

#ITCon22

# VDC Contracts

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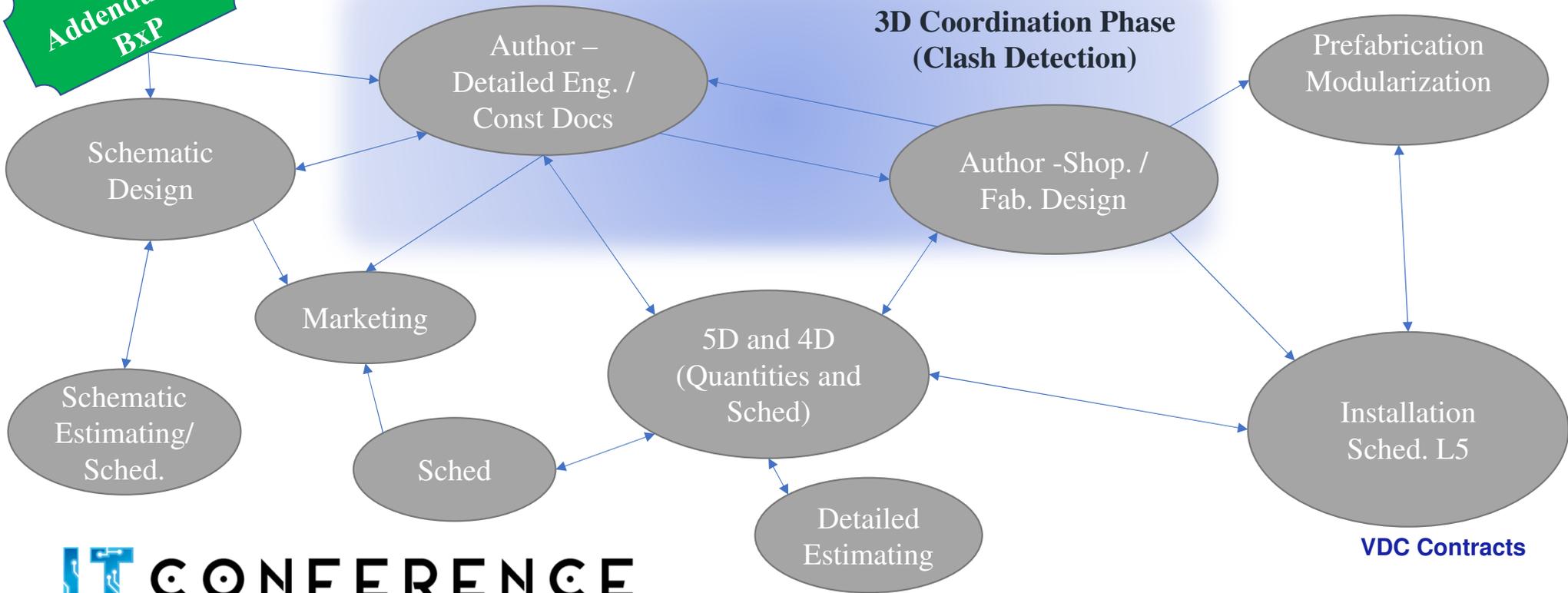
 **CONFERENCE**  
FOR CONSTRUCTION PROFESSIONALS

# Where Do You Start?

- Spec MIN LOD
- Abbv BIM EX Plan

# Start with a Contract

**BIM  
Addendum &  
BxP**



**VDC Contracts**

# BIM Addendum is Best

ConsensusDocs 301

BUILDING INFORMATION MODELING (BIM) ADDENDUM

Attachment



# BIM Addendum is Best

- **Basics**

1. Keep responsibilities and risks as per the primary contracts.
2. This document does not create privity.
3. The BIM Addendum needs to be included in every contract on the project. (The owner, including their vendors, design and their consultants, Construction and all trade contracts and contractor's vendors.)
4. The designers and engineers are still responsible for design and engineering.
5. The Owner still warrants the sufficiency of the design.
6. Trade contractors' models are still means and methods and are not design, unless specifically called for in governing contracts.
7. Design models are expected to be used for general quantities (just like drawings are used), but are not intended for exact or precise quantities.
8. The design model takes precedence over other models.
9. If there are discrepancies in models, speak up and let the authors know.
10. Tolerances set by the contract are the same tolerances for the model.
11. This addendum has precedence over the Governing Contract.

# BIM Addendum is Best

## Definitions

2.1 to 16 These are definitions of terminology used in the Addendum

2.4 **Contribution** means the expression, design, data or information that a Project Participant (a) creates or prepares, and (b) incorporates, distributes, transmits, communicates or otherwise shares with other Project Participant(s) for use in or in connection with a Model for the Project.

# BIM Addendum is Best

## Primary BIM Manager

3.1 Which budget should carry the cost of the Information Manager that will federate and review models.

3.2.1-14 Role and responsibility of the Information Manager.

# BIM Addendum is Best

## **BIM Execution Plan**

4.1 The project team must create a BxP (BIM eXecution Plan) that covers the details of collaboration and coordination via BIM.

4.2 The Information Manager will chair the meetings.

4.3.1-29 The specifics of what needs to be covered in the BxP.

4.3.11 How much can we use the design models?

Very important.

# BIM Addendum is Best

## Risk

- 5.1 Each company is responsible for the information they provide and the information of their lower tier contracts.
- 5.2 Waives consequential damages for modeling and access to models.
- 5.3 Models can be project documents; if so refer to BxP to know which ones are.
- 5.4 Maintain Standard of Care
  - 5.4.1 Models have to grow to maturity; don't rely on immature models.
- 5.5 Everyone should minimize claims.
- 5.6 Companies are not responsible if some else uses the models in an unauthorized way.
- 5.7 Valuable papers and records insurance.
- 5.8 Mitigate issues and allow for software defects.

# BIM Addendum is Best

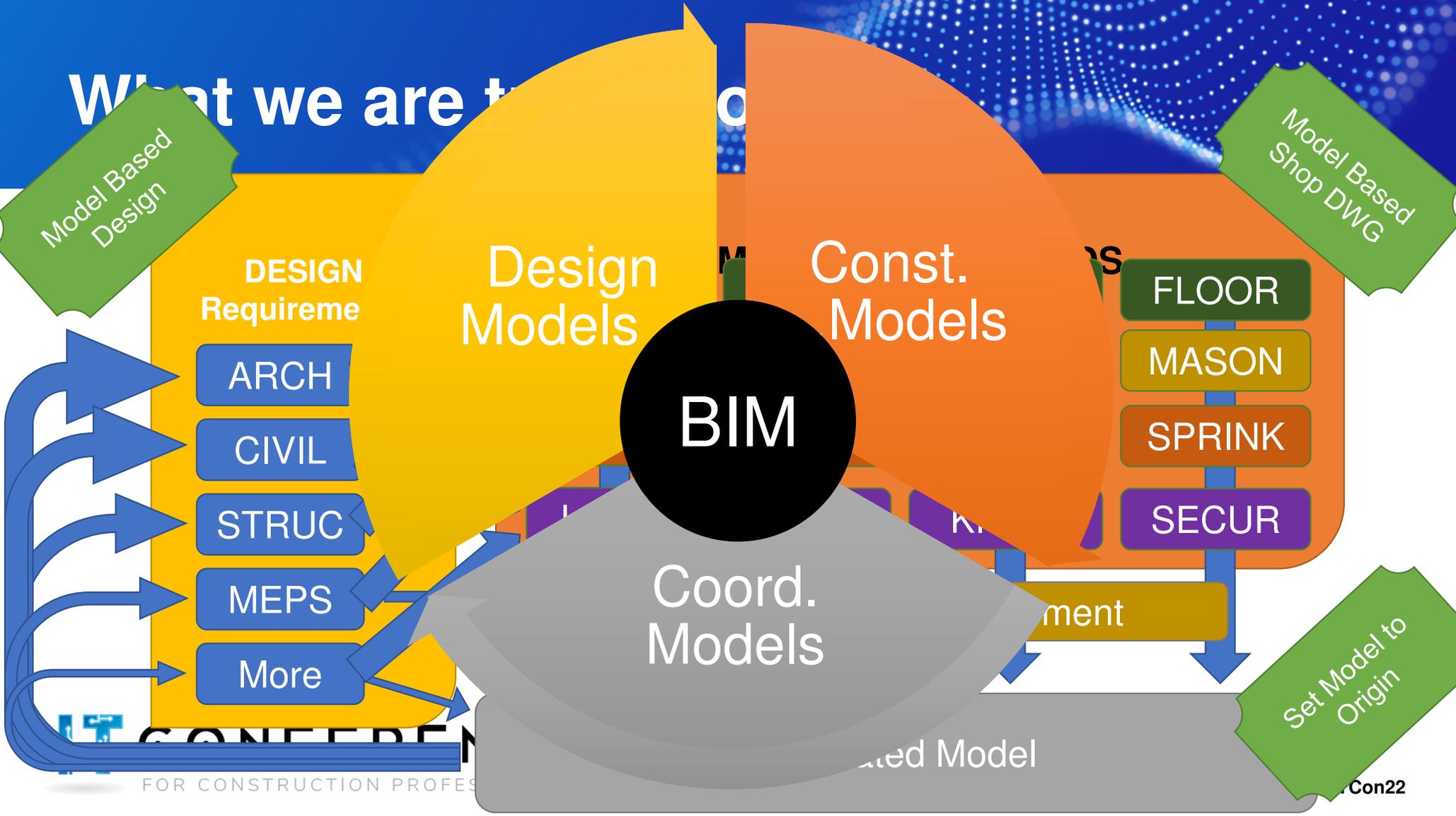
## Intellectual Property

- 6.1 Indemnify and hold harmless other parties if there is an intellectual property violation.
- 6.2 Grant license to use intellectual property (models) to everyone else on project for purpose of completing project.  
Must be changed if models will be used after project or for Marketing and/or Presentations later.
- 6.3 Allow for licenses of Copyright data to be passed to others on the project.
- 6.4 Owner's use of model is per the Governing Contract.
- 6.5 Model license allows for archival copies.
- 6.6 Model license is limited to this project, and co-authorship limited.
- 6.7 If owner does not pay, their license is revoked.

# BIM Addendum For Design Build

## A few small changes

# What we are trying to do



# Where are we now?

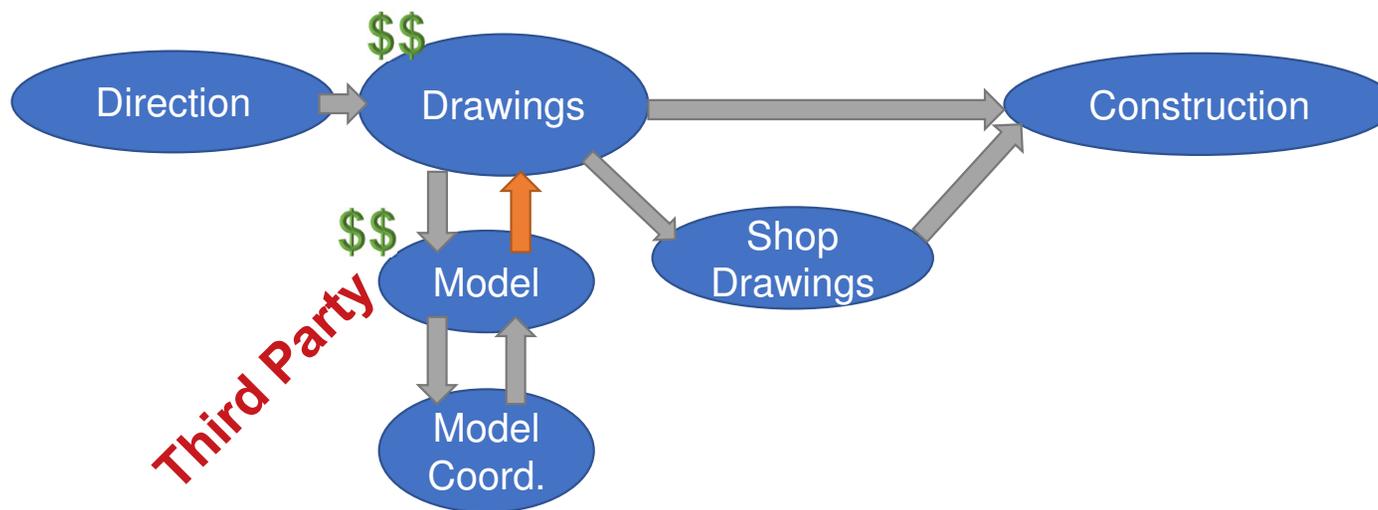
- ???

# What to Model?

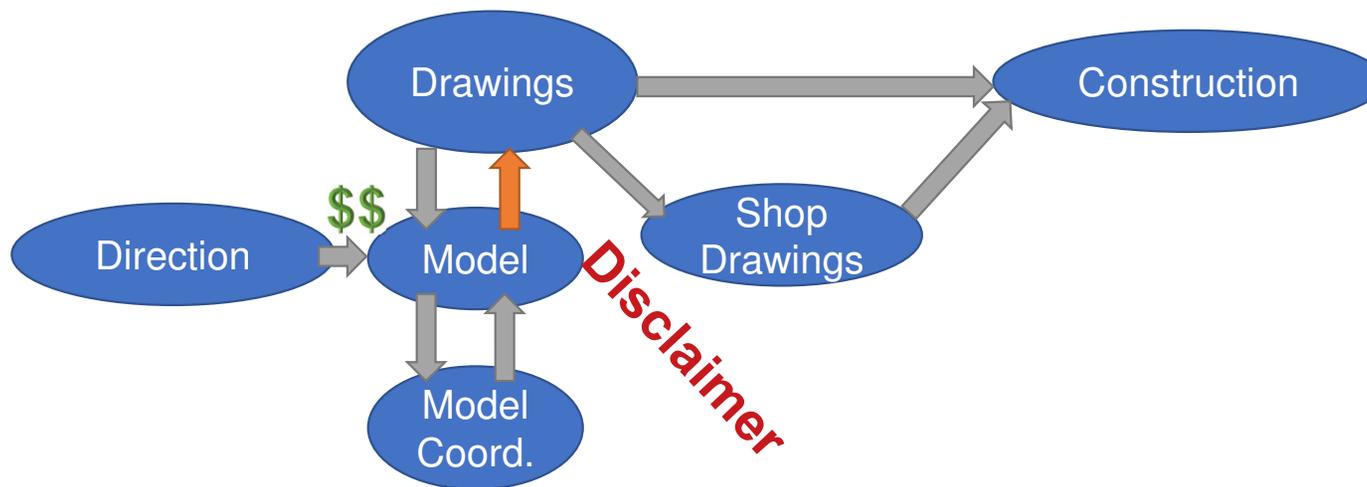
## Architects and Engineers:

The models should have elements at a default Level of Development 300 per BIMForum 2020 LOD Spec. This is the standard of care necessary for construction documents (Note: non-graphic information may or may not be in the models). Items/scopes designed to less than LOD 300 need to be identified, and the associated Specifications need to call for Shop Models - Coordination Models from the Trades. Drawings and details should be created from the models, in the native software (derived), and edits to the 2d details should enhance but not change the model geometry. Additional information from the model elements will be derived from the model to create the General Notes. The models from the various design disciplines need to be coordinated at regular intervals during the design. The end result being the models have been verified, the drawings derived from the models, and the model content is reliable (per the LOD of the elements).

# Contract Situations



# Contract Situations



## Disclaimer Options

# Disclaimer

Design Team makes neither any representation regarding the accuracy, completeness, or permanence of Digital Files, nor for their merchantability or fitness for a particular purpose.



## Disclaimer Options

# Disclaimer

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Wait!  
What?

# Disclaimer Options

## Disclaimer



If we have  
too.

MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE IN CONNECTION WITH THE SERVICE OF PROVIDING ACCESS TO, AND THE TRANSFER OF, THE DIGITAL MODEL FILES, OR THAT THE DIGITAL MODEL FILES WILL BE USABLE OR ACCURATE, WHICH WARRANTIES AND REPRESENTATIONS ARE EXPRESSLY DISCLAIMED.

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**Nothing in this document waives or releases Designer from meeting all its obligations per its design contract.**



Ok, but come on, lets do better.

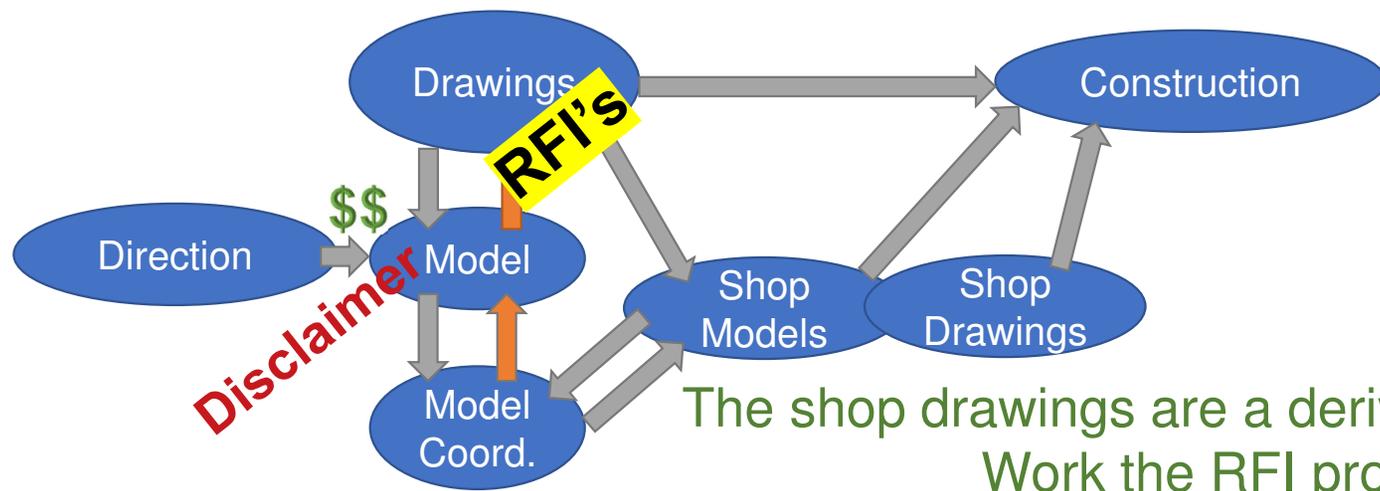


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# Contract Situations



The shop drawings are a derivative of the model.  
Work the RFI process!!!

# What to Model - Trades?

Contractors that are producing shop drawings and coordination documents (per specification) will need to provide a minimum “Level of Development **350**” per BIMForum 2020 LOD Spec. This means that specific assembly information is required (see some specific examples below). LOD 400 is encouraged internally since when used, it increases productivity and lowers costs. Shop Drawings, Coordination Drawings and Delegated Design Drawings should all be derived from the models.

# Specification Check

Review Specifications to know what Shop Models to Create and the what to Model Per Approved Submittals.

PN: 19078 / 20038 THE UNIVERSITY OF MISSISSIPPI UNIVERSITY, MS  
 IHL#400-001 JIM AND THOMAS DUFF UM #14-010  
 CENTER FOR SCIENCE AND TECHNOLOGY INNOVATION



**CLA**  
Corbett Legge & Associates, PLLC  
Mechanical & Electrical Engineers

**ELECTRONIC SUBMITTAL REVIEW STAMP**

APPROVED  APPROVED AS NOTED  OTHER  REVIEWED

REJECTED  REVISE & RESUBMIT

Reviewed for design only, errors & omissions included. CONTRACTOR is responsible for obtaining quantities, dimensions, and for making submittals with all CONTRACT DOCUMENTS including completion of the portion of the submittal with that of all related items.

Reviewed by: Chris Cullin

REVIEWED BY:

PROJECT NO.: 15001

PROJECT NAME: U OF M DUFF CSTI CENTER UNIVERSITY, MISSISSIPPI

SECTION NO.: 230719

EQUIPMENT MATERIAL DESCRIPTION: HVAC PIPE INSULATION

**SHOP DRAWING REVIEW**

Review is for general compliance with contract documents. It is the contractor's responsibility to provide items that conform to the contract documents. No responsibility is assumed for correctness of dimensions, details, or quantities.

NO COMMENTS

SECTION 220719 - PLUMBING PIPING INSULATION

1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

SUMMARY

This Section includes preformed, rigid and flexible pipe insulation; insulating cements; field-applied jackets; accessories and attachments; and sealing compounds.

B. Related Sections include the following:

1. Division 22 Section "Hangers and Supports" for pipe insulation shields and protection saddles.

1.3 SUBMITTALS

- A. Product Data: Identify thermal conductivity, thickness, and jackets (both factory and field applied, if any), for each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details for the following:
  1. Application of protective shields, saddles, and inserts at pipe hangers for each type of insulation and hanger.
  2. Insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
  3. Removable insulation at piping specialties and equipment connections.
  4. Application of field-applied jackets.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Ship insulation materials in containers marked by manufacturer with appropriate ASTM specification designation, type and grade, and maximum use temperature.

1.5 COORDINATION

- A. Coordinate size and location of supports, hangers, and insulation shields specified in Division 22 Section "Hangers and Supports for Plumbing Piping and Equipment".

ITEM NO.	SYSTEM	LOCATION	SIZE	INSULATION THICKNESS	PIPING				FITTINGS AND/C		
					INSULATION MATERIAL	SECUREMENT	FINISH	SECUREMENT	INSULATION MATERIAL	F	
1	Chilled Water	Mech Room Below 7' Mech Room Above 7' Concealed	All	1 1/2"	Polyisocyanurate Foam	Jacket	PSK	SSL	Polyisocyanurate Foam		
			All	1 1/2"	Polyisocyanurate Foam	Jacket	PSK	SSL	Polyisocyanurate Foam		
			up to 2"	1 1/2"	Cellular Glass	Jacket	PSK	SSL	Cellular Glass		
			2 1/2" & up	2"	Cellular Glass	Jacket	PSK	SSL	Cellular Glass		
2	Heating Hot Water	Exterior	All	2"	Polyisocyanurate Foam	Jacket	Aluminum	Aluminum Banding	Polyisocyanurate Foam	Alk	
			up to 2"	1 1/2"	Mineral Fiber	Jacket	PSK	Fab & Mastic	Mineral Fiber		
			2 1/2" & up	2"	Mineral Fiber	Jacket	PSK	Fab & Mastic	Mineral Fiber		
			Above 7'	1 1/2"	Mineral Fiber	Jacket	PSK	SSL	Mineral Fiber		
3	Condensate Drains	Indoor	All	3/4"	Flexible Elastomeric	Adhesive	N/A	N/A	Flexible Elastomeric		
			Exterior	All	1 1/2"	Polyisocyanurate Foam	Jacket	Aluminum	Aluminum Banding	Polyisocyanurate Foam	Alk
				All	3/4"	Flexible Elastomeric	Adhesive	N/A	N/A	Flexible Elastomeric	
				All	3/4"	Flexible Elastomeric	Adhesive	N/A	N/A	Flexible Elastomeric	Alk
4	Make up Water	Exterior	All	1 1/2"	Polyisocyanurate Foam	Jacket	Aluminum	Aluminum Banding	Polyisocyanurate Foam	Alk	
			5	Refrigerant Piping	Indoor	All	3/4"	Flexible Elastomeric	Adhesive	N/A	N/A
6	Condenser Water	Exterior				All	1 1/2"	Polyisocyanurate Foam	Jacket	Aluminum	Aluminum Banding

# Put it in the Scope

23	Pumping and dewatering as necessary.								
24	Any provisions necessary for cold weather work as required including hot water, temporary heat, enclosures, blankets, etc.								
25	Any provisions necessary for hot weather work as required.								
26	Protect surfaces from concrete spillage. Remove splatters and spillage. Restore affected surfaces to original condition or replace. Legally dispose								
27	Engineering and layout work required including verification of all structure elevations and locations.								
28	As-built survey indicating the horizontal and vertical locations of all walls, pits, floors, etc. Survey to be performed and certified by a licensed surveyor.								
29	Concrete mix design for all specified strengths.								
30	Installation of bollards.								
31	Grout baseplates.								
32	Furnish and install polystyrene insulation as shown.								
33	All site concrete. (retaining walls, sidewalks, curb, curb & gutter, steps, cisterns, etc...)								
34	Includes engineering for concrete cisterns.								
35	Includes trench and inlet grates and frames.								
36	Includes backfill of retaining walls and misc. concrete.								
37	Furnish and install of all sleeves required per contract documents.								
38	Furnish and install of all sleeves required per contract documents.								
39	Includes transportation.								
40	Models (BIM) used to produce the required Shop/Coordination/Design Drawings per specification 032000.1.3B, 033001.1.05C								
<b>Exclusions</b>									
	<table border="1"> <thead> <tr> <th>Exclusion</th> <th>Bid Package Including this Exclusion</th> </tr> </thead> <tbody> <tr> <td>* Testing</td> <td>Owner</td> </tr> <tr> <td>* Waterproofing</td> <td>07A</td> </tr> <tr> <td>* Pump system for cisterns</td> <td>Irrigation</td> </tr> </tbody> </table>	Exclusion	Bid Package Including this Exclusion	* Testing	Owner	* Waterproofing	07A	* Pump system for cisterns	Irrigation
Exclusion	Bid Package Including this Exclusion								
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# Flags

- Red Flags
  - BIM takes to long
  - BIM costs more
- Yellow Flags
  - We don't do BIM
  - We haven't done this before
  - What is BIM
  - Where can I buy BIM
  - We use Revit

# Story Time

- UMSTEM



# Questions?

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**ITCON WILL  
RETURN IN**

**2023** CHICAGO, IL  
AUGUST 22-24

**FAIRMONT MILLENNIUM PARK**

