

# DRAFT AIA® Document E202™ - 2008

## Building Information Modeling Protocol Exhibit

This Exhibit is incorporated into the accompanying agreement (the "Agreement") dated the « » day of « » in the year «2015»  
(In words, indicate day, month and year.)

### BETWEEN:

(Name, address and contact information, including electronic addresses)

«City of Durham »«, City of Durham »  
«101 City Hall Plaza  
Durham, NC 27701»  
«Telephone Number: 919-560-4197»  
«Fax Number: 919.560.4970 »

### AND:

(Name, address and contact information, including electronic addresses)

«O'Brien Atkins»« O'BRIEN/ATKINS ASSOCIATES P.A.»  
«5001 South Miami Blvd.  
Durham, NC 27703»  
«Telephone Number: 919-941-9000»  
«Fax Number: 919-941-9006»

for the following Project:

(Name and location or address)

«Durham Police Headquarters Complex»  
«113 S Elizabeth St, Parcel ID 102868, 2.837 acres  
601 E Ramseur St, Parcel ID 102870, 0.235 acres  
605 E Ramseur St, Parcel ID 102871, 0.17 acres  
101 S Elizabeth St, Parcel ID 102869, 0.747 acres  
616 E Main St, Parcel ID 102890, 0.45 acres  
102 Hood St, Parcel ID 102889, 0.084 acres»  
« »

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### ARTICLE 1 GENERAL PROVISIONS

§ 1.1 This Exhibit establishes the protocols, expected levels of development, and authorized uses of Building Information Models on this Project and assigns specific responsibility for the development of each Model Element to a defined Level of Development at each Project phase. Where a provision in this Exhibit conflicts with a provision in the Agreement into which this Exhibit is incorporated, the provision in the Agreement will prevail.

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

§ 1.1.1 The parties agree to incorporate this Exhibit by reference into any other agreement for services or construction for the Project.

§ 1.1.2 The parties to this agreement acknowledge that the creation of Building Information Model(s) for the Project may require certain licenses and rights to use information technology and software ("Licensed BIM Technology") necessary to create Model(s). Notwithstanding the proprietary rights in such Licensed BIM Technology, each person or entity supplying or creating data or information for input into the Licensed BIM Technology necessary to create a Model hereby assigns to the Owner all copyrights in the data or information supplied or created.

§ 1.1.3 Each person or entity supplying or creating data or information for BIM Technology input hereby represents and warrants to the Owner and to other undersigned persons that it holds all licenses in the data or information needed to allow the Owner the ability to adequately review and evaluate the data or information on this Project.

## § 1.2 Definitions

§ 1.2.1 **Building Information Model.** A Building Information Model(s) is a digital representation of the physical and functional characteristics of the Project and is referred to in this Exhibit as the "Model(s)," which term may be used herein to describe a Model Element, a single Model or multiple Models used in the aggregate. "Building Information Modeling" means the process and technology used to create the Model.

§ 1.2.2 **Level of Development.** The Level(s) of Development (LOD) describes the level of completeness to which a Model Element is developed.

§ 1.2.3 **Model Element.** A Model Element is a portion of the Building Information Model representing a component, system or assembly within a building or building site. For the purposes of this Exhibit, Model Elements are represented by the Construction Specifications Institute (CSI) UniFormat™ classification system in the Model Element Table at Section 4.3.

§ 1.2.4 **Model Element Contributor.** The Model Element Contributor is the party responsible for developing the content of a specific Model Element to the LOD required for a particular phase of the Project. Model Element Contributors are identified in the Model Element Table at Section 4.3.

§ 1.2.5 **Model User.** The Model User refers to any individual or entity authorized by the Owner to use the Model on the Project, such as for analysis, estimating or scheduling.

§ 1.2.6 **Model Manager.** The Model Manager refers to the individual or entity who is responsible for the assembly, control, and integrity of the Model or Models. Owner designates the following person or entity to serve as the initial Model Manager: « O'BRIEN/ATKINS ASSOCIATES P.A. ». That designation may be changed by the owner by written notice to appropriate Model Element Contributors and Model Users.

§ 1.2.7 **Licensed BIM Technology.** Licensed BIM Technology refers to the proprietary information technology or software used to create the Model(s) for the project.

## ARTICLE 2 PROTOCOL

### § 2.1 Coordination and Conflicts

Where conflicts are found in the Model, regardless of the phase of the Project or LOD, the discovering party shall promptly notify the Model Manager and appropriate Model Element Contributor(s). Upon such notification, the Model Manager and appropriate Model Element Contributor (s) shall act promptly to mitigate the conflict.

### § 2.2 Model Ownership

In contributing content to the Model, the Model Element Contributor does not convey any ownership right in the Licensed BIM Technology used to generate the content. Unless otherwise granted in a separate license, any subsequent Model Element Contributor's and Model User's right to use, modify, or further transmit the Model is specifically limited to the design and construction of the Project, and nothing contained in this Exhibit conveys any other right to use the Model for another purpose. unless either: (a) the Agreement into which this Exhibit is incorporated provides for another use; (b) another use is otherwise licensed by the express terms of this Exhibit; or

(c) Owner has provided an express, written license to the Model Element Contributor or the Model user to the contrary.

### § 2.3 Model Requirements

**§ 2.3.1 Model Standard.** The Model shall be developed in accordance with the following standard, if any: *(Set forth below object naming conventions, graphic standards, common symbology, etc., or state an applicable standard, such as the National Building Information Model Standards (NBIMS).)*

« »

**§ 2.3.2 File Format(s).** Models shall be delivered in the following format(s) as appropriate to the use of the Model:

**Use of Model**

**Required File Format(s)**

### § 2.4 Model Management

**§ 2.4.1** The requirements for managing the Model include, but are not limited to, the duties set forth below in this Section 2.4. The Architect will manage the Model from the inception of the Project. If the responsibility for Model management will be assigned to another party at a particular phase of the Project, indicate below the identity of the party that will assume that responsibility, and the phase at which that party will assume those responsibilities.

**Responsible Party**

**Project Phase**

**§ 2.4.2 Initial Responsibilities.** The party responsible for managing the Model shall facilitate the establishment of protocols for the following:

- .1 Model origin, coordinate system, and units
- .2 File storage location(s)
- .3 Processes for transferring and accessing Model files
- .4 Clash detection
- .5 Access rights
- .6 Other protocols:  
*(Insert additional protocols below.)*

« Nothing in the foregoing Section 2.4.2 shall relieve the Architect of the full breadth of its professional obligations and duties with respect to the Project and the Model. »

**§ 2.4.3 Ongoing Responsibilities.** The party responsible for managing the Model shall have the following ongoing responsibilities:

- .1 Collect incoming Models:
  - .1 Coordinate submission and exchange of Models
  - .2 Log incoming Models
  - .3 Validate that files are complete and usable and in compliance with applicable protocols
  - .4 Maintain record copy of each file received
- .2 Aggregate Model files and make available for viewing
- .3 Perform clash detection in accordance with established protocols and issue periodic clash detection reports
- .4 Maintain Model archives and backups
- .5 Manage access rights
- .6 Follow protocols established in Section 2.4.2

**§ 2.4.3.1** Nothing in the foregoing Section 2.4.3 (or elsewhere in this Exhibit) shall relieve the Architect of the full breadth of its professional obligations with respect to the Project and the Model.

**§ 2.4.4 Model Archives.** The party responsible for Model management as set forth in this Section 2.4 shall produce a Model Archive at the end of each Project phase and shall preserve the Model Archive as a record that may not be altered for any reason.

§ 2.4.4.1 The Model Archive shall consist of two sets of files. The first set shall be a collection of individual Models as received from the Model Element Contributor(s). The second set of files shall consist of the aggregate of those individual Models in a format suitable for archiving and viewing. The second set shall be saved in the following file format:

« »

§ 2.4.4.2 Additional Model Archive requirements, if any, are as follows:

« The Model Manager shall maintain at all times at least two complete electronic copies of back-up files of all Model-related data and digital information. The back-up files shall be stored and secured on a weekly basis in secure servers at locations remote to the primary office of the Model Manager. Storage sites shall be at least ten miles from each other. The Model Manager shall coordinate with the Owner to provide the Owner on a weekly basis (or at some other interval specified by the Owner) a digital copy of all pertinent Models. The Owner shall have access electronically and physically to all Project-related Models and Model servers and the Model Manager shall provide Licensed BIM Technology to the Owner to enable the Owner's access to the Model(s) for the entire duration of the Project and for thirty-six (36) months following final completion of the Project (or termination of the Project for convenience). Should the Owner terminate for cause the Agreement into which this Exhibit is incorporated, the Model Manager shall provide Licensed BIM Technology access to the Owner to all applicable Project-related Models for a period of forty-eight (48) months after termination or for twelve (12) months after final resolution of all disputes between the Owner and others on the Project, whichever period ends later »

§ 2.4.4.3 The procedures for storing and preserving the Model upon final completion of the Project are as follows:

« »

§ 2.4.5 Other requirements for Model management, if any, are as follows:

*(Describe in detail any other Model management requirements.)*

« »

### ARTICLE 3 LEVEL OF DEVELOPMENT

§ 3.1 The following LOD descriptions identify the specific content requirements and associated authorized uses for each Model Element at five progressively detailed levels of completeness. Each subsequent LOD builds on the previous level and includes all the characteristics of previous levels. The parties shall utilize the five LOD described below in completing the Model Element Table at Section 4.3, which establishes the required LOD for each Model Element at each phase of the Project.

#### § 3.2 LOD 100

§ 3.2.1 **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.

#### § 3.2.2 Authorized Uses

§ 3.2.2.1 **Analysis.** The Model may be analyzed based on volume, area and orientation by application of generalized performance criteria assigned to the representative Model Elements.

§ 3.2.2.2 **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, condominium unit, hospital bed, etc.).

§ 3.2.2.3 **Schedule.** The Model may be used for project phasing and overall duration.

§ 3.2.2.4 **Other Authorized Uses.** Additional authorized uses of the Model developed to a Level 100, if any, are as follows:

« Any other use authorized in writing by the Owner »

### § 3.3 LOD 200

**§ 3.3.1 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.

#### § 3.3.2 Authorized Uses

**§ 3.3.2.1 Analysis.** The Model may be analyzed for performance of selected systems by application of generalized performance criteria assigned to the representative Model Elements.

**§ 3.3.2.2 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).

**§ 3.3.2.3 Schedule.** The Model may be used to show ordered, time-scaled appearance of major elements and systems.

**§ 3.3.2.4 Other Authorized Uses.** Additional authorized uses of the Model developed to a Level 200, if any, are as follows:

« Any other use authorized in writing by the Owner »

### § 3.4 LOD 300

**§ 3.4.1 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.

#### § 3.4.2 Authorized Uses

**§ 3.4.2.1 Construction.** Suitable for the generation of traditional construction documents and shop drawings.

**§ 3.4.2.2 Analysis.** The Model may be analyzed for performance of selected systems by application of specific performance criteria assigned to the representative Model Elements.

**§ 3.4.2.3 Cost Estimating.** The Model may be used to develop cost estimates based on the specific data provided and conceptual estimating techniques.

**§ 3.4.2.4 Schedule.** The Model may be used to show ordered, time-scaled appearance of detailed elements and systems.

**§ 3.4.2.5 Other Authorized Uses.** Additional authorized uses of the Model developed to a Level 300, if any, are as follows:

« Any other use authorized in writing by the Owner »

### § 3.5 LOD 400

**§ 3.5.1 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.

#### § 3.5.2 Authorized Uses

**§ 3.5.2.1 Construction.** Model Elements are virtual representations of the proposed element and are suitable for construction.

**§ 3.5.2.2 Analysis.** The Model may be analyzed for performance of approved selected systems based on specific Model Elements.

**§ 3.5.2.3 Cost Estimating.** Costs are based on the actual cost of specific elements at buyout.

**§ 3.5.2.4 Schedule.** The Model may be used to show ordered, time-scaled appearance of detailed specific elements and systems including construction means and methods.

**§ 3.5.2.5 Other Authorized Uses.** Additional authorized uses of the Model developed to a Level 400, if any, are as follows:

« Any other use authorized in writing by the Owner. »

**§ 3.5.2.6** At each design phase, at each significant point in development of the Model(s), at the permitting phase, and at the "for construction" phase of development of Model(s) used for construction or fabrication, the Model Manager shall prepare a printed or scanned fixed image of the complete set of Model documents, and shall present a copy of them, together with a digital file of the Model(s) to the Owner.

### **§ 3.6 LOD 500**

**§ 3.6.1 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.

### **§ 3.6.2 Authorized Uses**

**§ 3.6.2.1 General Usage.** The Model may be utilized for maintaining, altering, and adding to the Project, but only to the extent consistent with any licenses granted in the Agreement or in a separate licensing agreement.

**§ 3.6.2.2 Other Authorized Uses.** Additional authorized uses of the Model developed to a Level 500, if any, are as follows:

« Any other use authorized in writing by the Owner. »

## **ARTICLE 4 MODEL ELEMENTS**

### **§ 4.1 Reliance on Model Elements**

**§ 4.1.1** The Model Element Table at Section 4.3 identifies (1) the LOD required for each Model Element at the end of each Project phase, and (2) the Model Element Contributor responsible for developing the Model Element to the LOD identified. Each Model Element Contributor's content is intended to be shared with subsequent Model Element Contributor and Model Users throughout the course of the Project.

**§ 4.1.2** It is understood that while the content of a specific Model Element may include data that exceeds the required LOD identified in Section 4.3 for a particular phase, Model Users and subsequent Model Element Contributors may rely on the accuracy and completeness of a Model Element consistent only with the content required for a LOD identified in Section 4.3. Should a question arise on the part of any Project participant regarding the extent, completeness, accuracy, or reliability of the data in the Model, it is the obligation of that participant to raise the question with the Model Element Contributor and with the Model Manager without delay. Nothing in this clause or in this Exhibit should be construed as creating a duty upon the Owner to evaluate or analyze Model Data; and the Owner is entitled to rely on the accuracy and completeness of the Model.

**§ 4.1.3** Any use of, or reliance on, a Model Element inconsistent with the LOD indicated in Section 4.3 by subsequent Model Element Contributors or Model Users shall be at their sole risk and without liability to the Model Element Contributor. To the fullest extent permitted by law, subsequent Model Element Contributors and Model Users shall indemnify and defend the Model Element Contributor and the Owner from and against all claims arising from or related to the subsequent Model Element Author's or Model User's modification to, or unauthorized use of, the Model Element Contributor's content.

### **§ 4.2 Table Instructions**

**§ 4.2.1** The table in Section 4.3 indicates the LOD to which each Model Element Contributor (MEC) is required to develop the content of the Model Element at the conclusion of each phase of the Project. No designation in the following table shall relieve the Architect of the full breadth of Its professional obligations and duties with respect to the Project and the Model.

**§ 4.2.2** Abbreviations for each MEC to be used in the Model Element Table are as follows:  
(Provide abbreviations such as "A – Architect," or "C – Contractor.")

**Abbreviation**

**Model Element Contributor (MEC)**

<b>§ 4.3 Model Element Table</b> <i>Identify (1) the LOD required for each Model Element at the end of each phase, and (2) the Model Element Author (MEA) responsible for developing the Model Element to the LOD identified.</i>  <i>Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."</i>  <i>NOTE: LODs must be adapted for the unique characteristics of each Project.</i>	Preliminary Design		Schematic Design		Design Development		Construction Documents		Construction		Note Number (See 4.4)	
	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA		
<b>Model Elements Utilizing CSI UniFormat™</b>	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA
<b>Model Elements Not Utilizing CSI UniFormat™</b>	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA

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<b>§ 4.3 Model Element Table</b> <i>Identify (1) the LOD required for each Model Element at the end of each phase, and (2) the Model Element Author (MEA) responsible for developing the Model Element to the LOD identified.</i>  <i>Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor."</i>  <i>NOTE: LODs must be adapted for the unique characteristics of each Project.</i>	Schematic Design		Design Development		Construction Documents		Record Documents		Note Number (See 4.4)	
	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA		
<b>Model Elements Utilizing CSI UniFormat™</b>	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA

A	SUBSTRUCTURE	A10	Foundations	A1010	Standard Foundations	100	S	200	S	300	S	300	S								
				A1020	Special Foundations																
				A1030	Slab on Grade	100	A	200	S	300	S	300	S								
	A20	Basement Construction	A2010	Basement Excavation																	
			A2020	Basement Walls																	
B	SHELL	B10	Superstructure	B1010	Floor Construction	100	A	200	A	300	A	300	A								
				B1020	Roof Construction	100	A	200	A	300	A	300	A								
		B20	Exterior Enclosure	B2010	Exterior Walls	100	A	200	A	300	A	300	A								
				B2020	Exterior Windows	100	A	200	A	300	A	300	A								
	B2030			Exterior Doors	100	A	200	A	300	A	300	A									
	B30	Roofing	B3010	Roof Coverings																	
			B3020	Roof Openings			100	A	200	A	300	A									
	C	INTERIORS	C10	Interior Construction	C1010	Partitions	100	A	200	A	300	A	300	A							
C1020					Interior Doors	100	A	200	A	300	A	300	A								
C1030					Fittings																
C20		Stairs	C2010	Stair Construction	100	A	200	A	300	A	300	A									
			C2020	Stair Finishes			100	I	300	I	300	I									
C30		Interior Finishes	C3010	Wall Finishes			100	I	300	I	300	I									
			C3020	Floor Finishes			100	I	300	I	300	I									
	C3030		Ceiling Finishes			100	I	300	I	300	I										
D	SERVICES	D10	Conveying	D1010	Elevators & Lifts	100	A	200	A	300	A	300	A								
				D1020	Escalators & Moving Walks																
				D1030	Other Conveying Systems																
				D20	Plumbing	D2010	Plumbing Fixtures	100	A	200	P	300	P	300	P						
	D2020	Domestic Water Distribution					100	P	300	P	300	P									
	D2030	Sanitary Waste					100	P	300	P	300	P									
	D2040	Rain Water Drainage					100	P	300	P	300	P									
	D2090	Other Plumbing Systems																			
	D30	HVAC	D3010	Energy Supply			200	M	300	M	300	M									
			D3020	Heat Generating Systems			200	M	300	M	300	M									
			D3030	Cooling Generating Systems			200	M	300	M	300	M									
			D3040	Distribution Systems			200	M	300	M	300	M									
			D3050	Terminal & Package Units			200	M	300	M	300	M									
			D3060	Controls & Instrumentation			100	M	100	M	200	M									
			D3070	Systems Testing & Balancing																	
			D3090	Other HVAC Systems & Equipment																	
	D40	Fire Protection	D4010	Sprinklers			100	FP	200	FP	300	A									
			D4020	Standpipes			100	FP	300	FP	300	A									
			D4030	Fire Protection Specialties			100	FP	300	FP	300	A									
			D4090	Other Fire Protection Systems																	
D50	Electrical	D5010	Electrical Service & Distribution			100	E	300	E	300	E										
		D5020	Lighting and Branch Wiring			100	E	300	E	300	E										
		D5030	Communications & Security			100	E-T	300	E-T	300	E-T										
		D5090	Other Electrical Systems																		
E	EQUIPMENT	E10	Equipment	E1010	Commercial Equipment			100	A	300	A	300	A								

& FURNISHINGS		E1020	Institutional Equipment			100	A	300	A	300	A						
		E1030	Vehicular Equipment			100	A	300	A	300	A						
		E1090	Other Equipment														
	E20	Furnishings	E2010	Fixed Furnishings			100	A	300	A	300	I					
			E2020	Movable Furnishings			100	A	300	A	300	I					
	F	SPECIAL CONSTR. & DEMO	F10	Special Construction	F1010	Special Structures											
				F1020	Integrated Construction												
				F1030	Special Construction Systems												
				F1040	Special Facilities			100	A	300	A	300	A				
				F1050	Special Controls & Instrumentation			100		300		300	A				
		F20	Selective Bldg Demo	F2010	Building Elements Demolition												
				F2020	Hazardous Components Abatement												
G	BUILDING SITEWORK	G10	Site Preparation	G1010	Site Clearing												
				G1020	Site Demolition & Relocations												
				G1030	Site Earthwork												
				G1040	Hazardous Waste Remediation												
		G20	Site Improvements	G2010	Roadways			100	A	200	A	200	A				
				G2020	Parking Lots			100	A	200	A	200	A				
				G2030	Pedestrian Paving			100	A	200	A	200	A				
				G2040	Site Development			100	A	200	A	200	A				
				G2050	Landscaping												
		G30	Site Civil/ Mech. Utilities	G3010	Water Supply & Distribution Systems												
				G3020	Sanitary Sewer Systems												
				G3030	Storm Sewer Systems												
				G3040	Heating Distribution												
				G3050	Cooling Distribution												
				G3060	Fuel Distribution												
				G3090	Other Civil/ Mechanical Utilities												
		G40	Site Electrical Utilities	G4010	Electrical Distribution												
				G4020	Site Lighting												
				G4030	Site Communications & Security												
				G4090	Other Electrical Utilities												
		G50	Other Site Construction	G5010	Service Tunnels												
				G5090	Other Site Systems & Equipment												
<b>Model Elements Not Utilizing CSI UniFormat™</b>				LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA	LOD	MEA

#### § 4.4 Model Element Table Notes

Notes:

(List by number shown on table.)

