Enginee\n\nBusiness Process Guideline for Project Documentation

PHASE I
PROJECT INITIATION

PHASE II
PROJECT DESIGN
CONSTRUCTION
START-UP
COMMISSIONING

PHASE III
PROJECT TURNOVER
CLOSURE

AMGEN
Introduction

The Engineering Operations Services (EOS) Business Process Guideline for Project Documentation is an outline of best practices and methods for managing and archiving the information and documents related to Amgen engineering projects.

Project support staff in multiple sites currently service numerous active construction projects in addition to managing archives of hundreds of closed construction projects. The purpose of this guide is to serve as a reference document in providing Amgen with required, corporate-defined project documentation.

Most importantly, the Business Process Guideline should be considered the outline of the corporate engineering baseline requirements for a project’s documentation, which every project team should comply with. The corporate project support group believes that through the introduction and implementation of this standard, the project teams will help EOS meet four major objectives:

• Satisfy the company’s legal obligations for construction documentation
• Develop and accurately preserve the project’s complete documentation
• Streamline the final turnover, commissioning and validation (if required) phases of the project
• Provide Amgen-defined information/documentation for operations and maintenance purposes

The intent of this guide is not to replace, but rather to supplement, any currently used standards and procedures applied to the ongoing projects at various engineering sites. It is important that the project teams apply this standard transparently and without any interruptions to their day-to-day business.

We would like this document to provide the basis for discussion and be the foundation for the development and implementation of the consistent, logical and scalable business process for all Amgen teams supporting engineering projects.

The Engineering Operations Services (EOS) Business Process Guideline for Project Documentation has been developed with the support of Corporate EOS Business Process Management. Any questions regarding it should be directed to Pawel Sobierajski at 805.447.6552.
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1.0 Scope of Services

Engineering project support personnel in multiple Amgen sites provide construction and engineering documentation management in support of the Amgen Expense and Capital Projects.

The scope of services provided by these individuals is continuously expanding to meet the new challenges and requirements of Amgen. Currently the project support staff operates across many different Amgen engineering centers and management structures. They support various tasks, which may differ from site to site, based on the presence of unique site or project requirements, or interdepartmental organizational relationships.

The section below identifies the core services, which every successful Amgen project support team should be capable of offering to any of its projects. They can be divided into two major areas: Active Engineering Projects Support and Engineering Archive Management.

Active Engineering Projects Support

All project support groups at Amgen should be committed to providing document management support for active projects. The project support staff should be able to accommodate the project team with the following services:

<table>
<thead>
<tr>
<th>Filing</th>
<th>Hard Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All hard copies of project documents should be preserved and filed per the site hard-copy filing standard.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Electronic Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Each site should be capable of filing and storing electronic copies of documents. A logical, document filing structure should be used, such as the example provided in the Appendix.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The project support staff should have local space allocated to filing and storing project submittal samples. They can be archived or destroyed after the project closeout.</td>
</tr>
</tbody>
</table>

Table continued on next page
### Documents Tracking and Retrieval
Any filing or project data systems should be capable of tracking and retrieving project hard or electronic documents. Staff should be capable of locating and retrieving any filed project documents.

### Documentation Distribution
Support staff is often asked to coordinate the distribution of project documents. If required, they monitor the document response deadlines and send notifications.

### On-Site Storage Management
- **Files, Binders, Samples**
  Project support personnel should reserve and secure access to an on-site document-storage shelving system for current project hard folders, binders and small submittal samples.

- **Flat and Hanging Files**
  The hanging or flat file should be designed to accommodate the E-size paper drawing sets.

- **Squad Check**
  The staff should be capable of coordinating the setup of the project squad check-room per request of the Project Manager.

### Software Administration
Various engineering centers use different applications for tracking, distributing and storing project data. The staff should continue using these tools.

### Meetings Participation
Staff should participate in team meetings on an as-needed basis as essential to the support of business objectives.

### Administrative Support
- **Mailing**
  Support staff when asked should coordinate the mailing of project documents and drawings to various team members through FedEx, UPS, USPS, interoffice mail or email.

- **Copying**
  Staff can be delegated to perform on-site copying and collating services, or coordinate off-site copying for larger packages.

- **Scanning, printing, plotting, and reprographic**
  Staff should be able to offer a wide range of on-site large format document imaging services such as scanning, printing or plotting. Depending on the quantity needed, it should have the capability of outsourcing the imaging requests through a local reprographics vendor.

### Miscellaneous Support
The staff should review and justify the support of other tasks on a case-by-case basis. The support resources should be allocated depending on their availability. Their new roles or assignments should be clearly defined and the request for additional support should be placed with the staff Supervisor.
**Engineering Archive Management**

The corporate engineering project support team recommends that all documents related to closed engineering projects be preserved and archived. The engineering archive storage is usually outsourced to an outside archive-management service. Each engineering site should establish a relationship with an outside storage company and designate staff to be the point-of-contact for sending and receiving archive shipments.

The services provided by this staff, at minimum, should be as follows:

<table>
<thead>
<tr>
<th><strong>Archiving</strong></th>
<th>Daily tasks for the Archive staff should include the archiving of closed projects, personnel, contract and real estate files. The staff should review, audit and re-archive records on as-needed basis.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Off-Site Storage Coordination</strong></td>
<td>Staff should be able to track and retrieve any project hard or electronic document. He/she should have electronic search tools available for querying archive documents in many different ways.</td>
</tr>
<tr>
<td><strong>Records Tracking, Retention, and Retrieval</strong></td>
<td>EOS is in the process of defining and implementing a document-retention policy for project documentation. This policy will give staff a basis for setting expiration dates on archived documents and executing destruction of expired documentation. Tracking and retrieval services should be similar to the Active Project Support scope above, except that they are not related to the specific project.</td>
</tr>
<tr>
<td><strong>Software Administration</strong></td>
<td>Once the projects are closed, their electronic data should be relocated into the site engineering electronic archive. From this point, it should be under the care of the archive staff.</td>
</tr>
<tr>
<td><strong>Administrative Support</strong></td>
<td>Should be similar to the Active Projects Support scope above, except that it is not related to the specific project.</td>
</tr>
</tbody>
</table>
Amgen Capital Project Teams can include numerous members from a multitude of companies. At any given time, each team member may be authoring project documents that require filing or distribution support. This automatically makes every member on the team a general stakeholder to the project-support process.

> The Project Team Participants list can be found in Appendix A.

There are a few core team members, however, who share the most significant roles and responsibilities within the project support business process. They are:

- The EOS Engineering Project Manager (PM)
- The Supervisor of the project support staff
- The Project Coordinator (PC)
- The Architectural/Engineering (A/E) and the General Contractor (GC) consultants
- The Manufacturing Project Engineer (PE) on projects related to manufacturing or GMP facilities

The following sections describe the roles and responsibilities of the project support business process general and core participants:

> The explanation of the concept of project phases can be located in Chapter 3, Process Overview, of this guideline.
**Project Manager**

The Project Manager is the designated Amgen person carrying the ultimate responsibility for the project. PM roles and responsibilities in the project support process are as follows:

| Phase I | • Consult with the PS Supervisor about the scale and scope of Services needed for the project  
|         | • Establish project sub-account(s) for miscellaneous Project Support expenses for reprographics, mail and copy, staff timecard allocations and other miscellaneous costs  
|         | • Define and request other PC services needed, outside the scope of general PC responsibilities |

| Phase II | • Request and communicate document distribution requirements  
|          | • Supervise the general flow of project documentation  
|          | • Oversee and provide feedback on the Project Support process  
|          | • Deliver project documentation to the PC for filing; provide document file number when authoring the content |

| Phase III | • Support the timely turnover of the project TOP  
|           | • Ensure and approve the completeness and correctness of the TOP package, including Record Drawings |

| All Phases | • Support PC in the interpretation of documentation categories so they can be filed appropriately  
|            | • Convey the date of documentation development/delivery events in the project schedule  
|            | • Support Project Support documentation goals and tasks related to the Project  
|            | • Be the liaison between the A/E, GC and the PC  
|            | • Be the advocate for Amgen internal department (manufacturing, validation, maintenance/operations) special interests, especially related to the Turnover Package |

**Support Staff Supervisor**

The Support Staff Supervisor is the designated Amgen person responsible for managing the project support staff (Project Coordinators) and resources.

**Tip** *The project support staff supervisory position may be structured in many different ways, depending on the site departmental composition or project team configuration. In the case when the supervisory position is not clearly defined/assigned, the Project Manager should logically assume this role.*
Support Staff Supervisor roles and responsibilities in the project support process are as follows:

<table>
<thead>
<tr>
<th>Phase I</th>
<th>All Phases</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Consult with PM about the scale and scope of services needed for the</td>
<td>• Supervise the general flow of project documentation</td>
</tr>
<tr>
<td>project</td>
<td>• Oversee the Project Support process</td>
</tr>
<tr>
<td>• Request from PM the establishment of project subaccount(s) for</td>
<td></td>
</tr>
<tr>
<td>miscellaneous Project Support expenses for reprographics, mail and</td>
<td></td>
</tr>
<tr>
<td>copy, staff timecard allocations, etc.</td>
<td></td>
</tr>
<tr>
<td>• Assign Project Coordinators to projects</td>
<td></td>
</tr>
</tbody>
</table>

**Project Coordinator**

The Project Coordinator is the designated Amgen person responsible for helping the Project Manager manage the project documentation. PC roles and responsibilities in the project support process are as follows:

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Documentation Support:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Deliver and present Amgen project documentation and TOP requirements</td>
<td>• Deliver and present Amgen project documentation and TOP requirements to the A/E and GC</td>
</tr>
<tr>
<td>to the A/E and GC</td>
<td>• Negotiate the flow and routing of project documents</td>
</tr>
<tr>
<td>• Negotiate the flow and routing of project documents</td>
<td>• Develop flow diagrams</td>
</tr>
<tr>
<td>• Develop flow diagrams</td>
<td>• Distribute diagrams to flow participants</td>
</tr>
<tr>
<td>• Distribute diagrams to flow participants</td>
<td>• Establish contacts with A/E and GC key personnel</td>
</tr>
<tr>
<td>• Prepare support infrastructure for the project:</td>
<td>• Prepare support infrastructure for the project:</td>
</tr>
<tr>
<td>• Configure software applications in support of the project</td>
<td>• Configure software applications in support of the project (new database,</td>
</tr>
<tr>
<td>(new database, Livelink Endeavor library folder structure)</td>
<td>Livelink Endeavor library folder structure)</td>
</tr>
<tr>
<td>• Create new physical hard-copy folders</td>
<td>• Create new physical hard-copy folders</td>
</tr>
<tr>
<td>• Allocate hanging folders for project drawings</td>
<td>• Allocate hanging folders for project drawings</td>
</tr>
<tr>
<td>• Other, as requested</td>
<td>• Other, as requested</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase II</th>
<th>Administrative Support:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Participate in project meetings</td>
<td>• Participate in project meetings</td>
</tr>
<tr>
<td>• Attend project kick-off and/or alignment meeting</td>
<td>• Attend project kick-off and/or alignment meeting</td>
</tr>
<tr>
<td>• Attend other project meetings on as-needed basis</td>
<td>• Attend other project meetings on as-needed basis</td>
</tr>
<tr>
<td>• Provide general assistance to the Project Manager:</td>
<td>• Provide general assistance to the Project Manager:</td>
</tr>
<tr>
<td>• Schedule meetings and conferences</td>
<td>• Schedule meetings and conferences</td>
</tr>
<tr>
<td>• Other, as requested</td>
<td>• Other, as requested</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase II</th>
<th>Documentation Support:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Investigate and request document file numbers from document</td>
<td>• Investigate and request document file numbers from document</td>
</tr>
<tr>
<td>originators, so document can be filed appropriately</td>
<td>originators, so document can be filed appropriately</td>
</tr>
<tr>
<td>• File, track and research project documentation</td>
<td>• File, track and research project documentation</td>
</tr>
<tr>
<td>• Maintain project database and Livelink Endeavor library</td>
<td>• Maintain project database and Livelink Endeavor library</td>
</tr>
<tr>
<td>• Other, as requested</td>
<td>• Other, as requested</td>
</tr>
</tbody>
</table>

Table continued on next page
The Architectural/Engineering and General Contractor Consultants are the persons contractually obligated to design and construct facilities or systems based on the project’s predefined scope. A/E and GC roles and responsibilities in the project support process are as follows:

<table>
<thead>
<tr>
<th>Phase III</th>
<th>Documentation Support:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Perform project closeout:</td>
</tr>
<tr>
<td></td>
<td>– Check integrity and completeness of project documentation</td>
</tr>
<tr>
<td></td>
<td>– Obtain and route Project Closeout Sign-off sheet</td>
</tr>
<tr>
<td></td>
<td>– Archive all project documentation, including TOP</td>
</tr>
<tr>
<td></td>
<td>• Other, as requested</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Phases</th>
<th>Administrative Support:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Support miscellaneous administrative tasks:</td>
</tr>
<tr>
<td></td>
<td>– Distribute and route project documentation</td>
</tr>
<tr>
<td></td>
<td>– Copy, print/plot, scan, fax, mail support</td>
</tr>
<tr>
<td></td>
<td>– Document research support</td>
</tr>
<tr>
<td></td>
<td>– Point-of-Contact for A/E and GC</td>
</tr>
<tr>
<td></td>
<td>• Other, as requested</td>
</tr>
<tr>
<td></td>
<td>• Allocate project support costs, like copy, mail, and time worked to the designated project sub-account(s)</td>
</tr>
<tr>
<td></td>
<td>• Develop and update on quarterly basis the repro expenses report</td>
</tr>
</tbody>
</table>

### Architectural/Engineering and General Contractor Consultants

The Architectural/Engineering and General Contractor Consultants are the persons contractually obligated to design and construct facilities or systems based on the project’s predefined scope. A/E and GC roles and responsibilities in the project support process are as follows:

| Phase I | • Establish relationship with Project Coordinator |
|         |   – Obtain from PM the name and contact info for the Project Coordinator |
|         |   – Identify the A/E documentation point-of-contact |
|         | • Consult with the PC about documentation and project support procedures and requirements |
|         | • If project is related to manufacturing or GMP areas, consult with the Manufacturing, Validation, Maintenance/Operations and other Amgen departments about their specific turnover documentation requirements, and understand these requirements |
|         | • Participate in the design of project documentation flows |
|         | • If feasible, establish the Project Reprographics Account with local vendor for processing the Drawings |

| Phase II | • Comply with the project support documentation procedures and requirements, as well as any others related to the manufacturing, validation and maintenance/operations requirements |
|          | • Deliver the project documentation to the PC for filing |
|          | • Respond to any project correspondence in a timely manner |

*Table continued on next page*
General Project Team Member

A General Project Team Member is any person participating in the project who authors, initiates or receives project documentation. His/her roles and responsibilities in the project support process are as follows:

| Phase I     | • Participate in the design of project documentation flows, if needed  
|            | • Consult with the PC about the documentation and project support procedures and requirements |
| Phase II    | • Comply with Project Support documentation procedures and requirements  
|            | • Deliver project documentation to the PC for filing, provide the document file number when authoring the document  
|            | • Respond to any Project Correspondence in a timely manner |
| Phase III   | • Participate in the review of the TOP |
| All Phases  | • Support Project Coordinator in the interpretation of documentation categories so they can be filed appropriately |
**Project Engineer (for Manufacturing / GMP Projects)**

The Project Engineer is the designated Amgen person responsible for coordinating the project’s engineering issues. PE roles and responsibilities in the project support process are as follows:

| Phase I | • Participate in the design of the project documentation flows  
          • Consult with the PC about documentation and project support procedures and requirements  
          • Define and deliver manufacturing, validation and maintenance requirements for the project turnover documentation |
|---------|---------------------------------------------------------------|
| Phase II | • Comply with project support documentation procedures and requirements  
            • Monitor development of the project turnover documentation  
            • Deliver project documentation to the PC for filing, provide the document file number when authoring the document  
            • Respond to any Project Correspondence in a timely manner |
| Phase III | • Participate in the review of the TOP  
               • Lead the review of the TOP documentation being transitioned to Manufacturing, Validation and Maintenance/Operations (the Installation Verification package) |
| All Phases | • Support Project Coordinator in the interpretation of documentation categories so they can be filed appropriately |
Every project is unique and some of project support services or requirements may not be applicable to all projects. It is important, however, that every project is sufficiently documented in the Amgen EOS Archive. Therefore, it is the responsibility of project team members to ensure that the project’s core documentation is filed, managed and archived in a consistent way.

The success of this endeavor depends on the level of cooperation and collaboration between project participants, including A/E consultants, General Contractor representatives and Amgen project management staff. The graphic below represents the relationship and information flow between four key project roles.

**Figure 1: Information Flow Between Project Roles**

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**Corporate Project Authorization**

The EOS department has implemented the global corporate project authorization process to manage the approval and funding of engineering projects. This process is referred to as InBox/OutBox (IBOB).
Although IBOB is a corporate process, it is very important to project support across all Amgen sites. It initiates the beginning of projects and is a flag to the project support staff that their services might be needed.

Assignment of the Document Coordinator
In an effort to streamline communication and provide solid project support coverage on all Amgen engineering projects, the Thousand Oaks-based Project Support Supervisor assumes responsibility for notifying satellite project support groups about projects approved for their locations.

Next, the satellite support staff assigns the Project Coordinator as the point of contact for the project.

Project Tracking Number
Once the Project Request Authorization (PRA) is approved with all required signatures, the Facilities Planning Department releases the Capital Requisition Authorization (CRA) and issues the unique Capital Project Number, which officially marks the beginning of the project.

The Project Number is a 6-digit number starting with digits 83-

TIP: The Project Number is a 6-digit number starting with digits 83-

Figure 2: The Process of Generating a Project Number

In-Box/Out-Box  ➔  PRA  ➔  CRA  ➔  Project #

The Amgen Project Number is implemented in the project support process as the official unique tracking number for any project documentation. It then becomes the basis for:

- Project documentation physical hard file structure
- Project electronic file structure
- Project document identification and searching
The Project Number is essential to the documentation processes. If it is not available, or the project isn't Capital, the staff should consult the Project Manager or their supervisors to arrange for other ways of assigning a unique number to track the subject project.

**Project Execution Phases**

With the CRA fully approved, the project enters the execution stage. This event also marks the beginning of the Project Coordinator's participation in the project.

The DC’s involvement will continue throughout the project’s entire life-cycle, which for project support purposes, is divided into three distinct phases:

- Phase I – Project Initiation
- Phase II – Project Design, Construction, Start-Up, and Commissioning
- Phase III – Project Closure and Turnover Process (TOP)

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**Figure 3: The Three different Project Phases**

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Each of the three phases is characterized by a different set of team member responsibilities and tasks, interactive relationships, sub-processes and deliverables, which are all summarized in the following process flow charts.
**Figure 4: Phase I – Project Initiation**

- **Start Phase I**
  - Thousand Oaks Project Support Supervisor Receives the Projects Approval Status Matrix Email from the IBOB Administrator
  - Thousand Oaks Project Support Supervisor Notifies the Satellite Group of Project being Approved

- **Satellite Staff** Consults the PM about the Scope of the Services Needed and Assigns the PC Rep

- **Manufacturing or GMP Project?**
  - No
    - PM Decides on the Level of DC Support
      - Minimum
      - Full

- **PC Attends the Project Kick-Off Meeting:**
  - Develops the relationship with A/E and GC
  - Delivers the minimum project documentation (TOP) requirements to the PM, A/E and GC

- **PC Negotiates the Scope of Services with the PM:**
  - Establishes supported docs baseline
  - Designs the docs flows
  - Defines the admin support requirements (scheduling, meetings, travel, etc.)
  - Fine-tunes the docs requirements (TOP requirements) for A/E and GC
  - Requests his/her addition to the project matrix
  - Participates in the establishment and formatting of the Turnover Requirements for the manufacturing, validation and maintenance/operations

- **DC Negotiates the Scope of Services with the PM:**
  - Establishes supported docs baseline
  - Designs the docs flows
  - Defines the admin support requirements (scheduling, meetings, travel, etc.)
  - Fine-tunes the docs requirements (TOP requirements) for A/E and GC
  - Requests his/her addition to the project matrix

- **PC Prepares the Documentation Support “Infrastructure”:**
  - Electronic applications
  - Physical hard-copy folders
  - Hanging file

- **End Phase I**

---

**Notes:**
- Project Support Internal Activity
- Amgen Internal Activity
- A/E & GC Related Activity
- Start or End of Flow
- Flow Connection Point

**Process Overview** 3-3
**Process Overview**

**Figure 6: Phase III – Project Turnover and Closure**

- **Start Phase III**
  - TOP and Closure

- **Develop the TOP Matrix:**
  - Reconfirm the TOP Scope with A/E, GC and PM
  - Develop and Distribute the Schedule for the Delivery of the TOP Documents

- **Manufacturing or GMP Project?**
  - **Yes**
    - **Manage the Transfer of the TOP Package from the GC:**
      - Verify the Completeness of the Package
      - Notify the Amgen Team about the TOP Delivery and request their assistance in its review
      - Coordinate the review process of the manufacturing, validation, and maintenance/operations portion of the TOP

  - **No**
    - **Develop Document Retention Matrix for the Project:**
      - Use the Master Retention Policy guidelines as Template
      - Re-verify Correctness and Completeness of the final Docs with the PM and Supervisor

- **Archive all of the Project Data and Files:**
  - Electronically Archive the Project Database
  - Electronically Archive all the E-mails and Computer Files
  - Archive the Hard Copy Documents at Offsite Storage

- **Initiate and Execute the Project Closure:**
  - Notify the PS Supervisor that the Project is about to be Closed
  - PS Supervisor will Spot-Check the Completeness of Archive
  - PS Supervisor will Authorize the Release of the Project Closeout Signoff Form
  - DC will Manage the Routing of the Form and File with the Project Files

- **End Phase III**

---

**Satellite Involvement**

- Project Support Internal Activity
- Amgen Internal Activity
- A/E & GC Related Activity
- Start or End of Flow
- Flow Connection Point
Amgen EOS requests that consultants and contractors provide Amgen with all available construction documentation in a timely and diligent manner.

The main objective of the project support staff is to collect and file this documentation. It is critical to each project’s success that the A/E and GC transmittal/submittal processes run smoothly and that the Project Coordinator is included in the distribution of all project documentation and correspondence.

Each project support site should use the filing system described below for filing project documents. This system provides each document with its unique filing location.

All hard-copy documents submitted to Amgen should be accompanied by electronic copies, unless they are not available and their retrieval would create unreasonable hardship. The site engineering filing standard should be capable of accommodating both hard copies and electronic copies.

**Project Documentation Types**

EOS has established a list of standard types of project documents. This list includes most types that would comprise the project documentation package. They are:

1. General Correspondence
2. Feasibility Studies
3. Project Summary, Design Criteria, and Scopes
4. Contract Documentation
5. Meeting Minutes / City Correspondence
6. Monthly Reports
7. Permits
8. Certificate of Occupancy
9. Vendor & Subcontractor List
10. Request for Quote (RFQ), Request for Proposal (RFP), and Purchase Order (PO)
11. Transmittals
12. Specifications and Specification List
13. Division Requirements  
14. Project Schedules  
15. Vendor Submittals / Responses  
16. Requests for Information (RFI) / Responses  
17. System Start-up Sign-off  
18. Inspection Reports  
19. Equipment Manuals  
20. Warranties  
21. Material Safety Data Sheets (MSDS)  
22. Equipment Lists, Line Lists, Valve Lists, Instrument Lists, etc.  
23. Miscellaneous Reports / Sketches  
24. Engineering Drawing List  
25. Project Photographs  
26. Engineering Drawings  

On most projects, these documents create the overall project documentation package. Any of them could be part of the EOS Active Engineering File or part of the Contractors Turnover Package.

**TIP**  
The Active Engineering File and the Contractors Turnover package are explained in the Turnover Package section.

### Project Filing System

The typical project support filing structure is comprised of two different systems:

- The hard-copy filing system
- The electronic filing system

Both of these systems should apply consistent filing methodologies. Their organization should allow for easy cross-referencing of hard copies to their electronic equivalents.

### Hard-Copy Filing System

Project hard-copy documentation should be filed within two main categories:

- Administrative Section (contracts, invoices, PO’s)
- Engineering Section

**Administrative / Contract Documentation**

Based on local interdepartmental arrangements, the project support staff may provide filing services for a projects’ administrative/contracts documentation.
In this arrangement, the Amgen finance departments (Amgen Accounts Payable, Amgen Strategic Sourcing and Procurement, etc.) would forward batches of administrative documents to the Project Coordinator, who will file them into the project folders’ administrative section.

**Tip**  
*The Sample Administrative Folders Setup and Structure can be found in Appendix B.*

All Administrative folders should be located with the rest of the project folders, usually in the Project Support Document Control Room.

**Engineering Documentation**  
Most of the Engineering Documentation is generated by project Architects, Engineers, Consultants, Contractors and Subcontractors. Amgen requires that all of this documentation be delivered to the Project Coordinator for recording and archiving.

**Tip**  
*Project Support currently recognizes about seventy different engineering document categories. See the Document File Numbers and Categories table in the Sample Engineering Folders Setup and Structure in Appendix C.*

Each engineering document for the active project should be filed in the hard-copy folder. Project folders should be generated on an as-needed basis, depending on the inflow of project documentation. The Project Coordinator should be able to determine the classification of each document from its category. If unclear, Project Coordinators are encouraged to consult with the document originator or the Project Manager about the category of the document.

Project Coordinators may use other means for filing, storing or archiving project hard-copy documents. The Document Coordinator occasionally may use binders for the TOP documentation or hanging/flat files for drawings.

**Electronic Filing System**  
Migration of project documentation and archives into a paperless environment is one of EOS’s long-range goals. It is recommended that the project support sites request electronic copies of all project documentation. If the original electronic copies of documents are not available, the consultants should scan the hard-copy documents into Adobe Acrobat PDF format.

**Tip**  
*Administrative documents do not need to be archived electronically. They are already being tracked through other departments’ electronic system and duplication is not necessary.*
Different project support sites currently use proprietary electronic archiving systems, such as:

- Databases (Access)
- Project collaboration applications (Prolog, Skire)
- Web-based document management applications (Livelink Endeavor)
- Network server folder structures
- E-mail archive accounts, etc.

In most cases, these tools are used as interim solutions until the EOS Capital Projects Information Management Systems team implements e-Builder as the global Capital Project Collaboration Tool.

**Tip**

The Livelink Endeavor, Prolog and Microsoft Outlook Appendixes (appendixes D, E and F) explain some of the features and uses of sample document management applications used at the Thousand Oaks site. These systems have been designed with global support in mind and can be applied company-wide and made available to any engineering center.

**Document Flows**

The success of project support efforts depends on the efficiency of the project documentation distribution system. The Project Coordinators should insist that the team agree on and develop document-routing procedures and flows for different types of project documents requiring distribution.

Project Coordinators should follow the document flows for processing and filing the project’s documentation. The PC should immediately provide feedback to the team if he/she notices any issues related to the project documentation distribution.

The following sections provide typical document flows and should be interpreted as one of the possible scenarios for routing various project documents. They should be revised and applied accordingly to accommodate special project needs or project manager’s preferences.
**General Document Flow**

The General Document Flow should be applied for filing documents not requiring distribution or follow up.

**Figure 7: General Document Flow**

- **Start**
  - PC Receives the Document
  - What is the Document Format?
  - DC Logs the Document Data into the Database
  - DC Prints and Files the Hard Copy into the Project Folder
  - PC Loads the Document Electronic File into Electronic Doc Management System

- **Hard Copy and Electronic Media**
  - PC Verifies that Both Formats Represent the Match
  - PC Logs the Document Data into the Database
  - PC Files the Hard Copy into the Project Folder
  - PC Loads the Document Electronic File into Electronic Doc Management System

- **File on Electronic Media**
  - DC Archives the E-mail in Outlook

- **E-mail**
  - End

- **PC Rejects the Delivery and Requests the Hard Copy to be Delivered with the File**

**Legend**
- Project Support Internal Activity
- Amgen Internal Activity
- A/E & GC Related Activity
- Start or End of Flow
- Flow Connection Point

*Project Documentation* 4-4
Request for Information (RFI) Flow

In general, the Request for Information is the document requesting additional information or clarification of the design, installation, specifications and other issues. In most cases it originates at the GC or construction field and is directed to the A/E. The General Contractor should maintain on his own the complete project RFI documentation.

**Figure 8: Request for Information Flow**
**Submittal Flow**

In general, the Submittal is the project document, which contains information on proposed solutions to project issues as well as requests for the solutions’ approval. In most cases it originates at the GC and is directed to the A/E or Amgen. The General Contractor should maintain on his own the complete project submittal documentation.

**Figure 9: Submittal Flow**

![Submittal Flow Diagram]

---

Project Support Internal Activity
Amgen Internal Activity
A/E & GC Related Activity
Start or End of Flow
Flow Connection Point

---

**Project Documentation**

4-6
Turnover Package

PHASE I
PROJECT INITIATION

PHASE II
PROJECT DESIGN
CONSTRUCTION
START-UP
COMMISSIONING

PHASE III
PROJECT TURNOVER
CLOSURE
5.0 Turnover Package

TOP Process

The project’s turnover package (TOP) is the culmination of all the efforts associated with managing the project’s documentation. The TOP is the systematic composition of the most important project documents, which illustrate how the project evolved and how the facility has been constructed. The TOP is composed, developed and delivered by the General Contractor.

The significance of the TOP to Amgen is usually underestimated and poorly understood by the consultants responsible for its creation and delivery. From Amgen’s perspective, the delivery of the TOP not only concludes the construction process, but it also marks the beginning of the important new phase for maintained documents, which are used to operate the facilities.

The facilities documentation composed from the TOP documentation has to satisfy many different departmental, operational, legal or regulatory needs. Therefore it is important that it is complete, accurate and well organized.

Figure 10: The Significance of TOP to Amgen
EOS has established a corporate standard for turnover package requirements for all engineering projects. It should be followed for each project, but it can also be expanded based on additional site/project conditions or requirements, or project team preferences. At the TOP phase of the project, all consultants should be aware of and familiar with the required scope and formatting of the project turnover package.

**Active Engineering File vs. Turnover Package**

The active engineering file is the set of documents collected by the Project Coordinator during the project’s lifecycle. In general, they include the project’s general correspondence, feasibility studies, design criteria and scope, contract documentation, monthly reports, and project’s meeting minutes, but also might include any other type of documents, as outlined in the previous section.

*Tip*  
The filing methodology, which should be applied to these documents, is more fully explained in Appendix G – Sample Turnover Binder Structure.

The Turnover Package includes the documentation representing the latest and most complete versions of the project document, such as permits, Certificates of Occupancy, RFQs, RFPs, POs, RFIs, specifications, schedules, submittals, reports, manuals, warranties, equipment lists, drawings, photographs, etc.

Project support staff should request delivery of all available project documents from any of these categories.

This information is critical to Amgen because it references the most accurate data about the project. The formatting methodology, which should be applied to the TOP documents, is explained later in this chapter.

To accurately document the entire project, at the end of the project both packages should be combined and archived together. Since there may be duplicates or conflicting versions of documents between the two packages, the team should make an effort to identify and remove them, while cross-referencing the removed documents so documentation “gaps” are not created.
**Amgen TOP Requirements**

EOS requires that all project turnover packages are delivered to Amgen in this predefined format. The responsibility of formatting the TOP is placed on the General Contractor. Amgen recognizes that the General Contractor may need input and documentation from other consultants, such as the A/E, but it is still the GC’s responsibility to coordinate and manage the TOP process and deliver the completed package.

All General Contractors working on Amgen projects have to comply with EOS requirements for the TOP as the baseline. Depending on the project scope or type, the General Contractors may also be requested to comply with an extended set of baseline requirements, such as Manufacturing, Validation, Maintenance, EH&S or other requirements.

The following sections of this guide address the Engineering and Manufacturing baseline requirements for the TOP documentation.

**Engineering Baseline TOP Requirements**

This section explains the mandatory Engineering baseline TOP requirements that every project should comply with.

The turnover package should include both hard copies and electronic copies of every document. The documents should be delivered to Amgen in the following three forms:

- Binder sets
- Drawing sets
- Electronic media
The following table explains the quantities and basic formatting requirements for each deliverable type:

### Table 1: Engineering TOP Deliverables

<table>
<thead>
<tr>
<th>Deliverable Type</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Binder Sets**          | • Quantity: 2 or more, depending on requirements  
                          • Format:  
                          – Provide the Cover and Edge description, including Amgen project name and number and binder sequence number  
                          – Provide the content index  
                          – Incorporate tabs for sections  
                          – Collate  
                          – Provide covers large enough to accommodate the 8.5x11 or 11x17 size documents |
| **Drawings Sets**        | • Quantity:  
                          – 1 set of contractors original redlines  
                          – 1 set of final mylar or vellum, full size (to scale)  
                          – 2 sets of final blacklines, or equivalent full size (to scale)  
                          – 2 sets of final blacklines or equivalent, half size (1/2x the scale)  
                          – other, depending on the requirements  
                          • Format:  
                          – As-built/Record Drawings condition and Shop Drawings |
| **Electronic Media CD Sets** | • Quantity: 2 or more, depending on requirements  
                          • Format:  
                          – Label on the CD box and face identifying the Amgen project name and number and the CD sequence number  
                          – Provide the electronic content index  
                          – Structure the CD electronic folder to resemble the binder structure |

*Turnover Package*
Binder Sets Composition
Turnover binders should be organized in a logical way, allowing for grouping of documents of the same type. They should incorporate tabs for sections and sub-sections so the documents can be filed in an orderly manner and easily located.

The TOP binders generally should include the following document types:

- Permits
- Certificate of Occupancy
- Vendor & Subcontractor List
- Request for Quote (RFQ), Request for Proposal (RFP), and Purchase Order (PO)
- Transmittals
- Specifications and Specification List
- Division Requirements
- Project Schedules
- Vendor Submittals / Responses
- Requests for Information (RFI) / Responses
- System Start-up Sign-off
- Inspection Reports
- Equipment Manuals
- Warranties
- Material Safety Data Sheets (MSDS)
- Equipment Lists, Line Lists, Valve Lists, Instrument Lists, etc.
- Miscellaneous Reports / Sketches
- Engineering Drawing List
- Project Photographs
- Engineering Drawings (the drawings larger than 11x17 should be turned over in a roll and should not be folded into binders, unless requested)

It is requested that the General Contractor consult the Amgen project team about formatting the TOP binder content and incorporating their recommendations into the final copy.

**Tip**
The binder’s generic composition template, which can be easily applied to any project’s TOP binders, appears in Appendix B.
**Drawing Sets Composition**

For the final turnover of the drawings sets, the GC is required to deliver the original construction redline set, as well as the As-Built/Record Drawings sets plotted from the updated electronic versions of the drawings. It may be necessary to coordinate the incorporation of the field redlines into the engineering drawings with the A/E.

The required drawings sets must be delivered to Amgen at the time of the project completion. No exceptions shall be made to requests for postponing the delivery of the final drawings. If the General Contractor anticipates any nonconformance to this requirement related to subcontractor delays, data unavailability, etc., the GC should implement alternate strategies to ensure compliance with the requirement.

**Electronic Media CD Sets**

Delivery of two final sets of TOP CDs is requested for all projects. They should include the electronic images of the documents contained in the binders, and they should be filed in a folder structure resembling the binder structure.

An electronic index should be present on every CD. The files should be named or numbered in a manner allowing for easy cross-referencing of electronic copies to hard copies.

The table on the following page explains preferred file formats for the TOP documents:
<table>
<thead>
<tr>
<th>No.</th>
<th>Document Type</th>
<th>Preferred Native File Type</th>
<th>1st Choice *Acceptable Viewable File Type</th>
<th>2nd Choice *Acceptable Viewable File Type</th>
<th>File Transfer Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Correspondence</td>
<td>Microsoft Outlook E-Mail</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>2</td>
<td>Feasibility Studies</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>3</td>
<td>Project Summary, Design Criteria, and Scopes</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>4</td>
<td>Contract Documentation</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>5</td>
<td>Meeting Minutes / City Correspondence</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>6</td>
<td>Monthly Reports</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>7</td>
<td>Permits</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>8</td>
<td>Certificate of Occupancy</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>9</td>
<td>Vendor &amp; Subcontractor List</td>
<td>xls</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>10</td>
<td>Request for Quote (RFQ), Request for Proposal (RFP), and Purchase Order (PO)</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>11</td>
<td>Transmittals</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>12</td>
<td>Specifications and Specification List</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>13</td>
<td>Division Requirements</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>14</td>
<td>Project Schedules</td>
<td>mpp</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>15</td>
<td>Vendor Submittals / Responses</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>16</td>
<td>Requests for Information (RFI) / Responses</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>17</td>
<td>System Start-up Sign-off</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>18</td>
<td>Inspection Reports</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>19</td>
<td>Equipment Manuals</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>20</td>
<td>Warranties</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>21</td>
<td>Material Safety Data Sheets (MSDS)</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>22</td>
<td>Equipment Lists, Line Lists, Valve Lists, Instrument Lists, etc</td>
<td>xls</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>23</td>
<td>Miscellaneous Reports / Sketches</td>
<td>doc</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>24</td>
<td>Engineering Drawing List</td>
<td>xls</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (1)</td>
</tr>
<tr>
<td>25</td>
<td>Project Photographs</td>
<td>tif</td>
<td>jpg</td>
<td>gif</td>
<td>CD-ROM (2)</td>
</tr>
<tr>
<td>26</td>
<td>Engineering Drawings **</td>
<td>See Note Below</td>
<td>pdf</td>
<td>tif</td>
<td>CD-ROM (2)</td>
</tr>
<tr>
<td>27</td>
<td>Engineering Drawings **</td>
<td>dwg</td>
<td>dwg</td>
<td>dwg</td>
<td>CD-ROM (3)</td>
</tr>
</tbody>
</table>

* If preferred native file cannot be supplied

** Engineering Drawings files must be provided in the following two formats:
1) Native AutoCAD (.dwg) format. Along with all associated reference files, non-standard fonts, shapes, and line-types, company logos, etc.
2) A viewable flat file, compiled with all associated external references (Xrefs), fonts, shapes, line-types, logos, etc.

Because of the difficulty and time-consuming effort of re-assembling post construction drawings using current complex CAD packages, Amgen requires the viewable flat file.
Manufacturing Baseline TOP Requirements for Manufacturing / GMP Projects

The following section documents the Manufacturing baseline TOP requirements for every Manufacturing/GMP project.

The Manufacturing/GMP project support staff requests that the General Contractor coordinate and deliver the Installation Verification (IV) documentation and incorporate it into the project turnover package.

Installation Verification information has been structured to follow the Validation Installation Qualification documentation format. Therefore it is not only used by Manufacturing team as the base for equipment data, but it is also used by the Validation team as one of the most important references in the process of commissioning and validating the facility or system.

The GC will be issued the Installation Verification Guideline Document early in the project, which gives the overview of the IV documentation and provides instructions on how to complete the required forms. Additionally, the GC should obtain electronic copies of the IV templates from Amgen.

The required Installation Verification documentation must be formatted using the Amgen Manufacturing predefined templates.

The GC should direct all questions and requests regarding the IV to the Amgen Project Engineer, who should provide guidance on completing this part of the documentation. The PE would also be responsible for verifying that the IV documentation has been completed correctly. The IV should be delivered in the two forms:

<table>
<thead>
<tr>
<th>Table 3: Manufacturing TOP Deliverables</th>
</tr>
</thead>
</table>

### IV Binder
- **Quantity:** 2 or more, depending on requirements
- **Format:**
  - Provide the Cover and Edge description, including Amgen project name and number and binder sequence number
  - Provide the content index per template
  - Incorporate tabs for sections
  - Collate
  - Provide covers large enough to accommodate the 8.5x11 or 11x17 size documents

### IV Electronic Media Set
- **Quantity:** 2 or more, depending on requirements
- **Format:**
  - Label on the CD box and face identifying the Amgen project name and number and the CD sequence number
  - Provide the electronic content index
  - Structure the CD electronic folder to resemble the binder structure
The following list describes the required main sections and forms of the Installation Verification documentation. This structure must be used for the composition of the binders and electronic files.

- **Index and Summary**  
  - IV Completion Form  
  - Installation Verification Index  

- **System Summary / Scope of Work & Change Modification Description**  
  - MCO Checklist  
    - MCO Checklist  
    - Equipment Installation Summary  
    - Utility Descriptions: Water, Steam / Compressed Gas  
    - Utility Descriptions: Heating / Cooling  
    - Utility Descriptions: Electrical  
    - Utility Descriptions: Drainage  
    - Equipment Index  
    - Miscellaneous Equipment Index  
    - Valve Index  
    - Piping Index  
    - Piping Reports Summary Index  
  - ICO Checklist  
    - ICO Checklist  
    - Instrument Index  
  - ACO Checklist  
    - ACO Checklist  
    - Computer Software/Hardware Summary  
    - Computer Control Component List  

- **Reports List**  
  - Reports, Calculations, & Submittals  

- **Drawings List**  
  - Drawings  

- **Manuals Product Data List**  
  - Manuals, Cutsheets & Procedures  

- **Certifications & Warrantees**  
  - Certifications & Warrantees  

- **Spare Parts List**  
  - Recommended Spare Parts List  

- **Exceptional Conditions**  
  - Installation Verification Exceptional Conditions Summary
The Manufacturing TOP documentation requirements should not, in any way, replace or supersede documentation required by Engineering.

The Validation Installation section of the Turnover package must be delivered to Amgen together with the rest of the project turnover package.

Archiving of the Project Documentation
At project closure, one complete set of the project documentation including the Active Engineering File and the Turnover Documentation should be archived. The additional TOP set(s) should be distributed to internal users based on their requests.

The project documentation should be archived in accordance to the site engineering archiving standards.

Retention
It is recommended that the Project Coordinator requests the retention dates for all the project documentation. Most of the documents lose their validity over a period of time and should be purged accordingly based on Amgen global retention guidelines.

The Amgen global corporate retention team is currently working on defining the guidelines for the retention of project records. They will be referenced in this document once it becomes available.

Off-Site Storage
If the on-site storage space is inadequate, it is recommended that the Project Coordinators contact an off-site storage vendor. The Thousand Oaks office recommends contacting the national Iron Mountain Storage Company as the preferred Amgen off-site storage vendor.
Abbreviations

A/E  Architect/Engineer
ACO  Automation Check-out
CM  Construction Manager
CRA  Capital Request Authorization
CSI  Construction Specification Institute
DWG  AutoCAD Drawing
EOS  Engineering Operations Services
EH&S  Environmental Health & Safety
GC  General Contractor
GIF  Graphics Interchange Format
IBOB  In-Box/Out-Box
ICO  Instrumentation Check-out
IV  Installation Verification
JPG  Joint Photographic Experts Group Format
MCO  Mechanical Check-out
MPP  Microsoft Project File
MSDS  Material Safety Data Sheet
PC  Project Coordinator
PDF  Portable Document Format
PE  Project Engineer
PM  Project Manager
PO  Purchase Order
PRA  Project Request Authorization
RFI  Request for Information
RFP  Request for Proposal
RFQ  Request for Quote
TIF  Tagged Image File
TOP  Turnover Package
**A**

**Architect/Engineer (A/E)** – An individual or firm offering professional services as both architect and engineer.

**As-Built Drawings** – Construction hand marked redlined drawings generated in the field reflecting changes made during the construction process or after construction that amend the Contract Drawings to show the exact location, geometry, and dimensions of the constructed project. As-Built Drawings are not the same as Record Drawings.

**B**

**Bid** – A binding offer, usually expressed in dollars to provide specific services within clearly stated requirements.

**Building Permit** – A written document issued by the appropriate governmental authority permitting construction to begin on a specific project in accordance with drawings and specifications approved by the governmental authority.

**C**

**Commissioning** – The process at or near construction completion when a facility is put into use to see if it functions as designed. Usually applied to manufacturing-type projects.

**Consultant** – Professional firm and/or individual hired by the owner or client to give professional advice.

**Contractor** – A properly licensed individual or company that contracts to perform a defined scope of work on a construction project and agrees to furnish labor, materials, equipment and associated services to perform the work as specified for a specified price.

**CSI Master Format** – The CSI Master Format is a system of numbers and titles for organizing construction information into a regular, standard order or sequence. By establishing a master list of titles and numbers, Master Format promotes standardization and thereby facilitates the retrieval of information and improves construction communication. It provides a uniform system for organizing information in project manuals, for organizing project cost data, and for filing product information and other technical data.

**E**

**Engineer** – A professional firm and/or individual who is professionally engaged in an engineering discipline.
**F**

**Feasibility Phase** – The conceptual phase of a project preceding the Design Phase used to determine from various perspectives whether a project should be constructed or not.

**Flat File** – Engineering drawings storage-system based on the arrangement of flat drawers capable of accommodating large format drawings.

**G**

**General Contractor (GC)** – A properly licensed individual or company having "primary" responsibility for the work. A GC can perform work with its own contractors or can perform the project work as an independent contractor, providing services to owners through the use of subcontractors when using the general contracting system.

**H**

**Hanging File** – Engineering drawings storage-system based on the arrangement of hanging stick clamps capable of accommodating large format hanging drawings.

**L**

**Lien, Mechanic’s or Material** – The right to take and hold or sell an owner’s property to satisfy unpaid debts to a qualified contractor for labor, materials, equipment or services to improve the property.

**Lien Release** – A written document from the contractor to the owner that releases the Lien, Mechanic’s or Material, following its satisfaction.

**Lien Waiver** – (1) A written document from a contractor, subcontractor, material supplier or other construction professional who has lien rights against an owner’s property, relinquishing all or part of those rights. (2) Lien waivers are generally used for processing progress payments to prime or main or subcontractors as follows: Conditional Lien Waiver, Unconditional Lien Waiver, and Final Lien Waiver.

**M**

**Meeting Minutes** – A written report consisting of a project number, project name, meeting date and time, meeting place, meeting subject, a list of persons attending, and a list of actions taken and/or discussed during the meeting. Generally, this report is distributed to all persons attending the meeting and any other person having an interest in the meeting.
**N**

**Notice of Award** – A letter from an owner to a contractor stating that a contract has been awarded to the contractor and a contract will be forthcoming, which usually functions as a Notice to Proceed.

**Notice to Proceed** – A notice from an owner directing a contractor to begin work on a contract, subject to specific stated conditions.

**O**

**Owner** – An individual or corporation that owns a real property.

**P**

**Performance Specifications** – The written material containing the minimum acceptable standards and actions as may be necessary to complete a project. Including the minimum acceptable quality standards and aesthetic values expected upon completion of the project.

**Project** – A word used to represent the overall scope of work being performed to complete a specific construction job.

**Project Manager** – A qualified individual or firm authorized by the owner to be directly responsible for the day-to-day management and administration, and for coordinating time, equipment, money, tasks and people for all or specified portions of a specific project.

**Project Site** – The place where a structure or group of structures was, or is to be located, i.e., a construction site.

**Project Team** – Consists of the architect/engineer, construction manager, and owner representatives, plus the designated leaders of contracted vendors, suppliers, subcontractors and other consultants.

**Proposal** – A written offer from a bidder to the owner, preferably on a prescribed proposal form, to perform the work and to furnish all labor, materials, equipment and/or services for the prices and terms quoted by the bidder.

**Purchase Order** – A written document from a buyer to a seller to purchase materials, services, equipment or supplies with acceptable purchase terms indicated.
Record Drawings – A set of contract document drawings, updated electronically by the A/E from the handmarked redlines generated by the field. The Record Drawings should be updated as construction proceeds to reflect changes made during the construction process, showing the exact location, geometry, and dimensions of all elements of the constructed project as installed.

RFI – A written request from a contractor to the owner or architect for clarification or information about the contract documents following contract award.

RFP – The request for uniform detailed information from prospective CM practitioners being screened for a project.

Release of Lien – A written action properly executed by an individual or firm supplying labor, materials or professional services on a project which releases his mechanic's lien against the project property.

Shop Drawings – Detailed information provided by material and equipment suppliers demonstrating that the item provided meets the requirements of the contract documents.

Specifications – A detailed, exact statement of particulars, especially statements prescribing materials and methods, and quantitative and qualitative information pertaining to material, products, and equipment to be incorporated into a specific project. The most common arrangement for specifications substantially parallels the Construction Specification Institute (CSI) format.

Start-Up – The period prior to owner-occupancy when mechanical, electrical, and other systems are activated and the owner's operating and maintenance staff are instructed in their use.

Subcontractor – A qualified subordinate contractor who has a contract with the prime or main contractor.

Submittal – A sample, manufacturer's data, shop drawing, or other such item submitted to the owner or the design professional by the contractor for the purpose of approval or other action, usually a requirement of the contract documents.
Transmittal – A written document used to identify information being sent to a receiving party. The transmittal is usually the cover sheet for the information being sent and includes the name, telephone/FAX number and address of the sending and receiving parties. The sender may include a message or instructions in the transmittal. It is also important to include the names of other parties the information is being sent to on the transmittal form.

Turnover Package – Group of final project documents such as warranties, reports, specifications, drawings, etc., which the contractor is obligated to deliver to the owner at the end of the construction project.

Validation – The process of commissioning and operating a system through rigorous installation, operational, and performance qualification procedures and through ongoing monitoring of operation of the system’s critical parameters to verify performance. Initially, establishing documented evidence that a system does what it purports to do.
Appendix

Appendix A: Project Team Participants

Typical Capital Project Team Members

• Members
• Architect / Engineer
• Client (sponsor)
• Client (system owner)
• Code Consultant
• Commissioning Agent
• Document Control
• Drawing Management
• Engineering Services
• Environmental Health & Safety
• Facilities Planning
• Insurance Underwriter (during project)
• Finance
• General Contractor / Construction Manager
• Information Systems (CIS)
• OCIP Underwriter (post project)

• Operations – Facilities Management
• Operations (Calibration, Instrumentation, etc)
• Process Engineer
• Program Manager
• Project & Contract Services
• Project Capital Funding
• Project Controls
• Project Coordinator
• Project Executive
• Project Manager
• Quality Assurance (QA)
• Real Estate & Site Development
• Regulatory Affairs
• Security & Emergency Services
• Subcontractors
• Validation
• Vendors and Suppliers
Appendix B: Sample Administrative Folders
Setup and Structure

Administrative Folders
The administrative folder should accommodate dividers for different types of documents. In general there would be six inside tabs or dividers for different document types and one outside tab for general folder labeling.

Each administrative folder should be created for a specific project vendor. No two (or more) different vendor administrative files should be filed in the same folder.

Administrative Folder Labeling
Each Administrative folder cover tab should be labeled with the following:

- Six-digit project number
- Name of vendor
- Vendor Contract Number
- First three letters of vendor’s name

The sample graphic below depicts the rule.

Figure 11: Administrative Folder label

Administrative Folder Inside Tabs
Different types of vendor administrative documents should be filed into separate inside tabs of the vendor folder. The tab labels and placement should be defined by the following Contract File Index:
<table>
<thead>
<tr>
<th>Tab Number</th>
<th>Document Type</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bid/RFB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bid Analysis/Negotiations</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Successful Bidders Proposal</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Other Bids</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>RFB/Addenda</td>
<td>D</td>
</tr>
<tr>
<td>1.2</td>
<td>Contract</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contract/P.O.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Authorizing Document</td>
<td>B</td>
</tr>
<tr>
<td>2</td>
<td>Amendments/Change Orders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amendments/Change Orders</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Authorizing Document</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>Bonds/Linens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bonds</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Linens &amp; Linen Releases</td>
<td>B</td>
</tr>
<tr>
<td>3.1</td>
<td>Correspondence/Meeting Minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>External Correspondence</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Internal Correspondence</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Meeting Minutes</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Legal Correspondence</td>
<td>D</td>
</tr>
<tr>
<td>4</td>
<td>Financial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invoices and Payments</td>
<td>A</td>
</tr>
</tbody>
</table>
Appendix C: Sample Engineering Folders
Setup and Structure

Engineering Folder Color-Coding
It is recommended that color-coding is utilized for labeling project hard folders. This way it is much easier to distinguish between different projects and their documents.

Different engineering centers may be using different color-coding systems for project folders. Project Coordinators should become familiar with the current site standard in their respective locations and follow it in labeling the folders.

Engineering Folder Labeling
Each file folder should have unique numerical identification, giving each document its exclusive location. All folders should be kept together at all times, in the sequence forming the set.

The folder number syntax should be composed of two sections. The first represents the project number (see the Project Tracking Number section) for which the folder is created. The second represents the File Number related to the document category, which the folder is made for.

83xxxx-yyyyy (example: 830325-00200)

where 83xxxx is the six-digit Project Number and yyyyy is the five-digit Document Category Number.
**Engineering Document Category Numbers**

The available Document Categories are defined in the following table:

Table 5: Document File Numbers and Categories

<table>
<thead>
<tr>
<th>File Number</th>
<th>Category</th>
<th>Sub-Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxxx-00100</td>
<td>CRAs, Budgets &amp; Estimates</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-00200</td>
<td>Feasibility Study</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-00300</td>
<td>Title Reports</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-00400</td>
<td>Surveys</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-00500</td>
<td>Inspection reports</td>
<td>Soils reports</td>
</tr>
<tr>
<td>xxxxxxx-00505</td>
<td></td>
<td>Misc. inspections (i.e., welding insp.)</td>
</tr>
<tr>
<td>xxxxxxx-00510</td>
<td></td>
<td>Concrete inspections</td>
</tr>
<tr>
<td>xxxxxxx-00515</td>
<td></td>
<td>Job walk inspections</td>
</tr>
<tr>
<td>xxxxxxx-00600</td>
<td>Schedules</td>
<td>Monthly</td>
</tr>
<tr>
<td>xxxxxxx-00605</td>
<td></td>
<td>Weekly</td>
</tr>
<tr>
<td>xxxxxxx-00700</td>
<td>Interoffice Correspondence</td>
<td>Misc. Depts.</td>
</tr>
<tr>
<td>xxxxxxx-00705</td>
<td></td>
<td>Validation</td>
</tr>
<tr>
<td>xxxxxxx-00800</td>
<td>Monthly Reports</td>
<td>Owner-Generated</td>
</tr>
<tr>
<td>xxxxxxx-00805</td>
<td></td>
<td>A&amp;E/G.C.-Generated</td>
</tr>
<tr>
<td>xxxxxxx-00900</td>
<td>A&amp;E Correspondence</td>
<td>Memos, transmittals, fax transmittals</td>
</tr>
<tr>
<td>xxxxxxx-00901</td>
<td></td>
<td>Logs/ reports</td>
</tr>
<tr>
<td>xxxxxxx-00905</td>
<td></td>
<td>Minutes</td>
</tr>
<tr>
<td>xxxxxxx-00910</td>
<td></td>
<td>CM correspondence</td>
</tr>
<tr>
<td>xxxxxxx-00915</td>
<td></td>
<td>Telephone/Conference Calls</td>
</tr>
<tr>
<td>xxxxxxx-00920</td>
<td></td>
<td>Amgen to A&amp;E</td>
</tr>
<tr>
<td>xxxxxxx-00925</td>
<td></td>
<td>Bulletins / DCN's/ASI's</td>
</tr>
<tr>
<td>xxxxxxx-01000</td>
<td>Design Effort</td>
<td>Design Criteria (Standards &amp; systems)</td>
</tr>
<tr>
<td>xxxxxxx-01005</td>
<td></td>
<td>Utilities Design</td>
</tr>
<tr>
<td>xxxxxxx-01010</td>
<td></td>
<td>Programming</td>
</tr>
<tr>
<td>xxxxxxx-01015</td>
<td></td>
<td>Equipment Lists</td>
</tr>
<tr>
<td>xxxxxxx-01020</td>
<td></td>
<td>Hazardous Materials Lists</td>
</tr>
<tr>
<td>xxxxxxx-01021</td>
<td></td>
<td>Material Data Sheets</td>
</tr>
<tr>
<td>xxxxxxx-01025</td>
<td></td>
<td>Calculations</td>
</tr>
<tr>
<td>xxxxxxx-01100</td>
<td>Move-In</td>
<td>Check lists, etc.</td>
</tr>
<tr>
<td>xxxxxxx-01200</td>
<td>Outside consultants</td>
<td>Factory Mutual Correspondence</td>
</tr>
<tr>
<td>xxxxxxx-01205</td>
<td></td>
<td>Redi-Check Inf.</td>
</tr>
</tbody>
</table>

*Table continued on next page*
Table 5: Document File Numbers and Categories (continued)

<table>
<thead>
<tr>
<th>File Number</th>
<th>Category</th>
<th>Sub-Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxxx-01300</td>
<td>Governmental Agencies</td>
<td>Pre-Application</td>
</tr>
<tr>
<td>xxxxxxx-01305</td>
<td></td>
<td>Development Permit</td>
</tr>
<tr>
<td>xxxxxxx-01310</td>
<td></td>
<td>Minor/Major Mod Conditions</td>
</tr>
<tr>
<td>xxxxxxx-01315</td>
<td></td>
<td>Traffic Study</td>
</tr>
<tr>
<td>xxxxxxx-01320</td>
<td></td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>xxxxxxx-01325</td>
<td></td>
<td>City Correspondence</td>
</tr>
<tr>
<td>xxxxxxx-01330</td>
<td></td>
<td>Ventura County Fire Dept.</td>
</tr>
<tr>
<td>xxxxxxx-01335</td>
<td></td>
<td>Plan Check Comments</td>
</tr>
<tr>
<td>xxxxxxx-01340</td>
<td></td>
<td>Permits</td>
</tr>
<tr>
<td>xxxxxxx-01345</td>
<td>Utilities</td>
<td>water, phone, gas, &amp; electric</td>
</tr>
<tr>
<td>xxxxxxx-01350</td>
<td>Community</td>
<td>School Districts</td>
</tr>
<tr>
<td>xxxxxxx-01400</td>
<td>General contractor correspondence</td>
<td>Memos, transmittals, fax transmittals</td>
</tr>
<tr>
<td>xxxxxxx-01401</td>
<td></td>
<td>Logs/ reports</td>
</tr>
<tr>
<td>xxxxxxx-01405</td>
<td></td>
<td>Minutes</td>
</tr>
<tr>
<td>xxxxxxx-01410</td>
<td></td>
<td>Daily progress reports</td>
</tr>
<tr>
<td>xxxxxxx-01415</td>
<td></td>
<td>Amgen to GC</td>
</tr>
<tr>
<td>xxxxxxx-01420</td>
<td></td>
<td>Safety information</td>
</tr>
<tr>
<td>xxxxxxx-01510</td>
<td>Team meeting minutes</td>
<td>Amgen meetings</td>
</tr>
<tr>
<td>xxxxxxx-01600</td>
<td>Progress photos</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-01700</td>
<td>Owner Scope changes</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-01800</td>
<td>Turnover</td>
<td>Transmittals</td>
</tr>
<tr>
<td>xxxxxxx-01805</td>
<td></td>
<td>Punch-lists</td>
</tr>
<tr>
<td>xxxxxxx-02000</td>
<td>Site Work/Civil</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-03000</td>
<td>Concrete</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-04000</td>
<td>Masonry</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-05000</td>
<td>Metals</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-06000</td>
<td>Wood and Plastics</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-07000</td>
<td>Thermal and Moisture Protection</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-08000</td>
<td>Doors and Windows</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-09000</td>
<td>Finishes</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-10000</td>
<td>Specialties</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-11000</td>
<td>Equipment</td>
<td>Submittals</td>
</tr>
<tr>
<td>xxxxxxx-11010</td>
<td>(filed in alpha. equipment type)</td>
<td>Correspondence</td>
</tr>
<tr>
<td>xxxxxxx-12000</td>
<td>Furnishings</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-13000</td>
<td>Special Construction</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-14000</td>
<td>Conveying Systems</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-15000</td>
<td>Mechanical</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-16000</td>
<td>Electrical</td>
<td></td>
</tr>
<tr>
<td>xxxxxxx-17000</td>
<td>Instrumentation</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Livelink Endeavor

Livelink Endeavor is an Amgen-wide designated e-Document Management System. Its global availability and solid reliability makes it a good choice not only for electronic archiving, but also for managing and storing e-documentation for active projects. The most important features of Livelink Endeavor are listed below.

- The project documents are stored in a backed-up system
- Project documents are managed online
- E-mail notifications can be sent automatically when documents are modified
- All project documents are available on the web and can be accessed within the Amgen firewall
- Attributes can be attached to documents or folders making any project or document searchable
- The confidential documents access can be selectively restricted

All project support staff should be familiar with the Livelink Endeavor application and complete the Livelink Endeavor basic training offered by the Amgen CIS department.

Livelink Endeavor Folder Structure

The Thousand Oaks-based project support department has developed and is implementing a folder structure for the filing of project electronic documentation on Livelink Endeavor. The structure is known in engineering as Cyberian, and is currently being configured to accommodate all project construction documentation.

The figure below presents the major (down to the project level) proposed folder structure:

Figure 13: Livelink Endeavor File Structure
**Livelink Endeavor Folder Naming Convention**

Livelink Endeavor major folders are predefined all the way down to the project level. They should not be renamed or altered in any way, without approval of Project Support management. From there the Project Coordinator will develop the project folder structure.

Livelink Endeavor folders within the project should follow the filing standard guideline developed for the OPUS Project and the e-Builder tool.

---

*Figure 14: Livelink Endeavor Naming Structure*

**Electronic File Naming Convention**

The file-naming structure and guidelines for project electronic documents are currently being developed.

The file-naming syntax for documents should be developed for each project during its setup phase.
**Supported File Formats**

Livelink Endeavor is capable of importing and storing any kind of electronic file. Still, Project Management should decide what file formats should be supported for different types of documents.

It is recommended that all electronic documentation be delivered in Adobe Acrobat PDF as well as native file formats.

> **TIP**  
> Tests should be conducted to verify a format’s compatibility with the Livelink Endeavor viewer.

**Bulk Loader**

Documents can be loaded into Livelink in two different ways: manually, one by one, or as a set, through the Bulk Loader. The Project Coordinator should not be manually loading more than five files at a time. Any amount of files greater than five should be loaded with the Bulk Loader.

The Bulk Loader utilizes the Metadata spreadsheet file for loading files and their attributes into the Livelink database. When a large quantity of documents needs to be loaded, the Project Coordinator should ask the originator of the documents to provide a complete index spreadsheet together with the files. The Document Coordinator should be familiar with the Bulk Loader process.

> **TIP**  
> Project drawings are the ideal candidate for the Bulk Loader.

**E-Document Attributes**

E-document attributes are the key to document tracking and searches. The Project Coordinator should be responsible for uploading each electronic document and entering the attributes associated with it.

Project Support is currently evaluating the list of attributes. The figure below shows the eleven key attributes and their sample values identifying a record from one of the documents in Thousand Oaks (B01, Project 830565).
Special attention should be applied to attribute data entry. It is important to use consistent nomenclature in naming files, defining document titles and referencing the project number or name.
Appendix E: Prolog

Prolog is a database system used for logging information related to project documents. The system provides basic document electronic-tracking capabilities.

Documents Tracked in Prolog
The Thousand Oaks-based project support staff currently uses Prolog to track five different types of documents:

• Request for Information
• Submittals
• Meeting Minutes
• Drawings
• Transmittals

Prolog File Naming and Structure
Prolog data files are created individually for each project. They are named using the six-digit project number and are saved on the network server.

Although Prolog is designed to work as a centralized web-based project collaboration tool, at Amgen it has never been utilized as such. Since it is used on several projects in Thousand Oaks, the staff performs periodic manual exchanges of download data with vendors.

Prolog Administrative Support
The Project Support staff provides administrative support to vendors wishing to use Prolog on their projects. The supervisor should be contacted to arrange for the configuration of the application.
Appendix F: Microsoft Outlook

Microsoft Outlook is the standard Amgen application used primarily for exchanging e-mail related to the projects. It is recommended that Project Support staff archive and track all sent or received project e-mail.

Project E-mail Archive Structure
Each PC staff’s e-mail account should be configured to access the project support e-mail archive group of folders that contains a project’s e-mail archives. The projects’ e-mails should be filed within the respective project’s major folders named after the project’s six-digit numbers.

Project E-mail Folder Naming
Each project major folder should contain a folder structure resembling the Livelink Endeavor electronic folder structure. The e-mails should be respectively filed into the appropriate folders.
Appendix G: Sample Turnover Binder Structure

1. Part 1 – BINDER VOLUME #1 – GENERAL INFORMATION

1.1 First Tab – Labeled “Index”
List all specifications and reference binder in which information can be found.

1.2 Second Tab – Labeled “Certificate of Occupancy”
Place copy of certificate of occupancy in binder in clear sleeve.

1.3 Third Tab – Labeled “Permits”
Place copy of all permits and sign-off card in chronological order
• Grading
• Structural
• Electrical
• Mechanical
• Landscape
• SCE sign-off
• Fire Department sign-off

1.4 Fourth Tab – Labeled “Vendor and Subcontractor List”
List will be in order of trade and consist of company name, two contact persons, address, phone number and contract number (if applicable).

1.5 Fifth Tab – Labeled “Warranties”
Place copy of all warranties in order of specification division.

1.6 Sixth Tab – Labeled “Drawing List”
List of all as-built drawings. Must include drawing number, title, date, revision number and vendor, current list of drawings on AutoCAD with most current Version. (Note: CD should be provided in a padded envelope in this binder section).

1.7 Seventh Tab – Labeled “System Start-Up Sign-Off”
All systems are to be signed-off by required persons (Engineer, Architect, Amgen Engineers, Facilities representative and the General Contractor). Arrange in chronological order.
2. **PART 2 BINDER VOLUME #2 – JOB PHOTOS**  
*(see contract if these are required)*

2.1 Pictures of all rooms will be inserted in this binder in numerical order according to room number. There will be a picture of each wall and floor prior to being covered up. They need to be color photos, standard size and placed on an 8” x 11” sheet of paper, each must be labeled North, South, East or West wall. Additionally hardlid (sheetrock) ceiling must have photos of all electrical, mechanical and HVAC equipment prior to closure.

Pictures of all trenches with piping going to the building are required prior to covering up. All pictures must be labeled with the type of utilities that are running through each pipe and location in relation to the building.

3. **PART 3 BINDER VOLUME #3 – MATERIAL SAFETY DATA SHEET (MSDS)**

3.1 All MSDS are to be placed in this volume. The sheets are to be divided, labeled and placed in alphabetical order.

4. **PART 4 BINDER VOLUME #4 – SPECIFICATIONS**

4.1 Each binder must be labeled on the side with the building number, binder volume and specification sections covered inside the binder.

4.2 Each binder must have a table of contents which lists all of the specifications included and information within that section (e.g., submittals, warranties, keys, isometrics, etc.)

4.3 There must be a tab labeling each specification section, followed by the final job specification.

4.4 The next tab should be the corresponding approved submittals. Each submittal should be tabbed. If the submittal is a roll of drawings, there should be a sheet of paper inserted in a clear sleeve with a list of all the drawings, the vendor and the submittal number. The drawings will be delivered with the package clearly labeled with the submittal number.

4.5 The sign-off sheets for all systems should be located between the specification and the submittals. The form will be provided to the contractor by the owner (Amgen).

4.6 The next tab will be labeled “warranties.” All warranty information pertaining to the specification will be inserted here in order of the submittals. The warranties should have vendor information, warranty dates and job performed.
5. **PART 5 – AS-BUILT DRAWINGS**

5.1 All as-built shop drawings must be submitted clearly labeled with the binder section number that they reference. Owner must receive one reproducible (Mylar or vellum) and two copies of bluelines or blacklines.

6. **PART 6 – DIVISION REQUIREMENTS, CSI FORMAT**

Requires approved specification, submittals, guarantee letters, keys (if required) and shop drawings (insert list only if more than one drawing; roll drawings and label with tab number around roll).

6.1 Division 1 – General Requirements

6.2 Division 2 – Sitework

6.3 Division 3 – Concrete

6.4 Division 4 – Masonry

6.5 Division 5 – Metals

6.6 Division 6 – Wood and Plastics

6.7 Division 7 – Thermal and Moisture Protection

6.8 Division 8 – Doors and Windows

6.9 Division 9 – Finishes

6.10 Division 10 – Specialties

6.11 Division 11 – Equipment

6.12 Division 12 – Furnishings

6.13 Division 13 – Special Construction

6.14 Division 14 – Conveying Systems

6.15 Division 15 – Mechanical

6.16 Division 16 – Electrical

6.17 Division 17 – Instrumentation