

All disconnects must be non-fused

High altitude orifice kits

High efficiency units, 85% efficiency 16 SEER or greater or what is required by the current IECC.

Unit must have factory hail guard protection

Unit must be name brand with factory warranty, (Trane, Carrier, York Etc.) no sub brand

Rubber or composite sleepers with slip sheets, no wood sleepers shall be used

Unit must come with a Bacnet Card installed for future control if a BAS is not included in the construction project

New sensor t-stats throughout the building

New duct detectors

If a VRF system is designed, all interior piping must be hard piped, no soft copper within the building

If a VRF system is designed all exterior piping must include a wrap to deter the breakdown of exposed insulation due to the elements

New units and during remodel, Test and verify the HVAC system is balanced correctly to accommodate design use. Test and Balance Report shall be submitted to DMD & GSD. The design needs to meet the requirements of the current IECC.

HVAC Maintenance for the first year after Certificate of Occupancy

Include in the drawings and specifications a statement that the General Contractor and their subcontractor are responsible for the quarterly maintenance of all installed HVAC units for the first year after certificate of occupancy is issued. Including but not limited to: chillers, boilers, filter replacement, greasing bearings, Camfil filer replacement, replacing belts, coil cleaning, measuring discharge air temps, measuring water supply and return temps, recording, strainer cleaning, lubrication of rotating/moving parts, faulty wiring replacement, control connections/operations, seasonal heating/cooling switch over, etc. and submitting to the General Services Department.

Roof Top Units

All roof top units (RTU'S) shall have a curb height above finished roof membrane to membrane termination and noted elsewhere in this guideline. Provide an exterior rated convenience outlet at each unit with all wiring and conduit routed inside RTU curb. Provide hail guards on all RTU's. As safely as feasible possible, locate all RTU'S and route all gas lines along nearest parapet roof edge to allow for a larger open roof area for future solar panels. Also see HVAC maintenance requirements above.

Include hard labeling of HVAC circuit panel and OCPD number on either the disconnect of the HVAC unit. The convenience outlet shall also have the circuit identified.

RTU'S shall be either TRANE/~~Allerton~~ Automated Logic controls compatible.

RTU Units: Shall have disconnects and convenience outlets installed along with new rubber blocking for the new units and gas lines. Install frost free hose bids for maintenance purposes.

Electrical Design

Include in the contract documents all of the following building and site requirements:

Public Utility Requirements for All Disciplines
See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines.

UFER Grounding
Provide UFER Grounding detail (A.K.A. Concrete Encased Electrode). Design is mandatory for all new building installations. See NEC 250-52(A) (3) (1) for requirements.

Service Connection
All service connection conductors shall be copper. Any changes to this requirement will need prior approval from the City assigned PM and General Services Department

Sleeve Penetrations
Provide framed or pipe sleeves at all Foundation wall, slab, fire wall and sound wall penetrations. Use proper sealant, fire and sound caulk, with indicator coloring, inside sleeves and gang piping/conduit/duct frames.

EXTERIOR OUTLETS
Exterior power outlets are to be on a dedicated Circuit home run. The exterior receptacles shall have dedicated 20 amp circuits for no more than 10 receptacles. Any additional receptacles shall have another dedicated circuit provided for up to an additional 10 receptacles.

LED Lighting
Provide in all designs LED lighting and controls. All lighting and controls shall be coordinated and reviewed by General Services Department.

Flat panels should be used only in warehouse/institutional applications.
Lighting color temps shall be no warmer than 3000 kelvin without facilities division approval.
Outdoor lighting shall be LED and controlled by Intermatic timer with automatic DST.
Photocells shall be wall mounted at 9’ AFF.

Conduits for Future Charging Stations

Provide 2" conduits to the parking area for future charging stations for electric vehicles (one for data only and one each for power to each pair of parking space). Design the termination such that four parking spaces may have access to the service. Design the termination in the facility's electrical panel and IT room and design the power requirements for the future demand of this service.

Conduits for Future Photo Voltaic panels

Provide one 2" conduit from each rooftop to the electrical room and one 2" conduit to the IT room for connection to future Photo Voltaic panels. Provide the same for any site applied PV panels.

General requirements:

Under no circumstances fused disconnects or fused distribution equipment shall be used.
All Overcurrent Protection Devices (OCPD) shall be a circuit breaker.
All distribution equipment shall be square D
All exit signs in downtown facilities shall be red lettering
Every panelboard and distribution equipment shall have, at a minimum, of 30 percent available spacing in the panel/ distribution equipment for future loads.
As a precautionary method, underground raceways shall have at least one spare raceway equal to the size of the largest underground raceway.
MC cable shall not be used as a home run.
MC cable cannot exceed more than 15 feet in ceilings and no more than 10 feet in wall cavities.
All lighting "whips" shall have the dimming conductors incorporated into the cabling. Whether the systems is being dimmed or not.
Conduit fill shall not exceed 50 % of the conduit fill capacity.
All junction boxes shall be deep.
Floor boxes shall have brass covers.

All wall cover plates shall be stainless steel with circuit identified on wither the front side of the cover plate or in some cases listed behind the cover plate.

PVC schedule 80 under no circumstance shall be used as an above ground raceway. All above ground raceways shall be metal.

All VFDs shall be ABB

Liquid tight metallic flex conduit is allowed at no more than 6 feet in total length and only for equipment termination.

Photovoltaic Systems

All PV system installations are subject to compliance with these requirements.

PV systems shall not in any circumstance prevent access to rooftop equipment.

PV system raceways shall be installed equally spaced from each other, and supported every 6 feet horizontally with rooftop approved raceway support systems. Ariel power supply shall only be used by the local electrical utility (PNM). All customer owned electrical distribution installations including PV shall be underground.

Special Systems / Telecommunication Design

Include in the contract documents all of the following building and site requirements:

Public Utility Requirements for All Disciplines
See Public Utility Requirements for All Disciplines section towards the end of this document and coordinate work between all disciplines.

Coordinate all work through the COA Department of Technology and Innovation (DTI)
Include in bid set the GC Responsibilities to coordinate and pay for the backbone:
All Voice, Data and Communication Work internal to the building related to the permitting, cabling, connector, faceplates, devices, racks and related equipment other than the bid document required 1" conduits, J-boxes, pull strings all home run to the communication closets. A/E design team needs to get quotes from the City vendors that provide this work. Be sure to have the vendor use prevailing wage rates on projects over $60k in their quotes.

COA Department of Technology & Innovation (DTI)

Standards/Policies for Network Infrastructure

PURPOSE: This section describes installation standards and procedures for network infrastructure.SCOPE: Applies to the network infrastructure in all City owned or leased facilities
REVISED: 4/22/2022

The DTI Network group is responsible for all design, installation, and maintenance of networks in City owned and leased facilities. The DTI Network group will work with department program and procurement staff to provide appropriate quotes and contract information to aid with the purchase of all City network equipment and services. This includes, working with City contract and architecture staffin the design of any remodel or construction projects. All devices connecting to the City's intranet must support TCP/IP.

Network Equipment Requirements:

1. Switches must comply with all of the following:
    a. Enterprise level switches manufactured by Cisco
    b. Must be configurable by console port/command line

c. Must have LAN based image or higher (No LAN-Lite images)
d. Must support encryption (No NPE Images)
e. Dual power supplies shall be purchased whenever possible
f. Must be compatible with the Cisco DNA Infrastructure
g. Must support IEEE 802.3at (PoE+)
h. Manageable by SNMP

2. Routers must comply with all of the following:
    a. Only Enterprise level routers manufactured by Cisco
    b. Must be configurable by console port/command line.
    c. Must have IP Services image or equivalent (Full support of EIGRP and BGP)
    d. Must support encryption (No NPE Images)
    e. Dual power supplies shall be purchased whenever possible
    f. Must be compatible with the Cisco DNA Infrastructure
    g. Manageable by SNMP
    h. SRST capability FXO/FXS

3. Wireless Access Points must comply with all of the following:
    a. Only Enterprise level WAPs manufactured by Cisco please consult with Networking for current configurations.
    b. Must be compatible with Cisco Infrastructure
    c. Must work with Cisco Wireless Controllers and or Meraki dashboard.
    d. Must have dual 2.4 and 5ghz radios with 802.11n(AC/AX) support.
    e. Must support Cisco Clean Air technology for spectrum analysis
4. IP Telephony
    a. Must be manufactured by Cisco
    b. Must be supported by current version of Cisco unified communications manager CUCM.
    c. Desk phones shall have two ports, allowing for PC connectivity through the phone
    d. Plug-in's or additional telephony software or features must integrate with thecurrent CUCM environment.

MDF/IDF Requirements:

1. MDF/IDF's should be located so no copper cable run exceeds 295" in length. Multiple floors can be connected to an MDF/IDF if the cable length is not exceeded.
2. The MDF/IDF should be at a minimum 8x8 if it is not shared with anyone else. Shared closets need to be at least 12x12. The Demarcation (Dmarc) and Special Systems should reside within the same closet.
3. If multiple floors are to be pulled to one MDF/IDF, appropriate pathways must allow easyaccess between floors.
4. MDF/IDF's will be interconnected by the City's WAN. The exact MDF/IDF interconnections willbe determined by DTI Networking.
5. Each MDF/IDF will have a minimum of two duplex 20Amp / power outlets. These outlets requirededicated power/breakers.
6. DTI Network will require a 30Amp twist lock dedicated outlet for a UPS
7. All cables pulled into the MDF/IDF shall be clearly marked on the cable/jack/patch panel or termination point.
8. All Patch Panels will be ordered with 110 connectors on the back,(i.e., Siemon, Leviton PatchPanels), to be wired T568B standards. Patch panel should be numbered to match connected faceplate in the office.
9. Cables pulled by Contractor require 10' service loop at the MDF/IDF.
10. All cabling must be a minimum of CAT6.
11. A minimum of two 4-inch entrance conduits to be installed in most circumstances (DTI to determine) containing four 1" rigid innerducts with pull string.
12. Fire rated back board to be installed 4" AFF (above finished floor) on all walls, #6 ground tied to building ground.
13. Racks are standard 2 or 4 post racks to be installed in the Network closets. Exception will be a Vertical mount 6U cabinet. Location must be approved by DTI Network Group.
14. MDF will not be used for storage. Network equipment requires a 3' clearance of any obstructions front and back of rack per NEC Code.
15. MDF/IDF must have proper environmental controls and ventilation to prevent equipment malfunction/failure. Determined by DTI. Mini split will be needed if ventilation is not adequate. Mini Split not to be installed above any equipment, install above door if possible. No drop ceilings in the MDF/IDF.

ICO (Integrated Communications Outlet) Requirements:

1. Each office shall have at least one ICO with a minimum of 2 cables per each location.
2. Each ICO shall have a 1" conduit that is stubbed out to the nearest accessible ceiling space, with a double gang deep box with a single gang mud ring, at the same height as existing electrical outlets.
3. At least 2 CAT6 ethernet cables will be installed from each ICO to the MDF/IDF for data and voice.
4. All ICO's cables for new construction will be run from ICO to MDF/IDF in a minimum of 1" conduit.
5. ICOs will not be daisy chained.
6. Under carpet cable shall not be used. If an ICO must be installed in the middle of a room, it mustbe fed by conduit that is terminated to a floor box.
7. Twelve inches of service loop shall be left in cables at each ICO
8. All cable runs must be reflected in the As-Built diagrams
9. Note that all manufacturers' requirements regarding the installation practices are to be followed. This includes insuring that the minimum bend radius of installed wiring is maintained. Cables are to be routed so that no cable run is in excess 295' in length. All installation is to be done in accordance with the NEC Code and BICSI standards.
10. All wall face plates and floor face plates must be numbered for identification. Each ICO must benumbered to match the patch panel in the MDF/IDF.
11. All new cable installations must include patch cables for both the end user and for the networkswitch termination. The standard is one 15' and one 3' for each data run. Any variation to these cable lengths must be approved by DTI Networking.
12. All cabling systems will be thoroughly tested for continuity and correct termination sequence.The criteria for testing cable are length, exposure to electromagnetic interference, and other conditions that might cause transmission problems. Testing tools should test for reversed, opened, shorted, and transposed pairs, and verifies the cable is within parameters of NEXT, impedance, capacitance, and ACR. No pass is not accepted.

Fiber Optic Requirements:

1. Multi-mode and single-mode fibers are both utilized at the City. In all cases of multi-mode-fiberinstallation, 50 micron will be used, unless 62.5 is required for backward compatibility of existing fiber.
2. Direct burial of fiber optic cable is not allowed.
3. When installing fiber optic cable in ductwork and pullbox between buildings, there shall be aminimum of one complete loop; minimum of 12 feet in length, in the manhole and it shall be pulled in a protective liner inside the manhole to prevent damage to the cable.
4. All fiber optic cables shall be terminated with LC type connector and properly connected to theFDU. Fiber cable metallic sheath if attached shall be properly grounded.
5. When installing fiber optic cable, in existing conduit that is not Multi-Cell or does not contain flow duct, it shall be pulled in a protective textile innerduct, minimum 1 inch inside diameter. When placed in a cable tray or on a runway where there is the possibility of someone standing,walking or sitting on the cable, it shall be placed inside a protective liner. When floor duct is utilized one chamber will be used exclusively for the fiber.
6. All cable placed along runways, relay racks and distribution shelves shall comply with the manufacturer's minimum bend radius requirements for that particular type cable. Cable is to besecured by Velcro so as not to be pulled tight at any point that causes the cable jacket to be crushed flat or indented.
7. Use vertical and horizontal wire management on relay racks to accommodate the fiber cable tobe dressed into the fiber terminating enclosures.
8. There should be a minimum 12ft. service loop mounted in a circular configuration on fire ratedplywood (3/4 in. thick) in accordance with NEC standards.
9. All fiber strands shall be terminated in accordance with industry standards with LC Connectors inand rack mounted FDU. Kevlar strain relief should be tied inside the service access of the FDU. Rigid member should be secured in the service access of the FDU using applicable hardware

   provided with the FDU. Inner shielded fiber strands should have a minimum 3ft. service loopinside the service access of the FDU.
10. All strands must be tested per Bixey standards.
11. Installation of fiber optics in City facilities must include fiber patch cables of an appropriatelength unless prohibited by an existing Franchise agreement.

Phone Service

All telephone service and design needs to be fully coordinated with COA Department of Technology & Innovation (DTI). Provide the minimum number of dedicated phone line depending on building service requirements like elevator emergency phones, fire alarm monitoring systems, security monitoring systems, etc.

COA Security Cameras and Devices Requirements

Coordinate all work through the COA Department of Technology and Innovation (DTI) & DMD Security Department.

Include in bid set the GC Responsibilities to coordinate and pay for as an Allowance:

All intrusion detection, cameras and electronic security work on building and site related to the permitting, cabling, monitors, connector, faceplates, devices, racks, DVR and related equipment other than the bid document required 1" conduits, J-boxes, pull strings all home-runs to the security/communication closets and monitoring area. A/E design team needs to get quotes from the City vendors that provide this work. Be sure to have the vendor use prevailing wage rates on projects over $60k in their quotes.

CABQ Security Camera Standards SCOPE: Applies to security cameras and related equipment in all City owned or leased facilities REVISED: 8/2022
**All camera projects to be submitted to TRC

Camera Make/Model

- Camera shall be manufactured by a Genetec Gold Partner (currently Axis, Hanwha, Panasonic iPRO, Flir, Bosch)
- Camera shall not be NOS (discontinued)
- Camera shall have a minimum of three streams
- Camera shall have a minimum resolution of 1920x1080 @ 30FPS
- Camera shall have H264 capability
- Camera should have H265 capability
- PTZ cameras shall have home position capability and be programmed to return to home
- Camera should have advanced analytics matched to facility needs (object analysis, intrusion detection, loitering, etc.)

Cybersecurity

- Camera shall have firmware updated prior to commissioning
- Camera shall have default logins removed and replaced with CABQ provided credentials

Archiver
- Each facility shall have a Genetec Streamvault archiver on site
- Archiver shall be sized to retain a minimum of 30 days of footage for all cameras, at full resolution and framerate, recording continuously

Location/Mapping
- Cameras shall have location coordinates entered into Genetec
- Cameras shall be mapped in Genetec using the facility floorplan including FOV

Networking
- Cameras shall be networked to a DTI approved switch
- Facility shall have a minimum 10% free switch capacity after camera connections
- Please refer to the CABQ DTI Standards for Network Infrastructure to ensure compliance

Licensing
- A camera license for Genetec must be purchased for each camera installed and applied to System ID: GSC-200519-119676
- The City of Albuquerque holds an Enterprise Client license – Individual user licenses will not be required
- Ongoing costs for Genetec Advantage and any vendor provided maintenance plans should be considered

Sleeve Penetrations
Provide framed or pipe sleeves at all Foundation wall, slab, fire wall and sound wall penetrations. Use proper sealant, fire and sound caulk, with indicator coloring, inside sleeves and gang piping/conduit/duct frames.

Fire & Sound Rated Walls
Use 2” minimum labels above ceiling at every three feet that state “Fire Wall – Do Not Penetrate” or “Sound Wall –Seal Penetrations”.

Underground Utility Spotting
The Contractor is to be responsible for all underground utility spotting within the Limits of Construction of the project.

Public Utility Requirements for All Disciplines

Include in the contract documents all of the following building and site requirements:

Make sure to include the following items in the bid documents (Drawings & Specifications) that will make the General Contractor responsible for coordination of all documentation, payments to the service provider and maintaining the construction schedule. The design team engineers will need to coordinate with and incorporate many of the public utility and miscellaneous requirements in the contract bid documents.

PNM Utility- Include in bid set the GC Responsibilities to coordinate and pay for: Engineering and scheduling service connection, Transformer & Pad, 2- 4" conduit placement requirements, documentation requirements, PNM inspections, utility easement requirements and direct payment. Provide a note to make the GC responsible to plan ahead for this utility installation.

ABCWUA Utility- Include in bid set the GC Responsibilities to coordinate and pay for: Water and Sanitary Sewer service connection, taps, meters, UEC charges and all documentation requirements, scheduling, pipe placement requirements, inspections by ABCWUA coordination, utility easement requirements and direct payment. Provide a note to make the GC responsible to plan ahead for this utility installation.

NM Gas Utility- Include in bid set the GC Responsibilities to coordinate and pay for: Engineering and scheduling service connection, all documentation requirements, gas line placement requirements, inspection by NM Gas coordination, utility easement requirements and direct payment. Provide a note to make the GC responsible to plan ahead for this utility installation.

CenturyLink Utility- Include in bid set the GC Responsibilities to coordinate and pay for: Engineering and scheduling service connection, all documentation requirements, 2- 4" conduit placement requirements with 1" ridged inner duct and pull strings, inspection by CenturyLink coordination, utility easement requirements and direct payment.

Comcast Utility- Include in bid set the GC Responsibilities, if required, to coordinate and pay for: Engineering and scheduling service connection, all documentation requirements, conduit placement requirements with inner duct and pull strings, inspection by Comcast coordination, utility easement requirements and direct payment.

Sleeve Penetrations
Provide framed or pipe sleeves at all Foundation wall, slab, fire wall and sound wall penetrations. Use proper sealant, fire and sound caulk, with indicator coloring, inside sleeves and gang piping/conduit/duct frames.

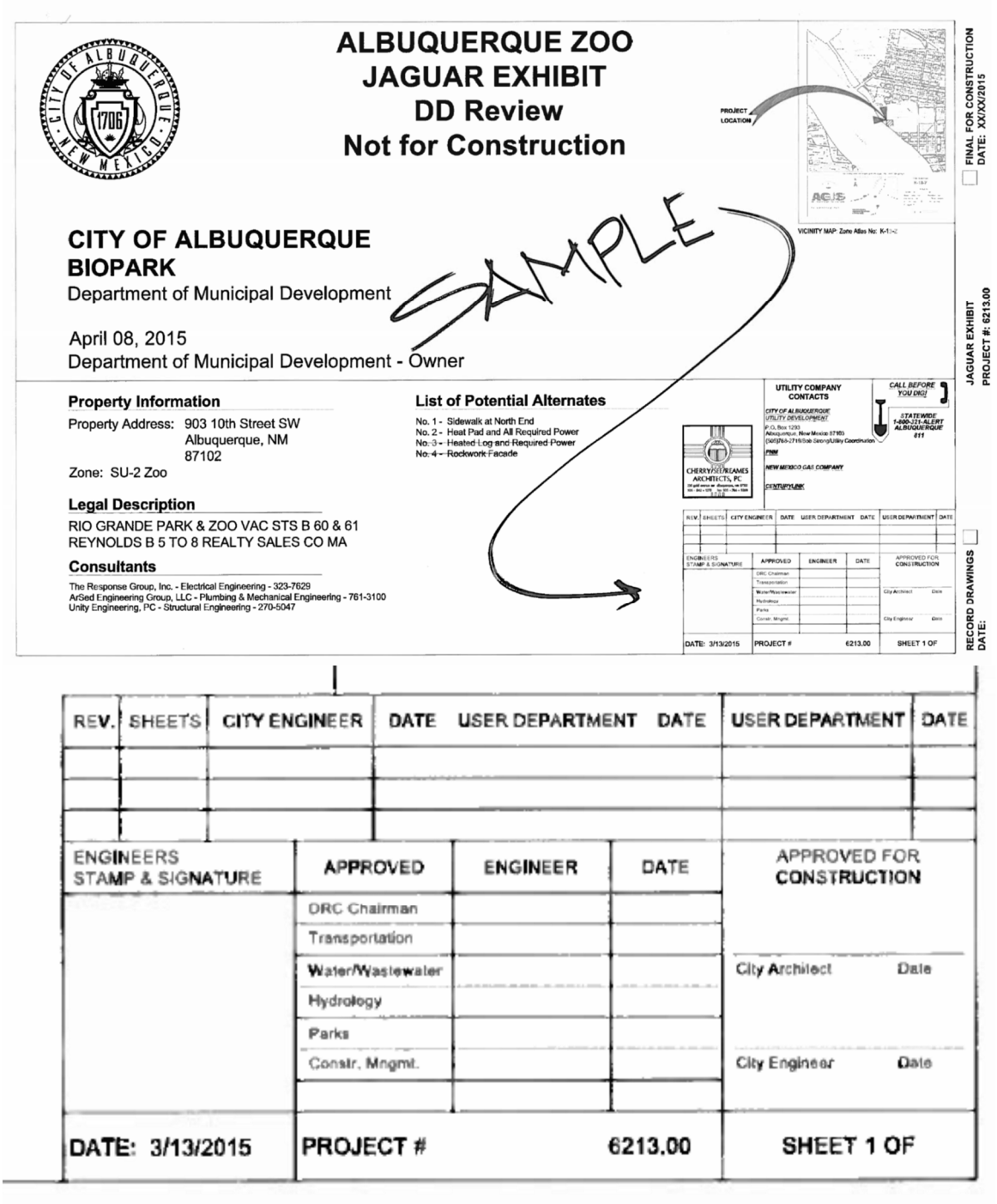
Miscellaneous Bid Document Requirements

Commissioning Specification – include as a minimum pre commissioning meetings, pre-functional checklist requirements, scope of all commissioning expectations from kick off meeting to final commissioning closeout and direct digital control requirements for closeout.

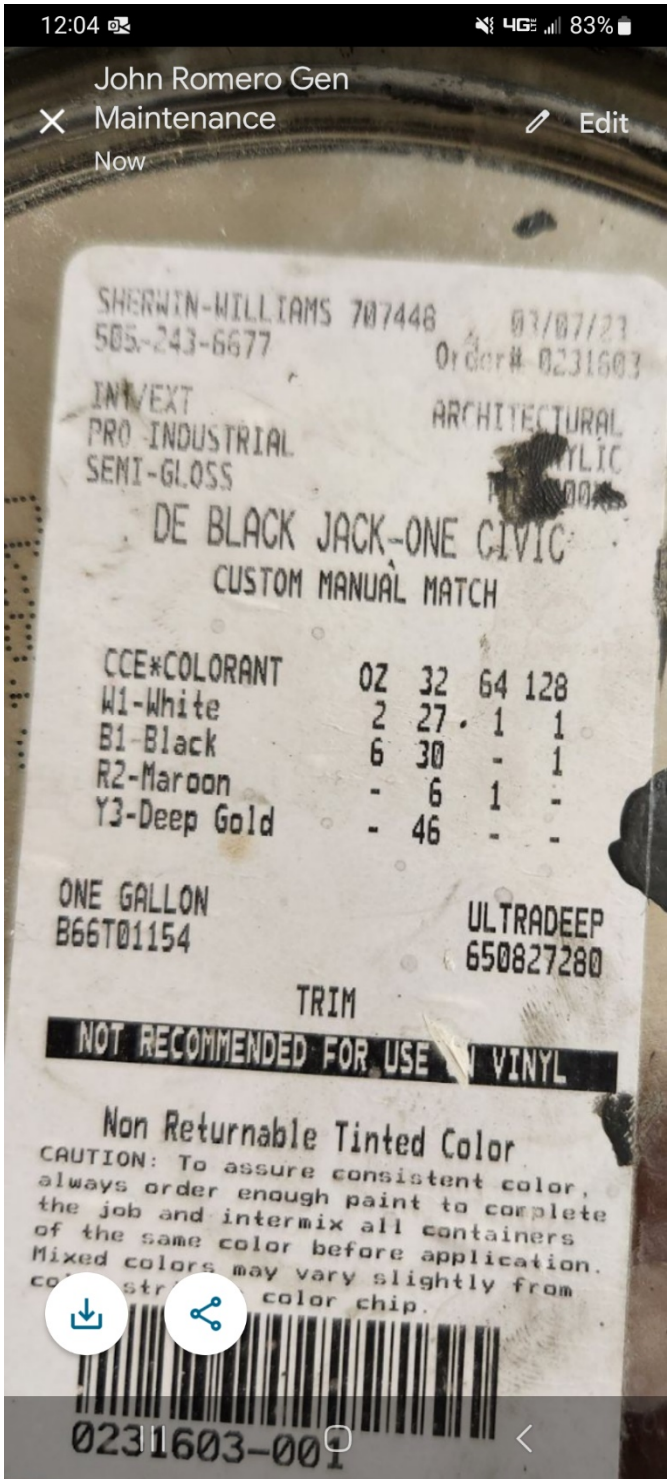
More items will be added to this document during plan reviews…

CIP Building Design Standards & Guidelines

Sample Title Block



Standard Paint options at City Hall



Door Frame Colors