



SPECIAL PROJECTS TEAM/  
INTEGRATED PROEJCT DELIVERY  
DOCUMENTS SUBMITTAL PROCESS





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## General Description

These guidelines are for all Commercial Projects that have qualified to be reviewed and permitted, with the Special Projects Team (SPT), in accordance with the North Carolina Law and Administration Code Section 106.2.3.1 for Building Information Modeling-Integrated Project Delivery. The SPT services commercial projects within Mecklenburg County, including Charlotte and the incorporated towns of Cornelius, Huntersville, Matthews, Pineville, Mint Hill, and Davidson. For other commercial projects that do not qualify for this permitting service, refer to the [Plan Submittal Guidelines for Commercial Projects](#).

NOTE: The towns of DAVIDSON, HUNTERSVILLE and CORNELIUS perform their own zoning review. Customers shall have their Building Permit application forms signed off by the specific town's administrator prior to the plans being submitted for review.

Davidson: (704) 892-5131; Cornelius: (704) 892-6031; Huntersville: (704) 875-6541.

### Definitions:

1. **Building Information Modeling (BIM):** a computerized model that replaces the traditional 2D layers of building construction document information with 3D modeling technology. BIM is used by owners to design facilities and virtually simulate the constructability of buildings, as well as manage maintenance and long-term use of buildings.
2. **Integrated Project Delivery (IPD):** an approach to design and construction that has the entire owner's team (architect, engineer, contractor, key subs, et al;), working together in a collaborative fashion. This collaborative approach normally starts at the project conception to create the best design-building value for the owner.
3. **Special Projects Team (SPT):** is a team of Building Code Officials, within Mecklenburg County Code Enforcement, that have been created to work with 3D modeling (BIM) and the IPD process.
4. **Electronic Plan Management (EPM):** the Electronic Plan Management (EPM) system is a work flow tool that allows architects, engineers, and designers the ability to oversee their projects through plan review and permitting, electronically. All SPT plan review applications are required to be submitted through EPM to obtain a plan review appointment.
5. **"Umbrella" Permit:** the Code Enforcement Official (CEO) may issue a single permit, based on the initial project description and code compliance strategy agreement. This issuance of permit is in accordance with the North Carolina Law and Administration Code Section 106.2.3.1 for Building Information Modeling-Integrated Project Delivery.
6. **Iteration:** a cyclical process consisting of model updates or deliverables that facilitates the review of projects.
7. **Deliverables:** the first review of phases or components of a project that need approval prior to construction, such as Footing and Foundation, Shell and Core, Interior Upfit etc. Deliverables are required to be at LOD 300 or above.
8. **Model Updates:** consists of changes to a model or drawing that has been previously approved and requires a plan review, i.e. design, customer, contractor, field changes or other changes requested by code officials.

9. **Field Comments:** any revision requested by inspector at the construction site. Some revisions can be handled on site, and others may require plan review.
10. **Interactive Status:** A process of addressing plan review comments during an iteration submittal.
11. **Owner/ Contractor Comments or changes:** any revisions requested by owner or contractor, i.e. value engineering.
12. **DWFX Files:** Design Web Format (DWF) 2D and 3D files extracted from BIM models that contains design data.
13. **Level of Development (LOD):** a term used to describe the clarity of the content of Building Information Models (BIMs). See attached "Level of Development Specifications" documentation.
14. **AUTODESK BIM 360 Document Management:** a cloud service offered by AUTODESK and used by Special Projects Team for review of 2D and 3D DWFX files.
15. **Validation Review:** final check of documents to ensure model and construction documents match the actual construction, prior to an issuance of a Certificate of Occupancy (CO).

#### **Background of the Special Projects Team**

The Special Projects Team (SPT) is a permitting and inspection team created to work collaboratively with the owner's project team in a specialized approach called Integrated Project Delivery (IPD). This team and service approach will consist of engaging the Code Enforcement Officials (CEO) on a project much earlier than the non-IPD projects and they will stay involved through all phases of the project i.e. design, fabrication and construction. The team of CEO's assigned to the project will conduct both plan review and inspection thereby minimizing any field related conflicts that may arrive due to unfamiliarity with the plans.

The Special Projects Team uses the highest technology in design and construction, such as Building Information Modeling, to provide plan review and permitting services. Consequently, projects will not follow the typical design-bid-build (D-B-B) process format.

#### **Projects that Qualify for the Special Projects Team's BIM/IPD Review Process.**

Customers who wish to use the BIM/IPD review and permitting process will need to contact the Special Projects Team (SPT) division, within Mecklenburg County Code Enforcement. The Special Projects Team will determine whether a project qualifies for the SPT review and permitting process. Criteria for eligibility include:

- A General Contractor will be in place, as part of the project team during preliminary review.
- There needs to be an agreement or contract between the owner, and the owner's team (Architects, Engineers, General Contractors, etc.,) that allows for integrated project delivery (IPD).
- The owner's team will be willing to work using a BIM platform to produce construction documents.

There may be instances that a project does not meet all of the aforementioned criteria. It is important for the client to contact the Special Projects Team, with project specific information. Based on the project information, the SPT will determine if a project can still qualify for the SPT plan review and permitting and inspections service.

### **SPT Submittal Requirements for Plan Review and Permitting Overview**

1. **Mega Accounts:** SPT's project services will use the Mega Account system for permit and plan review fees. In order to qualify for the Mega Program, Mecklenburg County Code Enforcement requires that a bond account be established. This account is a Land Use Bond Account through the LUESA Revenue Collection Department. For information on setting up a bond account, [click here](#).

The owner, general contractor, lead designer or lead design firm may create this account. If there is an existing bond account, it is the responsibility of the account holder to notify the SPT Coordinator (Cheryl Scott-Parker at 980-314-3106), for the account to be used for payment of fees.

The Mega Account can be set up after the initial Project Scoping Meeting, with the review team. However, the bond account must be in place prior to any future meetings or scheduling of projects.

2. **Fees:** Customers will be invoiced monthly for Mega Project fees. If an account is not current and charges cannot be billed to the account, further meetings and plan reviews will not be scheduled until the account is in good standing. Detailed billing information will be available from Revenue Collection upon request.

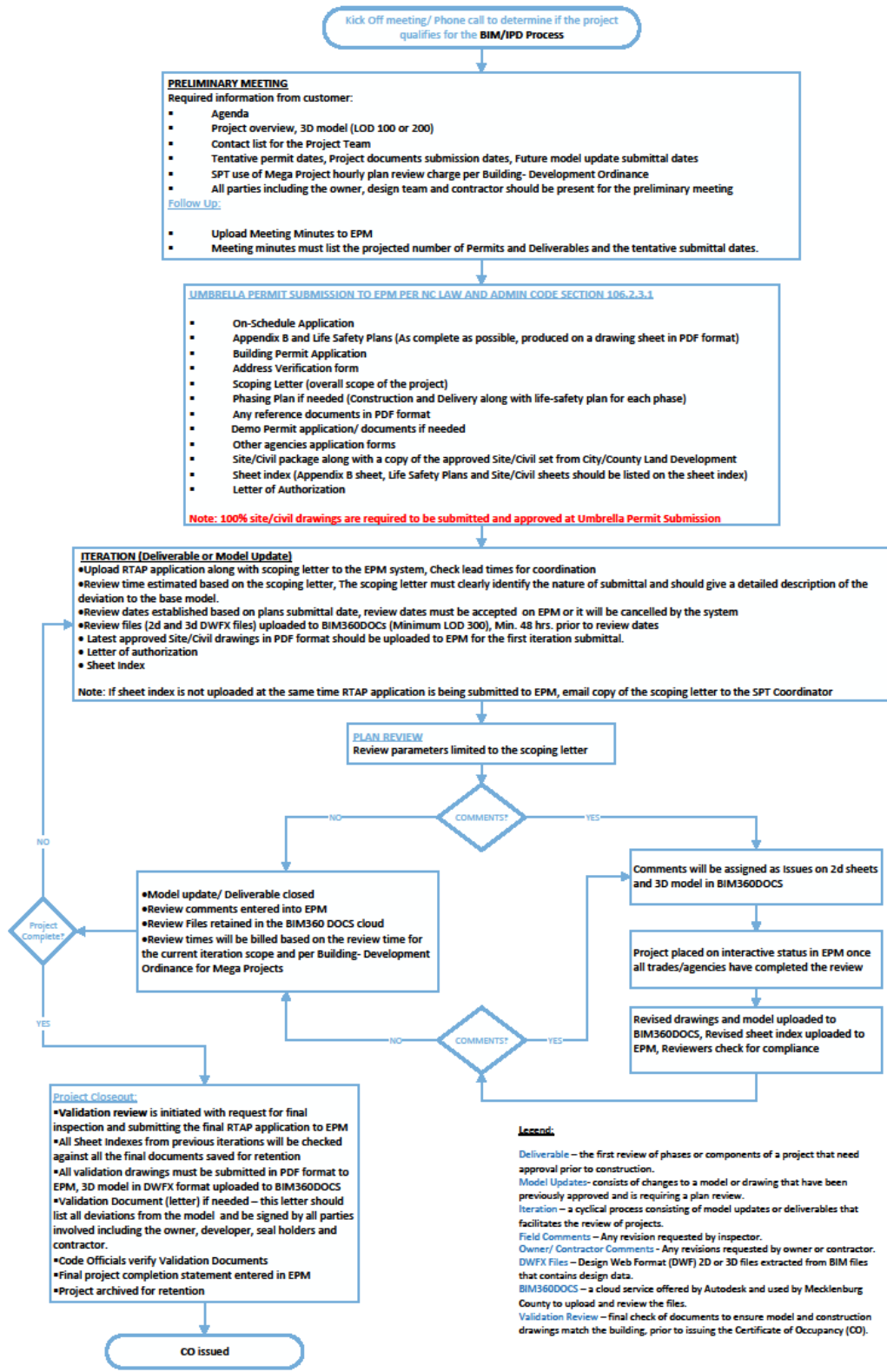
An hourly charge of \$145.00 per hour will be assessed for the time associated with staff, pre-review, review, phone conversations, owner/designer/contractor requested meetings, or other administrative duties by the reviewer on the project. If necessary, management time spent for project meetings, preliminary code reviews, plan review, or other problem resolutions will require a separate hourly fee. Additional fees will be charged to the project account for attorneys or consultants required by Code Enforcement to resolve specific issues with a project. The hours will be billed in half-hour increments. Plans Examiners will track time dedicated to the review of the project daily.

3. **Interior and Total Demolition Permits:** Total Demolition Permits must be obtained prior to the demolition of any existing building or structure located in the city, towns or county. The SPT will issue all demo permits for all SPT projects. An On-Schedule Application is required to be submitted through the EPM System to obtain a Demo Permit. Prior to the issuance of the permit, approval must be obtained from the Mecklenburg County Health Department and the Department of Environmental Protection (MCDEP). A National Emission Standard for Hazardous Air Pollutants (**NESHAP**) notification form is required to be submitted to Mecklenburg County Air Quality, in order to obtain an MCDEP approval. The form must be submitted at least ten days before any demolition begins. Required forms for demolition permits are a building permit application, address verification, Vector, and **NESHAP** forms. These forms may be found by clicking the links [click here](#) or in the Mecklenburg County Code Enforcement Building.
4. **Renovation projects with the removal of asbestos:** It is a requirement to submit a **NESHAP** notification form to Mecklenburg County Department of Environmental Protection, for any renovation project in which the removal of asbestos is necessary. This form must be submitted at least ten working days prior to the start of any asbestos removal.
5. **Special Inspections:** Please refer to [meck-si.com](http://meck-si.com) for comprehensive information relating to projects that require special inspections per Chapter 17 of the North Carolina State Building Code (NCSBC).

Note: The need for Special Inspection could dictate the number of "Umbrella" Permits and/or the delivery, phasing of a project.

6. **Preliminary Review:** All SPT projects require a Preliminary Review before the actual design is submitted for permitting. To begin the process it is necessary for the customer to submit a Preliminary Review application, through the Electronic Plan Management system.
7. **Plan Review Applications for the SPT Umbrella Permit:** The primary plan review system is called the On-Schedule review. It is necessary for the customer to submit an On-Schedule application through the Electronic Plan Management system to obtain an Umbrella Permit.
8. **Iterations:** Consist of Model Updates and Deliverables. Customers submit for Model Updates and Deliverables by submitting an RTAP application, through the EPM system. Model updates can be design changes by customer, or changes requested in the field by code officials or contractors. Deliverables are phases or components of a project that need approval prior to construction, such as Footing and Foundation, Shell and Core, Upfit etc. All deliverables are required to have an LOD 300 or better. The RTAP application is used for scheduling plan reviewers, for iterations.
9. **Site Plans:** 100% site and civil drawings are required to be submitted and approved by all trades and agencies in order to issue the umbrella permit. The towns of DAVIDSON, HUNTERSVILLE and CORNELIUS perform their own zoning review. Customers shall have their Building Permit application forms signed off by the specific town's administrator, prior to the plans being submitted for review.
10. **Interactive Status:** A process of addressing plan review comments during an iteration submittal. A project gets placed on this status in order to facilitate designers to upload revisions based on redline comments, provided by the reviewers. An iteration will go through as many Interactive Status Cycles required to address all comments, for a particular submittal.
11. **Use of AE seals on BIM/IPD projects:** Documents are required to have embedded graphic signatures and seals on all the sheets during each submission of a deliverable. Any subsequent model update that captures field driven changes to the previously approved documents can bear a digital signature in lieu of the graphic seal and sign.
12. **Outside Agencies:** Please recognize that although we interact with some outside agencies, we have no control over other agencies work scheduling or requirements. It is the customer's responsibility to provide submittals and obtain their approvals before an umbrella permit can be issued.

**SPECIAL PROJECTS TEAM - INTEGRATED PROJECT DELIVERY PROCESS**





## **BIM/IPD Step by Step Process**

### **Step 1: Project Kick-off Meeting/ Phone Call:**

The customer contacts Special Projects Team to determine the project's eligibility for SPT plan review and permitting services. The customer will provide a general scope of the project. Based on the scope and information provided, SPT manager will determine if the project qualifies for this service. If the project qualifies for BIM/IPD submittal, the client needs to upload a Preliminary Meeting Application to discuss project with the reviewers.

### **Step 2: Preliminary Meeting:**

The following information is required/discussed during the Preliminary meeting:

1. Create an account at EPM (Electronic Plan Management) website (<http://epm.mecklenburgcountync.gov/>) and request to be scheduled for a preliminary meeting.
2. Agenda and Appendix B: The agenda and Appendix B should be emailed to the SPT Coordinator at least 48 hours prior to the meeting. The agenda shall include the topics that the customer desires to discuss with code officials. Appendix B should be as complete as possible
3. Project Overview:
  - a. The customer provides schematic diagrams related to project. Information can be in 2d, and/or a 3d model (LOD100 or above).
  - b. Scoping letter (Detailed per trade) that clearly defines the scope of the entire project.
4. Contact list: The customer must provide the reviewers a contact list that contains the names of all the team players on the customers side that wish to be included in our communications plan.
5. Tentative permit dates, Project documents submission dates: The customer must be able to present a tentative timeline of deliverables/submissions (e.g. deliverable: footings and foundations - 03/20/2019).
6. Discuss method of permitting. Discussion of project phasing and Special Inspections if applicable.
7. Discuss document submittal format and gating procedure with the primary person of contact from the design team.
8. Discussion of upfront permitting fees and plan review fees. Plan review fees are based on the Building – Development Ordinance. Project Coordinator and SPT Manager will explain the fee process. Fees will be dependent on the number of deliverables and the scope of the deliverables.
9. Follow Up: As a follow up to the preliminary meeting, the customer will upload meeting minutes to the EPM system for recordkeeping. The meeting minutes must list the projected number of deliverables for the project. The project can be broken down into as many deliverables as deemed necessary by the customer's team. Based on the number of deliverables, the SPT will provide estimated hours for plan review.

### **Step 3: Umbrella Permit Submission to EPM per NC Law and Admin Code Section 106.2.3.1:**

Per the stated law, an Umbrella Permit can be requested upon presenting the concept or a schematic design of the project. The following information is required to be completed and uploaded to the EPM site, requesting an Umbrella Permit:

1. On-Schedule Application form.
2. Appendix B form signed, dated and in PDF format.
  - a. Appendix B must contain sufficient information to analyze the scope of the project.
  - b. This document must be reproduced on the plan document (drawing sheet) that is submitted.
  - c. [Click here](#) to download 2018 Appendix B.
3. Life safety Plans – Sheets should be signed, sealed and dated in PDF format.
4. Building Permit Application: All contractors named on the permit application/s must be licensed and bonded to work in Mecklenburg County.
5. Address Verification form.
  - a. Addressing's website: [Click here](#)
  - b. If not able to locate the address of the project, contact Addressing at 704.336.6357.
  - c. The form must be signed and dated
6. A scoping letter that clearly defines the scope of the entire project. This scoping letter will be used to approve the concept and the schematics of the project, for issuance of the Umbrella Permit. Scoping letter may be the same one used during the Preliminary Review, it contains detailed information about overall scope of the project. [Click](#) here to download copy of the SPT scoping letter.
7. Submit other applications required by city and county agencies (ex. Backflow, Health, Zoning, etc.)
8. Phasing plan if needed:
  - a) Building Permits for each phase
  - b) Phasing Plan identifying the different segments or phases of the project
  - c) Phasing plan is required for each phase
9. Letter of authorization: If you choose this as your payment option on the On-Schedule application, you will need to upload a signed letter of authorization.
10. Sheet Index: The sheet Index excel file must be downloaded from EPM, filled out with all the sheets that are being submitted for review along with any revision dates and numbers and then uploaded to EPM.
11. 100% complete Site/Civil drawings (PDF) must be uploaded to EPM for review and approval by Backflow, Zoning and any other affected trades. Site/Civil Package approved by city/county land development must be submitted as a reference in addition to the review set. **(Note: This must be approved before umbrella permit can be issued and any iterations are submitted for review)**

#### **Step 4: Iteration**

An iteration is a review cycle which occurs during one of the below listed situations:

1. The model is updated as part of a deliverable that has been previously identified during the preliminary meeting and needs approval prior to construction i.e. Footing and Foundation, Shell and Core, Interior Upfit etc. Submissions for deliverables are required to be at an LOD 300 or above.
2. The model is updated due to some changes requested by either the customer or the inspector in the field that might not have been previously identify during the preliminary meeting
3. The owner's team is requesting to update the model for any non-code related updates

The following documents will be required to be uploaded to the EPM during an iteration:

1. RTAP/Iteration Application: This must be uploaded to EPM ahead of package submittal.
2. Scoping letter: A scoping letter identifying the changes in the model or requesting an approval for a deliverable must be emailed to the SPT coordinator when submitting the RTAP application. The scoping letter must clearly identify the nature of submittal, e.g. previously identified deliverable or model update driving by change. Scoping letter must give a detailed description of the model update and should only list the items being requested for review. [Click here](#) to download copy of the SPT scoping letter.
3. Review dates: Review time is estimated based on the scoping letter. Review dates will be subject to lead times and availability of reviewers. Please contact the SPT project Coordinator ahead of time to check on lead times for review. Once your review is scheduled, you will need to accept the review dates in EPM.
4. Sheet Index: The sheet Index excel file must be downloaded from EPM, filled out with all the sheets that are being submitted for review along with any revision dates and numbers and then uploaded to EPM.
5. Letter of authorization: a signed letter of authorization must be uploaded for each iteration.
6. Drawings:
  - a. 2D sheets and 3D model (DWFX files) must be uploaded to the project's BIM360Docs account. Contact SPTBIM Navigator to setup access. See the instructions for uploading to BIM 360Docs.
  - b. Modifications/revisions must be clouded on each affected sheet and must be identified by the appropriate revision numbers and dates.
  - c. Appendix B and life safety plans must be submitted as part of the project documents for each deliverable.
  - d. Notify SPT BIM Navigator when all files have been uploaded to BIM 360Docs account.

## Plan Review:

1. Plan review will occur for each iteration.
2. The review parameters shall be limited to the items listed in the scoping letter.
3. Review comments are assigned as issues on 2d and 3d DWFX files on BIM 360docs, redlines and markups on any PDF drawings/files uploaded to EPM and any notes entered in EPM.
  - a. Reviewers will communicate with the seal holders to discuss any plan review comments they might have.
  - b. Reviewers enter the results in EPM, either approved or disapproved. Building trade will keep the review cycle open until all trades have entered their results.
  - c. If revisions to the drawings are required, project will be placed on interactive status by Building trade to allow submittal of revised sheets/model to BIM360Docs and sheet index to EPM.
    - i. The sheet index cannot be deleted from EPM. A new Sheet Index will have to be uploaded, indicating a new revised date and revision number next to the affected sheets.
    - ii. All sheets should be listed on the sheet index, avoid deleting any sheets from the sheet index when submitting interactive files, revised sheets should have a new revision number and date.
    - iii. If submitting interactive sheets to the EPM system the file name should remain the same, the EPM system will identify the sheets as an interactive file when it is resubmitted.
    - iv. Only revised sheets/model should be uploaded to BIM360docs during the iteration submittal or interactive.
    - v. If interactive files are being submitted for the sheets originally submitted to EPM in PDF format (for example Civil set), then all the sheets in the set should be submitted with revised sheets replacing the original sheets in the set.
  - d. SPT BIM Navigator will send a list of all issues marked on BIM360Docs to the point of contact on the design team once all reviewers have resulted the project, all other comments noted on EPM along with markups on any drawings uploaded to EPM can be accessed by login to EPM system.
  - e. If comments are assigned as issues on 2d sheets and 3d Model, issues can be re-assigned to the appropriate consultant, once the files are ready to be resubmitted all issues should be addressed by the design team and the status of each issue must be changed to Answered.
  - f. Revised drawings should have revision clouds and tags with new revision number and date.
  - g. Revised sheets/model should only be re-submitted when comments by all trades are addressed.
  - h. Notify SPT BIM Navigator ahead of time with tentative resubmittal date so reviewers can be scheduled ahead of time to speed up the review process.
  - i. A response to comments letter, addressing all the plan review comments should be emailed to the SPT BIM Navigator.
  - j. Revised drawings should be uploaded to the project's BIM360Docs account to be reviewed for compliance.
  - k. This process will continue until all the comments are addressed by the seal holder and review cycle is approved. Subsequent iteration can be submitted only when review cycle is approved.

### **Step 5: Validation**

This is a final check of the documents to ensure model and construction drawings match the building, prior to issuing the Certificate of Occupancy (CO).

- a) Validation review is initiated with the request for final inspection and submitting the final RTAP application to EPM.
- b) Sheet index listing all sheets submitted and approved in the previous iterations with the latest revision number and date on the sheet should be uploaded to EPM. All Sheet Indexes from previous iterations will be checked against all the final documents saved for retention.
- c) Copy of the latest approved sheets per trade must be submitted in PDF format to EPM, all sheets must be signed and sealed and dated.
- d) Latest 3D model in DWFX format should be uploaded to BIM360Docs.
- e) Signed letter of authorization should be uploaded to EPM.
- f) Code Officials will notify the design team of any deviations.
- g) Design team can either address the deviations by revising the drawings/model or providing a Validation Document (letter). This letter should list all deficiencies and be signed by all parties involved in the project including the owner, developer, seal holders and contractor.
- h) Code Officials verify Validation Documents.
- i) Code Officials will enter the final project completion statement in EPM.
- j) CO Issued.
- k) Project archived for retention.

### **Instructions for uploading files to BIM360Docs:**

Autodesk BIM360 Document Management is a cloud account used by Special Projects Team to review 2D sheets and 3D models.

- a) SPT BIM Navigator will set up the project and invite members to the project. Customer must provide emails of all team members who need to have access to view and respond to the comments on BIM360docs.
- b) Members will receive an invite from Autodesk with the link to the project.
- c) Members must have an Autodesk account to login to the project, an account can be created for free using the same email.
- d) All review files should be uploaded under PLANS in DWFX format including the 3D model.
- e) Customer should create folders for each trade and upload drawings under each trade folder (for example: 3D Model, Architectural, Mechanical, Electrical ...).
- f) If there are more than one model (linked models), create one model in DWFX format with all models combined, and upload the DWFX model to BIM360docs under Plans/ 3D Model folder.
- g) Each time drawings are being uploaded to the project on BIM360Docs, revised sheet index should be uploaded to the EPM and SPT BIM Navigator should be notified.
- h) Only revised sheets/model should be uploaded to BIM360Docs when submitting for new iteration review or during interactive review or iteration review.
- i) Reviewers will communicate any comments on 2D sheets and 3D model by assigning issues to the point of contact for the project. Issues can be re-assigned to the consultants if needed; all parties are able to view the issues.
- j) Once all reviewers result the project on EPM, SPT Navigator will send a summary of all the Issues marked on the 2D sheets/3D model to the project's point of contact.
- k) All issues must be addressed on BIM360docs and the status of the issue should be changed to Answered.
- l) All revised sheets for different trades should be submitted at one time; revised sheets should be uploaded under each trade folder.
- m) Each time a sheet /model is being submitted, it will automatically get a new version on BIM360Docs.
- n) Once sheets and model are uploaded to BIM360Docs and sheet index uploaded to EPM reviewers will review the submitted sheets and model on the scheduled review dates and result the project on EPM.