



# **Design-Build Contract Administration Manual**

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# Table of Contents

**Foreword**..... 1

FOR-1 – Conventions..... 1

    (A) Grammar..... 1

    (B) Capitalization of Terms ..... 2

    (C) Abbreviations ..... 2

    (D) Definitions/Glossary of terms ..... 5

FOR-2 – Revisions to the Manual..... 6

FOR-3 – Introduction..... 7

    (A) Project Lifecycle ..... 7

    (B) Design-Build Overview and Opportunities ..... 7

    (C) Design-Build Contract Documents ..... 9

FOR-4 – Design-Build Delivery Method..... 11

FOR-5 – Overview of Roles, Responsibilities and Governance..... 13

    (A) Agency ..... 13

    (B) Region ..... 14

    (C) Contract Administration Unit..... 17

    (D) ODOT Procurement Office..... 17

    (E) ODOT Office of Civil Rights..... 18

    (F) Design-Builder ..... 18

    (G) Owner’s Representative Consultant (Optional)..... 18

    (H) Other Agencies ..... 19

    (I) Governance ..... 19

    (J) Team Structure Examples ..... 22

**Chapter 1 – Project Start-up & Administration**..... 28

1-1 – Contract (Design & Construction) Hand-off Meeting (Optional)..... 29

1-2 – Post-procurement Lessons Learned Meeting (Optional) ..... 31

1-3 – Escrowed Documents..... 31

1-4 – Notice to Proceed..... 32

1-5 – Contract Time..... 33

1-6 – First Notification and Initial Submittals ..... 34

1-7 – Partnering ..... 35

1-8 – Document Control ..... 36

1-9 – Communication with the Design-Builder ..... 37

1-10 – Public and Other Agency Notification ..... 39

1-11 – Project Budget (Authorization)..... 39

1-12 – Pricing and Measurement, Payment, and Adjustments..... 40

1-13 – Pay Estimates Due (Design and Construction Phases) ..... 42

1-14 – Other Monthly, Weekly and Daily Submittals ..... 49

1-15 – Change Orders, Extra Work Orders, Orders for Force Work..... 50

    (A) Agency Directed Changes..... 51

    (B) Review of Changes..... 52

    (C) Continued Work Authority..... 53

    (D) Types of Work Associated with Changes ..... 53

    (E) Type of Project Change Orders ..... 56

    (F) Types of Situations and Conditions Resulting in Changes ..... 57

**Chapter 2 – Quality Management..... 64**

2-1 – Agency Acceptance of the Design-Builder’s Quality Plan..... 65

    (A) Requirements and Purpose of the Quality Plan..... 65

    (B) Independence of the Design-Builder’s Quality Management Team in the Quality Plan 67

    (C) Agency Review of the Quality Plan ..... 67

2-2 – Design Quality ..... 68

2-3 – Design Quality Records ..... 69

2-4 – Design-Builder Construction Quality Organization..... 70

2-5 – Design-Builder’s Roles for Construction Quality Management ..... 70

2-6 – Agency Quality Management ..... 72

(A) Role of the Agency ..... 73

(B) Design Oversight..... 73

(C) Construction Quality Assurance ..... 75

(D) Quality of Materials and Work..... 77

(E) Agency QA/IA of Materials ..... 78

(F) Agency Review of Design-Builder Quality and Quantity Documentation ..... 80

(G) Independent Reports from the Design-Builder’s Quality Project Manager..... 81

(H) Material Sources ..... 81

(I) Quantities of Materials to be Produced ..... 81

(J) Quantities of Work Performed (Progress Estimates and Final)..... 82

2-7 – Quality Task Force Meetings..... 82

2-8 – Risk-Based Approach to Agency Construction Quality Oversight..... 83

(A) Agency Risk-based Inspections and Quality Reviews..... 83

(B) Compliance (Records Management) Audits ..... 85

(C) APM Team Field Visits ..... 87

(D) Independent Quality Management..... 87

(E) Testing ..... 87

(F) Inspection ..... 89

(G) Independent Assurance and Verification Testing ..... 91

(H) Certificate of Materials Origin & Quality Compliance Certificates ..... 91

(I) Material Inspection ..... 91

(J) Production Inspection..... 92

(K) Plant Inspection..... 93

(L) Material on Hand ..... 93

(M) Third Parties ..... 93

2-9 – Nonconformance Reports and Issues ..... 93

(A) NCRs to Design-Builder’s Quality Management Team (DB154.40)..... 95

(B) NCRs by the Design-Builder ..... 95

(C) NCIs by the Agency ..... 96

(D) Agency Response to Nonconforming Work..... 98

2-10 – Oversight Escalation of Nonconformance ..... 100

2-11 – Quality Price Adjustments ..... 102

    (A) Nonconforming Materials or Work ..... 103

    (B) Standard Adjustments..... 103

    (C) Certified Payrolls ..... 104

    (D) Non-Standard Adjustments..... 104

2-12 – Hold Points..... 105

**Chapter 3 – Design Process ..... 107**

3-1 – Design Firm Subcontracting..... 111

3-2 – Design Review Procedures..... 111

    (A) Risk based Design and Quality Audits ..... 112

    (B) Performance Specification Reviews & Audits ..... 113

3-3 – Design-Builder’s Design Review Plan ..... 115

    (A) Disposition of Design Submittals..... 119

    (B) Other Agency Reviewers ..... 120

3-4 – Design Units ..... 120

3-5 – Design Development Meeting ..... 121

3-6 – Design Mobilization Meeting..... 121

3-7 – Maintenance Concept Meeting ..... 122

3-8 – Work Zone Decision Tree ..... 123

3-9 – Design Submittal and Review Process ..... 123

3-10 – Discipline-specific Design Checks..... 124

3-11 – Definitive Design Submittal by Design-Builder – Design Quality Manager’s Independent Review ..... 125

3-12 – Definitive Design Submittal by Design-Builder ..... 126

3-13 – Definitive Design Deliverable Review by the Agency ..... 127

    (A) Analytical Check..... 129

    (B) Returning Comments on Design Submittals..... 130

3-14 – Interim Design Submittal – Design Quality Manager Independent Review ..... 131

3-15 – Interim Design Submittal by Design-Builder .....	132
3-16 – Interim Design Deliverable Review by the Agency.....	132
3-17 – Readiness for Construction Submittal – Design Quality Manager Independent Review and Certification.....	133
3-18 – RFC Submittal by Design-Builder .....	133
3-19 – RFC Deliverable Review by the Agency .....	134
3-20 – Working Drawings and 3D Construction Model Submittal by Design-Builder .....	136
3-21 – Design Changes During Construction.....	136
3-22 – Design-Builder Design Change Requests.....	137
3-23 – Design-Builder Cost Reduction Proposals (Value Engineering) .....	139
3-24 – As-constructed Submittal and Review by Design-Builder and the Agency .....	140
3-25 – Environmental Compliance Plan.....	141
3-26 – Traffic Management Plan .....	141
3-27 – Third Parties .....	142
3-28 – Utility Work.....	144
(A) Design-Builder Responsibilities .....	146
(B) Role of the Agency .....	147
(C) Pre-construction Activities .....	147
(D) Utility Scheduling Meeting.....	148
(E) Utility Adjustment Master Plan.....	148
(F) Design Activities.....	148
(G) Construction Activities .....	149
(H) Changes Applicable to Utility Work .....	150
3-29 – Railroads .....	150
(A) Design-Builder Responsibilities .....	152
(B) Role of the Agency .....	153
(C) Pre-project Activities .....	153
(D) Kick-off Meeting.....	153
(E) General Coordination Activities .....	154
(F) Design Activities.....	154

(G) Construction Activities ..... 154

(H) Changes Applicable to Railroad Work..... 155

3-30 – Right of Way..... 155

    (A) Design-Builder Responsibilities ..... 156

    (B) Role of the Agency ..... 156

    (C) Right of Entry ..... 157

    (D) Right to Enter Prior to Acquisition ..... 157

    (E) Post-acquisition Right to Enter..... 157

    (F) Right-of-Way Acquisition Management..... 157

    (G) Cost Estimates..... 158

3-31 – Governmental Jurisdictions..... 158

    (A) Design-Builder Responsibilities ..... 158

    (B) Role of the Agency ..... 159

    (C) Pre-project Activities ..... 160

    (D) Kick-off Meeting..... 160

    (F) Construction Activities..... 160

    (G) Changes Applicable to Governmental Jurisdictions ..... 161

3-32 – Work Zone Law Enforcement..... 161

3-33 – Noise Risk Mitigation..... 162

3-34 – Public Engagement..... 163

    (A) Design-Builder Responsibilities ..... 164

    (B) Role of the Agency ..... 164

**Chapter 4 – Construction Process..... 165**

4-1 – Construction Management and Construction Quality..... 165

    (A) Quality Management ..... 166

    (B) Contract Administration (Agency)..... 166

4-2 – Commencement of Construction Work..... 167

    (A) Preliminary Activities ..... 167

    (B) Commencement Limitations ..... 167



4-3 – Design-Builder Responsibilities..... 170

4-4 – Key Personnel Management ..... 172

4-5 – Design-Builder Project Schedule Submittals and Reviews..... 173

4-6 – Pre-construction Conference..... 175

4-7 – Contract Administration & Project Management ..... 176

4-8 – Inspection and Field Monitoring Reports ..... 178

    (A) ODOT General Daily Progress Report ..... 179

    (B) Project Diaries..... 179

4-9 – Project Schedule ..... 180

4-10 – Workforce Development and Small Business Equity Programs..... 181

4-11 – Subcontracting..... 181

    (A) Subcontract Consent by the Agency ..... 181

    (B) Other Subcontracting Requirements ..... 182

4-12 – Quality, Labor Compliance, and Civil Rights..... 183

4-13 – Coordinating Reviews - RAS and OECR Field Coordinator ..... 184

4-14 – Labor Compliance Monitoring ..... 185

4-15 – EEO and Workforce Development Monitoring..... 186

4-16 – Construction Services by Design-Builder..... 186

    (A) Agency Roles, Responsibility, and Authority ..... 186

4-17 – Conformance to RFC Plans and Working Drawings..... 189

    (A) Working Drawing Reviews..... 189

    (B) Field and Design Changes ..... 190

4-18 – Changes during Construction..... 190

    (A) Construction Force Account Work ..... 191

    (B) Changes in the Character of Work..... 191

    (C) Preliminary Design Changes..... 193

    (D) Change Order Negotiations..... 194

    (E) Pay Estimate Processing..... 194

4-19 – Agency-supplied Materials ..... 195

4-20 – Environmental Compliance ..... 195

4-21 – Additional Utility Work..... 197

4-22 – Damage to the Work ..... 197

4-23 – SAFETY & TRAFFIC MANAGEMENT..... 198

    (A) Design-Builder Responsibilities ..... 198

    (B) Role of the Agency ..... 198

    (C) Primary APM Team Safety Oversight Duties..... 199

    (D) Safety ..... 199

    (E) Primary APM Team Traffic Management Oversight Duties ..... 200

    (F) Compliance Audits –Traffic Management..... 200

    (G) Nonconformance – Traffic Management ..... 201

4-24 – Relief Events ..... 201

    (A) DB140.40 and DB195.30: Differing Site Conditions ..... 201

    (B) DB140.50: Environmental Pollution Changes ..... 201

    (C) DB170.80: Damages ..... 202

    (D) DB174.10: Utility-Caused Delays ..... 202

    (E) DB195.40: Unreasonable Delay by the Agency ..... 202

4-25 – Interim Second Notification / Final Second Notification ..... 202

4-26 – Access to Project Records ..... 204

4-27 – Disagreements, Protests, and Claims..... 204

    (A) Design-Builder Responsibilities ..... 205

    (B) Role of the Agency ..... 205

    (C) Disagreements..... 205

    (D) Protests..... 206

    (E) Claims ..... 207

**Chapter 5 – Environmental..... 208**

5-1 – Environmental Compliance Activities..... 209

5-2 – Design-Builder Responsibilities..... 210

    (A) Design-Builder Environmental Manager ..... 210

    (B) Design-Builder Environmental Compliance Team ..... 211

5-3 – Agency Responsibilities ..... 211

5-4 – Basis for Environmental Oversight ..... 213

    (A) Primary Duties of the APM Team..... 213

    (B) Meetings ..... 214

5-5 – Environmental Communication ..... 214

    (A) Design-Builder Communications..... 214

    (B) Agency Communications..... 215

    (C) Resource / Regulatory Authority Communications ..... 215

    (D) External Communications..... 215

5-6 – Environmental Reviews..... 216

    (A) Environmental Compliance Plan ..... 216

    (B) Design Plans..... 217

    (C) Specifications..... 217

    (D) Environmental Permits, Clearances, and Approvals ..... 217

    (E) Review of Environmental Plans, Permit Applications, and Reports..... 218

5-7 – Compliance Verification ..... 218

5-8 – Construction Monitoring ..... 219

    (A) National Pollutant Discharge Elimination System ..... 220

    (B) Harmful and Hazardous Materials ..... 220

    (C) Cultural, Wildlife, Special Habitat or Biological Environmental Considerations ..... 221

    (D) Post-Construction Monitoring..... 221

5-9 – Agency Reporting..... 221

    (A) Project Site Visit Reports ..... 221

**Chapter 6 – Post-Construction Process ..... 223**

6-1 – Project Closeout ..... 224

6-2 – Design-Builder Responsibilities..... 226

6-3 – Prime Contractor Evaluation ..... 226

6-4 – Final Documentation Reviews by the RAS and OECR Field Coordinator ..... 227

6-5 – Quality Documentation – Plant Establishment ..... 228

6-6 – Recommendation of Project Acceptance ..... 228

6-7 – Agency Submittal of Final Documentation..... 229

6-8 – Final Labor Compliance..... 229

6-9 – Final Inspection..... 229

6-10 – Third Notification – Contract Time..... 230

6-11 – Final Acceptance and Final Payment..... 231

6-12 – Findings of Fact for Exemption Post-construction Evaluation Report ..... 231

6-13 – Post-construction Lessons Learned Meeting ..... 232

6-14 – Third-party Acceptance ..... 233

6-15 – Transition to Maintenance..... 234

**Appendix 1 – Transportation System Project Lifecycle Race Track – Design-Build. 235**

**Appendix 2 – Design-Build Review Process – Design Process..... 236**

**Appendix 3 – Design-Build Specifications Terminology Diagram ..... 237**

**List of Figures**

Figure 1: Design-Build Procurement Process Timeline ..... 8

Figure 2: Overview of Design-Build Contract Documents ..... 10

Figure 3: Phases of Design-Bid-Build and Design-Build Contracting Comparison ..... 12

Figure 4: Design-Bid-Build and Design-Build Contractual Relationships Comparison..... 12

Figure 5: Example of Agency PM Team Organization ..... 23

Figure 6: Design-Build Project Full Outsourcing Roles and Responsibilities Options Example.. 24

Figure 7: Design-Build Design Oversight Responsibilities Example..... 25

Figure 8: Design-Build Construction Oversight Responsibilities Example ..... 26

Figure 9: Example of a Design-Builder’s Organization ..... 27

Figure 10: Design-Build Phases..... 28

Figure 11: Q&Q Risk Based Quality Reviews – Design-Build Construction Phase Example ..... 84

Figure 12: Communication Scenario for Design-Build in-Field Discovered NCR Example ..... 95

Figure 13: Communication Scenario for Design-Build in-Field Discovered NCI Example ..... 97

Figure 14: Typical Design-Build Nonconforming Work Resolution Options ..... 98

Figure 15: Typical Design-Build Nonconforming Work Process Flow ..... 99

Figure 16: Typical Agency Corrective Action Escalation Steps..... 100

Figure 17: Typical Design-Build Design Milestone Process and Related Design Documents by Project Phase ..... 116

Figure 18: Typical Design-Build Design Review Process (See DB155)..... 118

Figure 19: Transportation System Project Lifecycle "Racetrack" ..... 235

Figure 20: Specifications Terminology Diagram ..... 237

**List of Tables**

Table 1: Mandatory Design-Build Meetings Examples ..... 39

Table 2: Required Design-Build Documents for Pay Request Approval ..... 44

Table 3: Comparison of Typical DBB and DB Quality Management Roles..... 72

Table 4: Typical Progression of Design-Build Project Design..... 108

Table 5: Disposition Definitions..... 119

Table 6: Typical Design-Builder, Agency and Representative Construction Phase  
Responsibilities..... 171

Table 7: Typical Design-Builder and Agency Environmental Compliance Roles and  
Responsibilities..... 209

# Foreword

This is the current edition of the ODOT Design-Build Contract Administration Manual (“Manual”) for the Oregon Department of Transportation. This Design-Build Manual is a supplement to the ODOT Construction Manual for use on Design-Build projects. The ODOT Construction Manual generally applies except as discussed in this Manual.

This Manual describes practices to administer a design-build project under the template Contract Documents. The design-build Contract Documents, as discussed further in this Manual, replace the Oregon Standard Specifications for Construction Part 00100 General Conditions used for design-bid-build contracts.

The Design-Build Contract Documents include some details regarding the Agency’s management and administration of the Contract, including, for example, timelines and milestones for design and construction documents, and defining the roles and responsibilities for the parties. This Manual provides additional details specific to the processes and procedures utilized by the Agency to administer Design-Build contracts. Nothing in this Manual changes any provisions of the Contract Documents or any applicable Laws, ordinances, or regulations.

The Agency’s Project Manager and Agency Project Management team must be familiar with the applicable requirements of the Contract Documents, as described further below. They must also be familiar with other relevant manuals, including technical reference manuals and Operational Notices or instructions applicable to portions of the Work not addressed in this Manual.

## FOR-1 – Conventions

### (A) Grammar

This Manual is generally written in the imperative mood. When sentences in this Manual use the imperative mood, the subject is implied. This Manual uses the terms “Area,” “Tech Center” or “Region” to describe duties, responsibilities, actions, etc., that must be fulfilled by the Agency area manager, tech center manager, or region manager. Since delegation of authority and responsibility may vary by region or area, the Agency PM must work with the area manager to determine whom the Agency PM should contact in different instances.

This Manual uses the pronoun “it” when referring to the Design-Builder, an agency, etc., since the Design-Builder or Agency is an organization rather than a person. This Manual generally uses the term “Agency’s Project Manager” or “Agency PM” when discussing the Agency’s Project personnel. This term is meant to include the Resident Engineer, Assistant Resident Engineer, Resident Engineer-Consultant Projects, or Transportation Project Manager, Inspector, and other Project personnel to whom the Agency has delegated responsibility.

### (B) Capitalization of Terms

Capitalized terms used in this Manual may refer to the defined terms found in this section. Other capitalized terms in this Manual are defined in the Contract Documents. Please refer to the definition of capitalized terms where appropriate.

Note that instances of the words “Project” and “Contract” may or may not be capitalized throughout this manual, depending on the context in which they are used. If the context is referring to “the Project,” “the Contract,” the terms are capitalized to reflect the formal definitions of terms (see DB110.20), but if the context is referring to “a project” or “a contract” in a general sense, the terms are not capitalized. Similarly, capitalization of the term “Work” varies throughout the manual, depending on whether the context applies to the formal defined term for “Work” under DB110.20.

### (C) Abbreviations

Following are the meanings of abbreviations used in this Design-Build Contract Administration Manual:

ACP	Asphalt Concrete Pavement
ADA	Americans with Disabilities Act
ADS	Alternative Delivery Services
AM	Area Manager
APM	Agency Project Management
ATC	Alternative Technical Concept
CA	Construction Administration
CA/CEI	Contract Administration / Construction Engineering Inspection
CAE	Contract Administration Engineer
CAU	Contract Administration Unit
CCO	Contract Change Order (Also referred to as “Change Order”)
CMO	Certificates of Materials Origin
CQM	Construction Quality Manager
CRP	Cost Reduction Proposals
DB	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise



DD	Definitive Design
DOJ	Oregon Department of Justice
DRR	Documentation Review Report
DU	Design Unit
ECM	Design-Builder's Environmental Compliance Manager
ECP	Environmental Compliance Plan
EDMS	Electronic Document Management System
EEO	Equal Employment Opportunity
ESCP	Erosion and Sediment Control Plan
EWO	Extra Work Order
FFE	Finding of Facts for Exemption
FIRs	Field Inspection Reports
FHWA	Federal Highway Administration
HDM	ODOT Highway Design Manual
IA	Independent Assurance
ID	Interim Design
ITS	Intelligent Transportation Systems
MAC	Mobility Advisory Committee
MFTP	ODOT Manual of Field Test Procedures
MOH	Material on Hand
NCI	Nonconformance Issue
NCR	Nonconformance Report
NEPA	National Environmental Policy Act
NTMAG	Non-Field-Tested Materials Acceptance Guide
NPDES	National Pollutant Discharge Elimination System
NTP	Notice to Proceed
NTR	Noise Technical Report
OECR	Office of Equity and Civil Rights
OAAPP	Oregon Approved Aggregate Product Program
ODOT	Oregon Department of Transportation

OFW	Order for Force Work (formerly known as a State Force Order)
OPO	ODOT Procurement Office
PM	Project Manager, also noted as Agency PM
PIO	Public Information Officer
POR	Professional of Record
QA	Quality Assurance
QAC	Quality Assurance Coordinator
QC	Quality Control
QCCS	Quality Control Compliance Specialist
QPL	Qualified Products List
RAS	Region Assurance Specialist
RE	Resident Engineer
REC	Region Environmental Coordinator
RFC	Readiness-for-Construction
RFP	Request for Proposals
RFQ	Request for Qualifications
ROW	Right-of-Way
SP	Schedule of Prices
SURL	State Utility and Railroad Liaison
TCDE	Design-Builder's Traffic Control Design Engineer
TCP	Temporary Traffic Control Plans
TCS	Design-Builder's Traffic Control Supervisor
TERO	Tribal Employment Rights Organization
TMP	Traffic Management Plan
TPARPS	Temporary Pedestrian Accessible Route Plans
WBS	Work Breakdown Structure
WZDT	Work Zone Decision Tree
WZLE	Work Zone Law Enforcement

## **(D) Definitions/Glossary of terms**

Refer to Contract Documents for definitions of defined Contract terms (generally capitalized in this document). Certain terms may be defined within this document if a Contract definition is not available, or otherwise as appropriate.

## **FOR-2 – Revisions to the Manual**

Comments or suggestions may be submitted to the ODOT Contract Administration Unit and the ODOT Alternative Delivery Program at the following:

[odotcontractsvcs@odot.oregon.gov](mailto:odotcontractsvcs@odot.oregon.gov)

[InnovativeDelivery@odot.state.or.us](mailto:InnovativeDelivery@odot.state.or.us)

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## **FOR-3 – Introduction**

### **(A) Project Lifecycle**

ODOT has prepared this Design-Build Contract Administration Manual (Manual) to provide an overview of the Agency’s roles on a Design-Build (DB) project and to highlight differences between administration of a DB project and a traditional Design-Bid-Build (DBB) project. Agency staff assigned to administer a DB project may consult this guide for an understanding of their responsibilities on a DB project, including how their role differs from ODOT’s DBB delivery method. Where the project delivery approaches are the same, references are provided to other applicable ODOT guidance.

The transportation project system lifecycle for DB projects begins with analysis and planning of the existing system to identify potential projects and ends when a project transitions into maintenance and operations. The lifecycle process has four stages:

- Program Development.
- Project Development (Includes Design-Builder’s Design Services).
- Construction Management.
- Maintenance and Operations.

These four stages for DB are outlined in Transportation System Project Lifecycle Race Track – Design-Build, included in Appendix 1. This Manual provides guidance for the time commencing at execution of the Contract Documents with the selected Design-Builder. ODOT has prepared additional guidance for the DB project development phase; see the DB Project Development Guide located on ADS’ Alternative Contracting webpage: [www.oregon.gov/odot/Business/Pages/Alternative-Contracting.aspx](http://www.oregon.gov/odot/Business/Pages/Alternative-Contracting.aspx)

This Manual does not provide details for the DB procurement process. Contact the Construction Section of OPO at [ODOTProcurementOfficeConstruction@odot.oregon.gov](mailto:ODOTProcurementOfficeConstruction@odot.oregon.gov) for information on DB procurement process, Solicitation Documents, schedule timelines and tasks. Below is a brief overview of the DB procurement process to provide context for the DB structure, and to assist the reader in understanding the DB process.

### **(B) Design-Build Overview and Opportunities**

The Agency has traditionally delivered projects using the DBB delivery method, in which the Agency prepares the project’s design in full and then solicits bids to construct the design. The Contract to construct a DBB project is awarded to the lowest responsible bidder, and does not generally allow for consideration of contractor qualifications or approach, nor does it afford much leeway for contractor innovation.

DB is an alternative delivery method in which the Agency is able to select contractors by considering qualifications and experience, as well as offers the opportunity to benefit from

contractor-proposed innovations. A DB procurement, in contrast to a typical DBB procurement, typically contains two steps:

- 1) A Request for Qualifications (RFQ)/ Statement of Qualifications phase.
- 2) A Request for Proposals (RFP)/Proposals phase.

The first step evaluates the qualifications of potential design-builders, including their experience, capabilities, and financial capacity to complete the Project. The end result of the qualifications phase is the shortlisting of Proposers deemed most qualified to complete the Project.

The next step is the RFP/Proposals phase, in which the Agency issues an RFP only to those proposing teams that were shortlisted from the qualifications phase. The DB RFP contains a Proof of Concept design prepared by the Agency, which is generally a conceptual design advanced no further than 30%. In response to the RFP, potential design-builders submit Proposals containing their proposed approach to the Project and technical innovations, as well as a fixed price to complete the Project. During the RFP phase, Proposers also submit Alternative Technical Concepts (ATCs), in which they propose changes to the Contract Documents that constitute enhancements.

The Design-Builder is selected using a “best value” process in which the Agency considers a combination of technical and price factors to determine which Proposal provides the best value to the State. The selected Design-Builder is bound to comply with the Agency-approved ATCs incorporated into its Proposal. Additionally, the Agency has the option of requesting that the Design-Builder incorporate ATCs and other concepts from unsuccessful Proposers into the Contract Documents so that the Project benefits from as many innovative concepts as possible. A timeline of the DB procurement process is shown below:

Figure 1: Design-Build Procurement Process Timeline



The most significant difference between DB and traditional DBB is that the Design-Builder controls both the final design and the means and methods of construction. After selection, the Design-Builder completes the design of the Project and determines how to carry out construction. The Agency’s role is to oversee that the Design-Builder is complying with the requirements of the Contract Documents.

The Contract Documents contain technical requirements with which the Design-Builder must comply. The technical requirements come in two forms: performance and prescriptive.

Prescriptive Specifications mandate specific requirements. Performance Specifications, on the other hand, provide the result that the Design-Builder must achieve, how the Design-Builder's performance will be measured, and allow the Design-Builder latitude to determine how best to implement the requirements.

The Agency can benefit from the DB delivery method through the combination of ATCs, the incorporation of Proposal concepts, and performance-based specifications. The Design-Builder has the discretion to develop project-specific concepts and innovate in ways that the Agency may not have developed on its own. Through the Design-Builder's innovation, the Agency has the opportunity to gain knowledge and implement novel methods that would not have been available using the traditional DBB model.

The Design-Builder may not always perform its design and construction Work in the same manner that the Agency has previously experienced or would choose to implement on its own. On a DB project, it is important to remember that the Agency does not control the final design or the means and methods of construction. Although the Agency does relinquish some control over the finished product, the potential for innovation is how DB can bring value to a project.

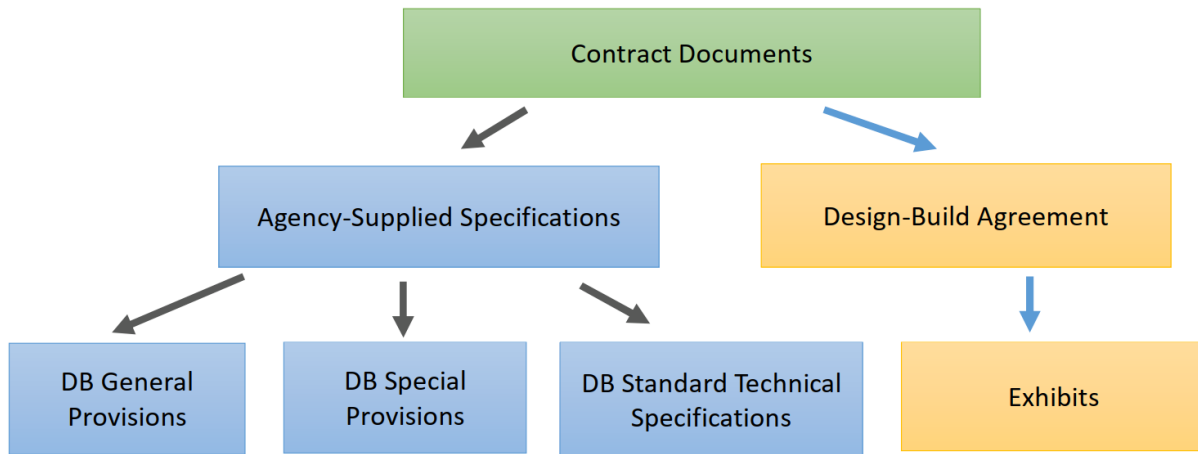
While the DB delivery method requires the Agency to administer the Project and oversee the Work, the nature of Agency oversight and involvement is different than traditional DBB. The Agency's goal is to allow the Design-Builder to implement innovative designs and construction methods, while ensuring conformance to the Contract Documents. Administering a DB project requires balancing oversight activities with affording the Design-Builder the opportunity needed to maximize DB project delivery.

## **(C) Design-Build Contract Documents**

This Manual refers in many instances to the template Design-Build Agreement and DB General Provisions that the Agency has prepared for DB projects. However, each project will have different requirements tailored to the Project's needs and may deviate from the template Contract Documents. Additionally, not every requirement from the template Contract Documents is addressed in this Manual. This Manual focuses primarily on the Agency's role rather than specifying the Design-Builder's obligations. While in several places the Design-Builder's obligations are discussed to provide context for the Agency's responsibilities, readers must be aware that this Manual does not provide an exhaustive discussion of the requirements applicable to the Design-Builder.

In addition, there are several locations in the template Contract Documents that allow the Agency to implement one of multiple options for a particular requirement. Refer to the requirements in the project-specific Contract Documents to determine the Design-Builder's responsibilities. An overview of the Contract Documents is shown below:

Figure 2: Overview of Design-Build Contract Documents



Part 00100 of the Oregon Standard Specifications for Construction (for DBB projects) has been replaced in its entirety for DB projects. The modified Part 00100 is referred to as the DB General Provisions. For certain Work, the Oregon Standard Specifications for Construction (other than Part 00100) apply; however, the project-specific Contract Documents may contain modifications to the standard specifications for a particular project.

Additionally, during the RFP process, the Design-Builder submitted a Proposal that contained information about its approach to the Project. The Design-Builder’s Proposal may have incorporated ATCs approved by the Agency. ATCs represent modifications to the technical requirements that ODOT provided in the RFP, but that the Design-Builder has proposed as enhancements. In addition to ATCs, the Design-Builder’s Proposal may contain commitments to perform Work of a higher quality than the Work required by the Contract Documents. At the conclusion of procurement process, the Agency may have selected commitments from the Design-Builder’s Proposal and specifically included those in the exhibits to the Design-Build Agreement. If so, those commitments become contractual requirements. The Agency might not perform the ATC process on every DB project, however, and it is therefore important to review the Contract Documents to determine what commitments from the Proposal become binding.

The Agency has the option of requesting that the selected Design-Builder incorporate the ATCs of unsuccessful Proposers into the Project. If incorporated, the Design-Builder is required to comply with the additional ATCs, which also represent modifications to the technical requirements provided in the RFP. Refer to Article 12 of the Design-Build Agreement, which contains the order of precedence of the Contract Documents.

This Manual refers generally to the Agency’s responsibilities. However, on many projects, the Agency engages outside consultants to assist with project management tasks. The role of the Agency in this Manual therefore refers to ODOT or its consultants, whichever is performing the function being discussed.

All references to days in this Manual, unless otherwise noted, refer to Calendar Days.



## FOR-4 – Design-Build Delivery Method

There are differences in the Agency's role between DB and DBB delivery methods, and this Manual explains the critical differences that an Agency Project Management (APM) team administering a DB contract needs to know.

Above all, on a DB project, the Agency's role is primarily to provide oversight of the Design-Builder's Work.

**On a DB project, the Agency is not the designer and is not the engineer of record.**

The Design-Builder is the engineer of record, and the Design-Builder controls the means and methods of construction. The Agency's role, in contrast, is to verify that the Design-Builder is in compliance with the Contract requirements. The Agency's oversight generally includes the following:

- Submittal Review and Comment, and Acceptance or Approval as described in the Contract Documents.
- Materials Quality Inspection and sampling.
- Quality Assurance (QA) and Independent Assurance (IA) of the construction Work and Materials.
- Workforce Development/Civil Rights/Labor Oversight.
- Contract Administration.

This Manual provides the details of each of the above processes, and where relevant, explains the differences between the Agency's role on a DB project versus a DBB project. Generally, this Manual explains that the Agency's role on a DB project is to allow the Design-Builder to perform the Work and to verify that the Design-Builder is conforming to the Contract requirements. The Contract Documents provide the procedures that the Agency follows when the Design-Builder has not complied with the Contract requirements. However, Agency project staff must consider that on DB projects, the Agency will generally refrain from directing the Design-Builder to perform the Work in a specified manner when the Design-Builder has complied with the Contract. Directing or requiring changes to the Design-Builder's Work in the absence of a contractual nonconformance can delay DB projects, undermine the Design-Builder's ability to innovate, and result in claims for additional compensation.

To assist the APM team in understanding the DB model, a brief overview of the delivery method is relevant. On a DBB project, the Agency first designs in-house or procures a design consultant to design the Project in its entirety, and then solicits bids for contractors to construct the design. In contrast, on a DB project, the Agency creates the Agency-Supplied Specifications that set the requirements and limitations establishing the parameters for the Project. The Agency-Supplied Specifications provide the Basic Configuration and a Proof of Concept design,

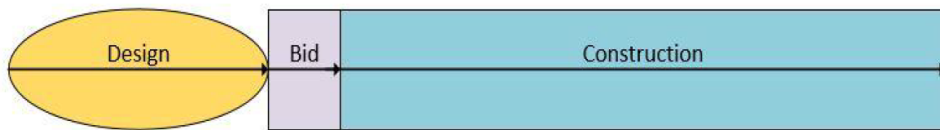
as well as Performance Specifications and other prescriptive requirements that the Design-Builder must follow. The Agency then uses these documents to select a single entity in one procurement to both design and construct the Project.

The following graphic illustrates the difference between phases of contracting for DBB and DB:

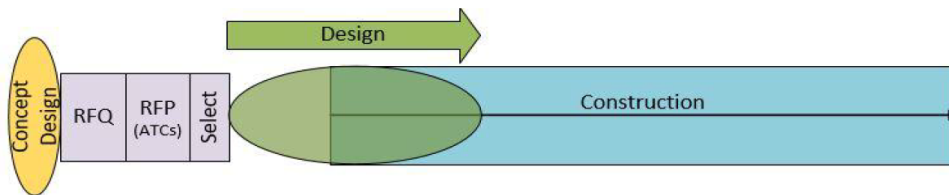
Figure 3: Phases of Design-Bid-Build and Design-Build Contracting Comparison

### Phases of Contracting

#### Design-Bid-Build



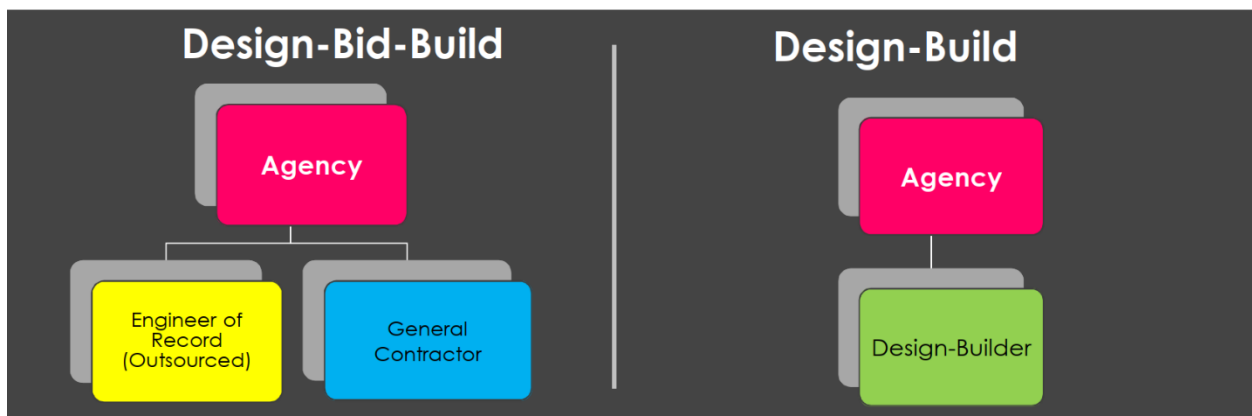
#### Design-Build



The following graphic illustrates the different contractual relationships between the Agency and contractor on a DB project compared to a DBB project:

Figure 4: Design-Bid-Build and Design-Build Contractual Relationships Comparison

### Contractual Relationship Comparison



On a DBB project, because the Agency controls the design and assumes responsibility for the constructability of the design, the Agency's role is much more hands-on. In contrast, on a DB project, the Agency does not prepare the final design, does not control the Project schedule, is not responsible for phasing (except to the extent of limitations in the Contract Documents), is not responsible for means and methods, does not procure/fabricate Materials, and does not perform Quality Control.

This differing allocation of responsibilities is the framework for the Agency's administration of a DB project. Above all, it is important to remember that DB project administration requires flexibility by the Agency's Project Management team to adapt to a delivery method in which the Agency does not have primary responsibility for design and construction.

## FOR-5 – Overview of Roles, Responsibilities and Governance

This section describes the roles and responsibilities of different parties that participate on a DB project. The below descriptions provide a general overview and do not list every role that may be assumed by each party. This Manual and the Contract Documents further describe how the roles below are carried out on each project.

### (A) Agency

The Agency (ODOT), as the Owner, is responsible for building and maintaining Highways, Bridges, and other facilities on the transportation system in the State of Oregon, including bicycle, pedestrian, and public transportation projects.

The Agency is responsible for providing public engagement through the region's Community Affairs Liaison and/or Public Information Officers (see ODOT's Public Involvement webpage, available at: <https://www.oregon.gov/odot/Planning/Pages/Public-Involvement.aspx>; and [Operational Notice PD-12](#)).

On a DB project, the Agency develops the Contract Documents, conducts the procurement, and provides oversight of the Design-Builder's Work during the design and construction of a project.

During the Design-Builder's performance of Construction Services, the Agency has the authority to appoint inspectors and other personnel to assist with administration of the Contract. DB150.20 permits inspection by the Agency to ensure that the Design-Builder's Work and Materials are compliant with the Contract, including material production, and fabrication. DB150.20 clarifies, however, that Agency's inspection is solely for Agency benefit, and does not constitute any of the following:

- Relief from Design-Builder's obligations to provide adequate Quality Management.

- Relief from Design-Builder's responsibility to correct damages to the Work or loss of Materials before Final Acceptance.
- Interim or Final Acceptance of Work or Materials.
- Waiver of any contractual obligations to perform Work as required by the Contract requirements.

Roles of other Agency personnel involved in the Project are discussed below.

## **(B) Region**

### **(B)(1) Area Manager**

For a full explanation of the Area Manager's role, refer to Chapter 1 of the ODOT Construction Manual. The Area Manager (AM) is responsible for ensuring that projects are delivered in scope, on schedule, and within budget as programmed. The AM ensures that the Project Resident Engineer (RE) has adequate staff, the Project is funded to complete the Work, and that good public relations exist at the Project level. The AM does not have day-to-day responsibilities on a DB project but is available when the APM team requires additional resources and must be contacted for certain approvals that are discussed in this Manual. The AM must be consulted with and approve several items needed for project closeout. The Agency Project Manager (PM) will be the primary liaison with the AM.

### **(B)(2) Agency's Project Manager**

In this Manual, the Agency's PM, RE, or Resident Engineer-Consultant Projects are all referred to as the Agency PM. The Agency PM may delegate tasks as needed to carry out the Agency's responsibilities on a DB project.

The Agency PM represents the Agency and is responsible for planning, executing, monitoring, and delivering assigned projects in accordance with the Contract Documents. The Agency PM works with resource providers to identify and secure the APM team members to support delivery of a project. The Agency PM is actively involved in the day-to-day responsibilities for the Project to which the Agency PM is assigned.

On DB projects, the Agency PM is responsible for overall management of the Project within the Agency PM's delegated authority, including but not limited to the following:

- All Project Management team development, assignment delegation, and establishing an Agency Project Management plan.
- Management and administration of consultant contracts and the DB Contract Documents.
- Lead Agency role on the APM team.

- Region liaison for solicitation, selection, and negotiation of third-party contracts such as those for an A&E firm, cost estimators, or owner's representatives, as applicable, and other project-related third-party contracts and/or agreements.
- Participating or assigning an Agency design management and oversight representative to the APM team.
- Establishing a plan for Agency Review and Comment on the Design-Builder's design submittals.
- Reviewing and filtering Agency comments on the Design-Builder's design submittals.
- Establishing a quality oversight organization for the Agency to perform design QA and to perform audits and inspections of the Design-Builder's Quality Management Team.
- Establishing a quality oversight organization to perform construction and Materials QA and IA.
- Establishing and leading the Agency's contract administration team.
- Scheduling required meetings with the Design-Builder, inviting required staff, and preparing agendas and meeting minutes.
- Reviewing change requests and preparing recommendations in accordance with the Contract Documents and Agency-Supplied Specifications.
- Reviewing invoices and preparing progress payments for consultants and the Design-Builder.
- Leading and participating in partnering sessions with Agency participants and the Design-Builder.
- Performing required closeout processes for the consultant contracts and the DB Contract Documents.

### **(B)(3) Other project support roles**

The following functions support the Agency PM. These functions are assigned to individuals by the Agency PM. Depending on the Project's size and complexity, the Agency PM may assign an individual one or several functions, or more than one individual may be needed to fulfill a function.

**Design Compliance** – This support function will consist of technical review and verification of compliance to Standards and Contract requirements.

**Technical Discipline Support** – As necessary, the APM team shall request Technical Services support to Review and Comment on the Design-Builder's design submittals and/or attend design meetings and workshops. During construction, Technical Services may be asked to participate in addressing changes that arise or exceptions to requirements that are being considered. Also, the Agency will provide Technical Services support to the APM team on an

as-requested basis, unless the Design-Builder's quality is being questioned. In that event, Technical Services staff will escalate their involvement so the Design-Builder meets ODOT Standards and re-establishes a level of confidence in its Quality Management efforts. Technical Services support staff from the Region and Salem offices cover all relevant disciplines and are available to support projects and Agency PM's.

**Environmental Compliance** – The APM team environmental compliance person will oversee the Design-Builder's efforts in meeting or exceeding contract requirements and the Agency-Accepted Environmental Compliance Plan (ECP). Periodic site visits, observations, and audits are performed to maintain confidence in the ECP's effectiveness.

**Mobility Compliance** – The APM team traffic control designee will oversee the Design-Builder's Traffic Control Supervisor (TCS) and monitor its efforts in meeting or exceeding contract requirements and the approved Traffic Management Plan (TMP), particularly the Temporary Traffic Control Plan (TCP). Periodic site visits, observations, and audits are performed to maintain confidence in the TCP's effectiveness.

**Agency Quality Control Compliance Specialist (QCCS)** – A QCCS monitors the Design-Builder's efforts in meeting or exceeding contract requirements and the construction portions of the Agency-Accepted Quality Plan. Periodic site visits, observations, and tests are performed to maintain confidence in the Quality Plan's effectiveness. The QCCS assures that the Region QA performs the necessary IA and Verification testing. The Agency QCCS's will coordinate with the Design-Builder's QCCS to perform the ODOT Verification tests on-site and at Supplier locations.

**Construction Administration Specialists/Document Compliance Reviewer** – The Agency role will help review Progress Estimates, quality and quantity documentation, workforce development and labor compliance documents and work closely with the Agency Inspectors, QCCS and other Agency's Project Management team support staff.

**Lead Inspector/Reviewer** – This function consists of Agency inspector(s) who oversee the Design-Builder's efforts during construction. Through observation, audit, and documentation review, the Construction Specialist assures that the Design-Builder is in compliance with contract requirements and the Quality Plan. They work closely with the Region Assurance Specialist (RAS) and QCCS and provide the support necessary to facilitate the Design-Builder's closeout actions. These inspectors do not perform traditional inspection duties but shall be aware of those duties to determine whether the Design-Builder's inspectors (part of the Project's Quality Management team) are performing the functions defined in ODOT's Inspector's Manual.

Each of the functions identified previously may or may not represent an official ODOT position or title. They are defined here to help the Agency PM organize duties and assign individuals who have the necessary skills for performing one or more roles.

### **(C) Contract Administration Unit**

The Contract Administration Unit (CAU) is responsible for administration of the Agency's construction contracts, including but not limited to the following:

- Approving and monitoring compliance with subcontracting procedures for DB contracts.
- Liaison with the Department of Justice (DOJ) to obtain concurrence on Contract Change Orders (CCOs) and any amendments to the DB Contract Documents
- Assigning a RAS.
- Other responsibilities as described in the ODOT Construction Manual.

The Contract Administration Engineer's (CAE) role is to coordinate all CCOs and contract amendments. The CAE also has the authority to Accept quality documentation for each project.

The RE is responsible for coordinating with the CAU on all CCOs or amendments to the DB Contract Documents and other contract matters that are beyond the RE's authority or require DOJ review or concurrence.

The RAS's responsibilities include the periodic (typically quarterly) reviews of quality documentation assembled by the Design-Builder. The results of the RAS's reviews are summarized in a Documentation Review Report (DRR) that is distributed to the Agency PM. The Agency PM will distribute the DRR to the Design-Builder's Quality Manager, the Design-Builder Project Manager, and any Agency consultant staff supporting the administration of the Project. The RAS should also assist in a pre-job Quality Management meeting to help the Design-Builder get off to a positive start prior to construction. The RAS will also be involved in reviewing quality price adjustments.

ODOT's CAU includes specialists that play a key role in processing CCOs and Pay Requests. This group can also assist in construction administration (CA) strategies, interpretations, and change resolutions. All CCOs and Pay Requests shall be approved and signed by the ODOT CAE, who heads this project support group.

### **(D) ODOT Procurement Office**

OPO conducts procurements for Highway and Bridge construction and other public improvements projects, architectural and engineering services, agreements, goods, equipment, and trade services.

OPO will issue Notice to Proceed (NTP) to the Design-Builder once a contract is executed and all prerequisites are complete. Note that if the National Environmental Policy Act (NEPA) process is not yet complete (Finding of no Significant Impact "FONSI" or Record of Decision "ROD" not yet issued), the NTP may be limited to initial Design Services only. The NTP cannot



allow for preparation of Readiness-for-Construction Plans and Specifications or any construction until the NEPA process is completed.

After issuance of NTP to the Design-Builder, OPO serves in an advisory capacity to the Agency PM on topics such as review of bonding and insurance requirements and review of subcontracting documents. OPO will ensure that the Design-Builder maintains up to date insurance and will be copied on all policy renewal documents.

## **(E) ODOT Office of Civil Rights**

The ODOT Office of Equity and Civil Rights (OECR) administers various programs and provides information regarding potential contracting opportunities for construction, architectural and engineering, and other personal trade services. These include:

- Small Business Resources.
- Disadvantaged Business Enterprise Program.
- Emerging Small Business Program.
- Mentor-Protégé Program.
- Tribal Employment Rights Ordinance (TERO).
- Workforce Development Program.

For some Design-Builder deliverables, OECR will work with DOJ for legal review. The OECR will provide project-specific information related to assigned goals. The Agency PM will work with OECR to ensure deliverables and amendments have been reviewed and concurrence is obtained as required.

## **(F) Design-Builder**

The Design-Builder is the entity that performs final design and construction of a DB project. The Design-Builder completes the Project's design and construction in compliance with the requirements of the Contract Documents. The Design-Builder is responsible for retaining the professionals of record and determines the means and methods of construction. In addition, the Design-Builder is responsible for Quality Management. The Design-Builder performs the Work for the Contract Amount stated in the Contract Documents and must complete the Project within the Contract Time.

## **(G) Owner's Representative Consultant (Optional)**

The Agency may hire an Owner's Representative Consultant (also known as "Owner's Representative") to provide expertise and resources during the project development, design, and construction phases of a project. An Owner's Representative may assist with design Review and Comment, quality audits and oversight, construction and Materials inspection, and contract



management. The Owner's Representative does not replace the Agency's role as Owner of a project.

### **(H) Other Agencies**

#### **(H)(1) Department of Justice**

The DOJ serves as legal counsel to the Agency through legal guidance and review of Contract Documents, and represents the Agency in the event of legal issues.

The DOJ assists the Agency in the execution of the Contract Documents. After award and execution, the Agency PM will work with the CAE. The CAE will coordinate DOJ legal sufficiency reviews of all DB Contract Documents, including amendments and CCOs.

#### **(H)(2) Federal Highway Administration (FHWA)**

Most DB projects in Oregon will receive federal funding. The Agency PM should review the sections in the ODOT Construction Manual for similar requirements on DBB projects to ensure compliance to maintain federal funding.

In addition, FHWA must provide concurrence on certain CCOs, as discussed further below.

### **(I) Governance**

#### **(I)(1) FHWA**

[23 USC 112\(b\)\(3\) Design-Build Contracting](#) (2012) provides FHWA's statutory requirements for the DB project delivery method.

The federal government issued regulations that establish the responsibilities of states in procuring and administering projects through the DB method. These regulations are located in 23 CFR Part 636, and describe FHWA's procedures for approving a DB project. The federal regulations provide guidance on the following:

- 1) Selection Procedures and Award Criteria:
  - a. Two-phase solicitations (See Section FOR-1(a)).
  - b. One-phase solicitations.
- 2) Proposal Evaluations Factors:
  - a. Technical Proposal evaluations.
  - b. Price Proposal evaluations.
- 3) Exchanges:
  - a. Allowable information sharing for competition.
- 4) Discussions, Proposal Revisions, and Source Selection:

- a. Issues for discussion; and
- b. Discussion and negotiation process.

The following CFR rules updated the federal DB guidance related to NEPA and ATCs:

[23 CFR 636 Design-Build Contracting; Final Rule](#) (08/14/2007). Among the revisions made by SAFETEA-LU were the elimination of the dollar thresholds for "qualified" projects and permission to release an RFP or award a DB contract prior to completion of NEPA. DB procurement processes that deviate from the requirements of 23 CFR 636 may require a Special Experimental Project – 14 work plan and FHWA approval.

[Design-Build Contracting Final Rule](#) (02/12/2014). The February 12, 2014 Final Rule revised FHWA's DB regulations at 23 CFR 636.209 relating to the use of ATCs. The Final Rule eliminates the requirement to submit a base proposal when a contracting agency allows DB Proposers to submit ATCs in their Technical and Price Proposals.

ODOT's procurement guidelines incorporate these federal requirements.

On federally-funded projects, there are specific federal requirements that apply to the Design-Builder's Work, including (DB170.65):

- Buy America.
- Cargo Preference Act (DB160.21).
- Davis-Bacon wages.
- Equal Employment Opportunity.
- DBE and OJT requirements.
- All requirements in FHWA Form 1273.

The Agency's responsibilities include oversight of the Design-Builder's compliance with the Project's federal requirements. FHWA may audit federally-funded projects from time to time, and the Agency will be responsible for resolving the audit findings. FHWA may impose additional reporting requirements with which the Agency must comply.

There are additional cost estimating requirements on Federal Aid projects if the Project is greater than \$500 million in total project costs or classified as a Major Project by FHWA. See <https://www.fhwa.dot.gov/majorprojects/> for additional requirements.

Additionally, on federally-funded projects, FHWA has the right to perform concurrence reviews of all CCOs for which the Agency will seek federal reimbursement. See ODOT Construction Manual, Chapter 15 – Change Orders, Force Account, Work by Public Forces. To decrease the risk that FHWA will not concur with the federal eligibility of a CCO, it is critical to receive FHWA concurrence prior to executing the CCO with the Design-Builder (23 CFR 635.120). All "major changes" require concurrence prior to implementing the change, while non-major changes may receive concurrence after the fact.

If the Project is federally-funded, the Agency PM must obtain FHWA approval before allowing any of the following elements to be incorporated into the Contract or CCOs:

- 1) Any sensitive or controversial change, or any change for which FHWA review and approval is specifically requested.
- 2) Changes that affect environmental mitigation or commitments.
- 3) Waiver of Buy America provisions.
- 4) Changes to the scope of Work or extension of the Contract limits shown in the Project documents approved by FHWA.
- 5) Work not already approved by FHWA, if FHWA participation is questionable.

Where the Agency is not intending to seek federal participation for additional Work costs or a particular change, the Agency should nevertheless consult FHWA to the extent that the proposed change might have an effect on another aspect of the Project.

## (I)(2) State of Oregon Statute

Oregon's DB process is governed by Oregon Revised Statutes (ORS) Chapters 279A, 279B, and 279C. Additional requirements are located in the Oregon Administrative Rules (OAR). These statutes and regulations generally govern when the Agency may use the DB delivery method, how the Agency may procure a Design-Builder, and requirements for the Contract structure between the Agency and the Design-Builder.

Additionally, the statutes address the Findings of Fact for Exemption (FFE) necessary to implement a project as DB. This Manual does not provide details for the DB procurement process for the FFE. Contact the Construction Section of OPO at [ODOTProcurementOfficeConstruction@odot.oregon.gov](mailto:ODOTProcurementOfficeConstruction@odot.oregon.gov) for more information.

Oregon's regulations governing DB contracts are contained in [OAR 137-049-0670](#). To use the DB method, the Agency must anticipate certain benefits, including:

- A fully integrated DB team capable of providing a suite of engineering services, construction, Quality Management, and documentation;
- Integration of value engineering suggestions into the design phase with the construction contractor joining the APM team earlier than under a DBB procurement – a team approach with potential to reduce contract changes;
- Reducing risk of design flaws and conflicts between the designer and contractor;
- Shortening the Project timeline with construction commencing prior to completion of the full design; and
- Obtaining innovative design solutions through collaboration between the contractor and design team.

The information outlined in the regulations above are important to keep in mind when administering a DB project. The APM team is encouraged to revisit these requirements as the Project is underway to ensure that the Project is meeting the goals of Oregon's DB legislation.

### **(I)(3) Agency Authority**

After award of the contract to the Design-Builder, the process for amendments is similar to the CCO process described in Chapter 15 – Change Orders/Force Account/Work by Public Forces of the ODOT Construction Manual. See also Chapter 1, section 1-14 and Chapter 3, section 3-23 in this Manual.

As required by Chapter 15 of the ODOT Construction Manual, the draft copy of all CCOs must be submitted to the CAE before being sent to the Design-Builder. The Agency PM has limited authority to execute CCOs and amendments. The Agency PM will work with the AM and the CAE on all amendments and CCOs. Agency Consultants do not have authority to execute CCOs on the Agency's behalf.

All amendments and CCOs to the Contract Documents require CAE review before submitting to the Design-Builder for signature. The CAE will coordinate the CCO reviews with DOJ as necessary for legal sufficiency and return any comments, questions, and/or concurrences back to the Agency PM. The Agency PM must also obtain approval from FHWA for certain CCOs on federally-funded projects. DOJ and FHWA (if applicable) review and concurrence are required prior to approval of CCOs.

The Agency PM will coordinate changes with the Design-Builder's staff that has authority to make changes.

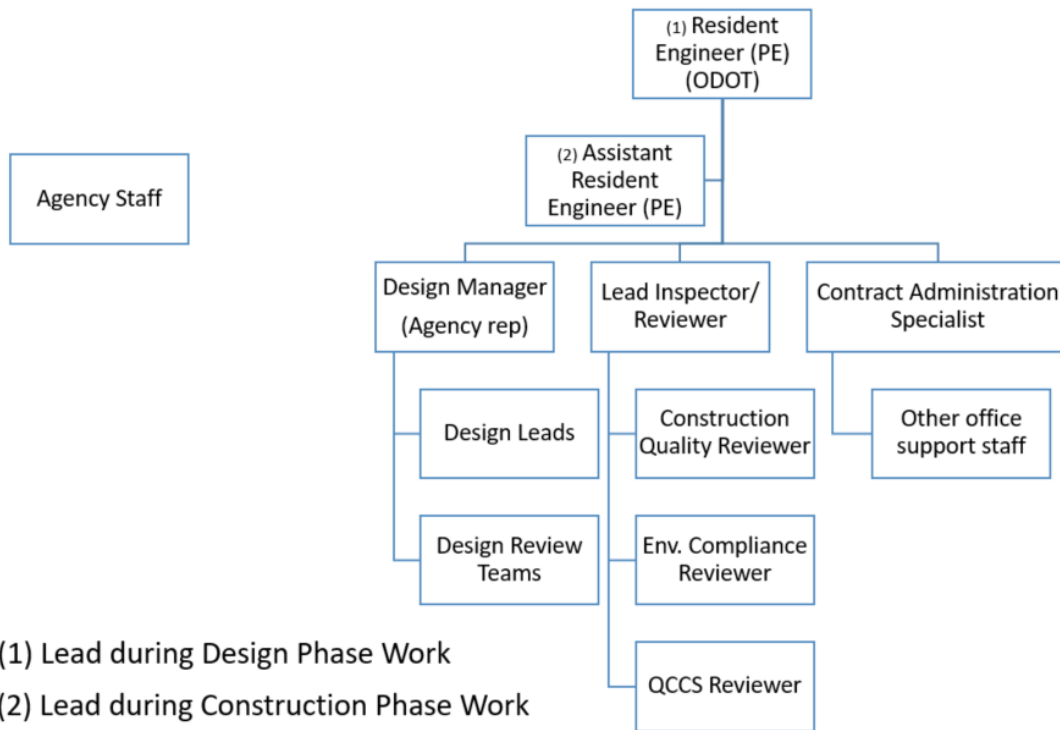
Refer to the ODOT Construction Manual, Chapter 3 – Delegation of Authority, which describes who in the Agency has authority and the levels of authorities for CCOs or amendments.

### **(J) Team Structure Examples**

Examples of the structure of the Agency's and Design-Builder's organization on a DB project are shown below:

## (J)(1) Agency Led Project Management Team Example

Figure 5: Example of Agency PM Team Organization



On a DB project, the APM team provides oversight of the Design-Builder’s Work, including:

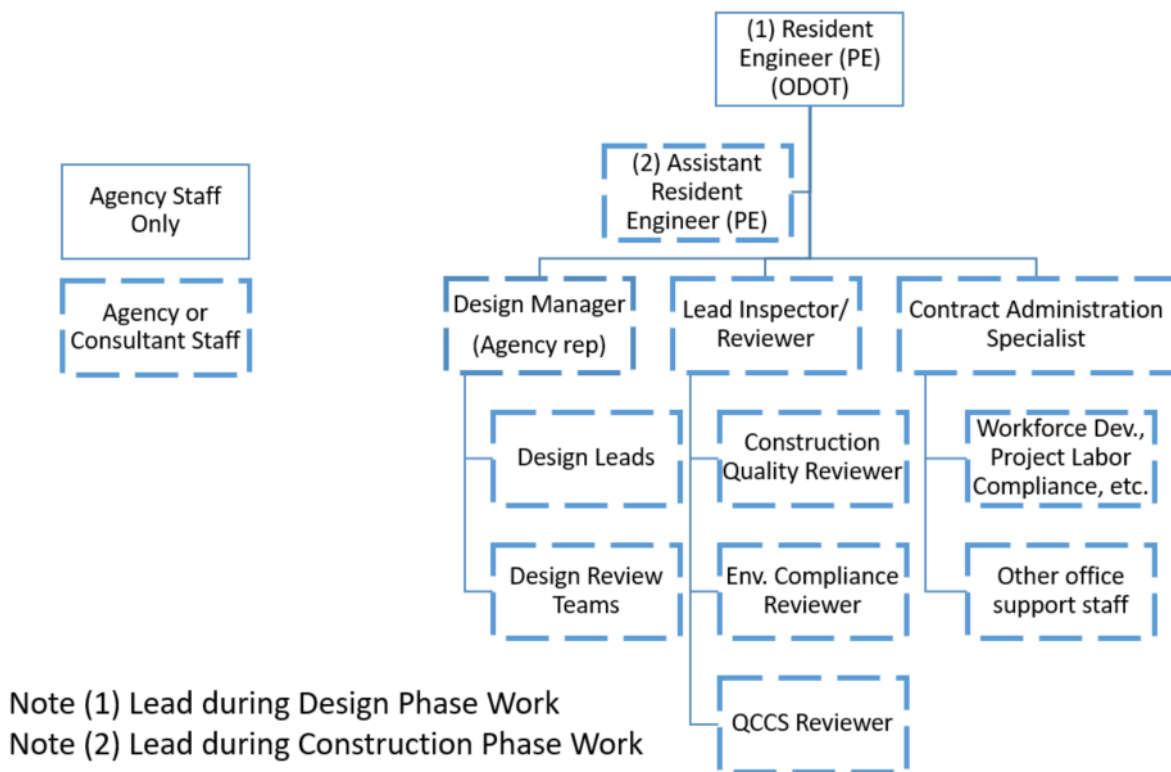
- Design Review and Comment.
- Contract management and compliance.
  - Enforcement of Contract provisions.
  - Responding to requests for clarification and interpretation.
  - Payment for all contract items that are satisfactorily completed, in accordance with the Contract.
  - Maintaining effective communications and good working relationships.
  - Maintaining proper documentation to demonstrate compliance.
  - Oversight inspection and contract audits.
  - Managing changes following the ODOT CCO methods outlined in the ODOT Construction Manual.
  - Resolving or facilitating disagreements according to the terms of DB199.
- Quality Assurance and Independent Assurance of Materials.

- Quality Audits (See Chapter 2 for Quality Management).
- Retained inspection roles (not performed by the Design-Builder):
  - Bridge inspections prior to traffic opening, and at Final Acceptance.
  - Traffic signal controllers
- Environmental Compliance audits or site visits.

## (J)(2) Agency Led Project Management Team Example (Consultant Support)

The figure shown below, depicts the possible options for full outsourcing of the roles and responsibilities on a DB project.

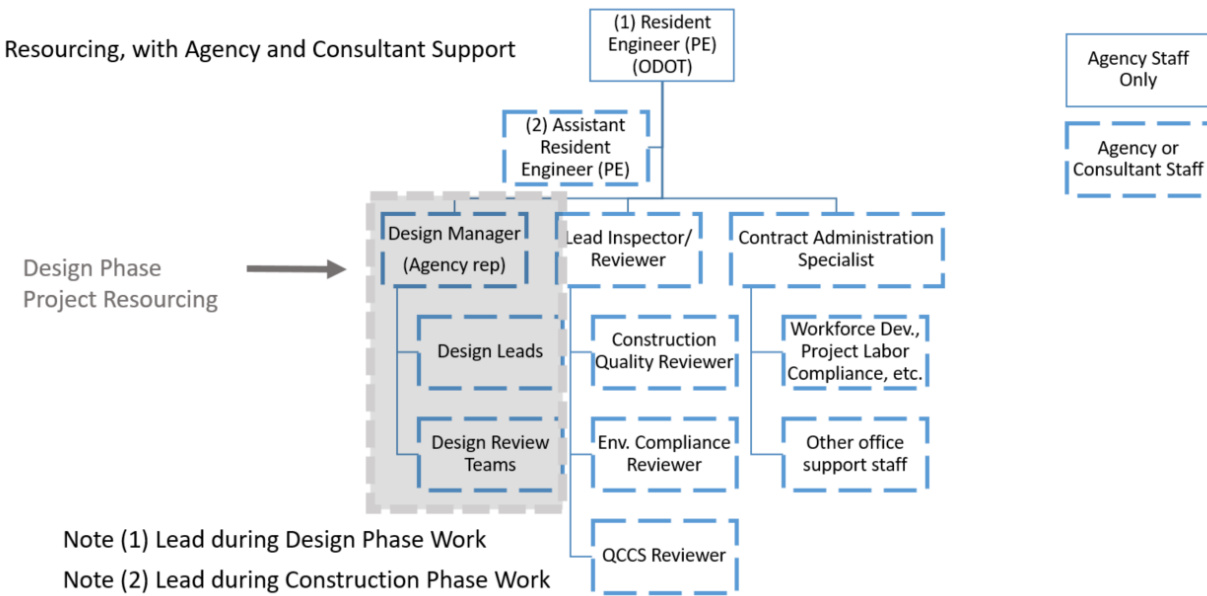
Figure 6: Design-Build Project Full Outsourcing Roles and Responsibilities Options Example



### (J)(3) Agency Led Project Management Team Example (Design Phase)

The figure shown below highlights the team working on the design oversight responsibilities on a DB project.

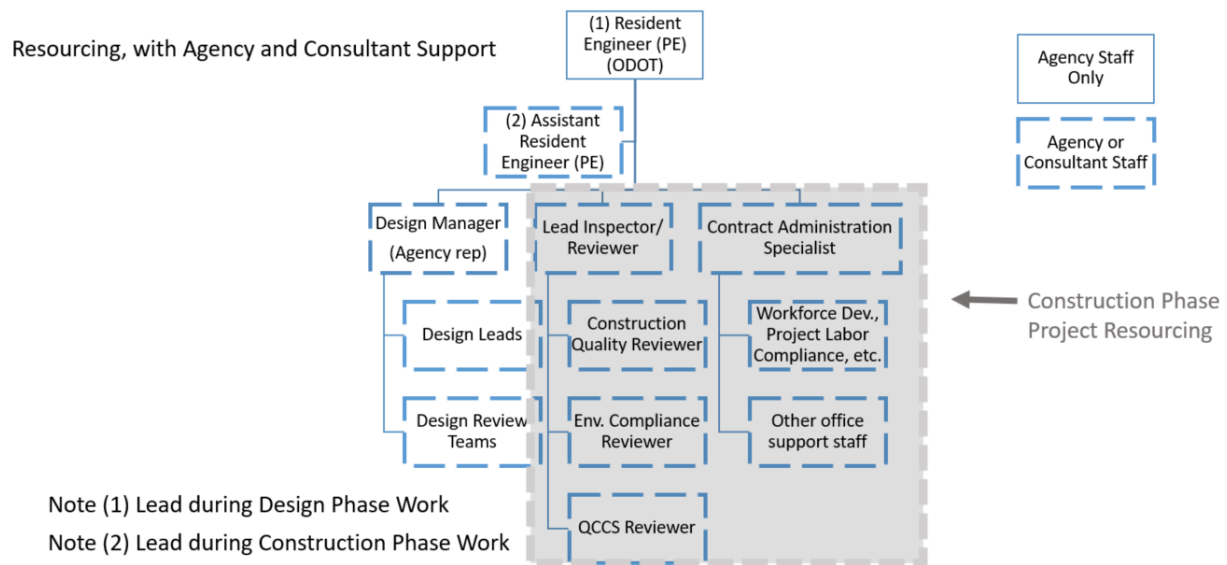
Figure 7: Design-Build Design Oversight Responsibilities Example



## (J)(4) Agency Project Management Team Example (Construction Phase)

The figure shown below highlights the APM team working on the construction oversight responsibilities on a DB project.

Figure 8: Design-Build Construction Oversight Responsibilities Example



## (J)(5) Agency Statewide Roles & Responsibilities

Finally, the Agency maintains certain roles responsibilities at the organizational level that are not delegated to an APM team or to a Design-Builder. These retained roles include:

- Contract Payments (Payments to the Design-Builder).
- Pavement Design.
- Intelligent Transportation Systems.
- Traffic Sign Inspection.
- Aggregate Source Approval.
- Qualified Products List (QPL).
- Region Quality Assurance of Materials (Independent Assurance).
- Region Assurance Specialist.
- OECR Field Coordinators.
- Labor Compliance Audits.

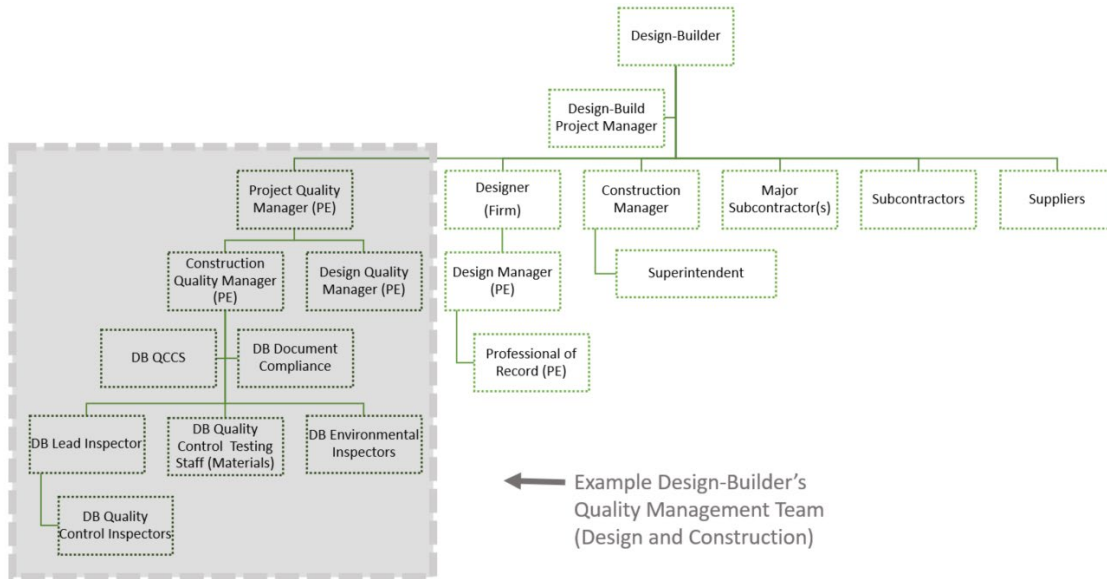


- Lab Certifications.
- Plant Inspections.
- Statewide (QA) ADA Ramp Inspection.
- Pavement Mix Design Approval.
- Fabrication Inspection.

### (J)(6) Design-Builder’s Project Team

The figure shown below depicts an example of a Design-Builder’s organization.

Figure 9: Example of a Design-Builder’s Organization

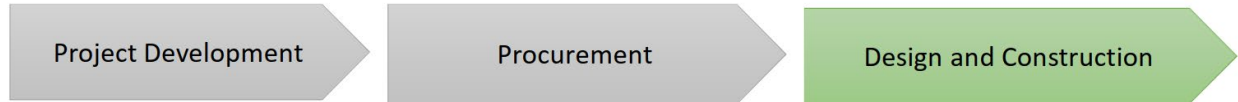


Note, in addition to the Design Firm working for the Design-Builder, the Design-Builder is also responsible for hiring a separate Quality Management Team that is highlighted in the figure above.

# Chapter 1 – Project Start-up & Administration

Once the procurement process is completed and the selected Design-Builder is under contract, the Project transitions to the design and construction phase.

Figure 10: Design-Build Phases



The DB Project commences on the day that the Agency (by OPO) issues NTP, which permits the Design-Builder to commence Work. Once the Design-Builder starts Work, the Agency PM issues the First Notification acknowledging commencement of the Project. Neither NTP nor First Notification allows the Design-Builder to start construction. Until the Design-Builder has met all preconditions to starting construction in the Contract Documents, the Design-Builder generally may not commence any ground disturbing activities unless the Contract specifically provides otherwise.

The first critical submittal from the Design-Builder is the Quality Plan. The Agency’s Acceptance of the Quality Plan is a precondition to continuing all other Work (including design Work) on the Project. The Agency PM must also initiate electronic documentation access immediately after award of a DB project. Various documents, typically submitted during the Construction Phase of a DBB project, will be submitted within the first month of Work for a DB project. These documents (e.g. subcontracts, Quality Plan documentation and Pay Request source documentation information) will be submitted through the Electronic Document Management System EDMS (not ProjectWise) which is managed by CAU. Contact the CAU to review the latest submittal processes and procedures.

After Acceptance of the Quality Plan by the Agency, the Design-Builder will start to provide design submittals. These design submittals will be typically uploaded in ProjectWise. Design submittals are the proposed design for discrete portions of the Project, referred to as Design Units (DU), (DB155.04). The Design-Builder will submit three iterations of each DU, consisting of the Definitive Design (DD), Interim Design (ID), and Readiness for Construction (RFC) Design. The Design-Builder’s Design Quality Manager is responsible for performing quality checks on each design submittal and certifying that all required quality checks have been performed before the Design-Builder provides the design to the Agency.

The Agency has a specified time (specified in the Contract Documents) to Review and Comment on each design submittal. The default time period for the Agency to Review and Comment on design submittals is 21 days; however, this may vary on a project-by-project basis or for certain submittals. As discussed further at length in this Manual, the Agency’s Review and Comment is generally limited to verifying conformance with the Contract requirements.

The Agency may not add requirements to the design that are not contained in the Contract Documents, unless the submitted design does not align with good industry practice, presents a safety concern, or the Agency and the Design-Builder execute a CCO implementing a desired change. Requiring the Design-Builder to revise a compliant design without a CCO can result in claims for additional compensation.

The RFC design submittal must be Accepted by the Agency before the Design-Builder can commence with construction of the RFC design. During construction, the Design-Builder is responsible for QC, including inspection, of the construction Work and Materials. The Agency's role is to provide QA and IA by undertaking spot checks, random sampling, and auditing the construction Work and the Materials incorporated into the Work. Only when a defect is located does the Agency perform a more thorough review of the construction Work. The APM team must take care not to undertake activities that are contractually assigned to the Design-Builder, but the Agency is permitted to carry out its contractual oversight responsibilities. Ultimately, the Agency will be responsible for long-term maintenance and operations of a facility and is responsible for verifying that the Design-Builder's Work conforms with the Contract Documents.

At the close of a DB project, the Design-Builder will be required to attest that its Work conforms to the Contract Documents, and the Agency's role is to verify that the Design-Builder's statement is accurate. When all Price Item Work is complete - except for any Punch-List items (see DB110.20) and any required seeding establishment or plant establishment - the Agency may issue the Final Second Notification. Once the Design-Builder completes the Punch-List items Work and submits all required closeout documentation, the Agency may issue the Third Notification, make the final payment to the Design-Builder, and acknowledge Final Acceptance of the Project. At that point, the Project is considered complete, subject to any disclosed claims and the Agency's right to pursue legal remedies for defects.

The foregoing is a brief overview of the DB project lifecycle. The remainder of the Manual is dedicated to providing detailed explanations of the applicable procedures to enable successful completion of DB projects. Feedback and lessons learned are encouraged. Please contact ODOT's Contract Administration Unit or ODOT Alternative Delivery Services with any comments you have. DB is an evolving process and the more experience the Agency gains, the better it can become at making the best use of this delivery method.

## **1-1 – Contract (Design & Construction) Hand-off Meeting (Optional)**

If determined as necessary, the Agency PM should schedule a hand-off meeting at the start of a DB project with OPO, the APM team, and CAU. The purpose of the hand-off meeting is to acquaint the CAU staff with project specifics to facilitate project awareness and understanding of its characteristics and challenges, and to review the conformed Contract, negotiation records, Agency responses to Proposer Requests for Clarification, executed Escrow Agreement, and

other key project documents and observations that have been collected over the project development and procurement phases.

**Note: The Contract is conformed by the Agency's Project Management team and OPO after the protest period for the Notice of Intent to Award is completed. The final assembly of the conformed Contract includes incorporation of all applicable changes made by Addenda, any mutually agreed-upon edits during negotiations, portions of the selected Proposer's Technical and Price Proposals that meet or exceed the minimal contract requirements stated in the RFP, and any approved DOJ changes. Contact the Construction Section of OPO at [ODOTProcurementOfficeConstruction@odot.oregon.gov](mailto:ODOTProcurementOfficeConstruction@odot.oregon.gov) for information on DB hand-off process.**

The hand-off meeting is the formal transition from the procurement process to the design and construction phase. Once the Agency PM has a reasonable estimate for the execution date of the Design-Build Agreement, the Agency PM will schedule this meeting to occur with the members of the APM team that will administer the Project. The meeting should not necessarily wait to take place until after contract execution or NTP, as there are many aspects of the Project on which the APM team may require training. Waiting until NTP will not allow sufficient time for the APM team to learn and understand the Project's requirements before it begins.

At a minimum, the hand-off meeting will cover:

- Overview of the conformed Contract Documents and where to find them.
- Overview of the Basic Configuration and Performance Specifications.
- Identity of the presumptive Design-Builder.
- Introduction to the Design-Builder's Proposal design, ATCs, and other Proposal commitments, including items that exceeded the requirements in the RFP.
- Additional ATCs from unsuccessful Proposers planned for incorporation into the Contract (if any).
- Organizational chart identifying the APM team and roles, including the role of outside consultants.
- Tentative Project schedule based on Design-Builder's Proposal schedule submission.
- Discussion of document management system and document controls.
- Discussion of Findings of Fact for Exemption (FFE) Post-Construction Report requirements.
- Discussion on any Agency consultant support.
- Opportunity for questions and answers.

## **1-2 – Post-procurement Lessons Learned Meeting (Optional)**

The post-procurement lessons learned meeting takes place among members of the APM team that participated in the procurement. If determined as necessary, the meeting will take place as soon as possible after the Contract Documents are fully executed, or earlier if needed to ensure full attendance. During the meeting, the participants will discuss the following topics, at a minimum:

- Procurement process overview.
- Document control.
- Interaction with Proposers.
- Development of addenda.
- Responding to Proposer questions and answers.
- Review and approval of ATCs.
- Proposal review process.
- Evaluation process.
- Selection and announcement of Best Value Proposer.
- Negotiations process.
- Procurement schedule adherence.
- Whether any changes to the procurement process manual are warranted.
- Any other topics that could use improvement.

OPO schedules and leads the meeting and assigns an individual to record detailed notes and prepare a summary of the lessons learned. The summary of the lessons learned and an assessment of whether any changes to the procurement processes are warranted must be provided to the meeting participants and to Alternative Delivery Services (ADS). ADS will maintain the record of lessons learned from all DB projects in the State.

## **1-3 – Escrowed Documents**

The Design-Builder will provide an inventory of Escrowed Documents to the Agency within 10 days of the date of the delivery of the Contract Documents by the Agency to the apparent Best-Value Proposer. The Escrowed Documents consist of the documents and information that the Design-Builder used to prepare the price submitted in the Proposal, including itemized cost estimates and the assumptions on which such estimates are based. The cost estimates in the Escrowed Documents must be broken down into labor, Equipment, and Materials, and must

also show the Design-Builder's allocation of plant and Equipment, indirect costs, contingencies, markup, and other items to each direct cost item identified.

The Design-Builder must organize the Escrowed Documents in the manner actually used by the Proposer to develop its Proposal and must be delivered in their original format (such as paper or electronic). The Design-Builder must also include Subcontractor and Supplier pricing information in the Escrowed Documents. The Design-Builder must include Form EA from the RFP, which contains an inventory of the Escrowed Documents.

The Agency PM will audit the Escrowed Documents within 90 days of NTP, including those provided for Subcontractors and Suppliers, to verify that they conform to the requirements of DB131. The Agency PM will perform a general overview of the documents provided and compare them to Form EA and the Design-Builder's inventory of the Escrowed Documents. In addition, the Agency PM will select specific Price Items and conduct a detailed review of the Escrowed Documents for those Price Items. The purpose of this detailed review is to assess whether the Design-Builder complied with DB131. If the Agency PM detects an issue in the detailed reviews, document the problem, inform the Design-Builder, and require correction. The Agency PM will review the updates to the Escrowed Documents after the Design-Builder performs the correction.

Note that the Design-Builder will be required to update the Escrowed Documents and provide an inventory of all additional Escrowed Documents for each schedule update, certified claim, and CCO (DB131.15). The Agency PM will review the updates to the Escrowed Documents using the same procedures as the initial review.

The Agency review may not discover all missing items, but this should provide the Agency improved assurance that the Escrowed Documents provided are complete enough to enable the Agency a complete understanding and interpretation of how the Design-Builder arrived at its Proposal, or documentation relating to CCOs, as applicable.

## 1-4 – Notice to Proceed

Once the Contract Documents are fully executed and all other preconditions are met, OPO will issue NTP to the Design-Builder. OPO will not issue NTP until they have received, reviewed, and approved the following:

- Bonds (Performance and Payment).
- Proof of Insurance (Design-Build Agreement Article 7.1, DB170.70), except for policies that may be obtained post-execution (DB170.70).
- Executed Escrow Agreement and inventory of Escrowed Documents.
- Other documents required by the RFP (joint venture agreements, Subcontractor agreements, opinions of counsel, certifications concerning liability, proof of registration to do business in the State, etc.).



OPO's review of the foregoing will confirm that the information submitted complies with the requirements of the Contract Documents. If any information is not submitted or is incorrect, OPO will notify the Design-Builder of the deficiency and require correction before issuing NTP.

Issuance of NTP does not permit the Design-Builder to start construction. Additionally, the Design-Builder may not commence preparation of RFC designs until receipt of notification from the Agency that the NEPA process is complete (Design-Build Agreement Article 4.1, DB140.00, DB155.01). For almost all projects, this step will have occurred prior to contract execution. Only in rare circumstances is this not the case, but where it is, the Agency must ensure that all NEPA conditions are met before the Design-Builder commences preparation of RFC Plans and Specifications. If the Project is awaiting NEPA clearance for a select portion of the Project, the Design-Build Agreement will contain specific terms and conditions applicable to this Work.

OPO will issue NTP within 5 days after the Agency executes the Design-Build Agreement (DB180.43). If OPO does not do so within the 5-day period, the Design-Builder may request an adjustment of Contract Time in accordance with DB180.80.

## 1-5 – Contract Time

The Contract Time is the amount of time specified in the Contract Documents for the Design-Builder to complete the Work. The Contract Completion Date is stated in DB180.50. If the Design-Builder does not complete the Work by the Contract Completion Date, the Agency PM may assess liquidated damages until the Design-Builder completes the Work. See the ODOT Construction Manual, Chapter 13 – Contract Time.

Some DB projects will have Interim Completion Dates within the overall Contract Time stated in DB180.50. Interim Completion Dates are not included in every project, and the APM team must be made aware if a particular project contains Interim Completion Dates. Any Interim Completion Date must also be shown in the Design-Builder's schedule.

The Agency PM's role is to monitor and evaluate the construction schedule and determine whether the Design-Builder is proceeding in a manner that will result in timely project completion in conformance with the Contract Documents. If the Design-Builder is not proceeding in this manner, document the delay and determine whether additional actions are necessary. See the ODOT Construction Manual, Chapter 13 – Contract Time.

Contract Time may only be adjusted as stated in DB180.80. The Design-Builder may not unilaterally change the Contract Time in its schedule. When reviewing the Design-Builder's schedule, the Agency PM will ensure that the proper Contract Time and Contract Completion Date(s) are reflected. If either or both are incorrect, the Agency PM will provide a comment noting the error to the Design-Builder.

In the following circumstances, Calendar Days will not be charged against the Contract Time (DB180.50):

- Acts of God or Nature.

- Court orders prohibiting Work.
- Strikes, labor disputes, freight embargoes that cause a shutdown of Work, despite Design-Builder's attempts to avoid it.
- Suspension of Work by the Agency other than due to Design-Builder's failure or neglect.
- Changes in Laws or regulations that occur after the Work commences and which materially affect performance time.

The circumstances for Contract Time adjustments are stated in DB180.80. Contract Time adjustments will be considered for causes identified in DB180.80. Contract Time adjustments can be accomplished according to one of the following:

- The Agency adjusts the Contract Time by CCO.
- The Design-Builder requests an adjustment of time and the Agency finds that the request is warranted. However, Design-Builder may not request an adjustment of Contract Time for events occurring prior to the date of the last revision of the Accepted Baseline Schedule.

If the Design-Builder has been delayed, it must submit a prompt notice of delay in accordance with DB180.60. If the Design-Builder believes that an adjustment of Contract Time is warranted following a notice of delay, it must follow up with a request for an adjustment of the Contract Time as described in DB180.80. Upon receipt of a request for an adjustment of Contract Time, the Agency PM will take the following steps:

- Review the request for compliance with DB180.80. If something is missing, advise the Design-Builder in writing as soon as possible.
- Once the Design-Builder has submitted a complete request, assess whether the basis stated for the adjustment is one of the permissible bases listed in DB180.80.
- Prepare a response to the Design-Builder. If a Contract Time adjustment is warranted, the Design-Builder must submit a new revised Baseline Schedule incorporating the adjusted Contract Time.

## 1-6 – First Notification and Initial Submittals

The Agency PM is responsible for issuing the First Notification. The First Notification acknowledges commencement of the Work and starts the charging of time against the Contract's completion deadlines. First Notification is prepared on a standardized form (Form 734-3233). First Notification will be sent by the Agency PM to the Design-Builder with copies to the ODOT District Manager, ODOT Region Survey Manager, and ODOT Region Right-of-Way Manager (Refer to Chapter 13 – Contract Time, of the ODOT Construction Manual).

Issuance of First Notification does not permit the Design-Builder to start construction; rather, there are several other conditions Design-Builder must meet before construction can begin (DB180.40), including Agency Acceptance of the Design-Builder's Quality Plan.



After issuance of NTP, the Design-Builder will begin to submit various design submittals for review by the Agency, generally consisting of the following:

- Quality Plan (both design and construction).
- Baseline Schedule.
- Environmental Compliance.
- Workforce Development Plans.
- Diversity Plan.
- Others as described in the Contract Documents.

The Agency will review these and all other required submittals in accordance with the timelines stated in the Contract Documents. The Agency reviews the submittals for compliance with the Contract requirements and to ensure that they are sufficient to execute the Design-Builder's contractual obligations.

## 1-7 – Partnering

DB150.05 establishes the procedures for the initial partnering meeting to take place after First Notification. Partnering is a useful process to resolve technical issues as well as potential disputes. Partnering provides a forum for early resolution of issues with the goal of resolving them before they materialize into claims.

Partnering is not mandatory for every DB project. Where the Contract Documents provide that partnering is voluntary, the initial meeting may be used for the Design-Builder to execute a partnering agreement if desired. If partnering is mandatory or if the Design-Builder elects to enter a voluntary partnering agreement, the meetings required by DB150.05 will be established. The Agency PM will arrange the initial partnering meeting.

The first partnering session will introduce the partnering process and establish how the parties will use partnering to resolve disputes and avoid claims and other controversies. The Agency and the Design-Builder may additionally consider whether to have the first partnering meeting, and any subsequent partnering meetings, led by a third-party facilitator who serves as a neutral person to consider the views of both parties. If the Agency and the Design-Builder decide to involve a third-party facilitator, the parties will arrange how to cover the facilitator's costs.

Design-Builder's Key Personnel and Agency staff with management responsibilities will attend the first partnering meeting to identify the relevant individuals with decision-making authority and to establish the roles and responsibilities of the partnering team. During the first partnering meeting, the participants will discuss the following, at a minimum:

- How potential disputes should be raised to the other party.
- The timing for future meetings (including scheduling such meetings at regular intervals).

- Whether the partnering process will involve a third-party neutral facilitator.
- Confidentiality of the partnering process, including of documents exchanged.
- Creation of an escalation ladder that names Design-Builder and Agency individuals at each level of issue resolution and the amount of time that an issue can reside at each level before it must be escalated further.
- The use of outside experts to resolve technical issues.
- Costs of the partnering process.

## 1-8 – Document Control

All documents submitted by the Design-Builder (other than claims) shall be submitted to the Agency using the document management system specified in the Contract Documents (DB170.08). Generally, the Design-Builder shall use ProjectWise for electronic submittal of Design Documents and Doc Express for construction documents.

Alternatively, the Design-Builder may propose to use a software program of its choice, subject to Agency approval (DB170.08). If the Design-Builder proposes its own document management system, and the Agency approves it, then the Agency PM will follow the Project-specific requirements stated in DB170.08. The Design-Builder must provide Agency staff with appropriate access to use the Design-Builder's software. Additionally, the Design-Builder shall migrate all Agency data to the Agency's ProjectWise and Doc Express platforms (as applicable) at the intervals specified in DB170.08. The migration process shall be described in the Design-Builder's Quality Plan.

The Design-Builder is responsible for obtaining access to ODOT's ProjectWise network. The Agency will process the user access agreement that the Design-Builder must submit on behalf of its employees, agents, and Subcontractors that require access.

For construction documents, the Agency will provide the Design-Builder with the ODOT Doc Express user guide for construction contractors, and the Design-Builder shall ensure that it obtains access for members of the Design-Builder's staff. Only construction documents submitted through Doc Express (or an Agency approved alternative) are considered part of the Project record. Additional information concerning Doc Express is available on the ODOT Construction e-Construction webpage: <https://www.oregon.gov/odot/Construction/Pages/e-Construction.aspx>.

Agency staff must be familiar with the platform they are required to use and understand how to use it prior to the Project commencing. New staff will receive training if not familiar with the program. The Agency may consider holding document control training for the entire APM team early in the Project. If the Agency approves a Design-Builder proposed software system, the Design-Builder shall be required to train Agency staff to use it.

The Agency PM and those assisting the Agency PM must be familiar with a wide variety of project-related documents, including (but not limited to), the following:

- Project-specific requirements defined in the Contract.
- Proposals submitted (specifically sections pertaining to technical solutions).
- Record of negotiations for Contract Award.
- “Hand-off” meeting (optional) documents, from procurement to contract delivery.
- Concept plans from the successful Design-Builder’s Proposal.
- Highway Design Manual (HDM), Bridge Manuals, the Traffic Control Design Manual, and other Standards defined in contract provisions, especially those defined in the Performance Specifications.
- Project DB General Provisions and DB Special Provisions.
- DB Standard Technical Specifications and DB Boilerplate Technical Special Provisions (See Appendix 3 for Specifications Terminology Diagram).
- Qualified Products List, Construction Manual, Manual of Field Test Procedures (MFTP), Inspector’s Manual, QCCS Handbook, Non-Field-Tested Materials Acceptance Guide (NTMAG), and other publications on the ODOT website.

In addition to familiarity with the Contract, during the early stages of project startup the Agency PM and the APM team must be knowledgeable of key Design-Builder submittals. These include the Project schedule, Price Center descriptions, Schedule of Prices, Design Plan, Quality Plan, Environmental Compliance Plan, and Traffic Control Plan(s). As the design develops, project Plans and Specifications are part of the submittals that the APM team will review.

## 1-9 – Communication with the Design-Builder

The Contract requires that all communication between the Agency and the Design-Builder be in writing and coordinated through the Agency PM. As stated previously, the Agency shall not be bound by contract clarification or interpretation obtained from anyone other than the Agency PM (per DB150.01) or other than in writing.

It is important that the Agency and the Design-Builder develop and maintain a good working relationship on each project. They must maintain good, effective communication and schedules.

A major benefit of using the DB method of delivery is the fast-tracking that these projects offer. The design of a typical ODOT DB project is completed in four to six months, environmental permitting can occur within six to nine months, and construction generally starts in the fourth month and is completed by the 30th month.

Design Reviews are streamlined by the Agency’s review and Acceptance of DD, ID and RFC designs. Design development after DD Acceptance is accomplished by using “over-the-

shoulder” collaborative reviews or workshops with the Design-Builder through any ID packages.

The Design-Builder has control of the delivery schedule, as long as the Design-Builder’s Quality Management Team certifies compliance with contract requirements, Standards, and the DD, ID and RFC design packages go through the Agency Acceptance process.

Variances or exceptions to requirements require an approval process with the Agency. Any significant changes from the DD Acceptance require the Design-Builder to repeat the review and Acceptance process with the Agency.

The Design-Builder is responsible for identifying changes and the associated documentation. The Design-Builder should communicate with the Agency PM any deviations to Plans that are outside required parameters. The Agency has responsibility for approving deviations from required parameters. However, the Professional of Record (POR) (Design-Builder Engineer) plays a key role in substantiating and incorporating Agency approved deviation or corrective action. The POR must document changed conditions and their associated impact on the intended function or performance and submit for the Agency’s consideration and approval.

In communicating with the Design-Builder, it is important that Agency staff make sure they contact the correct person. Equally important is determining whether written communication is needed to document an issue or ensuring that the other party has the same understanding.

If uncertainty exists about whether an issue needs to be documented in writing, it is best to document it in writing and provide the appropriate people with copies. The lines of communication between the Agency and the Design-Builder must be respected, and the Agency PM must be informed of any written or verbal communications that may affect project performance.

#### **Weekly Coordination Meetings**

The Design-Builder typically holds weekly coordination meetings that should be attended by the Agency PM and appropriate members of the Agency’s Project Management team, as well as pre-job conferences, as defined in the Construction Manual, prior to major operations. The Roles and Responsibilities Work Plan, if prepared by the Agency PM, should also schedule periodic (internal) Agency’s Project Management team meetings to review progress, issues, and lessons learned.

#### **Mandatory Meetings**

According to DB180.42 and Table 180.42-1, the Design-Builder is responsible for arranging and conducting the Project meetings with the Agency PM and other Agency staff, as determined by the Agency. Project meetings with the Agency include but are not limited to those listed in the following table.

Table 1: Mandatory Design-Build Meetings Examples

<b>Description</b>	<b>Frequency</b>	<b>Subsection</b>
Quality Task Force Meetings	Weekly	DB154.30
Design Development Meeting	Once	DB155.05
Design Mobilization Meeting	Once	DB155.06
Design Review Meetings	Varies	DB155.12
Materials Quality Team Meetings	Weekly	DB156.50(e)
Preconstruction Conference	Once per Work Location	DB180.42(a)
Progress Meetings	Monthly	DB180.42(b)
Three Week Look-Ahead Schedule Review Meetings	Weekly	DB180.41(g)(8)

Note: Additional project meeting requirements may be included in Sections DB141 and DB174.

## **1-10 – Public and Other Agency Notification**

The Design-Builder through the Agency PM shall have responsibility for the following public relations tasks:

- Informing the traveling public and media about construction Contract Work.
- Ensuring that the permit provisions are not violated (e.g. noise variance, Highway restrictions, etc.).
- Addressing concerns from the traveling public, adjacent businesses and owners, and other agencies.
- Ensuring that the Design-Builder accommodates emergency services.

The Agency PM (and the Design-Builder, through the Agency PM) will provide Project information to the local media so that local residents are made aware of the Project scope, schedule, and traffic impacts. The Agency PM (and the Design-Builder, through the Agency PM) may wish to obtain assistance from ODOT’s Regional Public Information Officer. Information shared with the media should be updated regularly and as needed.

## **1-11 – Project Budget (Authorization)**

In general, for DB projects, authorization of funds can be as early as the release of the RFP (if there are timelines or constraints associated with the funds) but it needs to be obligated by the time the Contract is awarded. The authorization of funds will be for both Design and Construction. Both types of work (and funding) is included under one contract when it is awarded to the successful Proposer, who becomes the Design-Builder for the project. The design phase (PE funds) will be the first phase (similar to low-bid style contracts), but construction phase (CE or CN) can and will typically start before the design phase is complete.

This also means that when the Contract is awarded to the Design-Builder the payments will actually shift over to the Construction Section - CAU, as it awarded as a highway/public improvement contract. The Agency PM is responsible for ongoing monitoring of the Project budget. These activities include monitoring of the following expenditures:

- Payments to the Design-Builder.
- Payments to Agency Consultants.
- Right-of-Way costs (acquisition, easements, leases).
- Utility relocation reimbursement.
- Agency/staff costs.

The monitoring of overall budget and costs included in the Project authorization is outlined in the ODOT Construction Manual, Chapter 5 – Construction Authorization. Note that the Project budget will include funds for both Preliminary Engineering and Construction (including Construction Engineering funds). The Agency PM will coordinate with the Statewide Investment Management, Program & Funding Manager, and the ODOT Construction Section for questions about the different funding sources and project authorization.

All project costs will be tracked on a monthly basis so that at any point during the Project, a report can be produced showing the following:

- Remaining design and construction budget.
- Remaining program budget.
- Remaining contingency.

As part of the management of the Project budget, the Agency PM will set up a log tracking all CCOs and potential CCOs. The purpose of this exercise is to measure the potential for increased costs against the contingency and the overall Project budget. If it appears that the Project may exceed the budget, the Agency PM will alert the Area Manager to decide whether additional funds must be requested.

## 1-12 – Pricing and Measurement, Payment, and Adjustments

During project development, prior to release of the RFP, the Agency will establish Price Centers for major Work activities, representing either an entire Work Location or grouping of inter-related Work within a Work Location. The Agency additionally identifies Price Items to reflect groupings of tasks within each Price Center. The Design-Builder assigns Price Item Values to each Price Item.

The Design-Builder must use a Schedule of Values for each Price Item in the Schedule of Prices to provide a measurement for the value of Work performed. The Agency must approve the Schedule of Values, which is based on DB190.10, before payment for the Work will be made.

The Design-Builder must have an approved Schedule of Values for design Work prior to the Design-Builder's first request for payment for Design Services, and an approved Schedule of Values for construction Work prior to the Design-Builder's first payment request for Construction Services.

There are different methods of payment to the Design-Builder and the Agency's responsibilities vary with each:

- **Fixed Price:** The Agency does not measure the Work unless there are Agency-directed changes. The Agency's PM does not adjust the Contract Price for differences in quantities, labor, etc. The Design-Builder is entitled to the fixed price and assumes the risk of cost overruns (DB190.10). Progress is determined in accordance with DB190.10.
- **Unit Priced Work:** All progress payments are made based on actual quantities of Work performed and material placed, as determined in accordance with DB195.55. The value of the Work performed is measured in accordance with DB190.10.

**Note:** Typically, Unit Priced Work (e.g. Tons, Feet, Square Yards, etc.) is not utilized for Price Items on DB projects. In some instances, after award a CCO may be executed with Unit Priced Work.

Additional terms and conditions of payment are included in DB195, including:

- Escalation/de-escalation for asphalt cement (DB195.10).
- Escalation/de-escalation for fuel costs (DB195.11).
- Escalation/de-escalation for steel Materials (DB195.12).
- Unit pricing (DB195.55).

The Agency does not generally withhold retainage, however, the Contract allows the Agency to withhold retainage of up to 2.5% of the value of Work from progress payments, and up to 5% of the value of Work if the Agency determines that satisfactory progress is not being made on the Work (DB195.50).

Additionally, the Agency may withhold other amounts to protect its interests (DB195.50) until the Design-Builder has:

- Complied with all Agency directives.
- Corrected or cured a failure to comply with the Contract requirements.
- Satisfied all legal actions filed against the Agency that the Design-Builder is obligated to defend.
- Paid all liquidated damages and other debt owed to the State.



The Agency may advance payments for Materials on hand if their value is at least \$1,000 or the total value of a single class of Materials is at least \$500. The conditions for the Agency's payment of an advance are specified in DB195.60. Additionally, the Agency may elect to purchase Materials left on hand due to a change in the Contract requirements or cancellation of the Contract (DB195.80).

## 1-13 – Pay Estimates Due (Design and Construction Phases)

One of the primary responsibilities of the APM team is to ensure that the method used to measure progress for the monthly Pay Request is accurate and meets Agency guidelines. Measuring progress for DB projects is different than that for traditional DBB projects in that, estimated quantities are typically used to measure DBB progress. For DB, both a "Schedule of Prices" and comparative quantities installed are used to measure progress.

In both circumstances, however, the approved payment must be supported by validated documentation. For DBB projects, the responsibility for quantity verification and documentation to support progress is the responsibility of the Agency or a consultant doing the Contract Administration/Construction Engineering Inspection (CA/CEI) on the Agency's behalf, and the information is provided to the contractor for Acceptance. The roles are reversed for DB projects.

The progress measurement and Pay Request processing for DB projects is similar to DBB projects with the establishment of "pay notes" and supporting documentation required to track quantities installed and milestones achieved to objectively determine the value of Work performed. The difference between the two delivery methods is that with DB projects, the Contract is based on a fixed price and a Schedule of Prices with a breakdown of Price Centers, Price Items and Price Item Values, which shall include the cost of all Work.

DB projects contain design, environmental, quality, and construction items. Unit prices with estimated quantities are occasionally used on DB projects for specific construction items.

An approved Schedule of Values has mutual benefit to both contracting parties, providing a means to determine progress achieved based on an objective assessment of the value of Work performed. Additionally the Contract requires the Design-Builder to correlate the Quality Management tracking of quantities for all Pay Items with the Project Quality Manager providing a certification that verifies the monthly progress measurement.

Because the Agency is providing an oversight role in the DB process, it has established the recurring monthly Pay Requests as a time to evaluate all aspects of the Project. As a result, multiple submittals are required with the Pay Request to allow the Agency's Project Management team to thoroughly review the current status of the quality program, the progress of the Project, and the completeness of other statutory requirements. As a result of this review, the Agency PM can provide recommendations for approving properly validated Pay Requests.



#### Progress Estimates: Required Monthly Progress Submittals

The Agency PM and the APM team needs to review for completeness and accuracy all information required to be submitted with the Design-Builder's Pay Request, as outlined in this chapter.

The Agency will work with the Design-Builder to discuss the Pay Request due date. The Pay Request due date must be either the 5<sup>th</sup>, the 6<sup>th</sup>, or the 7<sup>th</sup> of each month.

When the Design-Builder's Pay Request is received, the Agency PM (or other individual designated to review and process progress payments) reviews the Design-Builder's source documents. The Agency reviews the source documents for the monthly preliminary Progress Estimate using Design-Builder's Work performed through the last working day of the month for the entire Project (DB190 and DB195) (Refer to the ODOT Construction Manual Chapter 12D Quantities during the Construction Phase).

The Design-Builder provides the Agency with source documents to be validated by the Agency PM and submitted in the Agency's Contract Payment System. The Agency PM may use any of the following documents to determine the completeness of submittals:

- Contract Documents (conformed RFP and Design-Builder's Proposal).
- Schedule of Prices (SP) and approved Schedule of Values.
- Manual of Field Test Procedures (MFTP).
- Non-Field-Tested Materials Acceptance Guide (NTMAG).
- Construction Manual.
- Inspector's Manual.
- Bridge Inspection Manual.

Partial payment of Work, measured by the Design-Builder and verified by the Design-Builder's Quality Management organization will be based in terms of the "value of Work performed."

Monthly, according to DB195.50, the Design-Builder is responsible for providing a Pay Request, source documents and other items listed in DB180.45. The Agency PM and the APM team reviews the following documents for Pay Request approval. The following table provides descriptions of these documents.

Table 2: Required Design-Build Documents for Pay Request Approval

Item	Document Name	Description	References
1	Quality Plan (Design)	If submitted for partial payment Once Accepted by the Agency	DB154 DB190.10
2	Quality Plan (Construction)	Once Accepted by the Agency	DB150.20 DB154 DB190.10
3	Pay Request	The formal request for payment for units of Work identified in the Schedule of Prices that is submitted to the Agency and paid only upon the Agency's approval of the associated Progress Estimate.	DB110.20 DB195.50
4	Payment to Subcontractors	Form 734-2882) to the Agency Engineer certifying payments made to all of the following: <ul style="list-style-type: none"> <li>All Subcontractors</li> <li>Committed DBE Suppliers</li> <li>Non-Committed DBE suppliers and service providers with estimated total payments for the project over \$10,000.</li> </ul>	Design-Build Agreement Exhibit B-5 (12.00) (c) Paid Summary Reports
5	Certified Payrolls/Wage Rate Compliance	As required in ORS 279C.845 The Design-Builder and every Subcontractor shall submit written certified statements to the Agency Engineer on the form prescribed by the Commissioner of BOLI in OAR 839-025-0010	DB170.65(a) DB170.65(b)(1) & (2)
6	Project Quality Manager submittals – Monthly Report Certification	Work of Design Professions, Subcontractors at all tiers, Suppliers, fabricators is shown as complete for the Progress Estimate Period. Certification that all Work submitted for payment complies with quality requirements and has been satisfactorily completed. See Quality Reports noted below.	DB154.20(c)(1) DB180.45(a)(1)
7	Monthly Progress Schedule and Narrative Submittals	Completed by Design-Builder	DB180.41(g)(5)(a) DB180.41(g)(5)(b)
8	Monthly Progress Schedule and Narrative Submittals Certification	Project Quality Manager (Independent review of the schedule and narrative to certify actual progress of Work and quantities.)	DB180.41(g)(1) DB180.45
9	Monthly Progress Reports	See items below	DB180.45(a)

<b>Item</b>	<b>Document Name</b>	<b>Description</b>	<b>References</b>
10	Quality Reports	<ul style="list-style-type: none"> <li>Quality Plan Assessment</li> <li>Summary of new NCRs and NCIs logged during the month</li> <li>Summary of corrective actions in progress</li> <li>Summary of recommendations</li> </ul>	DB180.45(a)(1) DB154.20(c)
11	Change Order Status Report	<ul style="list-style-type: none"> <li>Identification numbers/coding</li> <li>Subject matter</li> <li>Description</li> <li>Outstanding issues to be resolved</li> <li>Estimate cost and time implications</li> <li>Resolution date</li> </ul>	DB180.45(a)(2)
12	Contract Submittal List <ul style="list-style-type: none"> <li>30 CD after NTP</li> <li>Updated monthly, thereafter</li> </ul>	<ul style="list-style-type: none"> <li>All submittals required during the first 6 months</li> <li>Record of submittals made to date</li> <li>Submittals due over next 3 month period</li> </ul>	DB180.45(a)(3)
13	Summary of Hazardous Materials Activity	<ul style="list-style-type: none"> <li>Monthly Summary of Planned or unplanned activities</li> <li>Hazardous Materials and contaminated substances performed to date or plan</li> </ul>	DB180.45(a)(4)
14	Written Summary of all disagreements, Written Protest Notices and Claims	<ul style="list-style-type: none"> <li>Disagreements (DB199.10)</li> <li>All written protested (DB199.20)</li> <li>All written claims (DB199.30)</li> <li>Must include all between NTP and end of the reporting month.</li> <li>Includes description of current status each</li> </ul>	DB180.45(a)(4) DB154.20(c)
15	Design Quality Certifications	<ul style="list-style-type: none"> <li>Pay Requests, Source Documents and Price Adjustments</li> </ul>	DB154.60(c)
16	Certifications for completion of design	If paying 100% of the: <ul style="list-style-type: none"> <li>DD,</li> <li>ID;</li> <li>Working drawings; or</li> <li>RFC Plans and Specifications DU.</li> </ul>	DB155.02(a) DB155.02(a)(4)
17	Materials Quality Forms and Checklists	Materials Quality Forms and Checklists	DB154.60(d) & (h)

<b>Item</b>	<b>Document Name</b>	<b>Description</b>	<b>References</b>
18	Construction Quality Certifications	Pay Requests, Source Documents and Price Adjustments	DB154.60(e)
		Verification, Certification and submittal of monthly Pay Requests, source documents and price adjustments	DB154.60(e)(3)
		Materials on Hand, if applicable	DB154.60(e)(4)
		Materials Quantities Report *To substantiate payment	*DB154.60(e)(5)
		Quality forms, test results, etc. *Source Documents to substantiate payment	*DB154.60(e)(5) DB156.50
19	Environmental Compliance and Mitigation Monitoring	If paying a portion on the Environmental Compliance activities; Includes conformance or deficiency and corrective action tracking.	DB156.40
20	Other nonconformance or documentation requirements:	Completed or addressed: Region Assurance Specialist (RAS) Quality Control Compliance Specialist (QCCS) Reports, or OECR Field Coordinator, as applicable	DB156 Design-Build Agreement Exhibit B-5
21	Drug Enforcement Program	Compliance with Article 14.2 Subcontract Requirements.	Design-Build Agreement Article 14.2
22	Nondiscrimination	Compliance with Article 14.2	Design-Build Agreement Article 14.3
23	Monitoring and compliance with workforce development	Diversity Plan 30 CD after NTP Final Diversity Plan 75 CD after NTP. All related submittals to AA, EEO, DBE, OJT, TERO, all submitted by the DB Diversity Lead	Design-Build Agreement Article 14.5 DB141.56 Design-Build Agreement Exhibits B1 to B9

**Materials on Hand**

As outlined in DB195.60, the Agency may authorize payment for Material on Hand (MOH) if the total is at least \$1,000 or at least \$500 for a single item. The Design-Builder is required to meet several criteria for the material to be considered for payment as MOH, including:

- Requesting MOH payment at least 5 days before the Pay Request is due.
- Having all certifications of material that confirm it meets project requirements.

- Having records of payment or other means to show the value of the material.

See DB195.60 for more detail on APM team requirements for MOH processing.

The ODOT Construction Manual (Chapter 12) provides more guidance on approving payment for MOH, including receiving right of entry documentation if needed (this is required for all Materials not on Agency-controlled or owned property).

MOH are paid for under the Series 7000 of the Contract Payment System.

### Quality-Based Price Adjustments

The ODOT Construction Manual (Chapter 12C, Quality Price Adjustments) provides guidance on quality-based price adjustments. These adjustments can be used for price reductions and increases.

The most common negative price adjustments are for failing concrete (calculated by using the Concal spreadsheet), failing asphalt cement (calculated by using the Summary of Failing Test Results for Asphalt Cements), and failing aggregates (calculated by using the Summary of Failing Test Results for Aggregate). However, as indicated in Chapter 2 in this Manual, nonconforming items can be allowed to remain at a non-standard price adjustment.

The most common positive price adjustments are for Statspec (HMAC, also used to pay for asphalt cement) and Smoothness (HMAC/PCC, to calculate a bonus for workmanship).

Quality-based price adjustments are paid under the 6000 series of the Contract Payment System.

### Change Orders

There are three types of orders on a project:

- Contract Change Order (CCO) – paid for under the 4000 series of the Contract Payment System.
- Extra Work Performed on Force Account Basis (EWO) – paid for under the 8000 series of the Contract Payment System.
- Order for Force Work (OFW) – paid for under the 92000 series of the Contract Payment System (these do not modify the Contract with the contractor).

Chapter 1, section 1-13 in this Manual and Chapter 15 and 25 of the ODOT Construction Manual provide guidance on the documentation necessary and means for paying for changes to contracts.

### Adjustments to Lump Sum and Other Items

For any construction project, certain items are subject to price changes due to the escalation in price of commodities around the world. Adjustments to “Other” items relates primarily to these items (e.g., fuel, asphalt, and steel escalation). DB195 and Chapter 12 of the Construction Manual provide more guidance for the APM team on when and how to apply these adjustments.

Adjustments for DB lump sum items are somewhat different than for DBB. For instance, in DBB this would relate to a lump sum item in the bid schedule (e.g., a box culvert or seeding or mulching). For example, if a contract adds to the original total and there is a need to seed 20 acres instead of 18, a quasi-unit rate can be determined and the lump sum can be adjusted without a CCO (similar to insignificant changes in Work in DB195.20).

In DB this situation can arise, but due to the nature of Price Centers it is not generally possible to determine a quasi-unit rate, so other means of adjustment are used (e.g., a CCO for a differing condition, etc.). However, situations can arise where adjustments are made to a lump sum CCO for Extra Work that were negotiated into a lump sum price. This is because the lump sum price for a CCO is much more definitive than the lump sum price for the original Price Centers, which was generated on an incomplete design.

Adjustments to lump sum and other items are paid under the 6000 series of the Contract Payment System.

#### **Unit Priced Work**

In DB, there are generally few or no Unit Prices within the Price Centers. An exception to this may be a negotiated Extra Work item determined to be based on Unit Price (as opposed to lump sum or Force Account Work). In these cases, Unit Price work will be measured and paid as outlined in DB195.

For Force Account Work, the APM team needs to be aware of the documentation required for Force Account payments.

#### **Withholding Pay**

The Agency can only withhold payment for just causes specified in the DB Contract. DB195.50 provides guidelines for withholding pay.

#### **Retainage and Interest for Late Payment**

It is important for the APM team to process Design-Builder Pay Requests promptly. If there are questions on withholding pay or the value of pay, the APM team should resolve them expeditiously because State Law requires that ODOT pay interest when payments are not made within statutory requirements.

Payment requests should not be held up pending resolution of issues that require significant time to resolve. Uncontested amounts should be forwarded for payment, and every effort should be made to resolve any outstanding issues by the end of the next payment period.

The Agency does not automatically withhold retainage on progress payments but has the right to do so if it is in the Agency's interest. In the event that the APM team chooses to withhold retainage, DB195 outlines several ways that the Design-Builder can allocate retainage funds. The APM team should be aware of the selected alternative and process pay notes accordingly. As the Project proceeds, the DB Contract allows retainage to be reduced. DB195 provides the applicable requirements.

### Draft Pay Note

Chapter 25 of the ODOT Construction Manual discusses the completion of draft pay notes and the steps to be followed in the Agency's payment system. The APM team or a designee of the Agency PM enters the draft pay note into the ODOT's Contract Payment System. The Agency PM reviews the draft, and once they are in agreement the Agency uploads the information into the Contract Payment System. This entry is transferred to the ODOT mainframe computer.

The ODOT CAE's Office is notified of the upload and submits the payment process for the CAE's approval and payment. After this process, ODOT Financial Services releases payment.

After all paynotes are entered, the Agency generates the Preliminary Progress Payment Report and reviews it with the Design-Builder and the Design-Builder's Quality Management Team for concurrence on quantities being paid for the previous month's Work.

## 1-14 – Other Monthly, Weekly and Daily Submittals

### Monthly Submittals

Per DB180.45, "Monthly Progress Submittals," a series of monthly submittals is due prior to processing Pay Requests. These submittals seek approval of requested pay. Additional monthly submittals are identified throughout DB141 and other sections of the Contract Documents. Chapter 1, section 1-13 in this Manual provides more detail to the APM team regarding Pay Requests and required submittals.

It is important that the APM team complete the review of monthly submittals in a timely fashion. For monthly Pay Requests, the Design-Builder likely has internal financial reporting constraints. Therefore, if the APM team determines at the last minute not to pay an item, it needs to realize that this may place the Design-Builder Project Manager in a difficult situation. Prompt discussions and decisions will allow the Design-Builder Project Manager to make accurate internal reports.

For a monthly submittal, it is critical to review and provide any necessary comments promptly, preferably within the first week of the cycle. If comments are submitted late in the monthly cycle, it is difficult for the Design-Builder Project Manager to address these issues for the prior month and possibly the current month before submitting the next monthly report.

### Weekly Submittals

The primary weekly submittals are schedule updates. Weekly, the Design-Builder shall provide an updated look-ahead schedule. The Agency PM uses this submittal in conjunction with a contract submittal list to allocate resources. Accurate look-ahead schedules and submittal lists are instrumental in achieving a smooth-running project. It is imperative that the APM team not impede these schedules. If a weekly schedule slips, this should be the result of the Design-Builder's actions not those of the APM team.



Three Week Look-Ahead Schedule (See DB180.41): The Agency PM should stress the importance of achieving the stated timelines in the look-ahead construction schedule and submittal lists as a way to earn and foster trust between the Agency and the Design-Builder and allow the effective, efficient use of resources.

#### Daily Submittals

The Design-Builder should keep multiple daily records (e.g., Traffic Control and Inspection Report, and Equipment and Personnel Logs). If the APM team believes these daily records are not receiving the attention to detail they require, the DB Contract allows the APM team to audit these records for contract conformance.

## 1-15 – Change Orders, Extra Work Orders, Orders for Force Work

Most, if not all, Agency projects undergo some type of change during the execution of the Project. Changes can be the result of many factors. For example:

- The Agency may decide to have additional Work performed; differences in anticipated project conditions may occur.
- Mitigation for noncomplying work may be required (with the approval of the Agency).
- New information may reveal that a design will not perform adequately.
- The Agency may seek to modify Standards during the Project.
- Contract requirements may require changes due to a lack of resources or a change in the availability of personnel.
- Other unique situations may occur, such as cost-reduction proposals.

CCOs for DB contracts and DBB projects differ. This chapter describes these variations as they arise. APM team (management, design, and construction) should evaluate and document conditions and changes as they occur and determine whether conditions dictate a CCO given the DB Contract's terms. A CCO that increases the Contract price to be paid to the Design-Builder should only occur in the following circumstances:

- 1) The Design-Builder has justified a cost increase to the Agency (not simply a change of the Scope of Work or an extension of the schedule), or
- 2) The Agency has ordered a contract change that increases the Design-Builder's costs and/or time.

For Agency projects, changes fall into one of three classifications: CCO, EWO, and OFW (work done by Agency forces). The Agency's PM must understand the differences between these types of changes. Properly managing change includes assuring the Agency is receiving a fair price, if applicable, for Changed Work, verify the appropriate contract clauses are enforced and adhere



to Changed Work, ensure proper documentation exists to validate payment of the Changed Work, and properly manage the resources required to oversee the Changed Work.

CCO and EWO can occur for a variety of reasons on a DB project. The most common reasons for issuance of a CCO include the following:

- The Agency adds scope to the Work.
- The Agency removes scope from the Work.
- The Design-Builder proposes a change to the Contract requirements, and the Agency Accepts that change.
- An event has taken place that entitles the Design-Builder to a CCO.
- The Design-Builder submits a claim alleging that a change to the Work has occurred or that it is otherwise entitled to relief under the Contract Documents.

When an order is going to be issued, the Agency must prepare, submit, and coordinate processing of CCO, EWO, OFW as outlined in the ODOT Construction Manual, Chapter 15 – Change Orders, Force Account, Work by Public Forces, and Chapter 12G – Extra Work Performed on a Force Account Basis. CCOs may include, but are not limited to, modification to the Contract, Agency-Supplied Specifications, and Contract Time.

For changes involving Design changes, see also Chapter 3, section 3-22 in this Manual. The Agency will draft CCO and EWO documents with supporting materials (cost estimate and justification) and submit to the Design-Builder by an agreed-upon date. Only the Agency has the authority to approve and authorize changes to the DB Contract, including CCOs and EWOs. On DB projects, all CCOs may require review and approval for legal sufficiency by a Department of Justice attorney depending on price (refer to OAR 137-045-0050) or the substance of the change (all changes to the Design-Build Agreement or Agency-Supplied Specifications require DOJ approval). The Agency PM coordinates with CAE, which will work with the DOJ to review CCOs for legal sufficiency.

There are two methods of compensating the Design-Builder for CCO Work, including:

- Lump sum.
- Unit pricing.

For Force Account Work, additional information is available in the ODOT Construction Manual at: [https://www.oregon.gov/ODOT/Construction/Doc\\_ConstructionManual/cm12g.pdf](https://www.oregon.gov/ODOT/Construction/Doc_ConstructionManual/cm12g.pdf).

## (A) Agency Directed Changes

See DB140.30. The Agency can require changes or Accept proposed changes it deems desirable or necessary within the Project scope. These changes may modify or require modifications to the following:

- Specifications and design.

- ODOT Standard Drawings or manuals.
- Contract Baseline Concepts or DD.
- Grade and alignment.
- Cross Sections and thicknesses of Courses of Materials.
- Method or manner of performance of Work.
- Project limits.
- Work location limits.

Changes may also result in the following:

- Increases and decreases in quantities.
- Changed or Extra Work.
- Elimination of any Work.
- Acceleration or delay in performance of Work.
- Suspension of Work.

Preparing supporting documentation and the CCO form are key activities in the change process. The Agency PM maintains a record of change requests, orders, and potential claim issues. The Progress Estimate documentation submitted with the Pay Request, contains authorized CCOs itemized separately (Series 4000) from the original Contract price.

### **(B) Review of Changes**

The process of evaluating and recommending CCO requests for the Agency's consideration and authorization is very important and should be consistent. It is important for the APM team to evaluate each potential change thoroughly and review the Contract to understand the risks identified in the Contract that the Design-Builder is to assume. The APM team must decide whether a CCO is required and whether it should be a no cost, cost add-on, or cost reduction to the Contract.

The Agency must review and respond to requested changes in a timely fashion. The Agency should make every effort to respond within the time requested by the Design-Builder, or notify the Design-Builder that additional time will be required.

At a minimum, the Agency must have the following information to properly evaluate a potential change:

- Clearly defined conditions.
- Cost details.
- Schedule update.

### (C) Continued Work Authority

If the Agency and the Design-Builder are unable to reach agreement on a change, and it is critical to the Project that the changed Work continues, the Design-Builder must proceed promptly with Work ordered by the Agency Engineer (DB199.20).

The Design-Builder is responsible for designing and constructing the Work according to the Agency's direction, but the Agency may incur additional risk by directing the Work. The Agency may also incur the cost of the Work performed per its direction.

If the Design-Builder identifies a change and the Agency is not in agreement, the Design-Builder either stops Work if ordered to do so by the Agency or tracks it as disputed Work (DB199.20).

If any Work on an order must start before the order is signed, the Agency PM must get verbal approval and must provide the Design-Builder with a written order identifying the scope of the Work for the order and the payment method. During this time, Work should be tracked according to DB197 (see Section (d) Type of Project Change Orders below) until the issues are resolved, depending on the situation. The Agency PM should review the Contract to determine when these approaches are appropriate (they are presented here for comparison with the situation where the Owner has authority to direct changes).

If agreement cannot be reached, the issue must be resolved following the dispute resolution procedures described in the Contract Documents.

### (D) Types of Work Associated with Changes

The Agency recognizes three types of Work associated with changes:

- Changed Work – Work included in a Price Item and within the scope of the DB Contract that is different from that reflected in the Contract Documents (DB140.30). This Work can be classified as insignificant or significant, but does not include Extra Work.
- Extra Work – Work not included in the DB Contract, but deemed by the Agency to be necessary to complete the Project. Extra Work changes can be ultimately performed under a CCO and classified as Changed Work (price can be negotiated) or performed under an Order for Extra Work to be performed on Force Account Basis (see also Force Account Work).
- Force Work – Work performed by public forces outside the Design-Builder's Contract, which impacts the Project and the Project Construction Authorization amount. If required, this Work will always be classified as a Major Change, as outlined in Chapter 3 of the Construction Manual. (This should not be confused with Force Account Work.)

### (D)(1) Changed Work

For DBB projects a Unit Price is based on an estimated quantity and can remain valid if the actual quantity varies from the original estimate. If changes in quantities impact the unit cost of the Work, the change is considered significant and a new Unit Price is negotiated, otherwise the change is considered an insignificant change and the new quantity of Work is multiplied by the original Unit Price for payment purposes.

This approach does not work for DB projects because the Design-Builder accepts risk in quantities with its Proposal. Obviously, this risk is not limitless, but changes need to be evaluated on a case-by-case basis to determine if the Price Center price (project Price Centers are described in DB190, and defined in Chapter 1, section 1-12 in this Manual) should be adjusted by CCO. This evaluation can be different for the many categories of potential changes such as differing conditions, environmental impacts, necessary Contract Baseline Concept changes, Utility or third-party impacts, inaccuracies in preliminary design, and Cost Reduction Proposals (CRP) (value engineering). For instance, the Contract may assign risk to the Design-Builder for some conditions but the Agency may Accept all risk for harmful or Hazardous Materials encountered that are not specifically identified in the RFP.

- **Insignificant changes** are described in DB195.20 and include minor variations in the Work that do not significantly change the character, nature, or cost of the original Scope of Work.
  - These changes do not affect the Fixed-Price basis or the individual breakdown of the item in the Schedule of Prices.
  - This deviates from DBB work, where an insignificant change still results in a price change (but not a unit rate change).
  - These could include changes to the seeding dates, changes in a material (e.g., a four-strand heavier-gauge barbed wire as opposed to a lighter-gauge five-strand where the price is the same).
- **Significant changes** are described in DB195.20 and include changes in which the character of the Work has changed, differing materially in kind, nature, or cost from that involved or included in the original Scope of Work.
  - These changes affect the Fixed-Price basis or price on the Schedule of Prices or add a new Price Center or new Price Items on the Schedule of Prices.
  - The overall change in price for a significant change cannot exceed the amount justified by the Agency on the basis of rates for Force Account Work and shall exclude any loss of anticipated profits.

For Changed Work, the Design-Builder is obligated to identify the situation or condition in a timely manner, cease Work in the area (if safety allows), define the condition or situation, and present a recommended change to the Agency. Instances may occur where the Design-Builder

continues to work. All Work done after the potential change is identified should be documented on a Force Account basis until the change is agreed to.

All documents that formed the basis of, influenced, or were used in the development of CCOs, as applicable, shall be submitted to Escrow in the format actually used by the Design-Builder in developing documents related to CCOs (DB131.05).

## **(D)(2) Extra Work**

Extra Work consists of Work outside the initial Contract that is deemed necessary by the Agency to complete the Project. This type of change can be paid for via negotiated lump sum or Unit Price. In either case, the Extra Work is paid for under Changed Work on a CCO. If the Agency PM and Design-Builder cannot agree on a negotiated price, the Work must be done under an Order for Extra Work to be performed on Force Account Basis (Form 734-3208).

If the Work proceeds before agreement on price, the APM team must maintain Force Account documentation (ODOT Construction Manual, Chapter 12G). See Chapter 3 of the ODOT Construction Manual for more information on the limits of the Agency PM and Region's delegation of authority for CCOs.

## **(D)(3) Force Work**

Force Work is performed by public forces such as municipalities, water districts, Utilities, or Railroad companies. Public force work can only be allowed if the situation is an emergency or if having public forces perform the work is in the public's interest or is the most cost-effective means.

- Utilities and Railroads generally perform work on their facilities or hire their own contractors unless this Work is otherwise specified in the Scope of Work. See Chapter 3, sections 3-28, 3-29 and 3-30.
- To determine whether to have public forces perform Work in a non-emergency situation, the Agency PM must perform a public interest/cost-effectiveness analysis.
- All Orders for Force Work are classified as Major Changes, and the Agency PM must receive authority as outlined in the ODOT Construction Manual Chapter 3 (Delegation of Authority section).

It is important to note that a Major Change and a Significant Change are different. A Major Change requires the Agency PM to receive authority (see attachment for Delegation of Authority Limits), and a Significant Change modifies the cost of a Price Center. Either can occur without the other, or a change may include both.

### (E) Type of Project Change Orders

There are three types of change authorizations to the Contract, the most common of which is the CCO. The other two types are Order for Work to be performed on Force Account and Force Work, both of which are less common than the CCO.

If the amount of the CCO will cause an overrun of the Project Construction Authorization, the Agency PM must secure proper approval to exceed the Project Construction Authorization. Section 5 of the Construction Manual provides guidance and definition of the Construction Authorization Amount.

If the change will result in a design change, the APM team should evaluate whether the Design-Builder will realize a design and construction cost adjustment. This deviates from a traditional DBB approach in that the Design-Builder is the Engineer of Record. If the Agency causes a change, the Design-Builder will most likely require compensation for additional design efforts. However, this may not be the case if the Design-Builder causes the change.

The Agency PM must complete a supporting data sheet that is attached to a CCO or Extra Work Order. This form should clearly identify the reasons for the change and the budget amount. If the change will affect both design and construction, the budget should be itemized into design and construction. Other itemizations could also help define the change (e.g., management, traffic control, Right-of-Way (ROW)). For changes initiated by the Design-Builder, it is common to require them to provide this information. The APM team should supplement the information provided by the Design-Builder with additional data or information it deems necessary to fully explain the CCO.

For each CCO, the Agency PM must provide the necessary information to enter into ODOT's CCO database. This includes the following:

- Contract number, type of order, and number of order.
- Absolute value of order.
- Reason code for the order.
- Who ordered the Work.
- Whether a CCO resolves a claim that was submitted as a fully supported, certified claim according to DB199 (no matter what step the claim was resolved at. See Chapter 15 of the ODOT Construction Manual).

#### (E)(1) Contract Change Order

A CCO is prepared for either Changed Work or Extra Work that can be negotiated with a Fixed-Price or unit rate. A CCO (refer to CCO Form 734-1169), may result in a price adjustment and/or a time adjustment, or a change requiring neither type of adjustment.

A CCO is treated as a mini-contract and should therefore include all information to be enforced. This includes Plans, references to existing contract language, and quantities if necessary.

If the Design-Builder refuses to sign a CCO, the Agency PM may elect to process the CCO unilaterally and write “unilateral” in the Design-Builder’s spot on the Contract Change Order form. The Agency PM will contact CAU before processing a unilateral CCO. The Agency PM should review the ODOT Construction Manual, Chapter 15, for other details and forms applicable to a CCO.

## **(E)(2) Order for Extra Work to be Performed on Force Account Basis**

When a price cannot be negotiated or the Scope of Work cannot be fully defined, an Order for Extra Work will be issued. All Extra Work (Form 734-3208) is tracked on a Force Account basis. Chapter 12G of the Construction Manual describes Force Account Work.

The APM team should review the Contract to determine prevailing Equipment, labor, and material cost mark-ups for the Extra Work.

## **(E)(3) Order for Force Work**

An Order for Force Work (OFW) is limited to work performed by public forces, Utilities, or Railroads that will be paid for under the Project Construction Authorization. This work is either defined in the initial scope and included in an anticipated item, or may result from a changed condition (e.g., the need to relocate a Utility due to other unforeseen conflicts).

Regardless of the cause, Form 734-1105 should be completed. If the work is non-emergency, the Agency PM must perform a public interest/cost-effectiveness analysis to justify that using public forces is appropriate for completing the work.

## **(F) Types of Situations and Conditions Resulting in Changes**

Numerous situations and/or conditions arise during a project that the Agency PM will need to evaluate to determine whether the situation and/or condition require a CCO. The following situations or conditions may warrant a CCO or an Order for Extra Work to be performed on Force Account Basis.

### **(F)(1) Differing Site Conditions**

The extent of information provided in a DB contract is inherently much less than that in a DBB contract because the Agency-provided design information is only 20-30% complete. The Design-Builder is responsible to complete the design based on its own means and methods and project development explorations. The Design-Builder’s post-award site explorations may encounter conditions different than those discovered by the Agency’s exploration and represented in the



Contract Documents, which could lead to an assertion of differing site conditions. Since the Agency does not perform a complete site investigation, the Design-Builder assumes more risk for site conditions. For example, if a Geotechnical Data Report is provided with the RFP there may be a statement similar to:

*“The Agency represents that, to the best of its knowledge, the information represented by the borings and tests taken by the Agency are accurate at the location of the tests. Any extrapolation of such information to other locations by the Design-Builder shall be at Design-Builder’s risk. Furthermore, the Design-Builder is responsible to determine what additional geotechnical information is required to support its design and is responsible for obtaining such information and is responsible for the accuracy of such information.”*

Clearly, in this case, there is a significant shift in the degree of risk from the typical DBB contract.

The Design-Builder may only rely on the information shown in the Contract at the specific locations of the investigations or tests.

DB140.40 provides two cases in which a differing site condition could be realized:

- Subsurface or latent physical conditions that differ materially from those indicated in the Contract Documents.
- Unknown physical conditions of unusual nature that differ materially from those ordinarily encountered and generally recognized as inherent in the Work provided for the Contract.

When determining if a differing site condition has occurred, the Agency staff should review how responsibilities and risks are allocated in the Contract. The Contract may assign responsibility for significant site investigation and analysis and assign the risk of interpretation of data to the Design-Builder. See DB140.40 and DB195.30 for more details.

## **(F)(2) Contract Baseline Concept Change**

If there is a change associated with a Contract Baseline Concept, this change could constitute a change in Work. Any adjustment in contract price or time must be justified in writing by the Design-Builder and approved by the Agency.

Because the RFP only represents preliminary engineering, the Agency will generally define the physical constraints within which the Proposer may submit a Proposal and complete final design and construction. These constraints are defined in the Contract Documents and are part of the Contract Baseline Concepts.

The Contract Baseline Concepts can consist of the following information:

- Horizontal and vertical alignment.
- Number of intersections/overpasses/underpasses.
- Minimum vertical clearance requirements.



- Right-of-Way limits.
- Shoulder width.
- Number of Traffic Lanes, Bike Lanes, and auxiliary lanes.
- General location of the limits of the Work Location.
- Construction staging and detour plan.
- Other factors that may define the Project's limits and constraints.

A change associated with a Contract Baseline Concept occurs when an error or an omission in the Contract Documents prevents the Project from being designed or constructed within the specified limits of variability for the Contract Baseline Concepts elements.

Although tight restrictions are not generally provided in the Contract Documents, assume, for example, that the Agency specified a horizontal alignment limit of variability of 6 feet, but a "bust" in the horizontal alignment shown on the Contract Baseline Concepts Plans is identified. If it is necessary to adjust the horizontal alignment more than 6 feet to fix the "bust," a change associated with a Contract Baseline Concept would occur and a CCO may be required because the situation qualifies as a change in the Work. If the "bust" can be fixed by adjusting the alignment by 6 feet or less, this would not be considered a Contract Baseline Concept change and would not be considered a change in the Work.

These situations will generally be defined by DD, but if a cultural resource, Threatened or Endangered Species, or hazardous substances are encountered, a Contract Baseline Concept change may be necessary.

### **(F)(3) Changes Applicable to Third Parties**

With DB projects, numerous situations arise where CCOs may be required that normally do not occur with DBB contracts. This is due to the more limited design scope and verification of existing conditions done by the Agency, and the likelihood that the Design-Builder will perform some third-party work associated with either design and/or construction of a relocation, new construction, or protection of a facility. The conditions or situations that can lead to a CCO regarding Third Parties include the following:

- Accuracy of Existing Utility Locations, Size, and Type: Contract documents may specify the accuracy limits of the location, size, and type of material for existing Utilities. If the actual conditions encountered are outside those specified, the provision will apply for increases and decreases in the Scope of Work. For example, presume that the RFP's plans show a 12-inch steel water main below a road centerline. The Contract Documents state that the horizontal location is accurate within 3 feet and the size is accurate within 25 percent of the stated diameter. If the actual pipe is 24 inches in diameter and located at the proper location, a change in Work may result, because the actual pipe diameter was off by over 25 percent.

- Changes in “conflict/no conflict” status represented on the RFP plans, design plans, or As-Constructed Plans for existing Utilities will qualify for a CCO only if the change in status is the result of an inaccuracy outside the specified limits.
- A CCO will be required if the responsibility for design and/or construction of a given facility construction, relocation, or protection changes from the Design-Builder to the third party owner or vice versa.
- Because the Design-Builder will design and construct the Project, there may be a significant opportunity for the Design-Builder to change the cost of third party construction, relocation, or protection work. When the Design-Builder is not responsible for design and/or construction of third-party facilities, during the course of its own design and/or construction of the entire Project the Design-Builder may increase or decrease the cost of third-party construction, relocation, or protection Work without any adverse impacts to themselves. The Design-Builder must consider and minimize impacts on third-party construction, relocations, and protection as Work progresses. If costs are impacted, this could result in a reduced price CCO if the APM team can identify the impact and show how the Design-Builder could have avoided it.
- Similar to the bullet above where the Design-Builder causes cost impacts to third parties, through actions of its Work not associated with the third party, the Design-Builder may or may not be entitled to a CCO if it incurs increased costs in facilitating the avoidance of a third party new construction or relocation. The APM team should evaluate these situations as they arise to ensure the total benefit and cost for the Design-Builder is known. For example the Design-Builder may choose to avoid a third-party construction requirement and incur significant costs in placing bridging Materials or constructing a wall, for example, which on the surface is more costly. However, the Design-Builder may be saving significant Contract Time if the Agency approves the avoidance CCO. This time savings may be a fiduciary equivalent to the extra cost of avoidance. Many different scenarios could occur throughout the course of a project. The APM team and/or Agency PM should review each for their true benefit and costs.
- The Design-Builder will be required to reimburse the Agency if its design increases Agency costs for third-party work. For example, if the RFP identifies known conflicts and the Design-Builder’s design results in more avoidable conflicts than represented in the RFP, the Design-Builder may be held responsible for the time and cost impacts associated with additional third-party work.
- The Design-Builder is not obligated to give the Agency a credit if it reduces its cost by avoiding a third-party work requirement such as through innovative design or scheduling, for example. A reduced price CCO could be required if the Agency granted leniency or other aspects that allowed the third-party work requirement to be less.
- If the Design-Builder is delayed by a third party or delays a third party there may be cause for a CCO. The APM team should review the agreement secured by the Design-

Builder from the Utility to determine if the delay is outside the agreed upon work window.

The APM team should be aware of any contract contingencies that cover the relocation of Utilities not shown on the RFP plans or described in the Scope of Work.

### **(F)(4) Environmental Pollution Changes**

**Harmful/Hazardous Materials** – Hazardous Materials remediation is typically paid on a Unit Price basis for quantities of Work actually performed, even in DB Contracts. This approach is taken to minimize the Design-Builder’s risk on potentially very risky work because the extent of contamination is often difficult to determine until the site is actually opened up. However, in DB the variation in quantities provision for DBB projects generally does not apply to each site but to total quantities for the entire Project for each category of Hazardous Materials remediation, and then only if the Agency defines the range of quantities a price is valid for.

The “category” can be the nature of the material required or the type of remediation involved. For example, a hydrocarbon hazardous material could be mitigated on-site or hauled away for remediation. Two categories of remediation would occur in this case.

The Contract provisions require the Design-Builder to obtain the services of previously trained and qualified personnel to perform remediation work. Otherwise, the Agency could be exposed to significant training and delay costs while the Design-Builder goes through the process of training and qualifying inexperienced staff.

The Agency PM should be aware of any contract contingencies that cover cases when unknown Hazardous Materials occur. The APM team also needs to understand ORS 279C.525 because this revised statute will be followed when changes to environmental or natural resource Laws impact the Project. As indicated previously, mitigation will generally be performed based on unit rates. The APM team should be aware of any unit rates requested with the Proposal due to previously recognized risks of particular impacts.

**Environmental Mitigation** – A change in Work may be deemed to occur if the Agency or others require environmental measures that are not specified or reasonably implied in the Contract Documents. This could include mitigation measures in the Design-Builder’s Proposal for conditions not known to occur for the Project. In other words, if the Agency wants to include with the Proposals a unit rate or fixed cost for a condition or issue that may occur, the Agency may ask for it in the RFP and/or the Design-Builder may offer it unsolicited with its Proposal, but it may not be in the base Contract Amount until the condition or issue occurs.

Therefore if the Design-Builder proposes mitigation measures in its Proposal that are not required by the Contract Documents or part of the base cost of the Contract, but these measures are subsequently required by the Agency or another agency, the Design-Builder would be entitled to a Change Order. For example, in its Proposal the Design-Builder may define an approach to mitigate an encounter with a specific endangered species, but the base price may

not include this. If this endangered species is encountered, the Design-Builder is entitled to a CCO to cover its mitigation costs as outlined in the approved plan.

**Inaccuracies in Preliminary Design** – Except for inaccuracies that lead to a material change in the Contract Baseline Concepts (discussed previously), the Design-Builder will be responsible for time and cost impacts due to inaccuracies in preliminary design.

## **(F)(5) Nonconformance Reports (NCRs)**

If the Agency or Design-Builder Quality Management Team identifies nonconforming work during its review, audit, observation, or monitoring of the Design-Builder's documents, submittals, activities, and/or Work, the Agency or Design-Builder Quality Management Team will issue a written NCR to the Design-Builder.

The Design-Builder is required to address items covered in NCRs, bring work covered by NCRs into compliance with contract requirements, and notify the Agency PM in writing of the corrective action taken. However, instances may occur where the Agency Accepts work at a lesser-quality standard and a CCO is issued to reflect the change and make an appropriate adjustment.

**It is important to remember that if this work is Accepted under a Standard Quality Price Adjustment (ODOT Construction Manual, Chapter 12C), a CCO is not required. Also, it is important to note that a CCO is not written to make nonconforming work conforming.**

## **(F)(6) Cost-Reduction Proposal**

The Design-Builder or Agency can submit Cost Reduction Proposals (CRP) to reduce the cost of the Work during construction (Refer to Chapter 3, section 3-23 in this Manual, for design changes prior to construction). The Agency PM should try to identify and encourage the Design-Builder to identify CRPs early in the Project because this is the best time to capture value with CRPs.

When a CRP is presented, the APM team should evaluate its merit expeditiously to give the Design-Builder as much time as possible to incorporate the CRP into the schedule and allow the most value to the Agency. The APM team should review the goals and requirements of the CR process outlined in DB140.70.

The APM team should be aware of the purpose for awarding a CRP. The primary purpose is to reduce overall project cost without impairing essential functions of characteristics of the Project. The APM team must not approve a CRP that impairs the Project, as outlined in DB140.70. The APM team should enlist the assistance of ODOT design, maintenance, and construction specialists to fully evaluate the benefit of the CRP.

The Agency is under no obligation to review CRPs, so if the APM team is not compelled to review a CRP they are not obligated to do so. However, in keeping with the DB philosophy of

encouraging partnering, the APM team should have a defensible reason for not evaluating the CRP. One acceptable reason would be when sufficient lead time is not provided to allow a thorough review in the timeframe required to produce the benefit.

To help defer potential costs, the Agency allows the Design-Builder to submit a written request for feasibility review by the Agency. This allows the Agency to advise the Design-Builder (prior to them spending time and money on the idea) if the idea will be considered, and, if so, under what constraints, if any. The Agency also reserves the right to have the Design-Builder share in investigation costs of a CRP.

During review of a CRP, the Design-Builder should continue the Work. If it ceases Work, it is at its discretion, and the APM team should be aware that any delays caused by this cessation cannot be part of a CCO.

### **(F)(7) Additional Related Work in Area**

As defined in the Design-Build Agreement, if the Agency requests additional related Work in the Project area, this constitutes a change to the Contract. This Work may be defined as an Order for Extra Work to be performed on Force Account Basis if a price cannot be agreed to or as a CCO if a price is agreed to.

### **(F)(8) Key Personnel Changes**

Key personnel are identified in the DB Contract. Although they do not generally involve a monetary CCO, changes in Key Personnel require Agency approval and should be processed through a change in the Contract. Other contract language may also be identified that requires a change but does not result in monetary or schedule changes.

### **(F)(9) Time Changes**

As defined in DB180.60 there are instances where the Contract Time will be extended or shortened. The Agency can extend or decrease the Contract Time a without request from the Design-Builder for delays caused by ROW and for added Work, such as Extra Work. The Agency may also shorten or extend the Contract Time at the request of the Design-Builder, provided the conditions of DB180.60 are met.

As outlined in the ODOT Construction Manual, the Authority of the Agency PM and Region Manager are limited for contract extensions. Refer to “Delegation of Authority” in Section 3 of that manual.

## **Chapter 2 – Quality Management**

For all ODOT projects, quality work is a primary goal. A project's quality starts with design and ends with construction. The design must address environmental concerns, and the construction phase must implement environmental mitigation measures outlined in the design. For DBB projects, ODOT generally accepts all design quality responsibility and shares or holds most environmental quality responsibility. For construction of DBB projects, ODOT has assigned the industry suppliers and the contractors with the burden for proof of quality. ODOT performs the IA and Verification testing role of construction quality with respect to material testing and maintains inspection authority.

Quality Management is an important aspect of a DB project and has numerous differences from traditional DBB. Primarily, on a DB project, the Design-Builder is responsible for QC of both design and construction. The Design-Builder's Design Quality Manager performs design quality reviews and must certify that the submitted designs comply with the requirements of the Contract Documents. Additionally, the Design-Builder performs construction and Materials inspection, and must have detailed plans and processes to identify and correct nonconforming work. A critical component of the Design-Builder's QC responsibilities is to identify and document nonconforming work, as well as to correct it and document the correction.

The Agency's role is QA and IA, which consists of providing oversight of the Design-Builder's Quality Management, reviewing Design-Builder submittals, and auditing and inspecting a portion of the Design-Builder's construction Work and Materials. For design Work, the Agency reviews the Design-Builder's quality documentation, reviews and comments on design submittals, and conducts audits as necessary to verify that the Design-Builder's designs comply with the Contract Documents.

For the construction phase, ODOT's system of QCCS and the RAS traditionally allows ODOT to rely on the Design-Builder and its Quality Management team to perform most traditional QC functions for projects, including inspection and material testing outlined in the Contract. ODOT performs the IA and Verification testing role of construction quality with respect to material testing and maintains inspection authority.

ODOT also qualifies some aggregate products used as construction Materials under the Oregon Approved Aggregate Product Program (OAAPP), which identifies the level of involvement of ODOT's QCCS and Inspectors in the Quality Management process for those products. The ODOT Central Materials Laboratory performs aggregate compliance testing for all aggregate Materials used on ODOT projects and also acts as the third-party laboratory, as needed for IA/Verification investigations.

ODOT also qualifies products on the QPL list. By not requiring additional certification for Materials on the approved ("A") list of the QPL and requiring testing or other documentation for Materials on the qualified ("Q") list, contractors can avoid having to track cumbersome paperwork by choosing the pre-qualified products.



For construction, the Agency performs oversight and inspection of construction Work, inspects portions of completed Work, performs IA and Verification testing of Materials, collects and reviews the Design-Builder's quality documentation, and performs audits and other spot checks as needed. The Agency acts in an oversight role and allows the Design-Builder the autonomy to perform its construction and QC responsibilities. The Agency has the authority to identify and document nonconforming work and when nonconforming work is discovered, whether by the Design-Builder or the Agency, the Agency has the discretion to determine whether the Design-Builder's proposed corrective measures are sufficient.

This chapter provides additional details of the Design-Builder's QC responsibilities and the Agency's QA/IA roles. The Agency's responsibilities described in this chapter pertain to both design and construction, but notes where there are responsibilities specific to design, construction, or Materials. While most of the Agency's responsibilities with respect to Quality are discussed in this chapter, the chapters in this Manual on design (Chapter 3) and construction (Chapter 4) may provide additional discussion of the Agency's Quality-related obligations.

## 2-1 – Agency Acceptance of the Design-Builder's Quality Plan

The Design-Builder's Quality Plan is one of the first major submittals after receipt of NTP and is a critical document for the success of a DB project. The details of the requirements for the Design-Builder's Quality Plan are provided in DB154. The Agency's primary role is to review the Quality Plan for Acceptance and monitor the Design-Builder's compliance with the Accepted Quality Plan over the lifecycle of a project.

The Design-Builder must submit the Quality Plan for Agency Acceptance before any design or construction Work can begin (DB154.10). Note, however, that Acceptance of the Quality Plan is not required before design Work can begin. Rather, the Design-Builder must coordinate with the Agency to have the plan be acceptable to the Agency, and Accepted by the Agency, within 60 days of submittal, or the Work in progress shall be stopped. The Agency PM may consider whether to permit the Design-Builder to submit a partial Quality Plan that allows the Design-Builder to start a portion of the Work (DB154.10).

Although certain components of the design and Quality Management Work may begin prior to Agency Acceptance of the Quality Plan, the Design-Builder may not start construction Work until Agency Acceptance (full or partial) of the Quality Plan (DB180.40).

### (A) Requirements and Purpose of the Quality Plan

DB154.10 provides the requirements for Design-Builder's Quality Plan. The general purpose of the Quality Plan is to:

- Ensure that the Design-Builder delivers a completed project that complies with the Contract Documents.
- Ensure that the Design-Builder implements a quality process that includes review of the Design-Builder's Work by individuals that are independent from production staff.
- Prevent nonconforming work (both design and construction) through active monitoring.
- Detect nonconforming work and identify appropriate corrections.
- Ensure that Design-Builder allows the Agency the ability to verify that the Contract requirements are being met and that appropriate payments for the Work are being made.

The Quality Plan establishes the general procedures for the Design-Builder's organization of the Quality Management Team, processes and protocols for Quality Management, and independence of the Quality Management Team. The Design-Builder's Quality Plan will provide the procedures the Design-Builder will use to perform QC of design submittals, construction Work, and Materials conformance.

The Quality Plan will also provide the procedures for the Design-Builder's QC program to work in concert with the Agency's QA/IA to facilitate inspection of construction Work and Materials. The Design-Builder has primary and ultimate responsibility for the quality of its Work. Throughout the Contract term, however, the Agency will perform quality inspections and audits of the Design-Builder's management, design, construction, maintenance activities, Design-Builder Quality Management activities, the quality of Materials and fabricated products, and the quality of workmanship of the completed Project.

The construction aspects of the Design-Builder's Quality Plan must contain review, inspection, and documentation procedures consistent with the ODOT Construction Manual and the ODOT Inspector's Manual. The Design-Builder's quality inspectors must be certified in accordance with ODOT's inspection certification program.

The Design-Builder is responsible for many functions that the Agency traditionally performs (including the functional role of the QCCS and portions of environmental permitting). However, just as important is the Design-Builder's responsibility for understanding the interrelationship of ODOT's many existing programs and ensuring that the Quality Program is compatible with and incorporates these programs. These programs include the RAS review of documents, IA and Verification testing, mix design approvals, source approvals or OAAPP designations, steel inspections at fabricator plants, pre-stress girder inspection, and pre-cast concrete approvals.

Additionally, the Quality Plan must require Materials quality and documentation consistent with the requirements in the ODOT Manual of Field Testing Procedures (MFTP), the ODOT Nonfield-Tested Materials Acceptance Guide (NTMAG), the ODOT Qualified Products List (QPL), and any other ODOT-provided specifications and documents including the ODOT Construction Manual and the ODOT Quality Control Compliance Specialist (QCCS) Handbook.



The importance of ensuring that all these programs function effectively remains the Design-Builder's responsibility. However, Agency representatives must respond quickly and efficiently to ensure the overall program's functionality.

## **(B) Independence of the Design-Builder's Quality Management Team in the Quality Plan**

As part of the Quality Plan, the Design-Builder will establish its Quality Management Team. It is vital that members of the Design-Builder's Quality Management Team (including the Project Quality Manager, Construction Quality Manager, and Design Quality Manager) are independent from the Design-Builder's overall Project Manager. Independence entails that the Design-Builder's Quality staff do not directly report to the Design-Builder's Project Manager and have the independence to stop Work without fear of reprisal if quality issues are detected. When reviewing the Quality Plan, ODOT verifies this independence and requires correction if the Design-Builder's Quality Management Team does not comply with this critical requirement.

As part of the independence of the Design-Builder's quality organization, the Design-Builder's Project Quality Manager provides independent reports directly to the Agency PM. The Design-Builder's Project Quality Manager must also meet at least monthly with Agency PM, separate from any Design-Builder personnel, to discuss:

- The Quality Plan.
- Corrective actions in progress.
- Monthly written reports.
- Monthly certification Pay Request.
- Other relevant topics.

## **(C) Agency Review of the Quality Plan**

Upon receipt of the Quality Plan submittal, the Agency will review the plan to ensure that it establishes a robust quality organization that is tailored to the needs of the Project. The Quality Plan must address how the Design-Builder will provide the Agency access to the information it needs to perform these reviews and how the Design-Builder will address the Agency's comments and concerns. When reviewing the Design-Builder's Quality Plan, the Agency will focus on whether the Design-Builder sufficiently accounts for its responsibilities, including the number and qualifications of its inspection personnel. Further, it is important to confirm that the Design-Builder's Quality Plan recognizes and accommodates the Agency's oversight role so that the Agency can perform its responsibilities.

The Quality Plan must discuss how the Design-Builder will respond to and address comments received from the Agency on design submittals, as well as how the Design-Builder will respond to and address construction-related nonconformance issues. Generally, if a nonconformance is

detected, the Design-Builder may issue a Nonconformance Report (NCR) or if the Agency identifies the nonconformance, the Agency may issue a Nonconformance Issue (NCI). The Quality Plan must provide the procedure for the Design-Builder to respond to both NCRs and NCIs, including how it will perform corrective work and close out the issue.

The Design-Builder's process must fit within the procedures discussed in the Contract Documents (see DB154, DB155 and DB165). The Design-Builder will provide all submittals under the Quality Plan, except claims, via the EDMS for the Project. When reviewing the Quality Plan submittal, the Agency reviews must ensure that the Quality Plan contains these procedures and that they appear reasonable to address the Project's quality requirements.

In reviewing the Quality Plan, the Agency will verify that the Design-Builder has the appropriate Quality Management structure in place, including that members of the Design-Builder's Quality Management Team are independent and report to individuals other than those involved in production. Additionally, the Agency will verify that the members of the Design-Builder's Quality Management Team have sufficient experience with design and construction in the areas they oversee and that they are present at necessary times when the Work is being performed or requires review. The Agency will also verify that the Quality Plan accounts for the quality-related process discussed further in this Chapter.

## 2-2 – Design Quality

Quality Control of the Design Services is an important aspect of the Design-Builder's design process. The details of the Design-Builder's Design Quality Management responsibilities are provided in DB155.

The Design-Builder shall have a Design Quality Manager that is responsible for the Design-Builder's design Quality Management. The Design Quality Manager is the Agency's point of contact for design-related quality issues. See Design-Builder's team structure example in Chapter FOR-5, Figure 9 in this Manual.

Prior to submitting each iteration of the design (DD, ID, RFC), the Design-Builder's Design Quality Manager must perform a quality review of the design to certify conformance with the Contract Documents. The Design Quality Manager's review must be documented and included with each design submittal. Further, prior to submittal of the RFC submittal, the Design-Builder shall have the design undergo an independent peer review by a reviewer not involved in the production of the Design Documents. The independent peer reviewer shall have qualifications equal to the POR.

The details of what the Design Quality Manager must certify and submit to the Agency are discussed in Chapter 3 in this Manual in the sections on each iteration of the design.

When the Agency receives the Design-Builder's design submittals, the Agency PM will review the quality records with each submittal and confirm that the Design-Builder has followed all procedures stated in the Design-Builder's Accepted Quality Plan, including that the Design Quality Manager has performed the required review. For the RFC submittal, the Agency will

additionally verify that the design has undergone an independent review by a peer reviewer. The Agency may reject any design submittal that has not complied with the design quality procedures.

## 2-3 – Design Quality Records

As discussed further in Chapter 3 in this Manual, the design process consists of the Design-Builder submitting designs for Agency Review and Comment. In connection with this process, the Design-Builder must maintain quality records concerning the design submittals, Agency review, and resolution of Agency comments.

The Design-Builder shall maintain an auditable record of compliance with all quality-related procedures in accordance with DB155.13 and the Accepted Quality Plan. The Design-Builder must submit all monitoring reports and records within 7 days of completion of the subject Design Review. The Agency's role is to receive this documentation and review it to ensure that the Design-Builder is following the Contract Documents and the Accepted Quality Plan.

The Design-Builder's Design Manager must keep records of the following (DB155.13):

- Monitoring of NCRs, NCIs, and review comments from audits, design checks and Design Reviews, and final resolution of comments.
- A log of design NCRs and NCIs, noting date issued, reasons, status or resolution, and date of resolution (if resolved).
- Daily records of design activities.

The Design-Builder's Design Quality Manager must keep records of the following (DB155.13):

- Monthly report: on or before the 5<sup>th</sup> of each month, containing a summary of Design Reviews conducted, nonconforming work with current status and disposition, and submissions from Design-Builder with status.
- Final Design Report: upon completion of RFC Plans and Specifications for each DU, the Design Quality Manager notifies the Design-Builder, copying the Agency, of the final resolution or disposition of all review comments (Design-Builder's and Agency's), monitoring report issues, and nonconformance issues identified during review of the Plans and Specifications.

The Agency will review these records as determined to be necessary and may audit their content by requesting backup information for a sample of items in the quality records. For example, the Agency may select several comments on a design submittal, track their issuance and resolution, and compare the Agency's information to the Design-Builder's quality records. If the Agency identifies any inaccuracies in the Design-Builder's quality documentation, the Agency will notify the Design-Builder in writing and require correction.

## **2-4 – Design-Builder Construction Quality Organization**

The Design-Builder's Quality Management organization is a critical component of the Design-Builder's organization. The Design-Builder's Quality Management organization must include the following individuals (DB156.20):

- Construction Quality Manager.
- Design-Builder Quality Control Compliance Specialist.
- Construction Quality Control Inspectors.
- Environmental Compliance Inspectors.
- Materials Quality Control Testing Technicians.

See Design-Builder's team structure examples in Chapter FOR-5, Figure 9.

## **2-5 – Design-Builder's Roles for Construction Quality Management**

The purpose of this section is to present an overview of the Design-Builder's construction quality-related responsibilities to provide the context for the following sections that discuss the Agency's construction QA and IA roles.

The Design-Builder's construction QC activities consist of the following: Materials handling and construction procedures, calibration and maintenance of Equipment, shop drawing review, document control, production process control, and any inspection, sampling and testing done for these purposes. QC also includes documentation of QC efforts. Further examples of QC include:

- Preconstruction activities such as review of Plans and Specifications before Work activity is performed.
- Constructability reviews (which must be performed before the design is submitted for review by the Agency).
- Documentation of construction activities.
- Analysis and documentation of site conditions.
- Materials verification and management.
- Subcontractor oversight.
- Testing and inspection procedures, including schedules, pre-closure inspections, and documentation.

- Nonconformance procedures, including detection, evaluation, correction, and reporting to the Agency.
- Verification of Materials.
- Protection of Materials.
- Preparation of as-constructed documents.

A significant aspect of DB QC includes documentation, examples of which are:

- Meeting documentation (preconstruction, jobsite, pre-installation, ad hoc).
- Reports (daily inspection reports, Subcontractor reports, NCRs)
- Checklists.
- Logs (inspection and testing).
- Photographs of the Work.
- Documentation for the Punch-List items.

The Design-Builder's Quality Management Team monitors and inspects all construction activities to document Contract compliance (DB156.30). The Design-Builder's Quality Management Team additionally:

- Coordinates closely with the Design-Builder to ensure on-site inspections are coordinated with the construction schedule.
- Performs construction QC inspections in accordance with the Accepted Quality Plan, ODOT Construction Manual, and ODOT Inspector's Manual.
- Prepares daily progress reports for days when on-site Work is performed by the Design-Builder.
- Takes photos of construction activities and keep a digital photo log of critical construction activities on EDMS. The photo log must be up to date throughout construction and available for review by the Agency.

## 2-6 – Agency Quality Management

The following table compares the conventional roles for DBB to DB projects.

Table 3: Comparison of Typical DBB and DB Quality Management Roles

Description	DBB: ODOT	DBB: General Contractor (for Construction)	DB: ODOT	DB: Design-Builder
Design	X <sup>1 2</sup>	- <sup>3</sup>	QA <sup>4 5</sup>	X & QC
Environmental Permitting	X	See Note	X	X
Environmental Compliance	X	Application /Implementation	Oversight	X
Mix Design Approval	X	-	X	-
OAAPP Aggregate Products Program	QA	QC	QA	QC
IA & Verification	X	-	Oversight	X
RAS	X	-	X	
Off-Site Steel	X	-	QA	QC Weld
Off-Site Pre-Cast Concrete	X	-	QA	QC
Density Testing	IA & Verification	X	IA & Verification	X
Source Review and Aggregate Production Compliance Testing (Central Materials Lab)	Central Materials Lab	QC	Central Materials Lab	QC
Aggregate production testing	QA	QC	QA	QC
Concrete Testing	IA & Verification	QC	IA & Verification	QC
On-Site Inspection	X	-	Oversight	X
Pile Inspection	X	-	Oversight	X
Caisson Inspection	X	-	Oversight	X

<sup>1</sup> “1” ODOT may also use consultants for Design Services.

<sup>2</sup> “X” identifies responsible party.

<sup>3</sup> “-” indicates that the area responsibility is not applicable.

<sup>4</sup> “2” ODOT may also use consultants for design quality reviews.

<sup>5</sup> “QA” identifies party responsible for Quality Assurance.

<b>Description</b>	<b>DBB: ODOT</b>	<b>DBB: General Contractor (for Construction)</b>	<b>DB: ODOT</b>	<b>DB: Design-Builder</b>
Certificate of Materials Origin	-	X	-	X
Certifications	-	X	-	X
QPL Adding New Items	X	-	X	
QPL Evaluating Use of Item	X	-	-	X
Address RFIs	X	-	-	X
Address Field Changes	X	-	Oversight	X

Note: In DBB, the contractor is responsible for certain permits associated with construction, but in DB the Design-Builder is responsible for the same permits and also responsible for many aspects of preparing the joint permit.

## **(A) Role of the Agency**

Agency personnel assigned to DB projects are expected to confirm that the Design-Builder’s Quality Program is functioning properly. This process is defined as Quality Program Assurance. The Agency has a stepped approach of increasing involvement in the Quality Program Assurance process if the Design-Builder’s Quality Program is not functioning. The remainder of this section defines the depth at which the Agency should be involved, depending on the Design-Builder’s ability to implement the Quality Program.

The Agency PM and APM team must work collaboratively with the Design-Builder in order to perform proper Quality Program Assurance. A key aspect of this is reviewing the Baseline Progress Schedule, which is initially submitted with the Proposal, updated based on early negotiations following NTP and then monthly during project execution. By working with the Design-Builder and understanding the schedule, the APM team can effectively perform Quality Program Assurance services.

The Agency’s involvement in a DB project should generally consist of oversight, as discussed in the following paragraphs.

## **(B) Design Oversight**

Design oversight consists of Design Reviews for overall adherence to ODOT Standards, not for the designer’s technical competency or for the technical adequacy of particular aspects of the design. These reviews (see Chapter 3 in this Manual) focus on items such as the maximum length of pre-cast girders, maximum allowable skew for a Bridge approach, and vertical curve limitations. It also consists of performing audits of Quality Program design quality processes. The Design-Builder’s Quality Management Team is typically responsible for these audits but



the designer can also self-perform them with personnel not involved in the design. The APM team will review the audits and reserves the right to perform its own audits and checks.

A DB project's design is developed following the requirements defined in DB155. Design development typically consists of four milestones with an optional ID step (if necessary to resolve conflicts or incorporate betterments), as follows:

- DD – Contract Baseline Concepts developed by the Design-Builder to a degree of completion that enables the Agency to determine that the Contract Baseline Concepts proposed by the Design-Builder is consistent with contractual requirements. Agency Acceptance of the DD submittal forms the contractual basis upon which the Plans and Design-Builder Specifications must be developed.
- IDs – are intended to resolve conflicts, consider alternatives, and/or betterments. These IDs follow the Accepted DD and are reviewed by the Agency using “over-the-shoulder” reviews (via workshops and meetings) leading to the development of the RFC Plans and Specifications.
- RFC – these Plans and Specifications are developed based on DD Acceptance and incorporate details and additional site-specific conditions/investigations/interpretations. RFC Plans and Specifications should be checked by the Design-Builder's Quality Management Team for compliance to DD Acceptance and contract requirements. The Design-Builder shall specifically highlight, check, and bring to the attention of the Agency any information differing from or supplemental to what was presented at the DD review. RFC Plans are submitted to the Agency for review and Acceptance prior to construction. In addition to normal design quality checks, the Design-Builder's Quality Management Team shall certify that this submittal meets contract requirements and the procedures defined in the Quality Plan.

**Note: Agency “Approvals” should be limited to Design-Exceptions, Deviations, Operational Approvals, or certifications requiring Agency concurrences with various process steps required by Contract.**

**In Design-Build, the Chief Engineer's signature should not be included on the Design-Builder's Plans or Specifications. Likewise, other Agency technical disciplines should make certain they are not providing signatures or “Approvals” on the Design-Builder's Plans or Specifications.**

**Contractually, the Design-Builder's Design Firm provides the POR responsibilities prior to RFC. See DB155 for RFC plan requirements.**



- Working Drawings – these are prepared by the Design-Builder’s Suppliers, fabricators, and constructors to specify particular details and procedures for construction of a DB project, including, but not limited to the following:
  - Construction details.
  - Erection plans.
  - Fabrication plans.
  - Field design change plans.
  - Stress sheets.
  - Shop plans.
  - Lift plans.
  - Bending diagrams for reinforcing steel.
  - Falsework and shoring plans.
  - Similar data required for successful project completion.

The Design-Builder shall check, review, and certify that Working Drawings have been reviewed and approved for use by the POR (Designer), in accordance with contract requirements and the Design-Builder’s Quality Plan (refer to DB155.12). The Design-Builder shall invite the Agency to participate in a Review and Comment of Working Drawings. The Agency may invite Stakeholders to attend reviews of Working Drawings.

- As-Constructed are Plans and Specifications that reflect the as-constructed conditions of the Project. They are part of the final records turned over to the Agency at the end of a project (refer to Chapters 3 & 6 in this Manual). The Design-Builder shall submit As-Constructed Plans for each DU (work package) in accordance with DB190.10 and DB155.

## (C) Construction Quality Assurance

On DB projects, the Agency performs QA of the Design-Builder’s construction Work. The Agency’s role is to verify that the Design-Builder is performing its QC obligations and that the Work complies with the Contract Documents. The Agency’s quality activities may consist of audits, inspections, and the establishment of other quality oversight processes. The Agency will perform the following roles:

- Auditing the Design-Builder’s Quality Management Team’s performance of the following activities:
  - Verifying that the Work conforms to the Contract requirements.
  - Examining ongoing Work to evaluate compliance with the Contract Standards and the Quality Plan.
  - Verifying that Materials are correct and meet the Project’s Standards.

- Oversight of nonconforming work and corrective action.
- Performing ongoing reviews of the effectiveness of the Design-Builder's quality program.
- Recommending changes to the Design-Builder's quality organization if necessary.
- Reviewing the documentation prepared by the Design-Builder and its Quality Management Team for sufficiency.

Agency QA is separate from the Design-Builder's QC responsibilities and is not intended to overlap with the Design-Builder's quality obligations. QA is intended to be an unbiased and independent evaluation of the Design-Builder's Work and the Design-Builder's procedures for quality checking of its Work.

Except as discussed below, the Agency's QA entails higher-level inspection of field Work than the inspection performed by the Design-Builder's Quality Management Team. Agency's QA staff may be present at major construction operations, but may not be present at every construction activity in the field. They Agency's QA may also perform unscheduled audits of the Design-Builder's construction Work. The Agency's QA inspector typically observes and checks Work after the Design-Builder's QC staff have performed their own inspections. Typically, an Agency's QA inspector present at the site of ongoing Work will not stop Work or otherwise intervene unless there is a critical deficiency in the Design-Builder's Work or a safety issue arises. The risk-based approach to how the Agency will perform construction QA is discussed in greater detail in Chapter 2, section 2-8 in this Manual.

When performing an inspection or audit, items that Agency QA will note include:

- Relevant section of the Contract Documents applicable to the Work.
- Time observed.
- Operations observed.
- Location.
- Design-Builder personnel present (including QC).
- If the Work is being performed by a Subcontractor or Materials Supplier.
- Number of items selected for audit during a specified operation.
- The presence of compliant or noncompliant items.
- Observations and photos.
- Any explanations by the Design-Builder of the means and methods used.

The Agency QA inspector will maintain a log of all items observed during a shift. The Agency PM will create and maintain a repository for QA inspectors to enter their observations. Nonconforming work identified during QA inspections will be tracked and the Agency PM will

be responsible for ensuring that all items are closed out in accordance with the process for the Design-Builder's correction of nonconforming work (See Chapter 2, section 2-9 in this Manual).

Although the Design-Builder's Quality Management Team generally remains responsible for all inspection of construction Work, the Agency retains the inspection roles for the following:

- Bridge inspections prior to traffic opening, and at Final Acceptance.
- Fabrication.
- Traffic signs.
- Traffic signal controllers.
- Intelligent Transportation Systems.
- Aggregate Source Review and Product Compliance.
- Qualified Products List (QPL).
- Region Quality Assurance of Materials.
- Region Assurance Specialist.
- OECR Field Coordinators.
- Labor Compliance Audits.
- Lab Certifications.
- Statewide (QA) ADA Ramp Inspection.
- Pavement Mix Design Approval.
- Plant Inspections.
- Environmental Compliance audits or site visits.

Similar to DBB projects, the Agency also retains responsibility for permanent and temporary traffic signal timing and detection setup and adjustments on DB projects (see DB Standard Technical Specifications sections 00227 and 00990).

For further information, the ODOT Quality Assurance Program identifies the roles of the Design-Builder's QC and ODOT's QA activities (DB156.50). The ODOT Quality Assurance Program is included in the ODOT Manual of Field Test Procedures (MFTP).

## **(D) Quality of Materials and Work**

For more detailed information, refer to the Quality Section (12B) of the ODOT Construction Manual, DB165, and the Quality Assurance Program in the MFTP. Also refer to the requirements for Materials and workmanship included in the specifications for each Work item and the Design-Builder's Quality Plan.

All material and workmanship that the Design-Builder incorporates into the Project must comply with applicable contract requirements. The Design-Builder must perform testing and/or provide quality documentation as required. The requirements are specified in one or more of the following:

- Design-Builder Specifications and Special Provisions for the particular Work item.
- The MFTP and the NTMAG.
- The “Blue” and “Green” sheets (as defined in the Traffic Signals Manual) for traffic signals and other electrical Work.
- CCOs for the particular Work item.

The Design-Builder is required to use certified testing technicians and laboratories to test Materials and processes and to perform other Quality Management processes. This helps ensure that the Materials, processes, and resulting products comply with contract requirements. The Design-Builder must perform, and is fully responsible for, all Quality Management needed to ensure that its Materials and processes will provide a final product that complies with contract requirements. The Design-Builder shall also provide a level of Quality Management typically associated with QA, such as reviews, audits, and observations that documents all Quality Management processes and testing are in compliance with requirements.

The APM team will:

- Review Quality Management testing results and any Quality Management audit findings and Quality Management documentation.
- Keep Region QA up to date on quantities of field tested Materials placed and scheduled to be placed for the purpose of scheduling.
- Reserve the right, at any time, to request samples of Materials or products to verify that the Design-Builder’s test results represent the material, process, or product and that the material and the resulting product complies with contract requirements.

If the Design-Builder has supplied or incorporated material that does not conform to contract requirements, but the Agency has determined this material to be acceptable to remain in place, refer to “Quality Price Adjustments” in Chapter 1, section 1-15 in this Manual. Some items require that ODOT pay a bonus for material or Work that consistently meets or exceeds the Contract requirements, and as such must follow the criteria defined in the Contract or Work item specification.

## **(E) Agency QA/IA of Materials**

In addition to Agency’s QA role with respect to the Design-Builder’s construction Work, the Agency is also responsible for performing QA and IA of Materials testing.

The details concerning the quality requirements for Materials are specified in DB165. To ensure the quality of Materials, the Design-Builder is required to have dedicated Materials inspection

QC processes, while the Agency performs QA and IA of the Design-Builder's Materials testing and inspection. For Materials, the IA involves laboratory certification, technician certification, proficiency samples, and split samples of verification or QC tests (DB156.50). The Agency's IA may also review the qualifications of the Design-Builder's QC inspectors and validate the Equipment used by the Design-Builder to perform Materials tests.

The Design-Builder must perform QC laboratory testing of field-tested Materials in a testing laboratory certified by the Agency in accordance with the ODOT Quality Assurance Program requirements (DB156.20). This lab must be independent of the Design-Builder's organization.

The Agency performs Verification Sampling, Testing, and Inspection as part of its QA role (DB156.50). The Agency performs QA of field-tested Materials at a frequency not less than the minimum specified in the MFTP. Agency QA takes verification samples at random of no less than 10% of the Design-Builder's Work for testing to verify that the products, Materials, and Work meet the Contract's requirements (DB156.50). Verification samples taken by the Agency must not be the same samples taken by the Design-Builder's QC program. All deficiencies discovered by the Agency will be logged and a Nonconformance Issue (NCI) issued.

The results of the Agency's QA and IA testing are compared to the Design-Builder's QC test results. The Design-Builder's Materials QC test results can be used for Acceptance of Materials quality only if verified by tests performed by the Agency. If a discrepancy between the Design-Builder's test results and the Agency's test results is discovered, a second test may be performed to validate the results.

If the discrepancy remains, the Design-Builder's Quality Manager and the Agency PM must identify the root cause of the difference and determine how to proceed. The Agency works with the Design-Builder's Quality Management Team to determine whether the Agency's test results and the Design-Builder's QC test results are within IA parameters, and also to resolve discrepancies between the Agency's test results and the Design-Builder's ongoing QC test results.

If there are deficiencies with the Design-Builder's Materials, the Agency may reject the material or prepare a price adjustment to compensate for the deficiencies (if the Agency decides to Accept nonconforming Materials, see Chapter 2, section 2-9).

Additionally, the Materials must be analyzed for Acceptance using one of the methods provided in DB165.40. If the Design-Builder cannot produce satisfactory results demonstrating that the Materials meet the Project's quality requirements, the Agency may reject the Materials and require the Design-Builder to replace them.

For fabrication inspection retained by the Agency, the Structure Services team will lead the oversight of Materials and include inspection of Materials at off-site fabrication facilities. The Agency may also choose to have inspectors at the shops for critical elements of the Project. Typically, this will include, at a minimum, Agency Inspectors at steel fabrication shops and precast concrete plants. The Agency's role is to identify quality-related issues that the Design-Builder's quality program may have missed.

When the Agency discovers a problem during its reviews or quality audits, the Agency will do the following:

- Issue an NCI or audit finding.
- Evaluate the Design-Builder's proposed corrective actions.
- Require Design-Builder to propose changes to its quality procedures, as appropriate.

The Agency and the Design-Builder will form a Materials Quality Team that meets regularly to resolve issues relating to inspection, substandard Materials quality, inadequate Design-Builder QC processes that require adjustment, disparities between Design-Builder QC and Agency QA/IA test data, future quality concerns, and other related issues (DB156.50).

Additionally, during the Materials Quality Team meetings, the Design-Builder and the Agency will review current and unresolved Materials-related NCRs and NCIs. The Design-Builder must address the following:

- Corrective action taken.
- Resolution of the root cause.
- Process changes to avoid future occurrences of the nonconformance.
- Whether changes to the Quality Plan are needed.

Finally, either the Design-Builder or the Agency may reject any Materials that appear to be defective or that contain asbestos (DB165.01). The processes for Materials Acceptance are specified in greater detail in DB165.10. Additional detail concerning the Agency's QA responsibilities is provided in the ODOT Manual of Field Test Procedures (MFTP).

## **(F) Agency Review of Design-Builder Quality and Quantity Documentation**

The Design-Builder prepares and provides construction and Materials quality and quantity documentation in accordance with the ODOT Construction Manual (DB156.60).

The details of what the Design-Builder is required to compile are specified in DB156.60, but generally include:

- Manpower and Equipment reports.
- Utility Work.
- Daily Work on the Project.
- Quality operations.
- Inspections and reviews.
- Nonconforming work.

The Agency performs periodic and final reviews of the Design-Builder's quality and quantity documentation. The Agency works with the Design-Builder's Quality Management Team to resolve discrepancies in documentation.

## **(G) Independent Reports from the Design-Builder's Quality Project Manager**

As discussed in DB154 and Chapter 2 in this Manual, as part of its responsibilities under the Quality Plan, the Design-Builder's Project Quality Manager shall provide independent reports to the Agency throughout the Project. The Agency PM is responsible for reviewing the reports to verify that the procedures in the Accepted Quality Plan are being followed and that the Work conforms to the Contract requirements.

The Agency will periodically review, inspect and audit the reports from the Design-Builder's Project Quality Manager by performing testing of Materials, inspection of Work processes, and observation of the Design-Builder's Quality Management activities, to verify that the information stated in the reports is correct.

## **(H) Material Sources**

Refer to "Sources of Materials" in of the ODOT Construction Manual Chapter 22 – Sources of Materials and Section 4A of the MFTP for information regarding this topic.

The APM team must assure that the Design-Builder's Quality Management Team adheres to the following requirements:

- If a prospective aggregate source is used, the Agency PM or the Design-Builder's Quality Management Team must notify the Region Geologist of the planned use.
- Maintain product compliance testing that is current or test a new sample at the ODOT Central Materials Lab. The test results must indicate that the aggregate product is acceptable for use.
- For manufacture of steel or other fabricated Materials, the material must be inspected at the fabrication site.
- Testing must be properly performed, test results must be acceptable, and the Agency must perform IA and Verification testing.
- If there is any indication that the material does not meet contract requirements, the Design-Builder's Quality Management Team must take necessary action to assure that corrective action occurs, and must involve the Agency PM.

## **(I) Quantities of Materials to be Produced**

If the Design-Builder requests payment for material on hand, assure that quantities do not exceed the estimated quantities required for construction. The APM team and the Design-



Builder's Inspector shall be involved in calculating the cost to be paid for the material. Also refer to "Materials Stored or On Hand" in Section 12F of the ODOT Construction Manual.

If material is left over after the Contract Work is complete and the Design-Builder requests payment for it, refer to DB195.80 and the "Materials Left Over or Produced for a Third Party" in Chapter 33 of the ODOT Construction Manual.

## (J) Quantities of Work Performed (Progress Estimates and Final)

Refer to "Quantities" in Chapter 12D of the ODOT Construction Manual and Chapter 1, section 1-13 in this Manual for information on this topic. The APM team may assist the Design-Builder's Inspector to assure the following:

- All required quality documentation is provided before Materials are incorporated into the Project.
- Source documents that have been prepared by others are checked.

## 2-7 – Quality Task Force Meetings

The Agency will jointly form a quality task force team with the Design-Builder that will meet to review the Project quality program (DB154.30). At these meetings, the Design-Builder's Quality Managers shall provide a progress update to the Agency on quality activities and provide a forum to address opportunities for enhancement and resolution of deficiencies.

These meetings are a useful forum for the Agency to provide input to the Design-Builder's Quality Management operation. For the Agency's participation in the task force meetings, the Agency PM will assign individuals performing construction and Materials QA/IA functions, design reviewers who identify quality-related issues, and others with knowledge of the Design-Builder's quality program.

The task force meetings also offer an open forum for the Agency to express concerns about Design-Builder quality and for the Design-Builder to offer explanations of its approach and recommended solutions for improvement. While the Design-Builder is ultimately responsible for QC, if there are problems with how the quality program operates, the Agency may comment and require corrective action.

Issues that may arise during quality task force meetings include inadequate inspection, substandard Materials quality, Quality Management process flaws, test results out of tolerance, differences between Design-Builder and Agency testing, future quality concerns, disputes regarding remediation of NCRs and NCIs, and other quality-related issues.

While it is important that the Agency staff allow the Design-Builder to correct its deficiencies in the design and construction methods, it is also important that the Agency's quality oversight



role is a prominent component of the Project, because the Agency will ultimately be responsible for long-term maintenance of the Project.

## 2-8 – Risk-Based Approach to Agency Construction Quality Oversight

On a DB project, the Agency does not inspect every piece of material brought on site and an Agency inspector does not inspect every Work operation. Rather, the Agency QA and IA staff observe and document the Design-Builder's progress and only perform close-up inspection and testing on a sample of the Design-Builder's Work.

Generally, the Agency's inspectors must use their discretion and perform quality inspection efficiently and judiciously. For example, offering potential solutions to design issues or field fit suggestions may be permissible, but the Design-Builder may consider any requirements as Agency-issued direction. Directing the Design-Builder may result in the Agency taking control and direction over the design, thus shifting the risk from the Design-Builder back to the Agency.

Accordingly, Agency inspectors must find a balance between the proper level of oversight and allowing the Design-Builder to control the Work. The Agency will use a risk-based assessment to determine the appropriate level of oversight for a particular item of construction Work or material.

### (A) Agency Risk-based Inspections and Quality Reviews

The risk-based approach to the Agency's QA and IA evaluates the risk to the Project of the Design-Builder's construction operations and Materials. The Agency PM's goal is to identify the construction Work and Materials that present the highest risk and allocate the most Agency resources to oversight and inspection, while allocating less inspection oversight to lower risk items. The risk-based approach gives the Design-Builder the control it needs to perform the Work, while ensuring that the Agency reviews high-risk operations to protect the Project.

The Agency PM will review the Contract Documents and initiate the strategy for developing a review of the required quality documentation, inspection, and general oversight. This process may involve development of a Quality and Quantity document that outlines the required documentation and testing requirements that the Design-Builder is responsible for maintaining during the construction phase of the Project. This should be developed by the Agency PM after the conformed Contract is completed to ensure consistency and accuracy with the Contract requirements.

Some items during the construction phase might be reviewed by the Agency similar to DBB projects. For a DB project, it is important for the Agency's PM to develop a plan to determine its level of risk and compliance of the documentation that the Design-Builder is responsible for maintaining through its Quality Management Team. The Design-Builder's Quality Price Items

include the quality documentation and Quality Management services, and duplicating this effort with the Agency’s staff or consultant is not an efficient use of project resources.

The Agency PM and the APM team will randomly perform its own audits on the Design-Builder’s production-side activities (especially if audits of the Quality Management Team expose concerns). Unless the APM team is escalating their involvement, these audits and reviews should be maintained as occasional and random so as not to interfere with the Design-Builder’s Quality Management.

The following sections outline the work the Agency will perform during construction execution. They also explain some of the interrelated Quality Management roles that the Agency will fulfill (e.g., inspections at certain fabricators, supplier quality testing, etc.).

Refer to the following example of a “Q&Q” template that the APM team may use. However, it is important for the Agency to develop a risk-based approach when tailoring this documentation to a specific project.

Figure 11: Q&Q Risk Based Quality Reviews – Design-Build Construction Phase Example

FOR RISK BASED QUALITY REVIEWS- DESIGN-BUILD - CONSTRUCTION PHASE (Agency Guide)								
NTR - NO TESTS/CERTS REQUIRED			Q - QUALITY COMPLIANCE CERT.			JMF - JOB MIX FORMULA		
E - EQUIPMENT LIST & DRAWINGS			L - ODOT MATL. LAB REPORT			AS - APPROVED SOURCE		
CS - CONTROL SAMPLE			F - FIELD INSPECTION RPT					
W - WARRANTY			T - TEST RESULT CERTIFICATE			QPL - QUALIFIED (APPR.) PRODUCTS LIST		
R-ROTATIONAL CAPACITY TESTING (ROC)						O - CERTIFICATE OF MAT'LS ORIGIN (CMO)		
SPEC	ITEM NAME	PRICE ITEM	Price Item Value	EST. QTY	EST. UNIT (for Tracking)	QUALITY	RISK PROFILE	Audit Question
<b>BRIDGES</b>								
503.00	BRIDGE DECK COLD PLANE A/C REMOVAL 2-4 IN. DEEP	A6		16,200.0	SQYD	NTR	NA	NA
538.00	INJECT AND SEAL CRACKS	A6		500.0	FT	SUBMITTAL OF MAT'L & PERSONNEL, VISUAL, QPL, F	Low	Skip
503.00	CLASS 2 PREPARATION	A6		4,857.0	SQYD	QPL PATCHING OR 4000 - 3/8 PCC	Low	Skip
588.00	CONCRETE CROSS BEAM STRENGTHENING	A6		20.0	CUYD	FALSEWORK SUBMITTAL	Low	Skip
	CL 6000 CONCRETE	A6				FTMAG 00745	High	Does the Quality Management team have documentation on the field inspection and other quality documentation?
	REINFORCEMENT	A6				Q, O, F IF QPL T, L, Q, O, F IS NOT	Medium	Has the Design-Builder provided the required quality information (based on the RAS review)?
585.00	JOINT CLEANING AND INSPECTION	A6		725.0	FT	VISUAL	Medium	Audit related Quality Management team documentation on field inspection notes.

**NOTE: This document should be developed for project-specific “shall haves” based on the Performance Specifications and the Project Specifications for construction. For example, wherever the Contract Documents state that the Design-Builder “shall” perform a certain**

**action or Work in a specified manner, the Agency will determine whether the Design-Builder has complied with the Contract requirements.**

### **(B) Compliance (Records Management) Audits**

The Agency reviews and audits the Design-Builder's records management system (document control). Auditing the Design-Builder's construction Quality Management records is a primary way that the APM team verifies the Quality Plan is being administered properly.

The Design-Builder sets up its records management system to facilitate Agency review and audit. The Agency assists in this activity with pre-construction meetings and workshops geared to communicating the Agency's forms and processes that are required to meet contract requirements. The RAS is a primary Agency representative that assists in this process. The APM team assists by providing Agency forms that augment the Design-Builder's records management system and facilitate Agency review and Acceptance at job end. The RAS also performs their normal review of records management and provides a DRR to the Agency PM.

The APM team will audit the records management system randomly during contract execution to assure the Design-Builder is in compliance with documentation requirements and records reflect the Quality Plan's intentions. This assurance increases the confidence level in Project Acceptance and closeout.

Auditing the records management system involves the following:

- Reviewing construction inspection reports.
- Reviewing construction Quality Management records of sampling and testing reports and results, and checking the Quality Management Team personnel's qualifications. These should be compared to Agency-generated results from IA and Verification sampling and testing.
- Spot-checking for compliance with design Plans and Project Specifications, and comparing APM team records with Design-Builder construction inspection results.
- Verifying that the Quality Management Team has the required Quality Compliance Certificates and Certificates of Material Origins.
- Reviewing any other records that the Quality Management Team is required to keep, and reviewing the specific items in the next section (APM team Field Visits) for potential additional records related to field activities.

The auditing process should be continuous throughout any given period and should not be concentrated at the end of any payment period or prior to formal reviews. It is important to remember that the Agency PM and the APM team are part of the overall Quality Management Team. The primary purpose of the Agency's activities is to provide Quality Program Assurance through reviews and audits. The APM team should help the Design-Builder maintain quality and perform its Quality Management responsibilities, by providing real-time, continuous

feedback to allow the Design-Builder to make adjustments in its Construction Quality Management processes.

The Agency will attend weekly coordination meetings held by the Design-Builder, and any other meetings requested by the Design-Builder in order to maintain project awareness and facilitate progress validation and payment.

Routine audits by the Agency are critical to verifying that the Design-Builder is properly executing its QC responsibility and the procedures in the Accepted Quality Plan. If the Design-Builder is not properly carrying out its quality-related responsibilities, the Agency has several options to address the deficiency. The initial step is to document the deficiencies with the Design-Builder's quality organization and raise these issues with the Design-Builder's Quality Manager. The Design-Builder shall provide a corrective course of action, which may include revisions to the Quality Plan. If the Design-Builder updates the Quality Plan, the Design-Builder must re-submit it for Agency review and Acceptance.

**Note: If an updated version of the Quality Plan is submitted to the Agency, the Agency PM will also verify that all applicable Design-Builder personnel have signed the Quality Plan.**

If problems persist, the Agency may be inclined to step in and provide inspection services that are contractually the duty of the Design-Builder. If the Agency takes this approach, the Agency must seek cost recovery for the Agency's effort, similar to when the Agency performs critical (usually safety related) Project Work that a contractor has failed to perform. The better alternative is to require the Design-Builder to perform its Quality Management activities as contracted and to allow the Design-Builder to work with its contracted Design Firm or Quality Management Team to come up with a solution that complies with the Contract Documents.

There are circumstances where additional inspection and oversight activities by the Agency are warranted, such as where the Design-Builder's Work is not in compliance with the Accepted Quality Plan or Accepted RFC Plans and Specifications, or where there are repeated errors or quality issues in the construction Work. If the Agency field inspectors believe there is an issue of this nature, they should consult with the Agency PM and require that the Design-Builder develop a plan to adjust the level of oversight and inspection to ensure that quality issues are resolved.

Although the Design-Builder is responsible for QC and its means and methods of construction, because the Agency will have to operate and maintain the Project after completion, the Agency has a stake in the outcome of the Design-Builder's Work. It is therefore important to maintain an appropriate balance between protecting the long-term integrity of the Work and allowing the Design-Builder to perform its contractual duties.

### **(C) APM Team Field Visits**

An integral part of contract administration and construction compliance oversight is field visits and validation of certain field-related activities. Also, the APM team has certain defined roles that, in conjunction with the Design-Builder's field activities, form the whole basis of Quality Management. This section identifies the APM team's field-related activities. Note that some of these activities result in records management and as such, the APM team will review certain aspects of this during the records management audits (described previously). As projects become more seamless, the APM team can generally reduce field activities and rely more heavily on records management audits.

The APM team members and/or Agency PM visit the Work Location and/or field office at critical times to attend coordination meetings, observe construction activities, audit records, and assure Quality Plan implementation. These field visits place particular interest on safety and quality. Field notes/diaries are prepared and made part of the Agency's records during contract execution. These records include observations, results of audits and reviews, progress photos, and field notes.

### **(D) Independent Quality Management**

The Design-Builder's Quality Organization performs testing and inspection of installation per the accepted Quality Plan. The nature of these tests and inspections is critical to the overall Quality Process. The Quality Management Team, although members can be Design-Builder employees, is to function independently of production and not report to the Design-Builder's Project Manager.

The APM team should verify that testers and inspectors do not report to production personnel or perform any production role. This verification can be done by reviewing reporting lines on organization charts and/or by observations or interviews made in the field.

### **(E) Testing**

The Design-Builder will provide Materials QC testing technicians certified in accordance with the Manual of Field Test Procedures. This role does not materially differ from the traditional DBB project. The Design-Builder's testers will perform the tests outlined in the MFTP for on-site material testing not performed by specialty suppliers, such as Bridge joints or primary Suppliers as described in the following paragraph.

Generally, Suppliers (subcontracted to the Design-Builder) will have their own QC testing technicians perform the testing required in the MFTP for off-site Materials (e.g., aggregates and precast Materials). Testing of on-site material placement may be performed by the Supplier or by the Design-Builder's QC testing technicians.

According to DB156.20 and Agency's Quality Assurance Program, the following are the approved Technician Certifications currently in place in the Agency Technician Training and Certification Program:

- Certified Aggregate Technician (CAgT).
- Certified Embankment and Base Technician (CEBT).
- Certified Density Technician (CDT).
- Certified Asphalt Technician I (CAT-I).
- Certified Asphalt Technician II (CAT-II).
- Certified Mix Design Technician (CMDT).
- Quality Control Technician (QCT).
- Concrete Control Technician (CCT).
- Concrete Strength Testing Technician (CSTT).

According to DB156.20 and the Agency's Quality Assurance Program, the Design-Builder's Quality team must also include a DB QCCS and meet the testing certifications listed in the Contract to perform the role of a QCCS.

The Design-Builder shall maintain a list of all Materials QC testing technicians and DB QCCS for the duration of the Project.

The APM team will need to verify that the Design-Builder's Quality Management team has the required certifications for the DB QCCS and the material QC testing technicians to cover the scope of the Work, maintain compliance with the Design-Builder's Quality Plan, and comply with the requirements in the Contract.

See DB156.20 for additional requirements.

Off-site fabricators will perform the testing outlined in the MFTP. The Design-Builder has the right to perform oversight of this testing for its own interests, but the test results from the approved fabricator will be used in applying for Acceptance of the material and will be compared with ODOT's IA and verification test results.

ODOT will also perform specialty tests for asphalt (e.g. high-speed profilometer) and other Materials including signal continuity tests.

The Agency will be involved with Materials testing in several ways. The RAS reviews of the Quality Management records will provide the APM team DRRs, which will outline the effectiveness and completeness of the Design-Builder's Quality Management records.

Through the IA and Verification testing process (described in more detail in the IA and Verification Testing section of this chapter), the APM team, generally through the Quality Assurance Coordinator (QAC), can confirm that testing processes are correct. Through the split



samples obtained in the Verification testing, the QAC can confirm the Design-Builder's test results are representative of the material placed.

The responsibility of testing (each on-site, off-site, and at fabricators) should be addressed in the approved Quality Plan.

## (F) Inspection

The Design-Builder will provide Quality Management Inspectors and perform many of the traditional Agency Inspector duties.

According to DB156.20, the following are the approved Construction Quality, Construction QC and Environmental Inspectors currently in place in the Agency Inspection Certification Program:

- Certified General Inspector (CGI).
- Certified Bridge Construction Inspector (CBCI).
- Certified Environmental Construction Inspector (CECI).
- Certified Traffic Signal Inspector (CTSI).
- Certified Asphalt Concrete Pavement Inspector (ACP).
- Certified Drilled Shaft Inspector (CDSI).
- Certified ADA Inspector (ADAI).

The Design-Builder shall maintain a list of all Construction Quality, Construction QC and Environmental Inspectors for the duration of the Project.

The APM team will need to verify that the inspectors listed Design-Builder's Quality Management team have the required certifications in place to cover the scope of the Work, maintain compliance with the Design-Builder's Quality Plan, and comply with the requirements in the Contract.

See DB156.20 for additional requirements.

The APM team should perform inspection-related audits and review activities, such as:

- Verifying that current stamped and signed design Plans and Project Specifications are on site. The APM team should regularly check to see that the appropriate design Plans, working or shop drawings, and Project Specifications are on site and being used to govern construction Work.
- Checking the Design-Builder's construction Quality Management staff to determine that they:
  - Have the specified qualifications, licenses, and/or certifications.
  - Are present to observe and document control the Work.

- Are performing their duties in accordance with contract requirements, specifically those specified in DB156.
- Are verifying appropriate documentation in accordance with the Contract and the NTMAG.
- Determining whether differing site conditions and/or significant changes to the Work occurs. See the change request section later in this chapter for more detail.
- Keeping records of Force Account Work. The APM team will be responsible for maintaining the Force Account records, but the Design-Builder will sign the daily record to indicate agreement.
- Spot-checking measurements of any Work paid on the basis of quantities and Unit Prices. Although payment based on Unit Prices and quantities is likely to be rare, when this does occur the APM team should make spot-checks of the measurements and compare them to the results determined by the Design-Builder's Quality Management staff. These comparisons should be made soon after the spot-checks are made, and should not be held until the request for progress payment is submitted. Delaying the comparison until after the request is submitted will likely delay processing the payment request, and will not contribute to the teamwork and partnering critical to a project's success.
- Reviewing on-site safety and security measures.
- Spot-checking Work for compliance with RFC Plans and Specifications.
- Reviewing and spot-checking TCP and TMP activities and installations. The Design-Builder will be required to inspect and correct any deficiencies and maintain TCP and TMP records. The Agency should make spot-checks and compare its results to the Design-Builder's records.
- Performing inspections of sources, off-site facilities, etc., as outlined in the following section.
- Verifying that products and Materials are new, unless otherwise approved by the APM team.
- Verifying that the Design-Builder only uses certified laboratories and certified technicians to perform laboratory material testing.
- Verifying that the Design-Builder properly maintains and protects completed Work, as outlined in the Contract. If Work is subsequently damaged after payment, payment may need to be reduced if the damage is not repaired.
- Periodically checking the Design-Builder's means of protecting existing facilities. The APM team is trying to limit exposure of the Agency in this check.
- Documenting results of inspections and observations on the appropriate field reports.



### **(G) Independent Assurance and Verification Testing**

The Design-Builder's independent quality organization performs testing and verification of installation, per its Accepted Quality Plan. Additionally, based on the quantities spreadsheet provided by the Design-Builder per DB155.18, the Agency will perform IA and Verification testing of the Design-Builder's testing and inspection based on a percentage of produced or installed quantities.

IA and Verification sampling and testing is typically performed at a minimum frequency of 10% of what is normally performed by the contractor's sampling and testing personnel for a DBB contract, as outlined in the MFTP. The Design-Builder is required to perform material quality sampling and testing at the frequency specified in the MFTP (as may be modified by Contract Documents, see DB165). The Agency's IA and Verification sampling and testing should be performed on the same lots and during the same time period as the Design-Builder's material quality sampling and testing, so that a valid comparison of results can be made. The Agency (as outlined in Section 2 of the MFTP) should perform reviews of test methods and Equipment, as part of the IA and Verification testing program.

### **(H) Certificate of Materials Origin & Quality Compliance Certificates**

In DBB, Agency staff typically collects and maintains Certificates of Materials Origin (CMO) and Quality Compliance Certificates. In DB, these quality documents are typically retained as part of the Quality Management records by the Design-Builder's Quality staff, subject to review and audit by the Agency. This is done so that Quality Management records are maintained in one place and turned over to the Agency at the conclusion of the Project. The Agency may request copies of any certifications as it deems appropriate.

DB195 requires that Work conforms with contract requirements (including all required quality documentation) prior to payment being made. The ODOT RAS is a good resource to ensure these documents are maintained up to date by the Design-Builder's Quality Management staff. The construction APM team should perform audits of the quality documentation, confirming what is delivered to the site and installed conforms with the Contract.

### **(I) Material Inspection**

The Design-Builder's construction quality staff has the primary responsibility for performing material inspection functions. The Agency's staff is responsible for the sampling and testing of special Materials and activities. The APM team should verify that material inspections are occurring, including:

- Being present to perform concurrent inspections.

- Verifying that Field Inspection Reports (FIRs) are completed by the Design-Builder's construction quality staff.
- Spot-checking Materials after the construction quality inspection.

For Materials that originate from Borrow sources, the APM team should verify that the Design-Builder and/or its Supplier has applicable Geology and Mineral Industries permits, Division of State Lands permits, local government authority approvals, and land owner approvals. The APM team should also verify through audit that the requirements of DB160.80 are being adhered to.

The APM team should also confirm the designation of the source as participating in the OAAPP, or not. Regardless of this designation, the APM team should help the Design-Builder coordinate the necessary activities required by the ODOT QA Program.

The APM team should confirm that products and Materials are to be new unless approved by the Agency PM.

## (J) Production Inspection

Production inspection falls into two categories.

- 1) On-site production inspection (e.g., placement, forming, trimming, etc.), which is the responsibility of the Design-Builder.
- 2) Off-site production inspection (e.g., aggregate production runs, precast girders, precast drainage elements, etc.), which could be the responsibility of either the Design-Builder (typically the source or fabricators staff) or Agency.

As indicated previously, in DB the on-site production inspection and testing is the Design-Builder's responsibility. The APM team oversees the processes, compares the Design-Builder's inspection results and the accompanying FIRs with its own observations, and audits the Design-Builder's Quality Management staff's records. The APM team should verify through spot-checks and audits that the Quality Management Team is performing required production inspections and acquiring the proper documentation (e.g., Quality Compliance Certificates, lab reports, CMOs, FIRs, etc.).

For off-site production inspection (not fabricator or pre-cast plant), the roles are generally as defined previously, but the Agency will be more involved for source approval and for sources that are not participating in the OAAPP. The APM team should consider aggregate products participating in the OAAPP versus those that are not, to fully define their roles. The following section (Plant Inspection) defines roles for off-site production inspection at plants.

The responsibility for production inspection should be covered in the Design-Builder's Quality Plan. This plan should also cover the requirements of the MFTP, the NTMAG, and the Inspector's Manual.

## **(K) Plant Inspection**

The Agency maintains its role of inspecting off-site fabrication yards where it currently performs this role. The construction APM team should coordinate with the Design-Builder Quality Management Team to ensure that proper inspection is performed on fabrication of precast girders, steel girders, and other items that Agency-appointed inspectors cover. The responsibility for fabricated items should be discussed and well defined at the initiation of a project so the Design-Builder, APM team, and Agency inspectors are aware of their responsibilities.

The APM team should check the Design-Builder's asphalt and concrete Supplier's Quality Plan, its operators, and the Quality Technician's qualifications. The APM team should also spot-check the operators' and technicians' procedures and audit their records. The Agency should also make oversight spot-checks on the plant itself, and compare its results to those reported by the Design-Builder's asphalt and concrete Quality Technicians covering the same time period.

The APM team should also verify that required permits for noise, air and water pollutants have been submitted to the Agency. This applies for new project-specific or existing plants

## **(L) Material on Hand**

Through the documentation review process, the APM team should confirm that the Quality Management Team has inspected the stored Materials and confirmed that they are stored in an appropriate manner. The APM team can also randomly perform verification inspections as confirmation of the Quality Management Team's diligence.

Chapter 1, section 1-13 in this Manual, Chapter 12 of the ODOT Construction Manual, and DB195.60 provide more detail on MOH for DB projects.

## **(M) Third Parties**

Third parties, as outlined in Chapter 3, section 3-27 in this Manual, consist of Utilities, Railroads, governmental jurisdictions and individual property owners regarding ROW requirements. The APM team will be involved in monitoring Utility relocations and installations.

The APM team will also be involved with Railroads, governmental jurisdiction facilities and ROW in an oversight role. See Chapter 3, section 3-29 in this Manual for more detail on the APM team's role regarding Utilities and other third parties.

## **2-9 – Nonconformance Reports and Issues**

The Design-Builder is responsible for Quality Management and its records should reflect Design Reviews, independent inspection and testing results. These results may generate non-conformances and corrective actions that are also part of the Design-Builder's record system.

All NCRs and logs will be monitored by the Agency's representative during the design and construction.

Non-conforming work can result from any of the following conditions:

- Design work not meeting contract requirements, or not following Standards.
- Work performed prior to a proper design and review process.
- Design submittals missing information or not certified by the required DB personnel.
- Work performed without Agency approval (e.g., a differing conditions claim filed without following the procedures set for verifying a differing condition).
- Work performed outside the Project limits (design and construction).
- Work tested or inspected by the Design-Builder for construction quality and determined not to meet contract requirements.
- Work the Agency identifies as not meeting contract requirements, through IA and/or Verification testing during construction.
- Material placed without a required test result certificate, Certificate of Materials Origin or Quality Compliance Certificate.
- Source material placed without approval of the source, mix design, etc.

Under all conditions, the APM team should keep abreast of all nonconforming work and verify that the Design-Builder's Quality Management Team adequately documents the mitigation of the work. The APM team has the authority to require that work be resubmitted or removed. The APM team should thoroughly review the Contract when making this order, to properly evaluate the Agency's overall fiduciary risk.

The APM team has the right to issue nonconformance issues (NCIs), but it is proper for the APM team to advise the Quality Management Team if it identifies a nonconforming item. The APM team should provide sufficient detail as to why it believes an item is nonconforming and allow the Quality Management Team time to review and act on the issue. If the Quality Management Team fails to act or decides the item is in conformance, the APM team can initiate its right to issue an NCI.

Another aspect of nonconformance will stem from the result of the RAS's DRR. The DRR itemizes the Quality Management records that are not in compliance with record requirements. A NCI should also be completed for many of these items, but some items will be tracked solely in the DRR. Therefore, the APM team should utilize both the DRRs and the Nonconformance log to stay abreast of all conformance issues.

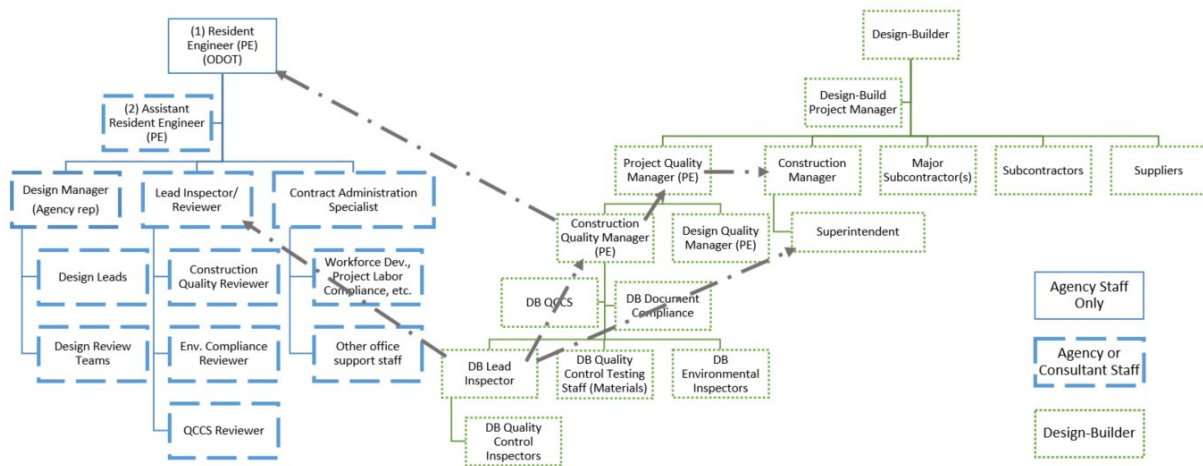
This Section discusses the process for identification and correction of nonconforming work.

## (A) NCRs to Design-Builder’s Quality Management Team (DB154.40)

The Design-Builder’s QC staff is responsible for identifying nonconforming work, and reporting it to the Design-Builder and the Agency in an NCR within 24 hours of discovery.

Generally, when the Design-Builder discovers nonconforming work, the Construction Quality Manager and DB Quality Control inspectors are responsible for reporting the issue to the Design-Builder’s Construction Manager and Superintendent. The Design-Builder must issue an NCR with a copy to the Agency’s Resident Engineer (DB156.30).

Figure 12: Communication Scenario for Design-Build in-Field Discovered NCR Example



Dashed lines and arrows denote example communication pathways during a discovered NCR

The Agency’s options to address nonconforming work are discussed below.

## (B) NCRs by the Design-Builder

When the Design-Builder’s Quality Management team identifies a nonconformance (as it is required to do in accordance with DB156.30), the Design-Builder generally undertakes the following procedure:

- Evaluation of the extent of the nonconformance.
- Evaluation of the root cause of the nonconformance.
- Preparation and issuance of NCRs.

- Coordination with the POR to evaluate corrective action required, including potential impacts on other elements of the Work.
- Developing design changes, as needed, and submission to the Agency for review and Acceptance where required.
- Conferring with the Agency to determine the Agency's preferred course of action (require correction, Accept, and reduce pay).
- Implementation of corrective or other action.
- Final documentation of the change.
- Evaluation of procedures to prevent recurrence.

The Agency does not issue NCRs. Rather, the Agency issues NCIs, which are discussed further below.

### **(C) NCIs by the Agency**

In addition to the Design-Builder's responsibilities, the Agency's quality oversight team (QA/IA) has the right to identify nonconforming work and independently document the issue in an audit finding or a NCI. The Design-Builder is required to log and treat NCIs and audit findings the same as it would treat a Design-Builder issued NCR.

At any time before Final Acceptance, the Agency may require the Design-Builder to uncover Work for inspection (DB150.20). If the uncovered Work is not compliant with the Contract requirements, the Agency PM may require Design-Builder to address the nonconforming work at Design-Builder's expense. If the uncovered Work is compliant, the Agency will reimburse Design-Builder for the costs of uncovering the Work.

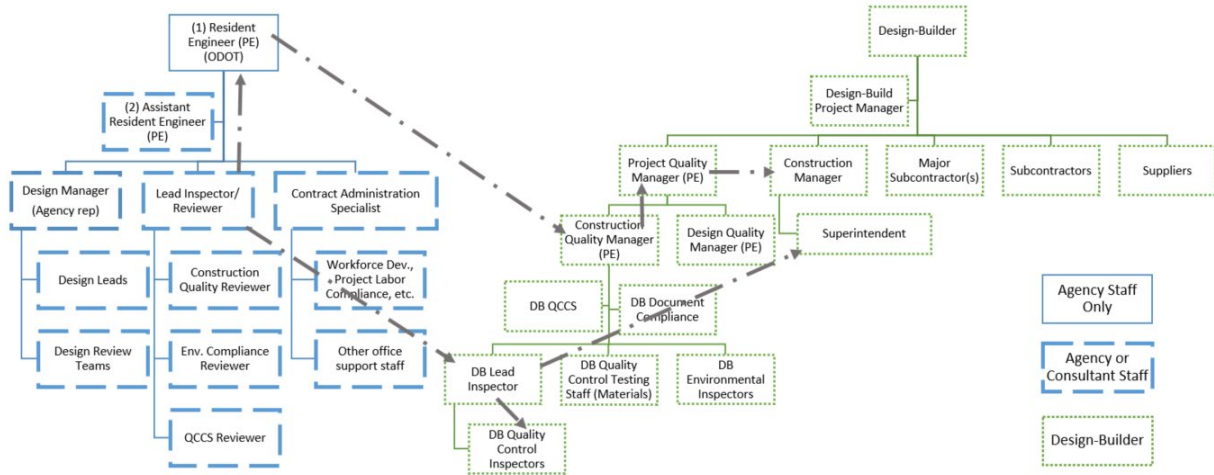
The process for the Agency's issuance of an NCI is as follows:

- The Agency construction quality reviewer identifies the nonconforming Work.
- The Agency construction quality reviewer drafts the NCI and submits it to the Design-Builder, where it is reviewed by the Design-Builder's Construction Quality Control Specialists, Quality Control Manager, and DB Quality Control Inspectors.
- The Design-Builder's Construction Quality Manager identifies the issue to the Design-Builder's Superintendent.
- The Design-Builder develops a plan to resolve the issue and communicates with the Agency's construction quality reviewer.
- Region QA and DB QC Testing Staff discuss the issue if the nonconformance involves Materials.
- The Design-Builder submits a written response to the NCI.



- The Agency determines the course of action to take, discussed below for nonconforming Work.
- The Agency approves the course of action selected and states it in writing to the Design-Builder.

Figure 13: Communication Scenario for Design-Build in-Field Discovered NCI Example



Dashed lines and arrows denote example communication pathways during a discovered NCI

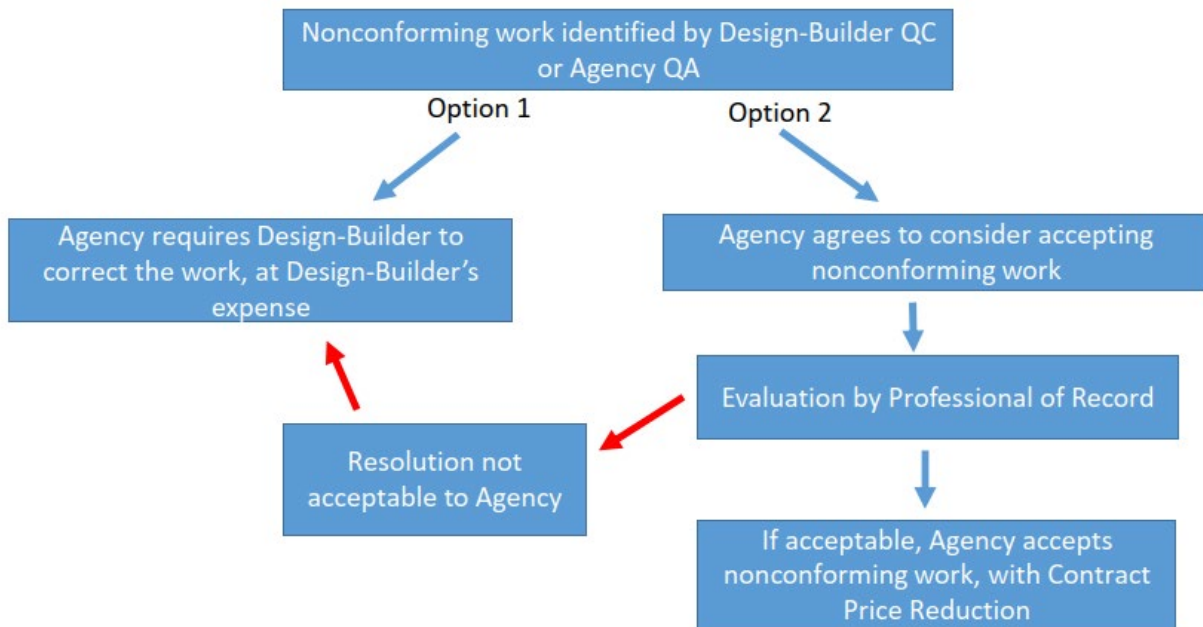
When nonconforming work is identified, the Agency reviews the issue and decides the course of action Design-Builder must take, including:

- 1) To require Design-Builder to perform remediation Work, at Design-Builder’s expense, to correct the nonconformance, or
- 2) To Accept the nonconforming work but reduce compensation to the Design-Builder in an amount equal to the diminution in value.

The Agency retains the contractual right to require either option; however, if it is not feasible or would be prohibitively expensive to require full correction and contract compliance, the Agency may consider an alternative (with a reduction in compensation) that meets the purpose and need of the original contract requirement.



Figure 14: Typical Design-Build Nonconforming Work Resolution Options



## (D) Agency Response to Nonconforming Work

When the Design-Builder proposes action in response to nonconforming work, the Agency’s role is to:

- Review the proposed action,
- Accept it, or
- Accept it with modification, or
- Direct a different disposition.

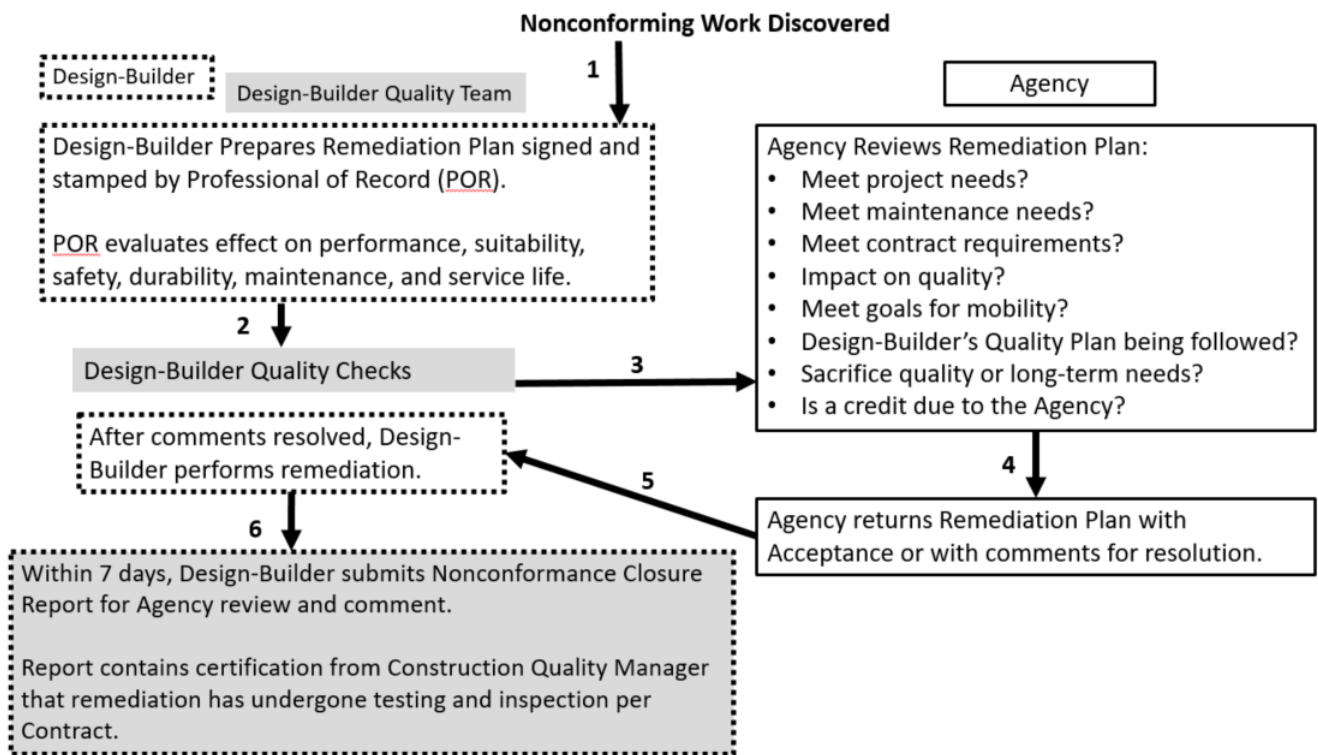
If the Agency PM requires the Design-Builder to remediate nonconforming work, the Design-Builder must consult with its POR and propose a plan to remediate the work. The remediation method selected must be contractually compliant. The POR must prepare a signed and stamped report evaluating the effect of the nonconforming Work and the Design-Builder’s selected remediation on the performance, suitability, safety, durability, long-term maintenance, and life of the element of Work. The remediation plan must follow the same Quality Management process as Design Documents.

The Agency will review the POR’s report and provide comments. The Design-Builder may not commence the remediation until the Agency has Accepted the report. The Agency must allow the Design-Builder and its POR the opportunity to find a solution that complies with the Contract. The Agency should minimize its effort in directing a solution. The Agency’s role is to oversee the Contract and allow the Design-Builder to innovate a solution to nonconforming Work. The Agency should ask questions such as:

- Initially, is the Design-Builder working with its POR to come up with a solution that meets the maintenance needs of the Project?
- Does the Design-Builder’s proposed solution meet the Contract requirements? If not, then what is the impact on quality? Is the Agency due a credit for quality?
- Does the Design-Builder’s proposed solution also meet the Project goals for quality, mobility or other specific attributes?
- Is the Design-Builder working with its Quality Management Team to address the issue?
- Does this solution sacrifice quality or is it an equitable solution long-term?

Within 7 days after completing the remediation, the Design-Builder submits a Nonconformance Closure Report to the Agency for Review and Comment. The report must include a copy of the Accepted POR’s remediation evaluation, signed and stamped remediation plan, and a signed and stamped certification from the Design-Builder’s Construction Quality Manager stating that the remediation Work has undergone inspection and testing in conformance with the Contract Documents.

Figure 15: Typical Design-Build Nonconforming Work Process Flow



The Design-Builder must maintain a log of all NCRs, NCIs, and audit findings with a unique numerical identifier assigned to each issue. The log must also contain a description and remediation status. It is important that the Agency regularly evaluate the status of the Design-

Builder’s open issues relating to nonconforming work and verify that issues are being corrected in a timely manner. Closure of open NCRs, NCIs, and audit findings is necessary to close out a project, and it is best to avoid having the Design-Builder attempting to correct instances of nonconforming work toward the end of the Project.

The Agency will regularly assess the Design-Builder’s progress resolving instances of nonconforming work and verify that issues are being corrected in a timely manner and in accordance with the procedures discussed above.

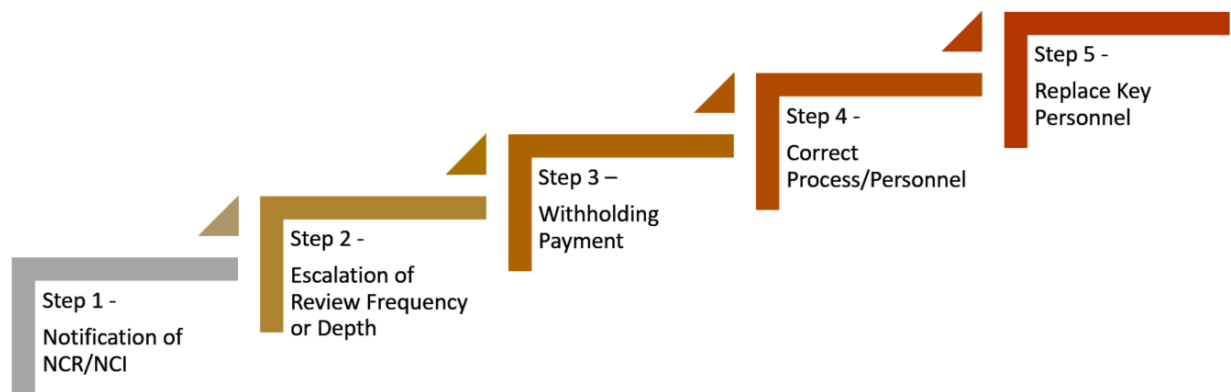
In addition to nonconforming work, the Agency can require the Design-Builder to correct or remove unacceptable work, which includes work that occurs beyond the Project limits, work contrary to the Agency’s instructions, or work performed without authorization (DB150.80).

## **2-10 – Oversight Escalation of Nonconformance**

When traditional oversight does not confirm the Quality Program’s effectiveness or if it identifies areas not functioning properly, the Agency will institute the following escalation of involvement process.

Figure 16: Typical Agency Corrective Action Escalation Steps

### **Agency Escalation Steps For Corrective Action on Quality Issues**



#### **Step 1 – Notification of NCR/NCI**

When an item is first identified as not meeting Quality Program requirements, the first level of action is to document the NCR/NCI and communicate the matter to the Design Builder. NCR/NCI’s may be communicated in a meeting, email, or phone conversation with the Quality Manager. It is important to document the method of dissemination used. If it is discussed in a meeting where someone other than Agency personnel distributes minutes, it is important to review the minutes to ensure that the notification was properly documented.

It is also important to clearly identify the following:

- The issue.
- The requirement.
- The current status.
- A date for resolution.
- A champion for resolution.
- A means to measure resolution.

### **Step 2 – Escalation of Audit and Review Frequency and/or Depth**

For Step 2, the Oversight (APM) Team either escalates the frequency of reviewing certain data or increases the depth of a particular review.

An escalation of Step 1 may or may not lead directly to a Step 2. For instance, if it was noticed that a submittal log was not posted in time, a more in-depth or more frequent review is probably not warranted (Step 1 would resolve the issue). However, if it was noticed that a technician was not identifying a piece of testing equipment properly in the documentation, this may automatically lead to a Step 2 escalation. This could involve reviewing other types of testing to ensure the mistake isn't common or reviewing the technician's paperwork more thoroughly to ensure that additional mistakes are identified and corrected.

### **Step 3 – Withholding Payment**

The Agency PM must determine when to withhold payment depending on the severity of the nonconformance or the risk to the Agency. Contact the ODOT Contract Administration Office before withholding all or a portion of a progress payment related to NCR's/NCI's.

This step can be implemented for several reasons, but the primary instance would be when an item is constructed and at the time of the Pay Request an NCR/NCI is still outstanding. Another instance would be if a design package is submitted without proper certifications or other supporting data.

Although these are apparently straightforward situations, there are many situations where payment or a portion of the payment is allowed to continue even though an NCR/NCI may be outstanding.

As an example, assume that during MSE wall construction a large portion of a wall was constructed but it was discovered that a few panels placed at the top did not meet specified strengths. Payment should be withheld to cover the Agency's risk for nonconforming work until the Design-Builder's POR has an opportunity to evaluate the work and determine if it is suitable or must be removed and replaced.

This step could also be implemented if there is a consistent lack of adherence to a requirement. For example, if the Quality Management Team consistently neglected addressing design

comments in a timely fashion, it may be appropriate to withhold design payment (as documented through an NCI).

#### Step 4 – Correct Process and/or Personnel

This step is implemented when continued nonconformance is occurring in a process or activity (e.g., the RAS continually finds data lacking from the files, design submittals routinely missing required certifications, density testing is not being performed at the required frequency or by certified technicians). If NCRs/NCIs have been written numerous times and payment has been withheld, it is time to either provide training, change a process, or ask for new or additional personnel to be assigned. If a process or personnel are changed, a change to the Quality Plan is required.

#### Step 5 – Replace Key Personnel/Major Subcontractors

If an unacceptable action or nonconformance continues, the Agency PM can request that the Design-Builder replace personnel for lack of competence. Several areas within the Contract Documents specify that personnel can be removed from the Project, including Article 3.6 and 3.7 of the Design-Build Agreement, DB150.40, DB170.78, DB180.21, and DB180.30. Refer to DB180.35 for additional information related to the replacement of Key Personnel or Major Subcontractors.

The APM team should note that none of the preceding steps are meant to take over the Design-Builder's Work. It is important to maintain the Contract lines of responsibility and not take over performing a function that clearly belongs to the Design-Builder. The Agency can define the issue, train people, and provide guidance, but it is important to maintain clear boundaries and not take over the Design-Builder's functions.

## 2-11 – Quality Price Adjustments

The Contract requires the Design-Builder to furnish Materials and perform the Work in a manner that closely conforms with or exceeds contract requirements DB150.20.

Construction Materials and workmanship fall into one of the following categories:

- Materials and/or Work that are in Close Conformance with contract requirements and paid at full price.
- Specified Materials and/or Work that are in Close Conformance with or exceed the Contract requirements and will be paid at the full price plus a premium price adjustment (bonus).
- Materials and/or Work that are NOT in Close Conformance with the requirements but considered suitable for the intended purpose may be approved for use with an appropriate adjustment (reduction) in price.
- Materials and/or Work that are NOT in Close Conformance with the Contract requirements and NOT considered suitable for the intended purpose shall be rejected

and not incorporated into the finished Work, unless the defects are corrected in a manner acceptable to the Agency PM.

## (A) Nonconforming Materials or Work

The Design-Builder's Quality Management Team and/or the Agency PM's team determine whether the Materials and/or Work performed is in conformance with contract requirements. The Design-Builder's Inspectors and/or testing laboratories are responsible for documenting and notifying the Agency if Materials and/or Work do not meet Contract requirements.

If Work is identified as "nonconforming," the POR and Agency PM have a shared responsibility to determine whether the Materials and/or Work are suitable for their intended purpose. This requires documentation from the Design-Builder's POR and the Agency PM that both parties agree to this determination.

The Agency PM must then confirm/determine the price adjustment for the diminished value to the Agency, document the adjustment, and provide written documentation to the Design-Builder regarding the basis of the adjustment.

DB contracts also allow Design-Builders to receive a premium price adjustment (bonus) for Work or Materials that exceed requirements. Examples of this type of adjustment are:

- Asphalt Concrete Pavement (ACP) bonus for Materials.
- Pavement Smoothness (Ride Quality): ACP and PCC pavement bonus for workmanship.

## (B) Standard Adjustments

Standard adjustments are those for which there is a defined process for applying either a bonus payment for qualifying Materials and workmanship or a reduction in payment for inferior Materials and workmanship. Section 12C of the ODOT Construction Manual has many examples of standard price adjustments.

The most common positive price adjustment (bonus) is for ACP bonus. The ODOT Construction Manual, Chapter 12-C, contains instructions for completing the Statistical Analysis Excel spreadsheet called StatSpec. StatSpec is used to calculate pay factors and composite pay factors used in determining asphalt bonuses for quality material, as well as price adjustments for non-specification material. Note that the StatSpec spreadsheet is the only Agency-approved and accepted method for calculating ACP bonus payments.

The most common negative price adjustments are for failing concrete (Concal spreadsheet), failing asphalt cement ("Summary of Failing Test Results for Asphalt Cements" form), and failing aggregates ("Summary of Failing Test Results for Aggregate" form).

These forms are located both in the Construction Manual and on the ODOT Construction website at: <http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/ConstForms1.shtml>.



Filling out these forms is self-explanatory. The RAS can answer any questions and should be consulted prior to assessing any price adjustments. All data entries used to calculate the adjustments must be checked by someone other than the person completing the adjustment. This can be a time-consuming task for large projects. It is important that the checker sign and date the form when this task is complete.

The Agency PM will sign off on the adjustment, which will be processed as a Series 6000 adjustment on the monthly Pay Request.

## **(C) Certified Payrolls**

Failure to submit certified payrolls is also an example of Standard Adjustment. The Agency PM will prepare the adjustment in this case, however, which is different from normal adjustments. The Design-Builder will receive the money back once it complies with the certified payroll requirements.

## **(D) Non-Standard Adjustments**

Non-standard adjustments do not have a standard method for calculating a price reduction. Once the material is found to be suitable, an analysis of the reduction in the product's useful life should be performed. This is done by considering one or more of the following:

- Based on the expected life of the specified material, how much value is being lost because of the shorter expected useful life of the supplied material?
- How much additional maintenance will be needed for repairs due to the lesser quality of the supplied material or workmanship?
- Are there any other impacts that may occur due to the lesser quality of the supplied material or workmanship?

Assistance should be obtained from the Region, RAS, or Contract Administration Unit when determining these impacts.

A common method for figuring a non-standard adjustment is to calculate the percentage of how far the material is out of specification and to reduce the price accordingly.



### Price Adjustment Calculation Example

Galvanized pipe requires 1.8 oz. galvanizing. The pipe tested at 1.5oz galvanizing. The pipe cost is \$11.42/meter and 112 meters were used:

$$\text{Step 1: } (1.8 - 1.5) / 1.8 = 0.17$$

$$\text{Step 2: } 0.17 \times \$11.42 = \$1.94$$

$$\text{Step 3: } \$1.94 \times 112 = \$217.28$$

Therefore, a negative adjustment of \$217.28 would be applied.

Other examples of non-standard adjustments are included in Chapter 5 of the QCCS Manual.

The APM team will prepare non-standard adjustments. The Agency PM can post the adjustment to the monthly pay estimate as a Series 6000 adjustment. Written notice and documentation of the adjustment must be forwarded to the Design-Builder.

The RAS must review all non-standard price adjustments because the adjustments and all workups (calculations) of these adjustments are considered to be “pay documents.” It is therefore important that all documents are filed together in the price adjustment book for the Project.

## 2-12 – Hold Points

The Design-Builder’s Quality Plan must identify Hold Points where critical aspects of the Work are inspected before any further progress occurs (DB154.50). Hold Points are either at critical points of the Work or where it would become impractical to evaluate the adequacy of workmanship or Materials beyond the Hold Point. Typically, Hold Points occur after the Acceptance of the RFC Plans and Specifications during the construction phase of the Work.

Both the Design-Builder and the Agency have a role inspecting Hold Point Work. The Design-Builder must provide the Agency at least 3 days advance notice before each Hold Point. There are two types of Hold Points:

- 1) Agency Hold Points – Agency **must be** at and inspect an Agency Hold Point;
- 2) Design-Builder Hold Points – Agency **may** attend and inspect a Design-Builder Hold Point.

**Work may not proceed beyond the Hold Point until the inspection or other activity is performed and the owner of the Hold Point (Agency or Design-Builder) provides written authorization to proceed.**

Hold Points are critical to DB, as they provide a point where the Work on a particular item pauses so that it can undergo inspection. A major aspect of DB is that design and construction proceed concurrently, meaning construction can move more quickly on DB than it would on a traditional DBB project. Concurrent design and construction also mean that construction may start before the entire design for the Project is completed.

This timing creates risk for the later stages of design, as nonconformance or other issues in early construction items may impact the ability for subsequent Work to conform to the Contract requirements. Hold Points introduce the opportunity to perform a check before the Work proceeds past a point at which it would be difficult to determine the presence of a nonconformance or where it may become prohibitively expensive to bring a Work item into compliance with contract requirements.

The DB General Provisions may define specific Hold Points for a project that must be included in the Design-Builder's Quality Plan. Refer to Table DB154.50-1 in DB154 for a project's required Hold Points. The Design-Builder may choose to include additional Hold Points in the RFC Plans and Specifications.

Any nonconformance detected during a Hold Point must immediately be identified to the Design-Builder's quality organization. The Design-Builder must correct the nonconformance as discussed in the Contract Documents. See Chapter 2, section 2-9 in this Manual.

## **Chapter 3 – Design Process**

This chapter describes the responsibilities of the Design-Builder’s design development team and those of the independent design quality team, as well as how the Agency interfaces with design development.

With DB projects, the initial push is to work through the design development phase at the Design-Builder’s pace. Design development incorporates the Design-Builder’s site investigations, surveys, and Utility and Railroad coordination and considers Stakeholder input and ROW, permitting, and mobility issues. This phase essentially begins when the Design-Builder’s team is assembled before the RFQ is issued.

It is beneficial for the Design-Builder’s Team members to have experience with Agency projects and be knowledgeable about the Project’s site-specific conditions. Starting with the release of the RFQ, the Design-Builder’s Team tailors its approach to the specific DB Project and develops concepts and solutions that are appropriate for the Project scope outlined in the RFQ. The Design-Builder’s Team typically communicates with Agency staff from the APM team (e.g., design, environmental, construction, and maintenance disciplines) to gain an understanding of the Project risks and Agency concerns prior to RFQ release. This allows the Design-Builder’s Team to start developing its approach to the Project scope, schedule, and risks before the RFQ is released. At this point, the Design-Builder’s Team initiates the Project designs and advances them in order to make a preliminary determination of quantities and to assess technical risks.

The Design-Builder is responsible for developing a design of the Project that complies with the Contract Documents, and in particular, the Basic Configuration. The Design-Builder must have a Design Firm that is either a Subcontractor or, if the DB Entity is a joint venture, partnership or limited liability organization, the Designer may be a member or equity holder. The Designer designates a POR responsible for the Design Services for each technical discipline within a DU. The POR signs and stamps the design for which the POR is responsible before it is constructed. As discussed in Chapter 2 in this Manual, the Design-Builder must have a Design Quality Manager to oversee QC of the design.

The Agency will have provided a conceptual design (the Proof of Concept Plans) as part of the DB General Provisions Attachment C - Reference Documents in the RFP with aspects of the design partially completed, typically no more than 30% of complete design. The Design-Builder is permitted to use the Proof of Concept Plans as a foundation; however, the Design-Builder is not entitled to rely on the Proof of Concept, nor is the Design-Builder required to use the Proof of Concept Plans as long as the design submitted complies with the requirements of the Contract Documents.

Expressing design development in terms of the percentage of design complete is a subjective matter and varies by discipline. However, to progress payment for design it is imperative to forge agreement of design milestones with associated percentages complete. The intent of the “design mobilization meeting,” as described in DB155, is for the Agency and Design-Builder to

discuss and reach alignment on design milestones. The Design Review Plan is agreed upon at this meeting, along with an agreement on DU breakdown and progress measurement for design.

The Design-Builder's Baseline Schedule conveys to the Agency PM and the APM team how the Design-Builder is planning to develop the design as well as when the Agency must review design submittals to maintain schedule compliance. The Baseline schedule also helps to form the basis for the "design mobilization meeting."

Table 4: Typical Progression of Design-Build Project Design

Milestone	Design Complete	Month Count <sup>6</sup>
RFQ Release	10% <sup>7</sup>	1
Proposals Submitted	20% <sup>7</sup>	3
Contract Notice to Proceed	30%	5
DD Submittal	40% to 60%	7
ID	60% to 75%	Varies
RFC	60% to 95%	10
As-Constructed Plans & Specifications	100%	Post-construction

The Agency-Supplied Specifications contain the technical parameters for the design and construction of the Project, and consist of two types of requirements: prescriptive and performance-based. Prescriptive Specifications are mandatory requirements that the design must include, or may require specific Materials or means and methods. For example, a prescriptive design requirement might be that the Highway have three lanes of traffic in each direction, or that lanes must be 12 feet wide. There is little room for interpretation in how to comply with a Prescriptive Specification.

Performance-based Specifications leave room for Design-Builder innovation. An example of a performance-based Specification may be that the design achieve anticipated traffic speed of no less than 40 mph during rush hour based on projections of traffic volumes in the succeeding 10 years. The Design-Builder has discretion for how to develop the Roadway to meet this requirement.

When reviewing design submittals, it is important to distinguish between performance-based and Prescriptive Specifications. The Performance Specifications for DB projects, located in

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<sup>6</sup> Actual design durations will vary, depending on project size, complexity, schedule constraints, etc.

<sup>7</sup> Some environmentally critical, complex, or expensive elements may require advancement of pre-design and RFP plans, increasing those aspects of the design complete percentage upwards in order to identify, quantify, and properly assign risks.

DB141, will contain performance-based requirements and may also contain requirements that are prescriptive in nature for the following technical disciplines:

- Bridges / Structures.
- Geotechnical.
- Hydraulics.
- Roadway geometrics.
- Drainage.
- Guardrails and barriers.
- Highway illumination and electrical.
- Permanent traffic control.
- Pavement.
- Landscape and aesthetics.
- Surveying and mapping.
- Intelligent transportation systems (ITS).
- Traffic operations.
- Temporary traffic control.
- Environmental compliance.
- Public engagement.
- DBE, workforce diversity, and mentoring.
- Maintenance during construction.

DB projects are structured so the design can advance at the Design-Builder's pace with minimum "progress stop points" for Agency PM's review and Acceptance. These occurrences are minimized in order to keep the Design-Builder in control of the schedule.

It is solely the Design-Builder's responsibility to provide engineering documents that develop a finished product in accordance with Contract requirements. The purpose of the Agency Design Reviews is to assure that the Design-Builder follows and fulfills contract requirements. The Agency's Design Reviews are not intended to provide a technical competency review of the Design-Builder's engineering documents (this is the responsibility of the Design-Builder and the Design-Builder's Quality Management Team). Contract requirements also specify that prior to submittal to the Agency, design submittals must be complete to the level agreed upon during the design mobilization meeting for each development stage and DU.

The Agency's role with respect to the design of a DB project is discussed in detail in this Chapter. The Agency's primary responsibility is to review the Design-Builder's design

submittals for conformance with the Contract Documents, including both the prescriptive and performance-based requirements. Agency reviewers will comment on the design submittals, identifying instances of nonconformance with contract requirements and other issues identified with the design. Where Agency reviewers discover that the Design-Builder has not incorporated a Contract requirement into the design, the nonconformance must be identified in a comment.

The Agency verifies that the design meets the Contract requirements. If the Agency discovers during its Design Reviews or audits that the design may not comply or the supporting information provided by the Design-Builder is inconsistent or contains errors, then the Agency PM is responsible for reviewing the information identified, evaluating the potential contract nonconformance, and notifying the Design-Builder. If the Agency PM determines, after discussion with the Design-Builder, that a potential nonconformance does not in fact conflict with any Contract requirements, the Agency must decide whether the risk to the Project is sufficient to warrant a change to the design, which may result in a CCO.

Compliance with a performance-based specification may involve subjective interpretations of the requirement and how the Design-Builder proposes to meet it. Engineers can often have differing opinions on what constitutes compliance with a performance-based specification. If there are questions or doubts whether a submitted design meets the Performance Specifications, then the Agency PM may comment on the issue and request additional information from the Design-Builder. In response, the Design-Builder's POR is responsible for demonstrating that the design meets the performance requirements in the Contract.

Agency review comments for all Design Review stages are to be documented and forwarded to the Design-Builder within 21 days, or as otherwise specified or directed, from receipt of the package for review, unless an alternate time schedule is agreed upon at the Design Mobilization Meeting(s). Where applicable, notification of the Agency's Acceptance or rejection shall be included in the transmittal to the Design-Builder.

See Appendix 2 - Design-Build Review Process – Design Process.

The Design-Builder must generally resolve Agency comments before moving to the next stage of the design (e.g., from the DD to the ID to the RFC designs), depending on the disposition (discussed below) that the Agency issues to a design submittal. To foster a collaborative approach, the Design Review process provides for meetings between the Agency and the Design-Builder to address and resolve Agency comments. If the Project requires co-location, the Agency should take advantage of the proximity to the Design-Builder's Designer to resolve design issues.

In addition to reviewing the Design-Builder's designs for compliance with the Contract Documents, the Agency's role is to receive and review the Design-Builder's design quality documentation. The Design-Builder is required to submit quality documentation with each design submittal demonstrating that the design underwent quality checks in accordance with the Contract Documents and the Accepted Quality Plan. The Agency verifies that the Design-

Builder has properly submitted its quality documentation with each design submittal and that the quality documentation is complete and sufficient.

In addition to the Quality Plan review, the Agency will periodically audit and spot-check the Design-Builder's quality procedures and records to assure compliance with the Accepted Quality Plan (see Chapter 2, "Quality Management" in this Manual).

The Agency places a high importance on the Quality Plan and the Design-Builder's implementation of this plan. Adherence to this plan helps ensure that design and construction are conducted in accordance with contract requirements and delivered to the satisfaction of the Agency and all project Stakeholders. The Quality Plan and the resulting quality records are the Design-Builder's responsibility and are available at any time for the Agency's review and audit.

## 3-1 – Design Firm Subcontracting

As an initial step at the commencement of the design process, the Agency must verify that the Design-Builder has executed a proper Subcontract with the Design Firm and must approve the Subcontract in accordance with DB180.21. For a full description of the requirements for Subcontractors, see Chapter 4, section 4-10 in this Manual.

With respect to the Design Firm, the Agency PM will verify, in addition to all other subcontracting requirements provided in DB180.21, that:

- The Agency is named a third-party beneficiary of the design Subcontract;
- The Subcontract provides that the Design Firm must turn over all Work product to the Design-Builder, and in turn, to the Agency, on request;
- The Design Firm waives all rights to claim that the Agency violated the Design Firm's intellectual property rights by use of the Work prepared as part of the Design Services; and
- The Design Firm is required to obtain professional liability insurance in the amount stated in the Contract Documents.

The Design-Builder may not seek payment for Design Services or submit designs for Agency review until the Agency has verified that the Design-Builder has a proper subcontract in place with the Design Firm and the Agency has consented to the subcontract.

## 3-2 – Design Review Procedures

Article 2.1.6 of the Design-Build Agreement provides the general term governing the Agency's review, comment, and Acceptance of the design and construction Work as follows:

"The Agency's consideration, Review and Comment, or Acceptance of any matters, or the Agency's authorization of any action, will not be deemed or construed as relieving the Design-Builder of its sole responsibility for, and its complete and exclusive control over the means, methods, sequences and



techniques for, performance of the Work in accordance with the terms of the Contract.”

The Agency’s Review and Comment on the Design-Builder’s Work does not shift the contractual responsibility for the Work from the Design-Builder to the Agency.

However, Review and Comments should align with the requirements of the Contract Documents and not preferences of Agency reviewers. The Agency PM will schedule a pre-Design Review meeting to familiarize Agency reviewers with all contractual requirements.

### **(A) Risk based Design and Quality Audits**

The Design-Builder is responsible for achieving the Contract requirements during the design and construction phases of the Project. The Design-Builder’s Design Quality Manager’s QC review should be at the level similar to the QC review conducted by Agency on a DBB project. Applying a risk-based approach to the review of design and quality documentation submittals allows the Agency to spot check areas and determine if the Design-Builder’s Design Quality Manager is performing reviews appropriately, or if there are areas where the Agency is finding nonconformance.

During all stages of Design Review, the Design-Builder’s Design Quality Manager shall maintain a Comment and Response Log that indicates agreement and closure of comments as the design moves to RFC. Agency comments are placed into this log, which includes room for the Design-Builder’s responses. This log identifies design milestones and appropriate DUs.

The Design-Builder’s response to comments must be agreed upon by the Agency at three points in the design development and review process:

- 1) DD in order to receive Acceptance,
- 2) ID in order to receive Acceptance, and
- 3) RFC in order to receive Acceptance prior to construction commencing.

Comments may be deferred to a subsequent design milestone when more details are known, but the Design-Builder’s response should stipulate this. The option to defer a response to a comment is not available for the RFC submittal. Agreement on all unresolved comments is required prior to commencing construction on that particular DU/work package.

The Agency’s PM will develop a risk-based process for identifying Contract requirements and focus areas for Agency Design Reviews and Contract conformance audits. The Agency PM will review the Contract and initiate the strategy for identifying Contract requirements to be verified during the Agency’s Design Review process. The content for the Contract reviews or audits should be developed after the conformed Contract is completed to ensure consistency and accuracy with the Contract requirements. In accordance with Article 1.7.2 of the Design-Build Agreement, the conformed Contract also incorporates the Design-Builder-supplied minimum Contract requirements, performance obligations, and ATCs included in the Design-Builder’s

Proposal that the Agency has determined meet or exceed the minimum Contract requirements established by the Agency.

The Agency PM may also seek help with the development of this document and assignment of risk from the Owner's Representative. Creation of an independent document that outlines the "shall haves" in the Performance Specifications could be arranged by the different disciplines outlined in the Performance Specifications. Some of these requirements may also include prescriptive requirements.

The Design-Builder's Contract includes costs for resourcing of the Quality Management Team, including the Design Quality Manager's Design Reviews. It is therefore not an efficient use of project resources if the Agency duplicates the Design-Builder's Quality Management effort with the Agency's own staff or the Owner's Representative.

### (B) Performance Specification Reviews & Audits

The following is a brief example of Performance Specification requirements that were collected by the APM team. It was also determined in this example that these Performance Specifications should be included and verified in the risk-based Design Review.

Example #1: Performance Specification:

The Agency reviewer gathered the following Performance Specification requirement:

**Bridge Design Elements:** *For skewed Bridges, skew shall be limited to 45 degrees for precast slabs and 30 degrees for precast boxes.*

The Agency reviewer developed the following Design Audit Review Question:

*Does the design limit the skew to no more than 45 degrees for any pre-cast slabs?*

*Or*

*Does the design limit the skew to no more than 30 degrees for precast boxes?*

If the design submittal complies with the Performance Specification, the reviewer auditing for Contract conformance can confirm that the Design-Builder has met its contractual obligation.

### **Example #2: Performance Specification:**

The Agency reviewer gathered the following Performance Specification requirement:

**Roadway Design Elements:** *The new Structure shall be constructed to accommodate a minimum Shoulder width of 8 feet for the right Shoulder and 4 feet for the left Shoulder.*

The Agency reviewer developed the following Design Audit Review Question:

*Does design indicate a minimum Shoulder width of 8 feet for the right Shoulder?*

*Or*

*Does design indicate a minimum Shoulder width of 4 feet for the left Shoulder?*

If the design submittal complies with the Performance Specification, the reviewer auditing for Contract conformance can confirm that the Design-Builder has met its contractual obligation.

The Design-Builder may intend to exceed certain Contract requirements, such as providing a 6-foot Shoulder on the left side. This could be because the ROW limits allow for additional space due to changes in parking, or because the Roadway alignment constraints changed during the design. Note that areas where the Design-Builder is surpassing the Contract requirements should be documented, as that information could be pertinent and important to other aspects of the Project, such as (in the case of the example) to the Agency's overall goals to enhance bike and pedestrian access.

Upon completion of any Design Review process that audits the design submittals for compliance with the Contract, the Agency PM will review and verify that the review comments from the Agency reviewers and (if applicable) the Agency's consultant, pertain to actual contractual requirements, and not just reviewer preferences.

In some cases, a reviewer may also include a comment that may be subjective or include preferences that exceed the Contract requirements. The Agency PM may need to provide additional training or information to the Agency reviewers to confirm that the review process is centered on the Contract requirements, including requirements that are performance-based and offer innovative solutions, allowing for a practical design. Some review comments may focus on concerns about maintenance considerations or long-term life cycle costs.

The Agency PM will need to strike a balance between administrating the Contract as written and determining if there are further inquiries or modifications to the Design-Builder's design that could result in an Agency directed change to the design. Changes that are minor in nature could become significant changes later during the Project.

It is important to consider that when the Agency's direction becomes overly prescriptive, it can shift the risk of design errors from the Design-Builder to the owner, effectively negating one of the benefits of the DB delivery method. Moreover, overly prescriptive comments lessen the potential for innovation that warrants use of DB. When reviewing comments before returning them to the Design-Builder, the Agency PM is responsible for striking this balance.

## **3-3 – Design-Builder’s Design Review Plan**

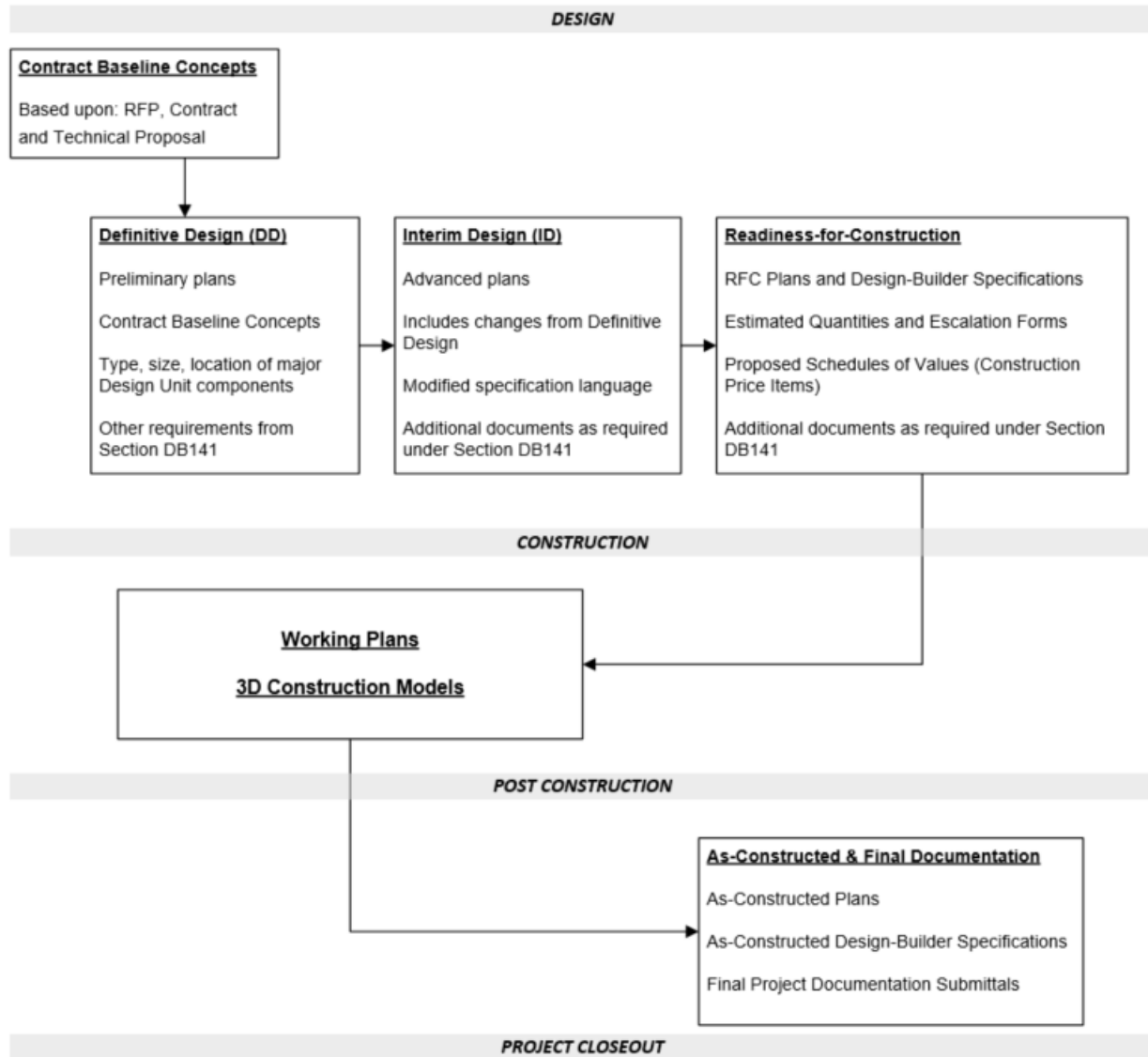
The Design-Builder is required to submit a Design Review Plan (DB155.03) that describes the quality review responsibilities of the Design-Builder’s Design Manager and the independent responsibilities of the Design-Builder’s Design Quality Manager. The Design-Builder shall submit the Design Review Plan to the Agency prior to the design mobilization meeting.

The Design Review Plan must describe the level of design completion that the Design-Builder’s Design Firm shall accomplish for each of the planned stages of design development and must include a description or checklist for each DU, clearly identifying the design packages that will be reviewed and submitted. The Contract Documents require the Design-Builder to submit iterative design packages for each DU.

The iterative design stages consist of the DD, ID, and RFC Plans and Specifications. The Design Review Plan must contain the details of what each iterative submittal will contain, including, for example, the percentage complete that the Design-Builder proposes for each step in the design submittal process. The Design-Builder may elect to have different completion percentages at each design stage for different packages, as long as there is a basis for performing the design in this manner. Note, however, that the Design Review Plan cannot simply state the completion percentage for each submittal; rather, the Design Review Plan must contain the detailed information required by DB155.03.

When reviewing the Design Review Plan, the Agency will verify that the Design-Builder has presented a thorough process for the submittal of DUs and that the procedures are sufficient to allow the Agency to review the submittals.

Figure 17: Typical Design-Build Design Milestone Process and Related Design Documents by Project Phase



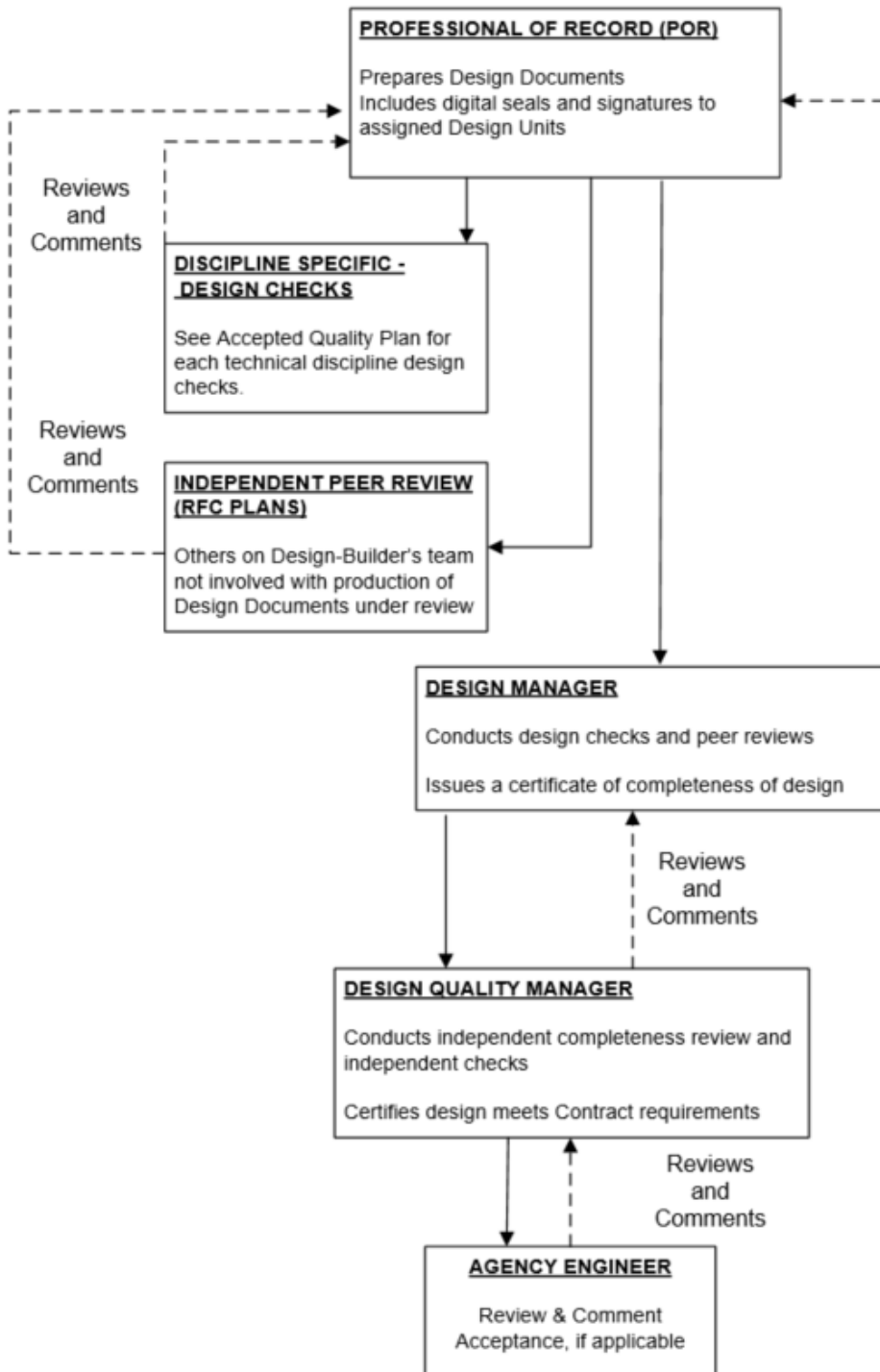
Additionally, the Design Review Plan must include detailed procedures the Design-Builder will follow to document all steps of the quality review process for each design submittal, including documentation of all reviewer comments and the resulting determinations made or actions taken in response to the comments. These steps must be in accordance with DB141 and DB155.

The Design Review Plan must address the steps for completion and review of the DD, ID, and RFC Plans. The Agency’s responsibilities and actions when the design does not comply with the Contract Documents are discussed further below in each step of the Design Review process.

As part of the Agency's review of the Design Review Plan, the Agency will verify that the Design-Builder has properly documented the Review and Comment process, as well as the Design-Builder's design quality process.

The Design Review Plan must include a description of how the Design-Builder will review and address Agency comments on design submittals, including by setting up meetings with the Agency to respond to comments that require discussion. Additionally, the Design Review Plan describes how the Design-Builder will update the design for the subsequent submittal and perform all required quality checks before re-submitting to the Agency for review.

Figure 18: Typical Design-Build Design Review Process (See DB155)





## (A) Disposition of Design Submittals

To facilitate review of design submittals by the Agency, the Agency will establish dispositions of design submittals. While these may vary by project, they will generally include the following.

Table 5: Disposition Definitions

Disposition	Definition
<b>Acceptance with No Exception Taken</b>	The Agency has no further comments on the submittal or any comments provided may be accepted or rejected in the Design-Builder’s discretion. The submittal may proceed to the next iteration, or, if this disposition is given to the RFC submittal, the design is ready for construction.
<b>Acceptance with Make Changes Noted</b>	The submittal has instances of nonconformance with the Contract Documents that are not material in nature or that do not warrant a resubmittal at the same level of design. The Design-Builder must correct the nonconformance(s) but may proceed to the next iteration of the design (e.g., DD to ID or ID to RFC), making sure to address the Agency’s comments in the subsequent design submittal.
<b>Revise and Resubmit</b>	The submittal has instances of nonconformance with the Contract Documents but is not materially deficient. The Design-Builder must correct all the nonconformance noted and re-submit for review at the same level of design.
<b>Reject</b>	The submittal is materially deficient and does not comply with the Contract Documents. The Design-Builder must correct and resubmit the submittal in its entirety.

The Agency PM will assign a disposition to each DU submittal package depending on the nature of the comments. The Design-Builder’s Design Review Plan must specify how the Design-Builder will address each of the dispositions that the Agency may assign to a design package.

If a reviewed item meets contract requirements and the Agency wishes to alert the Design-Builder of issues to be addressed in the next milestone review, the “Acceptance with Make Changes Noted” category will be indicated. These reviewed items appear to be acceptable to the Agency but may need more consideration to confirm that position.

If a reviewed item either does not comply with the Contract or generates questions regarding contract conformance, the “Revise and Resubmit” category will be indicated. These reviewed items are not acceptable to the Agency, and a Design-Builder response and further discussion will be required prior to obtaining Agency concurrence with these items.

When all items are reviewed and deemed acceptable, the Agency will issue a formal notification to the Design-Builder of Acceptance (if appropriate) or Acceptance with comments. The final Comment and Response Log maintained by the Design-Builder will be reviewed in a meeting

(preferable) or by submittal to the Agency PM for agreement with the Design-Builder's final responses prior to starting construction.

Design development milestones that are "Review and Comment" actions by the Agency (ID) allow the Design-Builder to proceed with the design (at its risk) concurrently while responses are generated and the next milestone submittal is prepared. This allows the Design-Builder to remain in control of design development and is predicated on how well the Design-Builder implements internal reviews and quality checks so that contract requirements are met.

## (B) Other Agency Reviewers

The Agency PM, with assistance from an Agency Consultant as needed, will coordinate Review and Comments from a number of Agency Stakeholders. This review should include the following:

- ODOT Region (including District Maintenance).
- Engineering and Technical Services Branch.
- Statewide Mobility Services:
  - Roundabouts - If the Accepted Design-Builder's design affects the roundabout details that were included in the Conditional Memorialized Agreement during project development, the Design-Builder will need to work with Region's Mobility Liaison and ODOT Statewide Mobility Services Team to re-engage the Mobility Advisory Committee (MAC) and seek an updated final Memorialized Agreement (Highway Directive DES-02).
  - Reductions to vehicle-carrying capacity - If the Accepted Design-Builder's design affects the reductions to vehicle-carrying capacity impacts and ODOT's proposed actions that were agreed to by the Stakeholder Forum during project development, the Design-Builder will need to work with Region's Mobility Liaison and ODOT Statewide Mobility Services Team to re-engage the Stakeholder Forum and seek an updated final Record of Support.
- FHWA Technical Personnel (Federal funded projects, bridge, interstate access, etc.).
- County and/or City Engineers (if projects impact their facilities).
- Construction Section.

See Appendix 2 - Design-Build Review Process – Design Process.

## 3-4 – Design Units

The overall design for a project will generally be subdivided into "work packages" called Design Units (DUs). A DU is a unit of design that can be checked and reviewed for design integrity as a self-contained RFC Plans and Specification package. DUs are proposed by the Design-Builder and subject to Agency approval.

The Design-Builder may propose to develop the design for a specific Price Center as a single DU, or through multiple DUs. However, the Design-Builder may not include Work from more than one Price Center. Therefore, the number of DUs a project includes will always be equal to or greater than the number of Price Centers.

## 3-5 – Design Development Meeting

The Design Development Meeting between the Design-Builder and the Agency takes place to finalize the DU breakdown, content, and design submittal schedule in accordance with DB155.05. The design development meeting will take place after the Design-Builder submits the Design Review Plan, and can serve as a forum to discuss Agency comments on the plan.

During the meeting, the following topics will be discussed, at a minimum:

- **DU breakdown:** the Design-Builder’s proposed design packages for units of the Work. The Design-Builder has discretion in how to break down the Project’s overall design, which correlates to the Design-Builder’s approach to construction sequencing. Agency comments should therefore only be directed to issues that may be noncompliant with the Contract Documents or if there appears to be a significant flaw in how the design packages are broken down. Agency comments may also address situations where it appears that the design sequence may conflict with any restrictions that are contained in the Contract Documents (e.g., lane and road closures restrictions, Intergovernmental Agreement restrictions, seasonal limitations).
- **Design submittal schedule:** the Design-Builder’s proposed schedule for submitting each design package. Similar to the DU breakdown, the Design-Builder has discretion in how it will stage its design submittals to meet the deadline for completing a project. Agency comments will be limited to significant issues only, such as a discrepancy between the design submittal schedule and the Preliminary Baseline Schedule or other major apparent flaws in the Design-Builder’s schedule.
- **Other Content:** including the level of completion of the design packages (DD, ID, RFC Plans and Specifications), processes for reviewing comments, and how the Design-Builder will review, assess, and close Agency comments.

## 3-6 – Design Mobilization Meeting

The Design Mobilization meeting is the Agency’s opportunity to become familiar with how the Design-Builder plans to perform the design Work. During the meeting, the Agency’s Project Management team will seek to understand how the Design-Builder will submit the design, and the expectations for each iteration of the DUs. The Agency PM and design reviewers will raise any perceived issues, including if the design approach does not include sufficient attention to quality or if it does not sufficiently account for the Agency’s oversight role.

The APM will coordinate with the Design-Builder to schedule the meeting and build the meeting agenda. The Agency PM will ensure that the appropriate Agency staff attend the meeting.

During this meeting, the Design-Builder's design staff are introduced to the APM team and the design process and protocols are discussed and agreed upon in accordance with DB155.06. The intent of this meeting is to address outstanding issues related to the design process and to close remaining comments on the Design-Builder's approach to design the Project. The following topics (as required) will be discussed at the meeting:

- Discussion of Contract Baseline Concepts.
- Review and verification of the Basic Configuration and other constraints prior to development of the Work.
- An update on the Quality Plan status and requirements to complete.
- Confirmation of the design process and protocols, including meetings to discuss comments.
- An update on the status of the Design Review Plan and design Quality Management, to the extent not then completed.
- Review of the content of packages per DU stage (DD, ID, RFC).
- Cost breakdown of design per DU and per stage of design (DD, ID, RFC, and As-Constructed).
- Agreement for design development, review process, submittals, and turnaround times for comments and Agency response schedules (if different from standard 21-day period).
- Accounting for third-party review of designs (government agencies, Tribes, Railroads, and Utility Owners).
- Processes for Design Exceptions, Design Deviations, and Operations Approvals.
- Review of permit requirements and project commitments (from Proposal).
- Status of the DU Report.
- Terms of payment after submission of a design package.
- Any executed or pending CCOs affecting design (including, if applicable, incorporation of any non-successful Proposer ATCs that were not incorporated during the finalization of the Contract Documents).

## 3-7 – Maintenance Concept Meeting

After issuance of NTP, the APM team will coordinate with District Maintenance staff to attend a meeting with the Design-Builder to discuss the following:

- Inventory of all existing maintenance elements, conditions, active permits, and Adopt a Highway program sponsors for the Project area.
- Layout of the existing elements for the Project.
- Ensure the appropriate parties are notified of the upcoming construction activities.

See DB Performance Specifications DB141.57 for project-specific requirements.

### 3-8 – Work Zone Decision Tree

The Work Zone Decision Tree (WZDT) process for DB projects is similar to the process outlined in the most current version of the ODOT Highway Directive [TRA 10-16 Guiding Principle for Work Zone Safety and Project Delivery Guide](#).

Prior to the start of DD Design Review, the Design-Builder and the APM team will hold a traffic control concepts meeting to discuss the following Design-Builder traffic control and Work Zone items:

- TCP concepts and strategies for the Project.
- Proposed updates to the WZDT.
- Proposed deviations from the Temporary Traffic Control Narrative Reference Document.

The Agency PM will coordinate with the Design-Builder to schedule the meeting and build the meeting agenda. The Agency PM will ensure that the appropriate Agency staff attend the meeting.

Throughout a project, the Design-Builder and APM team will verify alignment between the WZDT and the Design-Builder's TCP. The Design-Builder is responsible for updating the WZDT as needed to reflect current approved traffic control strategies.

### 3-9 – Design Submittal and Review Process

Design Reviews are an integral part of design management and quality. The Design-Builder's Design Manager, Design Firm, and the design quality teamwork together to provide the Agency with Work Products that meet or exceed contract requirements. The Design-Builder uses innovation and creativity to improve quality and/or schedule when appropriate. The Agency PM and the Agency's technical support personnel will Review and Comment on project features as defined in the Baseline Project Schedule and/or agreed to at the design mobilization meeting. Agency staff who participate in Design Reviews for either Acceptance or comment will review features in accordance with the Contract requirements, including DB141, the Design-Builder's Quality Plan, and other documents stipulated in the Contract.

Following DD Acceptance, the balance of Design Reviews are intended to consist of Review and Comment by the Agency or major Stakeholders (City/County project partners or FHWA)

leading to the RFC submittal. The Design-Builder and the Agency can perform “over-the-shoulder reviews” at their discretion. These reviews typically occur at ID workshops occurring between DD and RFC submittals to resolve conflicts or Agency-requested betterments. The RFC review includes agreement on the Design-Builder’s responses to all comments prior to the start of construction.

The Agency PM will reject a design submittal if it does not comply with the Accepted Quality Plan or if the Design-Builder has not completed the proper quality review procedures and certifications.

At any time, the Agency has the right to review or audit any of the Design-Builder’s quality records, including those verifying the Design Quality Manager’s review of submitted Design Documents. If the Agency believes there is a deficiency in the design quality review process, the Agency PM will notify the Design-Builder.

## 3-10 – Discipline-specific Design Checks

DB155.12 requires the Design-Builder to include discipline-specific design checks in the Quality Plan. The following technical disciplines must be included, if applicable to the Project:

- Bridge/Structures design.
- Hydraulic and stormwater engineering.
- Geotechnical engineering and engineering geology.
- Hazardous Materials.
- Land surveying.
- Environmental.
- Pavements.
- Intelligent transportation systems (ITS).
- Right-of-Way.
- Roadway.
- Traffic.

As a general principle of Design Review, the Agency will have subject-matter experts review corresponding designs. Agency reviewers with technical expertise are in the best position to identify potential design issues and provide comments directed to addressing them. Prior to reviewing any design, the Agency’s technical subject matter experts must be provided access to the relevant Agency-Supplied Specifications and instructed about the parameters of Design Review contained in this Manual. The Agency PM will notify subject-matter experts as early as possible when they might be requested to review design submittals. The Agency PM will provide a copy of the Design-Builder’s design submittal schedule for this purpose.



When performing discipline-specific checks, the Agency's subject-matter experts will verify, among other things, that the Design-Builder is following the design Quality Management processes and procedures in the Accepted Quality Plan that meet or exceed the requirements listed in DB155 for each technical discipline. Additionally, the Agency's technical discipline subject matter experts are reviewing designs for conformance with the Contract Documents. Comments must be limited to instances of nonconformance, safety issues, and other material design defects. Comments must not include the reviewer's design preferences if the design otherwise meets the requirements of the Contract Documents.

The following section describes the process for the Design-Builder's submission of DU submittals and the Agency's Review and Comment on the submittals. As a general matter, the Design-Builder will organize the design into DUs (DB155.04), which correspond to individual components of the Work. DUs break down the Project's overall design into discrete parts for the purpose of enabling construction of project elements, facilitating Agency review, and payment for design Work. The following processes for design refer to the Design-Builder's submittal of a DU for Agency Review and Comment.

## **3-11 – Definitive Design Submittal by Design-Builder – Design Quality Manager's Independent Review**

DD Design Review, as defined in DB155, is the Agency's first review after award of the design and is intended to verify that the design concepts proposed by the Design-Builder appear to meet the Contract requirements (DB155.12). This takes place at a preliminary stage when site investigations may not be finalized and incorporated.

The level of design completion for the DD submittals, as well as the Materials the Design-Builder will include, are defined in the Design-Builder's Quality Plan and Design Review Plan.

Prior to submission of the DD for a DU, the Design-Builder must follow its Quality Management procedures in the Accepted Quality Plan. Compliance with these procedures must be documented to demonstrate that all required checks have been completed.

The DD Review verifies the following conditions:

Upon receipt of a DD package, the Agency PM will ensure that the Design-Builder's Design Quality Manager has certified the following in accordance with DB155.12 and the Accepted Quality Plan:

- All Contract requirements applicable to the proposed Contract Baseline Concepts, including all applicable Standards and Legal Requirements, have been identified, and the proposed Contract Baseline Concepts comply.
- The Contract Baseline Concepts are substantiated and justified by adequate site investigations and analyses conducted by the Design-Builder.



- Right-of-Way requirements have been identified.
- The proposed Contract Baseline Concepts are constructible.
- Required Materials and Equipment are available within the timeframe needed to support the Design-Builder's schedule.
- The Contract Baseline Concepts meet all quality requirements, and all required design Quality Management procedures have been followed.

The Agency's Acceptance of DD establishes the "Contract Baseline Concepts" against which all future designs are compared and future changes are measured and monitored. If later Design-Builder or Agency reviews find that the design has been amended since DD Acceptance, specific design elements will require a reprocess through DD Acceptance by the Agency (DB155.09).

Refer to DB155 for further definition of DD Agency reviews. If the Design-Builder proposes a change to the Contract Baseline Concept, or to the design Contract Requirements, the Proposal will be reviewed and processed according to DB155.10.

## 3-12 – Definitive Design Submittal by Design-Builder

The Design-Builder will submit DD packages and the draft basis of design memorandums for each DU in accordance with DB155. The schedule for DD submittals will be included in the design submittal schedule discussed above. The DD is the earliest design submittal for each DU.

The DD submittal includes the following (DB155.15):

- Preliminary plans sufficient to depict the design concepts and Design Exceptions the Design-Builder intends to use, and the spatial setting (including site-specific characteristics) for major DU components.
- Draft Basis of Design Memorandum.

The Basis of Design memorandum must identify and describe the design alternatives considered, in addition to the Materials and means and methods for the DD. The memo shall also include information applicable to the DU, including preliminary reports on additional site investigations, geotechnical reports, hydraulic reports, stormwater reports, environmental findings, and similar information in support of the design decisions made. See also DB155.15.

Any requests for Design Exceptions from the Design-Builder must be submitted no later than the DD Design Review (DB155.08). Design Exception requests must be in accordance with the ODOT Highway Design Manual, and must include a report detailing the reasoning for the requested exception. The Design-Builder may not incorporate Design Exceptions into the DD (or the Work generally) unless the Agency provides written approval. The Agency will review Design Exception requests and either approve them, reject them or provide comments. The

Design Builder shall address any comments and resubmit to the Agency. The required Agency approvals for Design Exceptions on DB projects are the same as those required for DBB projects, as described in the ODOT Highway Design Manual.

Additionally, the Design-Builder must submit any requests for Design Deviations to the Agency no later than the DD Design Review. Design Deviation requests must be prepared in accordance with the ODOT Bridge Design Manual, ODOT Geotechnical Design Manual, and the ODOT Hydraulics Design Manual. The Design-Builder may not incorporate the Design Deviation into the Work unless approved in writing by the Agency. The Agency will review Design Deviation requests and either approve them, reject them or provide comments. The Design-Builder shall address any comments and resubmit to the Agency.

The Design-Builder must submit requests for Operations Approvals no later than the DD Design Review. The Agency will review Operations Approvals requests and either approve them, reject them or provide comments. The Design-Builder shall address any comments and resubmit to the Agency. The Design-Builder may not incorporate the request into the Work unless the Agency provides written approval.

If the Design-Builder proposes a design that requires either a change to an approved Interchange Modification Request IMR or a new IMR, the Design-Builder shall follow the requirements of DB155.10 for Design-Builder proposed changes regarding design.

If the Agency is amenable to the Design-Builder's Proposal, the Design-Builder shall prepare and submit updated (or new) IMR documentation to the Agency for review and submittal to FHWA. The Agency PM will coordinate with the ODOT Interchange Engineer for ODOT's IMR procedures and ODOT Roadway Engineer and ODOT Chief Engineer reviews and approvals. Additional information is available on the following webpages:

- FHWA Interstate System webpage:  
<https://www.fhwa.dot.gov/programadmin/interstate.cfm>
- ODOT Interchange Design webpage:  
<https://www.oregon.gov/odot/Engineering/Pages/Interchange-Design.aspx>.

## 3-13 – Definitive Design Deliverable Review by the Agency

The Agency's review of the DD submittal is the first Design Review for each DU and is intended to verify that the Design-Builder's Contract Baseline Concepts meet all requirements of the Contract Documents.

The first step in the Agency's review is to verify that the design submittal is complete, including that all quality documentation has been provided and that the Design-Builder has performed all QC steps specified in the Accepted Quality Plan. The quality processes, including the requirement that the Design Quality Manager certify the design, are discussed at greater length

above and in DB155. The Agency may reject and return an incomplete submittal and require the Design-Builder to resubmit the DD deliverable with all required Materials.

Once the Design-Builder provides a complete submittal, the Agency reviews and provides comments on any areas of the submittal that are not in compliance with the Contract Documents, DB155, and the Accepted Quality Plan. Reviewers may also provide comments to note other potential issues with the design that are apparent, such as constructability, compatibility with other components of the design, or design elements presenting a safety concern.

Comments must be provided back to the Design-Builder within the time limitations stated in the Contract Documents. For most DB projects, the default duration for the Agency to return comments is 21 days after receipt of the design submittal (DB150.37); however, this may change on a project-by-project basis and through agreement with the Design-Builder.

The Agency PM must clearly communicate to design reviewers when the Agency must return comments on the design submittals. Late comments may delay the Design-Builder and result in additional costs for which the Agency is responsible. To avoid this situation, the Agency PM will establish a Design Review and comment schedule at the inception of the Project and provide it to all Agency design reviewers. The schedule will provide the following, at a minimum:

- Time for initial review, with deadline to provide initial comments.
- Time for the Agency PM (or designee) to review and filter comments.
- Time for discussion of comments that need further clarification.
- Time for reviewers to return updates to comments.
- Time for final processing to return comments to Design-Builder.

Comments expressing design preferences or that add requirements should not be sent to the Design-Builder. A fundamental difference between DBB and DB is that the Design-Builder is responsible for its design, subject to the constraint that the design complies with the Contract Documents. Even if the design differs from the way in which the reviewer would design the item, reviewers should not provide comments that merely express preferences.

Comments on any design submittal that require changes based on the reviewer's preferences may result in the need for a CCO.

Generally, in addition to verifying that the Design-Builder complied with quality requirements, the Agency's Design Review covers, at a minimum, the following substantive topics:

- Loads.
- Legal Requirements and Standards.
- Methods of analysis.
- Computer software and its validation.

- Interface requirements.
- Maintenance requirements.
- Materials and Material properties.
- Durability requirements.
- Fatigue performance.
- Hydrology.
- Design drainage flows.

### **(A) Analytical Check**

The Agency may perform an analytical check for Structures included in a design package. The Design-Builder is required to provide calculations with the DD (and subsequent) design submittals.

Analytical checks by the Agency use independently derived calculations (without reference to the Design-Builder's initial design calculations) to evaluate the structural adequacy and integrity of structural members as designed. At a minimum, the Agency's analytical check includes the following:

- The structural geometry and modeling.
- Material properties.
- Member properties.
- Loading intensities.
- Structural boundary conditions.
- Stress calculations.

If there is a discrepancy between the Design-Builder's calculations and those derived from the Agency's analytical check, the Agency PM will schedule a meeting with the Design-Builder to review the calculations. The Design-Builder must be prepared to discuss the inputs for the calculations, modeling assumptions, and other materials and information used to prepare the calculations included in the design submittal. The Agency PM or design reviewer may identify additional information necessary to verify the calculations, and may request that the Design-Builder provide this information in advance of the meeting for review and consideration.

While comparing calculations, it is important to consider that the Design-Builder is the POR for each DU, and controls the design. Therefore, the Agency's critique of the Design-Builder's calculations should be limited, except where there are errors or safety concerns. The presence of differing calculations on their own does not necessarily indicate a problem with the design. A difference in calculations should be considered a starting point for assessment to determine if

there are errors in the design, but should not be used as an opportunity to require design changes to suit Agency design preferences.

The Agency must allow the Design-Builder to explain its assumptions and calculations to enable a determination of whether there truly is a problem with the design. If the Design-Builder is able to provide a satisfactory explanation to resolve the discrepancy, the Agency can close the analytical check. If the Design-Builder is unable to resolve the difference, the Design-Builder must correct the design before the Agency's comments can be closed and the design progressed further.

## **(B) Returning Comments on Design Submittals**

All Agency comments will be collected and reviewed by the Agency PM or their designee prior to returning them to the Design-Builder. The intention of collecting and reviewing Agency comments is to filter comments that may constitute a reviewer preference, delete duplication, and obtain clarification of ambiguous statements in the comments. Only those comments addressing nonconformance with the Contract Documents, potential deficiencies in the design, or safety concerns will be returned to the Design-Builder. If the person performing the filtering review discovers comments that may be preferential or add requirements not in the Contract Documents, the comment will be discussed with the reviewer and removed if inappropriate. As noted above, the Agency PM's schedule for review and return of comments will account for this activity.

If, during Design Review, the Agency discovers that it would like to make a change to the Contract requirements, or add scope to the Work, the Agency must follow the contractual process for changing the Work rather than implementing the change through comments. Comments that add scope to the Project can result in CCO requests initiated by the Design-Builder and could impact the Project schedule.

Each DD submittal will be given an overall disposition of Reject, Revise and Re-submit, Acceptance with Make Changes Noted, or Acceptance with No Exception Taken (see Section 3-3 in this Manual). The overall disposition is important because it determines whether the Design-Builder can proceed to the ID submittal or whether the DD must be re-submitted for further review. The Design-Builder may only proceed to the ID submittal when the Agency issues either an Acceptance with No Exception Taken or Acceptance with Make Changes Noted disposition.

The Design-Builder's Quality Plan and Design Review Plan must include a process for comment and nonconformance resolution, including meetings with the Agency to address design comments (DB155.14). If the Agency returns comments on the DD submittal, the Design-Builder shall follow the process in the Accepted Quality Plan to address Agency comments.

If there are comments that the Design-Builder or the Agency design reviewer believe warrant discussion, either party may request to meet and address such comments. During design comment meetings, Agency participants must be open to allowing the Design-Builder to

explain its position in response to Agency comments, with the goal of cooperative resolution of the issues. Similar to the comment review process, Agency reviewers will refrain from expressing design preferences or making comments that could be construed as a directive. Overall, it is important to remember that the Design-Builder controls the design and that the Agency's role in Design Review is to verify conformance with Contract requirements.

## 3-14 – Interim Design Submittal – Design Quality Manager Independent Review

The next step in the Design Review process is the Design-Builder's submission of the ID submittal. The progression of the ID will be provided in the Design-Builder's Design Review Plan. The ID is typically the last opportunity for the Agency to provide significant comments on a DU before the submission of the RFC design. Similar to the DD, the Design-Builder must complete the required quality verification in accordance with the Accepted Quality Plan and DB155 before submitting the design for Agency Review and Comment.

At a minimum, the Design-Builder's quality check shall include the Design Quality Manager's review verifying that any Agency comments on the following have been addressed from the DD:

- If the DD received a disposition of Accepted with Make Changes Noted, that the Design-Builder has made all required changes.
- All Contract requirements applicable to the proposed Contract Baseline Concepts, including all applicable Standards and Legal Requirements, have been identified, and the proposed Contract Baseline Concepts are in conformance with the Contract Documents.
- The Contract Baseline Concepts are substantiated and justified by adequate site investigations and analyses conducted by the Design-Builder.
- Right-of-Way requirements have been identified.
- The proposed Contract Baseline Concepts are constructible.
- Required Materials and Equipment are available within the timeframe needed to support the Design-Builder's schedule.
- The Contract Baseline Concepts meet all quality requirements, and all required design Quality Management procedures have been followed.

Similar to the DD submittal, the Agency PM will verify that the Design Quality Manager completed the required review and that the Design-Builder has followed all procedures for the ID in the Accepted Quality Plan. The Agency may reject an ID submittal that has not undergone the required quality review.



### 3-15 – Interim Design Submittal by Design-Builder

The ID Design Review is intended to resolve comments on the DD, remedy any conflicts, add necessary specification language, and complete other milestone-specific requirements in DB141. The ID is further advanced than the DD, and is the last submittal that precedes the RFC design. The ID should be nearly complete and require only minor adjustments to be ready for construction.

### 3-16 – Interim Design Deliverable Review by the Agency

The Agency's review of the ID focuses on updates or adjustments made in response to the DD Design Review. Where the disposition of the ID was Accepted with Make Corrections Noted, the ID Design Review will verify whether the Design-Builder made the noted corrections.

Additionally, the ID Design Review may require remedying and reconciling potential conflicts with other Work items and modified or additional specification language. Further, the ID Design Review is to verify that the concepts and parameters established and represented by the DD are being followed, and that all contract requirements continue to appear to be met as described in DB155 and the Accepted Quality Plan.

Significant changes to the ID submittal require re-submittal and Agency review and Acceptance, after the Design-Builder has completed a re-check and re-certification in accordance with DB155.09, prior to the submittal of the RFC package. The Agency may perform a further analytical check on calculations provided with a design package using independently derived calculations to verify the design.

The ID package receives a disposition similar to the DD submittals (Reject, Revise and Re-submit, Acceptance with Make Corrections Noted, Acceptance with No Exception Taken). See also Section 3-3 in this Manual. Agency comments on the ID submittal are subject to the same considerations as comments on the DD submittal discussed in Chapter 3, section 3-10 and 3-11 in this Manual, except that an additional category of comments might arise where the Design-Builder has not sufficiently addressed an Agency comment on the DD.

Similar to the DD, the Agency PM will filter comments before returning them to the Design-Builder. The Design-Builder and/or the Agency may use Design Review meetings to discuss comments. It is important to resolve as many comments as possible before the ID process is complete, as the subsequent design submittal is the RFC design. If there are material errors in the design or significant issues that must be resolved before the Design-Builder submits the RFC design, the Agency must ensure that the Design-Builder has sufficiently resolved Agency comments on such issues before progressing the design further.



## **3-17 – Readiness for Construction Submittal – Design Quality Manager Independent Review and Certification**

Before Readiness for Construction (RFC) Plans and Specifications, Working Drawings, or 3D Construction Model data are released for construction, or any construction Work can begin, the Design-Builder's Design Quality Manager must independently review and issue a written certification to the Agency that each of the following conditions has been met in accordance with DB155.02:

- The Design Quality Manager has conduct independent quality reviews, as referenced in DB155.02.
- Design checks are completed.
- The design has undergone constructability review and is constructible as represented in the RFC Plans and Specifications.
- The design conforms to all Legal Requirements and other Contract requirements.
- All applicable Design Exceptions, Design Deviations, and Operations Approvals have been approved in writing by the Agency. Note: Design Exceptions, Design Deviations, and Operations Approvals require the same Agency staff approvals under DB projects as required under DBB projects.
- All required written concurrences from Agency technical resources have been obtained for modified DB Boilerplate Technical Special Provisions or additional Design-Builder Specifications, as described in DB155.19.
- Design Quality Management procedures have been complied with in accordance with the Contract requirements and the Accepted Quality Plan.
- All outstanding issues and comments from the Design Review have been resolved and all comments are closed.

The Agency may reject an RFC submittal if the Design-Builder has not provided this information with the design package submittal.

## **3-18 – RFC Submittal by Design-Builder**

The intent of the Agency's RFC design submittal review is to verify that the concepts and parameters established and represented by the Design-Builder's DD and ID Design Reviews are being followed and that all Contract requirements continue to be met. The RFC design package must include the following, as required by DB155.15:

- RFC Plans and Specifications.

- Details of pre-activity conferences and meetings.
- Quality inspection Hold Points, in accordance with DB154.50 and the Accepted Quality Plan.
- Agency-approved Design Exceptions, Design Deviations, and Operations Approvals.
- Final Basis of Design Memorandum (must include foundation reports, hydraulics reports, slope stability reports, and all other technical reports and memoranda prepared in support of the RFC Plans and Specifications).
- Estimated quantities (DB190.10).
- Updated Table of Steel Escalation, Form TSE (if applicable) (DB195.12).
- Estimated quantities for liquid asphalt (DB195.10).
- ODOT fuel escalation form, or alternatively, calculations for the estimated fuel usage quantities for all major fuel usage items in a format approved by the Agency (DB195.11).
- Proposed Schedule of Values for Price Items associated with construction Work for the RFC submittal, according to DB190.10.
- List of applicable Hold Points (DB154.50).
- Additional Agency-required documentation or data, including but not limited to the required documentation included in DB141.

After the Agency Accepts the RFC submittal, it must be signed and stamped by the Professional(s) of Record, as required by DB155.16. The Design-Builder does not have to sign and stamp the RFC submittal for Agency review.

### **3-19 – RFC Deliverable Review by the Agency**

The Agency will perform a final review of the DU by reviewing the RFC design submittal. As with the other design submittals, the Design-Builder must state that it completed all required quality checks on the RFC package prior to submittal to the Agency. The Agency may reject the RFC submittal if the Design-Builder does not perform required quality checks in accordance with the Contract Documents and the Accepted Quality Plan.

The Agency's review of the RFC submittal consists of reviewing the Design Documents for compliance with all Contract requirements, taking into consideration the proposed method of construction. The Agency's review additionally verifies that the Design-Builder has satisfactorily resolved all prior Agency comments in accordance with the submittal dispositions for the DD and ID Design Reviews. For Structures and other design packages that may include calculations, the Agency may perform a final analytical check on the calculations to satisfy itself that the design meets Contract requirements.

Upon receipt of the RFC submittal, the Agency performs a conformance check to determine if the submittal is complete. Where the RFC submittal is not complete, the submittal will either be

rejected or the missing information immediately identified with a notification to the Design-Builder to provide it.

The RFC review can be facilitated in a workshop or meeting (preferable) or submittal of a review package, but will entail the Review and Comment on the design as it relates to conformance with the DD Acceptance and adherence to the Contract requirements and Agency Standards.

**Note: The Chief Engineer does not sign the RFC or any Plans or Specifications submittals.**

**The Agency may Review and Comment or “Accept” the Design-Builder’s RFC plans.**

**The Agency’s acceptance or concurrence with the RFC plans is based on its limited review of the Design Documents and does not at all constitute a waiver of Contract obligations or performance requirements.**

**Contact the [Senior Standards Engineer](#) for Design-Build specific title page standards.**

Typically, the RFC submittal is a further breakdown of the DU, matching the construction work package and Design-Builder’s schedule. At this review stage, the Design-Builder works directly with the APM team to resolve any outstanding comments in order to certify design completeness.

The Design-Builder’s Design Manager and Design Quality Manager help resolve all open comments in order to reach agreement on the final Comment and Response Log. This agreement is required prior to start of construction for specific DUs/work packages. This meeting and/or agreement should not take more than 2 days to complete once final responses are received and reviewed by the Agency.

Either at the Agency or the Design-Builder’s discretion, other items may be provided for Agency Review and Comment at the RFC milestone.

**Note: Refer to DB155 for further definition of RFC Agency reviews. DB155 also defines the Design-Builder’s requirements to initiate construction.**

When the Agency has confirmed that the RFC submittal is complete, the APM team and technical disciplines perform their limited review of the RFC submittal to verify that the concepts and parameters established and represented by the DD and ID Design Reviews are being followed and that all contract requirements continue to appear to be met. The Agency may provide comments on any areas of the submittal that are not in conformance with the Contract Documents, in accordance with DB155 and the Accepted Quality Plan. Comments are subject to the same parameters identified in this Manual for other design submittals.

When the Agency determines that the RFC submittal complies with the Contract Documents, the Agency PM notifies the Design-Builder by issuing a disposition of Acceptance with No Exception Taken.

The Design-Builder cannot alter RFC Plans and Specifications without prior approval of the POR, completion of the Design Review process, certification of the Design-Builder's Design Quality Manager, and Agency Acceptance (See DB155.17). The exception to this is minor changes to the Work, which are addressed in Article 2.3.8 of the Design-Build Agreement and discussed further in section 3-21 below.

## **3-20 – Working Drawings and 3D Construction Model Submittal by Design-Builder**

The Design-Builder must submit Working Drawings and 3D Construction Models as required. These documents must be prepared in accordance with the RFC Plans and Specifications and include verification by the Design-Builder of field dimensions and other information relevant to construction.

The Design-Builder is required to check, review, and certify Working Drawings and 3D construction model data as specified in DB155 and the Accepted Quality Plan. The Design-Builder must complete this step before issuing the documents for construction. This review must include the Design-Builder's Design Firm, Design Manager, and Design Quality Manager reviews, approvals, and certifications.

Working Drawings are to be reviewed and approved by the POR prior to construction. The Agency's review of Working Drawings is at its discretion. The Design-Builder is responsible for notifying the APM team that Working Drawings are ready-for-review.

The Design-Builder shall invite the Agency to participate in Design Reviews for Working Drawings and 3D Construction Model. The Agency may choose whether to participate and is under no obligation to do so. The Agency may invite other Stakeholders to these reviews, as desired. If the Agency elects to participate, the Design-Builder must allow at least 7 days for Agency Review and Comment on Working Drawings and 3D construction model data, unless the Agency agrees to a different timeframe.

If the Agency participates, its review is limited to verifying that the Working Drawings or 3D models conform to the RFC Plans and Specifications. The Agency PM will discuss comments with the Design-Builder.

## **3-21 – Design Changes During Construction**

If changes are made to the design during construction, Design-Build Agreement Article 2.3.8 and DB155.09 govern. The Design-Builder may make "minor changes" in the Work, which are those that do not involve an adjustment to the Contract Amount or Contract Time, that do not materially or adversely affect the Work, and are consistent with the intent of the Contract

Documents. If the Design-Builder makes changes of this nature, the Design-Builder shall immediately notify the Agency and provide updated Design Documents that identify the changes. The changes must also be reflected in the As-Constructed documents. The Agency will review and determine if the proposed changes are minor in nature and do not require adjustments to the Contract Amount and Contract Time.

Design changes that are not “minor changes” must go through the Agency review process (DB155.09 and DB155.17). The Design-Builder’s designer must prepare changes to the RFC Plans and Specifications and ensure that appropriate quality checks are performed consistent with the Accepted Quality Plan. The Agency will review proposed design changes similar to the process discussed above for standard Review and Comment on design submittals (DB155.09). The Design-Builder’s Design Quality Manager must certify that the adjustments in the RFC Plans and Specifications comply with the Contract Documents and applicable Standards. The Design-Builder must obtain Agency Acceptance of the proposed changes before implementing them.

The Agency may comment on proposed design changes in the same manner as it comments on the design submittals. Agency comments will be limited to identifying contractual nonconformance, failure to comply with good industry practice, and safety issues.

For Design-Builder initiated changes, the Design-Builder is responsible for the costs of permits, authorizations, or other agreements, and all other cost impacts arising from the Design-Builder’s changes.

## 3-22 – Design-Builder Design Change Requests

Changes occur on all projects. The APM team’s ability to manage change in an effective, efficient manner helps foster a partnering approach to DB projects and empowers individuals to take responsibility for change.

Change requests encompass multiple facets of a project, including CCOs, changes to the original design (field design changes) that meet contractual requirements, and Acceptance of lesser quality (nonconformance, quality price adjustment). This chapter concentrates on CCOs. Chapter 1, section 1-15, in this Manual discusses field design changes and nonconformance issues.

The Design-Builder may request changes to the Project’s required design criteria in accordance with DB155.10. Upon receipt, the Agency PM will review the request to determine its impact on the Project and whether to permit the Design-Builder to incorporate the requested change.

The Agency typically does not approve any proposed changes that will impair the essential functions and characteristics of the Project, including, for example, service life, economy of operation, ease of maintenance, designed appearance, or design and safety standards. The Agency may approve a change that results in the foregoing effects only if there is a compelling reason that warrants such a drastic modification.

For design changes that are within the original Contract requirements, the APM team should ensure that the processes outlined in section 3-23 in this Manual and in the Design-Builder's Quality Plan are followed. When a design change deviates from contractual requirements (whether it results in a net price change or not) or the design change stays within original Contract requirements but causes a change in project cost, the Agency PM and the APM team must adhere to the processes described in this chapter.

The Design-Builder's request to change the design requirements must contain the following:

- A description of the objectives and benefits of the proposal;
- A description of existing Contract requirements for performing the Work and the proposed change(s), including a detailed description of changes to the Basic Configuration, Planned ROW, permits, and third party agreements;
- Preliminary Plans depicting the proposal;
- A description of any associated Design Exceptions, Design Deviations, or Operations Approvals that will be required for the proposed design or design change (see DB155.08);
- A description of any associated proposed changes to the Contract Amount, including a detailed breakdown by Price Item;
- A description of any associated proposed changes to Contract Time; and
- A date by which the Agency must Accept the proposal to avoid impacting the Contract Amount or Contract Time changes described in the proposal.

Rather than submit a complete Design change request, the Design-Builder may first submit a written request that the Agency review the feasibility of the proposed change. This request is less comprehensive than a full request to modify the design requirements. The Agency will review the feasibility request, provide comments, and either reject the request or approve the Design-Builder to proceed with development of a detailed proposal in accordance with DB155.10.

The Agency may require the Design-Builder to pay for any Agency costs associated with its investigation of the Design-Builder's requests. If the Agency elects to do so, it may deduct the amount from money owed to the Design-Builder.

If the Agency Accepts the Design-Builder's request to change the design criteria, the Agency will issue a CCO modifying the Contract requirements.

If the Design-Builder requests additional ROW for the Project, the process is provided in DB174.20.



## **3-23 – Design-Builder Cost Reduction Proposals (Value Engineering)**

Article 2.2.3 of the Design-Build Agreement and DB140.70 permit the Design-Builder to submit a written proposal to the Agency to modify Plans, Specifications, or other Contract Documents for the purpose of reducing the cost of the Work. Unless otherwise approved by the Agency, such proposals may not be based solely on a reduction in quantities or to delete Work.

Upon receipt of a Cost Reduction Proposal (CRP) from the Design-Builder, the Agency will consider the following:

- The proposal should not impair essential functions or characteristics of the project, such as service life, economy of operation, ease of maintenance, designed appearance, or design and safety standards, unless the Design-Builder offers an appropriate alternative.
- The proposal should contain a clear benefit to deviating from the Project's Specifications.
- The cost savings to the Agency and the Design-Builder should more than compensate for any additional costs (e.g., maintenance, inspection) that might result from implementation of the Design-Builder's proposed change.
- The cost savings should compensate the Agency for any long-term risk that might be associated with implementing the proposed change.
- The proposed change should not impact the ability to implement other aspects of the Project in conformance with the Contract Documents.
- If the proposal concerns a change to the Basic Configuration, whether the alternative proposed meets the Project's needs.
- If any changes are needed to the Project's ROW, whether it is feasible to obtain additional ROW without significant impact to the Project schedule.
- Whether the Design-Builder's proposal brings innovation to the Project.
- Whether the Design-Builder's proposal represents something that was previously considered and dismissed.

The Agency may request that the Design-Builder share in the costs of performing investigation of the CRP. For a significant proposal, the Agency should consider this option, particularly if the investigation requires an evaluation of the proposal's fit with elements of the Basic Configuration.

When evaluating a proposal that might affect the Basic Configuration, the Agency will perform the following investigation:

- Arrange a meeting with the members of the APM team that prepared the Basic Configuration and project-specific Agency-Supplied Specifications.



- Obtain an understanding of the original need for the element of the Basic Configuration under review.
- Determine whether the element of the Basic Configuration is inextricably connected to another aspect of the Project and assess whether the Design-Builder's proposal would impair the function of another project element.
- Determine whether the element of the Basic Configuration impacts the needs of a party(ies) other than the Agency, such as a Local Agency, body of water, or otherwise.

An approved CRP entitles the Agency and the Design-Builder to 50% each of the cost savings. The Agency has sole discretion whether to Accept a CRP. The CCO allowing the Design-Builder to implement a CRP must include the requirements in DB140.70.

Finally, when the Design-Builder submits a CRP, the Agency may use the contents, without compensation to the Design-Builder, on any other project. CRPs will be saved in the Project record and may be considered on other contracts.

## 3-24 – As-constructed Submittal and Review by Design-Builder and the Agency

Within 90 days after the Agency's issuance of Final Second Notification, the Design-Builder must submit As-Constructed Plans and as-constructed Design-Builder Specifications for each DU, in accordance with DB155 and the Accepted Quality Plan (DB155.12). As-Constructed Plans and as-constructed Design-Builder Specifications must thoroughly describe and identify every aspect of the Project as constructed.

As-Constructed Plans and Specifications may contain updates from the RFC Plans and Specifications based on actual field conditions and adjustments to means and methods. The As-Constructed Plans and Specifications must identify all modifications to the Accepted RFC Plans and Specifications. Such modifications may only be implemented as described in sections 3-21, 3-22, and 3-23 in this Manual.

The Agency may Review and Comment on the As-Constructed Plans and Specifications based on the Agency's inspection and oversight performed during construction. The Design-Builder shall make any changes required by the Agency's comments and resubmit the As-Constructed Plans and Specifications for Agency Acceptance.

Unlike earlier submittals, Agency reviewers will comment on any perceived inconsistencies or omissions identified in the as-constructed documents. The as-constructed documents are a critical component of the Project record and may serve as important foundational information for future projects. It is therefore critical that the as-constructed documents be as accurate as possible.

The Agency will review and Accept As-Constructed Plans and Specifications and quality records prior to processing final payment for a specific project element or the entire Project,

based on the Project schedule. The Design Quality Manager and the design quality team should provide certification that all reviews and checks have been complete and that the as-constructed documents reflect the as-constructed conditions and are in conformance with the Contract.

## 3-25 – Environmental Compliance Plan

As part of the Quality Plan, the Design Builder is required to develop an ECP which shall explain processes and procedures that the Design-Builder's Environmental Team shall employ to ensure compliance with environmental permits, programmatic agreements (if applicable), orders and opinions, and protection of the environment. The Design-Builder shall clearly represent, in the ECP and during all phases of construction, that compliance with environmental permits is integral to the Project Work and not an impediment to other aspects of construction. DB141.51 details the requirements of the ECP and identifies minimum contents.

The Design-Builder shall include its fugitive dust control and air pollution control measures plans as part of the ECP.

As with the main Quality Plan, the APM team should look for details in procedures and processes that allow verification that the ECP is being implemented. It is important to avoid leaving general statements in the plan that don't add accountability or responsibility or define the processes or procedures to be used. It is also important that the plan clearly identifies communication and reporting channels, reporting frequency, and reporting contents.

In making comments to the plan, the APM team should understand that the Design-Builder is responsible for complying with permits and documenting this compliance. It is important that this responsibility is not pushed onto the Agency. The Agency verifies that the Design-Builder has met the requirements of the ECP. Ambiguities allowed to remain in the plan will later cause difficulties in defining responsible parties and adhering to the plan.

The Agency, primarily through the APM team, will oversee the Design-Builder's Environmental Program to verify that the Design-Builder conducts its operations in accordance with contract requirements and the Design-Builder's ECP and associated permits.

Chapter 5 in this Manual provides more detail for the APM team regarding environmental submittals and associated APM team functions. The Quality Management Section in this Manual also provides more detail regarding the APM team's responsibilities for Environmental Program audits, nonconformance items, and the APM team's ability and responsibility to stop Work.

## 3-26 – Traffic Management Plan

In DBB projects, the Agency typically performs inspections to ensure compliance with the traffic management requirements described in the Contract.

The TMP is a project-level plan and must contain the components identified in DB141.31. The Design-Builder must prepare the TMP in accordance with the *ODOT Transportation Management Plan Project Level Guidance Manual*.

The Agency will review the TMP and any updates to ensure that it meets the Agency-specified parameters for TMPs.

The Agency will also monitor and audit the Design-Builder's design and construction operations and products to verify that contract provisions and the TMP are being met, including specified public notice requirements. The TMP and components should be a topic at weekly progress meetings. It is important to note that each Work Location will have its own TCP, so the TMP may not provide exact details for each Work Location.

Matters relating to the traveling public's safety are normally covered in a TCP. The requirements for a TCP are also detailed in DB141.31. The Design-Builder is required to submit a TCP for the Agency PM's review and written comment that it meets contract requirements.

The specific details of a TCP for each DU to be released for construction must be prepared by the Design-Builder and reviewed as part of the RFC review (see DB141.31 and DB155).

## 3-27 – Third Parties

As with DBB projects, multiple external entities are involved in DB projects. Generally, these external entities (defined as parties outside the Agency and the Design-Builder) are referred to as third parties. Third parties can range from individual landowners to jurisdictional agencies, Utility companies, and Railroads. DB deviates from DBB in two primary interrelated ways: 1) the uncertainty of third-party requirements at contract award and 2) contractor involvement.

In DB, as indicated throughout this Manual, design is only at a small percentage of completion at the time of bidding and still at a small percentage of completion when a contractor is selected. This is significantly different from DBB. This brings an uncertainty regarding final third-party requirements for the Project at the award point of the Contract. It places the Design-Builder in more direct involvement with third parties than with traditional DBB projects. Because of this, the process becomes much more collaborative in order to meet the timeframes necessary in a DB contract.

In DBB the collaboration is traditionally between the Agency and the affected third party. For a DB project, the Design-Builder's schedule and bid assumptions make the Design-Builder an additional interested party with each of the affected third parties. This in turn forces a more organized, focused, and collaborative effort to meet the Project goals.

The remainder of this chapter and following sections outline the Design-Builder's general role and the APM team's role in more detail, with respect to the following main third-party categories:

- Utilities.

- Railroad.
- Right-of-Way.
- Governmental Jurisdictions.

For Utilities, both the Design-Builder and the APM team can have a myriad of different responsibilities across DB projects, and sometimes within a single project. The most common separation of roles and responsibilities is for the Agency to accept financial responsibility for relocating and/or protecting Utilities.

The Design-Builder is also responsible for coordinating with Utility Owners and identifying scope and schedule. The Design-Builder will then coordinate design and construction to avoid conflicts with the schedule. The APM team will review the Utility Adjustment Master Plan and use this as a basis for performing oversight of the Design-Builder.

As with Utility Work, the Agency will maintain fiduciary responsibility for Railroad Work. However, the Agency PM or designee rather than the Design-Builder will be the lead liaison for design and construction of Railroad-related Work. The Design-Builder is responsible for obtaining temporary crossing orders and rights-of-entry permits.

Each Railroad has different agreement and permit requirements, see ODOT Railroad Manual available on ODOT ROW Railroad Coordination Program website:

<https://www.oregon.gov/odot/ROW/Pages/Railroad.aspx>

DB projects can involve cities, counties, and other governmental agencies that own and/or operate facilities in proximity to the Project.

Generally, the Design-Builder is responsible for coordinating the Project design and construction to avoid conflict with existing facilities or work being done by third parties.

Agency construction projects remove vegetation and affect the aesthetic and environmental character of Project Sites. Agency Highway Directive DES 20-01 (located on ODOT's Engineering Technical Guidance webpage:

<https://www.oregon.gov/odot/Engineering/Pages/Technical-Guidance.aspx>) requires that when ornamental landscaping is included in a project, that Local Agencies agree, through an Intergovernmental Agreement to assume the costs for landscape maintenance. The APM team shall ensure that the Design-Builder provides the Local Agencies the opportunity to have the Project Site revegetated with a well-considered landscape plan. The trees and vegetation provided by the Project to provide environmental services or reduce inequity and the APM team shall be coordinate where they are located in the Project Site, as agreed upon with the ODOT Maintenance District representative.

The APM team provides oversight and, depending on the Entity, will usually also be the liaison with the third parties.

## 3-28 – Utility Work

As a general matter, all Utility Work performed by the Design-Builder or performed by a Utility Owner must comply with the ODOT Utility Relocation Manual, available at:

[https://www.oregon.gov/odot/ROW/Docs\\_Uilities/Utility-Relocation-Manual.pdf](https://www.oregon.gov/odot/ROW/Docs_Uilities/Utility-Relocation-Manual.pdf).

The Design-Builder is responsible for coordination with Utility Owners whose facilities may be impacted by the Work and require relocation or protection measures. In contrast to a DBB project, in which the Utility conflicts are typically all known before construction starts, on a DB Project, the Utility conflicts may not be known in their entirety until the Design-Builder completes each DU.

The Agency will have coordinated with Utility Owners during project development and during portions of the procurement phases of the Project. During that time, it will have been decided what types of Utility agreements would be used (template vs. owner specific) and the Design-Builder's responsibilities with respect to each impacted Utility.

The Design-Builder shall comply with the ODOT Utility Relocation Manual (including all referenced OAR requirements) and the ODOT Bridge Design Manual in connection with Utility Work (DB174.10). On a DB project, the following Design-Builder submittals are subject to Agency Acceptance (DB174.10):

- Reimbursement package.
- Utility adjustment master plan.
- Project notification letters.
- Conflict letters.
- Time requirement letters.
- Utility certification.

Further information about the Design-Builder's required Utility-related submittals is found in DB174.10.

The Agency is responsible for coordinating with FHWA for approval of Utility Work within the federal-aid ROW on the interstate system (DB174.10). The Agency PM may reach out to the Region Utility Coordinator or the State Utility and Railroad Liaison (SURL) for questions.

Utility relocations may be either non-reimbursable or reimbursable. Federal regulations (23 C.F.R. § 645.107(a)) govern whether a Utility relocation is reimbursable. When a relocation is reimbursable, the Design-Builder must enclose an ODOT Reimbursement Information Form with the ODOT Conflict Letter. The Utility Owner must provide documentation showing their property right in order to be eligible for reimbursement.

The Design-Builder is responsible for confirming the precise location of all Utilities that may be affected by the Work. The Agency will have provided information about known Utilities to the

Design-Builder in the RFP; however, the Design-Builder must confirm that information. The Design-Builder shall perform these tasks by inquiring with Utility Owners, consulting public records, and conducting field studies. The Design-Builder may perform Subsurface Utility Engineering to identify and confirm the location of Utilities within the Project's ROW.

The Design-Builder submits a Utility Management Plan within 90 days of NTP for Agency Review and Comment. The Design-Builder will thereafter submit the Utility Management Plan to the Agency on a monthly basis for further Review and Comment (DB174.10). The Agency PM will coordinate the review with the Region Utility Coordinator, or other designee.

The Design-Builder is responsible for submitting a Utility Adjustment Master Plan showing the location of Utilities and the plans for relocating them. The Utility Adjustment Master Plan will also identify the timing of the relocation Work and the reimbursable status of Utility relocations (DB174.10). The Agency will review and determine if the plan is compliant with the Contract Documents. The Agency PM will review the information with the appropriate Agency staff. Once the Utility Adjustment Master Plan is found to be compliant, the Agency PM will Accept it. The Agency's Acceptance is required before the Design-Builder may perform any Utility adjustment Work and before the Design-Builder's submittal of RFC Plans (DB174.10).

The Design-Builder shall submit a Conflict Letter or Project Notification Letter to each Utility Owner impacted by the Project. The notification serves as the "First Notification" under OAR 734-055-0045(2). Within 7 days of issuance to Utility Owners, the Design-Builder must submit a copy of all letters to the Agency for review and Acceptance.

The Design-Builder shall submit a Utility Certification form [734-5158](#) to the Agency PM for Acceptance with each RFC design submittal (DB174.10). Acceptance of the Utility Certification must occur before the Design-Builder commences construction activity for the associated RFC package.

If the Design-Builder is responsible for the design of a relocation, the Design-Builder is required to submit the design to both the Agency and the Utility Owner for Review and Comment (DB174.10). The Utility Owner's approval of the design is required before the Design-Builder may commence construction of the relocation. If the Utility Owner is responsible for the design, the Utility Owner submits the design to the Design-Builder for Review and Comment, and the Design-Builder submits the design to the Agency for Review and Comment (DB174.10). The Design-Builder must incorporate the Agency comments on the design to the Utility Owner.

The Design-Builder must submit copies of all correspondence to or from Utility Owners to the Agency PM. The Agency PM reviews the correspondence for any potential issues, including any indication that a Utility relocation is behind schedule or is not compliant with the Contract Documents. The Agency may determine whether to intervene if there is a potential issue affecting the Project, keeping in mind, however, that the Design-Builder is responsible for Utility coordination Work.



Utility relocation, protection or expansion is a part of nearly all Agency projects. In DB, coordination of Utilities becomes increasingly more important due to the speed at which projects are usually completed.

In the RFP as part of the DB General Provisions, Attachment C – Reference Documents, the Agency will have identified known Utilities within the limits of the proposed Work. The information provided will consist of:

- Agency-identified Utility Owners within the Project limits.
- The contact name and telephone number of each Utility Owner.
- A description of the Utility facilities and potential conflicts, and information on prior Agency contact with the Utility.
- The responsible party for the cost of adjustment of the Utility.

The Design-Builder and APM team have different roles with respect to each group of Utilities. Their roles are defined in the rest of this chapter.

## (A) Design-Builder Responsibilities

DB174.10 describes the Design-Builder's role for Utilities and summarizes this role for the APM team, and the rest of the section concentrates on the APM team's roles and how they relate to the Design-Builder's role for Utilities. The APM team should review DB174.10.

As indicated previously, Utility responsibility can be divided in numerous ways for DB projects. This division can be consistent across a single DB project or can vary by Utility for each DB project. Generally, if Utilities are present the Design-Builder will have some responsibility. This responsibility could range from:

- Coordination of Utility design and construction, to ensure it does not conflict with the Design-Builder's design and/or construction (location, sequence, etc.); to
- Construction of the Utility: in this case the Utility company may provide the design, but the Design-Builder may be responsible for performing the Work; to
- Design of the Utility: the Design-Builder may be required to design the Utility, but the Utility company may designate select contractors for the work; to
- Design and construction of the Utility.

As part of the coordination effort, the Design-Builder is required to prepare a Utility Adjustment Master Plan. The plan will include:

- Surveyed locations of all Utilities.
- Proposed final location of Utilities.
- Any required ROW.
- A description of the timing and sequence of the Work.



- A schedule that the Utility has agreed to.

To prepare a complete plan the Design-Builder is required to:

- Coordinate with the Utility Owner to obtain a sketch of the final location of the Utility.
- Certify to the Agency that the proposed location is not in conflict with the Design-Builder's proposed Work.
- Show the Utility's concurrence with the proposed Utility location.

The Design-Builder is required to hold a Utility scheduling meeting before the pre-construction meeting. At the meeting the Design-Builder should present known impacted Utilities, anticipated schedules, and means for reducing or eliminating conflicts. It should also address procedures to be followed for newly discovered Utilities or impacts.

The Design-Builder will incorporate Utility timeline needs into the Baseline Schedule. Other Design-Builder roles include:

- Updating the Baseline Schedule monthly to reflect current Utility progress.
- Monitoring and coordinating the Project schedule with planned Utility relocations and any associated ROW acquisition dates.
- Protecting Utilities that are not to be affected.
- Providing as-constructed documents to the Agency.

## (B) Role of the Agency

The APM team is expected to work with the Design-Builder and Utility companies to help facilitate that all Work is coordinated and performed efficiently and in the Agency's and public's best interest.

The Agency may have provided Utility engineering and preparation of Utility agreements with impacted Utility Owners. If so, Utility plans and agreements will have been provided in the RFP's Engineering Data for the Design-Builder's construction coordination.

The APM team's role can vary with respect to Utility Work for each DB project. This section outlines the major roles that the APM team should perform and outlines other roles that may be performed.

## (C) Pre-construction Activities

In preparation of the Project, the following activities will assist the team in being better prepared:

- Assigning a Utility Coordinator to serve as the Agency's main Utility-related contact for the Design-Builder and affected Utilities.
- Reviewing the Contract to understand the risk assignment for Utilities in general.

- Reviewing Utility requirements in DB174 and Utility agreements in Attachment A – Engineering Data, if any are provided, to understand the requirements for specific Utilities.

### **(D) Utility Scheduling Meeting**

The Design-Builder must hold a Utility scheduling meeting for Utility coordination before the pre-construction conference (see DB174.10). All affected Utilities may not be invited, because it could be considerable time before some Utilities are affected. If all Utilities are not invited, the APM team should confirm that additional Utility scheduling meetings will be held to properly address all Utilities.

At the Utility scheduling meeting, the APM team should be prepared to describe the communication protocols for the Project. The APM team should also be prepared to discuss any known or perceived circumstances associated with any Utility or Utility company that may impact or affect the Design-Builder's approach to schedule, coordination, Work, etc.

### **(E) Utility Adjustment Master Plan**

The APM team will review and approve the Utility Management Plan submitted by the Design-Builder. The APM team should assist the Design-Builder in preparing this plan. The plan should be updated as required by DB174.10.

### **(F) Design Activities**

Refer to Chapter 3 (Design Review) in this Manual for specific roles that the APM team will perform for designs and Design Review. The primary difference for Utility design is that the APM team should confirm the following:

- Regardless of who performs the design:
  - Utilities and the Agency are involved in the review.
  - Meetings occur at least monthly and the Agency is invited.
  - The design is clearly marked to show who performed the design.
- If the Utility company is performing its own design:
  - The Design-Builder reviews the design for effectiveness and consistency with the remaining project requirements.
  - The APM team reviews the design for general conformance with Agency requirements.
  - Proper ROW and easements are identified and deemed to be acceptable.
  - The Design-Builder provides written certification that the Utility design does not conflict with other Highway improvement Work.

- If the Design-Builder performs the design:
  - The Utility company performs a review of the design and provides acceptance.

### **(G) Construction Activities**

Refer to the Foreword Chapter, section FOR-5 in this Manual for the overall functions the APM team performs during construction. Generally, the APM team's role during Utility construction is similar and covers the same broad categories identified in Chapter 2 in this Manual. The primary difference for Utilities construction is that the APM team needs to confirm the following on a periodic basis, through audits or observations:

- Regardless of who is performing the work:
  - The Oregon Utility Notification Center must be notified (OAR 952-001-0010 through 0100).
  - The Agency must approve the Utility Adjustment Master Plan before construction.
  - The Baseline Schedule must be updated to account for Utility Work.
  - Installation must meet the Agency's Utility regulations and policies, unless otherwise approved by the APM team.
  - The Design-Builder must notify Utility companies before working in the vicinity of the Utility.
  - The Design-Builder must notify Utility companies if work will interrupt service.
  - Collaboration with Utilities must take place regarding other construction issues that could impact the Utility.
  - Meetings must occur at least monthly and the Agency must be invited.
  - Appropriate permits must be obtained and complied with.
  - Separate records must be kept for each Utility.
  - The records identified in DB174 must be maintained in the Project files.
  - As-Constructed Plans showing final construction must be submitted and approved by the Agency.
- If the Utility company is performing its own construction:
  - The Design-Builder Quality Management Team must ensure that there is proper documentation to cover the Agency's interests.
  - For work under (buried or bored) or over (e.g., bridged, spanned) an Agency facility, work must be performed and inspected according to Agency requirements.

- If the Design-Builder performs the construction:
  - The Utility company must perform a review of construction and provide concurrence (see Chapter 3, section 3-28 in this Manual for Third Party acceptance) that the Work has been completed according to Contract requirements.
  - The Design-Builder must notify the Agency at least 2 days before meetings with Utility companies.
  - The Design-Builder must provide meeting minutes for all meetings with Utility companies.
  - Damaged Utilities must be reported (see DB174.10) and repaired.

## (H) Changes Applicable to Utility Work

The APM team will be responsible for evaluating whether a change is warranted and providing the baseline documentation required for the change. If a dispute occurs regarding whether a change exists that warrants a CCO, the current status of the Work should be documented and any future Work tracked as Force Account until resolution.

The APM team should follow the steps identified in Chapter 1, section 1-15 in this Manual for defining the type of change and the methods for tracking specific types of changes. The oversight staff should also perform the following duties:

- Communicate with the affected Utility, to help identify whether the Work is warranted and being performed in an efficient manner (this is especially true if the Utility company is performing inspections).
- Perform sufficient oversight to verify that the Utility company is performing efficiently (this is particularly true when the Utility company self-performs or self-hires the Work).
- Coordinate with Utility companies to reduce the potential for additional costs that result from delays beyond the Design-Builder's control. (The APM team needs to review the Utility agreement to determine the point of contact before providing assistance.)

## 3-29 – Railroads

Where the Design-Builder's Work will impact Railroads, special attention is required due to the nature of the Work. Agency coordination with Railroad owners during project development and procurement phases establishes the processes for the Design-Builder's Work that impacts Railroads. Due to the long lead time associated with obtaining approval for Railroad Work, it is common on DB projects for the Agency to have completed a greater amount of the design for Railroad Work or developed Prescriptive Specifications for Railroads. Having a more complete design or prescriptive requirements may be necessary to obtain Railroad permits early in the Project.

The Design-Builder is required to comply with the conditions of any Railroad permits as part of the Contract requirements, including that Design-Builder has obtained proper Railroad protective insurance. The Agency's oversight entails monitoring of the Design-Builder's compliance and immediate identification and notification if a problem arises. It is important to resolve Railroad-related issues quickly to avoid delays to the Project schedule.

The Design-Builder must submit to the Agency PM for Review and Comment all necessary documentation to acquire right-of-entry agreements, Temporary Construction Crossing Agreements, Utility license agreements, general license agreements, and other permits required by the Railroad for design and construction of the Project (DB174.30). The Design-Builder must incorporate Agency comments into the documentation. Each Railroad has different agreement and permit requirements, see ODOT Railroad Manual available on ODOT ROW Railroad Coordination Program website: <https://www.oregon.gov/odot/ROW/Pages/Railroad.aspx>

Except for right of entry agreements, the Agency facilitates all communication between the Design-Builder and the Railroad regarding the necessary agreements, licenses, and permits.

The Design-Builder may not work on or above Railroad ROW until the Agency and the Railroad have a fully executed Construction and Maintenance (C&M) agreement or a fully executed railway flagging services agreement, as applicable. After the Agency has obtained all required agreements, the Design-Builder must obtain a fully executed right of entry agreement as well as all insurance coverages as required by the Railroad. For the Agency to obtain an executed C&M agreement, the Design-Builder must submit final stamped Plans for all Railroad Work to the Agency PM at least 210 days prior to the scheduled commencement of Work on or above Railroad ROW.

Any Design-Builder proposed changes to the Railroad design must comply with DB155.10. For approved changes, the Agency PM coordinates with the SURL and the Railroad for review and approval and other permits (except the right-of-entry permit) required for the Design-Builder's Work. The Design-Builder is responsible for preparing all documents required to obtain any new permits or agreements necessary to implement the design change.

Any Design-Builder proposed changes to the Railroad design must comply with DB155.10. For approved changes, the Agency PM coordinates with the SURL and the Railroad for review and approval and other permits (except the right of entry permit) required for the Design-Builder's Work. The Design-Builder is responsible for preparing all documents required to obtain any new permits or agreements necessary to implement the design change.

The specific submittals that the Design-Builder must prepare and submit are described in DB174.30. The Design-Builder must allow 60 days for approval from the Railroad.

Railroad crossings require crossing orders, agreement modification, and right of entry agreement issued by the Railroad. Refer to the DB General Provisions to determine the Design-Builder's Scope of Work.

The Railroad crossing should try to stay within existing easements to avoid potential time delays.

This section identifies some of the key Design-Builder responsibilities, and more importantly identifies the APM team's key roles and functions for Railroad oversight

## (A) Design-Builder Responsibilities

For DB projects, the division of Railroad responsibility is similar to Utilities. In all cases, the Design-Builder has some responsibility, which can range from:

- Coordination of Railroad design and construction, to ensure it is not in conflict with the Design-Builder's design and/or construction (location, sequence, etc.) (this occurs when the Railroad performs design and construction using its own forces or others); to
- Design of the Railroad: this would occur if the Railroad or its contractor is to construct the facility; to
- Construction of the Railroad: this is unlikely to occur, but would represent the Design-Builder constructing a design by others for a facility; to
- Design and construction of the Railroad: this is unlikely to occur.

By far, the most common of the previous responsibility scenarios is the first: design and construction coordination. The other three scenarios are very limited, and will be defined in the DB General Provisions if incorporated into a project.

The Design-Builder is required to coordinate with the affected Railroad to ensure that design and construction of the Railroad is effective and efficient with respect to construction and long-term maintenance and expansion. This effort requires collaboration between the Design-Builder, the Railroad, and the Agency.

The Design-Builder is responsible for working with the Railroad to acquire any necessary rights-of-entry permits, temporary crossing permits, or other permits required for Highway or Bridge improvements.

Other Design-Builder responsibilities include:

- Updating the Baseline Schedule monthly to reflect current Railroad progress.
- Identifying and verifying the easements or ROW required for the Railroad.
- Protecting Railroad facilities that will not be affected.
- Performing Work and operations so they do not affect the Railroad's operation.
- Identifying and resolving all Railroad conflicts, except for those identified in the DB Special Provisions.
- Identifying potential Railroad conflicts with the Contract Baseline Concepts.
- Identifying ownership of previously unknown Railroads, if encountered.

- Notifying affected Railroads within of the timeframe specified in the right of entry agreement(s) before performing Work adjacent to their facility.
- Ensuring that the Railroad company provides flagging, linemen, signalmen, signal indicators, telltales, etc. as deemed necessary by the Railroad company (at the Design-Builder's expense).
- Maintaining drainage of Railroad facilities.

## (B) Role of the Agency

The APM team is expected to work with the Design-Builder and the Railroads to help facilitate that all Work is coordinated and performed efficiently and in the Agency's and the public's best interest.

The information that the Agency may provide in the RFP or that the APM team may provide early in the Contract include:

- A Railroad point of contact.
- RFP plans identifying known Railroad facilities.
- Any secured Railroad agreements (in DB General Provisions, Attachment A – Engineering Data).

The APM team's role for Railroad Work can vary for each DB project. The APM team will be the liaison between the Design-Builder and Railroad for coordinating all design and construction Work.

## (C) Pre-project Activities

The following activities will help the APM team be best prepared to address Railroad needs during execution of the Project:

- The SURL will be the main contact between the Design-Builder, the Agency, and affected Railroad.
- Reviewing the Contract to understand the general risk assignment for Railroads.
- Reviewing Railroad agreements in the DB General Provisions Attachment A – Engineering Data (if provided), to understand the requirements for specific Railroads.

## (D) Kick-off Meeting

The Design-Builder may be required to hold a kick-off meeting for Railroad and Railroad facility-related coordination (refer to project-specific Railroad requirements). Kick-off meetings allow better coordination of Work that affects the Railroad or that is adjacent to the Railroad. At this meeting, the APM team should be prepared to describe the communication protocols within the Agency.



The APM team should also be prepared to discuss any known or perceived circumstances associated with any Railroad facility or Railroad that may impact or affect the Design-Builder's approach to schedule, coordination, Work, etc. This meeting should culminate in discussing the number of known affected Railroads and how to eliminate conflicts.

### **(E) General Coordination Activities**

The Agency is responsible for entering into negotiations and securing any necessary property interests. The Agency is the Entity that will enter into any agreement with the Railroad for maintenance or construction.

The actual Work will be performed by the Design-Builder as the Agency's agent. The APM team should inform the Design-Builder that the Agency will provide all direct coordination, notify the affected Railroads, and inform the Railroads of their obligations.

### **(F) Design Activities**

Refer to Chapter 3 (Design Review in this Manual) for specific roles the APM team will perform for designs and Design Review. The primary difference for Railroad design is that the APM team should confirm the following:

- Regardless of who performs the design:
  - The design must be clearly marked with who performed it. The Railroad and Agency must be involved in the review.
  - Meetings must occur at least monthly and the Agency must be invited.
- If the Railroad is performing its own design:
  - The Design-Builder must review the design for effectiveness and consistency with the remaining project requirements.
  - The APM team must review the design for general conformance with Agency requirements.
  - Proper easements and ROW must be identified and deemed acceptable
- If the Design-Builder performs the design:
  - The Railroad must perform a review of the design and provide acceptance.

### **(G) Construction Activities**

Refer to Foreword Chapter FOR-5 in this Manual for the APM team's overall functions during construction. Generally, the APM team's role during Railroad or Railroad facility construction is similar, and covers the same broad categories identified in Chapter 2 in this Manual.

The primary difference for Railroad construction is that the APM team needs to confirm the following, on a periodic basis through audits or observations:

- Regardless of who is performing the work:
  - The Baseline Schedule must be updated to account for facility Work.
  - Installation must meet the Agency's Railroad regulations and policies, unless otherwise approved by the APM team.
  - The Design-Builder must notify the Railroad before Work begins in the vicinity of the facility, and arrange for traffic control as necessary.
  - Collaboration with Railroads must occur, regarding other construction issues that arise that could impact the facility.
  - Meetings must occur at least monthly and the Agency must be invited.
  - Appropriate permits must be obtained and complied with.
  - Records must be kept separate for each Railroad.
- If a Railroad is performing its own construction:
  - The Design-Builder's Quality Management Team must ensure that there is proper documentation to cover the Agency's interests.
  - For work under (e.g., buried or bored) or over (e.g., bridged, spanned) an Agency facility, all work, testing and inspection must be performed according to Agency requirements.
- If the Design-Builder performs the construction:
  - The Railroad must perform (or at a minimum be given the opportunity to perform) a review of the construction, and provide concurrence that the completed facility meets jurisdictional requirements.
  - The Design-Builder must notify the Agency before meetings with a Railroad.
  - Damaged Railroad facilities must be reported (DB174) and repaired.

## (H) Changes Applicable to Railroad Work

Refer to the previous Changes Applicable to Utility Work Chapter 3, section 3-29 in this Manual for guidance in changes applicable to Railroad Work.

### 3-30 – Right of Way

Right-of-way acquisition is critical to all projects and should be avoided, if possible. The Agency will provide ROW identification, engineering and acquisition services. The Agency provides clearance notification once ROW acquisition is completed.

The Design-Builder may identify construction easements by providing ROW engineering with the Agency securing the construction easement. Refer to DB174 for the Design-Builder's Scope

of Work. When ROW acquisition by the Agency continues after Contract Award, an acquisition schedule is provided to the Design-Builder in the RFP.

This section gives the APM team the background needed to provide proper oversight of the ROW process. Roles and responsibilities are defined and procedures for compliance monitoring are provided.

## (A) Design-Builder Responsibilities

The Design-Builder is generally only responsible for coordination efforts associated with ROW. Generally, during the procurement process the Agency will have identified necessary ROW parcels and may have begun the process of securing ROW.

The Design-Builder is responsible for:

- Reviewing the DB General Provisions and Attachments for the ROW parcels designated to be delivered for the Project, reviewing the associated timeframes designated for delivery to the Design-Builder, and comparing them to the Baseline Schedule.
- Providing adequate access and Utility service to all occupied properties, including businesses.
- Obtaining the right-of-entry permission forms associated with private properties for the purpose of surveying, investigations, etc.
- Identifying all additional required ROW based on its design by DD. The Design-Builder has the right to pursue additional ROW acquisitions if its final design requires it. However the Design-Builder is responsible for all costs, including the Right-of-Way Specialist's costs, purchase costs, condemnation costs, environmental permit updating costs, and any project delays that result from requiring additional environmental permitting and/or updating the permits.

## (B) Role of the Agency

The APM team liaison should be familiar with the following documents, to assist in ROW matters:

- ODOT Right-of-Way Manual.
- ODOT Right-of-Way Engineering Manual.
- ODOT Right-of-Way and Rail/Utility Coordination Contractor's Services Guide.
- Code of Federal Regulations, 23 CFR 710.
- Uniform Relocation Assistance and Real Property Acquisition Policies of 1970, as amended.
- ODOT Contractor's Services Guide.

- ODOT Guide to Appraising Real Property for Use in State Transportation Projects.
- Uniform Appraisal Standards for Federal Land Acquisitions.

In instances where ODOT is acquiring ROW, the APM team will coordinate with the ODOT Right-of-Way Section.

## **(C) Right of Entry**

The Design-Builder can receive a right of enter a parcel in two circumstances: 1) prior to acquisition and 2) post acquisition. The APM team should confirm that the Design-Builder has the appropriate approvals for right of entry.

## **(D) Right to Enter Prior to Acquisition**

Prior to acquisition of the identified ROW parcels, it is the Design-Builder's responsibility to negotiate with individual property owners for access. Entry prior to acquisition could be needed for additional studies or to provide environmental clearances, but is not to include any construction Work.

## **(E) Post-acquisition Right to Enter**

Following successful acquisition through negotiating or condemnation, the Agency's APM team will issue the Design-Builder Acceptance of Certification for physical possession.

On rare occasions, the APM team and the Design-Builder can request that the Agency's Right-of-Way Supervisor and Right-of-Way Agent secure Permits of Entry to Construct. The APM team should discuss each of these instances with the Right-of-Way Agent and verify that the owner has been informed of their rights and the State's obligations.

The Design-Builder cannot enter onto property acquired by the Agency prior to ROW certification being issued by the Agency (regardless of status of possession) unless the Design-Builder receives written permission from the Region ROW office. Unless permission is given for a specific property, the Design-Builder must wait to enter the property until after certification has been issued. The Agency PM should work with the Region ROW office during the progress of the Project Work, and make certain that Design-Builder is not allowed access until all certifications have been issued.

## **(F) Right-of-Way Acquisition Management**

The DB General Provisions commits the Agency to providing access to properties, per the schedule shown in DB174.20. The Agency and the Design-Builder should meet soon after NTP to determine whether the Right-of-Way Acquisition Schedule can be adjusted to facilitate the Design-Builder's plans for completing the Work. At that meeting and at regular intervals thereafter, the Agency and the Design-Builder should meet to review the status of ROW acquisition and to alert each other of any difficulties anticipated or discovered.

## **(G) Cost Estimates**

The Agency is required to track ROW costs associated with Design-Builder requests for additional ROW (DB174.20). The APM team should review the cost estimates for each parcel or on a project basis. If additional ROW costs are prepared on a Work Location basis, the APM team should verify that the Design-Builder only proceeds with design on Work Locations where additional ROW costs have been approved. The APM team will provide an estimate of all costs.

## **3-31 – Governmental Jurisdictions**

Governmental jurisdictions include cities, counties, Native American Tribes, and other agencies that own or operate facilities that may be impacted by a DB project. These facilities could include wastewater, stormwater, drinking water lines and facilities, sidewalks, traffic lights, signs, Roadways, erosion control devices, and storm management devices (e.g., ponds, dams and weirs).

Governmental jurisdictions could have a myriad of facilities that require protection, relocation, upgrading, expansion, or removal. Whatever the Work, the APM team and the Design-Builder will have a role. Generally, overall coordination is the Design-Builder's responsibility, but the APM team may be the liaison between the Design-Builder and the governmental jurisdiction.

In the RFP, the Agency will generally have presented limited information on governmental facilities with respect to location, condition, etc. The degree to which the information is complete or accurate will vary depending on the risk analysis/gap analysis and risk assignment during procurement (similar to Utilities and Railroad Work). If the risk associated with a particular governmental facility is deemed significant, the Project Development Team may have performed gap analysis work to lessen the risk. Because of the lesser degree of completeness and accuracy, there is a larger need to involve the Design-Builder in coordinating the Work. This allows the Design-Builder to own the risk of its responsibility with respect to the Project schedule and interdisciplinary coordination of overall design and construction.

This section identifies some key Design-Builder responsibilities, but more importantly identifies the APM team's key roles and functions with respect to governmental jurisdiction oversight.

## **(A) Design-Builder Responsibilities**

Governmental facility responsibility can be divided in four categories. With each category, the Design-Builder has some responsibility. The responsibility could range from:

- Coordination of the facility design and construction, to ensure it is not in conflict with the Design-Builder's design and/or construction (location, sequence, etc.); to
- Construction of the facility: the governmental jurisdiction may provide the design, but the Design-Builder may be responsible for performing the Work; to

- Design of the facility: the Design-Builder may be required to design the facility, but the governmental jurisdiction may self-perform or select contractors for the Work; to
- Design and construction of the facility.

The top category is the most prevalent in DB projects. Any other category will be clearly described in the DB Special Provisions.

The Design-Builder is required to coordinate with the affected governmental jurisdiction, to ensure that the facility's design and construction is effective and efficient with respect to construction and long-term maintenance and expansion. This effort requires collaboration between the Design-Builder, the governmental jurisdiction, and the Agency. Generally, the APM team will be the Design-Builder's liaison to any governmental jurisdictions.

Other Design-Builder responsibilities include:

- Updating the Baseline Schedule monthly to reflect current facility progress.
- Identifying and verifying the easements or ROW required for the governmental facility Work.
- Protecting governmental facilities that are not to be affected.
- Identifying and resolving all governmental jurisdiction facility conflicts, except for those identified in the DB General Provisions.
- Identifying potential governmental jurisdiction facility conflicts with the Contract Baseline Concepts.
- Identifying ownership of previously unknown facilities, if encountered.

## **(B) Role of the Agency**

The APM team is expected to work with the Design-Builder and governmental jurisdictions to help facilitate that all Work is coordinated and performed efficiently and in the Agency's and public's best interest. Information that the Agency may provide in the RFP or that the APM team may provide early in the Contract include:

- A governmental jurisdiction contact list.
- RFP plans identifying known governmental jurisdiction facilities.
- Any secured agreements (in DB General Provisions Attachment A – Engineering Data).

The APM team's role can vary with respect to governmental jurisdiction facility Work for each DB project. This section outlines some of the critical roles that the APM team should perform and outlines roles that may be performed.

The APM team will be the liaison between the Design-Builder and the governmental jurisdiction for coordinating all design and construction Work.

### (C) Pre-project Activities

The following activities will help the APM team be best prepared to address governmental jurisdiction needs during execution of the Project:

- Identify main points of contact with all Parties.
- Reviewing the Contract to understand the risk assignment for government facilities in general.
- Reviewing any agreements in the DB General Provisions Attachment A – Engineering Data to understand the requirements for specific government jurisdictions.

### (D) Kick-off Meeting

Depending on project specifics, a kick-off meeting for governmental jurisdictions may be warranted. This meeting would be a venue for reviewing and coordinating jurisdictional facility Work. At the kick-off meeting, the APM team should be prepared to describe communication protocols within the Agency. The APM team should also be prepared to discuss any known or perceived circumstances associated with any governmental facility or government jurisdiction that may impact or affect the Design-Builder's approach to schedule, coordination, Work, etc.

#### (E) Design Activities

Refer to Chapter 3 (Design Review in this Manual) for specific roles that the APM team will perform for designs and Design Review. The primary difference for government facility design is that the APM team should confirm the following:

- Regardless of who performs the design:
  - The design must be clearly marked with who performed it.
  - Governmental jurisdictions and the Agency must be involved in the review.
  - Meetings must occur at least monthly and the Agency must be invited.
- If the governmental jurisdiction is performing its own design:
  - The Design-Builder must review the design for effectiveness and consistency with the remaining project requirements.
  - The APM team must review the design for general conformance with Agency requirements.
  - Proper easements and ROW must be identified and considered to be acceptable.
- If the Design-Builder performs the design:
  - The governmental jurisdiction must review the design and provide acceptance.

### (F) Construction Activities

Refer to Foreword Chapter, section FOR-5 in this Manual regarding overall functions that the APM team performs during construction. Generally, the APM team's role during governmental



facility construction is similar and covers the same broad categories identified in Chapter 2 in this Manual. The primary difference for construction of government facilities is that the APM team needs to confirm the following on a periodic basis, through audits or observations:

- Regardless of who is performing the work:
  - The Baseline Schedule must be updated to account for facility work.
  - Installation must meet the Agency's regulations and policies, unless otherwise approved by the APM team.
  - The Design-Builder must notify the governmental jurisdiction before Work begins in the vicinity of the facility, and must arrange for traffic control as necessary.
  - Collaboration must occur with governmental jurisdictions regarding other construction issues that arise that could impact the facility.
  - Meetings must occur at least monthly and the Agency must be invited.
  - Appropriate permits need to be obtained and complied with.
  - Records must be kept separate for each facility.
- If the jurisdiction is performing its own construction:
  - The Design-Builder's Quality Management Team must ensure that there is proper documentation to cover the Agency's interests.
  - For work under (buried or bored) or over (e.g., bridged, spanned) an Agency facility, work must be performed, tested and inspected according to Agency requirements.
- If the Design-Builder performs the construction:
  - The governmental jurisdiction must review (or at a minimum be given the opportunity to review) the construction and provide concurrence that the completed facility meets jurisdictional requirements.
  - The Design-Builder must notify the Agency before meetings are conducted with governmental jurisdictions.
  - Damaged facilities must be reported and repaired.

## **(G) Changes Applicable to Governmental Jurisdictions**

Refer to the previous changes applicable to Utility Work section (3-28(h)) and Railroads section (3-29(g)) in this Manual for guidance in changes applicable to governmental jurisdiction work.

### **3-32 – Work Zone Law Enforcement**

The Work Zone Law Enforcement (WZLE) process for DB projects is similar to the process outlined in the most current versions of the ODOT WZLE 30 step process workbook and the following ODOT guidelines and manual located on ODOT's internet sites.

- Work Zone Law Enforcement Guidelines located on the ODOT Work Zone Safety webpage: <https://www.oregon.gov/odot/Safety/Pages/Work-Zone.aspx>
- Traffic Control Plans Design Manual located on the ODOT Engineering Manuals webpage: <https://www.oregon.gov/odot/Engineering/Pages/Manuals.aspx>

For DB projects, the Agency PM and the APM team should be aware of the following WZLE processes and timelines:

- No later than the first RFC Design Review, the APM team will Review and Comment on Design-Builder's recommended plan for allocating the law enforcement hours over the duration of the Project.
- During RFC Design Reviews, the APM team will Review and Comment on the Design-Builder's list of construction activities requiring on-site law enforcement, including a preliminary schedule of when those activities will occur.
- The APM team will invite law enforcement agencies to preconstruction conferences to discuss WZLE placement, construction schedule, positive protection, etc.
- The APM team (not the Design-Builder) will coordinate directly with law enforcement agencies to schedule the enforcement days and times for the Project. Note: Law enforcement agencies require minimum advance notice to schedule on-site enforcement in accordance with the WZLE 30 step process workbook and WZLE Guidelines.
- During monthly traffic control task force meetings, the APM team will Review and Comment on the Design-Builder's updates to the recommended law enforcement allocations and the actual number of law enforcement hours expended and law enforcement hours remaining.
- The Design-Builder's TCS tracks and records law enforcement presence / activities in daily reports. See Chapter 12A – Daily Reports / Diaries of the ODOT Construction Manual.
- The APM team will review and approve law enforcement hours worked (presence, enforcement, commute) via submitted law enforcement agency invoice.

The APM team will submit the final amount for reimbursement prior to Third Notification (no later than 60 days after completion of law enforcement hours). See OFW process, Chapter 15 – Contract Change Orders / Force Account / Work by Public Forces of the ODOT Construction Manual.

## 3-33 – Noise Risk Mitigation

Except as described below, the environmental risk noise and mitigation process for DB projects is similar to the process outlined in the most current version of the ODOT [Noise Manual](#) and [Project Delivery Guide](#) for DBB projects.

For DB projects, the Design-Builder submits a Noise Technical Report (NTR) addendum to the Agency if needed – see DB141.51.

If needed, the Agency Region Public Information Officer (PIO) will manage and perform or have an Agency-outsourced consultant (not the Design-Builder) perform the noise walls voting process for the affected property owners. The voting process must be completed prior to the RFC Plans and Specifications Design Review submittal to minimize cost or schedule delays. If the vote is “no,” the scope of work would be eliminated before submittal of the RFC Plans and Specifications.

Individual noise walls that are subject to voting will be a separate design and construction Price Item in the Schedule of Prices. The Agency PM and APM team will remove any Price Items by CCO for any noise walls not approved by the voting process. Any proposed design changes by the Design-Builder that have the potential to impact the number or size of required noise walls will follow the process outlined in DB155.10.

If the Design-Builder makes an Agency-approved design change that can affect the outcome of the noise analysis (such as a change that would move traffic horizontally or vertically or change the Roadside topography compared to the previous design) then the Design-Builder must perform noise analysis on the new design, and document it with an addendum to the NTR.

The Agency understands that noise walls affect road users and adjacent property owners with visually negative aesthetics. The APM team shall ensure that the Design-Builder screening vegetation, when used, is located in the Project Site, as agreed upon with the ODOT Maintenance District representative.

If the Proof of Concept design did not require a noise study per the ODOT Noise Manual, but the Design-Builder design does, then the Design-Builder must prepare a NTR. The Noise analyses prepared by the Design-Builder are subject to Agency approval.

## 3-34 – Public Engagement

Public engagement is a critical function on any Agency project. The Agency generally provides an Official Spokesperson, a PIO, to be the interface between the Project, the Agency, and the public. The Agency will generally assign a PIO to projects on a part-time or full-time basis, depending on the Project’s size and need.

Through proper public engagement, the Agency and Design-Builder can provide the public with accurate, timely information that allows them to better understand the Project’s impacts on their daily lives. The better this is understood, the better the perception the public will have of the Project.

Public engagement has a single overriding goal that guides the work: Fully informed and meaningful participation by Stakeholders and the public for the duration of the Project.

To achieve this goal, the communications work must:

- Allow travelers to make informed decisions while encouraging alternative modes of transportation and reduce traffic demands during the Project's construction.
- Maintain effective communication and relationships with the public, partner agencies, Stakeholders, elected leaders, local governments, businesses, and emergency service providers, etc. prior to and during construction to ensure proper coordination efforts.
- Educate the public about the transportation and safety needs of the Project.

This chapter defines engagement roles and responsibilities in broad terms for the Design-Builder (if applicable to a specific project), and provides the APM team with a guide for overseeing the Design-Builder. DB141.52, if included, provides the contractual requirements for public engagement.

If the Design-Builder is tasked with providing some public engagement functions on the Project, their role will be limited to supporting the Agency's efforts.

## **(A) Design-Builder Responsibilities**

The Design-Builder's roles and responsibilities for public engagement can vary depending on the Project's needs. When the Design-Builder is expected to take an active role in public engagement specific requirements are detailed in DB141.52.

## **(B) Role of the Agency**

The Agency's Region PIO or designated region representative will act as the official spokesperson for the Project according to ODOT policy. The spokesperson shall be the sole source for all news releases and interviews, including on-site interviews with all news media representatives including but not limited to newspaper, magazine, radio, and television reporters, elected officials, and others as determined in the Project's Public Communications and Engagement Plan.

## Chapter 4 – Construction Process

### 4-1 – Construction Management and Construction Quality

With DB projects, the Design-Builder (rather than the Agency) has primary responsibility for construction management and construction quality. Because of this, contract administration and construction conformance oversight focuses on the Design-Builder's performance as it relates to contract requirements and the Quality Plan Accepted at start of a project. As discussed in Chapter 2 in this Manual, the Design-Builder prepares a Quality Plan for Agency review and Acceptance. This Plan defines the processes to be implemented in assuring quality during design and construction of the specified Scope of Work.

The Design-Builder is responsible for delivering Highway improvement projects to the Agency, from contract award through construction completion. The Design-Builder has Quality Management responsibilities and employs a Quality Organization or Quality Team that implements management plans and procedures tailored to the DB delivery method and also to project-specific requirements.

The Agency and its representative (if outsourced) are responsible for confirming conformance with the Contract and confirming that the Design-Builder implements the Quality Plan.

Similar to the design process, the Agency's role during construction is oversight of the Design-Builder's Work, which principally entails verifying that the Design-Builder is complying with the requirements of the Contract Documents.

It is important to remember that the Design-Builder is responsible for its design and for its means and methods to accomplish the construction Work. Unless the Design-Builder is not in compliance with a contractual restriction or limitation on its Work, the Design-Builder's Work presents a safety concern, or the Design-Builder's Work is resulting in quality issues, the Agency must not direct changes to the design or direct the Design-Builder's construction Work.

The Agency maintains a role similar to DBB with the use of the RAS to review documentation and the role of the IA and Verification testing performed by Region QAC. The Agency roles at fabricators and Suppliers are also similar to DBB projects. Therefore, with DB, the roles are more involved than a traditional oversight role.

Agency inspectors at these facilities remain responsible for inspection and Acceptance of workmanship of many aspects at these facilities. The Agency maintains the Acceptance role of mix designs and modifications to the QPL. The APM team must understand the interrelationships of construction phase roles to ensure the proper Entity maintains responsibility.

### (A) Quality Management

The Design-Builder's and Agency's respective roles in the construction quality process are discussed in detail in Chapter 2 in this Manual. In short, the Design-Builder is responsible for all QC activities, while the Agency is responsible for QA and IA. The Design-Builder performs detailed inspections and testing of the Work and Materials, while the Agency provides oversight that the Design-Builder is complying with QC requirements, including by reviewing quality documentation, sampling, spot checks, and audits.

### (B) Contract Administration (Agency)

In addition to oversight of the Design-Builder's construction Work and performing QA and IA (discussed in Chapter 1 & 2 in this Manual), the Agency has numerous project administration responsibilities while the construction Work is underway, including:

- Contract management.
- Processing payment requests.
- Labor compliance oversight (Subcontractor payment and DBE/OJT compliance).
- Environmental compliance oversight.
- Managing changes in the Work (either Agency-directed or Design-Builder proposed).
- Responding to disputes.
- Interfacing with the public, elected officials, property owners, and business owners.

The goal of the APM team who performs Contract administration and construction compliance oversight is to:

- Assist in project startup, to facilitate understanding of ODOT standards of practice.
- Validate the progress claimed on pay estimates (see Chapter 1, section 1-13 in this Manual).
- Assure that the Design-Builder implements its Quality Plan.
- Audit the Design-Builder's record management system for compliance and conformance with contract requirements and ODOT standards of practice.
- Monitor Agency IA and Verification testing activities.
- Assure that the Design-Builder provides the Agency with as-constructed records and maintenance documents that facilitate the Agency's asset management activities.

This chapter describes many Design-Builder roles, and more importantly describes the APM team's roles and relationship. It provides guidelines for the APM team staff to follow in implementing construction oversight, including specific items to review and documents to use for conformance comparison. It also specifies many construction disciplines (e.g., inspection,

Materials, Pay Requests, and project completion) and describes the Design-Builder and Agency Team's interrelationships.

To properly perform contract administration and construction oversight, it is important to understand some major project roles and responsibilities. This understanding can ensure that oversight personnel don't mistakenly perform a function to be performed by the Design-Builder. It also ensures that oversight personnel understand what Design-Builders need from them. This keeps the responsibility and risk with the proper Entity and allows projects to proceed as outlined in the Contract provisions.

These activities are discussed further below.

## 4-2 – Commencement of Construction Work

The APM team has to perform multiple activities at project start-up. These activities range from preliminary review and understanding of the Contract Documents to activities that must take place before work begins in the field.

### (A) Preliminary Activities

The APM team's preliminary activities include:

- Reviewing the approved Baseline Schedule and outlining the Agency resources needed and timeframes for the Construction phase of the Project.
- Reviewing the Quality Plan or outline submitted with the Proposal related to the construction phase.
- Verifying inspector and technician certifications for Agency resources.
- Reviewing the Contract Documents, including the Design-Builder's Proposal.
- Assisting the RAS with documentation system set-up.
- Reviewing any ID Submittal packages in preparation for the RFC Plans and Specifications and estimates.
- Reviewing the measurement and payment provisions for the Price Items established for the Contract.

### (B) Commencement Limitations

The Design-Builder may not commence any construction Work until the following have been completed (DB180.40):

- Receipt of the proper NTP (see Chapter 1, section 1-4 in this Manual)
- Filing a Public Works Bond with the Construction Contractors Board (DB170.20) (Note: may have occurred prior to contract award).



- Ensuring that Subcontractors have filed the proper Public Works Bond (may have occurred prior to contract award).
- Agency's consent to subcontract (See Chapter 14 of the ODOT Construction Manual)
- There is an Accepted Project Work Schedule.
- Agency Review and Comment on the Baseline Project Schedule.
- Acceptance of the Quality Plan or Acceptance of a partial Quality Plan covering the Work to be performed:
  - The APM team should review the Quality Plan (as outlined in Chapter 2) prior to construction starting.
  - Review and Acceptance of the Quality Plan is critical to successful construction oversight, because it defines the Quality Management process that the Design-Builder will follow during construction.
  - The Quality Plan also defines interrelationships between the Design-Builder's Quality Management staff and the Agency's IA and Verification roles.
- The preconstruction meeting (for the Work Location) has occurred and the Design-Builder has met with the Agency Engineer
  - The Design-Builder must meet with the Agency at the required pre-construction conference at least 15 days prior to construction (See Chapter 11 of the Construction Manual for meeting goals).
  - In DB, the Design-Builder runs this meeting. However, the Agency should use this opportunity to ensure that the Design-Builder has defined and can explain the means for involving all Quality entities appropriately (i.e., Design-Builder and Agency personnel such as QAC/QA Testers, RAS, Fabricator Inspectors, Mix Design Approvers, etc.).
- The Design-Builder has provided confirmation that the Safety Manager (Key Personnel) has been appointed and commenced duties. All necessary permits and regulatory approvals have been obtained.
- OECR Pre-Construction Meeting – Refer to Chapter 18 – Workforce and Small Business Equity Programs of the ODOT Construction Manual.

Additionally, for each Design Unit, the Design-Builder may not commence construction until:

- Agency review and Acceptance of the RFC Plans and Specifications and Working Drawings.
- Agency review and Acceptance of the TCP.
- Agency review and Acceptance of the Pollution Control Plan.
- Agency review and Acceptance of the ESCP.

- All necessary permits and regulatory approvals have been obtained.
- All requirements under DB155.16 have been met.
- Design-Builder has assembled all Materials, Equipment, and labor on the Project Site, or has provided reasonable assurance that they will arrive on the Project Site, so that the Work can proceed according to the Project Work Schedule

In addition to these general requirements, the Contract Documents may contain additional limitations on construction operations with which the Design-Builder must comply, including those in DB180.40. During the Design-Builder's construction operations, the Agency PM will verify that the Design-Builder is in compliance with other requirements or restrictions on the Work, including:

- Design-Builder performed Utility Work and accommodation of Utility Owner Work.
- Accommodation of other contractors.
- Temporary traffic control.
- Railroad restrictions and requirements.
- Right of way and access release requirements.
- Lane closures.
- Special events.
- Limitations on road closure durations.
- Regulated Work areas.
- Noise limits.
- Air quality requirements.
- Maintenance under traffic.

The following additional requirements are pertinent to the Design-Builder's construction Work:

- Design-Builder must incorporate only new Materials into the Work, unless otherwise specified (Design-Build Agreement Article 2.3.4).
- Design-Builder must notify the Agency when the Work or an agreed-upon portion of the Work is completed (Design-Build Agreement Article 2.3.9).
- Design-Builder must maintain a complete set of the Contract Documents on the Project Site and at each Work Location (Design-Build Agreement Article 2.3.10).

## 4-3 – Design-Builder Responsibilities

Expectations for the Design-Builder's roles, responsibilities, organizational requirements, and tasks for construction Quality Management are outlined in the Design-Build Agreement and in DB154 and DB156.

The Design-Builder is responsible for furnishing all products, Materials, Equipment and personnel to perform the Work and provide necessary Quality Management functions. The Design-Builder is responsible for implementing a Quality Program that ensures that all Materials, Equipment and Work elements comply with contract requirements pertaining to the following:

- Procurements.
- Shipping.
- Handling.
- Fabrication.
- Installation.
- Cleaning.
- Inspection.
- Construction.
- Testing.
- Storage.
- Examination.
- Repair.
- Maintenance and Modifications.

The Design-Builder is responsible for ensuring that the Construction Quality Manager (CQM), testers and inspectors meet the following criteria (see DB154.20):

- CQM – requisite experience outline in DB General Provisions.
- Testers and Inspectors:
  - Must be employed by an Entity that is not performing any Work on the Project other than Quality Management activities.
  - Must have Agency-required certifications and/or training commensurate to the testing or inspection to be performed.

The following table provides a summary of roles and responsibilities of the Design-Builder, the Agency, and the Agency's representative (if outsourced) during the construction phase.

Table 6: Typical Design-Builder, Agency and Representative Construction Phase Responsibilities

<b>Construction Activities</b>	<b>Design-Builder</b>	<b>Agency's Rep (If outsourced)</b>	<b>Agency</b>
Construction Planning	✓	- <sup>8</sup>	-
Engineering during Construction	✓	-	-
Inspection (Quality Management)	✓	-	-
Independent Testing (Quality Management)	✓	-	-
Contract Administration/ Change Management	✓	-	-
Project Controls and Scheduling	✓	-	-
Records Management	✓	-	-
Quality Management Records	✓	-	-
Nonconformance Reports	✓	Review	Approval
Maintenance Plans and Procedures	✓	-	-
Compliance and Conformance Monitoring:	-	-	-
Records Management Audits	-	✓	✓ (RAS)
Change Order Processing	-	✓	CCO Approval
Pay Estimate Processing	-	✓	Pay Approval
Quality Plan Implementation Audits	-	✓	✓
Quality Plan Implementation Tests (IA & Verification)	-	✓	✓
Field Trip Reports	-	✓	-
Off-Site Fabrication, Manufacturing Inspection and Quality Testing	✓	-	✓
Contract Closeout/ Records Turnover	-	✓	Acceptance

The Agency and the Agency's representative may share responsibilities or trade responsibilities, as long as oversight functions are performed.

<sup>8</sup> "-" Indicates that the area responsibility is not applicable.

**Note: The Agency representative (Consultant) can perform most functions described in the preceding table, with the exception of approving payment, and Agency contractual actions.**

### 4-4 – Key Personnel Management

The Design-Builder named Key Personnel in its Statement of Qualifications and Proposal for the Project and committed that the Key Personnel would dedicate a specified amount of time to the Work. The Key Personnel for a project are identified in Design-Build Agreement, Article 3.4 and the roles are defined in DB180.35. The Design-Builder must maintain the Key Personnel on the Project for the time specified on the Design-Builder's Form KP, which the Design-Builder will have provided with its Proposal. Key Personnel must generally be at the Project Site during work hours and as necessary to fulfill the obligations of their position. See DB180.35.

If an individual identified as Key Personnel will be unable to fulfill the assigned duties for a period of 48 hours or more, the Design-Builder must propose a temporary replacement at least 7 days in advance of the absence. The Agency PM will review the request and may permit or reject the temporary substitution.

The Design-Builder is required to submit a request to replace, transfer or re-assign Key Personnel by following the process in DB180.35. The Design-Builder must propose a replacement that meets the criteria for the position provided in DB180.35, as well as the reason for the proposed change. The Agency PM will provide a written response within 14 days of receipt of the Design-Builder's completed request.

Continuity of key staff is a critical determinant for project success. Key staff changes must be evaluated carefully.

When the Agency PM receives a request to replace Key Personnel, the Agency PM will review the reason to ensure it is not one of the prohibited reasons in DB180.35. If the reason is acceptable, the Agency PM will review the proposed substitute to ensure that the qualifications meet the requirements for the position. The Agency PM will base the review on the proposed replacement's experience, years on the job, background, education, references, and other information relevant to their ability to complete the Work.

Additionally, the Agency PM will consider the Design-Builder's plan for the transition to ensure that there will be no loss of efficiency or productivity due to the transfer. For this purpose, key elements that the Design-Builder should include are a plan to identify the other staff member(s) who will undertake the departing key staff member's duties during the transition period, train the new person, instill project-specific knowledge, and have Design-Builder staff get to know the new person before starting.

The transition plan may be as important as the person's qualifications, as replacing a Key Personnel position entails the loss of a person who knows the Project and understands the

lessons learned. The Agency PM overseeing the Design-Builder's transition of Key Personnel will verify that the Design-Builder has a plan to maintain continuity and minimize loss of efficiency due to the replacement.

## 4-5 – Design-Builder Project Schedule Submittals and Reviews

Prior to commencing any construction Work, the Design-Builder submits a project schedule for the Agency's review in accordance with DB180.41. The project schedule shall use the Critical Path method and show the sequence of Work activities to design and construct the Project. The schedule must contain sufficient detail so that both the Design-Builder and the Agency can plan, coordinate, document, and control their respective responsibilities. Schedules must additionally show all required double shifts, overtime work, or both, necessary to meet the Contract deadlines.

The project schedule must show Float. Float is a shared resource, meaning that it does not belong to either party to use and is available to the party that first needs it. This means that if there is delay, all Float must be used before the Contract Time can be adjusted. As a result, the Agency may use Float to mitigate any schedule delay for which it is responsible, and the Design-Builder may use Float to mitigate its delays. Float is used on a first-come, first-served basis, and once exhausted, is no longer available unless additional Float is created in the schedule or there is an adjustment to the Contract completion time. The Design-Builder is prohibited from adjusting activity durations and/or schedule logic to use Float when it is not otherwise entitled to do so.

The Design-Builder must designate a Project Scheduler responsible for preparation and maintenance of the Project schedule. The Project Scheduler will serve as the Agency's primary point of contact for schedule-related issues and concerns. Additionally, the Design-Builder's Project Scheduler and Design-Builder's Quality Manager must attend all meetings related to schedule.

Schedules shall be submitted in Primavera P6 or an Agency-approved substitute. The Design-Builder must submit schedules in both digital and paper format to the Design-Builder's Quality Manager, who must independently review the schedule and certify to the Agency that the actual progress to date shown on the schedule is accurate.

Prior to the Design Mobilization meeting, the Design-Builder must provide the Agency PM one digital copy and four paper copies of the Preliminary Baseline Schedule with a time-scaled logic diagram. The Preliminary Baseline Schedule must include, at a minimum:

- Contract Baseline Concepts, stages of design development and construction, ROW, procurement, water Work, and other calendar constraints.
- Critical Path activities.

- Order and delivery dates of Materials and Equipment.
- Activities for procurement durations, including permits and stipulated Agency and third party review durations.
- Price Centers and subordinated activities, durations, sequences, and interrelationships for completing the Work.
- Work Breakdown Structure (WBS) for designing, constructing, and completing the Project.
- The expected beginning and completion date of each Activity, including all stages and phases.
- Utility relocation Work.
- Elements of the TCP.
- Subcontractor activities showing Subcontractor commencement date and estimated completion date.

The Baseline Schedule shall be prepared using the Critical Path Method. Prior to the first preconstruction conference, the Design-Builder must submit a complete Baseline Schedule showing the order in which Design-Builder will perform the Work, the date it will start major Work activities, the critical features of the Work (including procurement of Materials and Equipment), and contemplated dates for completing the Work. DB180.41 contains the full list of requirements for schedule submittals.

The Agency's review of the Preliminary Baseline Schedule and Baseline Schedule is to provide oversight similar to its role reviewing the design submittals discussed in Chapter 1, section 1-13 and Chapter 3 of this Manual. Reviewers will assess the schedules to consider whether they contain major logic flaws, questionable logic ties, are missing critical activities, do not comply with contract requirements, have other significant errors that the Design-Builder must correct, or are plainly unreasonable or infeasible. Reviewers should not provide their preferences in comments on the schedule submittal, such as changing the order of activities, adjusting durations, adjusting logic ties, etc.

The Design-Builder is responsible for complying with the contractual deadlines to complete the Work and Agency reviewers must generally defer to the Design-Builder's schedule unless it contains a material error or is deemed unreasonable.

After the initial schedule submittals, the Design-Builder is required to submit monthly progress schedules as required by DB180.41 and DB180.45. The monthly progress schedule submittal must include a project narrative summarizing progress in the preceding month, including identification of the Critical Path, achievement of milestones, upcoming Hold Points, quality activities, and issues with the Work.

If the Agency PM determines that the Design-Builder's schedule does not accurately reflect the Work, the Agency and the Design-Builder shall meet to discuss scheduling. During the meeting,



the Design-Builder must be prepared to explain apparent inconsistencies and discuss correction of the schedule. See DB180.41. The Agency PM will require the Design-Builder to submit a revised Baseline Schedule incorporating the plan to make the schedule accurately reflect the Work and make up any lost time.

Additionally, the Design-Builder shall submit a three-week Look-Ahead schedule each week from First Notification through Final Second Notification. See DB180.41. The Agency may require a revised three-week Look-Ahead if corrections are necessary.

## 4-6 – Pre-construction Conference

The Design-Builder shall hold a preconstruction conference prior to beginning construction for each Work Location in accordance with DB180.42. The meeting must take place at most 15 days prior to commencement of Work, unless the Agency authorizes otherwise. The Agency PM and its construction oversight staff will attend the preconstruction meeting.

The purpose of the preconstruction conference on a DB project is similar to DBB. The intent is for the Design-Builder to identify and define the roles, responsibilities, and expectations for the construction Work. During the preconstruction conference, the Design-Builder is required to provide an overview of the design for the Work Location, and identify any special challenges or considerations for the construction team.

The Agency's role during the preconstruction conference is primarily to participate in the meeting and gain an understanding of how the Design-Builder will approach construction at the Work Location. The Agency PM may also review the project schedule the Design-Builder has submitted and determine if there are any updates or inconsistencies in the approach to the construction and the Accepted project schedule.

During construction, the Agency will perform QA and IA of the construction Work. The preconstruction conference is useful for the Agency to understand how to engage its inspectors and provide the foundation for how they will schedule inspection personnel and conduct reviews and sampling. After learning of the Design-Builder's plan to approach the Work, the Agency inspector(s) will develop a plan to interact with the Design-Builder's Quality Management Team.

Additionally, the Agency's construction oversight role includes documenting the Design-Builder's progress on the Work to enable the Agency to comply with its responsibilities. The Design-Builder's Quality Management team, however, has the primary responsibility for daily inspection.

The Agency's observation of construction Work is important to fulfilling the Agency's responsibilities with respect to the following, at a minimum:

- Labor compliance/oversight – verification/audit of certified payrolls.
- EEO compliance.

- Verification of Work progress, including reviewing and spot-checking the Design-Builder's completed general daily inspection report, field inspection reports, etc.
- Verification of Equipment and Materials at the site.
- Documentation of construction issues.
- Documentation of Design-Builder issues.
- Conferring/evaluating proposed design changes due to field conditions.
- Verification of Equipment, Materials, quantities, and labor if Force Account Work is performed.

The Agency attendee(s) will use the preconstruction conference to evaluate such factors as:

- Timing of the Work to schedule staff.
- Location of the Work.
- Identification of impacts to the traveling public, property owners, and businesses.
- Discrete Work activities to schedule oversight reviews and inspections.
- An understanding of Design-Builder's crew.
- An understanding of the trades performing the Work for Design-Builder.
- The Materials that will be used.
- The Equipment that will be used.

Note that construction Work on Utilities is subject to a different requirement specified in DB174.10.

## 4-7 – Contract Administration & Project Management

The APM team's roles and activities during DB construction cover the full range of responsibilities found in a DBB project. However, many of the roles are at a reduced scope. For instance, the APM team's role consists of monitoring and tracking construction progress to verify that the Design-Builder's construction and Quality Management efforts meet contract requirements. Generally, the APM team's functions consist of oversight and auditing, as opposed to performing actual tests or inspection or collecting the Quality Compliance Certificate.

A significant aspect of the Agency PM's role on a DB project is contract administration and project management duties. There is no provision for this role in the Contract Documents, as this role is exclusively Agency's responsibility. Contract administration responsibilities on or related to the Project generally include:

- Complying with the terms of funding or grants.
- Compliance with federal obligations, such as:
  - DBE/OJT oversight.
  - Receipt of concurrence on CCOs from FHWA.
  - Reporting requirements to FHWA.
  - Transportation Infrastructure Finance and Innovation Act (TIFIA)-related requirements (if applicable).
  - Buy America.
  - Equal Employment Opportunity.
- Financial management:
  - Tracking the status of payments against budget.
  - Managing contingency.
- Spot-checking construction progress.
- Spot-checking and auditing Quality Management activities.
- Auditing Quality Management documentation.
- Performing IA and Verification testing, as required by ODOT manuals.
- Tracking nonconforming Work.
- Verification that Design-Builder is paying Subcontractors (prompt payment requirements).
- Processing payment requests/progress payments.
- Reviewing and recommending Pay Requests for approval.
- Certified payroll tracking and verification/audit.
- Ongoing risk identification and response.
- Responding to CCO requests and claims.
- Preparing and issuing CCOs.
- Compliance with review periods.
- Management of comments and oversight process.
- Management and release of retainage (if applicable).
- Recording activities on proper forms.

If a consultant is filling the Agency PM role, an ODOT employee with proper delegated authority must make final approval of the following:

- Pay notes.
- CCOs.
- As-constructed documents.

ODOT employees will also be responsible for the following APM team construction activities:

- Region Assurance Specialist (RAS) reviews.
- IA and Verification testing.
- Source QA testing or commercial status designation testing.
- Mix design approvals for concrete and asphaltic mixtures.
- Off-site fabrication inspections at facilities where the Agency is currently performing those functions.
- Labor compliance.

The following documents help the APM team verify that the Accepted Quality Plan works effectively during construction:

- Design-Builder Quality Plan.
- Manual of Field Test Procedures (MFTP).
- Non-Field-Tested Materials Acceptance Guide (NTMAG).
- Inspector's Manual.
- Qualified Products List (QPL).
- Construction Manual.
- QCCS Manual.

## 4-8 – Inspection and Field Monitoring Reports

The Design-Builder is responsible for Quality Management and its records should reflect independent inspection and testing results. As outlined in Chapter 2 (Quality Management) in this Manual, the Agency's primary role is in Quality Program Assurance and this is performed primarily through oversight audits. Audits consist of reviewing written records and field procedures.

The APM team will review all aspects of the Design-Builder's Quality Management Team's responsibilities. The Agency will spot-check the records system to provide evidence that the Quality Management Team is successfully implementing the Quality Plan and that As-Constructed Plans and Design-Builder Specifications are being maintained.

The APM team will also perform inspections and audits of the Quality Management Team's field activities. The APM team should initially focus on Record Management Reviews. As the

Project progresses and the Team confirms the Quality Plan is being followed, the Team can generally reduce field activities even more and rely more heavily on the records management reviews. However, if these reviews confirm that the Quality Plan isn't being following, the APM team should escalate the involvement process (as defined in Chapter 2 in this Manual).

In addition to auditing field activities, the Agency will perform some field activities as part of other statewide Quality Programs (e.g., fabricator inspections, Supplier quality testing, Supplier source approval, mix design approval).

Agency staff work on multiple, complex projects where several specialists collaborate and talk daily with many different people. Because they juggle priorities during construction season, it is imperative that Agency staff have an efficient means of recording their activities.

## (A) ODOT General Daily Progress Report

The Agency PM or the APM team should file an ODOT General Daily Progress Report, for any Project Site visits. This report must document significant occurrences. The General Daily Progress Report provides space for documenting planned occurrences determined by either the Baseline Progress Schedule or weekly coordination meetings held by the Design-Builder (where look-ahead schedules are circulated).

General Daily Progress Reports build a record and can serve as a communication tool for the Agency's Team. If an Agency's APM team uses the General Daily Progress Reports, it is important to be aware that they are not formatted for a DB oversight type report. However, these reports can be used to document information useful for DB oversight – primarily the date, location, and the following (at a minimum):

- Planned Work.
- Actual Work observed.
- Significant occurrences while on site.
- Meetings attended/subject matter/decisions or actions/attendees.
- Areas of concern/noncompliance.
- Audit findings/open items.

## (B) Project Diaries

Project diaries are a much quicker way of taking notes and provide an easy chronology of events, observations, and actions taken on a particular date. They can include more information than the General Daily Progress Report and document observations or concerns that may require additional follow-up and verification. Diaries allow for documenting the various interactions that typically occur on a site visit with APM team members and the Design-Builder's organization.

Typical entries to a diary include (but are not limited to) the following:

- Notes on daily proceedings, meetings, and conversations.
- The Work Location visited and the visit's purpose (if other than routine).
- Observations, conversations, problem areas, and corrective actions.
- Phone calls made or received regarding the Project.
- Directions from the Agency PM.

It is important that significant daily project events are recorded because these diaries are crucial to resolving disputes and claims brought by the Design-Builder. Claims can hinge on the APM team's ability to recreate the events surrounding a dispute. If a lack of documentation exists and the Agency can't adequately support its side of the story, it may have to pay significant sums of money.

It is better to err on the side of having more (rather than less) documentation. This prevents staff from having to say, "I don't remember" at a critical time. Regardless of how employees keep their records, entries shall be succinct and professional because all reports generated are – or can be – a public record. The "Daily Reports/Diaries" section of the ODOT Construction Manual (Section 12A) offers additional insight and guidance.

## 4-9 – Project Schedule

As required by DB180.41 and addressed in Chapter 1, section 1-5 and Chapter 13 - Contract Time of the ODOT Construction Manual, the Design-Builder shall initially submit a Baseline Progress Schedule (BPS) with the Proposal that serves as a basis for selection. Shortly following Contract Award and Notice to Proceed, the Design-Builder shall update the Baseline Project Schedule to reflect the current plan and provide a means of evaluating Work progress.

Each month, with the Pay Request, the Design-Builder shall submit an update of the BPS that reflects actual progress. The Agency PM will review these submittals for accuracy and to determine significant events that should be observed, reviewed, and/or witnessed.

If the updates are not reflecting the actual schedule being realized the Agency can require the BPS be officially updated. The BPS can be used as a tool for scheduling Region staff for IA and Verification testing.

Weekly, the Design-Builder shall provide work schedules that reflect the BPS and the number of personnel, kind of Equipment, and location and nature of the Work to be performed. This typically comes in a "look-ahead schedule" that looks back one week and projects forward for 2 weeks.

The Agency PM and staff shall be responsible for reviewing these submittals and planning their oversight accordingly. During the early stages of contract execution, a schedule can serve as a valuable tool in planning review personnel for particular submittals, design package reviews, or required Agency actions in support of the Project schedule.

## **4-10 – Workforce Development and Small Business Equity Programs**

The Agency PM will contact the Field Coordinator in the OECR for questions related to these topics or refer to the ODOT Construction Manual, Chapter 18 – Workforce and Small Business Equity Programs.

Note: The Contract Documents will specify two separate DBE goals, one for Design Services and one for Construction Services. See Design-Build Agreement Article 14.6.

The Workforce Diversity Requirements are located in the Design-Build Agreement, Exhibit B. Refer to the project-specific requirements as they are modified on a project-by-project basis:

- Performance Specification DB141.56.
- Exhibit B-1 – FHWA - 1273 Required Contract Provisions Federal-Aid Construction Contracts.
- Exhibit B-2 – On-Site Workforce Affirmative Action Requirements For Women And Minorities On Federal-Aid Contracts.
- Exhibit B-3 – Equal Employment Opportunity Provisions.
- Exhibit B-4 – Equal Employment Opportunity - Aspirational Target Provisions.
- Exhibit B-5 – Disadvantaged Business Enterprise (DBE) Supplemental Required Contract Provisions.
- Exhibit B-6 – Disadvantaged Business Enterprise (DBE) Commitment Requirements.
- Exhibit B-7 – Oregon Department of Transportation Policy Statement Disadvantaged Business Enterprise (DBE) Program.
- Exhibit B-8 – Federal On-The-Job and Apprenticeship Training.
- Exhibit B-10 – Indian Preference in Employment Compliance, if applicable to the Project.
- Exhibit B-10 – Indian Preference in Employment Compliance, if applicable to the Project.

## **4-11 – Subcontracting**

### **(A) Subcontract Consent by the Agency**

The Agency must consent to all subcontracts. The Agency PM will follow the ODOT Construction Manual, Chapter 14 – Subcontracts.

The Agency PM will verify that each subcontract has the appropriate flow down language contained in DB180.21 prior to consenting to the subcontract. The Agency PM will also ensure



that all subcontracts at all tiers that include Design Services comply with the requirements of DB180.21 to include the Agency as an intended third-party beneficiary (DB180.21).

This requirement is necessary, among other reasons, so that in the case of insolvency or termination of the Contract Documents with the Design-Builder, the Agency can require that the Design Firm provide the Design Documents to the Agency, since the Agency does not have any direct contract with the subcontracted Design Firm.

The Design-Builder will prepare and submit a Subcontract Consent (form 734-1964) for review and approval within the EDMS. Within 7 days after receipt of the subcontract packet (35 days if Subcontractor is providing any of the insurance coverages as permitted under DB170.70) from Design-Builder, the Agency PM shall complete the bottom area of the form to show review and approval. The Agency PM will forward the subcontract packet and corresponding approval per the distribution list on form.

## **(B) Other Subcontracting Requirements**

The Design-Builder must self-perform no less than 30% of the original Contract Amount. (DB180.20). The balance of the original Contract Amount (70%) may be performed by either the Design-Builder or by Subcontractors.

The Design-Builder must maintain detailed records of all subcontracts or other agreements entered into with DBE firms (Exhibit B-5, Section 12.00). The Agency PM is responsible for Subcontractor monitoring, which includes the following:

- Oversight of Design-Builder's compliance with prompt payment requirements (DB170.10). The Design-Builder must pay each Subcontractor within 10 days of receipt of each payment the Design-Builder receives from the Agency.
  - If the Design-Builder is holding retainage under a subcontract agreement, the Design-Builder must release the retainage within 10 days after satisfactory completion of the Subcontractor's Work.
  - Delay of either time period may only be based on good cause shown by the Design-Builder.
- The Design-Builder must submit Form 734-2882 monthly showing amounts paid to all Subcontractors, each committed DBE Supplier, and each non-committed DBE Supplier with estimated total payments over \$10,000. Additionally, each Subcontractor must submit Form 734-2882 within 20 days of receipt of payment from its controlling contractor and provide a recap of total amounts paid at the completion of the Project or the Work.
- Ensuring that Subcontractor pricing records are provided in the Escrowed Documents (at time of Award), including records for the pricing of Subcontractor Work in CCOs (DB131.10).

- Oversight of Design-Builder's verification that Subcontractors have obtained the required insurance for its Work.
- Compliance with the Subcontracting limitations in DB180.20.
- Compliance with the Subcontracting requirements in DB180.21, including:
  - The Agency must approve all requests to replace Major Subcontractors (DB180.35) that are identified as Major Subcontractors in the Design-Build Agreement, Article 3.5.
  - The Agency ensures that all subcontracts contain the required terms and conditions (DB180.21)
  - Requiring that the Design-Builder is still responsible for prosecution of the Work, regardless of whether a Subcontractor is performing an aspect of the Work
  - Enforcing the provisions of DB180.21 if the Design-Builder or Subcontractor does not comply with the requirements of DB180.21, including by suspending Work, withholding payment, or terminating the Contract with the Design-Builder.

The Design-Builder is responsible for management of Subcontractors, similar to a DBB project. The main difference between a DBB and DB project with respect to Subcontractor relations is that in DB, a Subcontractor to the Design-Builder typically performs the design. This means that during the Design Review process, the Agency may primarily be engaged with a Subcontractor to the Design-Builder.

Nevertheless, the Agency's role is still the same and follows the review process discussed in this Manual. Any design noncompliance, however, is the responsibility of the Design-Builder to correct, even if the design Subcontractor is performing the major components of the design Work.

Additionally, as part of the Agency's oversight role, the Agency has similar rights against Subcontractors as it does against the Design-Builder with respect to deficient or unsafe work. The Agency PM can require the Design-Builder to correct nonconforming work performed by a Subcontractor, and the Agency may also require that the Design-Builder remove a Subcontractor that is performing deficient work or creating a safety hazard.

## 4-12 – Quality, Labor Compliance, and Civil Rights

The Agency PM and staff assigned to perform auditing of the Project Records will perform periodic reviews on all project quantity, labor compliance, and Civil Rights documentation maintained by the Design-Builder.

These reviews are to accomplish the following:

- Quantity: to verify that the Design-Builder is accurately reporting Materials quantities in its requests for progress payments.

- Labor compliance: to verify that the Design-Builder is accurately reporting payrolls and is accurately reporting labor hours in its progress payment requests.
- Civil Rights documentation: verification and oversight of the Design-Builder's compliance with State and federal Civil Rights Laws.
  - On federally-funded projects, the Agency, as the administrator of federal funds, has oversight responsibility to verify that Design-Builder is in compliance with Equal Employment Opportunity requirements and is not engaging in prohibited discriminatory practices in its labor relations.
  - The Agency will periodically audit Design-Builder's compliance to carry out this function.
- DBE/OJT documentation: The Contract Documents will specify goals for DBE utilization (Construction Services and Design Services) and OJT requirements.
  - The Agency PM will review the Design-Builder's progress toward meeting established DBE and OJT goals.
  - If the Design-Builder is not on track to meet the goals, the Design-Builder must demonstrate the efforts it is making to recruit (a) additional DBE firms and (b) workers that qualify toward the OJT requirements.
  - The Agency PM will work with the OECR Field Coordinator and notify the Design-Builder to require changes and/or that the Design-Builder implement additional efforts if it does not appear that the Design-Builder is making good faith efforts to meet the established goals.

Additional details concerning the Agency's responsibilities are specified in further sections below.

## 4-13 – Coordinating Reviews - RAS and OECR Field Coordinator

The APM team will participate in reviews of the Project performed by ODOT's RAS per the ODOT Construction Manual, Chapter 12B - Quality, Section 12B-3(b), and the OECR per the ODOT Construction Manual, Chapter 18 – Workforce and Small Business Equity Programs.

The Agency PM, not the RAS, will work with the Design-Builder's Quality Management Team to resolve all documentation deficiencies noted during the periodic reviews prior to the next scheduled review.

## 4-14 – Labor Compliance Monitoring

The Agency PM will perform labor compliance monitoring on all DB Contracts. Refer to the ODOT Construction Manual, Chapter 19 – Labor Compliance. The Agency PM will contact the ODOT Labor Compliance Officer for more information.

The Agency's Project Management team performs labor compliance monitoring as required by the Contract Documents and the ODOT Construction Manual – Chapter 19 Labor Compliance. Tasks include, but are not limited to:

- Develop tracking documents to verify and confirm receipt of all certified payroll reports for weeks worked from the Design-Builder and all Subcontractors throughout a project. On DBB projects, this responsibility may only take place while construction Work is ongoing; however, on DB projects, this oversight role commences immediately after the Design-Build Agreement is fully executed, if manual labor is being performed that would be covered by prevailing wage requirements.
- Receive and review weekly certified payroll reports, including the signed Statement of Compliance/Certification page, from the Design-Builder and all Subcontractors. The Agency may perform periodic audits as described in the ODOT Construction Manual, Chapter 19 – Labor Compliance.
- Perform owner-operator checks: verify that owner-operators of trucking operations have provided the correct Materials to the Design-Builder (see DB170.65).
- Request revised or corrected certified payroll reports and proof of wage payments as needed.
- Conduct wage interviews of the Design-Builder's and Subcontractors' employees at least once every six months.
- Prepare Employee Interview Report (form 734-3478).
- Prepare and sign the Project Manager's Labor Compliance Certification (form 734-1734) listing Design-Builder and all Subcontractors, number of payroll reports received, and number of employees interviewed.

The Agency reviews the Design-Builder's submitted certified payroll reports, including the signed Statement of Certification/Compliance page, Employee Interview Reports (form 734-3478), and any wage and hour related correspondence. For additional requirements, refer to the ODOT Construction Manual, Chapter 19 - Labor Compliance, which contains the full requirements for the Agency's labor compliance responsibilities.

Additionally, if the Agency determines that the Design-Builder's management personnel, employees, Subcontractors, Suppliers, or other providers or agents are not performing the Work satisfactorily, the Agency may require the Design-Builder to replace them (DB150.40) and

DB180.30). See DB180.35 for replacement requirements for Key Personnel and for Major Subcontractors.

## 4-15 – EEO and Workforce Development Monitoring

The Agency performs Equal Employment Opportunity (“EEO”) monitoring as required by the Design-Build Agreement Exhibit B and the ODOT Construction Manual Chapter 18.

## 4-16 – Construction Services by Design-Builder

The Design-Builder must perform Construction Services in accordance with the Contract Documents, including the DB General Provisions, DB Standard Technical Specifications, DB Special Provisions, and Accepted Design-Builder Specifications. Additionally, all construction Work must be completed in accordance with the Accepted RFC Plans and Specifications, with the exception of Accepted design changes that occur due to field conditions.

The Design-Builder is responsible for the completion of the Construction Services in accordance with the Contract Documents, however, the Agency retains approval authority over the Work. The Agency Engineer has the final approval authority on the following (DB150.00):

- Quality and acceptability of Materials and workmanship.
- Measurement of Unit Price Work.
- Timely and proper prosecution of the Work.
- Interpretation of the Contract Documents.
- Payments due under the Contract Documents.

Agency-required changes to the means and methods of performance of the Work should be limited to issues of Contract noncompliance. The Design-Builder is responsible for the means and methods to construct the Project.

## (A) Agency Roles, Responsibility, and Authority

Although the Design-Builder and its Quality Management Team are responsible for ensuring contract compliance, the Agency still has the responsibility to verify the actions of the Design-Builder and authority to administer the Contract.

The Agency has the authority to appoint inspectors and other personnel to assist with administration of the Contract. DB150.20 provides the role of Agency inspectors on a DB project:

- Inspecting Work and Materials furnished, including without limitation, the preparation, fabrication, or manufacture of Materials.
- Oral rejection of defective Materials with confirmation in writing.

- Oral suspension of the Work on a temporary basis for improper prosecution of the Work, pending a further decision from the Agency.
- The exercise of any additional delegated authority.

DB150.20 additionally specifies that the Agency inspectors cannot:

- Accept Work or Materials.
- Alter or waive terms, provisions or conditions of the Contract.
- Give instructions or advice inconsistent with the Contract.

DB150.20 permits inspection by the Agency to ensure that the Design-Builder's Work and Materials are compliant with the Contract, including material production and fabrication.

DB150.20 clarifies, however, that Agency's inspection is solely for Agency benefit, and does not constitute any of the following:

- Relief from Design-Builder's obligations to provide adequate Quality Management.
- Relief from Design-Builder's responsibility to correct damages to the Work or loss of Materials before Final Acceptance.
- Interim or Final Acceptance of Work or Materials.
- Waiver of any contractual obligations to perform Work as required by the Contract requirements.

DB150.20 further details the Agency's inspection rights. At any time before Final Acceptance, the Agency may require the Design-Builder to uncover Work for inspection. If the uncovered Work is not compliant with contract requirements, the Agency PM may require the Design-Builder to correct the Work at Design-Builder's expense. If the uncovered Work is compliant, the Agency will reimburse Design-Builder for the costs of uncovering the Work.

Additionally, the Design-Builder must make samples of Materials available to the Agency for testing. The Design-Builder is not entitled to additional compensation for the cost of making such samples available to the Agency.

Generally, when the Agency or the Design-Builder discovers Work or Materials that are not compliant with the Contract Documents, the Design-Builder is obligated to correct the Work or replace the Materials at its own expense (DB150.20 and DB150.25). This obligation exists whether or not the Agency has inspected the Work or Materials in question. Alternatively, the Agency may Accept the nonconforming work, but reduce the amount paid to the Design-Builder by the diminished value of the Work or Materials. The process for addressing nonconforming work is discussed in Chapter 2 in this Manual.

The Agency's Project Management team on a DB project interacting with the Design-Builder's Quality Management Team is depicted in FOR-5 Overview of Roles, Responsibilities and Governance section in this Manual.

On a DB project, when verifying that the Work complies with the Contract, the Agency's inspectors must exercise care to avoid directing the Design-Builder's Work. For example, the Agency would avoid suggesting any field fit or changes in the field that do not allow the Design-Builder to first work with its Design Firm to propose a solution to the nonconforming Work.

The Agency PM and Inspectors will perform as much inspection and sampling as needed to fulfill the responsibilities listed above, including documenting the noncompliant issues. The Agency PM, or designee, will communicate any deficiencies immediately to the Design-Builder's Quality Management Team and discuss the issues at the Quality Task Force meetings established in the Contract Documents, as discussed further in Chapter 2, section 2-7 in this Manual.

If the Design-Builder exhibits a continued pattern of deficient work, then the Agency PM will notify the Design-Builder that its quality program is deficient and require the Design-Builder to implement corrective action.

**Note: It is up to the Design-Builder to work with its Design Firm, Quality Management Team, Subcontractors, or Suppliers to address and rectify issues with its quality nonconformance.**

**It is not up to the Agency to solve the issue or provide suggestions to the Design-Builder about how the Design-Builder should proceed to correct its nonconformance. The Agency PM team should enable the Design-Builder to solve its deficiencies to bring the nonconformance into compliance with the Contract.**

**Once the Design-Builder presents a solution, then the Agency PM's role will be to listen and understand the solution and determine if the corrective action complies with contract requirements or if there are any long-term maintenance concerns.**

If the Design-Builder fails to remedy any quality program deficiencies, the Agency PM may elect to mobilize Agency resources to perform additional inspection and sampling, the cost for which may be assessed to the Design-Builder. This decision will be documented in writing and transmitted to the Design-Builder (see ODOT Construction Manual Chapter 12C – Quality Project Adjustments for established Price Adjustments). After providing notice, the Agency conducts construction oversight activities in accordance with the stated plan to increase inspection efforts.



## **4-17 – Conformance to RFC Plans and Working Drawings**

The APM team is responsible for contract compliance reviews with RFC Plans in an oversight and review any nonconformance reports. The Design-Builder's Quality Management Team have an active role in checking for compliance with Plans and identifying and addressing changes. As indicated previously, the APM team's construction staff needs to monitor activities to verify that Work is progressing according to the Plans, and make appropriate decisions on whether contractual changes occur. However, it is important that the Agency staff do not impose solutions when changes do occur. The Design-Builder and its Designer (Engineer) need to provide these solutions.

The Agency staff will check to verify that the solutions in design changes and field changes proposed by the Design-Builder conform to contract requirements (see Chapter 1, section 1-15 and Chapter 4, section 4-16 in this Manual for more detail on change management). The APM team's field-related activities for change requests are also discussed in more detail in the following sections.

**Conducting and Managing Review of As-Constructed Plans** – The Design-Builder, not the Agency, will be responsible for maintaining As-Constructed Plans. As a component of Final Acceptance activities, the APM team will conduct and manage the review of As-Constructed Plans as they are prepared. The APM team should review Requests for Information, design changes, filed changes, and Nonconformance Reports and Issues (NCRs/NCIs) to ensure that they are appropriately incorporated into As-Constructed Plans.

### **(A) Working Drawing Reviews**

In DBB projects, the Agency reviews Working Drawings (e.g., shop drawings and fabrication drawings) for conformance with the design's intent and requirements. This is because the Agency (or a consultant retained by the Agency) is the Engineer of Record, and therefore has intimate knowledge of the design provided to the contractor and is responsible for the design.

In DB, the Design-Builder's designer is the Engineer of Record. Therefore, the Design-Builder's designer is the most appropriate party to review the Working Drawings for conformance with design requirements. However, the Agency's project design and construction staff (and other appropriate Region or Agency main office staff) should participate in Working Drawing reviews, as deemed necessary for safety concerns or for overall project compatibility.

The Design-Builder is responsible for scheduling these reviews and notifying the Agency of the time and location of the reviews.

The APM team needs to be aware of current Working Drawings when auditing field personnel, to verify that proper documents are being utilized for inspection.

### **(B) Field and Design Changes**

After construction initiates, the Design-Builder can issue design changes or field changes to the Plans. The APM team should review the Design-Builder's Quality Plan to understand the terminology that the particular Design-Builder will use for these changes. Generally, design changes are limited to elements for which construction has not been started, and field changes are changes to an element for which construction has started.

For design and field changes, the APM team's responsibility is essentially the same, as follows:

- Verify that the change follows the same design Quality Management required for all other design components.
- Verify that the change does not deviate from the approved DD Contract Baseline Concepts without approval.
- Verify that new Plans, Working Drawings, or other means are provided to Quality Management Team staff to adequately inspect or test the change.
- Confirm that the Quality Management Team staff appropriately documents the Work.

The next section discusses in a bit more detail changes during construction.

## **4-18 – Changes during Construction**

It is important that the evaluation and recommendation of requests for CCOs for further consideration and authorization by the Agency be performed consistently. Chapter 1-15 in this Manual discusses changer orders.

This section describes directions and guidelines for the construction APM team to follow in evaluating potential change requests and providing the supporting documentation. It also provides guidelines for implementing CCOs related to construction. As potential CCOs are identified, it is critical for the Agency PM to enlist the assistance of the construction APM team personnel and potentially the original Project Development Team members, in order to properly evaluate whether a change warrants a CCO.

For instance, as defined in DB140.40 and DB195.30, changes due to differing conditions are more restricted because the Design-Builder is required to provide its own geotechnical investigations to support its design. Chapter 1, section 1-15 in this Manual defines many situations and conditions where CCOs may be required.

The APM team must thoroughly evaluate each potential CCO. This chapter provides a detailed list of evaluation processes for the five main conditions of changes associated with construction. The following identifies the APM team's responsibility when performing Extra Work on a Force Account basis (Force Account Work). The next five subsections of this chapter provide the five main conditions likely to impact design and/or construction, and specific steps for the APM Team to follow for a CCO.

It is unlikely that construction changes will be handled as Extra Work on a Force Account basis, although in some cases the Agency could hire forces in addition to the Design-Builder to perform some work and thus enter into an Order for Force Work (especially with added work associated with third parties). Chapter 15 of the ODOT Construction Manual and Chapter 1-15 in this Manual identifies APM team responsibilities for Force Work.

## (A) Construction Force Account Work

It is unlikely that design Work would proceed as Force Account Work but if this does occur, the APM team's design staff would provide verification of the Force Account Work and would verify that the Design-Builder's design Force Account records are signed off on a daily basis.

For construction Force Account Work, the APM team will be required to sign daily Force Account records and obtain the Design-Builder's signature. The APM team needs to provide due diligence in confirming that daily reports itemizing utilization of labor, Equipment and Materials are accurate. The items to be tracked are referenced in DB197.

In all Force Account Work, the Agency oversight should evaluate the Design-Builder's efficiencies. The Design-Builder has a duty to perform the Work in an efficient manner in accordance with typical industry work practices. Consideration should be given to when Equipment was mobilized for the Work, whether it was required at the time of mobilization, and whether it was demobilized efficiently.

## (B) Changes in the Character of Work

Chapter 1, section 1-15 in this Manual describes two types of changes to the character of Work: insignificant and significant. Prior to making an order for change, the Agency and APM team staff should thoroughly evaluate the change and prepare estimated cost implications with a price breakdown. Design costs should be included.

Chapter 1, section 1-15 in this Manual provides steps for the APM team to follow in evaluating whether a change is to be defined as a Significant Change, whether it is classified as Changed Work or Extra Work, and whether a CCO is warranted. The APM team should be thoroughly familiar with the directed change and provide verification of Force Account paperwork if the Work is being performed under Force Account. The Agency Oversight Team must also be able to identify when the Scope of Work is complete in order to close out the CCO.

**Differing Site Conditions** – Chapter 1, section 1-15 in this Manual provides details on why and how Differing Site Conditions changes may be requested.

The Design-Builder is responsible to complete the necessary site investigation (including geotechnical exploration) to support its design. Discovery of a condition that is "different" or missing from the Agency-provided information does not necessarily indicate that a differing site condition has been encountered.

The Agency makes no representation that the Agency-provided information is adequate or complete to accommodate the Design-Builder's design. The Design-Builder included costs for investigations in its Proposal cost. Therefore, Differing Condition assertions or notices from the Design-Builder must be evaluated thoroughly.

The APM team should:

- Document the time and date that the condition was identified and the status of Work in the area. The Design-Builder should stop Work when a perceived changed condition is identified. It is critical to thoroughly document the status of all Work in the area at the time. This documentation will form the baseline of a CCO, if it is warranted.
- Review how responsibilities and risks are allocated in the Contract.
- Evaluate whether the conditions warrant a change to the Contract.
- If it is determined that an adjustment to the Contract is warranted:
  - Evaluate whether there are any tradeoffs in the change (e.g., does the Design-Builder save time by doing the change Work?). For example, the Changed Work may require a complete shutdown of a road, which then allows the Design-Builder to expedite construction with less traffic maintenance impacts on the schedule.
  - Evaluate whether there are any means under their control to help offset the change.
  - Assist in evaluating the proper CCO payment mechanism (unit rate, lump sum/Force Account). The intent is to properly balance risk with the party best suitable to address the risk.

The Design-Builder and its Quality Management Team are required to perform the appropriate documentation. However, due diligence by the APM team is imperative. During execution of a Differing Condition change, the APM team should maintain time and Materials records as necessary.

The APM team should also provide frequent inspections to identify when the differing condition has ended. For instance if the differing condition is rock blasting that was not initially expected, the APM team should provide sufficient oversight to define the end of the changed condition.

**Contract Baseline Concept Change** – Chapter 3 in this Manual provides details on how Contract Baseline Concept changes may be required.

For CCOs affected by a Contract Baseline Concept change, the APM team should perform the following steps:

- Thoroughly review the Contract Engineering Data and compare these to the actual situation encountered.

- Evaluate whether the situation (if beyond the Contract parameters) is truly a cause for change and not simply a convenient circumstance.
- Evaluate whether there are any trade-offs in the change (e.g., does the Design-Builder save time by doing the change Work?). For example, the Changed Work may require a complete shutdown of a road, which then allows the Design-Builder to expedite construction with less traffic maintenance impacts on the schedule.
- Evaluate whether there are any means under their control to help offset the change.
- Assist in evaluating that the proper CCO payment mechanism (unit rate, lump sum/Force Account). The intent is to properly balance risk with the party best suitable to address the risk.

**Changes Applicable to Third Parties** – Chapter 1, section 1-15 in this Manual describes why changes applicable to third parties may be required, how to evaluate whether a change is warranted, and the baseline documentation required for the change.

The APM team should follow the steps identified previously for tracking a change of this type. The APM team should also:

- Review the Utility or other third party agreement to determine the point of contact and communication tree before assisting.
- Remain in communication with the affected third party, to help identify whether the work is warranted and being performed in an efficient manner (this is especially true if a Utility company is performing inspections and/or the work, and if the work is reimbursable).
- Perform sufficient oversight to verify that the third party is performing efficiently (this is particularly true when a Utility company self-performs the work or self-hires the work and the work is reimbursable).
- Coordinate with third parties, to reduce the potential for additional costs due to delays beyond the Design-Builder's control.

## (C) Preliminary Design Changes

Chapter 1, section 1-15 in this Manual describes how changes in preliminary design may be required, provides the APM team with guidance for evaluating whether a change is warranted, and discusses the baseline documentation required for the change.

Because the Design-Builder performs preliminary design, this type of CCO should be rare and will probably fall into one of the preceding categories. There could be changes with the concept design, if provided in the RFP; but these changes could be covered by a Project Baseline Concept change (defined previously).

The steps outlined previously can be followed in tracking and documenting this type of change.

### (D) Change Order Negotiations

The APM team's construction staff will need to be involved in negotiating CCOs that include construction Work. The construction aspect of CCOs could fall within two categories: negotiated price and Force Account. A negotiated price can be either a Unit Price or lump sum. If the Design-Builder provides a lump sum price, they will generally be required to provide a breakdown of the costs. It is important for the APM team's construction staff to review the cost breakdown for accuracy and thoroughness. The APM team should consider whether the Design-Builder has captured all the required Work.

Part of the overall review of cost estimates for CCOs is to determine if the Design-Builder is properly addressing Material and Equipment costs. DB197 provides guidelines for reviewing and approving the proposed cost basis. It is in the Agency's best interest to assist the Design-Builder in evaluating a change, especially if it is a change requested by the Agency.

### (E) Pay Estimate Processing

The APM team will validate the progress achieved and the Pay Request submitted by the Design-Builder. Typically, this does not involve an Agency measurement of quantities (with the possible exception of material on hand), because the DB payment is not based solely on quantities. This validation should be a continual process and not a month-end process, although month-end checks are needed. This validation is to be based on:

- Audits (performed during the Progress Estimate period) of the Design-Builder Quality Management Team's records of test results and inspection observations.
- IA and Verification test results.
- Observations and inspections in the field.
- Review of the Nonconformance Log (NCRs, DRRs and NCIs).
- Review of quantities for items that lend themselves to quantity verification. Since DB is not a Unit Price approach, quantity verification will be used to validate a percent or value complete, Force Account Work, or material on hand

The Pay Request will include a Progress Estimate of the Work completed through the previous month, calculated based on the Project Work Schedule and the approved Schedules of Values, and all associated source documents (DB195.50). The Agency PM will be responsive to ODOT's CAU, which may have questions regarding the pay estimate. See Chapter 1, section 1-13 in this Manual for more detail on progress and pay note processing.

The APM team will Review and Comment on the monthly schedule update and compare it to actual progress in the field. Chapter 1, section 1-13 in this Manual describes additional APM teamwork during the pay estimate process.



## **4-19 – Agency-supplied Materials**

The Agency will periodically provide Equipment or Materials for a project. The APM team should be aware of items identified in the Contract that the Agency is to supply. These are typically identified in the DB160. The timeframe for delivery of these items should also be understood.

The APM team should document the condition of these Materials or Equipment when the Design-Builder takes custody. At this point, the Design-Builder takes over responsibility as defined in DB160.

For sources controlled by the Agency, the APM team should be aware of any sources identified in the Contract as being mandatory for use. The APM team should verify that the Design-Builder is utilizing the source as directed, and verify that the Design-Builder is following DB160.50.

## **4-20 – Environmental Compliance**

For DB projects, environmental compliance is the responsibility of the Design-Builder, although the Agency and APM team also play an important role. The Agency is involved with obtaining permits, either in a lead or support role, and assuring that the requirements of each permit are adhered to by the Design-Builder.

The Design-Builder is required to submit an ECP that details all aspects of the Design-Builder's proposed approach to its environmental program. The APM team uses this plan as a basis for confirming the Design-Builder is performing environmental compliance in accordance with the Contract and the applicable permits, Laws, and agreements.

The Design-Builder is responsible for several items related to environmental permit compliance, including but not limited to the following:

- The Design-Builder prepares and submits a dust mitigation and air quality plan.
- Certain project contracts may include fuel and engine class requirements (see DB180.30, if applicable and ORS 279C.537).
- The Design-Builder prepares and submits ESCPs.
- The Design-Builder must comply with the requirements of the NPDES 1200-C permit (or the NPDES 1200-CA permit, if applicable).

DB156.40 requires the Design-Builder's Quality Management Team to conduct regular environmental inspections during construction to document compliance with environmental permits, based on the project-specific requirements. During the construction phase, the Design-Builder is responsible for all environmental requirements and conditions assigned to the Design-Builder. The Design-Builder's Quality Management Team must identify and document



all elements of Work that have not, or are believed to have not, been performed in accordance with the Contract (including permit requirements), in a NCR and notify the Agency PM.

The Design-Builder's Quality Management Team is required to recommend a course of action to bring the Project into compliance with environmental regulations and environmental conditions for the Project.

The Agency PM will following the same monitoring process used for DBB projects, according to Section 800 Construction & Environmental Requirements of ODOT NEPA Manual, available on the ODOT Geo-Environmental Manual webpage: [Geo-Environmental Policy and Procedure Manuals](#)

Examples of environmental documents with requirements that require close monitoring include:

- Temporary Water Management Plan (TWMP).
- Work Containment Plan (WCP).
- Erosion and Sediment Control Plan (ESCP).
- Pollution Control Plan (PCP).
- Weed Control Work Plan (WCWP).

As a reminder, the Agency's role with respect to environmental compliance is generally to audit and spot check the Design-Builder's activities. However, the Agency PM may reject the Design-Builder's environmental compliance and require changes if there are any deficiencies noted. The Agency is responsible if the Project is out of compliance with environmental permits and agreements, and it is therefore important to oversee the Design-Builder's activities in the field and review the Design-Builder's quality-related documentation concerning environmental compliance.

The APM team must understand the type of NEPA approval obtained for the Project. Typically, there are three categories of approvals under NEPA:

- Categorical exclusions.
- Environmental Assessment.
- Environmental Impact Statements.

Additional details of each are available at:

<https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/NEPA-Manual.aspx>

Each of the three types of NEPA approvals will impose certain conditions on the Project Work in order for the Project to remain in compliance. The Agency PM must understand the conditions of the NEPA approval and environmental permits to ensure that the Design-Builder is in compliance. If there are questions, the Agency PM will review the Contract Documents and permit requirements and discuss any concerns with the REC assigned to the Project. This

discussion may include adjustments and a risk-based approach to the environmental oversight and inspection frequency of the Design-Builder's Work.

The Design-Builder will be responsible for the cost of changes in the design that result in the need to perform an environmental re-evaluation. To the extent that the Design-Builder seeks to implement a design change that affects the Project footprint or otherwise conflicts with a condition of the Project's NEPA approval and permits, the Design-Builder is required, at its own cost, to perform the additional analysis and effort to re-evaluate whether the changes fall within the Project's NEPA approval.

If the proposed changes would not meet the requirements of the Project's existing NEPA approval and permits, the Agency will determine whether the Design-Builder may proceed. If the Agency allows the Design-Builder to proceed, the Design-Builder is responsible for any associated costs and schedule delays and any additional mitigation measures of revisions to the existing NEPA approvals and permits, see DB155.10. When deciding whether to allow the Design-Builder to obtain new NEPA approval or permits, the Agency PM must consider the fact that the Agency is ultimately responsible for ensuring that a project does not violate any environmental laws and regulations. The Agency PM will therefore weigh the potential benefit of the change against the risk associated with seeking modifications to the existing NEPA approval and permits.

The Agency may assist with this process to the extent necessary, considering that the cost of the additional clearance is the Design-Builder's responsibility. The Agency PM must consider, however, that although the Design-Builder is responsible for any associated costs and schedule delays and any additional mitigation measures of additional NEPA approval and environmental clearances and permits in this circumstance, the Agency is ultimately responsible for NEPA compliance and must closely monitor the Work to ensure that the Design-Builder meets all environmental commitments.

## 4-21 – Additional Utility Work

Utility Owners may request additional relocations during the Project. If this occurs, the Agency PM will coordinate with the Utility Owner and the Design-Builder's Utility Coordinator. The Agency will review the request and determine whether to add the additional Work. The Utility Owner must submit draft plans, specifications, and an estimate to the Agency for review. The Agency PM will also coordinate with the Design-Builder to assess whether the additional Utility Work might affect the Design-Builder's project schedule or whether it would result in costs for additional Work.

## 4-22 – Damage to the Work

The Design-Builder is responsible for loss of property at Work Locations and other private property affected by the Work (Design-Build Agreement, Article 2.3.12). If there is damage to the Work, the Agency oversees the Design-Builder's repair Work and will inspect to ensure that

the repaired Work meets the requirements of the Contract Documents. The POR may need to evaluate the repair Work and provide an engineering opinion to the Agency about the sufficiency of the repair.

The costs of repair Work and related design evaluation may be covered by the Design-Builder's insurance. Consult with Risk Compliance to obtain information about insurance and bonding, including responsibility to compensate the Agency and the Design-Builder for repairs to damaged Work.

## 4-23 – SAFETY & TRAFFIC MANAGEMENT

As with DBB projects, the contractor for DB projects is responsible for project safety of both workers and the public throughout all Work Locations. The Design-Builder submits TCPs, including Temporary Pedestrian Accessible Route Plans (TPARPs), for each Work Location. The Agency has Acceptance authority over TCPs.

The Design-Builder will have primary responsibility for worker and public safety and project security. DB170 outlines contractual requirements for Design-Builder-related safety activities.

DB141.31 outlines the Design-Builder's contractual requirements for temporary traffic management. The Design-Builder is required to submit a TMP and a comprehensive TCP for each Work Location.

### (A) Design-Builder Responsibilities

The Design-Builder is responsible for project safety. The Design-Builder is required to have a Construction Manager who, as defined by Section 3.4 of the Agreement, is a Key Personnel on the Project (the necessary experience for this position is detailed in DB180.35). The Design-Builder must provide sufficient supervision to plan, implement, and execute the Work.

Matters relating to public safety will normally be covered in a TMP, particularly the TCP. The requirements for a TMP are typically included in Performance Specification DB General Provision Subsection 141.31. The Design-Builder is required to have on staff a Traffic Control Design Engineer (TCDE) and TCS.

The Design-Builder will be required to submit a TMP for Agency approval. The TMP is required to be a stand-alone document that covers all aspects of traffic management. The Design-Builder must provide the specific details of traffic management with a TCP for each Work Location to be released for construction. The TMP will be reviewed as part of the Design Review submittals (see DB141.31 and Section DB155). TCPs must provide the details of a specific location (e.g., posted speeds, phasing, geometry, etc.).

### (B) Role of the Agency

The Agency is expected to review the updated TMP, and individual TCPs (including TPARPs) as they are submitted. The Agency provides written comment and Acceptance of TCPs and

approval of TMP updates. During project execution, the Agency is expected to perform oversight functions, to verify that the various Plan(s) are being implemented properly and appropriate documentation is in the Design-Builder's files to validate this.

The Agency is also expected to follow the project-specific safety protocols when on site. The APM team should understand the Project's safety protocols and understand the differences that may exist between the Design-Builder's requirements and Agency protocol. The APM team should abide by the more stringent protocol.

The remaining portion of this chapter describes the APM team's oversight function for safety and traffic management.

## **(C) Primary APM Team Safety Oversight Duties**

In providing for public safety, the plan should define the precautions (e.g., signs, barriers, and restraints) and means of notice that the Design-Builder will utilize to ensure public safety (pedestrian and traveling) throughout each Work Location.

The APM team should be aware that the Design-Builder's Pollution Control Plan and also the Contaminated Media Management Plan, if applicable according to DB141.51 is required to cover Hazardous Materials. It should explain how workers and the APM team will know when potentially Hazardous Materials are used, and/or how they will be handled if encountered. Part of the plan will address storage and access to Material Safety Data Sheets for workers and APM team members.

## **(D) Safety**

Safety issues or concerns should be reported immediately to the Design-Builder's Safety Manager. Safety issues or concerns and/or corrective actions should be documented on an approved form, whether documented by Design-Builder or Agency staff. If safety issues or concerns are immediately corrected, the APM team should simply document it in a daily report. Otherwise, the Agency PM should notify the Design-Builder in writing that if the situation is not corrected within the timeframe specified by the Agency, the Agency may stop Work or require the removal of any worker from the Project Site.

In the event of non-responsiveness by the Design-Builder, the Agency may also correct the situation at the Design-Builder's expense (See DB170.60, DB141.57 and, 00220.60).

Although the Design-Builder has primary responsibility for enforcing and managing the safety for the Project, the Agency's APM team still has the responsibility and authority to suspend Work in areas where there is an immediate threat of serious injury or death to workers or the public (DB180.70).

## **(E) Primary APM Team Traffic Management Oversight Duties**

The APM team will review the Project-wide TMP submitted by the Design-Builder and provide written comment. DB General Provision Subsection 141.31 details the requirements of this plan, which must be prepared in accordance with the ODOT *Transportation Management Plan Project Level Guidance Manual*. The APM team should review and understand the requirements outlined in DB141.31 to properly oversee traffic management.

## **(F) Compliance Audits –Traffic Management**

The Agency, primarily through the APM team, oversees the TMP. Oversight should consist of field audits and file record audits to verify conformance to the TMP. These audits should:

- Verify that the TMP is submitted within the timeframes stipulated in DB141.31.
- Verify that individual plans are submitted for each Work Location with Design Review submittals.
- Verify that TCPs are submitted and Accepted prior to any traffic control measure being installed.
- Confirm that the Design-Builder notifies affected property owners.
- Verify that the Design-Builder's TCDE and TCS have the qualifications required for the Project.
- Confirm that that any performance deficiencies are being documented and corrective action is being taken in a timely manner.
- Spot-check to verify that traffic control devices are set per Plans and are providing the desired results.
- Confirm that the Design-Builder provides updates regarding traffic management requirements and plans at the Traffic Control Task Force meetings.
- Confirm that the TCDE verifies temporary traffic control measures in the field are in conformance with the approved TCPs.
- Confirm that the TCDE and TCS attend meetings where traffic control measures are discussed.
- Confirm that the TCS notifies the Design-Builder Project Manager within 24 hours of traffic flow problems or crashes.

Verify that a TCP diary is maintained for each Work Zone and kept current on a daily basis.

## **(G) Nonconformance – Traffic Management**

Nonconforming TMPs should be reported immediately to the TCS and the Design-Builder Project Manager.

A nonconforming report and/or a corrective action should be documented on an approved form, whether documented by the Design-Builder or Agency staff. If the nonconformance is an imminent danger to the traveling public, the APM team has the right to immediately remedy the situation – either by stopping or suspending the activity, directing the Design-Builder to do so, or using Agency forces to correct the situation if the Design-Builder refuses.

The Agency has the authority to stop Work when there is an imminent threat to health and safety. During execution of the Project, the APM team’s role with respect to safety and traffic management is one of primarily oversight. The APM team oversees field activities to ensure they conform to written and Accepted Plans as well as documentation to ensure Plans are being followed.

## **4-24 – Relief Events**

Below is a listing of events for which the Design-Builder may request a CCO.

### **(A) DB140.40 and DB195.30: Differing Site Conditions**

The Design-Builder may request an adjustment of the Contract Amount and Contract Time due to conditions on the site that differ from the information provided about the site (Type 1) or from generally expected conditions (Type 2) and that cause an increase or decrease in the cost of performing the Work.

If the Design-Builder provides notice of a Differing Site Condition, the Agency PM will review the information provided about the relevant conditions in the Contract Documents for the location in question, and may perform an investigation of the area. Based on this information, the Agency assesses whether there is a Differing Site Condition.

### **(B) DB140.50: Environmental Pollution Changes**

ORS 279C.525 provides for an adjustment to the scope of Work due to changes to environmental or natural resources Laws enacted or amended after submission of Proposals for the Project. ORS 279C.525 provides the applicable notice requirements and other rights and remedies available to the parties.

Additionally, for any change to the list of environmental statutes in DB170.01, the Design-Builder may request an adjustment in the scope of Work, with an accompanying change to the Contract Amount or Contract Time.

### **(C) DB170.80: Damages**

Damages to the Work caused by Public Traffic are the responsibility of the Design Builder unless the Agency has Accepted a Contractor's Request for Relief of Responsibility (ODOT Form 734-2768) (See ODOT Construction Manual, Chapter 31).

### **(D) DB174.10: Utility-Caused Delays**

The Design-Builder may be entitled to relief due to the adjustment of Utilities completed later than the agreed-upon time in the Design-Builder's time requirement letter, through no fault of the Design-Builder, that causes Contract completion to be delayed.

### **(E) DB195.40: Unreasonable Delay by the Agency**

The Design-Builder may request relief if performance of the Work is suspended, delayed, or interrupted for an unreasonable period of time due to acts or omissions of the Agency.

In all instances above, the Design-Builder has the burden of proving it is entitled to additional costs or additional time.

## **4-25 – Interim Second Notification / Final Second Notification**

The Agency PM will issue Interim Second Notification(s) and the Final Second Notification when on-site construction is complete, signifying the end of Contract Time.

For an Interim Second Notification, the Design-Builder must deliver notice to the Agency when it believes that all on-site Work associated with an Interim Completion Date, except for Punch-List items Work and landscape establishment, is complete. When this notice is received, the Agency will conduct an inspection to determine whether the Work is complete. (DB180.50). After the Agency PM determines that the Work is complete, they will issue the Interim Second Notification.

The general process leading up to Final Second Notification is as follows:

- The Design-Builder will notify the Agency PM as the Project nears completion, to perform inspections of the completed work. At this time the Design-Builder believes that only nominal Work (Work associated with a typical Punch-List item) remains.
- Within a reasonable timeframe, the APM team will assign individuals to inspect the completed Project.
- This inspection includes reviewing documentation, to verify that proper quality documentation is on file to substantiate the quality of the Materials incorporated.



- This inspection should also identify Work items that may be on record as nonconformance or that may have been damaged or improperly maintained and therefore require re-work, repair, or replacement. DB170.80 defines the mechanisms of damage that are the Design-Builder's responsibility and instances of vandalism for which the Agency will accept responsibility.
- It is recommended that the APM team perform this walk-through in the presence of the Design-Builder and its Quality Management Team. This facilitates the Design-Builder's understanding of actual non-completed items, rather than having to interpret the meaning of a written item.
- The result of this inspection is a Punch-List of items that are not complete or functional and will require additional Work (either effort in the field or documentation prior to Final Acceptance).
- If the Design-Builder has outstanding issues, they must be corrected and a re-inspection by the Agency PM must be requested before the Design-Builder re-submits its request for Project completion.

When the Design-Builder believes that all on-site Work, other than Punch-List items and landscape establishment, is complete, the Design-Builder issues a notice to the Agency PM. After receipt of the notice, the Agency will perform an inspection of the Work. After the Agency PM determines that all Work other than Punch-List items and landscape establishment is complete, they issue the Final Second Notification. The Final Second Notification includes the following:

- The date the time charges stopped.
- Final trimming and cleanup (DB140.90).
- Equipment to be removed from the Project Site.
- Minor corrective Work not involving additional payment to be completed.
- Completion of all documents, including Design Documents, required certifications, bills, forms, warranties, certificates of insurance coverage, and other documents that Design-Builder must provide to the Agency before issuance of Third Notification.

The Agency must all check that all required warranties received from the Design-Builder state that they are enforceable by ODOT (DB150.96).

Prior to the Agency PM's issuance of Final Second Notification, the Agency's Project Management team works with the Design-Builder's Quality Management Team to perform a final review of all the Project quality and quantity documentation. The Agency PM will also request a meeting with the Agency's RAS to review the Design-Builder's final documents. If any documentation appears to be deficient, it must be included in the documents that the Design-Builder must submit to obtain Third Notification. See the ODOT Construction Manual, [Chapter 13 – Contract Time](#).

Upon notification by the Design-Builder's Quality Management Team that all quality, quantity, and semi-final documentation has been submitted within the EDMS (see ODOT Construction Manual, Chapter 37 – Submittal of Final Project Documentation), the Agency PM will initiate steps to commence review by the ODOT Construction Section, Contract Administration Unit (CAU). The CAU will process the materials for Final Acceptance and archive the construction contract documentation.

## 4-26 – Access to Project Records

The Design-Builder is required to maintain Project Records for proper financial management of the Contract (Design-Build Agreement, Article 9.1; DB170.07). The Design-Builder must provide access to the Agency (and Agency representatives) on request (DB170.07) and the Agency may inspect, copy, and audit the documents. The Design-Builder must preserve all such records for the longer of: 3 years after Final Acceptance, until all disputes are resolved, or as otherwise required by Law. Subcontractors must also retain records in this manner.

The Agency may access the Project Records when there is a pending claim or other question about the Design-Builder's compliance with the Contract Documents. The Project Records provide details about the Design-Builder's Work, cost accounting, and other information that is relevant to verify the information submitted in the Design-Builder's claims or other requests for additional compensation or adjustments of the Contract Time.

In addition to the Project Records, the Agency may access the Escrowed Documents (DB131) to verify information submitted in connection with claims and CCOs. The Escrowed Documents contain information showing the Design-Builder's costs and assumptions for preparing its Price Proposal. This information can be useful to showing the assumed costs and other information about the baseline scope of Work.

## 4-27 – Disagreements, Protests, and Claims

Disagreements occur on all projects. If the Agency PM and APM team are properly prepared for conflict, it can stop a disagreement from escalating to a dispute or ultimately a claim. Proper preparedness is a combination of understanding the Contract and each party's responsibilities and being able to resolve an issue at the lowest possible level to minimize project impacts. Respecting the other party's position and understanding their point of view sets the stage for productive discussions and negotiations during a disagreement, protest, or claim.

The earlier a disagreement is settled, generally the cheaper the cost. The Agency has a well-defined process regarding disagreements, protests, and claims. This very detailed process includes specific timelines for each party in the process.

As indicated in earlier chapters, DB delivery methods generally use conceptual designs from the Agency for the RFP. Design-Builders typically provide a design at approximately the 10% level at the time of its Proposal (certain elements may be as far as 30% designed). Both of these

factors lead to a greater risk than with traditional DBB projects of encountering unknown conditions or differing interpretations of situations.

Whenever unknown conditions or differing interpretations are encountered, the potential for disagreements exist. Disputes can be filed against the Design-Builder for payment, labor and disparity issues as indicated in DB170. This chapter focuses on disagreements, protests and claims between the Design-Builder and the Agency regarding compensation and/or compensation and Contract Time. The process is outlined in DB199.

As with any disagreement, the first level of resolution is at the field level. When resolved at this level, most disagreements do not escalate into protests or claims. It is important that the resolution not be perceived as the APM team directing the Design-Builder's work in resolving the issue, because this can lead to a claim request.

## (A) Design-Builder Responsibilities

The Design-Builder may submit a claim asserting that it is entitled to additional compensation for Work or for an adjustment of the Contract Time, including Work during the design phase of the Project. The process for resolution of these protests and disagreements is provided in DB199. See the ODOT Construction Manual, Chapter 27.

The Design-Builder is responsible for escalating disagreements, protests, and claims according to the Contract. The Design-Builder has specific timeframes for certain escalations, and if these timeframes aren't followed the Design-Builder waives its right to file or pursue a claim. These situations are defined later in this chapter, and entail attempting to resolve disagreements through discussions with the Agency, and moving to a formal protest and then to a claim if concurrence is not reached.

If a disagreement is not resolved to the Design-Builder's satisfaction, the Design-Builder follows a two-step process: 1) file a protest, and then 2) file a claim if the Design-Builder disagrees with the APM's evaluation of the protest.

## (B) Role of the Agency

The APM team has an essential role in disagreements, protests and claims during the course of the Project. The Agency PM will be the Project lead in any protest or claim filed by the Design-Builder.

DB199 provides the contractual requirements of protests and claims involving compensation or compensation and time. This chapter describes the APM team's roles and responsibilities in preparing for and responding to protests and claims.

## (C) Disagreements

When a disagreement occurs between the Agency and the Design-Builder, the APM team should meet with the Design-Builder in an effort to resolve the issue. If discussions do not

resolve the issue, the Design-Builder (as indicated previously) can follow a two-step process to further the disagreement: 1) file a protest, and then 2) file a claim if satisfactory conclusions aren't gained from the protest.

The APM team should document all disagreements in daily reports or diaries as if they will be pursued further. As part of this documentation, the APM team should clearly define the disagreement and the current condition and status of the Work in the area, including the personnel working and Equipment and Materials present. They should also document whether the disagreement was resolved.

If the disagreement is not resolved, the APM team should notify the Agency PM of a potential protest. The Agency PM may provide additional guidance for resolving the disagreement. If not, the Agency PM should communicate directly with the Design-Builder to try to resolve the disagreement. It is only after a discussion between the Agency PM and the Design-Builder that a disagreement should escalate to a protest.

## (D) Protests

When a written notice of protest is received, the APM team will assemble factual, supporting Project information to inform the Agency's response to the protest. This information can include prior correspondence, meeting minutes, comments, and data regarding the protest.

When a Design-Builder pursues a protest, the APM team should confirm the following:

- The issue was previously discussed. If not, a formal discussion should take place before a protest is filed.
- The protest was raised in both oral and written fashion. The written notice of protest must identify the date that the order in protest was given by the Agency. The Design-Builder has 7 days to file a written protest from that date.
- The written protest adequately identifies the items outlined in DB199.20 (Agency acts or omissions, description of the damage, citation of Contract provisions, estimated cost, etc.).
- Documentation of any on-going Work related to or perceived to be related to the protest is provided in daily reports, diaries, or time and Materials records. If a Daily Force Account Record is used to record time and Materials related to a protest, it is important to indicate that it is being completed for disputed Work (not Force Account Work).
- Verification that the Design-Builder will proceed with Work, even though a protest is filed.
- Audits of the Design-Builder's records to confirm that they are also tracking disputed time and costs and verification that these confirmations are submitted weekly. The APM team will compare these records to theirs, as a basis for a CCO if the protest is validated by the Agency and Accepted. Any difference between Agency and Design-Builder records should be explained.

The Agency should review all protests submitted within allowable timeframes and for which adequate back-up information is generated, in a timely fashion. If the review partially or fully confirms the protest, the Agency PM should generate a CCO in a reasonable time.

The Agency is under no obligation to review protests that are not submitted within the appropriate timelines or do not include the information outlined in DB199.20.

## (E) Claims

A claim does not have to be filed until 45 days after “Second Notification,” which occurs after all Work defined in the Contract Documents for the Project is complete, including CCO Work and Extra Work.

Upon receipt of a properly submitted claim, the APM team will assemble relevant factual Project information. This can consist of pertinent prior correspondence, meeting minutes, comments, and data.

When a claim is submitted by the Design-Builder the APM team should confirm the following:

- The claim is to be filed by the Design-Builder (not a Subcontractor). If a Subcontractor submits a claim, the Design-Builder must submit its analysis of the claim and remain the party responsible for presenting the claim.
- The initial two steps of a disagreement and protest must be exhausted.
- The Design-Builder must provide narrative that clearly describes the claim.
- The claim must provide all the information detailed in DB199.30 Parts 1 through 9 (and Part 10 if applicable), including the certified statement(s).
- The claim must be filed within the allowable timeframes.
- The Design-Builder must maintain include complete cost records.
- The Design-Builder must allow the APM team access to all records that the Agency may require to determine the facts, contentions and costs involved.

The Agency PM should also notify the Construction Claims Engineer when a claim is submitted and will submit a complete copy of the original claim documentation. All records provided by the Design-Builder in support of the claim become Project Records and are subject to record retention times.

Once a claim is filed, the APM team and the Agency PM have definitive timeframes for reviewing and responding to the claim. The Design-Builder also has definitive timeframes and a sequence for escalating the claim. Refer to DB199.40 for a detailed, stepped process for resolving construction claims.

## **Chapter 5 – Environmental**

Although the environmental mission is the same for DBB and DB projects, significant differences exist between the two delivery methods with regard to environmental roles and responsibilities. In a DBB project, the Agency generally secures all required environmental permits, clearances, and approvals with the exception of some permits relating to the Clean Air Act and some erosion control and pollution control permits relating to the Clean Water Act (or similar permits).

In DB projects responsibilities vary, but the Agency generally makes the Design-Builder responsible for permitting or gathering information for permit applications, including Clean Water Act Section 404 and Oregon Removal-Fill permits. The purpose for placing the responsibility on the Design-Builder can be two-fold: 1) to decrease timelines and/or 2) to maintain efficiencies, because the Design-Builder prepares the design and therefore understands the particulars for specific permits.

The Design-Builder is responsible for monitoring compliance with environmental requirements. It is standard for the Design-Builder to be fully responsible for monitoring its own compliance, by using environmental specialists assigned to its overall Quality Management staff and paid by the Design-Builder. Environmental compliance monitoring to be performed by the Agency (e.g. archaeological monitoring) will be identified in the DB141.51 or in the DB Special Provisions.

In order for the APM team to properly perform its function, it is important to understand major milestones and roles and responsibilities on DB projects. DB141.51 specifies the requirements for developing an ECP.

This chapter details many Design-Builder roles and responsibilities. More importantly, it helps the APM team define and execute its role, and explains how this role can vary depending on how a DB contract places responsibility.

This chapter also provides the APM team and Agency environmental compliance oversight personnel with the tools required to provide proper environmental oversight on DB projects. It lists documents that the APM team needs to be familiar with and describes features to be reviewed. It identifies key APM team members and describes the protocol for oversight and communications, including Agency reporting requirements, environmental change management, and project completion efforts.

Although this chapter is comprehensive, the Agency environmental compliance monitoring personnel (as assigned by the Agency PM) and other Agency environmental staff should be familiar with the requirements of the Performance Specifications (DB141.51) for DB projects.

## 5-1 – Environmental Compliance Activities

See below summary of roles and responsibilities of the Design-Builder and the Agency on a typical DB project.

Table 7: Typical Design-Builder and Agency Environmental Compliance Roles and Responsibilities

<b>Environmental Compliance Activities</b>	<b>Design-Builder</b>	<b>Agency</b>
Design-Builder’s ECP (includes environmental communications protocol and the Environmental Compliance Monitoring and Reporting Program)	✓	Accept as part of Quality Plan
Agency’s 1200-CA Permit regulating stormwater discharges during construction	✓	Permittee
Agency’s environmental permit and land use applications	- <sup>9</sup>	✓
Design-Builder’s environmental permit and land use applications	✓	Accept
Design-Builder’s other project-specific environmental plans specified in DB141.51	✓	Accept
Design-Builder’s Pre-Construction Assessment Report(s)	✓	Review & Comment
Design-Builder’s Environmental Construction Monitoring Report(s)	✓	Review & Comment
Design-Builder’s NPDES 1200-CA monitoring reports	✓	Review, sign & forward to DEQ
Design-Builder’s ESCP updates	✓	Review, sign & forward to DEQ
Environmental Post-Construction Monitoring Report(s)	✓	Review & Comment
Design-Builder’s Annual Monitoring Report(s)	✓	Review & Comment
Agency’s Site Visit Reports	Available for Review	✓
Agency’s monthly Environmental Compliance Reports	-	✓
Agency’s quarterly Environmental Compliance Summary Reports	-	✓
Agency’s annual Environmental Compliance Reports	-	✓

<sup>9</sup> “-” Indicates that the compliance activity is not applicable.



## **5-2 – Design-Builder Responsibilities**

The Design-Builder has primary responsibility for environmental compliance and is responsible for employing qualified and capable team members, to ensure compliance with applicable permits, clearances, and approvals and the submitted and Accepted ECP. DB141.51 provides general guidelines on the Design-Builder's responsibilities in preparing an acceptable ECP and implementing and complying with the ECP.

This chapter describes the roles of Design-Builder environmental personnel; however, the Design-Builder has the latitude to detail specific roles and responsibilities in the ECP. Because these may deviate slightly from what is described in this chapter, the APM team should review the ECP and compare the defined project roles and responsibilities to those defined herein in order to ensure proper oversight.

Environmental personnel designing the ESCP and personnel providing erosion and sediment control inspections are required to hold specific certifications or professional licenses to qualify for those roles.

The Design-Builder as an organization has overall responsibility for applying for and obtaining all applicable environmental permits, clearances, and approvals that the Agency has not already obtained. The Design-Builder is responsible for submitting the following to the Agency for Review and Commenting and Acceptance, concurrence, or approval:

- An ECP (part of the Quality Plan).
- Design-Builder-obtained Environmental Permits.
- Regular Status/Compliance Reports.
- Updates to the ESCP to keep it representative of the site's current conditions.
- Post-Construction Report(s).

### **(A) Design-Builder Environmental Manager**

When required by the Contract, the Design-Builder will designate an individual to be a project's Environmental Compliance Manager (ECM). The Design-Builder, with technical guidance from the ECM, will be responsible for the Project's overall environmental compliance. The ECM will function as principal technical advisor and coordinator on environmental issues through design and construction activities, and will provide environmental compliance Quality Management for the Design-Builder.

The ECM is responsible for the following:

- Developing, implementing, and overseeing compliance of the ECP. This plan is prepared during the Project's design phase and updated as needed throughout the Project. It is prepared in accordance with the requirements provided in DB141.51. The

ECP must be updated as personnel change and as regulatory agencies apply environmental permit conditions to the Project.

- Developing, implementing, and overseeing compliance of the ESCP.
- Developing, implementing, and overseeing compliance of an Environmental Compliance Monitoring and Reporting Program.
- Reviewing any available Agency studies, including Environmental Baseline reports, Archeological Survey reports, and Rare Plant Survey reports.
- Coordinating with the Agency-defined regulatory authority liaisons as needed and as required.
- Reviewing and complying with Performance Specifications.
- Reviewing all design plans.

## **(B) Design-Builder Environmental Compliance Team**

The Design-Builder will prepare and implement an ECP for each DB project. This plan must be implemented so that no action or inaction on the Design-Builder's part results in noncompliance with the requirements of applicable Laws, permits, and regulations.

The Design-Builder will designate one or more individuals to comprise the Environmental Compliance Team. The Environmental Compliance Team assists the ECM in implementing the ECP and with overall environmental compliance monitoring.

## **5-3 – Agency Responsibilities**

Unlike DBB contracts, with DB projects the Agency is not responsible for environmental compliance monitoring. This responsibility falls directly to the Design-Builder. However, the Agency is still ultimately accountable for all permit noncompliance whenever the Agency is the permittee (e.g., NPDES 1200-CA). The Agency's role is to monitor and verify the Design-Builder's compliance with its ECP (as part of the Project's overall QA), not to inspect project construction for environmental compliance. However, Agency staff must remain aware of project conditions, (e.g., pay attention to erosion and sediment control) and if permit obvious noncompliance exists, the Agency can issue a NCI and stop Work if conditions are an immediate hazard to the environment or to personnel.

The Agency environmental compliance verification function will be performed in coordination with the REC, and will include:

- Evaluate and monitor the Design-Builder's success in environmental compliance and reporting to the Agency PM.
- Function as a liaison between the Design-Builder and the Agency PM on environmental compliance issues for the Project.

- Serve as the Agency PM's primary point of contact for the Design-Builder and resource agencies regarding environmental compliance issues.
- Participate in reviewing and commenting on the Design-Builder's ECP.
  - Important note: the Design-Builder is not relieved of its responsibility for contract compliance and compliance with all applicable Laws, Regulations, and permits based on the Agency's review of the ECP. If based on this review it appears that modifications are necessary for compliance, the Agency will notify the Design-Builder in writing of areas of concern in the ECP. However, the Agency will not offer specific recommendations.
- Participate in design, pre-construction, construction, and post-construction meetings as appropriate.
- Consult on a regular basis with the Design-Builder on environmental commitments and mitigation measures, in accordance with the communication protocol provided in DB141.51 and the Design-Builder's ECP.
- When notified by the Design-Builder, immediately report emergency conditions (e.g., fuel spills, chemical leaks, mass wasting, discharges into waterways) and/or non-compliance with environmental regulations and/or environmental Performance Specifications to the Agency PM.
- For reports of noncompliance from regulatory agencies that are directed specifically to the Agency, immediately notify the Design-Builder if non-compliance with a regulation or environmental Performance Specification has occurred. However, the Agency environmental compliance verification personnel will not offer recommendations for correcting the noncompliance and will not have authority to stop Work, unless the non-compliance is deemed to pose an imminent threat of irreparable harm to the environment or personnel. In this case, the Agency may cause the Work to stop and immediately notify the Design-Builder.

The Agency's PM, if not an ODOT employee, does not have the authority to:

- Accept and approve environmental and land use permit applications.
- Review and Accept reports.
- Review and Accept revisions or updates to permits and associated environmental documents.
- Submit documents to regulatory agencies.

These approvals must come from an Agency employee.

### 5-4 – Basis for Environmental Oversight

The goal of the APM team and environmental compliance verification personnel is to assure that the Design-Builder complies with applicable environmental permits, clearances, approvals, and regulations. This is done by verifying that the aspects detailed in the ECP are functioning effectively and properly. The basis of this assurance is the records management employed by the Design-Builder.

The following documents help the APM team determine environmental compliance:

- The Design-Builder's ECP.
- Environmental Construction Inspection Reports.
- Environmental Construction Monitoring Reports.
- DB141.51.
- The Design-Builder's Proposal as it relates to environmental services.
- Design Plans depicting environmental issues (e.g., clearance to the ordinary high-water mark for a foundation, ESCP).
- Applicable permits, clearances, and approvals obtained by the Agency and the Design-Builder for the Project.
- The list of conditions for each of the permits, clearances, and approvals obtained for the Project. The Design-Builder's other project-specific environmental plans, required per DB141.51.
- The Design-Builder's various reports as required by DB141.51.
- The Design-Builder's Quality Plan.

The ECP is the primary document that provides the Design-Builder's management plans and procedures for implementing environmental compliance as part of overall QA for the Project. The other documents provide additional reference for the APM team.

#### (A) Primary Duties of the APM Team

The Agency's responsibility is to confirm that the Design-Builder is effectively implementing the program defined by the ECP. This is achieved through reviews of submittals and reports (such as FAHP construction inspection forms, if applicable), observations in the field, and audits of documentation.

The Agency also plays a significant role in meetings and acts as a liaison with other governmental agencies. As part of its overall environmental oversight role, the Agency also has specific reporting requirements of its own, see Chapter 5, sections 5-5 and 5-9 in this Manual.

### **(B) Meetings**

The Agency will participate in meetings on environmental processes throughout all projects. Primary meetings include the following.

**Pre-Application Submittal Meetings:** When programmatic agreements and permits identified in DB141.51 are used, the Design-Builder shall schedule a meeting with the appropriate regulatory/resource authority personnel and Agency environmental personnel in order to ensure that application submittal Materials will meet the necessary requirements. The Design-Builder shall address all regulatory/resource authority comments prior to submitting the application materials.

**Recurring Project Meetings:** The Design-Builder is required to schedule regular meetings with the Agency environmental personnel to review project compliance with permits and approvals. The APM team will confirm that these meetings are occurring and verify that meeting minutes are distributed by the Design-Builder within 7 days of these meetings.

### **5-5 – Environmental Communication**

As part of its ECP, the Design-Builder is required to develop, document, and implement an Environmental Communication Protocol. The Environmental Communication Protocol must describe internal and external communication processes to be used for inspection and monitoring reporting, noncompliance reporting, inadvertent archaeological discoveries, spills, and communications with the Agency and regulatory Authorities.

Points of contact for reporting problems and potential violations of environmental regulations and/or environmental Performance Specifications are included in the Environmental Compliance Plan. The information required for each point of contact includes the name, responsibility, office, 24-hour and mobile telephone numbers, e-mail address, and work address. It is appropriate for the ECP to include contact information for the Agency's environmental personnel. The Agency's environmental personnel should verify that all permitting and partnering agencies involved in a DB project is aware of the communication protocol for the Project.

### **(A) Design-Builder Communications**

The Design-Builder is required to provide regular (weekly) environmental status reports to the Agency. The Design-Builder must immediately report emergency conditions (i.e., fuel spills, chemical leaks, sediment discharges to waterways, construction slides) and/or issues of noncompliance in accordance with the reporting protocols included in the ECP.

Agency environmental personnel must immediately notify the Agency PM of any reports of emergency conditions, including any actions that the Design-Builder has indicated it is taking to mitigate the emergency.

### **(B) Agency Communications**

In-addition to providing periodic status and compliance reports to the Agency, the Design-Builder must also arrange and schedule regular meetings with Agency environmental personnel to review project compliance with permits and approvals. The frequency of reports and meetings depends upon the level of activity during construction, environmental issues involved, and proximity of sensitive resources to active construction.

Prior to construction, the Design-Builder shall coordinate with Agency environmental personnel to establish the environmental task force meeting schedule and any particular environmentally sensitive construction activities to be monitored with the Design-Builder.

### **(C) Resource / Regulatory Authority Communications**

DB contracts require that the Design-Builder coordinate with appropriate resource/regulatory Authorities for pre-application meetings, permit application submittals, and permit modifications or variance requests. See DB141.51.

The Design-Builder is responsible for immediately reporting emergency conditions (i.e., fuel spills, chemical leaks, sediment discharges to waterways, mass wasting) and/or noncompliance with environmental regulations and/or environmental Performance Specifications to the appropriate resource agency and Agency environmental personnel. When the Agency is designated as the permittee and “Responsible Officer” in the permit conditions to approve and sign submittals, all communications to the regulatory agency will be conducted by the Agency. The timeframe for reporting emergency conditions will be specified in the environmental permit conditions and other applicable environmental clearances and approvals, and shall be clearly presented in the ECP.

The Design-Builder shall advise Agency environmental personnel of emergency condition communications, see DB141.51.

### **(D) External Communications**

External communication on issues of noncompliance with environmental Performance Specifications and authorized permit conditions may originate from federal and State resource agencies, other State and local officials, and the public.

All external communications that the Design-Builder receives on issues of perceived noncompliance to environmental permit conditions or clearances and approvals are immediately directed to the ECM. The ECM immediately informs the Agency PM of this external communication.

Conversely, where the Agency is the permittee and external communications regarding perceived noncompliance are directed to the Agency, then the Agency will immediately forward the comments to the Design-Builder’s ECM and the regulatory agency so that

corrective actions can be immediately initiated and that the regulatory agency is apprised of the issue.

The Design-Builder must coordinate with the Agency PM to respond to the party that issued the external communication, as outlined in the approved ECP. This response will generally be either verbally or in writing, and must acknowledge receipt of the correspondence, confirm the nature of the noncompliance, and provide a time estimate for the Design-Builder's appropriate response.

## 5-6 – Environmental Reviews

### (A) Environmental Compliance Plan

The Design-Builder is required to prepare an ECP per DB141.51. Adherence to the ECP provides an added level of accountability for the Design-Builder, which fosters a relationship of trust and respect between the Design-Builder, the Agency, and the resource/regulatory agencies.

The ECP is an overall plan that encompasses (among other items) communications protocol, an environmental compliance monitoring and reporting program, and other critical environmental coordination needs. It is the basis for the compliance audits that the APM team performs (see the following section). The ECP essentially provides the outline of the APM team's primary duties, by defining the Design-Builder's roles and responsibilities.

DB141.51 requires the Design-Builder to develop and submit a project-specific ECP for the Agency's review and Acceptance. Typically, the REC will perform this review and Acceptance. In accordance with DB141.51, the ECP becomes part of the overall Quality Plan. The Agency's environmental personnel lead the ECP review using Agency staff. The purpose of this review is to determine whether there are any fatal flaws in the Design-Builder's plan and whether the plan adequately accounts for requirements of applicable Laws, permits, clearances, and approvals.

The Agency's review is not meant to provide the Design-Builder with extensive comments, but to provide a thorough review to determine whether the ECP appears to provide the procedures and process that meet or exceed contract requirements and would lead to environmental compliance. The goal of the Agency's review is to help assure that when the ECP is followed, the Project will meet environmental goals. Suggestions or directions to the Design-Builder to change the plan to reflect a particular procedure that the reviewer prefers are to be avoided. Suggestions or directions to the Design-Builder on how to accomplish environmental compliance could transfer some of the risk to the Agency and cause the Agency potential liability.

The Agency's environmental personnel should review all comments from the review and provide the Design-Builder with a written description of areas of concern where the plan may not meet requirements. When it is determined that the ECP has no fatal flaws or other concerns, the Agency will provide this feedback to the Design-Builder by Accepting the ECP.



Any environmental permits, clearances, and approvals obtained by the Design-Builder for the Project will be incorporated into the ECP, and therefore will also become part of the Quality Plan, as they are issued by the resource/regulatory Authorities. The ECP should also be updated to include all of the conditions stipulated by the resource/regulatory Authorities. The ECP, and the ESCP shall also be updated as personnel changes and procedures are revised to accommodate and/or reflect project conditions as the Project progresses.

## **(B) Design Plans**

The Design-Builder's ECM must ensure that the design will not result in a noncompliance issue.

The ECM can accomplish this by reviewing all design plans to ensure proper implementation of all applicable permit conditions and environmental requirements. The Agency is not responsible for determining whether plans convey the necessary information to ensure adherence to applicable permits, clearances, and approvals.

The Agency PM will follow the same monitoring process used for DBB projects, according to Section 800 Construction & Environmental Requirements of ODOT NEPA Manual, available on ODOT Geo-Environmental Manual webpage: [Geo-Environmental Policy and Procedure Manuals](#).

## **(C) Specifications**

Performance Specifications provide general Standards and references that the Design-Builder must comply with in project design. The Design-Builder is responsible for examining the Laws and Regulations, determining which are applicable to the Project, and applying for, obtaining, and implementing environmental permits, clearances, and approvals as required by DB141.51.

The Design-Builder is responsible for developing Design-Builder Specifications that adequately convey the necessary information to ensure adherence to applicable permits, clearances, and approvals. The APM team should verify that the ECM is involved in the Design Review process to help perform this role. Additionally, the Agency environmental personnel will review all Design-Builder Specifications pertaining to permits to confirm conformance with permit requirements.

## **(D) Environmental Permits, Clearances, and Approvals**

The Agency will review all permit applications prepared by the Design-Builder. The Design-Builder is responsible for examining the Laws and Regulations, determining which are applicable to the Project, and applying for, obtaining, and implementing environmental permits and other applicable environmental clearances and approvals. The ECM is required to review all permits and applications to assure that the Design-Builder is adequately and properly capturing the required stipulations in design and construction.

Although the Agency is not responsible for determining which permits are applicable to the Project, it remains accountable to regulators and the public for environmental outcomes. The

Agency will notify the Design-Builder if any applicable permits, clearances, and approvals are omitted from the ECP. Omissions of applicable permits, clearances, and approvals would be a fatal flaw in the Design-Builder's ECP.

The Agency should help the Design-Builder coordinate with resource/regulatory Authorities. The Agency should verify that the Design-Builder (generally through the ECM) is obtaining and implementing all applicable environmental permits, clearances, and approvals. The Agency will review and approve any application prepared by the Design-Builder prior to submittal to the applicable resource/Regulatory authority.

## **(E) Review of Environmental Plans, Permit Applications, and Reports**

Agency environmental personnel will prepare a written report summarizing all Agency comments on ECPs, permit applications, and reports prepared by the Design-Builder, including:

- Design-Builder's ECP.
- Applicable permits obtained by the Design-Builder for the Project.
- Design-Builder's other project-specific environmental plans required per DB141.51.
- Design-Builder's Construction Monitoring Report(s).
- Design-Builder's Post-Construction Monitoring Report(s).
- Design-Builder's Annual Monitoring Report(s).

For all Design-Builder environmental plans, permit applications, or reports that require review, Acceptance, or approval by the Agency, the Agency will provide any comments or response within the timeframe specified in the Contract (see DB150.37 and DB155).

If the Agency PM and Agency environmental personnel conclude that the plan, application, or report can be favorably recommended to the regulatory agency, the Agency PM will sign (when required) then forward the plan, application, or report to the regulatory agency for acceptance, approval, and/or signature.

If the Agency PM and Agency environmental personnel conclude that the plan, application, or report cannot be favorably recommended to the regulatory agency for acceptance, approval and/or signature, the Agency PM will return the plan, application, or report to the Design-Builder. In this case, written comments are provided to indicate where environmental compliance is not met in the plan, application, or report.

## **5-7 – Compliance Verification**

The APM team and Agency environmental personnel should perform quality verification of the Design-Builder's implementation of the approved ECP.

The Design-Builder must set up its record management system to facilitate Agency review and verification. The APM team should assist the Design-Builder in establishing this system.

The APM team will verify the record management system randomly during contract execution. This will assure that the Design-Builder complies with documentation requirements and the records reflect that the implementation of the ECP satisfies regulatory requirements.

The APM team's verification involves reviewing many items, including, but not limited to:

- Environmental Monitoring Reports.
- Monthly reports.
- Data from discharge monitoring.
- Observations regarding the effectiveness of environmental controls (e.g., erosion control devices) installed in the field.
- Communications.
- The implementation of strategies identified in the ECP.
- Emergency response procedures.
- Training process.
- Other requirements, processes, and procedures outlined in the ECP.

## 5-8 – Construction Monitoring

The Design-Builder will monitor the Project throughout the construction phase to confirm adherence to regulations, permit conditions, approvals, and environmental Performance Specifications. During the construction phase, monitoring is to be conducted during all periods of mobilization, active construction, demobilization, and final project restoration. The APM team should become familiar with the Project and environmental issues by joining the Design-Builder periodically during its inspections of the Project.

The ECM ensures the appropriate frequency of monitoring, as required in the permit conditions, the level of construction activity, the protection of sensitive resources, and all environmental issues associated with the Project Site. Active projects are to be monitored more frequently during Work activities that could affect sensitive resources. In its audits, the APM team can verify that the Design-Builder is adhering to pre-set and weather dependent monitoring frequencies.

If a deficiency or issue of noncompliance is noted, the Design-Builder should immediately bring this to the attention of the APM team and the APM team will coordinate with the REC as appropriate.

The Design-Builder is required to determine corrective measures and, unless a timeframe is defined in the permit conditions, establish a timeframe for implementation of corrective

measures in coordination with applicable regulatory agencies. Implementation of corrective measures is to be documented during subsequent inspections. Monitoring reports of corrective actions are to be completed by the Design-Builder and submitted to the Agency environmental team within timeframes agreed to with the Acceptance of the ECP. Individual monitoring reports are to be prepared, and need to include the information outlined in DB141.51 and the approved ECP.

The Agency will also prepare Project Site visit reports when the Agency PM and/or Agency environmental personnel visit the Project construction site to review the Design-Builder's environmental compliance. These reports will include observations, results of audits and reviews of Design-Builder's records and plans, progress photos, conversation records with the Design-Builder, and field notes.

## **(A) National Pollutant Discharge Elimination System**

The Design-Builder is responsible for complying with the National Pollutant Discharge Elimination System (NPDES) in all cases. The Agency assigns responsibility to the Design-Builder (through its Quality Management organization) to inspect and monitor compliance with NPDES requirements. The Agency PM will follow the same monitoring process used for DBB projects, according to Section 800 Construction & Environmental Requirements ODOT Geo-Environmental Manual webpage: [Geo-Environmental Policy and Procedure Manuals](#)

## **(B) Harmful and Hazardous Materials**

The Design-Builder is responsible for inspecting remediation of Hazardous Materials, using specifically trained and qualified personnel. As with other inspection activities, the Agency should assign APM team members to check the Design-Builder's Quality Management Team Inspectors and records.

The Agency will need to have appropriate staff on call and available to respond if Hazardous Materials are found that are not identified and/or included in the Contract Scope of Work. If unknown, unidentified Hazardous Materials are encountered, the Agency will assume responsibility for coordinating with appropriate State or federal agencies. The remediation of previously unknown Hazardous Materials may still be assigned to the Design-Builder, but these activities must be covered by an appropriate CCO or Extra Work Order.

If Hazardous Materials are known to exist and identified in the Contract Documents, the Agency environmental personnel will verify that the Design-Builder follows the approved mitigation plan provided in the Design-Builder's CMMP. The Agency monitor will also verify that the Design-Builder is performing the required documentation and tracking of the Hazardous Materials.

In the event unknown harmful or Hazardous Materials are encountered, see 00290.20(f).

As indicated previously, the Design-Builder may be assigned the Work or the Agency may hire specialists to perform the mitigation depending on the severity, specialty or timeframe for completing the Work.

## **(C) Cultural, Wildlife, Special Habitat or Biological Environmental Considerations**

In the event of encountering an unknown cultural, wildlife, special habitat, or biological resource, the Design-Builder shall coordinate with the Agency to develop, direct, manage, and monitor the mitigation plan.

The ECP will address process and procedures for any cultural, wildlife, special habitat and biological issues assigned to the Design-Builder in the DB Special Provisions or in DB141.51.

## **(D) Post-Construction Monitoring**

After completion of the construction phase, the Design-Builder will conduct final monitoring inspections according to DB141.51. This will assess compliance with environmental permitting requirements and the long-term beneficial effects of the applicable environmental Performance Specifications. Inspections should also address the success, failures, and remedial actions for site restoration and compensatory mitigation sites. The Design-Builder will submit the final environmental monitoring report to the Agency within 30 days of the Final Inspection.

After completion of inspections, the Design-Builder will prepare a Project Commitments Closeout Report. This report will summarize the Project's construction history, including significant deficiencies or incidents that may have occurred and the corrective actions taken. It will generally assess the Project's overall compliance with environmental Performance Specifications and the requirements of various permits and approvals. This report is to be completed and submitted to the Agency 21 days before Final Second Notification.

The Agency may be responsible to perform long-term monitoring for environmental permitting requirements. Unless project-specific long-term monitoring requirements have been added to the Project's DB Contract, the Design-Builder's requirements for post-construction monitoring and maintenance are generally limited to what is required under a DBB contract (e.g., one-year plant Establishment Period). Refer to permit conditions and discuss with Region environmental staff to ensure that any required monitoring and reporting extending beyond the term and limits of the DB Contract is performed as required.

## **5-9 – Agency Reporting**

### **(A) Project Site Visit Reports**

The Agency will prepare Project Site visit reports when the Agency PM and/or the Agency environmental personnel visit the Project construction site to review the Design-Builder's

environmental compliance. These reports may include observations, results of audits and reviews of Design-Builder's records and plans, progress photos, conversation records with the Design-Builder, and field notes.

During periods of active construction, when construction activities occur in or near sensitive environmental resources, during or immediately after poor weather conditions that could increase the risk of environmental noncompliance, and as determined by the Agency or by regulatory agencies, the Agency PM and/or Agency environmental team should perform regular site visits to confirm environmental compliance.

## Chapter 6 – Post-Construction Process

Completion of a DB project includes the standard Agency project completion requirements, such as the processes leading to Second Notification, Final Inspection, disputes, final Pay Request, Third Notification, final payment, and Final Acceptance. DB projects also have unique requirements such as the RAS review of the Design-Builder's documentation and project documentation from the APM team.

Project closeout generally consists of the following activities:

- Final Inspection.
- Design-Builder submittals and APM team review.
- Final APM team submittals.
- Disputes.
- Final Pay Request processing.
- Third Notification.
- Final Payment.
- Final Acceptance.

A project's completion phase includes final confirmation that project construction is complete (including completing Punch-List items Work) as well as the closeout process and preparation for transition to maintenance activities. This chapter identifies the Design-Builder's general roles and explains the APM team's specific duties during project completion, closeout, and maintenance transition activities.

Project completion for DB projects varies from the traditional DBB project in several areas. Because the Design-Builder is responsible for much of the Project documentation, significant submittals are required of the Design-Builder at the end of the Project (ranging from as-constructed documents to warranties, operations manuals, and Quality Management records). The APM team must review all Design-Builder submittals for compliance with the Contract.

The APM team also has its own Project Records that must be submitted to the CAU upon project completion (e.g., certified payroll documentation) refer to the Semi-Final Documentation Submittal (Form 734-2706a). This chapter provides the APM team with a guide to the project completion requirements for DB projects.

In discussing project completion activities, it is helpful to try to place them in a chronological order. This chapter attempts to describe the major project completion items in as close to chronological order as possible. The APM team should also refer to the steps outlined in the ODOT Construction Manual Chapters 12 through 12H for project documentation requirements and Chapter 37 for project close out information.



The APM team must also coordinate reviews by internal staff and other State agencies for labor requirements, OECR, pay adjustments, and CCOs.

Project closeout ultimately results in the Design-Builder receiving Third Notification issued the Agency. This confirms that all aspects of the Contract have been Accepted, with the exception of in-place warranties. After Third Notification (which provides notification that all Work including final site cleanup, etc. is complete) is issued, the Agency has 30 days to issue final Payment to the Design-Builder before interest will accrue. The Agency will provide the Design-Builder with formal written notification of the date of Final Acceptance.

Following project closeout, maintenance transition activities take place. These activities are essentially associated with maintaining the completed project. The APM team is responsible for distributing critical information to ODOT's District Maintenance Divisions so they can efficiently and effectively maintain the completed project.

A post-construction review is also required to discuss and present specific information regarding the Project and its progress.

## 6-1 – Project Closeout

The project closeout process consists of performing Final Inspections, collecting necessary documentation, Accepting the Project, and taking control of the Project from the Design-Builder. The Design-Builder's requirements for project closeout are located in DB154.80. See also Semi-Final Documentation Submittal (checklist forms 734-2706a and 734-2706b, located on Construction Forms webpage:

<https://www.oregon.gov/odot/Construction/Pages/Forms.aspx?wp4384=se:%22semi-final%22>.

The project closeout process includes the following steps:

- Final Inspection of onsite Work: The Agency conducts the Final Inspection to evaluate that the Design-Builder has completed the Project in accordance with the Contract Documents (DB150.90).
- Post Construction Review Meeting (DB150.91): The purpose of the meeting is to examine the Project for process improvements to benefit future projects. Depending on the Project, the meeting may be either optional or mandatory.
- Issuance of Second Notification to Design-Builder: This includes the Agency's issuance of Interim and Final Second Notification(s) to the Design-Builder (Chapter 4, Section 4-23 in this Manual).
- Review of As-Constructed Plans for completeness: Prior to the Agency's issuance of Third Notification, the Agency PM reviews the As-Constructed Plans submitted by the Design-Builder and evaluates whether they accurately reflect the as-constructed condition of the Project. Attention must be given to changes from the Accepted RFC Plans and Specifications. The Agency may conduct field checks of construction Work to assess whether the as-constructed documents are accurate.

- Review and submittal of required project documentation: The Agency PM reviews all other project documentation that the Design-Builder is required to submit as a condition of project closeout. In addition to the comprehensive as-constructed documents, this includes:
  - NCR, NCI, and audit finding logs showing resolution.
  - All required labor compliance documents (DBE, OJT certifications).
  - Subcontractor payment certifications.
  - Warranties.
  - Bills.
- Environmental – Ensure that inspections have covered the full range of the Project and that all findings have been adequately resolved and documented.
- Third parties – Verify that affected third-party work is complete and that third parties have been provided the proper opportunities to review designs, etc. during the course of the Project.
- Review of required project documentation in accordance with the ODOT Construction Manual, Chapter 37. Note one exception is that because of the nature of DB, the records will include back-up pay estimate information for payments made for Design Services.
- Prepare documents to reconcile changes between the original scope and the final scope of the Project.
- Prepare the Recommendation of Project Acceptance: The Agency PM submits to the EDMS a Recommendation of Project Acceptance for review and concurrence by the AM.
- Issuance of Third Notification to Design-Builder (DB150.09(b)): The Agency PM issues Third Notification providing that, as of the date of the notice, the Design-Builder appears to have completed the Project in accordance with the Contract requirements. Third Notification may only be issued after the Design-Builder has completed all Punch-List items, corrective Work, Equipment and plant removal, site cleanup, and submittal of all Design Documents, certifications, bills, forms, and other documents required by the Contract Documents. Third Notification relieves the Design-Builder of its obligation to protect and maintain the Work. Upon issuance of Third Notification, the Agency will take over the protection and maintenance of the Project.
- Make final payment to the Design-Builder (DB195.90): Final payment reconciles all outstanding amounts due and owed between the Agency and the Design-Builder. The Agency releases all retainage with the final payment and compensates the Design-Builder in full for the Work.
- Final Acceptance of the Project (DB150.95): After the Agency completes the Final Inspection and issues Third Notification to the Design-Builder, the Agency will issue

notice of Final Acceptance. The Agency PM will notify the Design-Builder of Final Acceptance.

- Note: A project narrative is not required for DB projects.

## 6-2 – Design-Builder Responsibilities

The Design-Builder is responsible for advising the Agency of project completion and requesting in writing that the Agency perform an inspection.

The Design-Builder is also responsible for delivering submittals, including:

- As-constructed documents.
- Warranties and applicable “sign over” to the Agency.
- “Sign over” to the Agency of applicable permits.
- Quality Management records (e.g., CMOs, material certifications, test results, inspection results, daily progress reports, erosion control monitoring reports, and pile record books).
- Quantity documentation (e.g., all Price Center Pay Items, CCOs, and price adjustments).
- Operation manuals, if applicable.
- Final designs complete with reports, calculations, load rating reports and drawings.

The Design-Builder is also responsible for completing all tasks identified in the Agency’s Second Notification in an expeditious manner and within the timeframe agreed to. The Design-Builder must then ask the Agency in writing to perform a Final Inspection to confirm that all Work (including Punch-List items and clean-up Work) is complete.

The Agency is responsible for responding to the Design-Builder’s request for inspections within the timeframes outlined in the Contract or as otherwise agreed to.

## 6-3 – Prime Contractor Evaluation

The Agency PM will prepare the Prime Contractor Performance Evaluation (Form 734-2884) and submit it to the Design-Builder and CAU annually within 30 days of the anniversary date of NTP during the Project, and within 60 days after the Agency’s issuance of Second Notification.

If the Design-Builder agrees with the evaluation, they sign and return the evaluation to the Agency PM and CAU. If the Design-Builder does not sign and return the form, the CAU will process the unsigned evaluation after 15 days of it being sent to the Design-Builder. See ODOT Construction Manual, Chapter 34.

Additionally, the Agency PM sends the Contractor’s Construction Process Feedback form (Form 734-2469a) to the Design-Builder and CAU along with the Agency’s final Prime Contractor

Performance Evaluation. The Design-Builder has the option to sign and return the feedback to the Agency PM and CAU.

## 6-4 – Final Documentation Reviews by the RAS and OECR Field Coordinator

The Agency PM will coordinate with the RAS to perform the final documentation review. Additionally, the Agency PM will coordinate with the OECR Field Coordinator to perform a final review of all OECR documentation.

Documents reviewed at the end of the Project include, but are not limited to, the following:

- As-Constructed documents, including (partial list):
  - Design reports, including the final geotechnical interpretive report.
  - Load rating calculations/reports.
  - Plans.
  - Design-Builder Specifications.
  - Operations and maintenance manuals.
  - Special instructions.
- Final payment documents.
- Quality Management records.
- Quantity documentation (e.g., CCOs and price adjustments).
- Labor compliance documents.
- Project commitments identified in the Contract.
- Warranties and sign-overs.
- Completed Punch-List items.

The APM team is responsible for reviewing these submitted project documents and the completed Punch-List items Work prior to issuing the Third Notification.

Other Agency functions include final review by the RAS to ensure that quantity and quality documentation reviews do not have any unresolved issues and that quality price adjustments have been properly accounted for.

After preparing for project completion by ensuring that the preceding activities have been properly addressed throughout the duration of the Project, the APM team is responsible for a number of tasks and activities that must be completed during project completion prior to issuing Second Notification, including the following:

- Before Third Notification, the RAS will compile the reviews and reports generated during the Project, perform final reviews, and provide the following:
  - Verification that all final quantities match the quantities from the Accepted quantities calculation and sign the document. The RAS will list any changes and discrepancies.
  - A listing on the final DRR of any PM Exceptions associated with missing documentation such as certifications, testing, etc.
  - A listing of approved quality and quantity price adjustments and confirmation that they were properly applied.
  - Verification that warranties have been properly accounted for.

See ODOT Construction Manual, Chapter 37 for a complete listing of all semi-final related documentation required for project closeout.

## 6-5 – Quality Documentation – Plant Establishment

The Agency PM will review the complete quality and quantity compliance documentation (submitted by the Design-Builder's Quality Management Team) associated with plant establishment Work completed after the Design-Builder has submitted final project documentation. The Design-Builder must submit this information through the EDMS for the Agency's review and documentation of Acceptance within 14 days after the plant establishment Work has been completed (DB154.80). See ODOT Construction Manual, Chapter 37.

The Agency PM's review will address whether the Design-Builder has completed the seeding and plant establishment requirements prior to Final Acceptance. The Agency will verify that all necessary aspects of the landscaping are in place and that the Agency understands any processes it must take to ensure that the landscaping grows and survives once the Design-Builder is no longer on the Project Site.

The Agency PM will use this opportunity to gather any necessary additional information about the plants that the Design-Builder installed, including about their care and maintenance. Additionally, the Agency verifies that all irrigation systems are installed and functioning, and that the Agency understands the watering requirements for the Project's landscaping.

## 6-6 – Recommendation of Project Acceptance

The Agency PM will prepare the Recommendation of Project Acceptance (Form 734-1384) once the Design-Builder has satisfactorily completed all construction Work and fulfilled its obligations concerning project documentation (see the ODOT Construction Manual, Chapter 36 – Acceptance of Project).

Note that the CAU has primary authority over project Acceptance. The Agency PM recommends Acceptance, and the CAU decides whether Acceptance is appropriate.

For projects with Local Agency participation or other funding, the Agency PM will also obtain a letter or signature on the Recommendation of Project Acceptance form from the Local Agency (or other funding source) indicating that they accept the Project as complete.

## 6-7 – Agency Submittal of Final Documentation

Upon receiving the final quality and quantity documentation from the Design-Builder, the Agency PM will perform a final review and submit the final labor compliance documentation to the EDMS for Acceptance by the APM.

Refer to [Chapter 37 – Submittal of Final Project Documentation](#) in the ODOT Construction Manual for guidance on submittal of final project documentation, with the exception of the Project Manager’s Narrative Form, 734-2756. The Project Manager’s Narrative Form is not required for DB projects.

## 6-8 – Final Labor Compliance

The Agency PM prepares and submits electronically, within the EDMS, all certified payroll reports within 14 days after completing the plant establishment Work, including:

- Signed Statement of Certification/Compliance page.
- Employee Interview Reports (Form 734-3478).
- Project Manager’s Labor Compliance Certification (Form 734-1734) for the Project, including or updated for any plant establishment Work for APM team’s review and Acceptance.

Refer to the ODOT Construction Manual, Chapter 19, Labor Compliance; and Chapter 37, Submittal of Final Project Documentation. Labor compliance for DB projects is similar to the standard process in the ODOT Construction Manual.

## 6-9 – Final Inspection

In accordance with DB150.90, the Agency PM will perform the Final Inspection of the Project, which includes the following:

- Schedule a review of the Project at a time close to completion of on-site Work. The purpose of this review is to document site conditions and understand what remains to be completed before the Design-Builder issues notice that its Work is complete.
- Schedule and lead a project Final Inspection with the Design-Builder and the Agency within 15 days after receiving notice from the Design-Builder that all Punch-List items, final trimming, and cleanup, in accordance with DB140.90, have been completed.
- Prepare a final Punch-List of remaining items to be corrected by the Design-Builder.
- Include documentation from Local Agencies or other funding sources stating that they accept the Project as being complete.

- Send the Contractor Construction Process Feedback (Form 734-2469a) to the Design-Builder along with the final Prime Contractor's Performance Evaluation (Form 734-2884) within 60 Calendar Days of Second Notification. Refer to the ODOT Construction Manual, Chapter 34 – Contractor Performance Evaluation.
- Issue Third Notification to the Design-Builder after all construction contract Work and inspections are complete, all required documentation is submitted in accordance with the Contract Documents, and all other conditions to receipt of Third Notification are complete.
- After completion of Final Inspection and issuance of Third Notification, begin the steps toward issuance of Final Acceptance.

See ODOT Construction Manual, Chapter 36 – Acceptance of Project. Additional details concerning Third Notification and final payment are included below.

As stated previously, it is recommended that the APM team perform this walk-through in the presence of the Design-Builder and its Quality Management Team. This facilitates the Design-Builder's understanding of an incomplete or unsatisfactory work, rather than having to interpret the meaning of a written item.

If the inspection results in identification of incomplete or unsatisfactory work items, the Design-Builder must correct these items and request in writing that the Agency PM re-inspect.

It is important to remember that the authority to "Accept" the Project is vested with the Oregon Transportation Commission, which has delegated that authority to the ODOT Construction Section.

## 6-10 – Third Notification – Contract Time

The Agency PM issues Third Notification after inspecting the Work and confirming the following (DB150.90):

- The Design-Builder has completed all on-site Work and Punch-List items required by the Contract Documents.
- The Design-Builder has removed all Equipment, other than Equipment incorporated into the Work.
- The Design-Builder has completed all Design Services and submitted all required Design Documents, certifications, bills, forms, warranties, and other documents, including all Quality Management documentation (including resolution of all NCRs, NCIs, and audit findings).
- The Design-Builder has delivered a complete listing of all warranties, if any to the Agency PM.



When issuing Third Notification, the Agency PM will submit one electronic copy to APM team and EDMS. Additionally, the Agency PM will submit one copy via email to the ODOT District Manager, ODOT Region Survey Manager, and ODOT Region Right-of-Way Manager.

Third Notification relieves the Design-Builder of its obligation to maintain and protect the Work. Prior to issuing Third Notification, the Agency must be prepared to assume full control over the Project, including all measures necessary to protect and maintain the Work.

Refer to the ODOT Construction Manual, Chapter 40, Third Notification.

## 6-11 – Final Acceptance and Final Payment

Final Acceptance is issued by the Agency if after 45 days following Second Notification the Design-Builder does not file a certified claim. If it is discovered that the Design-Builder has not completed all Work, the Agency PM can rescind Third Notification by notifying the Design-Builder of this decision.

Final Acceptance is written confirmation by the Agency that the Project has been completed in accordance with Contract requirements, with the exception of latent defects and Warranty obligations, if any, and has been Accepted.

The Agency will make the final payment to the Design-Builder to close out the Work (DB195.90). No later than 10 days after the Final Inspection, the Design-Builder is responsible for submitting a request for final payment. The final payment request must contain all Work not included in a prior Pay Request. The amount of final payment is the difference between the total amount due to the Design-Builder (accounting for all adjustments to the Contract Price) and the sum of all payments previously made. All prior progress payments are subject to correction in the final payment. The final payment releases all retainage, if held by the Agency.

The Agency becomes liable for interest (at the rate stipulated in ORS 279C.570) starting 30 Calendar Days after the date of Third Notification. Refer to the ODOT Construction Manual, Chapters 25 and 33.

## 6-12 – Findings of Fact for Exemption Post-construction Evaluation Report

Within 45 days after Final Second Notification, ADS will set up a meeting with the Agency PM to discuss required project information needed to complete the Finding of Facts for Exemption (FFE) Post-Construction Evaluation Report. At the meeting, ADS will provide the Agency PM a base document for the report. The Agency PM will provide the information and coordinate with ADS on any necessary project-specific information required to complete this report.

In accordance with ORS 279C.355, the FFE post-construction evaluation report must be submitted to ODOT's Director. The final report must be submitted no later than 30 days after

Third Notification. The FFE-post construction evaluation process includes the following steps performed by the Region and ADS, at a minimum:

- Prepare a draft FFE evaluation report base document with project-specific information.
- DOJ review and approval of the draft FFE evaluation report documents.
- Finalize FFE evaluation report documents, including by incorporating comments from the DOJ.
- Copy of final FFE evaluation report to the ODOT Director (no action required)
- Post final FFE evaluation.

## 6-13 – Post-construction Lessons Learned Meeting

As close as possible to the Agency's Acceptance of the Project, schedule a post-construction lessons-learned meeting with members of the APM team.

This meeting does not have to wait until Third Notification as long as 45 Calendar Days have passed since Final Second Notification and no litigation has been filed; rather, the meeting should take place at a time when most Agency team members are still on the Project and available to hold the meeting. Additional meetings can occur after the Agency performs the Final Inspection and acknowledges Final Acceptance.

The intent of the lessons-learned meeting is to capture best practices, identify areas of improvement, and identify efficiencies for construction-related process and documents for future DB projects. Topics for discussion at the meeting may include the following:

- Processes that resulted in disagreements or delays.
- The Design Review and comment process.
- Construction oversight and inspection processes.
- Innovations that could be considered for incorporation as standard practice.
- Project components that worked well and may be considered for incorporation into other projects.
- Project components that were problematic and recommended solutions for future projects.
- Disagreements with the Design-Builder.
- Claims and what could have been done to avoid or reduce them.
- How the Prescriptive Specifications and Performance Specifications worked in practice.
- Ambiguities in the Contract Documents that should be corrected, including potential changes to the template Contract Documents.

- Potential changes to the contractual procedures or improvements to the Contract Documents.
- Potential changes to the Design-Build Project Development Guide and Design-Build Contract Administration Manual.
- Any other project-specific topics that impacted the Project and could be useful on a programmatic level.

## 6-14 – Third-party Acceptance

In addition to the preceding submittals and required APM team reviews, the APM team should review the status of third parties. This section provides options to help guide the APM team in regard to third parties and Final Acceptance of third parties with respect to their facilities.

During project completion, it is beneficial for the APM team to verify that affected third parties have provided signed agreements or other means of acceptance indicating that their facilities are acceptable. The APM team should review the DB Special Provisions for any requirements associated with third-party acceptance. The following are examples of potentially affected third parties:

- An agency or political entity that is either participating in the cost of the Work or will have maintenance responsibility upon completion.
- An agency or political Entity that has furnished funds for adjusting, improving, or constructing facilities as part of the DB Contract.
- A Utility whose facilities may be adjusted as a part of the DB Contract.
- A governmental agency that has placed certain requirements as a condition of conveying land or property to the State for the DB Project (an infrequent condition, but a possibility).
- The US Coast Guard or US Army Corps of Engineers, relative to compliance with clearance requirements affecting navigation.
- A local government or toll authority that has reached agreement with the State for improving or adjusting some segment of its street or highway system as part of the DB Contract.

The following are examples of how the APM team could receive documentation of acceptance by affected third parties:

- A written notification of acceptance from the third party to either the Design-Builder or Agency.
- A report from the Agency PM documenting verbal acceptance from a responsible third-party official, with the indication that a copy of this report has been mailed to the third party.

- Documentation of correspondence sent to the third party requesting its concurrence with acceptance of the Project or comments on corrections needed, with indication that no reply by a specified date will signify concurrence.

It should be standard procedure for the APM team to notify all affected third parties of the completion of the DB Contract, so any valid comments they may have can be incorporated into the DB project's Punch-List items. Any affected third party's acceptance could be made subject to satisfactory completion of the remaining Work that affects them. In addition, as soon as Work that affects such third parties is completed, their review and acceptance should be solicited (rather than waiting until completion of the DB Contract).

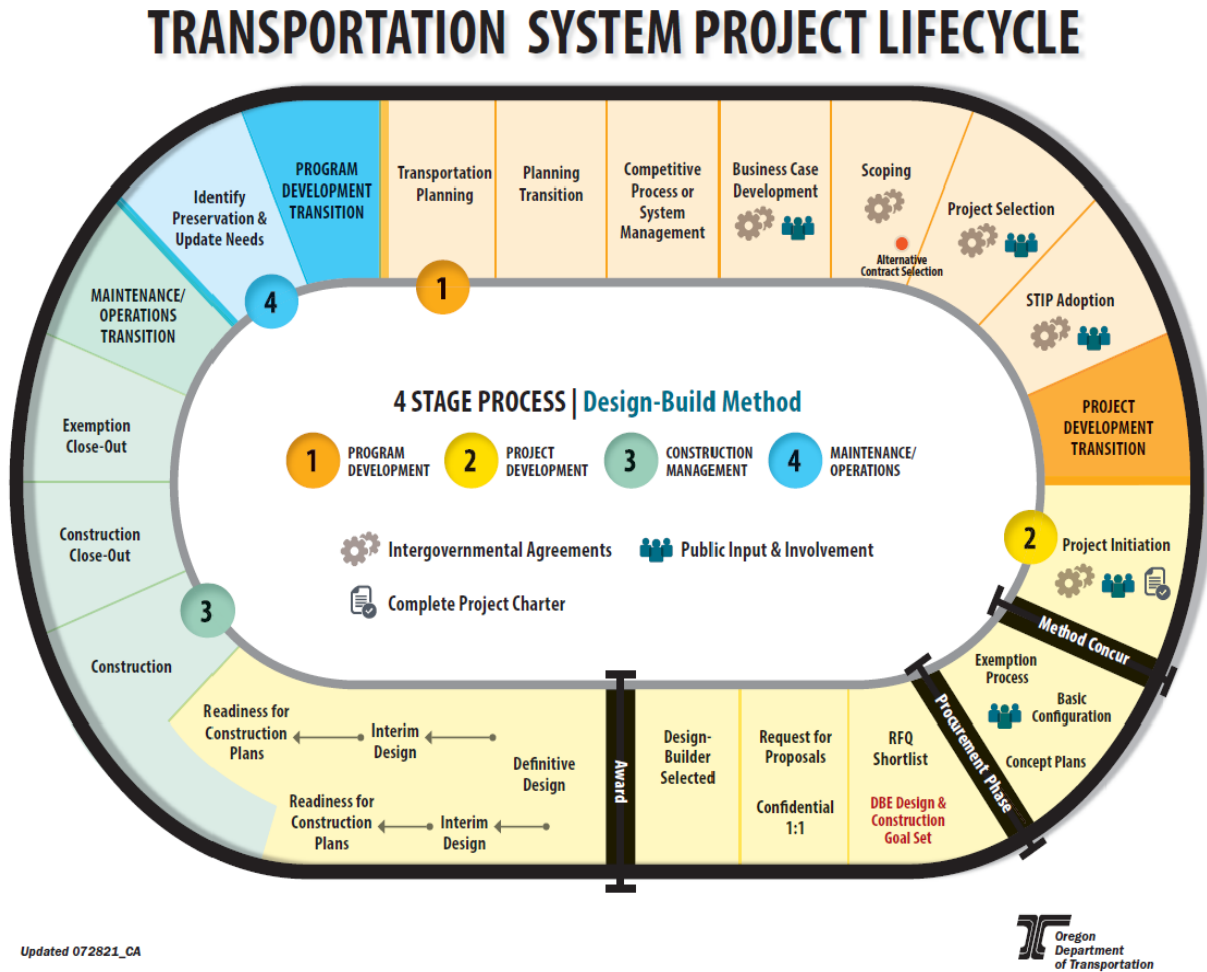
## 6-15 – Transition to Maintenance

The APM team's role in transition to maintenance activities includes meeting with appropriate District maintenance personnel that will be responsible for future maintenance. The team should inform maintenance staff of the following:

- Location of the as-constructed Project.
- Issues that arose during construction that may impact long-term performance (if this information has not already been discussed).
- Design and construction concerns that the team has identified that may impact maintenance or long-term performance.
- Environmental features or commitments associated with long-term maintenance or monitoring (e.g., erosion control features in critical habitat to monitor, compliance wells to sample, vegetation establishment in critical areas).
- Key features of the Project that may cause maintenance issues.
- Key features of the Project that may cause concerns for projects that will "add on" to the completed Project.
- Locations of warranties for Equipment and features that are applicable to the Project.
- Information on Subcontractors contracted to perform warranty work.
- Information for contacts for warranty work.
- Copies of operations manual(s).

# Appendix 1 – Transportation System Project Lifecycle Race Track – Design-Build

Figure 19: Transportation System Project Lifecycle "Racetrack"



## **Appendix 2 – Design-Build Review Process – Design Process**

The DB Review Process – Design Process is located on the following webpage:

<https://www.oregon.gov/odot/Construction/Pages/Contract-Administration-Services.aspx>

# Appendix 3 – Design-Build Specifications Terminology Diagram

Figure 20: Specifications Terminology Diagram

