

**Third Amendment to the Agreement between Broward County and Saltz Michelson Architects, Inc. for Consultant Services for New Facilities for The Human Services Department: Broward Addiction Recovery Center Central and Nancy J. Cotterman Sexual Assault Treatment Center in Broward County, Florida.
RLI # R0930411R1**

This Third Amendment ("Third Amendment") to the October 23, 2012 Agreement ("Agreement") between BROWARD COUNTY, a political subdivision of the state of Florida ("COUNTY"), and SALTZ MICHELSON ARCHITECTS, INC, a corporation authorized to conduct business in the state of Florida ("CONSULTANT"), (collectively, the "Parties") is entered into and effective as of the date the Third Amendment is fully executed by the Parties (the "Effective Date").

Recitals

- A. On October 23, 2012, the Parties entered into an Agreement for Consultant Services for New Facilities for The Human Services Department: Broward Addiction Recovery Center Central and the Nancy J. Cotterman Sexual Assault Treatment Center.
- B. On September 1, 2015, the Parties entered into a First Amendment to the Agreement to revise and increase compensation for Basic Services and Optional Services.
- C. On April 18, 2016, the Parties entered into a Second Amendment to the Agreement to allocate compensation for Basic Services between the two projects.
- D. The Parties desire to amend the Agreement a third time to revise terms and increase compensation for Basic Services and Optional Services for the Nancy J. Cotterman Center portion of the Agreement.

NOW THEREFORE, in consideration of the mutual terms and conditions, promises, covenants and payments hereinafter set forth, COUNTY and CONSULTANT agree as follows:

- 1. All references to "Nancy J. Cotterman Sexual Assault Treatment Center (NJCSATC)" shall be amended to read: "Nancy J. Cotterman Center (NJCC)." throughout the Agreement, First Amendment to the Agreement and Second Amendment to the Agreement.
- 2. Article 5, COMPENSATION AND METHOD OF PAYMENT is hereby amended to include revised Salary Cost Rates, Exhibit "B-1", attached hereto and made a part of hereof, for CONSULTANT and all Subconsultants.
- 3. Article 5, COMPENSATION AND METHOD OF PAYMENT is hereby amended as follows:

5.1.2 Lump Sum Compensation: COUNTY agrees to pay CONSULTANT, as

compensation for performance of all Basic Services related to Exhibit "A" that are required under the terms of this Agreement, a lump sum of ~~\$1,860,850.00~~ \$2,341,455.03. In addition, COUNTY agrees to pay CONSULTANT up to ~~\$415,000.00~~ \$465,000.00 for Optional Services, and

to reimburse CONSULTANT for Reimbursables up to a maximum amount not-to-exceed of \$15,000.00 as described in Section 5.3. The total maximum not-to-exceed amount for Basic Services, Optional Services, and Reimbursables shall be ~~\$2,290,850.00~~ \$2,821,455.03. The method of compensation for Basic Services shall be "lump sum," which means CONSULTANT shall perform all Basic Services set forth herein for total compensation in the amount stated above. The total hourly rates payable by COUNTY for each of CONSULTANT's employee categories are shown on Exhibit "B." COUNTY shall not pay CONSULTANT any additional sum for reimbursable expenses or additional services, if any, unless otherwise stated in Section 5.3 and Article 6.

The lump sum compensation of ~~\$1,860,850.00~~ \$2,341,455.03 for Basic Services shall be paid out in accordance with the percentage amount set forth below:

Project Phase	Fee %	Fee % Amend. 3	BARC	NJCC	NJCC
			Amendment 2	Amendment 2	Amendment 3
Phase I:	5%		\$ 66,359.50	\$ 26,683.00	<u>\$ 52,640.53</u>
Phase II:	20%	<u>29%</u>	\$ 265,437.00	\$106,733.00	<u>\$ 418,223.40</u>
Phase III:	25%	<u>21%</u>	\$ 331,796.50	\$133,416.00	<u>\$ 155,218.69</u>
Phase IV:	23%	<u>20%</u>	\$ 305,252.50	\$122,743.00	<u>\$ 154,568.61</u>
Phase V:	5%	<u>4%</u>	\$ 66,359.50	\$ 26,683.00	<u>\$ 43,262.56</u>
Phase VI:	20%	<u>19%</u>	\$ 265,437.00	\$106,733.00	<u>\$ 173,050.22</u>
Phase VII:	2%		\$ 26,544.00	\$ 10,673.00	<u>\$ 17,305.02</u>
Basic Services	100%		\$1,327,186.00	\$533,664.00	<u>\$1,014,269.03</u>

4. Optional Services and Reimbursables shall be amended as follows:

	BARC & NJCC	BARC & NJCC
	Amendment 2	Amendment 3
Optional Services	\$ 415,000	<u>\$ 465,000</u>
Reimbursables	\$ 15,000	

5. Article 6, OPTIONAL SERVICES; CHANGES IN SCOPE OF SERVICES is hereby deleted in its entirety and amended as follows:

ARTICLE 6

OPTIONAL AND ADDITIONAL SERVICES; CHANGES IN SCOPE OF SERVICES

6.1 County or Consultant may request changes that would increase, decrease, or otherwise modify the Scope of Services to be provided under this Agreement. Unless otherwise expressly permitted herein, such changes must be made in accordance with the provisions of the Broward County Procurement Code and must be contained in a written amendment, executed by the Parties hereto, with the same formality and of equal dignity herewith.

6.2 To the extent any goods or services under this Agreement, or the quantity thereof, are identified as optional ("Optional Services"), County may select the type, amount, and timing of such goods or services pursuant to a work authorization ("Work Authorization") executed by Consultant and County pursuant to this section, provided that no such selection, when combined with those goods or services required under this Agreement, would result in a payment obligation exceeding the applicable maximum amount stated in Article 5. A Work Authorization for Optional Services shall specify the method of compensation applicable to that Work Authorization and the required completion date for those additional services.

6.3 Notwithstanding anything to the contrary in this Agreement, Work Authorizations for Optional Services shall be executed on behalf of County as follows: (a) the Contract Administrator may execute Work Authorizations for which the total cost to County in the aggregate is less than \$50,000.00; (b) the Purchasing Director may execute Work Authorizations for which the total cost to County in the aggregate is within the Purchasing Director's delegated authority; and (c) any Work Authorization above the Purchasing Director's delegated authority requires express approval by the Board. Subsequent to the full execution of any Work Authorization, the Contract Administrator will issue a Notice to Proceed for those authorized Optional Services. Consultant shall not commence work on any Work Authorization until after receipt of a purchase order and Notice to Proceed.

6.4 In the event a dispute between the Contract Administrator and Consultant arises over whether any work requested by County is within the scope of contracted Services and such dispute cannot be resolved by the Contract Administrator and Consultant, such dispute shall be promptly presented to Purchasing Director for resolution, whose decision shall be in writing and shall be final and binding on the Parties. During the pendency of any dispute, Consultant shall promptly perform the disputed work.

6. Article 8, INSURANCE is hereby deleted in its entirety and amended as follows:

ARTICLE 8

INSURANCE

8.1 For the duration of the Agreement, Consultant shall, at its sole expense, maintain the minimum insurance coverages stated in Exhibit E in accordance with the terms and conditions of this article. Consultant shall maintain insurance coverage against claims relating to any act or omission by Consultant, its agents, representatives, employees, or Subconsultants in connection with this Agreement. County reserves the right at any time to review and adjust the limits and types of coverage required under this article.

8.2 Consultant shall ensure that "Broward County" is listed and endorsed as an additional insured as stated in Exhibit E on all policies required under this article.

8.3 On or before the date this Agreement is fully executed or at least fifteen (15) days prior to commencement of Services, Consultant shall provide County with a copy of all Certificates of Insurance or other documentation sufficient to demonstrate the insurance coverage required in this article. If and to the extent requested by County, Consultant shall provide complete, certified copies of all required insurance policies and all required endorsements within thirty (30) days after County's request.

8.4 Consultant shall ensure that all insurance coverages required by this article shall remain in full force and effect for the duration of this Agreement and until all performance required by Consultant has been completed, as determined by Contract Administrator. Consultant or its insurer shall provide notice to County of any cancellation or modification of any required policy at least thirty (30) days prior to the effective date of cancellation or modification, and at least ten (10) days prior to the effective date of any cancellation due to nonpayment and shall concurrently provide County with a copy of its updated Certificates of Insurance evidencing continuation of the required coverage(s). Consultant shall ensure that there is no lapse of coverage at any time during the time period for which coverage is required by this article.

8.5 Consultant shall ensure that all required insurance policies are issued by insurers: (1) assigned an A. M. Best rating of at least "A-" with a Financial Size Category of at least Class VII; (2) authorized to transact insurance in the State of Florida; or (3) a qualified eligible surplus lines insurer pursuant to Section 626.917 or 626.918, Florida Statutes, with approval by County's Risk Management Division.

8.6 If Consultant maintains broader coverage or higher limits than the minimum insurance requirements stated in Exhibit E, County shall be entitled to any such broader coverage and higher limits maintained by Consultant. All required insurance coverages under this article shall provide primary coverage and shall not require contribution from any County insurance, self-insurance or otherwise, which shall be in excess of and shall not contribute to the insurance required and provided by Consultant.

8.7 Consultant shall declare in writing any self-insured retentions or deductibles over the limit(s) prescribed in Exhibit E and submit to County for approval at least fifteen (15) days prior to the date this Agreement is fully executed or commencement of Services. Consultant shall be solely responsible for and shall pay any deductible or self-insured retention applicable to any claim against County. County may, at any time, require Consultant to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. Consultant agrees that any deductible or self-insured retention may be satisfied by either the named insured or County, if so elected by County, and Consultant agrees to obtain same in endorsements to the required policies.

8.8 Unless prohibited by the applicable policy, Consultant waives any right to subrogation that any of Consultant's insurer may acquire against County and agrees to obtain same in an endorsement of Consultant's insurance policies.

8.9 Consultant shall require that each Subconsultant maintains insurance coverage that adequately covers the Services provided by that Subconsultant on substantially the

same insurance terms and conditions required of Consultant under this article. Consultant shall ensure that all such Subconsultants comply with these requirements and that "Broward County" is named as an additional insured under the Subconsultants' applicable insurance policies.

8.10 In the event Consultant or any Subconsultant fails to maintain the insurance required by this Agreement, County may pay any costs of premiums necessary to maintain the required coverage and deduct such costs from any payment otherwise due to Consultant. Consultant shall not permit any Subconsultant to provide Services under this Agreement unless and until the requirements of this article are satisfied. If requested by County, Consultant shall provide, within one (1) business day, evidence of each Subconsultant's compliance with this section

8.11 If any of the policies required under this article provide claims-made coverage: (1) any retroactive date must be prior to the date this Agreement is fully executed; (2) the required coverage must be maintained after termination or expiration of the Agreement for at least the duration stated in Exhibit E, and (3) if coverage is canceled or nonrenewed and is not replaced with another claims-made policy form with a retroactive date prior to the date this Agreement is fully executed, Consultant must obtain and maintain "extended reporting" coverage that applies after termination or expiration of the Agreement for at least the duration stated in Exhibit E.

7. EXHIBIT A, SCOPE OF WORK, Section 1.01.02 (A) and (A)(2), shall be amended as follows:

1.01.02 Project Description

(A) The Project includes the planning, design, site development and construction of New Facilities for the Human Services Department. The New BARC Central Facility site is located on a COUNTY owned block of approximately 3.84 Acres in size. This recently cleared site is located in Fort Lauderdale, Florida, bounded by SW 3rd & 4th Avenues and SW 27th and 28th Streets. The new Nancy J Cotterman Center (NJCC) site is located on a COUNTY owned block of approximately 2.11 Acres in size. The site is located at 2995 N. Dixie Highway, City of Oakland Park, FL 33334. To meet the COUNTY's goal, two new Human Services Facilities, support buildings and structures are planned for the sites to replace their current facilities located elsewhere in Fort Lauderdale.

- 1) "The new, two-story, approximately 28,000 square foot, 17,670-SF, Nancy J. Cotterman ~~Sexual Assault Treatment Center, (NJCSATC)~~, (formerly known as the Sexual Assault Treatment Center, SATC) will replace the 57-year-old, facility that is currently located at 400 N.E. 4th Street, Fort Lauderdale, FL 33312..." **Remainder of paragraph shall remain unchanged.**

8. EXHIBIT A, SCOPE OF WORK, Section 1.01.02 (G) shall be amended to include:

Nancy J. Cotterman Center (NJCC) to be located at 2995 North Dixie Highway, Oakland Park, FL 33334

9. All references to “FM Global” throughout EXHIBIT A shall be amended to read: “COUNTY’s insurance carrier.”
10. EXHIBIT A, SCOPE OF WORK, Section 3.05 Phase IV - Construction Documents Development, shall be amended to include: “Section 3.05.02 - 50% Construction Documents Submittal.”
11. EXHIBIT A, SCOPE OF WORK, Section 3.05.02 - 75% Construction Documents Submittal shall be amended and renumbered as Section 3.05.03 – 85% Construction Documents Submittal.
12. EXHIBIT A, SCOPE OF WORK, Section 3.05.03 shall be amended as renumbered Section 3.05.04.
13. All references to “75% Construction Documents” or “75% Contract Documents” shall be amended to read “85% Construction Documents.”
14. EXHIBIT A, SCOPE OF WORK, Attachment 2: Electronic Media Submittal Requirements and Attachment 2a: BIM Standards of Care shall be replaced for the ~~NJCC~~ Nancy J. Cotterman Center with Attachment 2: BIM Requirements & Electronic Media Submittal Requirements per attached amended Attachment 2.
15. EXHIBIT A, SCOPE OF WORK, Attachment 4: Preliminary Project Budget, shall be amended as follows:
 - Estimated “Construction Phase Total” for the New BARC Central Facility shall remain unchanged. (Referred to as GMP 1)
 - Estimated “Construction Phase Total” on the Preliminary Project Budget for the Nancy J Cotterman Center shall be amended to ~~\$7,843,174~~ \$10,200,000. (Referred to as GMP 2)
16. The following amended forms and exhibits to the Agreement are attached and hereby incorporated for the Nancy J Cotterman Center:
 - Exhibit A, Scope of Work – Article 3.05.02 - 50% Construction Documents Submittal.
 - Amended Exhibit A, Scope of Work, Attachment 1: Project Schedule
 - Amended Exhibit A, Scope of Work, Attachment 2: BIM Requirements & Electronic Media Submittal Requirements.
 - Exhibit B-1, Salary Cost Rates
 - Amended Exhibit C, Schedule of CBE Participation
 - Amended Exhibit C-1, Schedule of Subconsultant Participation
 - Amended Exhibit E, Insurance Requirements

17. Except as set forth in this Third Amendment to the Agreement, all other terms conditions and covenants contained in the original Agreement and First and Second Amendments to the Agreement between the Parties amended Agreement shall remain in full force.
18. In the event of any conflict or ambiguity between this Third Amendment and the amended Agreement, the Parties agree that this Third Amendment shall control.
19. All capitalized terms not identified in this Third Amendment shall have the same meaning as the defined terms found in the amended Agreement.

Words in struck ~~through~~ type are deletions from existing text.
Words in underscored type are additions.

END OF SECTION

IN WITNESS WHEREOF, the Parties hereto have made and executed this Third Amendment to the Agreement on the respective dates under each signature: BROWARD COUNTY, through its BOARD OF COUNTY COMMISSIONERS, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the _____ day of _____, 20____, and SALTZ MICHELSON ARCHITECTS INC., signing by and through its President/Vice President , duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through its Board of County Commissioners

Broward County Administrator, as
ex officio Clerk of the Broward County
Board of County Commissioners

By _____
Mark D. Bogen, Mayor

____ day of _____, 20____.

Approved as to Insurance
Requirements by
Risk Management Division

Approved as to form by
Andrew J. Meyers
Broward County Attorney
Governmental Center, Suite 423
115 South Andrews Avenue
Fort Lauderdale, Florida 33301
Telephone: (954) 357-7600
Telecopier: (954) 357-7641

By Tim Eady 1/8/19
Signature Date

By MJK 1/8/19
Michael J. Kerr Date
Deputy County Attorney

Tim Eady Property Specialist
Print Name and Title above

THIRD AMENDMENT TO THE AGREEMENT BETWEEN BROWARD COUNTY AND SALTZ MICHELSON ARCHITECTS, INC. FOR CONSULTANT SERVICES FOR THE BROWARD ADDICTION RECOVERY CENTER CENTRAL AND NANCY J. COTTERMAN CENTER,

FOR CORPORATION:

CONSULTANT

ATTEST:

Natalia Castro
Secretary

NATALIA CASTRO

CORPORATE SEAL



Saltz Michelson Architects, Inc.

By Charles Michelson
President

CHARLES MICHELSON
(Print Name)

7 day of JAN, 2019

THIRD AMENDMENT
New Facilities for The Human Services Department: Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center

EXHIBIT A, SCOPE OF WORK

50% CONSTRUCTION DOCUMENTS SUBMITTAL

3.05.02 **50% Construction Documents Submittal:** Consultant shall make a 50% Construction Documents submittal, for approval by the Contract Administrator, which shall include five copies (3 - full size, 2 - 11" X 17") of the following:

(A) "Project Transmittal Form" as required by County's Construction Management Division.

(B) Updated Florida Energy Efficiency Code for Building Construction (FEEC) compliance forms. Submit five (5) copies signed and sealed by a State of Florida registered design professional with 50% Contract Documents submittal.

(C) Drawings:

1) Site Plan(s) and detailing which, in addition to the Phase II requirements, indicate:

a. Legal description, property lines, location of applicable easement lines, setback lines, other restrictive lines or limits, existing site features or amenities to remain, limits of Work area, locations of temporary structures, and staging areas and related Contractor facilities for use during execution of the Work.

b. Site Demolition plans.

c. Spot elevations, based on the civil grading plan, for the perimeter of the new additions, sidewalk, or any other areas pertinent to the drainage of rainwater.

d. Location of storm water and roof drainage systems, including catch basins, retention areas, piping, culverts, control devices and other system components.

e. Parking lot lighting poles location and type.

f. Final location for manholes, handholes, pull boxes.

g. Layout of underground distribution systems (normal power emergency power, fire alarm, master clock, intercommunication, computer networking, television, telephone, radio (or other communications systems, antennas, etc.), security, control and spares).

h. Details of all curbing, typical parking spaces (regular and accessible), accessibility ramps and curb cuts, light fixtures, flagpole and fence

foundations, and any other site improvement or condition pertinent to the scope of work.

- I. Plans and details of new site equipment or furnishings including site improvements and equipment, pavements, shelters, accessory structures, signage and kiosks, planters, seating areas and other site furniture, book drops, postal equipment, vehicular and parking equipment, landscape accessories, site and security lighting, art work (and associated footings, supports, lighting and other accessories), security and pedestrian safety devices, traffic control devices, loading dock equipment, dumpster and recycling areas, and other equipment or improvements appropriate and necessary for the project as determined by the Contract Administrator.
- 2) A phasing plan to delineate the order of the construction and delineating staging and storage areas, temporary buildings or structures, temporary utilities, other temporary constructions, construction access (including parking and delivery locations), haul routes, site barriers, traffic control devices, and other area designations and protective measures to control and separate staff and the public from construction activities and traffic.
- 3) Landscape plans and detailing including: a plant list clearly referenced and targeted, details for shrub and tree plantings, identification of plants and trees to remain (with associated plans and details of their protection, maintenance and care during the project), identification of plants to be removed or relocated (including details and specifications for their preparation, replanting, maintenance or disposal), and other necessary documentation to ensure healthy and vigorous plant growth.
- 4) Irrigation plans and details delineating the entire area of the project, and addressing necessary connections, alteration, repair or replacement of any existing irrigation systems and irrigation requirements for plant materials provided or retained on site during the project.
- 5) Full floor plans including:
 - a. All dimensions and any target notes explaining the extent of Work, wall types, or other component, assembly or direction regarding the Construction.
 - b. Note all chases and delineate all rainwater leaders.
 - c. Show structural tie columns and coordinate with the floor plan.
 - d. Target interior elevations.
 - e. Delineate and note all built-in cabinetry or equipment.
 - f. Identify room and door numbers with all spaces and doors having individual numbers.
- 6) Demolition Plans: Indicate required demolition activities.

- a. Provide separate demolition plan(s) and other drawings (elevations, sections, etc.) if the scope of work includes demolition which is too excessive to indicate drawings depicting new construction.
 - b. Indicate notes on the extent of the demolition: address dimensions at locations where partial walls are being removed or altered, existing room names and numbers, existing partitions, equipment, plumbing, HVAC or electrical elements.
 - c. Include notes dealing with repair of existing areas as a result of demolition.
 - d. Delineate any modifications to existing buildings involving structural elements within the structural documents rather than on the architectural.
 - e. Provide detailing for protective barriers and safeguards (indoor and outdoor) to provide separation of construction activities and protection of County's existing facilities.
- 7) Building elevations developed further than at the Design Development Phase and including delineation of building joints (including dimensionally located stucco control joints), expansion joints, material locations, elevation heights, color scheme, special finishes, and other building features.
- 8) Building and wall sections to establish vertical controls and construction types for the Project. Include clear graphics, and notes on construction assemblies and systems to be used, dimensions, heights. Provide associated detailing to further delineate solutions for connections.
- 9) Reflected ceiling plans indicating ceiling types, heights, light fixture types, speakers, outlets, alarms, mechanical diffuser locations, sprinkler heads (if area includes sprinklers) and any other ceiling mounted device, equipment, fixture and/or finish. Delineate and detail any dropped soffits or joint conditions between different materials. Ensure coordination with architectural, electrical, mechanical and plumbing disciplines and work of any applicable Subconsultants.
- 10) Roof plans:
- a. Indicating all roof penetrations, including drains, scupper, mechanical exhaust fans, any other equipment on the roof, slopes of roof with elevations shown, type of roofing system to be used, expansion joints, curbs, and other roof accessories.
 - b. Provide dimensions to locate the items noted previously and show detail targets where necessary to reference detailed drawings elsewhere in the drawings.
- 11) Building Sections and Large-scale wall sections as appropriate to this level of document development and as required to establish vertical controls for the Project. Include clear graphics, and notes on construction assemblies and

systems to be used, dimensions, heights. Provide larger scale detailing to delineate solutions for connections.

- 12) Interior elevations of all room designs (where those rooms house casework, built-in furniture, variations in material finishes, wall mounted equipment or specialty items, graphics, artworks, plumbing, mechanical or electrical fittings, fixtures or equipment, or other improvement that cannot be shown as a standard detail for several similar rooms) including detail targets referencing cabinetry details, dimensions and heights, notes indicating type of equipment (and whether equipment is in or out of contract), wall materials, finishes, and accessories.
- 13) Details of casework as necessary to appropriately delineate custom or pre-manufactured casework. Provide appropriate schedules referencing manufacturer's numbers or catalogs, finishes, hardware and other construction characteristics.
- 14) Details of the following:
 - a. Door jamb, head and sill conditions including delineation of required fire ratings for assemblies and components, electrical power requirements and connections to fire alarm, security and other building automation systems within the project or the existing facility.
 - b. Wall and partition types including identification of rated assemblies and product limitations and tolerances relative to those ratings.
 - c. Window head, sill and jamb conditions, and anchorage methods shown, in lieu of referencing to manufacturer's standards.
 - d. Interior signage to include room and building identification, directional signage, directories, emergency exiting and equipment signs, occupancy and other code mandated signage, and any other items pertinent to the identification of the project. Coordinate and delineate electrical connections and power requirements.
 - e. Interior or exterior expansion control connections and related flashings, cover plates, applied sealants, etc.
 - f. Any other specialized items necessary to clearly express the intent of the project design.
- 15) Room finish, door and window schedules coordinated with the floor plans developed beyond the Design Development Phase.
- 16) Structural foundation and framing plans, with associated diagrams, schedules, notes, detailing and section drawings completed sufficiently to communicate the design intent and coordination with other disciplines.

17) Mechanical Drawings:

- a. Provide double line duct work layout and HVAC equipment layout drawings with related diagrams, schedules, notes, detailing and section drawings completed sufficiently to communicate the design intent and coordination with other disciplines. Provide a Building Automation System description.
- b. Provide plumbing equipment and fixture layout drawings with related diagrams, schedules, fixture schedules, notes, detailing and section drawings completed sufficiently to communicate the design intent and coordination with other disciplines.
- c. Provide 1/2 inch scale plans, elevations and sections of the mechanical rooms showing service clearance, room openings, nominal equipment size, ceiling height, duct clearance between bottom of joist and top of ceiling and any ceiling mounted lighting fixtures, electrical equipment or other building assembly or component, etc.

18) Electrical: Provide drawings for the following systems:

- a. Lighting including circuiting and luminaire identification and switching. Also provide illuminance computer printout for all indoor typical indoor spaces and parking lots.
- b. Convenience outlets and circuiting, special outlets and circuiting, television outlets, and power systems and equipment. Provide riser diagrams for all electrical systems including master clock, intercom, fire alarm, cable television, computer networking/telephone. Also, provide for emergency and normal power distribution. Provide luminaire schedule.
- c. Panel schedule may be in preliminary form but circuitry must be included.
- d. Applicable installation details.
- e. General legend and list of abbreviations.
- f. Voltage drop computation for all main feeders.
- g. Short circuit analysis
- h. Provide 1/2" scale floor plan and wall elevations for all electrical rooms.
- i. Indicate surge protector for main switchboard and electrical panels.

19) Updated Furniture and Equipment Plans and Furniture and Equipment Schedules indicating "In Contract" and "Not In Contract" furniture and equipment items, loose furniture and systems furniture and their location within facility.

(D) Progress construction specifications:

- 1) Provide preliminary Project Manual including front end documents. Completion of fill-in items in Bidding documents and other "Division 0" documents are not required.
- 2) Provide a preliminary Division 1 based upon the standard documents provided by the Contract Administrator and edited by Consultant after consultation with the Contract Administrator to establish project specific requirements.
- 3) Include progress set of all other Sections in all Divisions with each section developed to demonstrate to the Contract Administrator an understanding of the project and an appropriate level of developmental progress comparable to that of the drawings.
- 4) Specification sections shall be organized to follow the Construction Specification Institute's (CSI) latest edition of MasterFormat with each section developed to include CSI's standard 3-part section and page formats with full paragraph numbering.

(E) An updated Project Development Schedule, formatted as a preliminary construction schedule reflecting continued Project development and illustrating anticipated schedules for all subsequent project activities including permitting and submittal coordination with all agencies having jurisdiction on the Project, project phasing, site mobilization, temporary facilities, general construction sequencing, anticipated substantial completion dates, County occupancy, and all other significant Project events. Format updated schedule as a Bar Chart (Gantt Chart) type schedule with milestones.

(F) Color boards illustrating the selection of colors, finishes, textures and aesthetic qualities of all basic building finish materials for final review and approval by the Contract Administrator and to establish a final palette of material selections for development of subsequent specifications, schedules and other requirements for incorporation into the Contract Documents.

(G) A letter from Consultant and each of the major technical disciplines and any necessary Subconsultants or explaining how each previous comment concerning the project have been addressed and/or corrected.

3.05.03 Consultant shall make all changes to the documents as required by the Contract Administrator's review of the documents and resolve all questions of constructability, code compliance, compliance with Contract Administrator standards, or other issues raised by the Contract Administrator during its review of the documents. The Contract Administrator will retain the documents submitted at this phase.

END OF SECTION

THIRD AMENDMENT
New Facilities for The Human Services Department: Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center

EXHIBIT A, SCOPE OF WORK
ATTACHMENT 1
Project Schedule

Project Title: New Facilities for the Human Services Department
Facility Name: Nancy J Cotterman Center
Project No: CMD:5209-2004-00

The required project schedule milestones for this project are presented below. Items marked undetermined require additional development and submittal of the CONSULTANT's Project Development Schedule as required by the Professional Services Agreement for this project.

ACTIVITY	DATE REQUIRED OR ESTIMATED TIME PERIOD	
Phase I: Program Reconciliation		
Consultant's Document Preparation & Submittal	30 Days	<input type="checkbox"/> Undetermined
County Review	14 Days	<input type="checkbox"/> Undetermined
Consultant's Document Correction & Re-Submittal	7 Days	<input type="checkbox"/> Undetermined
Phase II: Schematic Design:		
Consultant's Document Preparation & Submittal	45 Days	<input type="checkbox"/> Undetermined
County Review	14 Days	<input type="checkbox"/> Undetermined
Consultant's Document Correction & Re-Submittal	14 Days	<input type="checkbox"/> Undetermined
Phase III: Design Development		
Consultant's Document Preparation & Submittal	90 Days	<input type="checkbox"/> Undetermined
County Review	14 Days	<input type="checkbox"/> Undetermined
Consultant's Document Correction & Re-Submittal	14 Days	<input type="checkbox"/> Undetermined
Phase IV: Construction Documents Development		

50% Construction Documents

Consultant's Document Preparation & Submittal	45 Days	<input type="checkbox"/> Undetermined
County Review	14 Days	<input type="checkbox"/> Undetermined
Consultant's Document Correction & Re-Submittal	14 Days	<input type="checkbox"/> Undetermined

85% Construction Documents

Consultant's Document Preparation & Submittal	30 Days	<input type="checkbox"/> Undetermined
County Review	14 Days	<input type="checkbox"/> Undetermined
Consultant's Document Correction & Re-Submittal	14 Days	<input type="checkbox"/> Undetermined

100% Construction Documents

Consultant's Document Preparation & Submittal	30 Days	<input type="checkbox"/> Undetermined
County Review / Submit for Final Site Plan Approval	14 Days	<input type="checkbox"/> Undetermined
Consultant's Document Correction & Re-Submittal	14 Days	<input type="checkbox"/> Undetermined

Permitting

Days Undetermined

Phase V: Bidding and Award of Contract

Days Undetermined

GMP Reconciliation

Days Undetermined

Phase VI: Administration of the Construction Contract

Construction through Substantial Completion 365 Days Undetermined

Final Completion 60 Days Undetermined

Phase VII: Warranty

365 Days Undetermined

THIRD AMENDMENT
New Facilities for The Human Services Department: Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center

EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2
BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Preamble

The Contract Administrator will be utilizing electronic media as the principal way it develops, communicates and archives information concerning its various construction programs. To that end, County's standard Professional Services Agreements for consultant services require submittal of documents produced on electronic media. The County encourages Building Information Model (BIM) based design and documentation to the maximum extent possible, especially for all major projects including all new construction. For projects utilizing BIM delivery, Consultant will include native BIM format and Industry Foundation Class (IFC) BIM deliverables at all project milestones, with any supplementary two-dimensional (2D) deliverables to be derived from the Building Information Model. Further, it is the intent of the County to require open-standard facility management data as a project deliverable at all milestones. Requirements for that media are presented below.

Table of Contents for Exhibit A, Attachment 2:

- 1. Section 1 - Definitions and Identifications**
- 2. Section 2 – Electronic Media**
- 3. Section 3 – BIM/ CADD Standard of Care, Level of Development (LOD), CoBie**
- 4. Section 4 - BIM Execution Plan (BIMPxP) *(Template to be completed - see Section)***
- 5. Section 5 - Model Progression Schedule *(Template to be completed - see Section)***

Section 1 Definitions and Identifications

The following definitions and identifications set forth below apply unless the context, the Agreement, Exhibit A, Scope of Work in which the word or phrase is used requires a different definition. In the event of a conflict, the Contract Administrator will determine its final resolution:

- 1.1 3D Coordination & Conflict Analysis:** A process in which clash detection software is utilized during the coordination process to determine field conflicts by comparing 3D models of building systems. The goal of clash detection is to eliminate the major system conflicts prior to installation.
- 1.2 As-constructed BIMs:** Multiple Construction BIMs, delivered and validated by the Contractor before closing up spaces and reviewed by the Consultants that represent the final as-constructed building and components, including embedded data as required by the Contract Documents.

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- 1.3 **Asset Management:** A process in which an organized management system will efficiently aid in the maintenance and operation of a facility and its assets. Asset Management utilizes the data contained in a record model to determine cost implications of changing or upgrading building assets, segregate costs of assets for financial tax purposes, and maintain a current comprehensive database that can produce the value of a company's assets.
- 1.4 **BIM:** Building Information Model(ing). BIM is not a specific product or technology, instead it's a collection of software applications designed to facilitate coordination and project collaboration. BIM is a digital representation of physical and functional characteristics of a facility and is used as a process for developing design and construction documentation by virtually constructing a building, bridge or other form of infrastructure – before anything is built.
- 1.5 **BIM Project Execution Plan (BIMPxP):** A document that defines the appropriate uses for Building Information Modeling on a project (e.g., design authoring, design review and 3D coordination), along with a detailed design and documentation process for executing BIM throughout a facility's lifecycle, team contacts, team responsibilities, team roles, definitions, delivery methods / formats, LOD matrix, work flow and process maps are among other information as outlined in the BIMPxP.
- 1.6 **Building Maintenance Scheduling:** A process in which the functionality of the building structure (walls, floors, roof, etc.) and equipment serving the building (mechanical, electrical, plumbing, etc.) are maintained over the operational life of a facility.
- 1.7 **CAD/CADD:** Computer Aided Design/Computer Aided Design and Drafting. Interchangeably used terms interpreted as 2D, (Two Dimensional) representations in electronic format.
- 1.8 **CIM / Sub-Surface:** Civil Information Modeling and subsurface utility mapping that relates and is coordinated with the building modeling.
- 1.9 **Clash detection/ Clash Rendition:** Rendition of the native-format model file is be used specifically for spatial coordination processes. Used to achieve clash avoidance or for clash detection (between, for example structure and services) between Building Information Models prepared by different disciplines. The key benefit is in reducing errors, and hence costs, pre-construction commencement.
- 1.10 **COBie:** Construction Operations Building Information Exchange specifications as administered through the buildingSMART alliance, National Institute of building Sciences, Washington, DC. http://www.nibs.org/?page=bsa_cobie.
- 1.11 **Code Validation:** A process in which code validation software is utilized to check model parameters against specific codes.
- 1.12 **Commissioning:** The process of verifying, in new construction agreed upon building systems to achieve Owners project requirements.

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- 1.13 **Compatible Data:** Data that can be accessed directly by the target BIM or CADD system upon delivery to the County, without further translation or post-processing of the electronic digital data files. It is the responsibility of Consultant to ensure this minimum level of compatibility.
- 1.14 **Constructability / PEER Review:** Constructability can be defined as a review of the building model along with drawings, specifications to determine feasibility to assembly the project in the manner documented. The review includes, but does not limit, evaluating and identifying efficiencies, assemblies, systems and obstacles to construction.
- 1.15 **Construction System Design:** A process in which 3D System Design Software is utilized to design and analyze the construction of a complex building system (e.g. form work, glazing, tie-backs, etc.) in order to improve planning.
- 1.16 **Cost Analysis:** A process in which a BIM model can offer a preliminary analysis of the costs of constructing a Project during the design process and provide cost effects of additions and modifications with potential to save time and avoid budget overruns. The accumulation, examination, and manipulation of cost data for comparisons and projections.
- 1.17 **Cost Estimation:** A process in which a BIM is used to develop accurate quantity take-offs for the purpose of creating or validating cost estimates.
- 1.18 **Design Authoring:** A process in which 3D software is used to develop a BIM model based on criteria that is important to the translation of the building's design. Design authoring tools are a first step towards BIM, connecting the 3D model with a database of properties.
- 1.19 **Design for Maintenance:** An evaluation process where each object selected during design for inclusion in a BIM are evaluated for maintenance issues, such as clearances to perform routine maintenance activates to include complete replacement of the object or any of its components.
- 1.20 **Design Reviews:** A process in which a 3D model is used to showcase the proposed design to the stakeholders and to help evaluate whether it has met deliverable requirements.
- 1.21 **Digital Fabrication:** A process that utilizes machine technology to prefabricate objects directly from a 3D Model.
- 1.22 **Digital Layout - BIM2Field:** A process that allows information in a BIM to be transferred to digital layout tools for layout in conformance to the model. This information can be used to validate (QA/QC) the physical facility against the model.
- 1.23 **Disaster Planning / EM Preparation:** A process in which emergency responders would have access to critical building information in the form of model and information system. The BIM would provide critical building information to the responders, that would improve the efficiency of the response and, more importantly, minimize the safety risks. The dynamic building information would be provided by a building automation system (BAS), while the static building information, such as floor plans and equipment schematics, would reside in a BIM model. These two systems would be integrated via a

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- wireless connection and emergency responders would be linked to an overall system. The BIM coupled with the BAS would be able to clearly display where the emergency was located within the building, possible routes to the area, and any other harmful locations within the building.
- 1.24 **Electrical Analysis:** A process in which intelligent modeling software uses the BIM model to determine the most effective electrical system based on engineering and design specifications. These analysis tools and performance simulations can significantly improve the design of the facility and its energy consumption during its lifecycle in the future.
- 1.25 **Energy Analysis:** A process in which intelligent modeling software uses the BIM model to determine the most effective facility energy plan based on engineering and design specifications. These analysis tools and performance simulations can significantly improve the design of the facility and its energy consumption during its lifecycle in the future.
- 1.26 **Existing Conditions Modeling:** A process in which a project team develops a 3D model of the existing conditions for a site, facilities on a site, or a specific area within a facility. This model can be developed in multiple ways depending on what is desired and what is most efficient. Once the model is constructed, it can be queried for information, whether it be for new construction or a modernization project.
- 1.27 **Facility Data Exchange:** A process where a facility data schema is developed to ensure information is supplied to the BIM in electronic form so that it can be easily exchanged between the BIM and the organizations selected tool. The capability should include textural as well as graphic entities.
- 1.28 **Federated BIM Model:** A single [federated model](#) is useful for [design co-ordination](#), [clash avoidance](#) and [clash detection](#), [approvals](#) processes, [design development](#), [estimating](#) and so on, but the individual models do not interact, they have clear authorship and remain separate. This means that the liabilities of the originators of the separate models are not changed by their incorporation into the [federated model](#).
- 1.29 **IFC:** Industry Foundation Classes, open sharable standards for building information as defined by the buildingSMART alliance, National Institute of building Sciences, Washington, DC. <http://www.buildingSmart.org/compliance/certified-software>
- 1.30 **Information Manager:** The CIC BIM Protocol refers to and provides for the appointment of an 'Information Manager' by the employer. This is the project manager, or BIM Manager who is responsible for managing the delivery of the asset using BIM procedures and methods. This is expected to form part of a wider set of duties under an existing appointment and is likely to be performed either by the Design Lead or the Project Lead.
- 1.31 **Integrated Project Delivery (IPD):** The owner's goal who's primary motive is to bring the teams together early on in the project. A full implementation of BIM also requires the project teams to collaborate from the inception stage and formulate model sharing and ownership contract documents.

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- 1.32 **Laser Scanning and Point Cloud Integration:** A process where the application is the controlled steering of laser beams followed by a distance measurement at every pointing direction. This is used to rapidly capture shapes of objects, buildings and landscapes. The point cloud generated is then interpreted by software to create a BIM of the existing conditions.
- 1.33 **Life Cycle Assessment -** Life-cycle assessment (LCA, also known as life-cycle analysis) is a cradle-to-grave environmental impact assessment for built assets, in terms of materials and energy. The energy and materials used, along with waste and pollutants produced as a consequence of a product or activity, are quantified over the whole life cycle; the result representing the environmental load of that asset. ISO 14040 defines LCA methodology.
- 1.34 **Lighting Analysis:** A process in which intelligent modeling software uses the BIM model to determine the most effective lighting method based on engineering and design specifications. These analysis tools and performance simulations can significantly improve the design of the facility and its energy consumption during its lifecycle in the future.
- 1.35 **LOD:** Level Of Development Specification for Building Information Models. See Section 3 – BIM/CADD Standards of Care and the current edition (2017 or later), of the BIMForum LOD Specification for additional information. <http://BIMForum.org/lof>
- 1.36 **Maintenance & Repair Information:** A function to allow the collection and storage of maintenance and repair information about objects brought into a BIM.
- 1.37 **Mechanical Analysis:** A process in which intelligent modeling software uses the BIM model to determine the most effective mechanical system design based on engineering and design specifications. These analysis tools and performance simulations can significantly improve the design of the facility and its energy consumption during its lifecycle in the future.
- 1.38 **Model Progression Schedule:** A worksheet that is a guide for the project team to define model creation scope of work and model level of development. The LOD will aid in determining the level of involvement of the project stakeholders from planning through facility turnover. This worksheet is intended to guide the project team in achieving project goals, accommodate required BIM uses, and meet schedule requirements for the project.
- 1.39 **OmniClass:** OmniClass Construction Classification System (OCCS), is a means of organizing and retrieving information specifically designed for the construction industry. This agreement incorporates Table 23 establishing National Standards BIM for the classification of construction products. Most recent release date May 16, 2012. OmniClass uses MasterFormat and UniFormat as the basis of its Tables wherever possible. <http://www.omniclass.org/about>
- 1.40 **Owner Approval:** A business process which takes advantage of information stored in a BIM to help validate progress as well as observing that the owner's intent for the facility is being honored both conceptually and contractually.

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- 1.41 **Phase Planning - 4D Modeling:** A process in which a 4D model (3D models with the added dimension of time) is utilized to effectively plan the phased occupancy in a renovation, retrofit, addition, or to show the construction sequence and space requirements on a building site.
- 1.42 **Programming:** A process in which a spatial program is utilized to efficiently and accurately assess design performance in regard to spatial requirements. Use of the BIM model allows the project team to analyze space and understand the complexity of space standards and regulations. Critical decisions are made in this phase of design and brings the most value to the project when needs and options are discussed with the client and the best approach is analyzed.
- 1.43 **Quality Assurance/Quality Control - QA/QC:** QA/QC as a BIM Use refers to ensuring that the BIMs follow County requirements and all components of the approved BIM Execution Plan, and that the BIMs accurately represent the building geometry and data to meet the purposes for which they are developed.
- 1.44 **Quantity Take Off:** Quantity take-off's (QTO) are a detailed measurement of materials and labor needed to complete a construction project. Estimators review drawings, specifications and BIMs to find these quantities.
- 1.45 **Record BIMs:** The updated BIMs generated by the Architecture Engineering Team of record that includes the contractors As-constructed BIMs.
- 1.46 **Security / Key Management:** A process to identify and evaluate the security zones in the facility using BIM. The process includes identifying the door keys required for openings through the security perimeters established to ensure that the level of security defined is maintained.
- 1.47 **Site Analysis:** A process in which BIM/GIS tools are used to evaluate properties in a given area to determine the most optimal site location for a future project. The site data collected is used to first select the site and then the position the building based on engineering criteria (e.g. solar path, utility availability, hazardous material).
- 1.48 **Site Utilization Planning:** A process in which a 4D model is used to graphically represent both permanent and temporary facilities on site, with the construction activity schedule. Additional information incorporated into the model can include labor resources, materials and associated deliveries, and equipment location.
- 1.49 **Space Management:** A process in which BIM is utilized to effectively allocate, manage, and track assigned workspaces and resources.
- 1.50 **Specification Production:** A data based three- part specification system linked to the objects selected in a BIM which responds to any changes or alternatives items added, or subtracted from the model.
- 1.51 **Structural Analysis:** A process in which analytical modeling software utilizes the BIM design authoring model to determine the behavior of a given structural system. Based on

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- this analysis further development and refinement of the structural design takes place to create effective, efficient, and constructible structural systems.
- 1.52 **Sustainability & LEED Evaluation:** A BIM process in which a project is evaluated based on LEED or other sustainability criteria. This can refer to materials, performance, or a process. Sustainability evaluations can be applied across all four phases of a construction project, Planning, Design, Construction, and Operation. Sustainability evaluation is most effective when it is done in planning and design stages and then applied in construction and operations phase.
- 1.53 **Tolerance:** Acceptable dimension or variation from precise material, fabrication, or assembled condition as a unit of measure to be specified allowable variations in strength, stability, dimension, the mix of a material, the performance of a system, temperature ranges and so on.
- 1.54 **Total Cost of Ownership / Service Life:** A financial estimate intended to help buyers and owners determine all direct and indirect costs of a product or system.
- 1.55 **Virtual Design and Construction (VDC):** The management of integrated multi-disciplinary performance models of design-construction projects, the work processes and organization of the teams to support business objectives.
- 1.56 **Visualization:** Any technique for creating images, diagrams, or animations to communicate information. BIM can be used as a tool to show visual clarity of simple and complex systems and data to help understand project scope, design options, constructability, coordination and QA/ QC.

Section 2 Electronic Media

- 2.1 General Requirements:
- 2.1.1 All Work, including drawings, land surveying work, maps, details or other drawing information to be provided in electronic media by Consultant shall be accomplished and developed using Computer-Aided Design and Drafting (CADD), or Building Information Modeling (BIM), or a coordinated combination of both as determined by the Contract Administrator and may also include other software and procedures conforming to the following criteria.
- 2.2 BIM and CADD Graphic Formats:
- 2.2.1 Provide all CADD or PDF data in Autodesk, Inc.'s AutoCAD release 2018 or higher for Windows in native .dwg electronic digital format. CADD data required for Contract submittals shall be provided in native .dwg format. Provide copies of all drawing sheets

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or other CADD and/or PDF format produced documents intended for hardcopy plotting or printing in plot (.plt) and drawing web format (.dwg) versions of all sheets/documents.

2.2.2 Provide all BIM models and data in Autodesk Revit 2018 or higher. Provide all BIM and data in any of the following software formats:

- a. Autodesk, Inc. Revit 2018 or higher.
- b. Alternative compatible BIM software formats that conform to the requirements of Section 2.2 of this Attachment if accepted in writing by the County's Contract Administrator.

2.2.3 BIM data required for Contract submittals shall be provided in native.rvt format as well as .ifc format in conformance with IFC (Industry Foundation Classes) IFC2x4 or higher, as established by the buildingSMART International Alliance for Interoperability. Use of BIM vendor's or systems that incorporate the International Alliance for Interoperability IFC standard above must be approved in writing in advance by the County's Contract Administrator and comply with this Attachment.

2.2.4 Building Positioning to be accomplished for the intended project site by using "Auto – by Shared Coordinates" process or similar. Obtain State Plane Coordinates from Project survey information and utilize this same positioning process for all BIM files.

2.2.5 CADD data required for Contract submittals shall be provided in native .dwg format or be contained within the structure of the BIM data required in Section 2.2.2.

- a. Ensure that all digital files and data (e.g., constructs, elements, base files, prototype drawings, reference files and images, blocks, attribute links, pen settings and all other files external to the drawing itself) are Compatible Data with the Contract Administrator's target BIM and/or CADD system (i.e., BIM and CADD software, platform, database software), and adhere to the standards and requirements specified herein.

2.2.6 Target platform: A personal computer with Windows 10 operating system that meets or exceeds the minimum manufacturer's requirements to operate the version of software utilized for the project.

2.2.7 Any non-graphical database delivered with prepared drawings must be provided in relational database format compatible with Microsoft Access 2016 or higher, or other compatible SQL format database. All database tables must conform to the structure and field-naming guidance provided upon request by the Contract Administrator.

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- a. Maintain all linkages of non-graphical data with graphic elements, relationships between database tables, and report formats.
- 2.2.8 BIM & CAD Content:
- a. Provide all Building Information Modeling (BIM) models in conformance to the General Service Administration's (GSA) "Building Information Modeling Guide 02 - Spatial Program Validation," dated May 21, 2015 or later. Provide space identification, charts and information in conformance with this Guide.
 - b. See also Attachment – 2a, BIM/CADD Standards of Care.
- 2.2.9 CADD Standards:
- a. Standard plotted drawing size: 24-inch x 36-inch sheets (D-sized sheet)
 - b. Coordinate with the Contract Administrator concerning the standard file naming protocol to be utilized.
 - c. Drawing Set Organization and Sheet Identification per the United States National CAD Standard - V5. Provide dots in lieu of dashes at all uses.
- 2.2.10 CADD Layering:
- a. Conform to the guidelines defined by the American Institute of Architect's (AIA) standard document, U.S. National CAD standards version 5 (V5). "CAD Layer Guidelines", 2nd edition or later.
 - b. Provide an explanatory list of which layers are used at which drawing and an explanatory list of all layers which do not conform to the standard AIA CAD Layer Guidelines including any user definable fields permitted by the guidelines.
 - c. Layering: The Contract Administrator may, from time to time, supplement the AIA CAD Layer Guidelines with the Contract Administrator's specific requirements for Facilities or Construction Management and other related information. Obtain latest Contract Administrator specific layering from Contract Administrator prior to production of documents and incorporate into drawings.
- 2.2.11 Attribute Definitions:
- a. Obtain latest guidance from the Contract Administrator concerning attribute definition, database linking and other information embedding requirements prior to production of documents.

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2.2.12 Federated Models: The following colors shall be utilized for all federated models including Design, Construction, Coordination, As-Built, and Record Models:

- a. Architectural Models
 1. Architectural - Default
 2. Envelope (Curtainwall, Precast, Other) - Default
 3. Masonry - Gray

- b. Civil & Site Improvement Model?

- c. Structural Models
 1. Steel – Rust
 2. Concrete - Gray
 3. Masonry - Gray

- d. MEP/FP Models
 1. Mechanical Ductwork Supply - Magenta
 2. Mechanical Ductwork Return - Plum
 3. Mechanical Ductwork Exhaust – Medium Orchid
 4. Mechanical Piping Supply – Hot Pink
 5. Mechanical Piping Return- Violet
 6. Electrical Conduit - Orange
 7. Cable Tray- Yellow
 8. Electrical Lighting – Light Golden Rod Yellow
 9. Plumbing Domestic Water - Lime
 10. Plumbing Storm / Roof Drain – Dark Green
 11. Plumbing Waste / Vent - Olive
 12. Medical Gas – Light Green
 13. Fire Protection - Red
 14. Fire Alarm – Golden Rod
 15. Data/IT / Controls - Aqua
 16. Pneumatic Tubing – Dark Slate Gray

- e. Miscellaneous Models
 1. Framing – Sandy Brown
 2. Equipment Models (by Equip. Planners) – Burly Wood
 3. Clearances - Dark Red

2.2.13 Deviations from Standards:

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- a. Submit a written request for approval of any deviations from the Contract Administrator's established electronic media standards. Pre-coordinate the development, use and submittal of 3-D modeling, Building Information Models (BIM), photo-realistic renderings, animations, presentations and other visualization/information tools utilized during the design and construction process to ensure compatibility of submittal with County's uses and information systems.
- b. No deviations from the Contract Administrator's established BIM/CADD standards will be permitted unless prior written approval of such deviation has been received from the Contract Administrator.
- c. County or its Owner's Designated Representative reserves the right to review, accept or reject AutoCAD files, BIMs and other Digital Deliverables. If the Digital Deliverables do not comply with the provisions of the agreement between County and the External Project Team member, the External Project Team member will be required to correct the work at no additional cost to County or delay to the Project Schedule.
- d. County or its Owner's Designated Representative also reserves the right to review, accept or reject Facility Data deliverables when required by contractual agreements. To ensure successful integration into County's computer aided facility management software, milestone reviews may be conducted by County to export or link BIM data into these designated programs to ensure compatibility and capability. During the development of the BIMPxP, the required BIM outputs allowing for this integration will be determined. If the Facility Data integration with the computer aided facility management software fails because of the BIMs non-compliance with the provisions of the agreement between County and the External Project Team member, or the data imported does not accurately reflect the current state of the Project, the External Project Team member will be required to correct the work at no additional cost to the owner or delay to the Project Schedule.

2.3 Non-BIM/CADD Graphic Format:

2.3.1 Provide digital photography files and other miscellaneous graphics in High Resolution JPEG, PDF in 600 dots per inch (dpi) or higher resolution or PNG format.

2.4 Non-Graphic Format:

2.4.1 Provide word processing files in Microsoft Word 2016 or higher compatible file formats including all fonts, typefaces, bit-map and vector graphics and other information necessary for remote printing.

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2.4.2 Provide spreadsheet files in Microsoft Excel 2016 or higher for windows compatible file formats including all fonts, typefaces, bit-map and vector graphics and other information necessary for remote printing.

2.4.3 Provide database files in relational database format compatible with Microsoft Access 2016 or higher, PDF or other compatible SQL format database including all tables, form and report formats, fonts, typefaces, bit-map and vector graphics and other information necessary for remote printing. Ensure integrity of relational database structure.

2.5 Delivery Media and Format:

2.5.1 Submit copies of all BIM/CADD data and other electronic files developed under this contract on electronic digital media as required for project phase submittals to 400 dots per inch (dpi) resolution.

2.5.2 Provide electronic digital data and files on labeled ISO-9660 CD-ROM., or DVD media. Flash drives are acceptable alternatives and shall contain identifying County project information in their disk name. Other media will not be accepted without Contract Administrators approval.

2.5.3 The electronic digital media shall be in the format which can be read and processed by the Contract Administrator's target CADD or BIM system.

2.5.4 The external label for each electronic digital media shall contain, as a minimum, the following information:

- a. The Project Number, Project Title and date.
- b. The Facility Name
- c. The format and version of operating system software.
- d. The name and version of utility software used for preparation (e.g., compression/decompression) and copying files to the media.
- e. A list of the filenames, (a separate sheet will be accepted).

2.5.5 Before a BIM/CADD file is placed on the delivery electronic digital media, the following procedures shall be performed:

- a. Ensure that drawing sheets, viewports, paper-space, line weights, fonts, and other drawing components are correctly configured for Contract Administrator's

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viewing and plotting.

- b. Make sure all reference files are attached using a “relative” path setting and without device or directory specifications. For each drawing, provide one bound file containing drawing sheet with associated XREFs and one un-bound file containing the associated XREFs.
- c. Compress and reduce all design files using PKZIP, WINZIP or other compatible file compression/decompression software approved by the Contract Administrator. If the file compression/decompression software is different from that specified above, then an electronic digital media copy of the file compression/decompression software shall be purchased for the Contract Administrator and provided to the Contract Administrator with the delivery media.
- d. Include all files, both graphic and non-graphic, required for the project (i.e., color tables, pen tables, font libraries, block libraries, user command files, plot files, and other elements of drawing definition). All blocks not provided as Contract Administrator-furnished materials must be provided to the Contract Administrator as a part of the electronic digital deliverables.
- e. Make sure that all support files such as those listed above are in the same directory and that references to those files do not include device or directory specifications.
- f. Document any fonts, tables, or other similar customized drawing element developed by Consultant or not provided among Contract Administrator-furnished materials. Contractor shall obtain Contract Administrator approval before using anything other than Contract Administrator's standard fonts, line types, tables, blocks, or other drawing elements available from Contract Administrator.
- g. Include any standard sheets (i.e., abbreviation sheets, standard symbol sheets, or other listing) necessary for a complete project.
- h. Check completed files are free of any known viruses or unrequired attachments.

2.6 Drawing Development Documentation:

2.6.1 Provide the following information for each finished drawing in the nonplot layer X****-NPLT:

- a. How the data were input (e.g., keyed in, downloaded from a survey total station instrument (include name and model), and other identification data).
- b. Brief drawing development history (e.g., date started, modification date(s) with brief description of item(s) modified, author's name, and other identifying data.).
- c. The names of the reference, blocks, symbols, details, tables, and schedule files required for the finished drawing.

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- d. Layer assignments and lock settings.
- e. Text fonts, line styles/types used, and pen settings.

2.7 Submittal:

2.7.1 Document any fonts, tables, or other similar customized drawing element developed by Consultant or not provided among the Contract Administrator-furnished materials. The contractor shall obtain Contract Administrator approval before using anything other than the Contract Administrator's standard fonts, line-types, tables, blocks, or other drawing elements available from the Contract Administrator.

2.8 Submittals / Deliverables:

2.8.1 Submit as Project Record Documents specified above and as required for project phase submittals and project record documents.

2.8.2 Submit electronic media with a transmittal letter containing, as a minimum, the following information:

- a. The information included on the external label of each media unit (e.g., CD, DVD, flash drive, etc.), along with the total number being delivered, and a list of the names and issue dates of all files on the media.
- b. Brief instructions for transferring the files from the media.
- c. Confirm that all delivery media is free of known computer viruses. A statement including the name(s) and release date(s) of the virus-scanning software used to analyze the delivery media, the date the virus-scan was performed, and the operator's name shall also be included with the certification. The release or version date of the virus-scanning software shall be the current version that has detected the latest known viruses at the time of delivery of the digital media.
- d. The following "Plot File Development and Project Documentation Information" as an enclosure or attachment to the transmittal letter provided with each electronic digital media submittal:
 - 1. List of all new figures, symbols, tables, schedules, details, and other blocks created for the project, which were not provided to Consultant with the Contract Administrator-furnished materials, and any associated properties.
 - 2. List of all database files associated with each drawing, as well as a description and documentation of the database format and schema design.
 - 3. Recommended modifications which will be necessary to make the data available for GIS use.

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2.8.3 Prime Contractors are responsible for ensuring that the Digital Deliverables prepared by their Subcontractors or Subconsultants comply with the standards and policies outlined in this document.

2.9 Ownership:

2.9.1 County has ownership and all rights to all finished or unfinished Digital Deliverables developed for this Project. Any Digital Deliverables generated under any County design and construction Contract, including those generated by the External Project Team Members' Subcontractors or Subconsultants, shall become the property of County. County will have unlimited use of the Digital Deliverables produced for the Project. County acknowledges that the Digital Deliverables are an Instrument of Service of the External Project Team member and that the author of the Digital Deliverable does not represent or guarantee that the Digital Deliverable will be useful to County for any purposes beyond those uses that they were authored.

2.9.2 County will have unlimited rights under the Professional Services Agreement of which this document is a part to all information and materials developed under these and other contractual requirements and furnished to the Contract Administrator and documentation thereof, reports, and listings, and all other items pertaining to the work and services pursuant to this agreement including any copyright.

2.9.3 Unlimited rights under this contract are rights to use, duplicate, or disclose text, data, drawings, and information, in whole or in part in any manner and for any purpose whatsoever without compensation to or approval from Consultant except where otherwise limited within the Contract.

2.9.4 The Contract Administrator will at all reasonable times have the right to inspect the work and will have access to and the right to make copies of the above-mentioned items.

2.9.5 All text, electronic digital files, data, and other products generated under this contract shall become the property of County except where otherwise limited within the Contract.

2.10 Contract Administrator-Furnished Materials to the Construction Contractor:

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2.10.1 The Contract Administrator and Consultant may make various electronic information available to the Contractor during the Pre-Construction and Construction phases of the Project. To this end, Consultant shall make the following information available to the Contractor in electronic format:

- a. Work-files: Selected work product files, copies of BIM and/or CAD files, reports, spreadsheets, databases, specifications, drawings and other documentation of Consultant's work in progress may be provided to the Contractor, Managing General Contractor, or other County consultant on an as required basis. Consultant shall cooperate and facilitate the exchange of these electronic media documents.
- b. Where electronic media submittals of final site surveys are required: Provide electronic copies of any existing site survey data already on electronic media conforming to Section 2.2 of this Attachment.
- c. Where Electronic Project Record Documents are required, Consultant will provide the Contractor one set of contract drawings in an electronic file format conforming to Section 2.2 of this Attachment, to be used for as-built drawings at the Contractor's option. Make electronic file drawings available on media in conformance with Section 2.5 of this Attachment.

2.11 Other Digital Information:

2.11.1 A variety of digital information may be generated by participants in the design process including the Contract Administrator, Consultant, Subconsultants, Contractor, subcontractors, the Contract Administrator's commissioning authority, local jurisdictional authorities and other project team members.

2.11.2 Consultant shall facilitate and participate in this digital exchange of information by conforming to the standards expressed above and as further described in attachments and Exhibit A Scope of Works.

Section 3 BIM/CADD Standards of Care

3.1 General Provisions

3.1.1 The Model(s) shall be developed to include the systems described below as they would be built, the processes of installing them, and to reflect final as-built construction conditions. The deliverable Model at all phases shall be developed to include as many of

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the systems described below as are necessary and appropriate to the design/construction stage. The BIM Model shall be provided in an editable form and from its inception shall include automatic model positioning using a common reference point (Point of Origin), based on "Florida State Plane Coordinates" derived from the project survey.

3.1.2 The Model shall be developed using Building Information Modeling ("BIM") supplemented with Computer Aided Drafting and Design ("CADD") content as necessary to produce a complete set of Construction Documents.

3.1.3 The parties shall utilize the appropriate Levels of Development (LOD) described below in completing the Model, which establishes the required LOD for each Model Element at each phase of the Project.

3.1.4 The following Level of Development (LOD) descriptions are summaries of Level Of Development Specification for Building Information Models as developed by BIMForum. (<http://bimforum.org/lof>), current edition (2017 or later). **Each subsequent LOD builds on the previous level and includes all the characteristics of previous levels.** The following list is a simplified summary of the adopted Levels of Development:

- **LOD 100** elements are not geometric presentations. They may be symbols or other generic representations of information that can be derived from other model elements. Any information derived from LOD 100 elements must be considered approximate.
- **LOD 200** elements are represented graphically but are generic placeholders, e.g., volume, quantity, location, or orientation. Any information derived from LOD 200 elements must be considered approximate.
- **LOD 300** elements are graphically represented as specific systems, objects, or assemblies from which quantity, shape, size, location, and orientation can be measured directly, without having to refer to non-modeled information such as notes or dimension call-outs.
- **LOD 350** elements are enhanced beyond LOD 300 by the addition of information regarding interfaces with other building systems. For example, an LOD 350 masonry wall element would include jamb conditions, bond beams, grouted cells, dowel locations, and joints – information that enables the model user to coordinate the wall element with other systems in the structure.
- **LOD 400** elements are modeled at sufficient detail and accuracy for fabrication of the represented component.

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NOTE - County and the LOD Specification do not address **LOD 500** since that LOD relates to field verification and is not an indication of progression to a higher level of geometry or information.

3.1.5 The parties shall utilize the appropriate Levels of Development (LOD) described below in completing the Model, which establishes the required LOD for each Model Element at each phase of the Project. LODs and Model Definition: There is no such thing as an “LOD ### model.” As previously noted, project models at any stage of delivery will invariably contain elements and assemblies at various levels of development. As an example, it is not logical to require an “LOD 200 model” at the completion of the schematic design phase. Instead, the “100% SD Model” will contain modeled elements at LOD 200 as well as various other levels of development. Consultants will be required to submit a LOD Model Progression as part of the Project Execution Plan.

3.2 Level of Development (LOD) – Expanded Descriptions

3.2.1 LOD 100: Predesign & Schematic Design Phase 0 & 1 (Basic Services)

- a. Model Content Requirements: Overall building massing indicative of area, height, volume, location, and orientation may be modeled in three dimensions or represented by other data.
- b. Potential Uses:
 1. Analysis: The Model may be analyzed based on volume, all spaces, area and orientation by application of generalized performance criteria assigned to the representative Model Elements.
 2. Cost Estimating: The Model may be used to develop a cost estimate based on current area, volume or similar conceptual estimating techniques (e.g., square feet of floor area, etc.).
 3. Schedule: The Model may be used for project phasing and overall duration.

3.2.2 LOD 200: Design Development Phase (Basic Service)

- a. Model Content Requirements: Model Elements are modeled as generalized systems or assemblies with approximate quantities, size, shape, location, and orientation. Non-geometric information may also be attached to Model Elements. Partitions and simple furniture models shall be included at this phase.
- b. Potential Uses:
 1. Analysis. The Model may be analyzed for performance of selected systems by application of generalized performance criteria assigned to the representative Model Elements.

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2. Cost Estimating. The Model may be used to develop cost estimates based on the approximate data provided and conceptual estimating techniques (e.g., volume and quantity of elements or type of system selected).
 3. Schedule. The Model may be used to show ordered, time-scaled appearance of major elements and selected systems.
- 3.2.3 **LOD 300**: Construction Document Phase (Basic Service)
- a. Model Content Requirements: Model Elements are modeled as specific assemblies accurate in terms of quantity, size, shape, location, and orientation. Non-geometric information may also be attached to Model Elements.
 - b. Facility Management information: Consultant will be required to input all new products installed under the scope of work for this project in conformance with an agreed upon list in OmniClass Table 23 format per Table 1 herein. County and Consultant to meet to refine the scope of the COBie information following issuance of the Schematic Phase NTP.
 - c. Potential Uses:
Suitable for the generation of traditional construction documents and shop drawings.
 1. Analysis. The Model may be analyzed for performance of selected systems by application of specific performance criteria assigned to the representative Model Elements.
 2. Cost Estimating. The Model may be used to develop cost estimates based on the specific data provided and industry estimating techniques.
 3. Schedule. The Model may be used to show ordered, time-scaled appearance of detailed elements and systems.
 4. Clash Detection. The Model may be used to identify architectural and engineering conflicts for primary systems and elements. Areas of study include HVAC ductwork and equipment, structural elements, above ground plumbing and drainage piping, fire sprinklers and risers.
- 3.2.4 **LOD 350**: Construction Phase (Contractor to provide this LOD using Consultants model unless County elects Consultant to provide as Optional Service)
- a. Model Content Requirements: Model Elements are modeled as constructed assemblies actual and accurate in terms of size, shape, location, quantity, and orientation. Clearances and access requirements to be included in model elements where applicable, (e.g. VAV access, HVAC access panels, equipment door swings, maintenance panel access, etc.). Non-geometric information may also be attached to modeled elements.
 - b. Facilities Management information: Consultant to provide complete BIM

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model(s) to Contractor for its use containing Construction Operations Building Information Exchange (COBIE) standards in conformance with Table 1 herein.

c. Potential Uses:

1. Clash Detection. The model may be used to coordinate the configuration, installation and positioning of all building elements.
2. Facility Management. The Model may be utilized for maintaining, altering, and adding to the Project. Update and confirm preliminary COBie data.
3. Analysis. The Model may be analyzed for performance of selected systems by application of specific performance criteria assigned to the representative Model Elements.
4. Cost Estimating. The Model may be used to develop cost estimates due to change in project scope based on the specific data provided and estimating techniques.
5. Schedule. The Model may be used to show ordered, time-scaled appearance of detailed elements and systems.

3.2.5 **Detailed BIM Delivery Breakdown for LOD 300 and 350:**

- a. **Architectural/Interior Design**. The Architectural systems Model may vary in level of detail for individual building elements, but at a minimum the model must include all features that would be included on a quarter inch (1/4" = 1'-0") scaled drawing. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. Additional minimum Model requirements include:
 1. Spaces. The Model shall include spaces defining actual net square footage, net volume and holding data to develop the room finish schedule including room names and numbers. Include program information to verify design space against programmed space, using this information to validate area quantities.
 2. Walls and Curtain Walls. Each wall shall be depicted to the exact height, length, width, materiality and ratings (thermal, acoustic, fire) to properly reflect wall types. The Model shall include all walls, both interior and exterior, and the necessary intelligence to produce accurate plans, sections and elevations depicting these design elements.
 3. Doors, Windows and Louvers. Doors, windows and louvers shall be depicted to represent their actual size, type and location. Doors and windows shall be modeled with the necessary intelligence to produce accurate window and door schedules.
 4. Roof. The Model shall include the roof configuration, drainage system, penetrations, specialties, and the necessary intelligence to produce accurate

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- plans, building sections and wall sections where roof design elements are depicted.
5. Floors. The floor slab(s) shall be developed in the Structural Model and then referenced by the Architectural Model.
 6. Ceilings. All heights and other dimensions of ceilings, including soffits, ceiling materials, or other special conditions shall be depicted in the Model with the necessary intelligence to produce accurate plans, building sections and wall sections where ceiling design elements are depicted.
 7. Vertical Circulation. All continuous vertical components (i.e., non-structural shafts, architectural stairs, ramps, conveying systems, handrails and guardrails) shall be accurately depicted and shall include the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.
 8. Architectural Specialties. All architectural specialties (i.e., toilet room accessories, toilet partitions, grab bars, lockers, and display cases) and millwork (i.e., cabinetry and counters) shall be accurately depicted with the necessary intelligence to produce accurate plans, elevations, sections and schedules in which such design elements are referenced.
 9. Signage. The Model shall include all signage and the necessary intelligence to produce accurate plans and schedules.
 10. Schedules. Provide door, window, hardware sets using Builders Hardware Manufacturers Association (BHMA) designations, flooring, wall finish, and signage schedules from the Model, indicating the type, materials and finishes used in the design.
- b. Furniture. The furniture Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'-0") scaled drawing and have necessary intelligence to produce accurate plans. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. Representation of furniture elements is to be 3D. 3D Examples of furniture include, but are not limited to, desks, furniture systems, seating, tables, and office storage. Additional minimum Model requirements include:
1. Furniture Coordination. Furniture that makes use of electrical, data or other features shall include the necessary intelligence to produce coordinated documents and data. Models shall be sufficient to enable their use to demonstrate complete furniture mounted electrical and data installation locations.

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- c. **Equipment**. The Model may vary in level of detail for individual elements. Equipment shall be depicted to meet layout and clearance requirements with the necessary intelligence to produce accurate plans and schedules, indicating the configuration, materials, finishes, mechanical, electrical requirements and all other related utilities. Examples of equipment include but are not limited to copiers, printers, refrigerators, ice machines, microwaves, and equipment specifically related to the operations and functions of the facility.
1. **Schedules**. Provide furniture and equipment schedules from the model indicating the materials, finishes, mechanical, and electrical requirements.
- d. **Structural** The Structural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'-0") scaled drawing. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. Additional minimum Model requirements include:
1. **Foundations**. All necessary foundation and/or footing elements, with necessary intelligence to produce accurate plans and elevations.
 2. **Floor Slabs**. Structural floor slabs shall be depicted with all necessary recesses, curbs, pads, closure pours, and major penetrations accurately depicted. Major penetrations shall include A/C duct chases and pipes larger than 6" dia. only.
 3. **Structural Steel**. All steel columns, primary and secondary framing members, and steel bracing for the roof and floor systems (including decks), including all necessary intelligence to produce accurate structural steel framing plans, related building/wall sections, and schedules.
 4. **Cast-in-Place Concrete**. All walls, columns, beams, including necessary intelligence to produce accurate plans and building/wall sections, depicting cast-in-place concrete elements.
 5. **Precast/Tilt-up/CMU**. All walls, columns, beams, including necessary intelligence to produce accurate plans and building/wall sections, depicting such elements.
 6. **Expansion Joints**. Joints shall be accurately depicted.
 7. **Stairs**. All framing members for stair systems, including necessary intelligence to produce accurate plans and building/wall sections depicting stair design elements.
 8. **Shafts and Pits**. All shafts and pits, including necessary intelligence to produce accurate plans and building/wall sections depicting these design elements.
 9. **Openings and Penetrations**. All major openings and penetrations.

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- e. **Mechanical.** The Mechanical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'-0") scaled drawing. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. Small diameter (less than 1-1/2" NPS) field-routed piping is not required to be depicted in the Model. Additional minimum Model requirements include:
1. **HVAC.** All necessary heating, ventilating, air-conditioning and specialty equipment, including air distribution for supply, return, ventilation and exhaust ducts, control systems, chillers, registers, diffusers, grills, and hydronic baseboards with necessary intelligence to produce accurate plans, elevations, building/wall sections and schedules.
 2. **Mechanical Piping.** All necessary piping and fixture layouts, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, and schedules.
 3. **Equipment Clearances.** All Mechanical equipment clearances shall be modeled for use in interference management and maintenance access requirements.
- f. **Plumbing.** All necessary plumbing piping and fixture layouts, floor and area drains, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. Piping shall include slope requirements.
1. **Equipment Clearances.** All equipment clearances shall be modeled for use in interference management and maintenance access requirements.
 2. **Elevator Equipment.** All necessary equipment and control systems, including necessary intelligence to produce accurate plans, sections and elevations depicting these design elements.
- g. **Electrical/Telecommunications/Data.** The Electrical and Telecommunications systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'-0") scaled drawing. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. Small diameter (less than 1-1/2" Ø) field-routed conduit is not required to be depicted in the Model unless banks of 3 or more conduits are run on racks. Additional *minimum* Model requirements include:
1. **Interior Electrical Power and Lighting.** All necessary interior electrical

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components (i.e., lighting, receptacles, special and general-purpose power receptacles, lighting fixtures, panel boards, cable trays and control systems), including necessary intelligence to produce accurate plans, details and schedules. Lighting and power built into furniture/equipment shall be modeled. Whips servicing lighting fixtures are required to be modeled.

2. **Special Electrical.** All necessary special electrical components (i.e., security, mass notification, public address, nurse call and other special electrical occupancy sensors, and control systems), including necessary intelligence to produce accurate plans, details and schedules.
 3. **Grounding.** All necessary grounding components (i.e., lightning protection systems, static grounding systems, communications grounding systems, and bonding), including necessary intelligence to produce accurate plans, details and schedules.
 4. **Telecommunications/Data.** All existing and new telecommunications service controls and connections, both above ground and underground, with necessary intelligence to produce accurate plans, details and schedules. Cable tray routing shall be modeled without detail of cable contents.
 5. **Exterior Building Lighting.** All necessary exterior lighting including all lighting fixtures, relevant existing and proposed support utility lines and equipment with necessary intelligence to produce accurate plans, details and schedules.
 6. **Equipment Clearances.** All Electrical equipment clearances shall be modeled for use in interference management and maintenance access requirements.
- h. **Fire Protection.** The fire protection system Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'-0") scaled drawing. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. All Fire Protection piping should be modeled. Additional minimum Model requirements include:
1. **Fire Alarms.** Fire alarm/mass notification devices and detection systems, audible and visual, shall be indicated with necessary intelligence to produce accurate plans depicting them.
 2. **Fire Protection System.** All relevant fire protection components (i.e., branch piping, sprinkler heads, fittings, drains, pumps, tanks, sensors, control panels) with necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. All fire protection piping shall be modeled.
- i. **Security.** Both facilities require a level of security to ensure record and evidence

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integrity. The security system Model may vary in level of detail for individual elements, but at a minimum must include all devices and components that would be included on a quarter inch (1/4" = 1'-0") scaled drawing. Where applicable and as required for construction documents, the model, or host platform will include additional scales as required to show necessary details. Additional minimum Model requirements include, but not limited to:

1. Closed Circuit Television (CCTV). Security Cameras, devices, components, and detection systems shall be indicated with necessary intelligence to produce accurate plans depicting them on drawings.
 2. Emergency Notification Systems. All relevant security protection components (i.e. panic buttons, card readers, door controls, monitoring stations, security computer room, room/ corridor sensors, audible/visible annunciators, and security control panels) with necessary intelligence to produce accurate plans depicting the system(s).
 3. Burglar Alarm Systems. Building security including motion detectors, glass-break sensors, audible devices, and other intrusion detection devices as well control system for above shall be indicated on plans.
 4. Public address system – Speakers, zone control reflected on plan.
 5. Low-voltage systems – Various systems for communication, or customer services including Wi-Fi, FIBS/BIDS boards, phone chargers, lighting, Public Art, induction systems, way-finding, solar PV, wind, and other systems.
 6. Bi-Directional Antenna systems (BDA) – Antennas, trunk lines, branch line, control boxes, repeaters, emergency or redundant power sources, primary interface components, & home run room.
- j. Conveying Systems. The conveying systems models should indicate primary equipment, all necessary plumbing piping, electrical panels, fixture layouts and other related equipment, that would appear on a quarter inch (¼" = 1'-0") scaled drawing. Clearly indicate equipment clearances.
1. Elevator Equipment. All necessary equipment and control systems, including necessary intelligence to produce accurate plans, sections and elevations depicting these design elements. Provide indicators and call buttons.
 2. Escalator and other Conveyance Equipment. All relevant components of the escalator/conveyance system including accurate modeling of stair tread, size and placement. Indicate areas where 6'-8" clear headroom exists below the finished escalator if applicable.
- k. Landscape. The Landscape Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on

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a quarter inch (1/4" =1'0") scaled drawing and have necessary intelligence to produce accurate plans. Representation of Landscape elements is to be diagrammatic. Examples of landscape material include but are not limited to trees and shrubs.

- I. **Civil.** The Civil Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a one inch (1" = 100' to 1"= 20') scaled drawing. Additional *minimum* Model requirements include:
 1. **Terrain (DTM).** All relevant site conditions and proposed grading, including necessary intelligence to produce accurate Project site topographical plans and cross sections.
 2. **Drainage.** All existing and new drainage piping, including upgrades thereto, including necessary intelligence to produce accurate plans and profiles for the Project site.
 3. **Storm Water and Sanitary Sewers.** All existing and new sewer structures and piping, including upgrades thereto, with necessary connections to mains or other distribution points as appropriate, including necessary intelligence to produce accurate plans and profiles.
 4. **Utilities.** All necessary new utilities connections from the Project building(s) to the existing or newly-created utilities, and all existing above ground and underground utility conduits, including necessary intelligence to produce accurate plans and site-sections.
 5. **Roads and Parking.** All necessary roadways, parking lots, and parking structures, including necessary intelligence to produce accurate plans, profiles and cross-sections.

- m. **Potential Uses:**
 - a. Suitable for the generation of traditional construction documents and shop drawings.
 - b. **Analysis.** The Model may be analyzed for performance of selected systems by application of specific performance criteria assigned to the representative Model Elements.
 - c. **Cost Estimating.** The Model may be used to develop cost estimates based on the specific data provided and conceptual estimating techniques.
 - d. **Schedule.** The Model may be used to show ordered, time-scaled appearance of detailed elements and systems.

3.2.6 **LOD 400:** BIM for Fabrication. (Optional Service).

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- a. Model Content Requirements. Model Elements are modeled as specific assemblies that are accurate in terms of size, shape, location, quantity, and orientation with complete fabrication, assembly, and detailing information. Non-geometric information may also be attached to Model Elements.
- b. Potential Uses:
 - 1. Construction. Model Elements are virtual representations of the proposed element and are suitable for construction.
 - 2. Analysis. The Model may be analyzed for performance of approved selected systems based on specific Model Elements.
 - 3. Cost Estimating. Costs are based on the actual cost of specific elements at buyout.
 - 4. Schedule. The Model may be used to show ordered, time-scaled appearance of detailed specific elements and systems including construction means and methods.

3.3 BIM for Facility Management

3.3.1 BIMs shall be provided by Contractor or Managing General Contractor (MGC). Contractor or MGC shall submit an as-constructed BIM model to the A/E Consultant for the extraction of COBie in Excel format.

3.4 As Constructed Model Content Requirements

- a. Model Content Requirements. Model Elements are modeled as constructed assemblies actual and accurate in terms of size, shape, location, quantity, and orientation. Non-geometric information may also be attached to modeled elements. Facilities Management information completed with all requested information developed to Construction Operations Building Information Exchange (COBIE) standards.
- b. Potential Uses:
 - 1. Facility & Construction Management. The Model may be utilized for maintaining, altering, and adding to the Project.
 - 2. Project Record Documents. As-built data accurately portrayed in the BIM model for future reference and reuse.

3.5 COBie Data

- a. **Within 30 days from the issuance of the Notice To Proceed (NTP) for Schematic Design**, the County and Consultant shall finalize and select items from the following OmniClass 23 table to establish the basis of COBie elements to be

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tracked and delivered in the completed model.

23-11	Products
23-13	Structural and Exterior Enclosure Products
23-15	Interior and Finish Products
23-17	Openings, Passages, and Protection Products
23-21	Furnishings, Fixtures and Equipment Products
23-23	Conveying Systems and Material Handling Products
23-27	General Facility Services Products
23-29	Facility and Occupant Protection Products
23-31	Plumbing Specific Products and Equipment
23-33	HVAC Specific Products and Equipment
23-35	Electrical and Lighting Specific Products and Equipment
23-37	Information and Communication Specific Products and Equipment

Table 1.0 – Selected Excerpt from OmniClass Table 23

3.6 BIM Project Execution Plan (BIMPxP)

3.6.1 The BIMPxP is Section 4 of the attached Project Execution Plan (PxP). The Consultants BIMPxP Coordinator for the Project has the responsibility of documenting the PxP, gathering the required information from the External Project Team, scheduling and leading the PxP meetings and establishing and implementing protocols for revisions and sharing the PxP

3.6.2 The development of the PxP is a collaborative effort by all members of the Project team and will be reviewed and updated in meetings specifically scheduled for this purpose. All members of the Project team are required to submit initial information for their scope to the designated PxP Coordinator within 15 calendar days of commencing work. At a minimum PxP meetings shall be conducted at the end of each project phase and a revised PxP shall be issued to County and the External Project Team. A record PxP shall be provided to the owner at handover including all updated requirements.

3.6.3 The PxP is subject to review and approval by County at each project phase.

3.6.4 The design & construction teams shall submit a written BIMPxP subject to review and written approval by County prior to proceeding with the process. The BIMPxP will outline all methods and procedures for collaboration between the design and construction teams as well as coordination of VDC/BIM efforts of the subcontractors. The

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Contract Administrator, Design Team and all sub-consultants engaged in the BIM process will sign agreement to adhere to the BIM Project Execution Plan.

3.6.5 The BIM Project Execution Plan shall include as a minimum:

- a. Project Information
- b. Key Project Contacts
- c. Project VDC / BIM Uses
- d. Organizational Roles and Staffing
- e. VDC / BIM Process for preconstruction, construction and handover
- f. BIM Information Exchanges
- g. BIM and Facility Data Requirements
- h. Collaboration and coordination procedures
- i. Quality Control
- j. Technological Infrastructure Needs
- k. A Model Progression Schedule identifying LODs and Authors for each category of model (built) element.
- l. Clash detection approach
- m. Cost estimating level
- n. BIM Deliverables

3.6.6 To promote efficiency and continuity, the 2D construction documents must be extracted directly from the Design BIMs and both the BIMs and the 2D Deliverables will be integral parts of the contract documents. Two dimensional (2D) details, enlargements, General Notes, externally-generated Schedules, and specifications will take precedence over the Design BIMs.

3.7 BIM Use Agent Responsibility Matrix

3.7.1 County has identified the Required, Preferred and Optional BIM uses as it relates to this project. The County acknowledges that Design and Construction Consultants will work together to achieve these Uses. Implementation of these uses should be explained by the Consultant in the BIMPxP, Section F. Roles, responsibilities and timing are to be documented.

3.7.2 The County's typical BIM Uses for New Construction Projects are as follows:

County Typical BIM Use - New Construction

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BIM Use	County Intent
3d Coordination / Conflict Analysis	Required
As Constructed Model	Required
Asset Management	Required
Cim / Subsurface	Required
Constructability/Peer Review	Required
Design 4 Maintenance (D4m)	Required
Design Authoring	Required
Design Reviews	Required
Existing Conditions Modeling	Required
Facility Data Exchange	Required
Owner Approvals	Required
Qa/Qc	Required
Record Modeling	Required
Site Utilization Planning	Required
Spatial Analysis	Required
Visualization	Required
Commissioning	Preferred
Cost Estimation	Preferred
Energy / Mechanical Analysis	Preferred
Programming	Preferred
Program / Code Validation	Preferred
Quantity Take-Off	Preferred
Site Analysis	Preferred
Space Management / Tracking	Preferred
Structural Analysis	Preferred
Sustainability Leed	Preferred
Total Cost Of Ownership	Preferred
Bim2field - Digital Layout	Optional
Building Maintenance Scheduling	Optional
Building System Analysis	Optional
Code Analysis	Optional

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BIM Use	County Intent
Construction System Design	Optional
Digital Fabrication	Optional
Disaster Planning	Optional
Electrical Analysis	Optional
Field And Material Tracking	Optional
Laser Scanning	Optional
Lighting Analysis	Optional
Pay Applications	Optional
Phase Planning 4d	Optional
Security / Key Management	Optional
Specification Production	Optional

3.8 3D Coordination and Conflict Analysis

3.8.1 The Design Team shall use BIM to employ a managed approach to advanced collaborative reviews, including automated element collision detection using software such as Autodesk Navisworks. By coordinating BIM data during the design phases, this can reduce the number of potential major conflicts that might arise during the construction phase.

3.8.2 This approach is not meant to replace the traditional quality control process, or the early airspace zone MEP strategy approach used by the project team and participating consultants but will enhance the ability of the project team to visualize the design and detect interferences between discipline components.

3.8.3 Design Team Coordination

- a. The Design Team shall produce a design in which all MEP/FP systems fit within the intended spaces provided, including necessary and required clearances, egress zones, and access zones. To help achieve this goal, the Design Team shall have a formal 3D spatial analysis and clash resolution process that forms the backbone of the QA/QC process. The spatial analysis and clash resolution process shall include regularly scheduled clash review meetings and the use of software tools to analyze and resolve clashes.

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- b. County does not expect a “clash-free” design, however expects a design that has been spatially analyzed and validated such that all systems are constructible within the space designed.
- c. Clash reports will be required at project milestone deliverables for both Design and Construction.
- d. Cost estimating – Level 1 thru 4
- e. Construction Schedule & Duration
- f. Utilities coordination & invert elevations

3.8.4 Contractor Team Coordination

- a. Contractor shall carry out clash detection analysis and complete preliminary virtual design and construction (VDC) activities as part of the Constructability Reviews.
- b. Weekly, the CM shall conduct coordination meetings with each Contractor, Subcontractor, PM, County and Design Team as needed.
- c. The CM shall prepare clash detection reports and distribute minutes/ reports to all attendees.

3.9 Model Content Requirements

3.9.1 A Model Progression Schedule (MPS) shall be used as a tool to help Model Contributors throughout the Design, Construction and Operation phases understand what should be included in the BIMs when at each project milestone.

- a. The Construction Models should reflect the exact geometric properties of the materials and/or systems being submitted. These models should reflect the exact material properties and performance data.
- b. It is the responsibility of the Design and Construction Team to use the MPS as part of the BIMPxP or JBIMPxP to establish how they progressively reach the County’s expectations.

3.10 Shop Drawings, Sleeve Drawings and Fabrication

3.10.1 Shop Drawings shall be produced directly from the construction BIMs. No parallel 2D process will be accepted

- a. Sleeve Drawings -Sleeve drawings for cast-in-place or precast systems shall be produced after BIM Coordination is completed for the area of construction requiring the sleeve drawings.
- b. Fabrication & Preassembly -Whenever possible the Construction Team shall use the Construction BIMs to fabricate or preassemble their systems.

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3.11 BIM in the field for Installation

3.11.1 The Contractor shall take measures to assure that what is being installed at the field is what was agreed upon on the Coordinated Federated Construction BIM. Any deviations must be documented as updates to the BIMs and the party responsible for resulting conflicts will be liable for costs associated with such deviations.

3.12 Submittals

3.12.1 Upon Substantial Completion, BIM files shall be submitted to County, and shall be cleaned of extraneous “scrap” or “working space”, stories, abandoned designs, object creation and testing places, and other content which is typically produced in or during BIM construction coordination.

- a. The CM@Risk shall be responsible for providing the County a federated as-built Model that includes all building systems. The Model shall be coordinated and “clash free” except as noted.
- b. CM@Risk shall provide a native file of the final federated as-built Model for building systems used in the multi-discipline coordination process (version as agreed in BIM PxP)
- c. CM@Risk shall identify native file formats used in the final federated as-built Model for building systems for the multi-discipline coordination process (version as agreed in BIM PxP)
- d. CM@Risk shall provide IFC files (ISO 16739) of as-built models (version as agreed in BIM PxP)
- e. CM@Risk shall provide COBie / data compliant file containing room and product data information (version as agreed in BIM PxP)

3.12.2 County will not accept BIM files that have become un-useable, or too heavy for normal use. Proper care shall be taken to strip all BIMs of any and all miscellaneous files that are not directly part of the BIMs. The BIM Compliance Checklist, shown below, is required to be submitted with each BIM Deliverable as part of the QA/QC process and to show compliance.

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BIM Compliance Checklist	
Description	?
Model content is representative of their discipline developments according to the MPS	?
Model file name and folder structure conforms to BCAD Standards	?
All annotations and title blocks are as per the BCAD standards	?
All BCAD floor plans and area plan views required by the BCAD have been created for all floors in the project	?
All schedules are populated with all the required data for the project	?
The model is correctly assembled as per visual inspection	?
The color code for Federated BIMs conforms to BCAD Standards	?
All the model contents are correctly placed per their element categorization in the correct workset, and conform to standards	?
All non-transmittal linked-in files (CAD/Revit) have been removed from the model	?
All non-required views / legends / schedules / sheets / images have been removed from the model	?
Unwanted Design Options have been removed from the model	?
All unnecessary groups have been removed from the model. All groups used to model the building have been ungrouped and purged from the deliverables to reduce the file size of the model.	?
As a last step, the model has been purged (repeat the process three times -- materials are only removed after the parent object has been removed). This will reduce the file size.	?
3D Solids Check – No wireframe or lines are accepted. Surface modeling shall be reserved for Topography modeling only. Other use of surface modeling shall require prior approval by BCAD.	?
Errors or Warnings - check that are generated inside the BIM Authoring software. It is the Design & Construction Teams' responsibility to ensure BIM quality and data integrity.	?
Model Elements are not duplicated. Ex. Columns in both Architect and Structural models.	?
Objects are correctly defined under the proper Revit Family Category and sub-category.	?

3.13 Responsibilities Related to the Final As-Built Model

3.13.1 Design Team Responsibilities

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- a. The Design Team will update the Architectural and Structural model(s) through the end of the construction phase, incorporating all updates and/or revisions to the model(s) as necessary to reflect design changes initiated by ASI, RFI, MIRs, Owner Changes, or coordination with existing conditions.
- 3.13.2 Construction Team Responsibilities
- a. During the construction phase, the Construction Team will maintain “red-line” as-built drawings.
 - b. In preparation for Substantial Completion, the Construction Team will:
 1. Make all necessary updates and/or revisions to the model(s) to reflect the as-built information to the tolerance specified in the Standard or agreed upon in the BIMPxP. It is the responsibility of each subcontractor to keep accurate “red-line” markups from the field in order to produce accurate as-built models and drawings.
 2. Final updates to material/equipment data and properties where installations differ from the “basis of design” included in the Design Team Model(s).
 3. Incorporation or linking of certain close-out documents to the Federated Model (as agreed in BIM PXP).
 - c. All model updates by the Construction Team shall be complete one (1) week prior to Final Completion at which time all the required close out deliverables shall be transmitted to the County (as agreed in BIM PXP).

END OF SECTION 3
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Section 4 BIM Execution Plan



**BIM PROJECT EXECUTION PLAN
FOR
Nancy J. Cotterman Center
DEVELOPED BY
Broward County - Construction Management Division
(County)**

This template is a required tool that is provided to assist in the development of a BIM Project Execution Plan (BIMPxP) as required by Contract.

Consultants are required to "Track" changes when editing this document so BROWARD COUNTY - CONSTRUCTION MANAGEMENT DIVISION can review and accept any additions and modifications as part of the review process.

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BIM PROJECT EXECUTION PLAN
FOR
Nancy J. Cotterman Center

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Introduction

This document exists to document the decisions made by the Design and Construction Teams working through the BIM process. To successfully implement BIM both on the project and organizational levels, Broward County Construction Management Division (County) has developed this BIMPxP to improve accuracy and consistency of BIM deliverables. This plan will delineate roles and responsibilities while detailing BIM scope of information to be shared that is relevant to the BIM project process. The document is intended to cover both model creation and data integration.

Instructions

Submission Requirements. The Design and Construction Teams are required to submit a completed BIMPxP within 30 days of contract execution. This plan shall identify the entire project team including consulting engineers and specialty consultants. The BIMPxP should be considered a living document and maintained and updated throughout the project.

Please note: Instructions and examples to assist with the completion of this guide are displayed in blue. The text can and should be modified to suit the needs of the organization filling out the template. If modified, the format of the text should be changed to match the rest of the document and “tracked changes” shall be submitted in electronic form for Broward County Construction Management Division review and approval.

The overall Part headings of this template shall remain, but the BIMPxP Coordinator may propose any other changes or additions to this template including expansion of the content of the Parts and additional Parts and attachments. Changes & additions shall be agreed to by the project team and submitted to Broward County Construction Management Division for approval.

This BIMPxP is based on the National BIM Standard-United States™ Version 3 and the Pennsylvania State University BIM Project Execution Plan Version 2.0 and customized for Broward County Construction Management Division.

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Part A: BIM Project Execution Plan Overview

The Broward County Construction Management Division requires the use of Building Information Modeling (BIM) as a tool in the planning, design, construction and operation of our facilities worldwide. A well-executed BIM project facilitates the collaboration and communication between the owner, the design team and the construction team in order to best meet the project's goals.

The purpose of this process change is to ensure maximum benefit from our assets by improving the building's design and construction, reduce the total cost and time of delivery and improve operations and management after handover. BIM allows for a more complete, efficient, iterative design and construction process. The clearest benefits are the enhanced visualization of the project at all stages of development, the creation of higher quality design and construction deliverables and the reduction of construction coordination conflicts in the field. At the end of construction, the Building Information Models serve as rich databases of digital data captured during design and construction about the building's assets. This single centralized source of information is invaluable to the Facilities Department for the on-going operations and management of the building to ensure our facilities are sustainable and resilient.

To successfully implement Building Information Modeling (BIM) on a project, the project team has developed this detailed template BIM Project Execution Plan.

INSERT ADDITIONAL INFORMATION HERE IF APPLICABLE.

With the help of the project team, develop a brief mission statement here that will give an overview of BIM objectives that are specific to this project. This can be developed at a collaborative brainstorming session at the first BIMPxP meeting. Extensive additional information can be included as an attachment to this document.

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Part B: Project Information

This portion defines basic project reference information.

1. CLIENT NAME: BROWARD COUNTY CONSTRUCTION MANAGEMENT DIVISION (COUNTY)
2. PROJECT NAME: NANCY J. COTTERMAN CENTER (NJCC)
3. PROJECT LOCATION AND ADDRESS: 2995 NORTH DIXIE HIGHWAY, OAKLAND PARK, FL 33334
4. CONTRACT TYPE / DELIVERY METHOD: MANAGING GENERAL CONTRACTOR (CM@Risk)
5. BRIEF PROJECT DESCRIPTION: REFER TO AMENDMENT 3, ITEM 5, EXHIBIT A, SCOPE OF WORK
6. ADDITIONAL PROJECT INFORMATION: NONE
7. PROJECT IDENTIFICATION NUMBERS: *Please complete table below:*

TEAM MEMBER	PROJECT NUMBER
Broward County Construction Management Division	
Architect	
MEP Engineers	
Structural Engineer	
Contractor	

Part C: Delivery Strategy

Delivery and Contracting Strategy for the project:

This part is useful primarily when design delivery methods are being utilized that involve early collaboration of the design and construction teams (CM at Risk, Design Assist, etc.). List the Project Delivery strategy for the project below (Design-Bid-Build, CM at Risk, Design Assist, etc.).

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What additional measures need to be taken to successfully use BIM with the selected delivery method and contract type?

Part C.1 - Project Schedule / Phases / Milestones:

Include BIM milestones, pre-design activities, major design reviews, stakeholder reviews and any other major events which occur during the project lifecycle in the table below:

PROJECT PHASE / MILESTONE	ESTIMATED START DATE	ESTIMATED COMPLETION DATE	PROJECT STAKEHOLDERS INVOLVED
Notice to Proceed			
BIMPxP Kick-off			
Programming			
County Review & Comments			
Design Team Review & Resubmit			
Schematic Design			
County Review & Comments			
Design Team Review & Resubmit			
75% CD's			
County Review & Comments			
Design Team Review & Resubmit			
100% CD's			
County Review & Comments			

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PROJECT PHASE / MILESTONE	ESTIMATED START DATE	ESTIMATED COMPLETION DATE	PROJECT STAKEHOLDERS INVOLVED
Design Team Review & Resubmit			
Award / Permit			
Pre-Construction			
Project Coordination Kickoff			
Underground Coordination			
Site Coordination			
Building Exterior Coordination			
Building Interior Coordination (First Floor)			
Building Roof Coordination			
Coordination Sign-Off			

Part C.2 - Project Deliverables

In these tables, please check off the BIM Deliverables from Consultant and Contractor on the appropriate table that are relevant for this project. Note any and all deviations to these required deliverables below.

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Schedule of Deliverables to Broward County Construction Management Division				
<u>CONSULTING A/E TEAM</u>				
PHASE	DELIVERABLE	INCLUDED (Y/N)	DUE	FILE TYPE
Contract Award	BIMPxP		30 days of ATP	Native & PDF
Programming / Feasibility Models	Massing models & Narrative Space & Program Validation Rpt		Per BIMPxP	Native & IFC & PDF Native & PDF
Planning	Design Models -		Per BIMPxP	Native & IFC (2x3) files
Schematic Design	Design Models -		Per BIMPxP	Native & IFC (2x3) files
Design Development	Existing Conditions Model Design & Analysis Models - Updated BIMPxP Coordination Reports BIM Compliance Checklist		Per BIMPxP	Native & IFC (2x3) files Native & IFC Native & PDF PDF PDF
Construction Documents	Design & Analysis Models 2D documents & Clash Report Updated BIMPxP Coordination Reports BIM Compliance Checklist COBie Data Set - Del 1		Per BIMPxP	Native & IFC (2x3) files PDF Native & PDF PDF PDF COBie2 2.40
Permitting / Conformance	Federated Design Model 2D Documents		Per BIMPxP	Native files PDF
Construction -Approved Submittals	COBie Data Set - Del 2		Per BIMPxP	Native & IFC (2x3) files
Construction- Close-Out Close-Out Close-Out Close-Out Close-Out Close-Out	COBie Data Set - Del 3 COBie Data Set – Final Record Floor Plans Record BIMs Federated Record BIM Coordination Report Record Model Instruction Rpt. Final BIMPxP		Per BIMPxP	COBie2 2.40 COBie2 2.40 DWG Native & IFC (2x3) Native Native & PDF Native & PDF Native & PDF

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Schedule of Deliverables to Broward County Construction Management Division				
<u>CONSTRUCTION TEAM</u>				
PHASE	DELIVERABLE	INCLUDED (Y/N)	DUE	FILE TYPE
Contract Award	BIMPxP		Within 30 days	Native & PDF
Pre-Construction	Coordination BIMs BIM Compliance Checklist		Per BIMPxP	
Project Close out	COBie Data Set – Del 3 As-Constructed BIMs BIM Compliance Checklist Coordination Report Federated As-Constructed BIM Final BIMPxP		Per BIMPxP	COBie2 2.40 Native & IFC (2x3) files PDF PDF .NWD Native & PDF

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Part D: Key Project Contacts

ROLE	CONTACT NAME	ORGANIZATION	EMAIL	PHONE
Owner PM		Broward County CMD		
Owners BIM Manager		Broward County CMD		
BIM PxP Coordinator				
Design Professional's Principal in Charge				
Design Professional's Project Manager				
Design Professional's BIM Manager				
Design Professional's BIM Project Lead				
Consultant's Principal in Charge				
Consultant's Project Manager				
Consultant's BIM Manager				
Consultant's BIM Project Lead (per discipline)				
Contractors PM				
Contractors BIM Manager				

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Others				
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Part E: Organizational Roles / Staffing

This part should be filled in at the choice of the BIMPxP Coordinator and extended team.

Broward County Construction Management Division (CMD): Broward County’s Construction Management Division is responsible for BIM, CAD support, coordination and integration for the County’s use. It is also their responsibility to review for design and construction document/model compliance with Broward County Construction Management Division Standards while maintaining and facilitating access to record drawings and models in coordination with the Facilities Management Division.

BIM Roles and Responsibilities:

Describe in the table below the BIM roles and responsibilities such as BIM Managers, Project Managers, Draftspersons, etc.

TITLES	ROLES IN DESIGN	ROLES IN CONSTRUCTION
Broward County Construction Management Division	<ul style="list-style-type: none"> • BIM Oversight and Compliance Reviews 	<ul style="list-style-type: none"> • BIM Oversight and Compliance Reviews
Project Manager		
Model Manager		
BIM Coordinator		
Modeler		
COBie Coordinator		

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Part F: BIM Uses

Broward County Construction Management Division has developed a BIM Use/Consultant Responsible Matrix for use in the planning and procurement of BIM projects. This matrix defines Broward County Construction Management Division's priorities for the application of BIM Uses, the responsibilities of the External Team Members, and the phases to which the BIM Uses apply. BIM Uses should only be employed if they offer significant benefit to the Project without compromising cost or schedule.

*Insert additional information in the table below as needed for this specific project. Items in **RED** are minimally required by Broward County Construction Management Division.*

BIM USE	CONSULTANT RESPONSIBLE FOR IMPLEMENTATION	REQUIRED PROPOSED	PLAN/ DESIGN/ CONSTRUCT/ OPERATE			
			P	D	C	O
Visualization	A & C.	Required	X	X	X	X
Programming						
Site Analysis						
Design Authoring	A, Trades	Required	X	X	X	
Design Reviews	A & C.	Required	X	X	X	
3D Coordination		Required	X	X	X	
Structural Analysis						
Lighting Analysis						
Energy Analysis						
Mechanical Analysis						
Other Eng. Analysis						
Sustainability Evaluation						
Design4Maintenance Review	A & C.	Required		X	X	
3D Coordination and Conflict Analysis	A & C.	Required	X	X	X	
Facility Data Exchange with Maximo	A & C.	Required		X	X	X
Quality Assurance / Quality Control						

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Code Validation						
Commissioning						
Site Utilization Planning	A or C.	Required		X	X	
Construction System Design						
Digital Fabrication						
3D Control and Planning						
4D Phase Planning						
5D Cost Estimation						
Quantity Take Off						
BIM2Field		Required			X	
Laser Scanning						
Point Cloud integration						
Security Key Management						
Building Maintenance Scheduling						
Record Modeling	A	Required		X		
Way finding						
Virtual / Mixed Reality						
As-Constructed Modeling	C				X	
Building System Analysis						
Asset Management						
Space Management / Tracking						
Disaster Planning						
Existing Conditions Model						

THIRD AMENDMENT
New Facilities for The Human Services Department: Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center

EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2
BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Part G: BIM Process Design

Define the BIM Process and Workflows that the External Project Team will be implementing on this project as it relates to the BIM Uses that have been selected and contracted for this project. Define a detailed plan for implementing each BIM Use, define the specific exchanges of information and/or BIMs for each activity, the party responsible for each activity, and when in the schedule of the project it should occur. Process maps like those in the Penn State BIM Execution Plan may be included but are optional. If necessary, attach maps to BIMPxP and reference location here.

Part H: Model Progression Schedule / LOD

A template Model Progression Schedule (MPS) defining minimum requirements for model handover is included for use. The LOD levels and tolerances in the Handover portion of the sample MPS define Broward County Construction Management Division's requirements for the Existing Conditions, As-Constructed and Record BIMs. The External Project Team is to complete and submit a project specific MPS for this project for all project phases as applicable. The columns pertaining to Existing Conditions, As-Constructed Modeling and Record Modeling along with requirements for tolerances and allowable deviations are to be included in the MPS.

The Model Element Rows in Broward County Construction Management Division's template MPS are high level. The rows in the final project MPS may have a higher level of granularity as required that addresses the needs of the project and the best practices of the External Project Team.

The executed MPS shall be included in this BIMPxP as Attachment 1.

Part I: BIM and Facility Data Requirements

At a minimum and not limited to Construction Management Division use, Broward County will require COBie data sets for all components on the Equipment List per the Construction Documents that require any of the following:

- ✓ Scheduled preventative maintenance i.e. Mechanical, Electrical,
- ✓ Routine maintenance/inspections: i.e. Plumbing
- ✓ Regulatory inspections i.e. life safety related: fire extinguisher, fire dampers, backflow preventers

THIRD AMENDMENT
New Facilities for The Human Services Department: Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center

EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

The list on the on the right shows Preliminary Asset Type List for Broward County Construction Management Division Projects. This list should be used and further detailed in the BIMPxP Template.

Shown In	BCAD Preliminary Asset Type List	OmniClass - Products Classification - Table 23
ARCH Model	AUTOMATIC EXTERNAL DEFIBULATOR (AED)	23-25 21 13
	BAGGAGE HANDLING CONVEYOR	23-23 17 15
	ELEVATOR	23-23 11 11
	ESCALATOR	23-23 11 13
	FIRE DOOR	23-17 11 32
	ICE MACHINE	23-21 21 29
	MOVING WALKWAY	23-23 15 11
	SLIDING DOOR	23-17 11 23
	TICKET COUNTER	23-21 19 15
	WATER COOLER	23-31 31 00
ELECT Model	FIELD CONTROL PANEL	23-35 31 15
	GENERATOR	23-35 11 15
	LINE CONTROL PANEL	23-35 31 15
	MOTOR CONTROL CENTER	23-35 31 23
	MOTOR CONTROL PANEL	23-35 31 15
	VARIABLE FREQUENCY DRIVE	23-35 17 15
MECH Model	VARIABLE SPEED DRIVE	23-35 17 00
	AC UNIT	23-33 39 11
	AIR HANDLER	23-33 25 00
	CHILLER	23-33 21 00
	CONDENSER WATER PUMP	23-27 17 00
	CONDENSING UNIT	23-33 43 00
	COOLING TOWER	23-33 23 00
	EXHAUST FAN	23-33 31 19
	FAN COIL UNITS	23-33 33 11
	FAN POWERED BOX	23-33 41 11
	FAN TERMINAL BOX	23-33 41 11
	FAN VARIABLE VOLUME BOX	23-33 41 11
	OUTSIDE AIR HANDLER UNIT	23-33 25 13
	PACKAGE AIR CONDITIONING UNIT	23-33 39 17
	PRIMARY CHILLED WATER PUMP	23-27 17 00
	ROOF TOP UNIT	23-33 25 17
	SECONDARY CHILLED WATER PUMP	23-27 17 00
SPLIT SYS CONDENSING UNIT	23-33 43 00	
SUPPLY FAN	23-33 31 19	
VARIABLE AIR VOLUME BOX	23-33 41 17	
PLUM Model	AIR COMPRESSOR	23-27 21 00
	CHEMICAL STATION	23-27 55 31
	ELECTRIC HOT WATER BOILER	23-33 11 22
	HEAT EXCHANGER	23-27 23 00
	HEAT PUMPS	23-33 17 00
	HOT WATER PUMP REHEAT	23-27 17 00
	SUMP PUMP	23-27 17 00
	TRASH PUMP	23-27 17 00
	WATER CIRCULATING PUMP	23-27 17 00
These assets types may be found in consultant 3D CAD models with limited information embedded. The information required on these asset types would be manual entered into the COBie deliverable worksheets.		
CIVIL	AIR FIELD LIGHTING RUNWAY	N/A
	AIRFIELD BEACON	N/A
	CRASH GATE	23-11 25 15
	CRASH PERIMETER GATE	23-11 25 15
	ENGINEERED MATERIAL ARRESTING SYSTEM - EMAS	N/A
	PEDESTRIAN GATE	23-11 25 15
CONSULTANT	PERIMETER GATE	23-11 25 15
	ABOVE GROUND STORAGE TANK	23-27 29 19
	BAG MEASUREMENT EQUIPMENT	23-23 17 15
	BAGGAGE DIMENSIONER	23-23 17 15
	BAGGAGE HANDLING CAROUSEL	23-23 17 15
	DIESEL FUEL STORAGE TANK	23-27 29 19
	HIGH SPEED DIVERTER	23-23 17 15
	JETWAY	23-23 15 15
OVER SIZE BAG DOOR	23-23 17 15	
SCALE	N/A	

**EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2**

BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Part J: Collaboration Procedures

Collaboration Strategy:

Provide a brief, general description of how the project team will collaborate. For example, include items such as communication methods, document management and transfer, and record storage, etc.

FILE LOCATION	FILE STRUCTURE/ NAME	FILE TYPE	PASSWORD PROTECT	FILE OWNER	UPDATED
Collaboration SITE: SITE	Root Project Folder	Folder	Yes	PT Project Mgr.	Once
Provide Further Information on Structure of Collaboration Site	Root Project Folder	Folder	Yes	PMG Project Mgr.	Once
Provide Further Information on Structure of Collaboration Site	TBD	RVT	Yes	PMG Project Mgr.	Weekly

Part J.1 - BIM Meeting Procedures:

The meetings listed below reflect typical Broward County Construction Management Division expectations for a project and should be customized for the needs of a project.

*There will be several types of collaboration and model review meetings needed for the project, including general progress meetings, design coordination meetings, etc. The following table includes, but is not limited to, some of the types of potential meetings necessary for the project, meeting host(s), required attendees, and required technology. Broward County Construction Management Division understands that these meeting may be actual, virtual and/ or a combination of both. The following table describes the schedule for coordination meetings, clash detection meetings, and model walkthroughs. Items in **Red** are REQUIRED.*

**EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2**

BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

	DESIGN INTENT MODELS			
MEETING TYPE	STAGE	FREQUENCY	LOCATION	COMMENTS / PARTICIPANTS
<i>Design Phase BIM Kick-off</i>		<i>1X within 15 days of start of project</i>	<i>On-site</i>	<i>General discussion to make sure all parties are aligned on BIM Requirements</i>
<i>BIM Project Execution Plan Presentation</i>		<i>1X within 30 days of start of project</i>	<i>On-site</i>	<i>BIM PxP Coordinator presents completed BIM PxP to entire team for final sign-off</i>
<i>Design Authoring Coordination Meetings</i>		<i>Weekly</i>	<i>In-Cloud</i>	<i>Coordination and Federation of Design Team Models.</i>
<i>Design Presentations/ Model Walk-throughs</i>		<i>As Needed</i>	<i>On-site</i>	<i>BIM presentations to Project Team for approval and reviews. Geared towards Owner and User Groups.</i>
<i>Design4Maintenance</i>		<i>DD / CD Phases 1X</i>	<i>On-site</i>	<i>BIMs to review equipment maintainability and “soft clash” for clearances.</i>
<i>Data Meeting</i>		<i>DD / CD Phases 1X</i>	<i>In-Cloud / On-site</i>	<i>Review BIMs for data compliance and test import.</i>
<i>Model Handover Meeting</i>		<i>1X</i>	<i>On-site</i>	<i>Meeting to discuss and test interoperability and file exchange.</i>
<i>Design Close-out</i>		<i>2X</i>	<i>On-site</i>	<i>Meeting to finalize Record BIMs and As-built BIMs for close-out.</i>
<i>Construction Phase BIM Kick-off Meeting</i>	STAGE	FREQUENCY	LOCATION	COMMENTS / PARTICIPANTS
<i>Clash / Cord Meetings</i>			<i>On-site</i>	<i>General Guidelines for model laying, area, trade sequencing and reserved zones.</i>
<i>Design4Maintenance</i>			<i>In-Cloud / On-site</i>	
<i>Contractor Handover/ Close-out</i>			<i>On-site</i>	<i>BIMs to review equipment maintainability and “soft clash” for clearances.</i>

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Contractor Handover/ Close-out			TBD	Meeting to finalize Record BIMs and As-built BIMs for close-out.

Part J.2 - Model Delivery Schedule of Information Exchange for Submission and Approval:

Document the information exchanges and file transfers that will occur on the project. Modify the DISCIPLINE column in the table below to match the way that content is segregated into different models on a project.

DISCIPLINE	FILE TYPE	UPLOAD FREQUENCY	DOWNLOAD FREQUENCY
Architectural (Exterior)			
Architectural (Interior)			
Specialty Equipment			
Furniture			
Structural			
Mechanical			
Electrical			
Plumbing			
Civil			
Landscape			

Part J.3 - Electronic Communication Procedures:

The following document management issues should be resolved, and a procedure should be defined for each: Permissions / access, File Locations, FTP Site Location(s), File Transfer Protocol, File / Folder Maintenance, etc.

Part K: Quality Control

Overall Strategy for Quality Control:

**EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2**

BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Describe the strategy to control the quality of the model.

Quality Control Checks:

The following Quality Control Checks should be performed to assure quality:

CHECKS	DEFINITION	RESPONSIBLE PARTY	SOFTWARE PROGRAM(S)	FREQUENCY
VISUAL CHECK	Ensure there are no unintended model components and the design intent has been followed	A/E/C	REVIT / NAVIS	Ongoing
INTERFERENCE CHECK	Detect problems in the model where two building components are clashing including soft and hard	A/E/C	NAVIS	Bi-weekly
STANDARDS CHECK	Ensure that the BIM and County Standards have been followed (fonts, dimensions, line styles, family naming, shared coordinates, etc.)	A/E/C	REVIT / DATA NORMALIZATION	Weekly
MODEL INTEGRITY CHECKS	Describe the QC validation process used to ensure that the Project Facility Data set has no undefined, incorrectly defined or duplicated elements and the reporting process on non-compliant elements and corrective action plans	A/E/C	REVIT	Ongoing
DATA CONTENT CHECK	Conform to County BIM Requirements	A/E/C	DATA NORMALIZATION / MAXIMO	Weekly then monthly
ERROR / WARNING CHECK	Conform to County BIM Requirements	A/E/C	REVIT	Weekly

Part K.1 - Model Maintenance

The following table describes the recommended process for model maintenance. Each discipline shall be responsible for the maintenance of their models. Broward County Construction Management Division requires that all processes below be conducted before submitting model at the completion of each phase of the development of the project. Complete all of the below with the exception of removing unused design options shall be conducted before uploading models for exchange with other team members.

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

PROCESS	FREQUENCY (MINIMUM)
Auditing Central Files	
Compacting	
Removal of Unused Design Options	
Correcting Warning Messages where applicable	On-going (Warnings that have significance shall be resolved. Warnings shall be kept to a reasonable number. An export of warnings in the model shall accompany major milestone deliverables.)
Purging unused objects	
Purging DWG links/imports	
Deletion of unused Sheets & Views	
Resolve duplicate elements	

Part K.2 - Document Revisions

Revisions to documents will be tracked as follows:

DESCRIPTION	DESIGN MODEL	AS- CONSTRUCTED MODEL	DESCRIPTION
RFI's			
Revit Model			
Navisworks			
CCD's			
ASI's			
CO's			

Part K.3 - Model Accuracy and Tolerances:

Models should include all appropriate dimensioning as needed for design intent, analysis, and construction and be provided strictly to the following tolerances:

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

PHASE	DISCIPLINE	TOLERANCE
EXISTING CONDITIONS MODEL	CIVIL (UNDERGROUND)	ACCURATE TO +/- (6") OF ACTUAL SIZE ACCURATE TO +/- (12") OF ACTUAL LOCATION
EXISTING CONDITIONS MODEL (ACCESSIBLE ITEMS)	ARCHITECTURAL STRUCTURAL MEPFP	ACCURATE TO +/- (1/8") OF DESIGN INTENT SIZE ACCURATE TO +/- (2") OF DESIGN INTENT LOCATION
DESIGN DOCUMENT MODELS	CIVIL ARCHITECTURAL STRUCTURAL MEPFP	ACCURATE TO +/- (1/8") OF DESIGN INTENT SIZE ACCURATE TO +/- (2") OF DESIGN INTENT LOCATION
SHOP DRAWINGS MODELS	CIVIL INTERIORS ENVELOPE STRUCTURAL MEPFP	ACCURATE TO +/- (1/16") OF ACTUAL SIZE ACCURATE TO +/- (1") OF ACTUAL LOCATION
AS-BUILT MODELS	INTERIORS NOT RELATED TO CODE	ACCURATE TO +/- (1/8") OF ACTUAL SIZE ACCURATE TO +/- (2") OF ACTUAL LOCATION
AS-BUILT MODELS	INTERIORS RELATED TO CODE	ACCURATE TO +/- (1/8") OF ACTUAL SIZE ACCURATE TO +/- (1/4") OF ACTUAL LOCATION
AS-BUILT MODELS	CIVIL INTERIORS ENVELOPE STRUCTURAL MEPFP	ACCURATE TO +/- (1/16") OF ACTUAL SIZE ACCURATE TO +/- (1") OF ACTUAL LOCATION

Part K.4 - BIM Folder Structure for Deliverables:

The following folder structure is the standard folder structure for BIM-related files that will be used on Broward County Construction Management Division projects. No deviations from this folder structure will be permitted without a Proposed Variance Request. However, if desired, each project team may add subfolders where necessary, as defined in the BIMPxP and approved by Broward County Construction Management Division.

Project Documents for Design BIMs

- Design BIM Execution Plan (Owner, AE)
- Design BIM Analysis Reports (Owner, AE)
- Coordination Logs and Reports
- Design Model Deliverables (Public)
 - Models Used to Produce SD
 - Models Used to Produce DD
 - Models Used to Produce CD

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

- Models Used to Produce Agency Submittals
- Models for Permitting/ Conformance
- Models for Construction Manager
- COBie Data Deliverables
- BIM Project Close-out
 - Record Floor Plans
 - Record BIMs
 - Federated Record BIM
 - COBie Data Final Deliverable
- Other

Project Documents for Construction BIMs

- Owner BIM Execution Plan (Owner, CM, BIM Subs)
- Construction BIM Analysis Reports (Owner, GC)
- Coordination Logs and Reports
- Coordination Models
- Trade Models
 - Models Used to Produce Final Shop Drawings
 - Models Used to Produce 4D
 - Schedule Data Used to Produce 4D
 - Models Used to Produce 5D
 - Model Quantities Used to Produce 5D
- COBie Data Deliverables
- BIM Project Close-Out
 - As-Built Models
 - Federated As-Built Models
 - Record Models
 - Federated Record Models
 - COBie Data Final Deliverable
- Other
 -

Part L: Technological Infrastructure Needs

Software:

Broward County Construction Management Division uses Autodesk Revit Suite for projects. Other IFC Compatible software than what is listed in the Broward County Construction

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Management Division BIM Standard will be reviewed for use, but such use requires prior approval by Broward County Construction Management Division.

List software used to deliver BIM in the table below. List any add-on software that is required to open, read or manipulate files as well. Indicate the 2D export deliverable file format for each software. The lines listed below are a sample and shall be modified for a project.

BIM USE	DISCIPLINE(S)	SOFTWARE	VERSION / BUILD	2D FILE FORMAT DELIVERABLE
Authoring				
Authoring				
Authoring				
Authoring				
Authoring				
Clash Detection				
Energy Analysis				
Cost Analysis				

Part M: Model Structure

Part M.1 - File Naming Structure:

Determine and list the structure for model file names. Design Team CAD File names shall be listed in a document entitled the **“Drawing List with Authoring Company and File Names”** to be attached to this document.

FILE NAMES (Design Intent Models)	
Architectural Model	
Civil Model	
Mechanical Model	
Plumbing Model	
Electrical Model	
Structural Model	
Energy Model	
Coordination Model	

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Part M.3 - Measurement and Coordinate Systems:

Broward County Construction Management Division will develop with the consultant a CAD file indicating the Broward County Construction Management Division Site Origin Point and the footprint(s) of the building(s) where applicable. Broward County Construction Management Division will also provide 2D and 3D AutoCAD blocks and a 3D generic model family to be placed at the origin of ALL Design Intent BIMs, Construction BIMs and CAD files to confirm that files are aligned.

All Revit files shall have their project base point at the Revit project startup location. All CAD and Revit files that are to be linked to the Revit file using the “Origin to Origin” option. All plan-based CAD files shall use the Broward County Construction Management Division Site Origin Point as well as their 0,0 WCS origin. The 0 level in the “Z” coordinate shall match the survey datum of “0” used by the Civil Engineer in their surveys. This will ensure that all files for all buildings across the Broward County Construction Management Division campus will align to a single origin and that Revit level tags will report the true elevations of the floors.

Civil AutoCAD 2D and Civil 3D files will need to be modified prior to linking because they use an origin point that is different than the Broward County Construction Management Division Site Origin Point. It is typically outside the distance allowed by Revit. Broward County Construction Management Division’s CAD-BIM Manager can provide instructions on this.

Units shall be Imperial units. Civil 2D AutoCAD or Civil 3D files may be set with 1 unit equals 1 foot. Revit files will be set with 1 unit equals 1 foot. All other AutoCAD files including Revit exports shall be set with 1 unit equals 1 inch.

Part M.4 - Worksets:

Each discipline shall be responsible for the naming of the worksets within their files. The only required worksets are LinkCAD-Description and LinkBIM-Description. Any linked CAD files or BIM files shall be placed on these worksets so that Revit files can be opened without loading these worksets for ease of upgrading the files.

List Worksets used by discipline below:

DISCIPLINE	WORKSET	DESCRIPTION
Arch, M, E, P, Struct	LinkCAD-All	Workset for all CAD links
M, E, P, Struct	LinkBIM-Arch	Workset for Architectural Revit file
Arch, E, P, Struct	LinkBIM-Mech	Workset for Mechanical Revit file
Arch, M, P, Struct	LinkBIM-Elec	Workset for Electrical Revit file

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

DISCIPLINE	WORKSET	DESCRIPTION
Arch, M, E, Struct	LinkBIM-Plumb	Workset for Plumbing Revit file
Arch, M, E, P	LinkBIM-Struct	Workset for Structural Revit file
Arch, M, E, P, Struct	Levels and Grids	Levels, Grids
Arch	Shell	Building Shell
Arch	Core	Elevators, Stairs
Arch	Interior-B	Basement Interior Fit-out
Arch	Interior-1	1 st floor Interior Fit-out

Part M.5 - Color Coding:

Federated models shall follow the trade colors listed below:

- a. Architecture: White
- b. Structural Steel: Maroon
- c. Concrete: Gray
- d. HVAC Equipment: Gold
- e. HVAC Supply Duct/Diffuser: Blue
- f. HVAC Return Duct/Diffuser: Magenta
- g. HVAC Pipe: Gold
- h. Electrical Equipment: Dark Yellow
- i. Electrical Conduits: Light Yellow
- j. Communication Conduit: Light Blue
- k. Electrical Cable Tray: Dark Orange
- l. Electrical Lighting: Yellow
- m. Plumbing Water: Cyan
- n. Plumbing Sewer: Magenta
- o. Plumbing Storm Drain: Green
- p. Fire Protection: Red
- q. Pneumatic Tube: Dark Green
- r. Equipment: Light Green
- s. Specialty Gas: Light Green
- t. Security Systems: Orange
- u. Fire Alarm: Fuchsia

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**EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2**

BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Part N: Attachments

1. Drawing List with Authoring Company and File Names (see Part 4, M.1)
2. Model Progression Schedule (see Section 5)
- 3.

Approvals:

By signing below, this BIM Execution Plan is adopted and agreed upon between the signed companies.

DISCIPLINE	NAME	SIGNATURE	DATE
Broward County Construction Management Division			
Architect			
Mechanical Engineer			
Electrical Engineer			
Plumbing Engineer			
Fire Protection Engineer			
Structural Engineer			
Civil Engineer			
Surveyor			
Geotech/ Soil borings			
BIM Consultant			
Construction Manager			
Construction Consultants			

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

DISCIPLINE	NAME	SIGNATURE	DATE
Other			

End - Section 4 BIM Execution Plan

EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2

BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Section 5 BIM Model Progression Schedule



Model Progression Schedule / Agent Responsible Mat

Overview and Intent of this Document.

Broward County Public Works and the Construction Management Divisions have created this Model Progression Schedule (MPS) and Agent Responsible Matrix (ARM) for use in the planning and procurement of BIM projects. This Matrix is based off of BIMForum's 2017 LOD **Specification** and serves as a reference document. This reference enables practitioners to specify and articulate with a high level of clarity the content and reliability of BIMs at various stages in the design and construction process. The County has prescribed minimum LOD's that are required at project milestones, however does not dictate workflow to achieve these requirements and leaves the completion of the Model Progressions to the users. This matrix defines Broward County's priorities for the development of project BIMs, the responsibilities of the External Team Members, and the phases to which the BIMs will be delivered and to what level of development is expected. The Model Element Tab includes the BIM Elements that are to be defined and the LOD tab includes Level of Development definitions. This chart will be included in RFP's that require BIM and is a tool to be used for contract negotiation upon project award.

Instructions for completing this Document.

- 1 The MPS/ ARM will be included in the RFP for all BIM Projects. Upon Contract award, your team shall complete the MPS as part of the contract negotiation process, **and be prepare to discuss hand-off & coordination.**
- 2 Click on the Model Element Tab Below to complete the MPS as is applicable to your project.
- 3 Insert the Level of Development and the Agent Responsible and Contracted to Deliver that Element.
- 4 Once agreed upon, this document will become a contract document and will be included in the teams BIMPxP.
- 5 When completing the MPS, Please check the box on the top of the MPS to show stage of the MPS submittal ie RFP, Proposed, Approved.

RFP: Required for this Project by **Broward County- - Construction Management Division**

Proposed: The Design or Construction Professional changes the status to Proposed for all Elements that are to be included in the project Models.


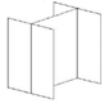



Approved: The Model Elements and Progression that is contracted to be included in the Design **Consultant** and Construction **Contractor** Team's scope of work.

Questions, suggestions or concerns with completing this document should be directed to the **BC-Purchasing contact or **BC-PW-CMD Project Manager** listed on the RFP or Project Documents.**

**EXHIBIT A - SCOPE OF WORK
ATTACHMENT 2**

BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

Level of Development Definitions (graphically described):

Fundamental LOD Definitions		
LOD 100 - Massing / Planning Level		
The Model Element may be graphically represented in the Model with a symbol or other generic representation, but does not satisfy the requirements for LOD 200. Information related to the Model Element (i.e. cost per square foot, tonnage of HVAC, etc.) can be derived from other Model Elements.		
BIMForum Interpretation: LOD 100 elements are not geometric representations. Examples are information attached to other model elements or symbols showing the existence of a component but not its shape, size, or precise location. Any information derived from LOD 100 elements must be considered approximate.		
LOD 200 - Generic Design Level		
The Model Element is graphically represented within the Model as a generic system, object, or assembly with approximate quantities, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.		
BIMForum interpretation: At this LOD elements are generic placeholders. They may be recognizable as the components they represent, or they may be volumes for space reservation. Any information derived from LOD 200 elements must be considered		
LOD 300 - Design Coordination Level		
The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of quantity, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.		
BIMForum interpretation: The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension call-outs. The project origin is defined and the element is located accurately with respect to the project origin.		
LOD 350 - Construction Coordination Level		
The Model Element is graphically represented within the Model as a specific system, object, or assembly in terms of quantity, size, shape, location, orientation, and interfaces with other building systems. Non-graphic information may also be attached to the Model Element.		
BIMForum interpretation: Parts necessary for coordination of the element with nearby or attached elements are modeled. These parts will include such items as supports and connections. The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension call-outs.		
LOD 400 - Fabrication Level		
The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly, and installation information. Non-graphic information may also be attached to the Model Element.		
BIMForum interpretation: An LOD 400 element is modeled at sufficient detail and accuracy for fabrication of the represented component. The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension call-outs.		

**EXHIBIT A - SCOPE OF WORK
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BIM REQUIREMENTS & ELECTRONIC MEDIA SUBMITTAL REQUIREMENTS

BIM – Model Progression Schedule (MPS) (Level #6):

The Broward County – Model Progression Schedule will be distributed by the CMD- Project Manager in Word Excel file as an example BIM-MPS. See ‘link’ (below).

“Copy of Copy of LOD MPS BC Draft 072618 - PS-ND-DC draft #4 2018 07 26”

End of Attachment 2
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THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Consultant Name: Saltz Michelson Architects, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$85.82		2.99		\$256.60
Senior Project Manager	\$52.88		2.99		\$158.11
Project Manager	\$43.27		2.99		\$129.38
Project Specialist III	\$35.58		2.99		\$106.38
Project Specialist II	\$26.44		2.99		\$79.06
Project Specialist I	\$21.00		2.99		\$62.79
Designer	\$49.68		2.99		\$148.54
Administrative Assistant	\$26.08		2.99		\$77.98

Multiplier of 2.99 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (114.56%)

FRINGE = HOURLY RATE X FRINGE (56.98%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.99

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: Chen Moore and Associates, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$85.00		2.82		\$239.70
Project Director	\$76.92		2.82		\$216.91
Senior Project Manager	\$65.00		2.82		\$183.30
Project Manager	\$61.20		2.82		\$172.58
Senior Engineer	\$61.20		2.82		\$172.58
Project Engineer	\$45.75		2.82		\$129.02
Engineer	\$33.65		2.82		\$94.89
Senior Landscape Architect	\$43.27		2.82		\$122.02
Project Landscape Architect	\$41.59		2.82		\$117.28
Senior Construction Specialist	\$38.30		2.82		\$108.01
Construction Specialist	\$33.16		2.82		\$93.51
Senior Designer	\$40.87		2.82		\$115.25
Designer/Technician	\$28.96		2.82		\$81.67
Administrative Assistant	\$26.92		2.82		\$75.91

Multiplier of 2.82 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (127.83%)

FRINGE = HOURLY RATE X FRINGE (28.63%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.82

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: DeRose Design Consultants, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Senior Project Manager	\$118.45		2.68		\$260.00**
Project Manager	\$56.50		2.68		\$151.42
Senior Engineer (PE) QA/QC Engineer	\$97.26		2.68		\$260.66
Project Engineer	\$43.56		2.68		\$116.74
Design Engineer	\$33.59		2.68		\$90.02
BIM/CAD Manager	\$62.53		2.68		\$167.58
BIM/CAD Designer	\$31.06		2.68		\$83.24
Designer	\$45.45		2.68		\$121.81
Project Support Specialist	\$43.40		2.68		\$116.31

Multiplier of 2.68 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (102.34%)

FRINGE = HOURLY RATE X FRINGE (40.96%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.68

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: Francis Engineering, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$95.24		2.31		\$220.00
Designer	\$32.47		2.31		\$75.01

Multiplier of 2.31 is calculated as follows: **Safe Harbor Elected**

OVERHEAD = HOURLY RATE X OVERHEAD (100%)

FRINGE = HOURLY RATE X FRINGE (10%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.31

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: Johnson, Avedano, Lopez, Rodriguez & Walewski Engineering Group, Inc. (JALRW)

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal in Charge/ Project Manager	\$72.12		2.84		\$204.82
HVAC Engineer (PE)	\$72.12		2.84		\$204.82
HVAC Designer	\$37.50		2.84		\$106.50
Plumbing Engineer (PE)	\$72.12		2.84		\$204.82
Plumbing Designer	\$45.67		2.84		\$129.70
Electrical Engineer (PE)	\$46.92		2.84		\$133.25
Electrical Designer	\$31.25		2.84		\$88.75
BIM Manager	\$45.67		2.84		\$129.70
BIM Technician	\$28.00		2.84		\$79.52
Administrative Assistant	\$17.00		2.84		\$48.28

Multiplier of 2.84 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (131%)

FRINGE = HOURLY RATE X FRINGE (30%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (9%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.84**

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: Solutech Environmental Consultants, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$64.94		2.31		\$150.01
Professional Engineer	\$54.12		2.31		\$125.02
Professional Geologist	\$54.12		2.31		\$125.02
Wetland Specialist/Biologist	\$47.62		2.31		\$110.00
Project Engineer	\$41.13		2.31		\$95.01
Project Manager	\$32.47		2.31		\$75.01
Project Scientist	\$28.14		2.31		\$65.00
Sampling Technician	\$23.81		2.31		\$55.00
Drafting Technician	\$19.48		2.31		\$45.00
Clerical	\$19.48		2.31		\$45.00

Multiplier of 2.31 is calculated as follows: **Safe Harbor Elected**

OVERHEAD = HOURLY RATE X OVERHEAD (100%)

FRINGE = HOURLY RATE X FRINGE (10%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.31

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: The Spinnaker Group Management, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$89.73		2.31		\$207.28
Senior LEED Project Manager	\$52.20		2.31		\$120.58
LEED Project Manager	\$48.90		2.31		\$112.96
Building Energy Modeling Professional (P.E.)	\$48.25		2.31		\$111.46
Senior Commissioning Agent	\$48.25		2.31		\$111.46
Commissioning Agent	\$46.14		2.31		\$106.58
Administrative	\$32.50		2.31		\$75.08

Multiplier of 2.31 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (100%) **Safe Harbor Elected**

FRINGE = HOURLY RATE X FRINGE (10%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.31

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT B-1
SALARY COST RATES**

RLI No: R0930411R1
Sub Consultant Name: Tierra South Florida, Inc.

FILL IN POSITIONS AS APPLICABLE

TITLE	MAXIMUM HOURLY RATE (\$/HR)	X	MULTIPLIER	=	MAXIMUM BILLING RATE (\$/HR)
Principal	\$67.31		2.76		\$185.78
Project Manager	\$51.68		2.76		\$142.64
Senior Engineer	\$53.85		2.76		\$148.63
Project Engineer	\$45.67		2.76		\$126.05
Senior Technician/CAD	\$33.65		2.76		\$92.87
Building Inspector	\$26.00		2.76		\$71.76
Secretary	\$22.12		2.76		\$61.05

Multiplier of 2.76 is calculated as follows:

OVERHEAD = HOURLY RATE X OVERHEAD (106.85%)

FRINGE = HOURLY RATE X FRINGE (44.42%)

PROFIT = (HOURLY RATE + OVERHEAD + FRINGE) X PROFIT (10%)

MULTIPLIER = (HOURLY RATE + OVERHEAD + FRINGE + PROFIT) /
HOURLY RATE

2.76

END OF SECTION

THIRD AMENDMENT

**New Facilities for The Human Services Department Broward Addiction Recovery Center
Central and Nancy J. Cotterman Center**

**EXHIBIT C
SCHEDULE OF CBE PARTICIPATION**

Project Title: New Facilities for the Human Services Department
 Facility Names: Broward Addiction Recovery Center Central - CMD:5219-2003-00
 Nancy J. Cotterman Sexual Assault Treatment Center - CMD:5209-2004-00

CBE/Firm	CBE Category	Description	Original CBE Commitment	Amended CBE Commitment	% of Basic Service Fees
DeRose Design Consultants	CBE	Structural Engineering	\$ 116,100.00	<u>\$ 176,150.00</u>	6.76%
Francis Engineering	CBE	Fire Protection	\$ 11,200.00	<u>\$ 15,816.00</u>	.61%
Chen Moore & Associates	CBE	Civil Engineering/ Landscape Architecture	\$ 77,886.00	<u>\$ 187,440.06</u>	7.20%
The Spinnaker Group	CBE	LEED Consulting	\$ 111,697.00	<u>\$ 103,341.00</u>	3.79%
Tierra South Florida	CBE	Optional Services Geotechnical/ Environmental	\$ 13,082.00	<u>\$ 26,698.77</u>	.91%
CMS-Construction Management Services	CBE	Optional Services—Cost Estimating	\$ 14,348.00	<u>\$ 14,348.00</u>	.55%
Total CBE Participation			\$ 344,313.00	\$520,793.83	20.00%

END OF SECTION

**THIRD AMENDMENT
NANCY J COTTERMAN CENTER**

**EXHIBIT C – 1
SCHEDULE OF SUBCONSULTANT PARTICIPATION**

Project Title: New Facilities for the Human Services Department
Facility Names: Broward Addiction Recovery Center Central - CMD:5219-2003-00
Nancy J. Cotterman ~~Sexual Assault Treatment~~ Center - CMD:5209-2004-00

No.	Firm Name	Discipline
1.	Saltz Michelson Architects, Inc.	Architecture
2.	JALRW Engineering Group, Inc.	MEP Engineering
3.	DeRose Design Consultants, Inc.	Structural Engineering
4.	Francis Engineering, Inc.	Fire Protection
5.	Chen Moore and Associates, Inc.	Civil Engineering and Landscape Architecture
6.	Keith and Associates, Inc.	Optional Services
7.	The Spinnaker Group	LEED Consulting
8.	CMS-Construction Management Services, Inc.	Cost Estimating
9.	Tierra South Florida, Inc.	Geotechnical/Environmental
10.	<u>Solutech Environmental Consultants, Inc.</u>	<u>Environmental</u>

END OF SECTION

THIRD AMENDMENT
NANCY J COTTERMAN CENTER

EXHIBIT E
INSURANCE CERTIFICATE

Client#: 1048451

SALTZMIC1

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
11/02/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER USI Insurance Services, LLC 2502 N Rocky Point Drive Suite 400 Tampa, FL 33607		CONTACT PHONE (A/C, No, Ext): 813 321-7500 FAX (A/C, No): E-MAIL ADDRESS: INSURER(S) AFFORDING COVERAGE NAIC #	
INSURED Saltz Michelson Architects, Inc. 3501 Griffin Road Fort Lauderdale, FL 33312		INSURER A : Travelers Property Cas. Co. of America 25674 INSURER B : Commerce & Industry Insurance Co. 19410 INSURER C : Travelers Casualty and Surety Co of Ame 31194 INSURER D : Everest National Insurance Company 10120 INSURER E : INSURER F :	

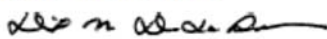
COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSTR LTR	TYPE OF INSURANCE	ADOL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	X	X	6601D208313	05/08/2018	05/08/2019	EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Per occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$2,000,000 GENERAL AGGREGATE \$4,000,000 PRODUCTS - COM/OP AGG \$4,000,000
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY	X	X	6601D208313	05/08/2018	05/08/2019	COMBINED SINGLE LIMIT (Per accident) \$2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED. <input checked="" type="checkbox"/> RETENTION \$0	X	X	EBU020409933	05/08/2018	05/08/2019	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	X	N/A	UB0K953533	04/01/2018	04/01/2019	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
D	Professional Liability			PL5EO0025918	06/14/2018	06/14/2019	\$3,000,000 per claim \$3,000,000 annl aggr.

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached)
 Professional Liability coverage is written on a claims-made basis.
 RE: Design NJCC SMA
 Broward County shall be listed as Certificate Holder and endorsed as an additional insured for liability, except as to Professional Liability and workers compensation policies as required by written contract. County shall be provided 30 days written notice of cancellation, 10 days' notice of (See Attached Descriptions)

Digitally signed by TIMOTHY CROWLEY
 DN: cn=timothy.crowley@acord.com, ou=Organization, ou=BCC, ou=IRM, ou=Users, cn=TIMOTHY CROWLEY
 Date: 2018.11.05 09:18:22 -0500

CERTIFICATE HOLDER Broward County 115 S. Andrews Avenue Fort Lauderdale, FL 33301	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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ACORD 25 (2016/03) 1 of 2
 #524216927/M23295865

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MRLEW

THIRD AMENDMENT
NANCY J COTTERMAN CENTER

EXHIBIT E
INSURANCE CERTIFICATE

DESCRIPTIONS (Continued from Page 1)

cancellation for non-payment. Primary coverage is provided and shall not require contribution from the County, self-insurance or otherwise.