



# 1-31 CONSTRUCTABILITY REVIEWS FOR STRUCTURES PROJECTS

## Process for Structures Constructability Review Checkpoints

### *ROLES:*

Structure Design Task Manager – Design TM

Structure Design Project Engineer – Design PE

Structure Office Engineer – SOE

DES Project Delivery Team – DES PDT

Constructability Review Functional Reviewers – FR

In general, functional reviewers will include the following:

Structure Design – Structure Project Engineer

Structure Construction – Field Representative

Structure Office Engineer – Specification Engineer and/or Project Estimator

Geotechnical Services – Geotechnical Designer

Structures Hydraulics – Hydraulics Designer

Structures Maintenance – Area Bridge Maintenance Engineer

District – District Project Engineer

### *PRODUCTS:*

Advance Planning Study – APS

Project Approval and Environmental Document – PAED

General Plan - GP



**ATTACHMENT 1**

*FORMS:*

DES Constructability Review Feedback Form – CR Feedback

Constructability Review Check Lists – Check Lists.

Review Stage	Process	Desired Outcome
Advance Planning Studies	<ol style="list-style-type: none"> <li>1. Design TM to identify applicable functional Offices.</li> <li>2. Each functional office to identify CR FR.</li> <li>3. Optional field review at discretion of Design PE</li> <li>4. Design PE to consult with FR during the development of the APS and incorporate comments as applicable.</li> <li>5. Design PE to transmit completed APS to FR for comment.</li> <li>6. FR to provide comments on plans and summarize on DES CR feedback form.</li> <li>7. Design PE to complete response portion of CR feedback form, respond to FR and file.</li> <li>8. Comments that do not impact project programming or PA&amp;ED will be incorporated at the next APS update or during the development of the General Plans.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify issues that impact project programming, specifically issues related to scope and capital costs.</li> <li>2. Identify fatal flaws</li> <li>3. Identify proper scope</li> <li>4. Input for project risk management plan</li> <li>5. Identify proprietary systems or potential unusual specification issues.</li> <li>6. Identify issues that impact the development of PA&amp;ED or the Project Report.</li> </ol>



**ATTACHMENT 1**

<b>Review Stage</b>	<b>Process</b>	<b>Desired Outcome</b>
General Plans	<ol style="list-style-type: none"> <li>1. Update list of FR, if needed.</li> <li>2. Mandatory field review at project site prior to Type Selection for Level 1 projects.</li> <li>3. Design PE to consult with functional reviewers during the development of the GP and incorporate comments as applicable.</li> <li>4. Design PE to schedule Type Selection meeting and distribute package to all FR.</li> <li>5. All FR to attend Type Selection meeting (mandatory CR review meeting)</li> <li>6. Design Project Engineer to transmit completed GP to FR for comment</li> <li>7. FR to provide comments on plans and summarize on DES CR feedback form.</li> <li>8. Design PE to complete response portion of CR feedback form, respond to FR and file.</li> <li>9. Comments not incorporated prior to General Plan Distribution (Milestone 275) will be incorporated at the Unchecked Details stage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify issues that impact project programming, specifically issues related to scope, schedule and capital costs.</li> <li>2. Identify fatal flaws and risks.</li> <li>3. Update project risk management plan.</li> <li>4. Assess risk for: staging, traffic control, permits, environmental, clearances, site access and utility conflicts.</li> <li>5. Evaluate foundation recommendations.</li> <li>6. Evaluate aesthetic issues.</li> <li>7. Identify potential CRIPs</li> <li>8. Identify proprietary systems or potential unusual specification issues.</li> <li>9. Check material availability</li> </ol>



ATTACHMENT 1

Review Stage	Process	Desired Outcome
<p>Unchecked Details</p>	<ol style="list-style-type: none"> <li>1. Update list of FR, if needed.</li> <li>2. Design Project Engineer to transmit Unchecked Details to FR for comment</li> <li>3. FR to provide comments on plans and summarize on DES CR feedback form.</li> <li>4. Design PE to complete response portion of CR feedback form, respond to FR and file.</li> <li>5. Comments received will be incorporated at the Draft Structures PS&amp;E (Milestone 378)</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify issues that impact project programming, specifically issues related to scope, schedule and capital costs.</li> <li>2. Resolve previously identified issues</li> <li>3. Identify proprietary systems or potential unusual specification issues.</li> <li>4. Determine status of all permits</li> <li>5. Review non-standard details</li> </ol>
<p>Draft Structures PS&amp;E</p>	<ol style="list-style-type: none"> <li>1. Update list of FR, if needed.</li> <li>2. SOE to provide draft SPS&amp;E package to FR.</li> <li>3. Design TM to schedule Project Review meeting (CR review meeting).</li> <li>4. All FR to attend Project Review meeting (mandatory CR review meeting), reviewed SPS&amp;E package and make final comments</li> <li>5. All FR to incorporate recommendations into their respective functional deliverables (i.e. Hydraulic Report, Foundation Reports, Special Provisions, Type Selection Report) during Project Review.</li> <li>6. All FR to concur that all applicable constructability comments have been properly incorporated into the final Structures PS&amp;E</li> <li>7. Design TM to send final CR Feedback forms and CR Check List to RE Pending File.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify issues that impact project programming, specifically issues related to scope, schedule and capital costs.</li> <li>2. Resolve previously identified issues</li> <li>3. Review and resolve conflicts with roadway plans: geometry, staging, permits, construction easements</li> <li>4. Identify and resolve construction impacts on plans or specifications: working day estimates, foundation review, utilities.</li> <li>5. Final review and updating of all project documents.</li> <li>6. Concurrence by FR that project is ready for final SPS&amp;E.</li> </ol>