

**PUBLIC PRIVATE PARTNERSHIP (P3)
DESIGN-BUILD-MAINTAIN AGREEMENT**

for

**202 MA 054 H882701C
SR 202L (SOUTH MOUNTAIN FREEWAY)
I-10 (MARICOPA FREEWAY) – I-10 (PAPAGO FREEWAY)**

Between



ARIZONA DEPARTMENT OF TRANSPORTATION

and

[DEVELOPER]

VOLUME II

TECHNICAL PROVISIONS

Dated as of: [_____], 2016

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GENERAL PROVISIONS (GP)**

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1 **GP 110 CONTRACT ADMINISTRATION**

2 **110.01 General**

3 Developer shall perform all Work in compliance with the requirements of Section GP 110 of the
4 TPs.

5 **110.01.1 Future Compatibility**

6 The Project, as further described in TP Attachment 110-1, must be compatible with the
7 improvements of future projects noted below. Developer shall demonstrate that the Project
8 design allows for the future ultimate configuration connection points when seeking review of the
9 Design Documents.

10 A. SR 30 Interchange and Avenida Rio Salado/Broadway Road Alternative D

11 The design of the SR 30 and Avenida Rio Salado system traffic interchange is reflected
12 in the preliminary plans included in the Reference Information Documents (RIDs).
13 Developer shall demonstrate Project design compatibility with respect to the following
14 aspects:

- 15 1. Developer shall design the profile of SR 202L and the location of the north abutment
16 of the Salt River Bridge to accommodate the planned undercrossing of SR 30 north
17 of the proposed Salt River bank protection work.
- 18 2. Developer shall design the distance between SR 202L northbound (NB) and
19 southbound (SB) roadway centerlines from north of Southern Avenue to north of
20 Broadway Road to accommodate future direct high-occupancy vehicle (HOV) system
21 interchange ramps. The design must allow for direct HOV system ramps for the
22 north-to-west/east-to-south movement and east-to-north/south-to-west movements.
- 23 3. Developer shall not design the Project with access ramps to or from SR 202L on the
24 north side of Broadway Road or on the south side of Lower Buckeye Road. The
25 traffic interchanges at those crossroads must be connected by collector-distributors
26 that accommodate, or can be modified within the Schematic Right of Way (ROW) to
27 accommodate, the future work associated with the SR 30 System Interchange
28 project.
- 29 4. Developer shall place ramp gores at their ultimate location with respect to the future
30 work associated with the SR 30 System Interchange project.
- 31 5. Developer shall design and position retaining walls to accommodate the future work
32 associated with the SR 30 System Interchange project.
- 33 6. Developer shall design the minimum vertical clearances for bridges to accommodate
34 the future work associated with the SR 30 System Interchange project.
- 35 7. Developer shall design and position drainage systems to not be in conflict with the
36 future work associated with the SR 30 System Interchange project. Where feasible,
37 Developer shall design drainage crossings long enough to accommodate the future
38 work associated with the SR 30 System Interchange project.
- 39 8. Developer shall coordinate the design and location of Utilities to not be in conflict
40 with the future work associated with the SR 30 System Interchange Project.

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B. I-10 Light-Rail Transit Corridor

In 2007, Valley Metro initiated a study of high-capacity transit options within the I-10 (Papago Freeway) corridor. Light rail has been identified as the preferred transit mode and a preferred alignment has been determined. The preferred route connects to the existing light rail service in downtown Phoenix. From downtown Phoenix, the route heads west to I-17 and then north to I-10 along the frontage road that is just west of I-17. At I-10, the route contemplates that light rail operates in the freeway median for approximately 3 miles between I-17 and 47th Avenue. The route then transitions via a bridge over the westbound freeway traffic lanes to the north side of I-10. At that point, the route remains on the north side of the freeway until it reaches the existing 79th Avenue Park-and-Ride. The I-10 Light-Rail Transit Corridor, which includes the preferred route, is shown in 2014-08 Valley Metro Capitol_I-10 West Advanced Conceptual Engineering.pdf included in the RIDs.

110.01.2 References

110.01.2.1 Applicable Standards

For all portions of the Project within the Maintenance Service Limits, Developer shall design and construct in accordance with the Technical Provisions and Developer shall have the right, but not the obligation, to apply ADOT standards, manuals, and guidelines not already incorporated into the Technical Provisions and in accordance with Section GP 110.01.2.2 of the TPs. For all Non-Maintained Elements to be owned by ADOT, Developer shall design and construct in accordance with ADOT standards, manuals, and guidelines, unless otherwise specified in the Contract Documents. For all other Non-Maintained Elements, Developer shall design and construct in accordance with the applicable Governmental standards, manuals, and guidelines, unless otherwise specified in the Contract Documents. The standards, manuals, and guidelines listed throughout the Contract Documents are not a comprehensive list; other applicable publications may be required to complete the Project. Developer shall determine the applicable standard, manual, and/or guideline for the Work and shall understand any modifications to those standards set forth in the Contract Documents. Requests for Deviation must be in accordance with Section 6.2.4 of the Agreement.

Developer shall use the most current version of each standard, manual, and guideline as of the Setting Date, unless otherwise specified in the Contract Documents. If the standard, manual, or guideline is superseded, expires, or revisions are issued during the course of the Project, Developer shall contact ADOT to determine whether to continue to use the manual, use the revision, or use a replacement standard, manual, or guideline identified by ADOT. If Developer becomes aware of any ambiguities or conflicts relating in any way to the standards, manuals, or guidelines, Developer shall immediately notify ADOT. If there is any unresolved ambiguity in the applicable standards, Developer shall obtain clarification from ADOT before proceeding with design, construction, or maintenance. All references to “as-built” and “as-built drawings” in the ADOT standards, manuals, and guidelines shall mean Record Drawings. Developer shall incorporate any safety change to the applicable standards issued by ADOT into the Project. If ADOT issues a safety change to the applicable standards, Developer shall immediately contact ADOT for direction and shall obtain ADOT’s approval of Developer’s proposed course of action prior to implementing such change.

110.01.2.2 Basis of Design Report

Developer shall prepare a Basis of Design Report for the Project that includes, at a minimum, the following:

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- 1 A. Cover sheet;
- 2 B. Table of contents;
- 3 C. A summary of specific methodologies, manuals, or references that Developer proposes
- 4 to use for the analysis and design of the Project for each technical discipline outlined in
- 5 the TPs;
- 6 D. A summary of all anticipated software and the applications for each proposed software
- 7 for the design and analysis of the Work;
- 8 E. A summary of specific methodologies, manuals, or references that Developer proposes
- 9 to use to construct the Project; and
- 10 F. All other items as required by the Contract Documents.

11 Prior to issuance of NTP 2, Developer shall submit the Basis of Design Report to ADOT for
12 approval. Developer shall immediately amend and prepare an updated Basis of Design Report,
13 as required to identify new methodologies, manuals, and references that are added to the
14 Project. When the Basis of Design Report or updated Basis Design Report is amended,
15 Developer shall submit an updated Basis of Design Report to ADOT for approval.

16 **110.01.2.3 Reference Information Documents**

17 ADOT has undertaken certain planning and preliminary concept work concerning the Project
18 development, which are included in the Reference Information Documents (RIDs).

19 **110.01.3 Work Performed by Developer**

20 Developer shall:

- 21 A. Manage, plan, execute, and control all aspects of the Work;
- 22 B. Coordinate its activities with Governmental Entities and other Persons that are directly or
- 23 indirectly impacted by the Work; and
- 24 C. Document and report all Work in accordance with Good Industry Practice, applicable
- 25 Governmental Entities' requirements, and the Contract Documents.

26 **110.01.3.1 Basic Configuration**

27 The Schematic Design included in the RIDs conveys the general intent and layout of the
28 Project. The Basic Configuration means the following:

- 29 A. Those portions of the Schematic Design that depict the following:
 - 30 1. The number and types of lanes;
 - 31 2. The approximate location of shoulders;
 - 32 3. The approximate location of service interchanges;
 - 33 4. The approximate location of grade separations;
 - 34 5. The number of entrance and exit ramps at each service interchange;
 - 35 6. A bridge, existing or new, at 63rd Avenue that provides connectivity to the Estrella
 - 36 Vista Commerce Park development on the south (see zoning document Estrella
 - 37 Vista Commerce Park Development.PDF in the RIDs) and to 63rd Avenue on the
 - 38 north;
 - 39 7. The approximate location of the bridges for multiuse crossings;
 - 40 8. The approximate location and number of ramp lanes at I-10 Papago Freeway system
 - 41 interchange;
 - 42 9. The approximate location of frontage roads;

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- 1 B. Within the lines delineating the outside boundaries of the Project set forth in the
2 Schematic ROW, as such boundaries may be adjusted from time to time in accordance
3 with the Contract Documents (including adjustments for ADOT Additional Properties,
4 Developer-Designated ROW and avoided parcels or partial parcels, in whole or in part);
5 C. The control of access limits as set forth in Section DR 440 of the TPs;
6 D. The provision of maintenance roads;
7 E. A pedestrian crossing at the Elwood Street alignment (mid-mile between Broadway
8 Road and Lower Buckeye Road;
9 F. A connector road at the Durango Street alignment (just south of the Roosevelt Irrigation
10 District canal) between the northbound and southbound frontage roads; and
11 G. The avoidance of the environmentally sensitive areas as further described in Section DR
12 420 of the TPs.

13 **110.01.3.2 Coordination of the Work**

14 Developer shall coordinate the Design Work and Construction Work with all development
15 planning, design, and construction projects that may impact the Work. Developer shall monitor
16 and coordinate Work with such projects, whether performed by ADOT or another Governmental
17 Entity, community groups, landowners, Utility Companies, Utility Companies' consultants or
18 contractors, resource agencies, environmental groups, or any other Person. Developer shall be
19 aware of the impact all such work may have on the Project and shall account for all such
20 impacts in the Design Documents and Construction Documents.

21 Developer shall identify and examine features of any work for each project that may impact the
22 Project, and shall demonstrate full compatibility in horizontal and vertical alignment and other
23 pertinent technical data between the Work and the work of such project(s). The Design
24 Documents must resolve any inconsistencies or design conflicts between the Design Work and
25 the work of such project(s).

26 **110.01.3.2.1 Future Projects**

27 It is anticipated that work by other contractors on the projects listed in Table 110-1 may be in
28 progress adjacent to or within the Site during progress of the Work. The anticipated future
29 projects shown in Table 110-1 are nonexclusive, and may be incomplete. A table/map (City of
30 Phoenix – SMF Adjacent Projects Database 08-15-15.PDF) of active developments in the area
31 of the Project is included in the RIDs. Developer shall prepare a Future Projects List that
32 includes the projects in Table 110-1, any other projects that may impact the Project, and the
33 project status. Each quarter, Developer shall submit an updated Future Projects List to ADOT.
34 During the design and construction of the Project, Developer shall actively and aggressively
35 pursue and implement measures to facilitate the overall construction of the Project in
36 coordination with Adjacent Work.

Table 110-1 Future Projects
City of Phoenix – Chandler Boulevard Extension
Western Area Power Administration – Transmission Line Relocation
ADOT – I-10 Pavement Preservation from Dysart Road to I-17 (excluding 75th Avenue to 43rd Avenue)
Salt River Project – 40th Street Utility Relocation

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Table 110-1 Future Projects
Arizona Public Service – 40th Street Utility Relocations
City of Phoenix - Laveen 59th Avenue Park-and-Ride Facility

1 **110.01.4 Submittals**

2 Table 110-2 reflects a nonexclusive list of Submittals identified in Section GP 110.01 of the TPs
 3 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 4 determine and submit all Submittals as required by the Contract Documents, Governmental
 5 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 6 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 7 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 8 formats described in Section GP 110.10.2.2 of the TPs:

Table 110-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Basis of Design Report	3	4	1	Prior to issuance of NTP 2	GP 110.01.2.2
Updated Basis of Design Report	3	4	1	When the Basis of Design Report or updated Basis Design Report is amended	GP 110.01.2.2
Future Projects List	5	0	1	Quarterly	GP 110.01.3.2. 1
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

9 **110.02 Meetings**

10 Developer shall perform all Work in compliance with the requirements of this Section GP
 11 110.02. Developer shall arrange and conduct Project meetings with ADOT and other parties as
 12 determined by ADOT, as reflected in Table 110-3 and the Contract Documents. The meetings
 13 identified in Table 110-3 reflects a nonexclusive list of meetings identified in this Section GP
 14 110.02 and is not intended to be an all-inclusive or exhaustive listing of meetings in the Contract
 15 Documents.

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Table 110-3 Meetings			
Description	Period (Design and Construction [D&C] and/or Maintenance)	Frequency	Section Reference
Project kick-off meeting	D&C	Once	GP 110.02.1
Partnering Meetings	D&C	Per Article 22 of the DBMA	Article 22 of the DBMA
Progress meetings	D&C and Maintenance	Monthly	GP 110.02.2
Pre-design coordination meetings	D&C and Maintenance (Capital Improvements)	Once per activity	GP 110.02.3
Technical work group meetings	D&C and Maintenance (Capital Improvements)	As determined by Developer	GP 110.02.4
Aesthetics and landscaping TWG meetings	D&C	Every other week	DR 450.2.2.3 CR 450.2.2.2
Aesthetics and Landscaping Task Force	D&C	Monthly during design or as directed by ADOT	GP 110.02.5
MOT Task Force	D&C and Maintenance	Monthly during design or as adjusted by MOT Task Force	GP 110.02.6
Utility coordination meetings	D&C	Weekly	DR 430.2.2.2
Project ROW coordination meetings	D&C	Weekly	DR 470.2.2
Pre-construction coordination meetings	D&C and Maintenance (Capital Improvements)	Once per activity	GP 110.02.7
Maintenance Period kick-off meeting	Maintenance	Once	GP 110.02.8

- 1 Developer shall schedule all meetings, develop all meeting agendas, attend all meetings, and
- 2 provide all meeting facilities and materials for all meetings required by the Contract Documents
- 3 or as otherwise requested by ADOT. Not less than 3 Business Days prior to the associated
- 4 meeting, Developer shall submit a Meeting Notice to ADOT. Developer shall invite ADOT and
- 5 other attendees, as determined by ADOT, to all Project-related meetings. At least 24 hours prior
- 6 to each meeting, Developer shall submit Meeting Schedules and Agendas to invitees.
- 7 For all meetings relating to the Project at which Developer is required to attend or an invitee (not
- 8 just those called by Developer or ADOT), Developer shall record Meeting Notes of each
- 9 meeting. The Meeting Notes must include the date of the meeting, list of all attendees, issues
- 10 considered by the participants, and related responses or decisions for the issues. Within 5
- 11 Business Days after the meeting, Developer shall submit copies of such Meeting Notes to
- 12 ADOT for review and comment. Developer shall incorporate ADOT's comments and prepare
- 13 final Meeting Notes. Within 5 Business Days of receipt of ADOT's comments, Developer shall
- 14 submit final Meeting Notes to ADOT.

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1 **110.02.1 Project Kick-off Meeting**

2 No more than 10 Business Days after issuance of NTP 1, Developer shall schedule and the
3 Parties will attend a Project kick-off meeting with ADOT to discuss the Project and to exchange
4 information. At this meeting, the Parties will also discuss additional topics relevant to the
5 Project, as identified by ADOT or Developer.

6 **110.02.2 Progress Meeting**

7 Developer shall participate in monthly progress meetings or meetings held at the request of
8 ADOT to review and discuss the status of the Project. In the meetings, the Parties will address
9 the causes, responsible party, impacts, and potential solutions to all issues identified with the
10 intent of finding the most effective solutions to problems through the following:

- 11 A. Developer shall make available the Project Manager and appropriate personnel to
12 participate in the monthly progress meetings.
- 13 B. Developer shall make and record an action item list that specifies who is responsible for
14 resolving existing or pending issues and the date by which the issue must be resolved to
15 avoid Project delays.
- 16 C. Developer shall make available the Safety Manager.

17 **110.02.3 Pre-Design Coordination Meetings**

18 Developer shall schedule a pre-design coordination meeting with ADOT to familiarize the
19 designers and ADOT's review personnel with the design concepts, issues, status, and review
20 procedures. Developer shall conduct a pre-design coordination meeting no later than 1) 10
21 Business Days prior to any Design Work associated with NTP 1 or 2) issuance of NTP 2.

22 **110.02.4 Technical Work Group Meetings**

23 Developer may arrange and conduct technical work group (TWG) meetings with ADOT to
24 identify and resolve issues and concerns raised by ADOT or Developer. The purpose of these
25 TWG meetings is to acquaint personnel with the details and features of the Work and to
26 facilitate completion of the Project.

27 The TWG meetings may include Project visits at either Party's request. At a minimum, the Key
28 Personnel assigned to perform the relevant type of Work involved must attend. Developer shall
29 invite ADOT and other relevant Governmental Entities' staff.

30 Developer shall prepare a TWG Report for each TWG meeting that includes observations,
31 discussions, meeting notes, action items, and any questions that pertain to the scope of Work
32 and level of effort for the Work. The TWG meetings do not replace the review process described
33 in Section GP 110.10 of the TPs. Within 5 Business Days after each TWG meeting, Developer
34 shall submit TWG Reports to ADOT for review and comment.

35 **110.02.5 Aesthetic and Landscaping Work Force**

36 Developer shall establish an aesthetic and landscaping task force as noted in Section DR
37 450.2.2.2 of the TPs. The aesthetic and landscaping task force must be established and
38 convene for an initial meeting at least 1) 10 Business Days prior to any aesthetic or landscaping
39 activities associated with NTP 1 or 2) 30 days after issuance of NTP 2. Developer shall
40 schedule and chair aesthetic and landscaping task force meetings monthly throughout the
41 duration of the design of the aesthetics and landscaping, unless otherwise directed by ADOT.
42 The aesthetic and landscaping task force must continue to meet as necessary throughout the
43 Construction Period.

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1 110.02.6 MOT Task Force

2 Developer shall establish a MOT Task Force as noted in Section DR 462.2.2 of the TPs.
 3 Developer shall prepare a MOT Task Force Invitees List that lists all parties invited to take part
 4 in the MOT Task Force. At least 10 Business Days prior to the first MOT Task Force meeting,
 5 Developer shall submit MOT Task Force Invitees List to ADOT for review and comment.
 6 Developer shall establish and convene the initial meeting of the MOT Task Force no later than
 7 30 days prior to activities affecting traffic.

8 Developer shall schedule and chair MOT Task Force meetings once a month from issuance of
 9 NTP 2 to Substantial Completion. The meeting schedule and frequency may be adjusted upon
 10 the agreement of the MOT Task Force members.

11 110.02.7 Pre-Construction Coordination Meetings

12 Developer shall schedule a pre-construction meeting with ADOT on any new construction
 13 activity as identified in the Project Schedule or with any new personnel at least 10 Business
 14 Days prior to beginning construction, unless otherwise authorized in writing by ADOT.

15 Developer shall establish the level of detail to be required for measuring progress with regard to
 16 construction prior to the pre-construction meeting and shall discuss such details, the Safety
 17 Management Plan, and Environmental Management Plan at the pre-construction meeting.
 18 Developer shall discuss its construction schedule and identify the early construction elements.

19 110.02.8 Maintenance Period Kick-off Meeting

20 Developer shall schedule a Maintenance Period kick-off meeting with ADOT to discuss the
 21 Maintenance Period and to exchange information at least 10 Business Days prior to issuance of
 22 the Maintenance NTP. Developer shall discuss additional topics relevant to the Maintenance
 23 Period, as identified by ADOT or Developer, at the meeting.

24 110.02.9 Submittals

25 Table 110-4 reflects a nonexclusive list of Submittals identified in Section GP 110.02 of the TPs
 26 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 27 determine and submit all Submittals as required by the Contract Documents, Governmental
 28 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 29 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 30 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 31 formats described in Section GP 110.10.2.2 of the TPs:

Table 110-4 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Meeting Notice	5	0	1	A minimum of 3 Business Days prior to the associated meeting	GP 110.02
Meeting Schedules and Agendas	5	0	1	At least 24 hours (earlier preferred) prior to each meetings	GP 110.02
Meeting Notes	4	1	1	Within 5 Business Days after the meeting	GP 110.02

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Table 110-4 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Final Meeting Notes	4	1	1	Within 5 Business Days of receipt of ADOT's comments.	GP 110.02
TWG Report	4	1	1	Within 5 Business Days after each TWG meeting	GP 110.02.3
MOT Task Force Invitees List	4	2	1	At least 10 Business Days prior to the first MOT Task Force meeting	GP 110.02.6
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1 **110.03 Submittals Prior to Notice to Proceed**

2 Developer shall perform all Work in compliance with the requirements of this Section GP
 3 110.03. Developer shall submit various plans and other documents, respond to and address all
 4 comments, and/or obtain approval of such plans and documents, prior to issuance of NTP 2 and
 5 the Maintenance NTP in accordance with Sections 6.6.3 and 7.4 of the Agreement. Table 110-5
 6 reflects a nonexclusive list of plans and documents that must be submitted to and/or approved
 7 by ADOT for issuance of NTP 2 or the Maintenance NTP.

Table 110-5 NTP Submittals					
No.	Description	Level of Review*	Required Prior to NTP 2	Required Prior to Maintenance NTP	Section Reference
1	Project Management Plan (PMP)	2			GP 110.04
	• Project Administration	2	X		GP 110.04.1
	• Quality Management Plan (QMP)	2			GP 110.07.2.1
	○ Volume I – QMP General Requirements	2	X		GP 110.07.2.1.1
	○ Volume II – Professional Services Quality Management Plan (PSQMP)	2	X		GP 110.07.2.1.2
	○ Volume III – Construction Quality Management Plan (CQMP)	2	X		GP 110.07.2.1.3
	○ Volume IV – Maintenance Quality Management Plan (MQMP)	2		X	GP 110.07.2.1.4

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Table 110-5 NTP Submittals					
No.	Description	Level of Review*	Required Prior to NTP 2	Required Prior to Maintenance NTP	Section Reference
	• Environmental Management Plan	2	X		DR 420.2.3
	• Public Involvement Plan	2	X		CR 425.2.2
	• Safety Management Plan	2	X		GP 110.09.2.1
	• Maintenance Management Plan	2		X	MR 400.1
2	ROW Activity Plan	2	X		Section 5.3.1 of the Agreement
3	Collocated Office Layout Plan	4	X		GP 110.05.2.6
4	Network Administration Plan	4	X		GP 110.05.4.2
5	Project Baseline Schedule	2	X		GP 110.06.2.6
6	Segment Limits Map	2	X		GP 110.10.2.6.2
7	Submittal Schedule	2	X		GP 110.10.2.6.2
8	Basis of Design Report	3	X		GP 110.01.2.2
9	Draft SWPPP	3	X		CR 420.3.2.2
10	Transportation Management Plan (TMP)	4	X		DR 462.2.3
11	Vehicle Project Logo	1	X		GP 110.05.4.3
12	Utility Coordination Plan	4	X		DR 430.2.2.1
13	Plant Inventory	4	X		DR 450.2.3
14	Sign Inventory	5	X		DR 460.2.3
15	ITS Inventory	5	X		DR 466.2.3
16	DBE Utilization Plan	2	X		DBMA Article 9
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

- 1 Developer shall provide written notification to ADOT prior to performing any Work in the Project
- 2 ROW. ADOT is under no obligation to receive or review Submittals of Design Documents until
- 3 approval of the Professional Services Quality Management Plan (PSQMP) in accordance with
- 4 Section GP 110.07.2.1.2 of the TPs.

ADDENDUM #2

1 **110.04 Project Management Plan**

2 Developer shall perform all Work in compliance with the requirements of this Section GP
3 110.04. Developer shall establish and maintain an organization that effectively manages all
4 elements of the Work. Developer shall define and guide the Project management effort through
5 the Project Management Plan (PMP), which is a collection of several management plan
6 elements. Developer shall ensure that the PMP is an umbrella document that describes
7 Developer's managerial approach, strategy, and quality procedures to design, build, and
8 maintain the Project and achieve all requirements of the Contract Documents. Developer shall
9 ensure that the PMP complies with Federal Highway Administration (FHWA) guidance for a
10 project management plan for major projects. PMP elements are specified throughout the TPs.

11 An acceptable structure of the PMP is outlined in Table 110-6. Developer may propose an
12 alternative structure for the PMP, provided that the proposed alternative PMP outline and
13 content comply with the requirements of the Contract Documents.

PMP Chapter	PMP Chapter Title	Section Reference
1	Project Administration	GP 110.04.1
2	Quality Management Plan	GP 110.07.2.1
2A	Volume I – QMP General Requirements	GP 110.07.2.1.1
2B	Volume II – Professional Services Quality Management Plan	GP 110.07.2.1.2
2C	Volume III – Construction Quality Management Plan	GP 110.07.2.1.3
2D	Volume IV – Maintenance Quality Management Plan	GP 110.07.2.1.4
3	Environmental Management Plan	DR 420.2.3
4	Public Involvement Plan	CR 425.2.2
5	Safety Management Plan	GP 110.09.2.1
6	Maintenance Management Plan	MR 401.1

14 Developer shall prepare and submit Submittals of the PMP in accordance with the Technical
15 Provisions. Developer shall ensure that all plans and components of the PMP remain valid and
16 updated as appropriate throughout the Term. Developer shall propose updates to the PMP
17 and/or affected components in the event of the following:

- 18 A. The occurrence of any changes to the Key Personnel, other personnel, Quality
19 Management Plan, Safety Management Plan, or Project administration policies and
20 procedures;
- 21 B. The occurrence of other changes necessitating revision to the PMP; or
- 22 C. As otherwise directed by ADOT.

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1 No later than 10 Business Days after the occurrence of the change or direction triggering the
2 need for the revisions to the PMP, Developer shall submit the revised PMP to ADOT for
3 approval in ADOT's good faith discretion.

4 ADOT may audit and monitor the activities described in the PMP to assess Developer's
5 performance. All commitments and requirements contained in the PMP must be verifiable.

6 **110.04.1 Project Administration**

7 Developer shall prepare a Project Administration Chapter in the PMP that addresses the
8 following:

- 9 A. Organization: Include an organization diagram.
- 10 B. Personnel: Establish Key Personnel and provide names, contact details, titles, and job
11 roles. Include resumes for all Key Personnel and other personnel as identified in Section
12 GP 110.08 of the TPs.
- 13 C. Subcontractors: Discuss Developer's Subcontractor approval process.
- 14 D. Schedule: Discuss schedule management procedures.
- 15 E. PMP Updates: Include procedures for preparation of amendments and submission of
16 amendments to any part of the PMP.
- 17 F. Audit: Include procedures to facilitate review and audit by ADOT a minimum of every 6
18 months, auditing and management review of Developer's own activities under the PMP,
19 and auditing and management review of Subcontractors' activities and management
20 procedures.
- 21 G. Document Management: Include document management procedures in accordance with
22 Section GP 110.04.2 of the TPs.
- 23 H. Site Documentation Plan: Discuss the process and procedures to prepare Existing
24 Conditions Site Documentation and Site Documentation in accordance with Section GP
25 110.11 of the TPs.

26 Prior to issuance of NTP 2, Developer shall submit the Project Administration Chapter to ADOT
27 for approval in ADOT's good faith discretion.

28 **110.04.2 Document Management**

29 Developer shall establish and maintain a web-based Electronic Document Management System
30 (EDMS) to transfer, store, catalog, and retrieve all Project-related documents. Unless otherwise
31 provided in the Contract Documents or directed by ADOT, Developer shall provide ADOT and
32 ADOT's designated representatives access to the EDMS records throughout the Term. At
33 Substantial Completion, Developer shall provide the records to ADOT as a condition of Final
34 Acceptance. All electronic information provided must be text searchable and legible. The
35 proposed EDMS is subject to review and comment by ADOT as part of the review and comment
36 on the PMP.

37 Developer shall prepare a Document Management Plan that:

- 38 A. Describes Developer's document control system to store and record all documents,
39 correspondence, design inputs, drawings, progress reports, technical reports,
40 specifications, Contract Documents, Submittals, calculations, test results, inspection
41 reports, Non-Conformance Reports, administrative documents, and other documents
42 generated under the Contract Documents. This includes all hardcopy and electronic
43 records.
- 44 B. Identifies how records are to be maintained and kept throughout the Term.

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1 C. Describes the methods by which all documents Developer issues or receives are to be
2 logged, tracked, retrieved, and approved.

3 D. Identifies how all documents are to be tracked using a unique document control number.

4 Developer shall provide ADOT with EDMS procedures, software for accessing all documents
5 generated under the Contract Documents, and access to Developer's document control
6 database in accordance with the requirements of the Contract Documents and as deemed
7 necessary by ADOT. Developer shall submit the Document Management Plan to ADOT as part
8 of the Project Administration Chapter.

9 **110.04.3 Site Documentation Plan**

10 Developer shall prepare a Site Documentation Plan that:

11 A. Describes Developer's policies, procedures, and staffing to perform and provide Existing
12 Condition Site Documentation as required by Section GP 110.11.1 of the TPs.

13 B. Describes Developer's policies, procedures, and staffing to perform and provide Site
14 Documentation as required by Section GP 110.11.2 of the TPs.

15 Developer shall submit the Site Documentation Plan to ADOT as part of the Project
16 Administration Chapter.

17 **110.04.4 Submittals**

18 Table 110-7 reflects a nonexclusive list of Submittals identified in Section GP 110.04 of the TPs
19 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
20 determine and submit all Submittals as required by the Contract Documents, Governmental
21 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
22 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
23 specified in the Contract Documents, Developer shall submit the following to ADOT in the
24 formats described in Section GP 110.10.2.2 of the TPs:

Table 110-7 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Project Administration Chapter	2	2	1	Prior to issuance of NTP 2	GP 110.04.1
Revised PMP	2	2	1	No later than 10 Business Days after the occurrence of the change or direction triggering the need for the revisions to the PMP	GP 110.04
Document Management Plan	2	2	1	As part of the Project Administration Chapter	GP 110.04.2
Site Documentation Plan	2	0	3	As part of the Project Administration Chapter	GP 110.04.3

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Table 110-7 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1 110.05 Project and Facilities Management

2 110.05.1 General Requirements

3 Developer shall perform all Work in compliance with the requirements of Section GP 110.05 of
 4 the TPs. Developer shall maintain and post, in a conspicuous location(s) at the Site that is
 5 available to employees and applicants for employment, the current and updated versions of
 6 notices setting forth the provisions of the nondiscrimination requirements. Developer shall erect
 7 one or more bullet in boards, large enough to display posters and other information on the Site
 8 prior to issuance of NTP 2. The location of the bullet in board(s) will be subject to the approval
 9 of ADOT. Developer shall post, at a minimum, the following notices:

- 10 A. The posters as shown on the ADOT Engineering and Construction Posters website
- 11 (<http://www.azdot.gov/business/engineering-and-construction/construction/posters>);
- 12 B. The wage decision included in Exhibit 4 to the Agreement;
- 13 C. The EEO Policy of Developer and Subcontractors with contracts greater than \$10,000;
- 14 D. List of safety officers for Developer and major Subcontractors; and
- 15 E. The Notice of Intent for Storm Water Discharges (EPA form 3510-618-98).

16 Developer will post the following items at the collocated office and field offices:

- 17 A. Name and telephone number of Contractor's EEO policy enforcement officer;
- 18 B. Emergency contract telephone numbers; and
- 19 C. OSHA postings and other Project safety and security information, as identified in the
- 20 Safety Management Plan.

21 Additional office requirements for the Project are identified in other sections of the TPs.

22 110.05.2 Collocated Office Requirements

23 Developer shall provide and maintain the collocated office and other building space, including
 24 office space for ADOT, and all facilities, equipment, and parking for vehicles necessary to
 25 design, construct, and maintain the Project. The ADOT office space in the collocated office must
 26 accommodate a staff size of approximately 60 people composed of ADOT, ADOT
 27 representatives, and guests. Developer shall provide sufficient office space in Developer's office
 28 in the collocated office for simultaneous occupancy by both design and construction personnel.
 29 Developer shall collocate with ADOT into a collocated office.

30 110.05.2.1 Location

31 Except where noted elsewhere in the Contract Documents, Developer shall continue to be
 32 collocated with ADOT until 90 days after Final Acceptance to facilitate Project coordination and
 33 daily communication. The definition of "collocate" is to occupy office spaces that are in the same
 34 building along or adjacent to the Project and that are within 3 miles of the Schematic ROW.

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1 ADOT facilities area must be a separate area than the Developer facilities area, unless
2 otherwise specified in the Contract Documents.

3 **110.05.2.2 Office Facilities and Equipment**

4 Developer shall comply with the following for the ADOT facilities area.

- 5 A. General. Developer shall obtain all facility space, permits, licenses, and approvals, install
6 and pay for all utility services, and operate and maintain the facilities as part of the Work.
- 7 B. Code requirements. Developer shall comply with all applicable building and fire code
8 requirements.
- 9 C. Access and security. Developer shall provide a separate ADOT entrance(s)/exit(s) to
10 and from the building, secured with an electronic door lock(s) plus a deadbolt lock(s).
11 Developer shall provide security badge card access with locking doors running on time
12 zone/holiday schedules for entry doors, as well as other designated areas (e.g., server
13 room, document storage, and offices). Developer shall provide software for maintaining
14 access to ADOT office spaces. Developer shall not access the ADOT office space
15 without ADOT's prior authorization.
- 16 D. Lighting and electricity. Developer shall provide all interior spaces with overhead lighting
17 complying with Occupational Safety and Health Administration (OSHA), building, and
18 electrical and energy code requirements for similar office spaces (provide nominal
19 30-foot candles of light at 30 inches above finish floor). Developer shall provide each
20 office space with at least four duplex receptacles, with minimum circuit capacity of 20
21 amperes.
- 22 E. Flooring. Developer shall provide carpeted flooring with non-static flooring in server
23 room.
- 24 F. Window coverings. Developer shall provide blinds (no drapes) for all windows.
- 25 G. Power circuits. Developer shall provide dedicated electrical power circuits for copiers
26 and a minimum of six duplex receptacles with three dedicated isolated ground 20-amp
27 circuits terminating in National Electrical Manufacturers Association (NEMA) 5-20R
28 receptacles and one dedicated isolated ground 30-amp circuit terminating in a NEMA
29 6-30R receptacle for the server room.
- 30 H. Network/electrical outlets. Developer shall provide each office and conference room with
31 a minimum of two wall plates (comprising two data outlets and one voice RJ-45 outlet)
32 per room, and one outlet (comprising two data outlets and one voice RJ-45 outlet) per
33 cubicle, as well as outlets at all designated printer, facsimile, and copier locations and
34 any and all shared areas (e.g., workroom, storage room, etc.). Developer shall install all
35 data/voice outlets near power outlets. All data and voice cabling must use Category 5e
36 unshielded twisted pair (UTP) with plenum rating. Developer shall place a minimum of
37 two duplex NEMA 5-15 or 5-20 outlets within 6 feet of each work surface.
- 38 I. Network/data network. Each of the data outlets must provide a minimum of a 100
39 megabits per second (Mbps) switched Ethernet connection and must be capable of
40 being assigned to a designated virtual local area network (VLAN). Developer shall
41 provide the capability to assign each data outlet to have an independent VLAN.
42 Developer shall provide patch cables long enough to safely reach from the data network
43 outlets to the designated computer(s) and printer(s). Developer shall install all cable
44 raceways and J hook cable supports in accordance with Building Industry Consulting
45 Services International and National Electrical Code standards. Each location must allow
46 for ADOT-provided computer equipment to be installed and operated.

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- 1 J. Janitorial and trash services. Developer shall provide daily janitorial service (except
2 Saturdays, Sundays, and holidays) and maintain trash containers and trash pickup
3 service for the building and areas beyond the ADOT office space. Daily janitorial service
4 must include sweeping and mopping floors, cleaning restrooms and break rooms,
5 emptying wastebaskets, weekly dusting, and furnishing of toilet paper, paper towels
6 and/or hand dryer, soap, and other restroom/kitchen supplies. Developer shall obtain
7 and pay for janitorial services for the ADOT office space.
- 8 K. Recycling Services. Developer shall provide recycling receptacles for paper, cardboard,
9 plastic bottles, and aluminum cans. Developer shall obtain and pay for weekly recycling
10 services, including recycling pickup service for the ADOT office space.
- 11 L. Exterior maintenance. Developer shall maintain the exterior areas of office spaces,
12 including access to parking areas.
- 13 M. Accessibility and licensing. All facilities must be in accordance with the access
14 requirements of the Americans with Disabilities Act (ADA) Accessibility Guidelines, as
15 amended (42 USC §§ 12101, et seq.) and the applicable building code(s). Developer
16 shall obtain approval of the Collocated Office Layout Plans from all applicable
17 Governmental Entities.
- 18 N. Restrooms, break room/kitchen, and entry space. Developer shall provide access to
19 women’s and men’s restrooms, individual break room space, and building entry space;
20 these spaces may be shared with Developer’s office space/staff. All office space must
21 be accessible 24 hours a day, 7 days a week, including holidays. Instead of access to a
22 common break room, Developer shall provide a 200-square-foot break room/kitchen
23 within the ADOT office space, with a 16 cubic foot refrigerator with freezer compartment,
24 ice machine, sink with hot and cold running water, including waste disposer, and
25 microwave oven. The break room/kitchen must have a storage closet (minimum of 25
26 square feet) and cabinets with drawers and countertops. If restrooms are not directly
27 accessible from a common building entry/lobby, Developer may provide separate
28 restrooms for the ADOT office space. If it is necessary to locate a separate break room
29 and/or restrooms within the ADOT office space, Developer shall increase the ADOT
30 office space allocation to accommodate these spaces.
- 31 O. HVAC. Developer shall provide electrical, and heating, ventilation, and air-conditioning
32 (HVAC) systems capable of maintaining temperatures between 65 and 75 degrees
33 Fahrenheit in all spaces, 24 hours a day, 7 days a week, including holidays. The server
34 room must have dedicated air-conditioning/cooling system capable of maintaining
35 temperatures between 70 and 76 degrees Fahrenheit and 20 to 60 percent relative
36 humidity at all times.
- 37 P. Utilities. Developer shall obtain all permits and approvals and provide all installation,
38 maintenance, and utility service costs throughout the Term.
- 39 Q. Emergency contacts. Developer shall provide a 24-hour emergency contact telephone
40 number for Developer.
- 41 R. Emergency equipment. Developer shall provide emergency equipment, such as first aid
42 kits and defibrillators. Developer shall provide fire extinguishers and smoke detectors in
43 accordance with all Laws and as may be directed by the applicable Governmental
44 Entity’s fire marshal.
- 45 S. Insurance. Developer shall obtain and maintain insurance covering the collocated office
46 in accordance with Exhibit 12 of the Agreement.

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- 1 T. Disposal and removal. Developer shall dispose of and remove all collocated office
2 facilities, including Developer's facilities, and provide any Site restoration Work needed
3 to return the Site to the original condition, and as directed by ADOT.
- 4 U. Furniture. Developer shall provide the ADOT office spaces in the collocated office with
5 furniture comparable to ADOT typical office furniture.

6 **110.05.2.3 Offices, Rooms, and Areas**

7 Although actual spaces may vary, the following nominal size requirements apply, and the typical
8 ADOT office space must include the following elements:

- 9 A. General. Developer shall wire all offices, cubicles, conference rooms, and work areas for
10 power, telephone, and internet connectivity. Developer shall equip the reception area,
11 offices, cubicles, and work areas with lighting, trash receptacles, desks, chairs, and
12 multi-station telephones connected on four telephone lines.
- 13 B. Offices.
- 14 1. Developer shall provide six enclosed office rooms of 12 feet x 12 feet (144 square
15 feet) each. All offices must have a small round meeting table with four chairs, two
16 extra chairs for visitors, a file cabinet, a book shelf, and lockable doors.
- 17 2. Developer shall provide 12 enclosed office rooms of 10 feet x 10 feet (100 square
18 feet) each. All offices must have two extra chairs for visitors, a file cabinet, a book
19 shelf, and lockable doors.
- 20 C. Cubicles. Developer shall provide 60 total cubicle area spaces for administrative staff
21 (nominally 80 square feet each). Developer may provide power supply and data and
22 communication lines to cubicles through power pole drops.
- 23 D. Conference rooms. Developer shall provide three enclosed conference rooms, one to
24 seat at least 24 people and accommodate at least 50 people, and two to seat at least 12
25 people and accommodate at least 24 people each. All conference rooms must have
26 dimmable lighting. Developer shall provide each conference room with a conference
27 room table and chairs. Developer shall also provide 10 additional chairs alongside walls.
28 Developer shall provide a 4-foot x 8-foot dry erase board in each conference room.
- 29 E. Reception area. Developer shall provide an approximately 300-square-foot total
30 receptionist space with a waiting area with seating for at least four visitors, arranged with
31 a reception area at a nominal 14 feet x 14 feet (196 square feet) and visitors' waiting
32 area at a nominal 8 feet x 12 feet (96 square feet). Developer and ADOT will jointly
33 determine other furniture. The reception area must include a telephone switch board.
- 34 F. Work room. Developer shall provide a work room (nominally 150 square feet) with
35 30-inch-high wall-mounted counters (15 lineal feet of counter-top space, 36 inches
36 deep). Developer shall locate the workroom near the center of the ADOT office space.
- 37 G. Storage and filing. Developer shall provide one lockable space for storage and filing,
38 nominally 10 feet x 15 feet (150 square feet).
- 39 H. Server room. Developer shall provide one computer server room (100 square feet) that
40 has limited and controlled access and is locked via security card access. The server
41 room must be accessible via a hallway entry not sharing any walls with the exterior of
42 the building and must have no windows, a non-static floor covering, and at least three
43 dedicated isolated ground 20-amp power circuits and one dedicated isolated ground 30-
44 amp circuit. Developer shall locate all patch panels (phone and data) within the
45 designated server room. Developer shall maintain server room temperature with a
46 dedicated air-conditioning/cooling system, as described above. Developer shall provide

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- 1 uninterruptable power supply (UPS) system in the server room capable of providing
2 spike and brown out protection for all Developer and ADOT server room equipment.
- 3 I. Kitchen/break room. Developer shall provide a kitchen/break room that is approximately
4 12 feet x 18 feet (216 square feet). Developer shall arrange and furnish the
5 kitchen/break room with office-type appliances and kitchen cabinets and drawers.
- 6 J. Parking area. Developer shall provide a parking area for ADOT for at least 100 vehicles
7 (85 staff/15 visitors). The parking area must be reasonably level (all-weather surface and
8 all-weather access). The parking area must include an additional lockable fenced
9 parking area to accommodate 25 ADOT vehicles.
- 10 K. Exterior lighting. Developer shall provide sufficient exterior security lighting that is
11 automatically activated at low light levels to maintain 2-foot candles of lighting within the
12 building and parking areas.
- 13 L. Office work space. Work surface area in all office rooms and cubicles must be a
14 minimum of 8 linear feet and 30 inches in depth to allow for the installation of two
15 monitors and still have room for spreading out books, reports, or maps.

16 **110.05.2.4 Office Condition**

17 The ADOT office space must be in good and serviceable condition, at least of the same quality
18 as that of Developer's counterpart office space and available for occupancy as specified in
19 Section GP 110.05.2 of the TPs. Developer and ADOT will participate in a facility condition
20 survey prior to and at the completion of occupancy. ADOT will return possession of Developer-
21 provided ADOT office space to Developer in essentially the same condition as when ADOT
22 occupied the facilities, except for reasonable wear and tear and except for alterations or Loss or
23 damage caused by any member of a Developer-Related Entity.

24 **110.05.2.5 Losses or Damage**

25 If ADOT office space in the collocated office, related facilities, or fixtures is destroyed, damaged,
26 or stolen then, except as provided below, Developer shall, at its cost and within 10 Business
27 Days after the occurrence of such Loss, repair the items to their original condition or replace
28 them. However, in the case of lost, damaged, or stolen office equipment (e.g., computers,
29 facsimile machines, copy machines, and printers), replacement must occur within 2 Business
30 Days. Notwithstanding the foregoing, however, if the Loss occurs as a direct result of the willful
31 misconduct of ADOT or its personnel or consultants **and** such Loss is not covered by insurance
32 actually carried, or required under or pursuant to the Contract Documents to be carried, by
33 Developer, then Developer shall repair or replace the affected items within the timeframes
34 specified herein, and ADOT will reimburse Developer for the actual reasonable documented
35 costs incurred to repair or replace, including the amount of any deductible, except as provided
36 otherwise in Section 11.2.4 of the Agreement.

37 **110.05.2.6 Collocated Office Layout Plan**

38 Developer shall prepare a Collocated Office Layout Plan that includes the layout of the offices,
39 cubicles, conference rooms, kitchen/break room, etc. Prior to issuance of NTP 2, Developer
40 shall submit a Collocated Office Layout Plan to ADOT for review and comment.

41 Developer shall make the ADOT office space in the collocated office available for occupancy as
42 a condition of issuance of NTP 2. The ADOT office space in the collocated office must be
43 available for ADOT's use until 90 days beyond Final Acceptance.

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1 110.05.3 Field Offices Requirements

2 Developer shall provide a minimum of two field offices approximately 6,000-square-foot each,
3 for ADOT's use. ADOT field office(s) must be adjacent to each of Developer's field offices.
4 Developer shall provide field offices for ADOT's field construction staff. Each field office must
5 accommodate the anticipated ADOT field construction staffing level of 30 field personnel.
6 Developer shall make ADOT field offices available for occupancy as a condition of issuance of
7 NTP 2. The ADOT field offices must be available for ADOT's use until issuance of the Certificate
8 of Substantial Completion.

9 110.05.3.1 Location

10 Developer shall provide field offices within 3 miles of the I-10 (Papago Freeway) and the I-10
11 (Maricopa Freeway) connections.

12 110.05.3.2 Office Facilities and Equipment

13 Developer shall comply with the following for the ADOT facilities area:

- 14 A. General. Developer shall obtain all facility space, permits, licenses, and approvals, install
15 and pay for all utility services, and operate and maintain the facilities as part of the Work.
- 16 B. Code requirements. Developer shall comply with all applicable building and fire code
17 requirements.
- 18 C. Access and security. Developer shall provide separate buildings or trailers for ADOT
19 staff that includes at least two entrance(s)/exit(s) secured with door lock(s) plus a
20 deadbolt lock(s).
- 21 D. Lighting and electricity. Developer shall provide all interior spaces with overhead lighting
22 complying with OSHA, building, and electrical and energy code requirements for similar
23 office spaces (provide nominal 30-foot candles of light at 30 inches above finish floor).
24 Developer shall provide each office space with at least four duplex receptacles, with
25 minimum circuit capacity of 20 amperes.
- 26 E. Flooring. Developer shall provide carpeted flooring with non-static flooring in server
27 room.
- 28 F. Window coverings. Developer shall provide blinds (no drapes) for all windows.
- 29 G. Power circuits. Developer shall provide dedicated electrical power circuits for copiers
30 and a minimum of six duplex receptacles with three dedicated isolated ground 20-amp
31 circuits terminating in NEMA 5-20R receptacles and one dedicated isolated ground
32 30-amp circuit terminating in a NEMA 6-30R receptacle for the server room.
- 33 H. Network/electrical outlets. Developer shall provide each office and conference room with
34 a minimum of two wall plates (comprising two data outlets and one voice RJ-45 outlet)
35 per room, and one outlet (comprising two data outlets and one voice RJ-45 outlet) per
36 cubicle, as well as outlets at designated printer, facsimile, and copier locations and any
37 and all shared areas (e.g., workroom, storage room, etc.). All data/voice outlets must be
38 installed near power outlets. All data and voice cabling must use Category 5e unshielded
39 twisted pair (UTP) with plenum rating. Developer shall place a minimum of two duplex
40 National Electrical Manufacturers Association (NEMA) 5-15 or 5-20 outlets within 6 feet
41 of each work surface.
- 42 I. Network/data network. Each of the data outlets must provide a minimum of a 100
43 megabits per second (Mbps) switched Ethernet connection and must be capable of
44 being assigned to a designated VLAN. Developer shall provide the capability to assign
45 each data outlet to have an independent VLAN. Developer shall provide patch cables

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- 1 long enough to safely reach from the data network outlets to the designated computer(s)
2 and printer(s). Developer shall install all cable raceways and J hook cable supports in
3 accordance with Building Industry Consulting Services International and National
4 Electrical Code standards. Each location must allow for ADOT-provided computer
5 equipment to be installed and operated.
- 6 J. Janitorial and trash services. Developer shall provide daily janitorial service (except
7 Saturdays, Sundays, and holidays) and maintain trash containers and trash pickup
8 service for the building and areas beyond the ADOT office space. Daily janitorial service
9 must include sweeping and mopping floors, cleaning restrooms and break rooms,
10 emptying wastebaskets, weekly dusting, and furnishing of toilet paper, paper towels
11 and/or hand dryer, soap, and other restroom/kitchen supplies. Developer shall obtain
12 and pay for janitorial services for the ADOT office space.
- 13 K. Recycling Services. Developer shall provide recycling receptacles for paper, cardboard,
14 plastic bottles, and aluminum cans. Developer shall obtain and pay for weekly recycling
15 services, including recycling pickup service for the ADOT office space.
- 16 L. Exterior maintenance. Developer shall maintain the exterior areas of office spaces,
17 including access to parking areas.
- 18 M. Accessibility and licensing. All facilities must be in accordance with the access
19 requirements of the ADA Accessibility Guidelines, as amended (42 USC §§ 12101, et
20 seq.) and the applicable building code(s). Developer shall prepare and obtain approval
21 of all filed office layout plans from all applicable Governmental Entities.
- 22 N. Restrooms, break room/kitchen, and entry space. Developer shall provide access to
23 women's and men's restrooms, individual break room space, and building entry space;
24 these spaces may be shared with Developer's office space/staff. All office space must
25 be accessible 24 hours a day, 7 days a week, including holidays. Instead of access to a
26 common break room, Developer shall provide a 200-square-foot break room/kitchen
27 within the ADOT office space, with a 16 cubic foot refrigerator with freezer compartment;
28 ice machine, sink with hot and cold running water, including waste disposer, and
29 microwave oven. The break room/kitchen must have a storage closet (minimum of 25
30 square feet) and cabinets with drawers and countertops. If restrooms are not directly
31 accessible from a common building entry/lobby, Developer may provide separate
32 restrooms for the ADOT office space. If it is necessary to locate a separate break room
33 and/or restrooms within the ADOT office space, Developer shall increase the ADOT
34 office space allocation to accommodate these spaces.
- 35 O. HVAC. Developer shall provide electrical and HVAC systems capable of maintaining
36 temperatures between 65 and 75 degrees Fahrenheit in all spaces, 24 hours a day, 7
37 days a week, including holidays. The server room must have dedicated air-
38 conditioning/cooling system capable of maintaining temperatures between 70 and 76
39 degrees Fahrenheit and 20 to 60 percent relative humidity at all times.
- 40 P. Utilities. Developer shall obtain all permits and approvals and provide all installation,
41 maintenance, and utility service costs throughout the Term.
- 42 Q. Emergency contacts. Developer shall provide a 24-hour emergency contact telephone
43 number for Developer.
- 44 R. Emergency equipment. Developer shall provide emergency equipment such as first aid
45 kits and defibrillators. Developer shall provide fire extinguishers and smoke detectors in
46 accordance with all Laws and as may be directed by the applicable Governmental
47 Entity's fire marshal.

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- 1 S. Insurance. Developer shall obtain and maintain insurance covering the field offices in
2 accordance with Exhibit 12 of the Agreement.
- 3 T. Disposal and removal. Developer shall dispose of and remove all field office facilities,
4 including Developer's facilities, and provide any Site restoration Work needed to return
5 the Site to the original condition, and as directed by ADOT.
- 6 U. Furniture. Developer shall provide the ADOT office spaces with furniture comparable to
7 ADOT typical field office furniture.

8 **110.05.3.3 Offices, Rooms, and Areas**

9 Although actual spaces may vary and will depend on Work schedule, geographic locations, and
10 ADOT-assigned staff at each field office, the following nominal size requirements will apply.
11 Each ADOT field office space must include the following elements:

- 12 A. General. Developer shall wire all offices, cubicles, conference rooms, and work areas for
13 power, telephone, and internet connectivity. Developer shall equip all offices, cubicles,
14 and work areas with lighting, trash receptacles, desks, chairs, and multi-station
15 telephones connected on four telephone lines.
- 16 B. Offices. Developer shall provide four enclosed office rooms of 12 feet x 12 feet (144
17 square feet) each. All offices must have a small round meeting table with four chairs, two
18 extra chairs for visitors, a file cabinet, a book shelf, and lockable doors.
- 19 C. Cubicles. Developer shall provide 15 total cubicle area spaces for administrative staff
20 (nominally 80 square feet each). Developer may provide power supply and data and
21 communication lines to cubicles through power pole drops.
- 22 D. Conference rooms. Developer shall provide one conference room (enclosed) to seat at
23 least 24 people and accommodate at least 50 people. The conference room must have
24 dimmable lighting. Developer shall provide the conference room with a conference table
25 and chairs. Developer shall also provide 10 additional chairs along side walls. Developer
26 shall provide a 4-foot x 8-foot dry erase board in each conference room.
- 27 E. Work room. Developer shall provide a work room (nominally 150 square feet) with
28 30-inch-high wall-mounted counters (15 lineal feet of counter-top space, 36 inches
29 deep). Developer shall locate the workroom near the center of the field office.
- 30 F. Storage and filing. Developer shall provide one lockable space for storage and filing,
31 nominally 10 feet x 10 feet (100 square feet) with shelving and lockable door.
- 32 G. Server room. Developer shall provide one computer server room (100 square feet) that
33 has limited and controlled access and is locked via security card access. The server
34 room must be accessible via hallway entry not sharing any walls with the exterior of the
35 building and must have no windows, a non-static floor covering, and at least three
36 dedicated isolated ground 20-amp power circuits and one dedicated isolated ground
37 30-amp circuit. Developer shall locate all patch panels (phone and data) within the
38 designated server room. Developer shall maintain server room temperature with a
39 dedicated air-conditioning/cooling system, as described above. Developer shall provide
40 UPS system in the server room capable of providing spike and brown out protection for
41 all Developer and stakeholder server room equipment.
- 42 H. Kitchen/break room. Developer shall provide a kitchen/break room that is approximately
43 12 feet x 18 feet (216 square feet). Developer shall arrange and furnish the
44 kitchen/break room with office-type appliances and kitchen cabinets and drawers.
- 45 I. Parking area. Developer shall provide parking area for at least 55 vehicles (50 staff/5
46 visitors) at each field office. The parking area must be reasonably level (all-weather

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1 surface and all-weather access). The parking area must include an additional lockable
2 fenced parking area to accommodate 25 ADOT vehicles.

3 J. Exterior lighting. Developer shall provide sufficient exterior security lighting that is
4 automatically activated at low light levels to maintain 2-foot candles of lighting within the
5 building and parking areas.

6 K. Office work space. Work surface area in all office rooms and cubicles must be a
7 minimum of 8 linear feet and 30 inches in depth to allow for the installation of two
8 monitors and still have room for spreading out books, reports, or maps.

9 **110.05.3.4 Office Condition**

10 The field office(s) at each location must be in good and serviceable condition, at least of the
11 same quality as that of Developer's counterpart field office space and available for occupancy
12 as specified in Section GP 110.05.3 of the TPs. Developer and ADOT will participate in a facility
13 condition survey prior to and at the completion of occupancy. ADOT will return possession of
14 Developer-provided ADOT office space to Developer in essentially the same condition as when
15 ADOT occupied the facilities, except for reasonable wear and tear and except for alterations or
16 Loss or damage caused by any member of a Developer-Related Entity.

17 **110.05.3.5 Losses or Damage**

18 If ADOT field office space(s), related facilities, or fixtures are destroyed, damaged, or stolen
19 then, except as provided below, Developer shall, at its cost and within 10 Business Days after
20 the occurrence of such Loss, repair those items to their original condition or replace them.
21 However, in the case of lost, damaged, or stolen office equipment (e.g., computers, facsimile
22 machines, copy machines, and printers), replacement must occur within 2 Business Days.
23 Notwithstanding the foregoing, however, if the Loss occurs as a direct result of the willful
24 misconduct of ADOT or its personnel or consultants **and** such Loss is not covered by insurance
25 actually carried, or required under or pursuant to the Contract Documents to be carried, by
26 Developer, then Developer shall repair or replace the affected items within the timeframes
27 specified herein, and ADOT will reimburse Developer for the actual reasonable documented
28 costs incurred to repair or replace, including the amount of any deductible, except as provided
29 otherwise in Section 11.2.4 of the Agreement.

30 **110.05.4 Computer and Equipment Requirements**

31 Developer shall provide network administration, operational support, and day-to-day
32 management of the collocated office and field office networks and data systems. Developer
33 shall provide a Project server that includes daily reliable backups of Project data.

34 **110.05.4.1 Original Equipment Manufacturers**

35 Developer shall use:

- 36 A. Commercial off-the-shelf equipment when available;
- 37 B. New and suitable original equipment manufacturers (OEM) hardware components for
38 the purposes specified herein; and
- 39 C. Hardware of the OEM's current design and equipped with the current revisions,
40 manuals, and equipment updates at the time of issuance of NTP 1. Hardware must
41 comply with all applicable quality control (QC) standards of the OEM.

42 Developer shall prepare an Equipment Demobilization Plan that includes Developer's strategy
43 for the methods and processes to discontinue the use of all computer and related equipment,
44 and how Developer shall erase Project-sensitive information from the equipment. At least 30

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1 Business Days prior to scheduled Substantial Completion, Developer shall submit the
2 Equipment Demobilization Plan to ADOT for approval.

3 All technology-related plans and procurements must take into consideration the information
4 technology goals for maintaining a secure and reliable computing infrastructure that complies
5 with current and planned operations and business needs. The information technology standards
6 used in the collocated offices and field offices must comply with Good Industry Practice.

7 Developer shall provide, install, and maintain the following for all ADOT office spaces:

8 A. Telephone. Developer shall provide at least one touch-tone telephone for each personal
9 office area with a unique direct-dial telephone number. Developer shall provide service
10 and Developer shall provide such service using voice over Internet protocol (VoIP) or
11 analog means. Each telephone number must have voicemail, conference-call capability,
12 call hold capabilities, and speaker telephone capabilities for the telephones in enclosed
13 offices/rooms. If a VoIP solution is provided, the telephone desk set must have the ability
14 to pass through data traffic on a second data network port; the pass-through port may
15 count as one of the data network outlets if performance requirements are met.

16 B. Computers. Developer shall provide 30 computer workstations at the collocated office for
17 ADOT and ADOT representative use. Each computer workstation must include the
18 minimum hardware and software as follows:

- 19 1. 24 inch color flat panel monitor
- 20 2. Quad-core processor
- 21 3. 4 GB Ram
- 22 4. 160 GB hard drive
- 23 5. DVD/CD RW drive
- 24 6. Windows 7 operating system
- 25 7. 2010 Microsoft Office Professional (MS Word, Excel, PowerPoint, Outlook, etc.)
- 26 8. Bentley's MicroStation V8i
- 27 9. Bentley's InRoads Suite SS2 or newer
- 28 10. Adobe Acrobat Professional

29 Developer provided computer workstations must be able to access the EDMS.
30 Developer shall provide network software licenses or a minimum of two licenses each of
31 all software used by Developer for design and construction. The software licenses must
32 be available for ADOT's use on the 30 Developer provided computer workstations. All
33 computer workstations and software are and must remain the property of Developer.

34 C. Tablets. Developer shall provide ADOT with 60 tablets capable of running a mobile
35 operating system such as iOS or Android and the tablets must be able to access the
36 EDMS. The tablet screen must be a minimum of 9.7 inches with a minimum storage
37 capacity of 16 GB. The tablets must connect to a long term evolution network, with a
38 data plan connection. The tablets must be able to share content, such as portable
39 document format (PDF) files or spreadsheets, between devices. Developer shall provide
40 a ruggedized case appropriate for field use for all tablets. Developer shall ensure that
41 the tablets are in a fully set-up state and include applications capable of performing the
42 following:

- 43 1. Accessing ADOT Outlook webmail;
- 44 2. Accessing, viewing, and editing Microsoft Word files;
- 45 3. Accessing, viewing, and editing Microsoft Excel files;

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- 1 4. Accessing, viewing, and annotating PDF files;
- 2 5. Merging and splitting PDF files;
- 3 6. Connecting to and viewing files on ADOT's file transfer protocol server; and
- 4 7. Basic calculations using a built-in calculator.

5 Developer shall provide a single computer capable of running Windows 7 or OS X 10.9
6 in order to administer the tablets in the ADOT office space in the collocated office.
7 Developer shall provide the tablets and computer to ADOT concurrent with providing
8 occupancy of the collocated office to ADOT. All tablets and software will remain the
9 property of Developer.

- 10 D. File server. The file server solutions must utilize a non-proprietary, industry standard
11 compliant operating system capable of supporting real-time electronic data storage,
12 compatible to ADOT server operating systems. At initial installation, the proposed
13 system must operate at no more than 35 percent of capacity (for processor, memory,
14 disk, and input/output performance). Parallel processing is not required, but the system
15 must continue processing without server failure should any one component fail. RAID 5
16 (disk striping with parity) and hot swap disks are required, along with dual
17 controllers/paths to the disk. The file server must also have redundant components such
18 as power, fan, controllers, and network cards.

19 The file server must have sufficient main memory, disk capacity, and processing
20 capability to support the collocated office electronic data storage needs and transmission
21 of large numbers of electronic data files. The file server hardware must have expansion
22 capabilities to comply with and support future requirements as determined by ADOT.
23 The file server must have a warranty with a 3-year next Business Day on-site service
24 agreement.

- 25 E. Internet. Developer shall provide a symmetrical business class Internet service.

- 26 F. Printer services. Developer shall provide and maintain the following printers:

- 27 1. Two office monochrome network printers for the ADOT office space in the collocated
28 office and each field office. Monochrome printers must comply with or exceed the
29 following: internal memory 64 megabytes (MB); print quality up to 1,200 by 1,200
30 dots per inch (dpi); paper trays must include 100-sheet multipurpose tray, 250-sheet
31 input tray, 500-sheet input tray; up to 35 pages per minute (ppm); and connectivity
32 universal serial bus (USB), parallel, Ethernet; duplex printing capability and paper
33 handling 3-inch x 5-inch to 11.7-inch x 17.7-inch.
- 34 2. Two office color network printers for the ADOT office space in the collocated office
35 and one for each field office facility. Color printers must comply with or exceed the
36 following: internal memory 160 MB; print quality true 600 x 600 dpi; paper trays will
37 include 100-sheet multipurpose, 500-sheet feeder; 27 ppm black and white and, 27
38 ppm color; connectivity Ethernet 100BaseTX/10BaseT; and duplex printing capability
39 and paper handling 3-inch x 5-inch to 11-inch x 17-inch.
- 40 3. Full-scale color plotter at the collocated office capable of handling 36-inch roll plots,
41 36-inch x 24-inch plots, and 11-inch x 17-inch plots.

- 42 G. Copier services. Developer shall provide and maintain two multifunction devices/copiers
43 for the ADOT office space in the collocated office and one each for each field office. The
44 multifunction devices/copiers must comply with or exceed the following: a monthly duty
45 cycle of 150,000; print/copy speed, full color – 45 ppm, monochrome – 45 ppm (letter,
46 portrait); print copy resolution – 1,800 dpi equivalent by 600 dpi; scan speed (letter) – full
47 color 78 operations per minute (opm) at 300 dpi, 55 opm at 600 dpi, and monochrome

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- 1 78 opm at 300 dpi, 65 opm at 600 dpi; scan resolution – 200 dpi, 300 dpi, 400 dpi, and
2 600 dpi; scan file formats – TIFF, PDF, compact PDF, JPEG, XPS, compact XPS;
3 internal memory – 2 gigabytes (GB); internal hard drive – 250 GB; paper copy size, tray
4 1 and 2 (universal cassette) – 5.5 inches x 8.5 inches to 12 inches x 18 inches, tray 3
5 and 4 (fixed cassette) – 8.5 inches x 11 inches, 5.5 inches x 8.5 inches, 4 inches x 6
6 inches, bypass tray – 4 inches x 6 inches to 12 inches x 18 inches, 8 inches x 13 inches;
7 original document size – up to 11 inches x 17 inches (scanning/copying), up to 11 inches
8 x 17 inches full bleed on 12-inch x 18-inch paper (printing); duplex printing capability;
9 automatic document feeder; and facsimile capability. Developer shall furnish copier
10 stand with storage shelves and provide paper and toner for copying machine as needed.
- 11 H. Wide area network (WAN). Developer shall provide a minimum of one 50 Mbps circuit
12 dedicated to ADOT from the Project computer room to its enterprise data or network
13 centers at the collocated office and 20 Mbps circuit at field offices. Developer shall
14 provide Ethernet handoff at each end of the circuit and obtain, install, and operate the
15 links. Developer shall provide all security measures necessary to secure the Internet
16 connection from outside intrusions and data losses.
- 17 I. IT equipment. Developer shall provide rack space, cooling, power, and cable
18 management to allow for the installation and operation of additional network equipment
19 supplied by ADOT. Developer shall provide a locking computer cabinet, a minimum of 42
20 rack units high, in a standard 19-inch equipment rack configuration, for each client party.
21 Developer shall provide 120 VAC power for the additional network equipment with a
22 minimum of four power outlets of style NEMA 5-15R for the client's equipment.
23 Developer shall provide cable management systems to support running patch cabling
24 from the floor cabling patch panels to each of the cabinets. Developer shall maintain a
25 secure equipment room with controlled and restricted access for use in operating all the
26 IT. The equipment room must be climate controlled and capable of maintaining an
27 ambient temperature range of 70 to 76 degrees Fahrenheit with a relative humidity
28 between 20 and 60 percent at all times. Developer shall terminate all Category 5e UTP
29 cable in data patch panels in the server room and any additional telecommunications
30 room(s).
- 31 J. Wireless local area networks (WLAN). Developer shall provide a minimum of two
32 802.11n WLAN in the collocated office and one each in each field office facility. Each
33 WLAN must provide a unique service set identification (SSID) to separate the network
34 traffic. The first WLAN is for the collocated office usage and protected using current
35 WLAN best practices. Developer shall provide the Project WLAN for Developer and
36 ADOT personnel. Developer shall provide a second WLAN for visitor access only to the
37 Internet and with no access to any Project, ADOT, or Developer's network data. The
38 wireless network must provide Internet access for tablets and computers via Wi-Fi for
39 uploading and downloading information.
- 40 K. Conference rooms. Developer shall provide an audio visual solution to support the
41 collocated office and field office conference rooms, including a projector and conference
42 telephone and integrated audio, video, displays, and control systems. Developer shall
43 provide a conference telephone for each conference room facility.
- 44 L. Disaster recovery. Developer shall prepare a Computer Disaster Recovery Plan to
45 identify Project-specific core systems and processes and to determine acceptable levels
46 of disruptive-to-Project operations. The Computer Disaster Recovery Plan must outline
47 the data backup scenario used to ensure proper backup of all Project data. Twenty
48 Business Days following the issuance of NTP 2, Developer shall submit the Computer
49 Disaster Recovery Plan to ADOT.

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1 M. Non-disruptive operations. During normal business hours, network downtimes must not
2 be due to hardware or software system improvements and/or repairs. Developer shall
3 schedule all maintenance and repairs to provide a minimum of 1 day advance written
4 notice to ADOT.

5 **110.05.4.2 Network Administration Plan**

6 Developer shall prepare a Network Administration Plan that describes all computer elements
7 described in Section GP 110.05.4 of the TPs. Prior to issuance of NTP 2, Developer shall
8 submit the Network Administration Plan to ADOT for review and comment.

9 **110.05.4.3 Project Vehicles**

10 Developer shall not permit and shall prevent parking of Project vehicles and vehicles belonging
11 to Developer's staff on the freeway, freeway on-/off-ramps, crossroads, work zones, under any
12 tree's defined dripline, local streets, and outside the ADOT ROW, unless authorized by ADOT.
13 Developer shall not park any Project vehicles or staff vehicles in locations that damage existing
14 or proposed landscaped areas or impair the installation or maintenance of the temporary
15 irrigation systems to the landscaped areas. In addition, Developer shall not park or store any
16 equipment within the dripline of any tree. The dripline of a tree is defined as the line created by
17 the tree's outermost branches that form the tree's canopy and refers to the extent of the outer
18 layer of a trees leaves and branches. If Developer damages any irrigation systems or
19 landscaped areas, or parks or stores any equipment within any tree dripline, Developer shall
20 repair or replace the damaged area or system. Repair of any compaction or fluid spill under or
21 associated with any tree's dripline that is a result of equipment or vehicle storage requires that
22 Developer shall bring the impacted area back to its pre-construction soil chemistry and
23 density/compaction through the use of a method that does not harm the tree's root system
24 through removal and replacement of soil for fluid spills, or mechanical tillage or soil injection
25 methods to relieve the compaction; and, prior to commencing any repair or replacement,
26 Developer shall obtain ADOT's approval of any and all such methods. If the tree(s) impacted by
27 such action show any signs of decline or stress during the Work, Developer shall replace such
28 trees with like kind, size, and character.

29 Developer's light duty on-road vehicles that are on-site must have the Vehicle Project Logo and
30 Developer's name visibly displayed on both sides of the vehicle. Developer's Project vehicles
31 must be equipped with appropriate safety equipment and warning lights according to all Laws.
32 Prior to issuance of NTP 2, Developer shall prepare and submit a full-size sample Vehicle
33 Project Logo that is to be affixed to all Developer's Project vehicles to ADOT for approval in
34 ADOT's good faith discretion.

35 **110.05.5 Construction and Maintenance Yards**

36 Developer shall be responsible for obtaining all approvals, permits, and Governmental
37 Approvals for obtaining locations for construction and maintenance yards for the Project.
38 Developer shall not locate construction yards adjacent to residential areas.

39 **110.05.6 Submittals**

40 Table 110-8 reflects a nonexclusive list of Submittals identified in Section GP 110.05 of the TPs
41 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
42 determine and submit all Submittals as required by the Contract Documents, Governmental
43 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
44 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
45 specified in the Contract Documents, Developer shall submit the following to ADOT in the
46 formats described in Section GP 110.10.2.2 of the TPs:

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Table 110-8 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Collocated Office Layout Plan	4	2	1	Prior to issuance of NTP 2	GP 110.05.2.6
Equipment Demobilization Plan	4	2	1	30 Business Days prior to Substantial Completion	GP 110.05.4.1
Computer Disaster Recovery Plan	5	2	1	20 Business Days following the issuance of NTP 2	GP 110.05.4.1
Network Administration Plan	4	2	1	Within 30 Business Days following issuance of NTP 1	GP 110.05.4.2
Vehicle Project Logo	2	2	1	Prior to issuance of NTP 2	GP 110.05.4.3
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1 **110.06 Schedule Management**

2 **110.06.1 General Requirements**

3 Developer shall perform all Work in compliance with the requirements of Section GP 110.06 of
4 the TPs.

5 **110.06.2 Administrative Requirements**

6 **110.06.2.1 Software Requirements**

7 Developer shall prepare the Project Schedule using Oracle's Primavera P6.

8 **110.06.2.2 Schedule Development**

9 The Parties will use the Project Schedule for planning and monitoring the progress of the Work,
10 to verify Draw Requests in accordance with Article 13 of the Agreement. The Project Schedule
11 serves as the foundation for the Monthly Progress Schedule. Developer shall coordinate with
12 Governmental Entities when developing and maintaining the Project Schedule and shall make
13 provisions for adjacent projects and Governmental Entities comments. Developer shall ensure
14 that the Project Schedule reflects the following information:

15 A. Activity Identification. Activities must be assigned consistent descriptions, identification
16 codes, and sort codes. Sort code schemes (a) are subject to ADOT's prior consent, (b)
17 must group activities using meaningful schemes defined by Developer and ADOT, and
18 (c) must designate lead responsibility for each activity, and (d) clearly identify each
19 Project Schedule Submittal. Resubmissions of Project Schedules must use the same
20 revision number as the original submission individually identified by a sequential
21 appended letter (A, B, etc.), as an indication of a revised version. Developer shall
22 identify Work being performed by Disadvantaged Business Enterprise (DBE) firms as
23 separate CPM activities.

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- 1 B. Cost Allocation. Allocate Price and commodity quantities throughout the Project activities
2 in the Project Schedule. Accurately reflect Developer's cost allocation for each Project
3 activity. All Work must be represented by cost resource-loaded Project activities.
4 Developer shall not artificially inflate, imbalance, or front-load line items in the Project
5 Schedules. The price of each Project activity must be all-inclusive and include all direct
6 and indirect costs, overhead, risks, and profit.
- 7 C. Milestones. Developer shall separately identify each Project milestone, conforming to the
8 scheduling requirements set forth in the Contract Documents.
- 9 D. Activity Information. Developer shall divide the Work into activities with appropriate logic
10 ties to show Developer's overall approach to the planning, scheduling, and execution of
11 the Work. Developer shall base duration and logical relationships of the Project activities
12 (or summaries at phase level) on the actual duration and relationships anticipated. Each
13 activity must have a duration not exceeding 20 Business Days.
- 14 E. Constraints. Developer shall not use calendar dates or constraints to logically begin or
15 complete any Project activity unless calendar dates are shown in the TPs or other
16 relevant Contract Documents. The Project Schedule must not contain unspecified
17 milestones, constraints, Float suppression techniques, or use of Project activity
18 durations, logic ties, and/or sequences deemed unreasonable by ADOT. Any schedule
19 showing an early completion date must show the time between the scheduled
20 completion date(s) and the applicable Completion Deadline(s) as Float.
- 21 F. Float.
- 22 1. Float is not for the exclusive use or benefit of either ADOT or Developer, but must be
23 used in the best interest of completing the Project within the D&C Period. If the dates
24 in any Monthly Progress Schedule Submittal forecast any slippage or overrun of the
25 D&C Period, Developer shall indicate such slippage or overrun by reporting negative
26 Float.
- 27 2. Developer shall not utilize (1) Float suppression techniques in the Schedule,
28 including interim dates imposed by Developer other than Project milestone(s), or (2)
29 the inclusion of activities or constraints in a path or chain leading to a Contract
30 Milestone which are unrelated to the Work as stated and specified in the Contract
31 Documents, or (3) activity durations or sequences deemed by ADOT to be
32 unreasonable in whole or in part.
- 33 3. Preferential sequencing (i.e., whereby activities that could be performed concurrently
34 and are established in the Project Schedule as sequential simply to consume Float)
35 and/or indicating artificial activity durations (i.e., inflating activities in the schedule to
36 consume Float and influence the Critical Path) are unacceptable. Sequestering of
37 Float is cause for rejection of Developer's schedule Submittal. In the event that Float
38 sequestering is identified, Developer shall revise the schedule appropriately.
- 39 4. Developer shall impose, code, and separately identify all time(s) and milestones in all
40 Monthly Progress Schedule Submittals in conformance to the milestone(s) and
41 time(s) set forth in the Contract Documents. Developer shall impose no other date
42 restraints in the Schedule, unless an explanation of their bases is provided and such
43 explanation is acceptable to ADOT.
- 44 5. ADOT will consider extensions of time for performance of the Work required under
45 the Agreement only to the extent that the equitable time adjustment for activities
46 affected by any condition or event which entitles Developer to a time extension
47 exceed the Float along the path of the activities affected at issuance of NTP for

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1 Supplemental Agreement or commencement of any delay or condition for which an
2 adjustment is warranted under the Contract Documents.

- 3 6. If Developer is delayed in performing the Work, Developer shall absorb any related
4 delay, disruption, interference, hindrance, extension, or acceleration costs, however
5 caused, except as otherwise provided in Article 14 of the Agreement. Developer may
6 use Float to absorb Project delays, if any. Developer shall include a description of
7 the cause of delay, the projected amount of Float to be used, and the revised
8 Monthly Progress Schedule showing the use of the Float in the Monthly Progress
9 Report. Developer shall work cooperatively with ADOT, other contractors, and third
10 parties to identify and implement, to the maximum extent possible, no-cost measures
11 to recover all schedule delays, regardless of the cause of the delays. One example
12 of such measures is no-cost re-sequencing of Work activities.

13 G. Progress. Developer shall show actual progress and not calculated progress in the
14 Monthly Progress Schedule. Developer shall incorporate logic changes and Work
15 changes into the Monthly Project Schedule. Each Monthly Project Schedule Submittal
16 must clearly and individually define the progression of the Work within the applicable
17 timeframe by using separate Project activities.

18 H. Resources. Developer shall indicate any resources such as commodities, labor, or
19 equipment quantities with the associated Project activity field. Developer shall base
20 labor-loading of activities on total number of workers, not total number of crews, and
21 shall assign applicable activities for major construction equipment to be used by
22 Developer and Subcontractors in prosecuting Work. The quantity must represent the
23 estimated effort in-place for the Project activity field.

24 **110.06.2.3 Schedule Submission Process**

25 Developer shall use the schedule submittal process outlined in this Section GP 110.06.2.3 for
26 the preparation and submittal of all Project Schedules provided by Developer to ADOT for
27 review and comment, unless otherwise specified in the Contract Documents.

28 For each Project Schedule Submittal, Developer shall provide the following:

- 29 A. Hard copies of the schedule on full-size (24 inches x 36 inches) color plot sheets.
30 B. Electronic version of the schedule in both native (including activity data, logic, and
31 coding) and PDF format on IBM PC compatible electronic media.
32 C. Schedule Narrative in accordance with Section GP 110.06.2.4 of the TPs.
33 D. Look-Ahead Schedule in accordance with Section GP 110.06.2.9 of the TPs.
34 E. Recovery Schedule, as needed, in accordance with Section GP 110.06.2.10 of the TPs.
35 F. Time Impact Analysis, as needed, in accordance with Section GP 110.06.2.11 of the
36 TPs.

37 The Project Schedule Submittal must progress with the following steps:

- 38 A. Developer shall submit Project Schedules for review and approval by ADOT.
39 B. ADOT will review the schedule and will return it with comments or no comments. ADOT
40 will not withhold payment in accordance with the requirements of Section GP 110.06.2 of
41 the TPs if ADOT fails to provide a response to the Project Schedule Submittal within the
42 specified time.
43 C. Developer shall address all ADOT comments and revise the Project Schedule, as
44 necessary.
45 D. Developer shall provide a revised schedule within 14 days, if necessary.

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- 1 ADOT's review of and comment on a Project Schedule does not do the following:
- 2 A. Imply approval of any particular construction methods or relieve Developer of its
 - 3 responsibility to provide sufficient materials, equipment, and labor to complete the
 - 4 Project in accordance with the Contract Documents.
 - 5 B. Attest to the validity of assumptions, activities, relationships, sequences, resource
 - 6 allocations, or any other aspect of the Project Schedule.
 - 7 C. Imply Developer is entitled to any Supplemental Agreement extending the Completion
 - 8 Deadline or adjusting the Price.
 - 9 D. Relieve Developer from compliance with the requirements of the Contract Documents, or
 - 10 result in the approval of any variation from the Contract Documents.
- 11 Failure to include any element of Work required by the Contract Documents in the Project
- 12 Schedule does not release or relieve Developer from responsibility to perform such Work.

13 **110.06.2.4 Schedule Narrative**

14 At each Project Schedule Submittal, Developer shall prepare and submit a stand-alone

15 Schedule Narrative with sufficient detail to explain the basis of the submitted Project Schedule

16 to ADOT. The Schedule Narrative must describe the activities, including how the activities

17 interrelate. Developer shall ensure that the Schedule Narrative includes the following

18 information:

- 19 A. A list of the activities on each Critical Path and a comparison of early dates and late
- 20 dates for activities designating times
- 21 B. For the Project Schedule Submittals, include (a) Developer's site management plan
- 22 (e.g., lay down, staging, traffic, and parking), (b) the use of construction equipment and
- 23 resources, (c) basis and assumptions for critical activity durations and logic, (d)
- 24 compliance with winter weather requirements, (e) any shifts, non-Business Days, and
- 25 multiple calendars applied to the activities, (f) the construction philosophy supporting the
- 26 approach to the Work outlined in the submitted Project Schedule, and (g) the reasons for
- 27 the sequencing of Work, including a description of any limited resources, potential
- 28 conflicts, and other salient items that may affect the schedule and how they may be
- 29 resolved
- 30 C. For all subsequent schedule Submittals, the Schedule Narrative must recap progress
- 31 and days gained or lost versus the previous Progress Schedule, problems and delays
- 32 that have been experienced to date, the party responsible for the problems or delays,
- 33 and Developer's plan to resolve the problems or bring the delayed activities back on
- 34 schedule, potential problems that may be encountered during the next period and the
- 35 proposed solutions (identify all potential problems and explain what action ADOT needs
- 36 to take and the date by which the action needs to be taken to avoid the problem),
- 37 describe changes in resources to be used on remaining Work and identify delays, their
- 38 extent, and causes. Each Schedule Narrative must also itemize changes in activities and
- 39 logic ties caused by each Supplemental Agreement, schedule recovery plans and
- 40 grouping of related Developer-initiated revisions
- 41 D. The justification for any activity with a duration exceeding 20 Business Days
- 42 E. The justification for any constraints used
- 43 F. Developer's approach used to apply relationships between activities, including a list of
- 44 activity relationships with lags and the justification for the use of each lag (e.g., all ties
- 45 are based on physical relationships between Work activities [such as "rebar must be

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1 placed before concrete is placed”] or relationships are used to show limited resources
2 [such as “bridge two follows bridge one” because Developer has only one bridge crew])

3 G. Challenges that may arise associated with Critical Path activities

4 **110.06.2.5 Schedule Deliverable Requirements**

5 Developer shall prepare and maintain the Project Schedule, which consists of the following:

- 6 A. Project Baseline Schedule
- 7 B. Monthly Progress Schedule
- 8 C. Recovery Schedule (as needed)

9 Developer shall also prepare and maintain the following schedules:

- 10 A. Look-Ahead Schedule
- 11 B. As-Built Schedule

12 **110.06.2.6 Project Baseline Schedule**

13 Developer shall use the Preliminary Project Baseline Schedule submitted with the Proposal as a
14 foundation to prepare the Project Baseline Schedule. The Project Baseline Schedule must
15 clearly define the prosecution of the Work from issuance of NTP 1 to Final Acceptance by using
16 the separate critical path method (CPM) activities for the following: design; Project ROW
17 activities (e.g., development of ROW Submittals, review and approval periods, and all other
18 Project ROW activities for each parcel in accordance with Section DR 470 of the TPs),
19 environmental commitments, and mitigation activities; construction; testing; permitting; Submittal
20 preparation, reviews, resubmissions, and concurrence; material and equipment deliveries;
21 interfaces with other contractors, Utilities, etc.; final inspection; Punch List; milestones and
22 Substantial Completion; and training. Developer shall detail CPM activities and logic ties in the
23 Project Baseline Schedule as necessary to show Developer’s Work sequencing and separately
24 define all requisite ADOT tasks. For each activity in the Project Baseline Schedule, Developer
25 shall indicate the duration, in calendar days, required to perform the activity and the anticipated
26 beginning and completion date of each activity. The Project Baseline Schedule must indicate
27 the sequence of performing each activity and the logical dependencies and interrelationships
28 among the activities. The Project Baseline Schedule must include a listing of all Submittals as
29 called out in the Contract Documents. Submittal activity durations must include specific
30 durations for reviews and/or concurrence of Developer’s Submittals as set forth elsewhere in the
31 Contract Documents.

32 Prior to issuance of NTP 2, Developer shall submit a Project Baseline Schedule to ADOT for
33 approval in ADOT’s good faith discretion. Developer shall use the Project Baseline Schedule as
34 the basis for Monthly Progress Schedule Submittals. The completion/approval of the Project
35 Baseline Schedule is a condition to commencement of any Construction Work.

36 Developer shall use the Project Baseline Schedule to coordinate all activities on the Project,
37 including those with other entities, such as Subcontractors, vendors and Suppliers, Utility
38 Companies, Governmental Entities, and ADOT.

39 Developer shall develop the work breakdown structure (WBS) with clearly identifiable linkage to
40 Developer’s activities and phases represented in the Project Baseline Schedule.

41 **110.06.2.7 Monthly Progress Schedule**

42 Developer shall prepare a Monthly Progress Schedule that updates the Project Baseline
43 Schedule during the D&C Period, commencing after issuance of NTP 2, until the closing for final
44 payment for the Work associated with NTP 2. The Monthly Progress Schedule must reflect

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1 progress up to the closing date, forecast finish for in-progress activities and re-forecast early
2 dates for activities planned in the next update period. The Monthly Progress Schedule must
3 include the following:

- 4 A. Actual start and finish dates for completed activities;
- 5 B. Actual start dates, percentage complete, and remaining duration for activities in
6 progress;
- 7 C. All proposed activities, logic, and restraint date revisions required to:
 - 8 1. Implement changes in the Work,
 - 9 2. Detail all impacts on preexisting activities, sequences and restraint dates,
 - 10 3. Reflect Developer's current approach for Work remaining,
 - 11 4. Incorporate any delays that are being negotiated between ADOT and Developer, and
 - 12 5. Reflect "or equal" or substitution proposals.
- 13 D. Planned start and finish dates for future activities; and
- 14 E. Progress for the current invoice submittal for Project activities.

15 If Work is performed out of sequence, Developer shall implement logic changes to allow the out-
16 of-logic sequence Work to proceed. Developer shall exclude any revisions for Developer's
17 convenience when reconciling an extension to a milestone. Developer shall document changes,
18 which must be highlighted or identified, in any Monthly Progress Schedule.

19 Concurrent with the draft invoice submittal, Developer shall submit the Monthly Progress
20 Schedule to ADOT for approval in ADOT's good faith discretion, and for discussion at the
21 progress meeting, as set forth in Section GP 110.06.2 of the TPs and in Section 13.2.2 of the
22 Agreement. Once the Monthly Progress Schedule is accepted by ADOT, Developer shall use
23 the Monthly Progress Schedule as the basis for the next Monthly Progress Schedule. ADOT has
24 no obligation to approve payment of an invoice until ADOT receives an acceptable Monthly
25 Progress Schedule and all other conditions for approval have been satisfied.

26 **110.06.2.8 Monthly Progress Report**

27 Developer shall provide additional, separate, filtered reports of the Project activities and Work
28 elements based on the Monthly Progress Schedule with the Monthly Progress Report, including
29 the following:

- 30 A. Description of coordination with Utility Companies and accomplishing Utility Work
- 31 B. Bar chart schedule sorted by elements, indicating the physical status of all activities as
32 of date of the update
- 33 C. Graphical report, which compares Developer's progress to planned progress by
34 elements
- 35 D. Design Document Submittals for the forthcoming period
- 36 E. Tabular report listing all activities with 14 days or less Float
- 37 F. 60-day look ahead report identifying all of ADOT and Governmental Approvals required
- 38 G. 180-day look ahead bar chart schedule sorted by WBS and activity early start dates
- 39 H. Critical items graphical report for each Critical Path sorted by activity early start date,
40 including major Work completion, long-term closures of travel lanes beginning and
41 ending, etc.
- 42 I. Time-scaled Critical Path network plot indicating the status of all activities as of the date
43 of the update

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- 1 J. Project
- 2 K. ROW acquisition status per parcel
- 3 L. Monthly expenditure projects and cash expenditure curves by WBS
- 4 M. Discussion of actions/corrections to be taken to achieve Project Baseline Schedule
- 5 milestones
- 6 N. Reporting of Noncompliance Events from the previous month

7 At the monthly progress meetings, Developer shall submit the Monthly Progress Report to
8 ADOT.

9 **110.06.2.9 Look-Ahead Schedule**

10 The Look-Ahead Schedule is a computer-generated bar chart that indicates the previous week's
11 Work and the Work planned for the next 3 weeks. Developer shall base the Look-Ahead
12 Schedule on the Project Schedule, and provide a greater breakdown of the Project Schedule
13 activities for the purpose of materials inspection and testing. The Look-Ahead Schedule must
14 clearly note and explain any Deviations from the Project Schedule. Developer shall reference
15 the Project Schedule activity identification numbers and define subsequent specific daily
16 operations for all Work activities scheduled to be performed during the 4-week period. At least 1
17 day prior to the weekly Project meeting, Developer shall submit weekly Look-Ahead Schedules
18 to ADOT.

19 **110.06.2.10 Recovery Schedule**

20 Unless otherwise directed in writing by ADOT, if ADOT's review of the Monthly Progress
21 Schedule indicates a late completion of the Work, or should Critical Path items shown on the
22 Monthly Progress Schedule Submittal slip by 28 or more days beyond any milestone, Developer
23 shall prepare a Recovery Schedule which displays how Developer intends to reschedule those
24 activities to regain compliance with the milestones and the Agreement. Whenever a Recovery
25 Schedule is required, Developer shall provide the following information:

- 26 A. Transmittal letter
- 27 B. Time-scaled network diagram
- 28 C. Electronic copy of the file used for the proposed Recovery Schedule
- 29 D. Narrative describing any proposed changes to the Project Schedule, in detail, with
30 justification for the changes, including the following:
 - 31 1. Changes to activity original durations;
 - 32 2. Changes to activity relationships and/or schedule logic;
 - 33 3. Cause of schedule slippage and actions taken to recover schedule within the
34 shortest reasonable time (e.g., hiring of additional labor, use of additional
35 construction equipment, and expediting of deliveries);
 - 36 4. Identification of activities that have been added, deleted, or modified; and/or
 - 37 5. Changes to the Project Schedule's Critical Path.

38 Within 10 Business Days of receipt of ADOT's written direction or when any Critical Path item
39 slips by 28 days or more, Developer shall submit the Recovery Schedule to ADOT for approval
40 in ADOT's good faith discretion. Developer shall not be required to prepare a Recovery
41 Schedule if Developer requests and demonstrates, in writing, entitlement to an extension of the
42 D&C Period, due to Relief Event Delay(s), and ADOT concurs schedule recovery is not required
43 at that time. Within 5 Business Days after any rejection by ADOT of the Recovery Schedule,
44 Developer shall resubmit a revised Recovery Schedule incorporating ADOT's comments. When

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1 ADOT accepts Developer's Recovery Schedule, Developer shall, within 5 Business Days after
2 ADOT's acceptance, incorporate such schedule in the Project Schedule, deliver the same to
3 ADOT, and proceed in accordance with the approved Recovery Schedule.

4 **110.06.2.11 Time Impact Analysis**

5 If Developer submits a Relief Request indicating that an event, situation, or change affects a
6 Critical Path of the Project Schedule as set forth in Section 14.1.3.1 of the Agreement,
7 Developer shall prepare a Time Impact Analysis showing the cumulative effect of the change on
8 the completion or fixed milestone date with the Relief Request. Developer shall include a written
9 report, in a form satisfactory to ADOT, describing the Time Impact Analysis with the Time
10 Impact Analysis. The revision to the Project Schedule associated with the time extension must
11 not modify the early- and late-start cost curves of the Project Schedule, except with respect to
12 activities that have been affected by the event that justify the extension. Developer may
13 reschedule activities not otherwise affected by the event to take advantage of additional Float
14 available as the result of the time extension. Developer shall reflect any such rescheduling in
15 the Project Schedule. Each Time Impact Analysis must include a fragnet demonstrating the
16 following information:

- 17 A. How Developer proposes to incorporate the Supplemental Agreement
- 18 B. The Claims impact to the Project Schedule
- 19 C. The sequence of new and/or existing activity revisions that are proposed to be added to
20 the Project Schedule that is in effect when the change or delay is encountered
- 21 D. The proposed method for incorporating the delay and its impact to the Project Schedule

22 With each Relief Request, Developer shall submit a Time Impact Analysis to ADOT.

23 **110.06.2.12 As-Built Schedule**

24 Developer shall prepare an As-Built Schedule that includes actual start and actual finish dates
25 for all activities. The As-Built Schedule, once accepted, serves as the final update of the Project
26 Schedule. Developer shall include a written certification with the As-Built Schedule Submittal
27 signed by the Project Manager and an officer of Developer in accordance with the following:

28 "To the best of my knowledge, the enclosed final update of the Project Schedule reflects the
29 actual start and completion dates of the activities for the Project contained herein."

30 Submittal of the final update of the Project Schedule and the Project Manager's certification is a
31 condition to Final Acceptance in accordance with Section 6.6.4.2 of the Agreement.

32 At least 20 Business Days prior to scheduled Final Acceptance, Developer shall submit the As-
33 Built Schedule to ADOT.

34 **110.06.3 Submittals**

35 Table 110-9 reflects a nonexclusive list of Submittals identified in Section GP 110.06 of the TPs
36 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
37 determine and submit all Submittals as required by the Contract Documents, Governmental
38 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
39 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
40 specified in the Contract Documents, Developer shall submit the following to ADOT in the
41 formats described in Section GP 110.10.2.2 of the TPs:

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Table 110-9 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Schedule Narrative	5	2	1	At each Project Schedule Submittal	GP 110.06.2.4
Project Baseline Schedule	2	2	1	Prior to issuance of NTP 2	GP 110.06.2.6
Monthly Progress Schedule	2	2	1	At the progress meeting	GP 110.06.2.7
Monthly Progress Report	5	2	1	At the monthly progress meetings	GP 110.06.2.8
Look-Ahead Schedule	5	2	1	1 day prior to the weekly Project meeting	GP 110.06.2.9
Recovery Schedule	2	2	1	Within 10 Business Days of receipt of ADOT written direction or when any Critical Path item slips by 28 Calendar Days or more	GP 110.06.2.10
Time Impact Analysis	5	2	1	With each Relief Request	GP 110.06.2.11
As-Built Schedule	5	2	1	Within 20 Business Days after Final Acceptance	GP 110.06.2.12
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1 **110.07 Quality Management**

2 **110.07.1 General Requirements**

3 Developer shall perform all Work in compliance with the requirements of Section GP 110.07 of
 4 the TPs.

5 **110.07.2 Administrative Requirements**

6 **110.07.2.1 Quality Management Plan**

7 Developer shall prepare a comprehensive Quality Management Plan (QMP) that is consistent
 8 with and expands upon the preliminary QMP submitted with the Proposal. The QMP must
 9 comply with International Standards Organization (ISO) 9001:2000 for quality systems, quality
 10 plans and quality audits, or most current version at the time of the Proposal submittal, as
 11 updated by the International Standards Organization. Developer may elect to obtain formal ISO
 12 9001 certification, but is not required to do so.

13 The QMP must consist of four volumes, as follows:

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- 1 A. Volume 1: Quality Management Plan General Requirements (Section GP 110.07.2.1.1 of
2 the TPs)
- 3 B. Volume 2: Professional Services Quality Management Plan (PSQMP) (Section GP
4 110.07.2.1.2 of the TPs)
- 5 C. Volume 3: Construction Quality Management Plan (CQMP) (Section GP 110.07.2.1.3 of
6 the TPs)
- 7 D. Volume 4: Maintenance Quality Management Plan (MQMP) (Section GP 110.07.2.1.4 of
8 the TPs)

9 Developer shall develop, implement, and maintain the QMP for the Term. The QMP must
10 describe the systems, policies, and procedures that ensure the Work meets the requirements of
11 the Contract Documents and provides documented evidence of same.

12 The QMP must encompass all Work to be performed by Developer and Subcontractors of all
13 tiers, and shall contain detailed procedures for Developer's quality assurance (QA) and QC
14 activities. Developer's quality process must incorporate planned and systematic verifications
15 and audits undertaken by an Independent Quality Firm (IQF) for construction, and by
16 Developer's quality staff for Professional Services and maintenance. Developer shall conduct all
17 QA/QC, performance confirmation, and coordination among disciplines, all in accordance with
18 the QMP and the requirements of the Contract Documents.

19 Developer shall prepare Quality Records that include the following documentation:

- 20 A. Forms and checklists corresponding to Professional Services Work QC and QA
21 procedures, as defined in the PSQMP;
- 22 B. Daily field reports for Construction Work QC inspection;
- 23 C. Construction Work QC forms, as defined in the CQMP;
- 24 D. Construction Work Quality Acceptance forms and documentation, as defined in the
25 CQMP;
- 26 E. Documentation of deviations from the IQF's sampling guide schedule;
- 27 F. Documentation of IQF's application of engineering judgment;
- 28 G. Documentation of Nonconforming Work identification, cause and corrective action;
- 29 H. RFI documentation;
- 30 I. Quality Acceptance test results;
- 31 J. Material certificates;
- 32 K. Buy America documentation, including summary quantity and dollars information;
- 33 L. Tracking documentation for testing frequencies to ensure compliance with the Contract
34 Documents;
- 35 M. Approval documentation for Portland cement concrete and hot mix asphaltic concrete
36 mix designs;
- 37 N. Documentation required for Maintenance Services Noncompliance Events;
- 38 O. Daily field reports for Maintenance Services QC inspection; and
- 39 P. Other quality documentation required for Professional Services Work, Construction Work
40 and Maintenance Services, as defined in the respective volumes of the QMP.

41 Developer shall load all Quality Records to the EDMS immediately. Upon request, Developer
42 shall submit copies of Quality Records to ADOT.

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1 Developer shall prepare Results of Internal Audits that includes the documentation specified in
2 the respective volumes of the QMP. Within 5 Business Days of their completion, Developer shall
3 submit all Results of Internal Audits to ADOT for review and comment. Upon resolution of the
4 non-conformance, Developer shall submit a Non-Conformance Reports to ADOT for review and
5 comment.

6 **110.07.2.1.1 Quality Management Plan – General Requirements**

7 Quality terminology, unless defined or modified elsewhere in the Contract Documents, must
8 have the meanings in ISO 9001. Terms used in ISO 9001 must include the following meanings:

- 9 A. Organization: Developer’s organization, including any Affiliates and Subcontractors.
- 10 B. Customers: the users of the roadways, ADOT, and stakeholders.
- 11 C. Product: the Work.

12 Developer shall prepare the Quality Management Plan General Requirements in accordance
13 with the requirements in this Section GP 110.07.2.1.1. Prior to issuance of NTP 2, Developer
14 shall submit the Quality Management Plan General Requirements to ADOT for approval in
15 ADOT’s good faith discretion.

16 **110.07.2.1.1.1 Quality Management Organization**

17 Developer shall document and regularly maintain the QMP so that it contains current versions of
18 the following information:

- 19 A. Resumes for all quality management personnel, including information on certifications
20 held.
- 21 B. The organizational chart that identifies all quality management personnel, and their
22 roles, authorities, and line reporting relationships.
- 23 C. Description of the roles and responsibilities of all quality management personnel and
24 those who have the authority to stop Work.
- 25 D. Procedures for ensuring independence of quality staff and procedures for assuring their
26 authority to effect changes in the event of Developer’s failure to comply with the Contract
27 Documents.
- 28 E. Identification of the testing organization, including information on the organization’s
29 capability to provide the specific services required for the Work, certifications held, type
30 of equipment, and location of laboratories.
- 31 F. Procedures for interdisciplinary quality reviews and coordination.

32 **110.07.2.1.1.2 Quality Policy**

33 The QMP must contain a complete description of the quality policies and objectives that
34 Developer shall implement throughout its organization. The policy must demonstrate
35 Developer’s senior management commitment to implement and continually improve the quality
36 management system for the Work.

37 **110.07.2.1.2 Professional Services Quality Management Plan**

38 Developer shall prepare a Professional Services Quality Management Plan (PSQMP) that
39 describes Developer’s policies, procedures, and staffing to manage quality for Professional
40 Services in accordance with the requirements of this Section GP 110.07.2.1.2. Prior to issuance
41 of NTP 2, Developer shall submit the PSQMP to ADOT for approval in ADOT’s good faith
42 discretion.

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1 **110.07.2.1.2.1 PSQMP General Requirements**

2 The PSQMP must address the following general requirements:

- 3 A. The QC and QA procedures for Professional Services Work products organized by
4 discipline and sub-discipline, as appropriate (such as engineering - structural, utilities,
5 and Project ROW). These procedures must specify measures to ensure that appropriate
6 quality requirements are specified and included in the Professional Services Work
7 product and to control deviations from such requirements.
- 8 B. Specific QC and quality review procedures, including all required forms and checklists,
9 for preparing, verifying, and checking all Professional Services Work products to ensure
10 that they are independently checked and back-checked in accordance with generally
11 accepted practices of said Professional Services in the State and the requirements of
12 the Contract Documents.
- 13 C. Provisions for identifying the originator and checker on the face of all final work products.
14 Developer shall clearly identify the designer and checker on the face of all Final Design
15 Documents.
- 16 D. Specific procedures for verifying the Professional Services Work product along with any
17 computer programs and methods being used for such purposes.
- 18 E. Method for coordinating Professional Services performed by different individuals or firms
19 working in the same area, in adjacent areas, or on related tasks to ensure that conflicts,
20 omissions, or misalignments do not occur between drawings or between the drawings
21 and the specifications or other applicable deliverables. This must also include the
22 coordination of the review, approval, release, distribution, and revision of documents
23 involving such parties.
- 24 F. Procedures must: (1) ensure that Developer personnel are familiar with all the provisions
25 of the Contract Documents concerning their respective responsibilities; (2) provide for
26 the education, training and certification, as appropriate, of personnel performing
27 activities affecting or assessing the quality of the Work to assure that such personnel
28 achieve and maintain reasonable proficiency; and (3) ensure that Developer performs
29 the Work in accordance with the PSQMP, generally accepted engineering practices or
30 other applicable Professional Services practices in the State and the Contract
31 Documents.
- 32 G. Procedures for meeting documentation requirements per the requirements of the
33 Contract Documents.
- 34 H. Procedures and schedules for the performance of audits of Developer's QC procedures
35 under the PSQMP.
- 36 I. A summary of the documentation that will comprise the Professional Services Quality
37 Records, and the procedures to make such Quality Records immediately available to
38 ADOT for review.
- 39 J. A summary of anticipated Professional Services audit documentation to be submitted to
40 ADOT, and the procedures to make sure that Developer shall submit all Results of
41 Internal Audits for Professional Services to ADOT for review and comment.

42 **110.07.2.1.2.2 Personnel and Staffing**

43 **110.07.2.1.2.2.1 Personnel Performing Professional Services Quality Control**

44 Developer shall ensure that the training and experience of personnel performing QC is
45 commensurate with the scope, complexity, and nature of the Professional Services Work

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1 products to be reviewed. Qualifications must include appropriate experience, certifications,
2 training, and licensure.

3 Developer personnel performing the QC check of Professional Services Work products must not
4 be directly involved with the original development of the item, Element, or phase being checked.

5 The number of personnel performing Professional Services QC must reflect the volume of
6 quality assurance (QA) activities necessary for the Work in progress.

7 **110.07.2.1.2.2.2 Professional Services Quality Assurance Staff**

8 Developer shall provide a QA staff under the direction of the Professional Services Quality
9 Manager (PSQM) to perform oversight and review of all Professional Services performed by any
10 member of Developer's group.

11 The QA staff must have an understanding of the various aspects of Professional Services
12 undertaken by Developer. The training and experience of the QA staff must be commensurate
13 with the scope, complexity, and nature of the QA to be performed. Qualifications must include
14 appropriate experience, certifications, and training.

15 **110.07.2.1.2.2.3 Professional Services Quality Assurance Staff Levels**

16 The size of the QA staff must reflect the volume of QA activities necessary for the Work in
17 progress and Developer shall maintain such staff in accordance with the approved PSQMP.

18 Developer shall update the Professional Services QA staffing requirements as necessary
19 throughout the Term to reflect changes in the actual Project Schedule and specific Professional
20 Services elements. Developer shall ensure that adequate Professional Services QA staff is
21 available and that PSQMP activities are undertaken in a manner consistent with the Project
22 Schedule and in a manner that enables Developer to timely achieve the Substantial Completion
23 Deadline and Final Acceptance Deadline.

24 Should ADOT determine that Developer is not complying with PSQMP because of lack of staff
25 or ethical standards, ADOT will have the right, without penalty or cost, including time extensions
26 or delay damages, to restrict Work efforts until appropriate levels of staffing consistent with the
27 PSQMP and satisfactory to ADOT are obtained, or ADOT may contract with a separate firm to
28 perform these services and withhold payment to Developer for such services.

29 **110.07.2.1.3 Construction Quality Management Plan**

30 Developer shall prepare a Construction Quality Management Plan (CQMP) that describes its
31 policies, procedures, and staffing to manage construction quality in accordance with the
32 requirements of this Section GP 110.07.2.1.3, TP Attachment 110-2, and the Contract
33 Documents.

34 Developer shall construct the Work in accordance with the RFC Submittal. Developer's CQMP
35 must contain detailed procedures for Developer's QA/QC activities for construction activities.
36 The CQMP must be consistent with the applicable procedures contained in the ADOT *Materials*
37 *Quality Assurance Program* and the ADOT *Construction Manual*. Developer shall use the ADOT
38 *Materials Testing Manual* when establishing sampling and testing procedures for
39 standardization and consistency with ADOT procedures. The CQMP must establish clear
40 distinction between Developer's QC and the IQF's quality acceptance activities and persons
41 performing them. The quality process must also allow for verification sampling, testing, and
42 inspection by ADOT.

43 Developer shall ensure that personnel with appropriate training and qualifications for each
44 appropriate item of Work (items produced on and off the Site) perform inspections, reviews, and

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1 testing using appropriate equipment that is accurately calibrated and maintained in good
2 operating condition in accordance with the ADOT *Materials Quality Assurance Program, Section*
3 *VI, "Laboratory Qualifications"*.

4 Prior to issuance of NTP 2, Developer shall submit the CQMP to ADOT for approval in ADOT's
5 good faith discretion.

6 **110.07.2.1.3.1 CQMP General Requirements**

7 The CQMP must describe and include the following general requirements:

- 8 A. Methods and procedures that clearly define the distinction/authority/responsibility for
9 the administration of the CQMP.
- 10 B. The review and approval process of all Portland cement concrete and hot mix
11 asphaltic concrete mix designs by an IQF Professional Engineer.
- 12 C. Methods and procedures to be utilized by Developer to obtain active participation of
13 the workforce in QC operations to achieve a high quality Project; Developer shall
14 include reporting forms to be used by the responsible QC personnel.
- 15 D. A construction QC organization and staffing plan. Developer shall (a) show the period
16 of time that the QC staff members must be present on the Site, (b) include the
17 resumes of the Key Personnel and other personnel included in the QC organization,
18 and (c) state the experience/knowledge/skill levels of the QC support staff.
- 19 E. IQF organizational and staffing plans. Developer shall (a) show the period of time that
20 the quality acceptance staff members must be present on the Site, (b) include the
21 resumes of key staff members, and (c) state the required minimum knowledge,
22 technical skills, and experience level of the personnel related to the various inspection
23 functions, such as grading, drainage, structures, and electrical inspections, that will
24 occur on the Work. Developer shall identify the administrative/clerical support staff for
25 maintenance and management of records/documents pertinent to quality acceptance
26 for the IQF activities.
- 27 F. Procedures for inspecting, checking, and documenting the Work. Developer shall
28 perform inspections, examinations, and measurements for each operation of the Work
29 to assure quality.
- 30 G. Sampling and testing requirements of all materials during the production or
31 manufacturing processes, including sampling guide schedule and material codes and
32 type codes to be utilized by the IQF. The sampling guide schedule must include
33 specific items, or components of items, that are planned to be accepted on the basis of
34 certification.
- 35 H. Procedures to document the Project-specific sampling and testing plan to track
36 planned versus actual testing status and documentation of deviations from the
37 sampling and testing plan.
- 38 I. For materials that are sampled on a time designated lot basis, the methodology to
39 estimate the relationship between the production lot quantity and the time required to
40 produce such quantity in order to determine the recommended number of samples.
- 41 J. Procedures to ensure there is adequate quantity of material available for IQF sampling
42 and testing and ADOT verification sampling and testing.
- 43 K. Procedures to ensure that all activities affecting the quality of the Work are
44 accomplished under controlled conditions, using appropriate equipment for the task
45 being performed.

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- 1 L. Procedures to ensure that the education, training, and certification of personnel
2 performing CQMP activities are achieved and maintained and that all Work is
3 performed in accordance with the approved designs, Plans, and specifications.
4 Procedures to make an electronic log available to ADOT that contains personnel
5 certification status and expiration dates.
- 6 M. Procedures to track that personnel performing IQF Quality Acceptance activities are
7 observed annually by ADOT's Independent Assurance (systems basis) for the
8 sampling and testing they perform. Procedures to report to ADOT which individuals are
9 due for observation.
- 10 N. Procedures to ensure that critical Elements of the Work are not started or continued
11 without inspection and testing by the IQF personnel on Site. Developer shall identify
12 and communicate inspection or hold points to the IQF, Construction Quality Control
13 Manager (CQCM), and ADOT and develop procedures to proceed beyond inspection
14 points.
- 15 O. Description of specific procedures to ensure that all Work conforms to the
16 requirements of the Contract Documents, Governmental Approvals, applicable Laws,
17 and the RFC Documents, as well as that all materials, equipment, and elements of the
18 Work perform satisfactorily for the purpose intended. The IQF may apply engineering
19 judgment to substantiate the use of material failing to meet the specification if the
20 material still meets the intended purpose. Developer shall incorporate the engineering
21 judgment guiding principles from TP Attachment 110-2 into the CQMP and indicate
22 how the IQF will comply with these guiding principles. Developer may add additional
23 guiding principles, as appropriate.
- 24 P. Format for documentation of the IQF's application of engineering judgment. At the
25 least, this must include a unique identifying number for each application, identification
26 and location of non-conforming work, the circumstances and the engineering
27 evaluation conclusions, and supporting documentation such as calculations or
28 sketches, as appropriate.
- 29 Q. Documentation that all activities undertaken by or on behalf of Developer affecting the
30 quality of the Work are prescribed by documented instructions, procedures, and
31 appropriate drawings. Such instructions, procedures, and drawings must include
32 quantitative and qualitative criteria to be used to determine compliance.
- 33 R. Measures to ensure that purchased materials, equipment, and services conform to the
34 Contract Documents, Governmental Approvals, applicable Laws, Rules, and the
35 Design Documents. These measures must be consistent with Good Industry Practice
36 and must include provisions for source evaluation and selection, objective evidence of
37 quality furnished by Subcontractors and Suppliers, inspection at the manufacture or
38 vendor source, and examination of products upon delivery.
- 39 S. Procedures for identification and control of materials, equipment, and elements of the
40 Work. These procedures must be consistent with current industry standards to ensure
41 that identification of the item is maintained by appropriate means, either on the item or
42 on records traceable to the item, as necessary, throughout fabrication, erection,
43 installation and use of the item.
- 44 T. Procedures to ensure that materials, equipment, or Elements of the Work that do not
45 conform to requirements of the Contract Documents, Governmental Approvals,
46 applicable Laws, or the Design Documents are not used or installed, unless the IQF's
47 engineering judgment is used to substantiate and document the use of nonconforming
48 material. These procedures must include identification, documentation, segregation,

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- 1 disposition, and notification of ADOT and, if appropriate, Governmental Entities and
2 other affected third parties, as well as procedures for ADOT to review Nonconforming
3 Work.
- 4 U. Procedures for processing a Request for Information (RFI) to resolve discrepancies
5 and/or questions in the Plans and specifications, so that all changes are documented
6 and approved by Developer's design engineers and ADOT.
- 7 V. Procedures to indicate, by the use of markings, such as stamps, tags, labels, routing
8 cards, or other suitable means, the status of inspections and tests performed upon
9 individual items of the Work.
- 10 W. A program for inspection for each operation of all Work examinations, measurement
11 and test of materials, or Elements of the Work to assure quality.
- 12 X. A program for coordination of all inspection and testing with the inspections and tests
13 of Governmental Entities and Utility Owners.
- 14 Y. A program to ensure performance of all testing required to demonstrate that all
15 materials, equipment, and Elements of the Work perform satisfactorily for the purpose
16 intended and meet the standards specified in the Contract Documents. The program
17 must specify written test procedures which include provisions for ensuring that all
18 prerequisites for the given test have been met and that adequate test instrumentation
19 is available and used. The CQMP must require that test results be documented and
20 evaluated to ensure that test requirements have been satisfied. The CQMP must also
21 demonstrate how the IQF tracks its testing frequencies to ensure compliance with the
22 Contract Documents, and how that information will be transmitted to ADOT, in a
23 manner acceptable to ADOT at least monthly.
- 24 Z. Procedures for reviewing and approving quality acceptance test results, categorizing
25 test results in a manner acceptable to ADOT, transmitting quality acceptance test
26 results to ADOT in a format acceptable to ADOT for use in fulfilling its statistical
27 validation requirements, and working collaboratively with ADOT to resolve statistical
28 non-validation between IQF and ADOT test results.
- 29 AA. Measures to ensure that tools, gauges, instruments, and other measuring and testing
30 devices used in activities affecting quality are properly maintained, controlled,
31 calibrated, certified, and adjusted at specified periods to maintain accuracy within
32 industry standards.
- 33 BB. Procedures to control the handling, storage, shipping, cleaning, and preservation of
34 materials and equipment to prevent damage or deterioration.
- 35 CC. Procedures to ensure those conditions adverse to quality, such as failures,
36 malfunctions, deficiencies, defective material and equipment, deviations, and other
37 Nonconforming Work are promptly identified and corrected. The procedures must
38 ensure that the cause of the condition is determined and corrective action taken to
39 preclude repetition. Developer shall document and report in writing to ADOT and to
40 appropriate levels of Developer's management (a) the identification of the significant
41 condition adverse to quality, (b) the cause of the condition, and (c) the corrective
42 action.
- 43 DD. A comprehensive system of planned and periodic audits of Developer's CQMP to
44 determine adherence to and the effectiveness of the CQMP. IQF personnel must
45 perform the audits in accordance with the written procedures or checklists. Developer
46 shall document, review, and act upon audit results. Developer shall take follow-up
47 action, including re-audit of deficient areas following corrective action, where indicated.

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- 1 EE. Measures to control the receipt and issuance of documents, such as instructions,
2 procedures, training manuals, and drawings, including changes thereto, which
3 prescribe activities affecting quality. These measures must ensure that approved
4 documents, including authorized changes thereto, are reviewed for adequacy and
5 approved for release by authorized personnel of Developer and are distributed to and
6 used at the location where the prescribed activity is performed. The same
7 organizations that performed the original review and approval must review and
8 approve changes to documents, unless ADOT consents, in writing, to the use of
9 another responsible organization.
- 10 FF. The requirements and methods for controlling documents.
- 11 GG. Procedures and personnel to be used to assure that specified instrumentation is
12 installed and monitored in accordance with applicable specification.
- 13 HH. Procedures which define a detailed description of how material certificates will be
14 collected or received, how they will be verified in the field by inspection, how they will
15 be matched up and assigned to specific quantities of received material, how they will
16 be stored and organized to facilitate future audits, what system will be used for
17 tracking certificates and who will be responsible for managing the program. A
18 certificate of analysis must include all the information required for a certificate of
19 compliance and, in addition, must include the results of all tests required by the
20 specifications.
- 21 II. Procedures for ensuring compliance with Buy America requirements of 23 CFR
22 635.410, including tracking quantities and dollars of domestic and foreign steel. The
23 IQF must make this information available to ADOT.
- 24 JJ. Procedures for quality acceptance in the CQMP with respect to checking and verifying
25 the accuracy and adequacy of construction stakes, lines, and grades established by
26 Developer.
- 27 KK. A summary of the documentation that comprises the construction Quality Records, and
28 the procedures to make such Quality Records immediately available to ADOT for
29 review.
- 30 LL. A summary of anticipated construction audit documentation to be submitted to ADOT,
31 and the procedures to make sure all Results of Internal Audits for construction are
32 submitted to ADOT within the timeline required in Section GP 110.07.3 of the TPs.

33 **110.07.2.1.3.2 Inspection of Work**

34 All materials and each part or detail of the Work must be subject to inspection by the IQF and
35 ADOT. Developer shall allow the IQF and ADOT access to all parts of the work and shall be
36 furnished with such information and assistance by Developer as is required to make a complete
37 and detailed inspection.

38 Developer's failure to immediately discover any defective Work or materials does not in any way
39 prevent later rejection by ADOT when such defect is discovered nor obligate ADOT to final
40 acceptance.

41 When identified by ADOT, certain Governmental Entities, Utility Companies, or railroad
42 corporations may have the right to inspect the Work. Such inspection does not in any sense
43 make any Governmental Entity or any railroad corporation a party to the Agreement and does
44 not in any way interfere with the rights of either Party to the Agreement.

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1 110.07.2.1.3.3 Plant Access

2 ADOT will have full entry at all times to such parts of the plant as may be involved in the
3 manufacture or production of the materials being furnished. Developer shall ensure adequate
4 safety measures are provided.

5 110.07.2.1.3.4 Sampling Device

6 Developer shall ensure that all secondary crushers and screening plants used in producing
7 material is equipped with a mechanical sampling device or devices that either can be operated
8 from the ground or is accessible to the operator on a platform.

9 Developer shall ensure that the construction and operation of these devices move at a constant
10 rate across the full width of material and collect a representative sample of the falling column of
11 material from the discharge belt or chute while the plant is in operation. The sampling devices
12 must be substantially constructed so that a sample weighing up to 100 pounds can be taken.

13 The sampling devices must be equipped with necessary attachments to convey the samples to
14 the ground so that they can be safely and conveniently collected.

15 The sampling devices must be maintained in a satisfactory working condition so that samples
16 may be taken at any time, as required by ADOT.

17 110.07.2.1.3.5 Ice for Field Testing

18 Developer shall make commercial ice available to ADOT on Site for field testing verification
19 purposes.

20 110.07.2.1.3.6 Construction Quality Acceptance Staff Levels

21 The size of the construction quality acceptance staff must reflect the volume of quality
22 acceptance activities necessary for the Work in progress and Developer shall maintain such
23 staff size in accordance with the approved CQMP. The IQF staff must perform quality
24 acceptance oversight, inspection, and testing services typically performed by ADOT on
25 traditional projects, unless otherwise indicated in the TPs.

26 Developer shall update the construction quality acceptance staffing requirements as necessary
27 throughout the Construction Period to reflect changes in the actual construction schedule.
28 Developer shall ensure that adequate construction quality acceptance staff is available and that
29 CQMP activities are undertaken in a manner consistent with the Project Schedule and in a
30 manner that enables Developer to timely achieve the Substantial Completion Deadline and Final
31 Acceptance Deadlines.

32 110.07.2.1.3.7 Recording, Record Keeping and Documentation

33 Developer shall develop and maintain IQF Quality Records, including:

- 34 A. The IQF must maintain, electronically, a daily log of all inspections performed for both
35 Developer and Subcontractor operations in a format acceptable to ADOT and must be
36 made available to ADOT upon request. The daily inspection reports must identify
37 inspections conducted, results of inspections, location and nature of defects found,
38 causes for rejection, and remedial or corrective actions taken or proposed. The
39 responsible technician and supervisor must sign the daily inspection reports. Inspectors
40 must use ADOT approved checklists when performing his/her inspections. Developer
41 shall provide the results of the daily inspections to ADOT in an electronic format within
42 24 hours after the work shift.

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1 B. The IQF must be responsible for establishing an electronic system for recording all
2 material test results and certifications. The responsible technician and his/her supervisor
3 must sign the daily test reports. Developer shall provide the results of the daily test to
4 ADOT within 24 hours of test completion.

5 C. The IQF's inspection and materials quality program must electronically deliver the
6 laboratory and field test results to ADOT in a database format acceptable to ADOT. This
7 electronic reporting is intended to allow Developer and ADOT to make timely and
8 accurate decisions on workmanship and material quality issues.

9 The IQF must review and maintain all originals or copies of a Certificate of Compliance or a
10 Certificate of Analysis, as required, prior to the use of any materials or manufactured
11 assemblies requiring such a certificate be furnished according to applicable ADOT *Materials*
12 *Policy and Procedure Directives*. The certificates must be made available to ADOT.

13 Certificates must be specifically identified as either a "Certificate of Compliance" or a "Certificate
14 of Analysis".

15 Acceptance of materials by "Certificate of Compliance" or "Certificate of Analysis" must comply
16 with or exceed the requirements of Subsection 106.05 of the ADOT *Standard Specifications for*
17 *Road and Bridge Construction*, Section 1000 of the ADOT *Materials Testing Manual*, and
18 applicable ADOT *Materials Policy and Procedure Directives*.

19 **110.07.2.1.4 Maintenance Quality Management Plan**

20 Developer shall prepare a comprehensive Maintenance Quality Management Plan (MQMP)
21 which must fully incorporate the requirements of the Work during the Maintenance Period, with
22 the primary function of establishing Developer's self-monitoring process and monitoring the
23 performance of the Maintenance Services. The MQMP must be consistent with the design and
24 construction QA/QC requirements set forth in this Section GP 110.07.2.1.4. At a minimum, the
25 MQMP must specify:

- 26 A. Detailed QA system for validating the information, accuracy, and results of the MQMP.
- 27 B. Procedures to validate the data, times, dates, calculations and other information that are
28 the basis of Maintenance Services Noncompliance Events.
- 29 C. Methods and procedures that clearly define the distinction/authority/responsibility for the
30 administration of the MQMP.
- 31 D. That Developer, Suppliers, and Subcontractors designate an individual on each crew to
32 be responsible for performing daily field Inspections of the crew's Work and for preparing
33 a daily QC report to document the Inspections performed.
- 34 E. A Maintenance Services quality organization and staffing plan. The plan must show the
35 period of time that the quality staff member must be present on the Site, must include
36 resumes of the Key Personnel, and must state the experience/knowledge/skill levels of
37 the quality support staff.
- 38 F. Procedures for Inspecting, checking, and documenting the Work. Developer shall
39 perform Inspections, examinations, and measurements must be performed for each
40 operation of the Work to assure quality.
- 41 G. Procedures to ensure that all activities affecting the quality of the Work are
42 accomplished under controlled conditions using appropriate equipment for the task being
43 performed.
- 44 H. Measures to ensure that purchased materials, equipment, and services conform to the
45 Contract Documents, Governmental Approvals, applicable Laws, Rules, and the Design

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1 Documents. These measures must be consistent with current industry standards and
2 must include provisions for source evaluation and selection, objective evidence of quality
3 furnished by Subcontractors and Suppliers, Inspection at the manufacture or vendor
4 source, and examination of products upon delivery.

5 I. Procedures to indicate, by the use of markings such as stamps, tags, labels, routing
6 cards, or other suitable means, the status of Inspections, and tests performed upon
7 individual items of the Work.

8 J. Procedures to ensure that conditions adverse to quality, such as failures, malfunctions,
9 deficiencies, defective material and equipment, deviations and other Nonconforming
10 Work are promptly identified and corrected. The procedures must ensure that the cause
11 of the condition is determined and corrective action taken to preclude repetition. To
12 ensure corrective action is promptly taken, Developer shall document and report to
13 ADOT in writing and to appropriate levels of Developer's management the identification
14 of the significant condition adverse to quality, the cause of the condition and the
15 corrective action taken.

16 K. A summary of the documentation that will comprise the Maintenance Services Quality
17 Records, and the procedures to make such Quality Records immediately available to
18 ADOT for review.

19 L. A summary of anticipated Maintenance Services audit documentation to be submitted to
20 ADOT, and the procedures to make sure all Results of Internal Audits for Maintenance
21 Services are submitted to ADOT within the timeline required in Section GP 110.07.2.1 of
22 the TPs.

23 Prior to issuance of Maintenance NTP, Developer shall submit the MQMP to ADOT for approval
24 in ADOT's good faith discretion.

25 **110.07.2.1.4.1 Reporting**

26 Developer shall prepare a Maintenance Annual Report that must include the following elements:

27 A. An assessment of the actual Maintenance Services achievements versus the planned
28 goals established in the Maintenance Management Plan, as well as corrective actions
29 and measures to be taken in the ensuing year to ensure that any shortcomings are
30 corrected; and

31 B. An assessment of compliance with the various traffic control requirements and
32 limitations contained in the Contract Documents, and the traffic control plans developed
33 in accordance with the Technical Provisions, as well as any corrective measures taken
34 to correct any breach or violation of such requirements and limitations and any corrective
35 measures necessary to prevent any future breach or violation of such requirements and
36 limitations.

37 By each anniversary of the Substantial Completion Date, Developer shall submit the
38 Maintenance Annual Report to ADOT for review and comment.

39 **110.07.3 Submittals**

40 Table 110-10 reflects a nonexclusive list of Submittals identified in Section GP 110.07 of the
41 TPs and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
42 determine and submit all Submittals as required by the Contract Documents, Governmental
43 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
44 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
45 specified in the Contract Documents, Developer shall submit the following to ADOT in the
46 formats described in Section GP 110.10.2.2 of the TPs:

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Table 110-10 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Quality Management Plan General Requirements	2	2	1	Prior to issuance of NTP 2	GP 110.07.2.1
Quality Records	5	2	1	Upon request	GP 110.07.2.1
Results of Internal Audits	4	2	1	Within 5 Business Days of their completion	GP 110.07.2.1
Non-Conformance Reports	4	2	1	Upon issuance and resolution of the non-conformance	GP 110.07.2.1
Professional Services Quality Management Plan (PSQMP)	2	2	1	Prior to issuance of NTP 2	GP 110.07.2.1.2
Construction Quality Management Plan (CQMP)	2	2	1	Prior to issuance of NTP 2	GP 110.07.2.1.3
Maintenance Quality Management Plan (MQMP)	2	2	1	Prior to issuance of Maintenance NTP	GP 110.07.2.1.4
Maintenance Annual Report	4	2	1	By each anniversary of the Substantial Completion Date	GP 110.07.2.1.4.1
*Levels of Review 1. Sole discretion or absolute discretion approval (Section 3.1.3.1 of the Agreement) 2. Good faith discretion approval (Section 3.1.3.2 of the Agreement) 3. Reasonableness approval (Section 3.1.4.2 of the Agreement) 4. Review and comment (Section 3.1.5 of the Agreement) 5. Submit/receive and file or comment/no hold point (Section 3.1.6 of the Agreement)					

1 **110.08 Human Resource Management**

2 **110.08.1 General Requirements**

3 Developer shall perform all Work in compliance with the requirements of Section GP 110.08 of
 4 the TPs.

5 Developer acknowledges and agrees as follows: All personnel performing Work on the Project
 6 must have the experience, skill, and knowledge to safely and efficiently perform the Work
 7 assigned to them; all personnel performing Work on the Project must also have appropriate
 8 required professional licenses and certifications; and such licenses and certifications must be
 9 acquired prior to the individual starting work on the Project, except as otherwise noted below for
 10 Key Personnel. Developer shall ensure that all such personnel satisfy the applicable
 11 requirements set forth in this Section GP 110.08 of the TPs.

12 **110.08.2 Key Personnel**

13 The following provides a brief job description and requirements of the Key Personnel and other
 14 important personnel assigned to the Project. Developer acknowledges and agrees that all Key
 15 Personnel are required to be and shall ensure that they are on-site at the Project as set forth
 16 below. The number of years of relevant experience listed for each Key Personnel position

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1 represents a target goal for evaluation purposes and is not a mandatory, minimum requirement
2 for the position.

3 Replacement and/or staffing of all Key Personnel positions listed below must follow the
4 processes described in Section 9.6 of the Agreement.

5 All Key Personnel must be actively engaged full time. Developer shall appoint the Key
6 Personnel for the Project as follows:

- 7 A. Project Manager
- 8 B. Construction Manager
- 9 C. Design Manager
- 10 D. Quality Manager
- 11 E. Safety Manager
- 12 F. Public Relations Officer
- 13 G. ROW Acquisition Manager
- 14 H. Utility Adjustment Coordinator
- 15 I. Environmental Compliance Manager
- 16 J. Maintenance Manager
- 17 K. DBE/On-the-Job Training (OJT) Outreach and Compliance Manager

18 **110.08.2.1 Project Manager**

19 The Project Manager is responsible for the overall design, construction, quality, and contract
20 administration for the design and construction of the Project. This individual must be an
21 employee of (i) Developer, (ii) an Equity Member that must hold at least a 1/3 beneficial interest
22 in Developer, or (iii) the Lead Subcontractor, and must be on-site full time during the D&C
23 Period. The individual's relevant experience includes the following:

- 24 A. 20 years on complex highway infrastructure projects.
- 25 B. 10 years managing the design and construction of major urban freeway systems.
- 26 C. 5 years of major design-build-maintain project management of major urban freeway
27 systems.

28 **110.08.2.2 Construction Manager**

29 The Construction Manager must be assigned to the Project full time, must be an employee of (i)
30 Developer, (ii) an Equity Member that holds at least a 1/3 beneficial interest in Developer, or (iii)
31 the Lead Subcontractor, and must be on-site during the Construction Work. The individual's
32 relevant experience includes the following:

- 33 A. 15 years on complex highway infrastructure projects.
- 34 B. 10 years managing the construction of major urban freeway systems.
- 35 C. 5 years of major design-build construction management of major urban freeways.

36 **110.08.2.3 Design Manager**

37 The Design Manager is responsible for coordinating the individual design disciplines and is
38 responsible for ensuring that the overall Project design is completed and design criteria and
39 requirements are met. This individual must be assigned to the Project full time and must be an
40 employee of (i) Developer, (ii) an Equity Member that holds at least a 1/3 beneficial interest in
41 Developer, (iii) the Lead Subcontractor, or (iv) the Lead Engineering Firm, and must be under
42 the direct supervision of the Project Manager. This individual must be on-site full-time until

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1 completion of the Design Work and as required during the Construction Work of the Project.
2 This individual is responsible for design quality management and must have primary
3 responsibility for Design Work. This individual must be a registered or licensed professional
4 engineer, comparable to an Arizona registration, in some state or foreign jurisdiction at the time
5 of SOQ submittal, and must be a Professional Engineer by the date of contract award. The
6 individual's relevant experience includes the following:

- 7 A. 15 years on complex highway infrastructure projects.
- 8 B. 10 years managing the design of major urban freeways.
- 9 C. 5 years of major design-build project management of major urban freeway systems.

10 **110.08.2.4 Quality Manager**

11 The Quality Manager is responsible for establishing and supervising Developer's QA/QC
12 program for the design and construction of the Project. This individual must be an employee of
13 (i) Developer, (ii) an Equity Member that holds at least a 1/3 beneficial interest in Developer, or
14 (iii) the Lead Subcontractor, and must be under the direct supervision of an executive officer
15 above the level of, and under a line of authority independent of, the Project Manager. This
16 individual must be assigned to the Project full time and must be on-site during the performance
17 of Design Work and Construction Work. This individual must not be assigned any other duties or
18 responsibilities on the Project or any other projects. This individual must have the authority to
19 stop any and all Design Work or Construction Work. This individual must be a registered or
20 licensed professional engineer, comparable to an Arizona registration, in some state or foreign
21 jurisdiction at the time of SOQ submittal, and must be a registered Professional Engineer by the
22 date of contract award. The individual's relevant experience includes the following:

- 23 A. 15 years on complex highway infrastructure projects.
- 24 B. 5 years coordinating and managing quality programs on major freeway projects.
- 25 C. 5 years of major design-build construction management of major urban freeways.

26 **110.08.2.5 Safety Manager**

27 The Safety Manager is responsible for establishing and supervising Developer's safety program
28 and implementing and coordinating the Transportation Management Plan (TMP) per 23 CFR
29 630.1012. This individual must be an employee of (i) Developer, (ii) an Equity Member that
30 holds at least a 1/3 beneficial interest in Developer, or (iii) the Lead Subcontractor, and must
31 report directly to the Project Manager. This individual must be assigned to the Project full time
32 and must be on-site during Construction Work. This individual must be familiar with FHWA work
33 zone safety regulations and must have at least 10 years of experience working in roadway work
34 zone safety and OSHA Regulations. The individual's relevant experience includes the following:

- 35 A. 15 years on complex highway infrastructure projects.
- 36 B. 5 years coordinating safety programs on major freeway projects.
- 37 C. 5 years of major design-build construction management of major urban freeways.

38 **110.08.2.6 Public Relations Officer**

39 The Public Relations Office is responsible for supporting ADOT's effort to involve the community
40 in the Project. This individual can be an employee of (i) Developer, (ii) an Equity Member that
41 holds at least a 1/3 beneficial interest in Developer, (iii) the Lead Subcontractor, (iv) the Lead
42 Engineering Firm or (v) the Lead Maintenance Firm, or must have a contractual relationship with
43 Developer. This individual must report to the Project Manager. This individual must be assigned

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1 to the Project full time during the D&C Period. The individual's relevant experience includes the
2 following:

- 3 A. 10 years working on community relations programs.
- 4 B. 5 years coordinating public outreach programs on major urban freeway projects.
- 5 C. 3 years of community relations experience on major design-build construction projects
6 with a contract price of \$100 million per project

7 **110.08.2.7 ROW Acquisition Manager**

8 The ROW Acquisition Manager is responsible for coordinating the ROW acquisition services
9 and ROW relocation activities of Developer and for ensuring that the ROW issues are resolved
10 before Construction Work begins. This individual must be an employee of (i) Developer, (ii) an
11 Equity Member that holds at least a 1/3 beneficial interest in Developer, (iii) the Lead
12 Subcontractor, or (iv) the Lead Engineering Firm, or must have a contractual relationship with
13 Developer. This individual must report to the Project Manager. This individual must be assigned
14 to the Project full time and must be on-site during acquisition and relocation activities on the
15 Project. This individual must be a licensed Arizona real estate agent or broker by date of
16 contract award. The individual's relevant experience includes the following:

- 17 A. 10 years on complex highway infrastructure projects.
- 18 B. 5 years coordinating ROW acquisitions and ROW relocations for major urban freeways.

19 **110.08.2.8 Utility Adjustment Coordinator**

20 The Utility Adjustment Coordinator is responsible for coordinating the Utility Adjustment and
21 relocation requirements for Developer and leading the efforts to resolve any utility conflicts that
22 may arise during construction. This individual must be an employee of (i) Developer, (ii) an
23 Equity Member that holds at least a 1/3 beneficial interest in Developer, (iii) the Lead
24 Subcontractor, or (iv) the Lead Engineering Firm, or must have a contractual relationship with
25 Developer. This individual must report to the Construction Manager. This individual must be
26 assigned to the Project full time and must be on-site during the D&C Period of the Project. The
27 individual's relevant experience includes the following:

- 28 A. 10 years on complex highway infrastructure projects.
- 29 B. 5 years coordinating utility adjustments and relocations for major urban freeway projects.

30 **110.08.2.9 Environmental Compliance Manager**

31 The Environmental Compliance Manager is responsible for coordinating the environmental
32 permitting requirements for Developer and ensuring that issues are resolved before
33 Construction Work begins. This individual must be an employee of (i) Developer, (ii) an Equity
34 Member that will hold at least a 1/3 beneficial interest in Developer, (iii) the Lead Subcontractor,
35 or (iv) the Lead Engineering Firm, or must have a contractual relationship with Developer. This
36 individual must report to the Construction Manager. This individual must be assigned to the
37 Project full time and must be on-site during the performance of the Design Work and
38 Construction Work. The individual's relevant experience includes the following:

- 39 A. 10 years on complex highway infrastructure projects.
- 40 B. 5 years managing environmental compliance activities and permitting for major urban
41 freeway project.

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1 **110.08.2.10 Maintenance Manager**

2 The Maintenance Manager is responsible for supervising all Maintenance Work and for working
3 with the Project Manager to integrate maintenance planning and considerations into design and
4 construction decisions. This individual must be an employee of (i) Developer, (ii) an Equity
5 Member that will hold at least a 1/3 beneficial interest in Developer, or (iii) the Lead
6 Maintenance Firm, and must be present during the Maintenance Period. This individual must
7 serve as the point of contact during the Maintenance Period. The individual's relevant
8 experience includes the following:

- 9 A. 15 years maintaining complex highway infrastructure projects.
- 10 B. 10 years coordinating maintenance programs on major urban freeway project.
- 11 C. 5 years of management of reconstruction associated with major urban freeways.

12 **110.08.2.11 DBE/OJT Outreach and Compliance Manager**

13 The DBE/OJT Outreach and Compliance Manager must be assigned to the Project full time, be
14 available during the D&C Period and the Capital Asset Replacement Work, and must coordinate
15 with ADOT's General Engineering Consultant DBE/OJT Compliance Specialist, Project Federal
16 Compliance Committee, and ADOT's Business Engagement & Compliance Office to help
17 ensure Project goals are met. This individual must be responsible for DBE/OJT, equal
18 employment opportunity (EEO), and small business recruitment, outreach, management,
19 monitoring, oversight, and reporting. The individual's relevant experience includes the following:

- 20 A. Must have strong knowledge and understanding of the federal DBE, OJT, and EEO
21 program requirements.
- 22 B. 5 years of experience working with DBE, OJT, or EEO programs.

23 **110.08.3 Other Personnel**

24 **110.08.3.1 Professional Services Quality Manager**

25 Developer shall designate a Professional Services Quality Manager (PSQM) for the Project. The
26 PSQM must report directly to the Quality Manager and Developer shall ensure that the PSQM is
27 responsible for overall management of the PSQMP, including implementing and managing staff
28 for QA/QC functions. The PSQM must be responsible for implementing quality planning,
29 overseeing the Professional Services review, auditing, and coordinating with ADOT Professional
30 Services oversight review. The PSQM must be 100 percent committed to the Project through
31 the acceptance of the Final Design Documents by ADOT and must have no other role, duties, or
32 responsibilities. The PSQM and Construction Quality Manager (CQM) must be different people.
33 The individual's relevant experience includes the following:

- 34 A. 10 years of experience in design quality management and/or Professional Services
35 quality management of major urban freeway projects.

36 **110.08.3.2 Construction Quality Manager**

37 Developer shall designate a CQM for the Project. The CQM must report directly to the Quality
38 Manager and Developer shall ensure that the CQM is responsible for overall management of
39 the CQMP. The CQM must be responsible for implementing, monitoring, and adjusting the
40 processes to make certain that acceptable quality is achieved and maintained and for
41 implementing quality planning and coordinating with the Independent Quality Firm (IQF). The
42 CQM must be 100 percent committed to the Project and must have no other role, duties, or
43 responsibilities. The CQM must be authorized to stop any Construction Work that does not

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1 comply with the standards, specifications, or criteria established for the Project. The PSQM and
2 CQM must be different people. The CQM's relevant experience includes the following:

3 A. 10 years of experience in the construction quality management of major urban freeway
4 projects.

5 **110.08.3.3 Construction Quality Control Staff**

6 Developer's and Subcontractors' construction work force are all considered to be members of
7 Developer's construction QC staff as each and every one is responsible for the quality of the
8 Work. Personnel performing QC inspections must ensure quality of workmanship. QC sampling
9 and testing must ensure that materials meet the required specifications prior to acceptance
10 testing performed by the IQF. Personnel responsible for performing QC inspection must be
11 knowledgeable and receive training to perform their QC duties. Personnel performing QC
12 sampling and testing must be knowledgeable in the testing methods and procedures and do not
13 need to be direct employees of Developer, but cannot be employees of the IQF.

14 **110.08.3.4 Construction Independent Quality Manager**

15 Developer's IQF must identify an on-site Construction Independent Quality Manager (CIQM)
16 who must be responsible for management of the quality acceptance aspect of the CQMP. The
17 CIQM must review, approve, authorize, examine, interpret, and confirm methods or procedures
18 performed by Developer. The CIQM must be responsible for overseeing the quality acceptance
19 testing and inspection and coordinating with ADOT's oversight inspection and testing staff in
20 accordance with the requirements of the Contract Documents.

21 The CIQM must be a Professional Engineer and must be an employee of the IQF, with no
22 responsibilities in connection with the production of the Work. The CIQM must report jointly to
23 Developer's management team and ADOT. The CIQM must not report to any person or party
24 directly responsible for Design Work or Construction Work.

25 The CIQM must be 100 percent committed to the Project and must have no other role, duties, or
26 responsibilities. The CIQM must be authorized to stop any Construction Work that does not
27 comply with the standards, specifications, or criteria established for the Project. The PSQM and
28 CIQM must be different people.

29 **110.08.3.5 Independent Quality Acceptance Staff**

30 Developer shall provide an Independent Quality Firm (IQF) staff under the direction of the CIQM
31 to perform inspection and material sampling and testing of all Work performed and materials
32 incorporated into the Project. If approved in writing in advance by ADOT, qualified individuals
33 who are employees of or retained by manufacturers, vendors, or Suppliers may inspect certain
34 portions of Work.

35 The IQF testing and sampling staff must be employees of the IQF, with no responsibilities in
36 connection with the production of the Work, and must meet the requirements of Section VII of
37 the ADOT Materials Quality Assurance Program ("Sampling and Testing Personnel Qualification
38 Requirements"). The IQF staff must be experienced in highway inspection and material testing.
39 The training and experience of the construction quality acceptance staff must be commensurate
40 with the scope, complexity, and nature of the activity to be controlled and tested. Qualifications
41 must be consistent with ADOT's Materials Quality Assurance Program. Construction quality
42 acceptance staff must report to the CIQM.

43 The IQF staff must provide appropriate level of oversight and perform audits of the QC
44 Inspection and material sampling and testing operation. The construction quality acceptance
45 Inspection staff must check compliance of all material, equipment, construction, installations,

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1 and operations. Personnel assigned to perform inspection, testing, or monitoring of
2 characteristics for acceptance must not be those personnel performing or directly supervising
3 the Work being accepted.

4 **110.08.3.6 Maintenance QC Manager**

5 Developer shall assign an on-site Maintenance QC Manager who must be responsible for
6 management of the MQMP. The Maintenance QC Manager must not be involved with
7 scheduling or production activities, and must report directly to Developer's management team.
8 The Maintenance QC Manager is responsible for independently overseeing and performing QC
9 for the Maintenance Work. The Maintenance QC Manager reports, develops, and implements
10 corrective actions for any deviations to the methods and procedures contained in approved
11 MQMP in the performance of the Work.

12 **110.08.3.7 Maintenance Quality Control Staff**

13 The members of Developer's and Subcontractors' Maintenance Services work force are all
14 considered to be members of Developer's QC staff as each and every one is responsible for the
15 quality of the Work. Personnel performing QC inspection must ensure quality of workmanship
16 and QC sampling and testing must ensure that materials meet the required specifications.
17 Personnel responsible for performing QC inspection must be knowledgeable and receive
18 training to perform their QC duties. Should any sampling and testing be required during the
19 Maintenance Work, Maintenance QC Manager must be responsible for ensuring that sampling
20 and testing procedures and methods meet the requirements in the MQMP.

21 **110.08.3.8 ROW Quality Control Specialist(s)**

22 Developer shall designate a ROW Quality Control Specialist(s) for the Project. The ROW
23 Quality Control Specialist(s) must be responsible for internal QA/QC for Project ROW Work and
24 review all Submittals associated with ROW Exhibits, Legal Descriptions, title, appraisal,
25 acquisition, relocation, and eminent domain prior to the Submittal being delivered to ADOT for
26 review. The ROW Quality Control Specialist(s) must be familiar with ADOT procedures,
27 standards, and law pertaining to acquisition of Project ROW.

28 **110.08.3.9 Survey Manager**

29 Developer shall designate a Survey Manager for the Project. The Survey Manager must be the
30 point of contact for all survey Work and must be responsible for all survey Work, including
31 directing and reviewing Subcontractor survey Work. The Survey Manager must be familiar with
32 ADOT procedures and standards pertaining to ROW, design, and construction surveying. The
33 Survey Manager must be a registered or licensed land surveyor, comparable to an Arizona
34 registration, in some state or foreign jurisdiction at the time of Proposal submittal, and must be a
35 registered land surveyor in the State by the date of contract award. The individual's relevant
36 experience includes the following:

- 37 A. 10 years of experience with Right-of-Way, Design, and Construction surveys.
- 38 B. A minimum of 10 years of registration as a Land Surveyor.

39 **110.08.3.10 Geotechnical Manager**

40 Developer shall designate a Geotechnical Manager for the Project. The Geotechnical Manager
41 must be the point of contact for all geotechnical Work and must be responsible for all
42 geotechnical Work, including directing and reviewing Subcontractor geotechnical Work. The
43 Geotechnical Manager must be familiar with ADOT guidelines, procedures, and standards
44 pertaining to geotechnical investigation, analysis, and design. The Geotechnical Manager must
45 be a registered or licensed professional engineer, comparable to an Arizona registration, in

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1 some state or foreign jurisdiction at the time of Proposal submittal, and must be a Professional
2 Engineer by the date of contract award. The individual's relevant experience includes 15 years
3 of experience in matters relating to geotechnical subsurface exploration, geotechnical site
4 characterization, analysis, design, and construction of bridge foundations, retaining walls and
5 soundwalls, drainage structures, roadway embankments and roadway pavements, and
6 excavation and fill slopes in soil and rock.

7 **110.08.3.11 Rock Engineer/Blasting Professional**

8 Developer shall designate a Rock Engineer/Blasting Professional for the Project, if warranted by
9 Developer's design. The Rock Engineer/Blasting Professional must be the point of contact
10 regarding all blasting Work. The Rock Engineer/Blasting Professional must be responsible for
11 ensuring that all blasting Work is in accordance with the Contract Documents. The Rock
12 Engineer/Blasting Professional must be a registered or licensed professional engineer,
13 comparable to an Arizona registration, in some state or foreign jurisdiction at the time of
14 Proposal submittal, and must be a registered Professional Engineer by the start of the
15 associated Work. The individual's relevant experience includes a minimum of 10 years of
16 practical applied experience in geological engineering with an emphasis on blasting for rock
17 excavation, including designing and construction engineering of rock blasting and stabilization of
18 roadway cut slopes, blasting techniques for roadway cut slope excavation, blast monitoring,
19 control procedures for vibration, air-blast and fly rock, and rock fall protection measures.

20 **110.08.3.12 Blasting Supervisors**

21 Developer shall designate Blasting Supervisors for the Project, if warranted by Developer's
22 design. The Blasting Supervisors must be responsible for activities of the blasting crews, make
23 decisions on the allocation of drilling and blasting personnel, drilling and blasting equipment,
24 drilling and blasting methods, and be responsible for the procurement, storage, handling and
25 use of explosives, blasting materials and agents, and supplies. Blasting Supervisors must
26 demonstrate a minimum of 10 years of experience in the loading and firing of charges for rock
27 excavation for heavy civil construction.

28 **110.08.3.13 Blasters in Charge**

29 Developer shall designate Blasters in Charge for the Project, if warranted by Developer's
30 design. The Blasters in Charge must have all necessary licenses and permits required by
31 ADOT, the State, and other Governmental Entities having jurisdiction by the start of the
32 associated Work. The Blaster in Charge must directly supervise the activities of the blasting
33 crew(s) in the course of laying-out, drilling, loading and firing of charges for a particular blast.
34 The Blasting Supervisor may or may not also serve as a Blaster in Charge. The Blasters in
35 Charge must demonstrate a minimum of 7 years of experience in supervising the loading and
36 firing of charges for rock excavation.

37 **110.08.3.14 Hazardous Materials Manager**

38 Developer shall designate a Hazardous Materials Manager for the Project. The Hazardous
39 Materials Manager must provide expertise in the safe handling of Hazardous Materials required
40 to perform the Work and those that may be discovered or impacted during the Term. The
41 Hazardous Materials Manager must schedule and/or conduct Hazardous Materials training for
42 Developer's employees, verify all necessary certifications prior to and required for any handling
43 of Hazardous Materials, and maintain records of all Incidents involving Hazardous Materials and
44 notify the Environmental Compliance Manager, ADOT, and appropriate Governmental Entities
45 in writing of any such Incidents.

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1 The Hazardous Materials Manager must be a qualified professional with 40-hour HAZWOPER
2 certification. In addition, the Hazardous Material Manager must have at least 5 years of
3 experience in similar projects in developing remedial action plans or equivalent reports
4 necessary and acceptable to the ADOT in Hazardous Material investigation, discovery, and
5 remediation efforts of Hazardous Materials.

6 **110.08.3.15 Principal Investigator**

7 Developer shall designate a Principal Investigator for the Project. The Principal Investigator
8 must demonstrate the ability to comply with Arizona State Museum (ASM) standards as a
9 principal investigator and demonstrate experience in producing reports and curating materials
10 and documents to meet ASM and State Historic Preservation Office (SHPO) standards. The
11 Principal Investigator must possess a valid State Antiquities Act Permit and demonstrate an
12 understanding of the Section 106 of the *National Historic Preservation Act* process and
13 familiarity with cultural resources policies, procedures, and goals, through published reports
14 and/or past performance.

15 **110.08.3.16 Qualified Biologist**

16 Developer shall designate a Qualified Biologist for the Project. The Qualified Biologist must
17 demonstrate:

- 18 A. A bachelor's degree with an emphasis in biology, ecology, natural resource
19 management, or related science
- 20 B. Three years of experience in field biology or current certification of a nationally
21 recognized biological society, such as The Ecological Society of America or The Wildlife
22 Society
- 23 C. Previous experience with applying the terms and conditions of a Biological Opinion
- 24 D. The appropriate permit and/or training for conducting focused or protocol surveys for
25 listed species of concern to the Project including burrowing owls
- 26 E. Previous experience in writing biological review, survey, and monitoring documents
- 27 F. Previous experience in general federal threatened and endangered species habitat
28 evaluations
- 29 G. Previous experience in federal, State and tribal sensitive species habitat evaluations and
30 surveys
- 31 H. Previous experience in surveying for native plants and noxious weeds of central Arizona
- 32 I. Previous experience in handling reptiles

33 **110.08.3.17 Erosion Control Coordinator**

34 Developer shall designate an Erosion Control Coordinator (ECC) for the Project. The ECC must
35 be responsible for implementing, monitoring, and revising the approved SWPPP throughout the
36 Construction Period, for making the required inspections, and for implementing any other permit
37 requirements stipulated in the AZPDES general permit.

38 The ECC must be capable of identifying existing and predictable effects of Developer's
39 operations, and must have complete authority to direct Developer's personnel and equipment to
40 implement the requirements described herein, including prompt placement of corrective
41 measures to minimize or eliminate pollution and damage to downstream watercourses. The
42 ECC must also be familiar with procedures and practices identified in the SWPPP, and must
43 ensure that emergency procedures are up to date and available at the Site.

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1 The ECC must at all times be aware of Developer's work activities, schedule, and effect of the
2 Work on the environment, and must, at any time, be accessible to direct Developer's personnel
3 to replace or repair erosion control measures as necessary. The ECC must be present at the
4 Site on a full-time basis. Developer shall provide ADOT with a phone number through which the
5 ECC can be contacted at any time, 24 hours a day, 7 days a week, including holidays. The ECC
6 must be present at the jobsite within 24 hours of such call being placed.

7 The ECC must also be aware of and comply with all requirements of the AZPDES general
8 permit to address discharges at the Site associated with Developer's activities other than
9 construction, including staging areas, and other potential pollutant and material storage and
10 borrow areas.

11 The ECC must have successfully completed the mandatory two-day (16 hour) "Erosion Control
12 Coordinator" training class provided by the Associated General Contractors (Arizona Chapter);
13 telephone (602) 252-3926. No other training can be substituted. The ECC must maintain the
14 training class certification and must not let it expire.

15 In addition, the ECC must have documented experience equal to a minimum of 1 year from
16 either of the following two categories:

17 A. Experience in the implementation of SWPPPs. The ECC's experience must demonstrate
18 full-time responsibility for directly supervising construction personnel in the installation,
19 monitoring, and maintenance of control measures.

20 B. Experience in stabilization of disturbed areas in environments similar to those on the
21 Project. Experience in re-vegetation or restoration of disturbed areas. The ECC's
22 experience must demonstrate full-time responsibility for directly supervising personnel in
23 stabilization of disturbed areas.

24 In addition to the general ECC requirements, one of the following is required and must be
25 maintained for the duration of the Work.

26 A. Registration in the State as a Landscape Architect, with a minimum of 1 year of
27 experience in the fields of erosion control and sediment transport.

28 B. Registration as a Professional Engineer with a minimum of 1 year of experience in the
29 fields of erosion control and sediment transport.

30 C. Certification by the EnviroCert International, Inc. as a Certified Professional in Erosion
31 and Sediment Control.

32 **110.08.3.18 Hydraulics Engineer**

33 Developer shall designate a Hydraulics Engineer for the Project. The Hydraulics Engineer must
34 report directly to the Design Manager. Developer shall ensure that the Hydraulics Engineer is
35 responsible for all matters regarding hydraulics for the Project. The Hydraulic Engineer must be
36 a registered or licensed professional engineer, comparable to an Arizona registration, in some
37 state or foreign jurisdiction at the time of Proposal submittal, and must be a Professional
38 Engineer by the date of Award. Registration must be kept active throughout the duration of the
39 Work. The individual's relevant experience includes 5 years of experience with hydraulics
40 design for the projects on the Arizona State Highway System.

41 **110.08.3.19 Landscape Architect**

42 Developer shall designate a Landscape Architect for the Project. The Landscape Architect must
43 report directly to the Design Manager. The Landscape Architect must be responsible for the
44 landscaping and aesthetics for the Project and must be familiar with ADOT construction plan
45 preparation. The Landscape Architect must be a registered or licensed landscape architect,

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1 comparable to an Arizona registration, in some state or foreign jurisdiction at the time of
2 Proposal submittal, and must be a registered landscape architect in the State of Arizona by the
3 time of contract award. The individual's relevant experience includes 5 years of experience in
4 developing landscape and aesthetic plans.

5 **110.08.3.20 Irrigation System Designer**

6 Developer shall designate an Irrigation System Designer for the Project. The Irrigation System
7 Designer must report directly to the Landscape Architect. The Irrigation System Designer must
8 be responsible for the irrigation system design for the Project and must be familiar with ADOT
9 construction plan preparation. The Irrigation System Designer must have a minimum of 5 years
10 of experience designing on complex highway infrastructure projects using drip irrigation and
11 have familiarity with reclaimed irrigation water design requirements and regulations.

12 **110.08.3.21 Landform Graphic Layout Artist**

13 Developer shall designate a Landform Graphic Layout Artist for the Project. The Landform
14 Graphic Layout Artist must be responsible for the complete layout and adjustment, as needed,
15 of the landform graphics to meet actual site and visual conditions. The Landform Graphic Layout
16 Artist must be responsible for providing all layout labor assistance, materials, tools, equipment,
17 and roadway safety items necessary to layout the landform graphics. The Landform Graphic
18 Layout Artist must have completed work on two major landform graphic projects that involved
19 working with variable contours, grading and drainage, and site conditions with grade level
20 changes other just flat surfaces. The Landform Graphic Layout Artist must have experience in
21 the use of professional methods of construction, materials, and equipment for the construction
22 of large-scale landform graphics.

23 The Landform Graphic Artist must be on the landform graphic site during layout, layout
24 approval, and installation of graphic outlines and as required by ADOT during placement of
25 granite and rock mulch materials.

26 **110.08.3.22 Appraiser(s) and Appraisal Reviewer(s)**

27 Each Appraiser and Appraisal Reviewer must be certified by the Arizona Board of Appraisers as
28 a General Certified Real Estate Appraiser. Each Appraiser and Appraisal Reviewer must have a
29 minimum 5 years of experience in appraising real property for eminent domain purposes,
30 including partial taking appraisal, partial taking appraisal review, and expert witness testimony,
31 unless otherwise approved by ADOT. Each Appraiser and Appraisal Reviewer must be familiar
32 with appraisal and appraisal report review processes pursuant to the Uniform Standards of
33 Professional Appraisal Practice (USPAP) and Federal requirements in Title 49 CFR Part 24.
34 Both Appraisers and Appraisal Reviewers may be required to testify. The Appraisers and the
35 Appraisal Reviewers must have separate and distinct duties, and Appraisers must be employed
36 by different firms from the Appraisal Reviewers. Each Appraiser must submit three samples of
37 previous appraisal work prepared for eminent domain purposes prior to performing any Work.
38 All Appraisers preparing and signing appraisals must be approved by ADOT prior to performing
39 any appraisals on the Project.

40 **110.08.3.23 Relocation Agent(s)**

41 Each Relocation Agent must have a minimum of 3 years of experience in relocation assistance
42 for ROW projects pursuant to the Uniform Relocation Assistance and Real Property Acquisition
43 Policies Act. Relocation Agents responsible for business relocations must have an additional 2
44 years of experience with business relocation. A Relocation Agent's responsibilities must include
45 the following: Determining eligibility of all displacees; contacting all displacees and informing

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1 them of their benefits; maintaining a file of all documentation concerning the relocation of the
2 displacees; and extending all relocation assistance advisory services.

3 **110.08.3.24 Acquisition Agent(s)**

4 Each Acquisition Agent must be licensed either as a real estate sales person or broker pursuant
5 to the Arizona Revised Statutes, Title 32, Chapter 20, Article 2 or rules established by the
6 Arizona Real Estate Department, and must be familiar with appraisal and appraisal report
7 review processes pursuant to the Uniform Standards of Professional Appraisal Practice
8 (USPAP) and Federal requirements in Title 49 CFR Part 24. The Acquisition Agents must have
9 a minimum 3 years of experience in ROW negotiations. The Acquisition Agent's responsibilities
10 must include the following: contact with property owners on the Project to discuss the
11 acquisition of property needed for the Project, maintaining complete and accurate files of all
12 transactions and contacts with the property owners and/or their representatives, and actively
13 working toward a joint resolution to acquire the property with the property owner.

14 **110.08.3.25 Other ROW Personnel**

15 All other ROW personnel must have at least 3 years of experience in title review and curative
16 matters. ROW personnel's responsibilities must include the following: maintain complete and
17 accurate files of all transactions and contacts with the property owners and/or their
18 representatives, coordinate and clear all title issues, and assist at closing for properties acquired
19 for the Project.

20 **110.08.3.26 Deputy Maintenance Manager**

21 Developer shall designate a Deputy Maintenance Manager for the Project. The Deputy
22 Maintenance Manager must report directly to the Maintenance Manager and must be assigned
23 to the Project full time. The Deputy Maintenance Manager must have at least 5 years of
24 experience managing or leading maintenance or operations of federally funded controlled
25 access freeway system, including responsibility for structures, pavements, roadside
26 appurtenances, and traffic control. This individual must not be assigned any other duties or
27 responsibilities on this Project or any other projects. The Deputy Maintenance Manager or
28 designee must be available on call within 1 hour of emergency notification.

29 **110.08.3.27 ITS Design Manager**

30 Developer shall designate an ITS Design Manager for the Project. The ITS Design Manager
31 must report directly to the Design Manager. Developer shall ensure that the ITS Design
32 Manager is responsible for all matters regarding ITS elements for the Project. The ITS Design
33 Manager must be familiar with the overall functionality of the FMS, its field elements and their
34 technologies, and the connectivity between the field elements and their users. The ITS Design
35 Manager must be a registered or licensed professional engineer, comparable to an Arizona
36 registration, in some state or foreign jurisdiction at the time of Proposal submittal, and must be a
37 Professional Engineer by the date of contract award. Registration must be kept active
38 throughout the duration of the Work. The individual's relevant experience includes a minimum of
39 10 years of experience in leading ITS design.

40 **110.08.3.28 ITS Construction Manager**

41 Developer shall designate an ITS Construction Manager for the Project. The ITS Construction
42 Manager must report directly to the Construction Manager. Developer shall ensure that the ITS
43 Construction Manager is responsible for the construction, installation, and systems acceptance
44 testing (SAT) for the entire ITS system. The ITS Construction Manager must be familiar with the
45 overall functionality of the ADOT FMS, its field elements and their technologies, and the

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1 connectivity between the field elements and their users. The individual's relevant experience
2 includes the following;

- 3 A. A minimum of 10 years of experience in leading ITS construction, installation, and
4 system acceptance testing.
- 5 B. A minimum of 50 miles of previous fiber optic cable installation experience.

6 **110.09 Safety Management**

7 **110.09.1 General Requirements**

8 Developer shall perform all Work in compliance with the requirements of Section GP 110.09 of
9 the TPs.

10 Developer shall have sole responsibility for safety on the Site until Final Acceptance. Developer
11 shall ensure that all Developer employees and Subcontractors comply with the Safety
12 Management Plan, applicable Laws, and associated elements of Developer's injury and illness
13 prevention program.

14 Developer shall comply with OSHA Regulations, including 29 CFR, Part 1926, and 29 CFR, Part
15 1910, as well as all applicable standards of the U.S. Environmental Protection Agency (EPA),
16 the Arizona Department of Environmental Quality (ADEQ), and the U.S. Mine Safety and Health
17 Administration (MSHA). Developer shall maintain a copy of the specified OSHA Standards on
18 the Site at all times.

19 **110.09.2 Administrative Requirements**

20 **110.09.2.1 Safety Management Plan**

21 Developer shall develop, implement, and maintain a comprehensive written Safety Management
22 Plan that describes the policies, plans, training programs, Project controls and reporting,
23 Incident response plans, and enforcement for the safety of personnel involved in the Project and
24 the general public affected by the Project during the Term.

25 The Safety Management Plan must be Project-specific, and must include Work to be performed
26 by Subcontractors.

27 Developer's Safety Management Plan must:

- 28 A. Be consistent with the Project insurance requirements;
- 29 B. Be consistent with railroad safety requirements;
- 30 C. Clearly establish the safety organization described in Section GP 110.09.2.1.1 of the
31 TPs;
- 32 D. Describe the process of conducting safety orientation for all employees;
- 33 E. Describe Developer's alcohol and drug free workplace policy;
- 34 F. Describe employee training requirements;
- 35 G. Describe safety inspection procedures;
- 36 H. Describe procedures and policies for working in active traffic locations;
- 37 I. Describe Incident reporting procedures including near-miss Incidents;
- 38 J. Describe Developer's hazard communication program;
- 39 K. Describe Developer's management and auditing of the Safety Management Plan;
- 40 L. Describe personal protective equipment (PPE) requirements and policy;

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- 1 M. Describe safety procedures for Developer's employees working around and handling
2 Hazardous Materials;
- 3 N. Describe the availability of first-aid, medical, and emergency equipment and services at
4 the Site, including arrangements for emergency transportation;
- 5 O. Describe security procedures to prevent theft, vandalism, and other losses at the Site;
6 and
- 7 P. Describe the process for submittal of *OSHA Forms for Recording Work-Related Injuries*
8 *and Illnesses* to ADOT.

9 Prior to issuance of NTP 2, Developer shall submit the Safety Management Plan to ADOT for
10 approval in ADOT's good faith discretion.

11 **110.09.2.1.1 Safety Organization**

12 The Safety Management Plan must clearly establish the specific chain of command and specify
13 the lines of authority, responsibility, and communication with regard to safety compliance
14 activities. The Safety Management Plan must identify full-time dedicated safety professionals or
15 managers covering all production shifts. The Safety Management Plan must delineate
16 administrative responsibilities for implementing the Project safety program. The Safety
17 Management Plan must describe the process of including representatives from Developer and
18 all Subcontractors, as well as ADOT personnel working on the Project. The Safety Management
19 Plan must specify which on-site personnel have the authority to stop on-site activities when
20 unanticipated and/or uncontrolled hazards are recognized and also specify those personnel with
21 the authority to restart site activities after the previously unrecognized hazards have been
22 controlled. The Project Manager must be responsible for the overall health and safety
23 performance. The Safety Management Plan must specifically define the safety responsibilities of
24 each level of supervision.

25 **110.09.2.1.2 Process of Employee Safety Orientation**

26 The Safety Management Plan must describe the safety orientation process, including the
27 following:

- 28 A. The extent and nature of the Project
- 29 B. Any hazards that can typically be expected during the course of Work that are specific to
30 the job assignment
- 31 C. Required Work practices, job conduct, and injury-reporting procedures
- 32 D. Acquainting the employee with special Work and safety requirements at the site

33 **110.09.2.1.3 Employee Training Requirements**

34 Developer shall establish a safety training program that includes requirements for general and
35 Project-specific training. All levels of staff must be trained.

36 Developer shall conduct, at a minimum, weekly safety meetings that are relevant to the specific
37 types of Work at the Site, which comply with applicable Laws. Developer shall prepare
38 documentation of meeting content and employee attendance.

39 **110.09.2.1.4 Personal Protective Equipment Requirements and Policy**

40 The Safety Management Plan must define specific personal protective equipment (PPE)
41 requirements for all employees for each task. At a minimum, Developer shall provide a
42 consistent type of high-visibility safety vest (ANSI 107-2004 Class 2 daytime, Class 3 nighttime)
43 to be worn by all personnel, as well as an ANSI-approved hard hat, safety glasses with side
44 shields, and work boots, specific for the job being performed.

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1 Developer shall ensure that all vendors and visitors wear hard hats, as well as other required
2 PPE, while on the Site. Developer shall ensure that anyone not complying with these
3 requirements does not to enter the Site or is required to leave the Site. Developer shall
4 document all such Incidents. Developer's job hazard analysis must include all required PPE for
5 the specific task.

6 **110.09.2.1.5 Alcohol and Drug Free Workplace Policy**

7 Developer shall provide a policy for promoting a safe, alcohol-free, and drug-free workplace.
8 The policy must be consistent, fair, manageable, and subject to audit. The policy must provide
9 for disciplinary action or termination for an employee reporting for work under the influence of
10 alcohol or a prohibited substance or in possession of a prohibited substance. It must include the
11 policy at the Site and any pre-job site and post-incident drug testing to satisfy Project insurance
12 requirements.

13 **110.09.2.1.6 Safety Inspection Procedures**

14 The Safety Management Plan must describe safety inspection procedures of Work areas,
15 materials, and equipment to ensure compliance with the safety management program.
16 Developer shall schedule, conduct, and document safety inspections in all Work areas to
17 identify and reduce physical and/or environmental hazards that could contribute to injuries or
18 illnesses.

19 **110.09.2.1.7 Emergency Procedures**

20 As it may pertain to Developer staff and Site procedures, Developer shall develop an
21 Emergency action plan for the Project that specifies the procedures for each identified potential
22 Emergency, notification requirements, and training, and identify those individuals responsible for
23 implementing the plan, if the plan is activated. The potential for an Emergency (fire, explosion,
24 chemical release, etc.) exists at all construction areas and operational areas. The Emergency
25 action plan must identify the various response activities necessary to minimize the dangers and
26 confusion associated with an Emergency. The Emergency action plan must address fire,
27 explosions, Hazardous Materials, natural disasters, and civil disruptions.

28 **110.09.2.1.8 Incident Response Procedures**

29 The Safety Management Plan must include processes to investigate and report accidents and
30 Incidents and to retain safety records. Developer shall develop a list of Project-specific
31 requirements for documentation and reporting. Developer shall include the reporting of near-
32 miss Incidents. Developer shall provide verbal notification and a written report to ADOT of all
33 Incidents arising out of or in connection with the performance of the Work, whether on or
34 adjacent to the Site, which cause death, personal injury, or property damage. Developer shall
35 verbally notify ADOT within 1 hour from time of occurrence of an Incident (or Developer's
36 discovery of the occurrence thereof) causing public injury, and include date and time, location,
37 brief description, extent of property damage, and extent of injuries. When such Incidents take
38 place, Developer shall promptly initiate an investigation and notify appropriate individuals
39 (ADOT, etc.).

40 Developer shall maintain a 24-hour-per-day, 7-day-per-week Emergency contact telephone
41 number with a responsible individual in charge, empowered to take any necessary actions on
42 behalf of Developer.

43 **110.09.2.1.9 Job Hazard Analysis and Communications**

44 Developer shall provide policy and procedures for job hazard analysis and how that analysis is
45 communicated to forepersons and workers as the day's work and tasks are outlined. All

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1 employees involved with the task must discuss the hazards anticipated, equipment needed to
2 work safely, and PPE to be provided and worn. The communications may include on-site
3 gatherings where the task is to be performed. Developer shall give employees an opportunity to
4 provide input regarding task steps, hazards identified, and appropriate control measures.
5 Developer shall document all job hazard analysis training.

6 **110.09.2.1.10 Materials Safety Procedures and Communication Policy**

7 Developer shall ensure that the Safety Management Plan describes safety procedures and
8 communication policy for Developer's employees working around and handling Hazardous
9 Materials.

10 Developer shall provide employees with information and training regarding any Hazardous
11 Materials to which they may be exposed. Additionally, Developer shall ensure that Hazardous
12 Materials are not delivered, stored, or used at the Site, unless they are properly labeled, tagged,
13 or marked and the safety data sheets are readily available.

14 **110.09.2.1.11 Managing and Auditing of Safety Management**

15 The Safety Management Plan must describe the audit process for safety management. The
16 Safety Management Plan must describe frequency and scope of audit, how it is to be
17 conducted, how the results are to be communicated, and how findings and corrective actions
18 are to be tracked.

19 **110.09.2.1.11.1 Safety Performance Analysis**

20 Developer shall complete a detailed analysis of safety performance each quarter. Developer
21 shall conduct the safety performance analysis to document that Developer and its
22 Subcontractors are performing Work in a safe way and in compliance with the Safety
23 Management Plan and applicable Laws. The analysis must define and measure specific
24 proactive program elements designed to prevent Incidents, such as employee training and
25 orientations, toolbox meetings, audits and inspections, immediately dangerous to life and health
26 interventions, etc. Developer shall document the measures to verify proactive efforts relative to
27 safety performance results. Developer shall prepare a Safety Performance Analysis Report that
28 includes the analysis and results as described in this Section GP 110.09.2.1.11.1. Each quarter
29 by the 15th of the month after the quarter ends, Developer shall submit a Safety Performance
30 Analysis Report to ADOT.

31 If the safety performance analysis reveals an error or deficiency, Developer shall take
32 immediate measures to correct the observed error and immediately prepare a Safety Corrective
33 Measure(s) that includes a description of all measures to correct the safety error or deficiency.
34 Developer shall immediately submit the Safety Corrective Measure(s) to ADOT.

35 **110.09.2.1.11.2 Safety Results and Statistics**

36 Developer shall prepare a Monthly Safety Report detailing the specific types of injuries, Incident
37 rates, corrective actions taken to prevent reoccurrence of similar Incidents for Developer and all
38 Subcontractors, and individual supervisor safety performance evaluations. Within 5 Business
39 Days after the end of the month, Developer shall submit the Monthly Safety Report to ADOT.

40 **110.09.2.1.11.3 Periodic Updates to Safety Management Plan**

41 Developer shall update the Safety Management Plan yearly to incorporate corrective action
42 recommendations and other minor clarifications. At a minimum, every year or as Work scope
43 changes the workplace environment, a major regulation change requirement occurs, or at the

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1 request of ADOT, Developer shall review and update the Safety Management Plan for
2 compliance with regulations, policies, and procedures.

3 **110.09.2.2 Temporary Fencing and Steel Plating**

4 In conjunction with the Safety Management Plan, Developer shall provide 72-inch temporary
5 chain link fencing, or ADOT approved equal, around all major structure construction areas (i.e.,
6 bridges, pump houses, drop structures, retaining walls, etc.) and around any unattended
7 excavation deeper than 4 feet, with slopes steeper than 1:2 (V:H). Temporary fencing must
8 completely enclose the referenced construction activity and must be secured after normal
9 working hours to prevent unauthorized access.

10 Developer shall limit open utility trenches to 50 feet in length, except for cast-in-place pipe
11 installations during non-working hours. Developer shall cover all open trenches with steel plates.
12 Developer shall prepare an Open Trench Safety and Security Plan for all trenches greater than
13 50 feet in length that describes and details how Developer intends to construct the trench and to
14 make it safe and secure for workers and the general public. Within 10 Business Days of
15 excavating trenches greater than 50 feet in length, Developer shall submit the Open Trench
16 Safety and Security Plan to ADOT for approval.

17 **110.09.2.3 Audits/Inspections**

18 ADOT reserves the right to perform audits and inspections to confirm that Developer is
19 complying with health and safety rules and procedures. ADOT has the right to have a qualified
20 safety representative perform audits and/or inspections on a periodic basis.

21 **110.09.2.4 Noncompliance with the Safety Program**

22 ADOT, through ADOT designated personnel, has the authority to stop any activity that
23 constitutes or is perceived to present a threat of imminent danger. If any conditions or activities
24 may present an imminent danger that could result in serious injury, death, or extensive property
25 damage, Developer shall stop the affected portion of the Work immediately and shall not
26 recommence until the practices or conditions are corrected to the satisfaction of ADOT.
27 Developer shall discipline and/or dismiss employees who violate established safety rules and
28 regulations. This includes immediate termination for serious violations, repeated violations, or
29 the refusal to follow health and safety rules. Developer shall be solely responsible for all cost or
30 schedule impacts, in the event the Project or any portion thereof is stopped or shut down by any
31 Governmental Entity because of an unsafe condition.

32 **110.09.3 Submittals**

33 Table 110-11 reflects a nonexclusive list of Submittals identified in Section GP 110.09 of the
34 TPs and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
35 determine and submit all Submittals as required by the Contract Documents, Governmental
36 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
37 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
38 specified in the Contract Documents, Developer shall submit the following to ADOT in the
39 formats described in Section GP 110.10.2.2 of the TPs:

Table 110-11 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Safety Management Plan	2	2	1	Prior to issuance of NTP 2	GP 110.09.2.1

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Table 110-11 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Safety Performance Analysis Report	5	2	1	Each quarter by the 15th of the month after the quarter ends	GP 110.09.2.1.11 .1
Safety Corrective Measures, as needed	5	2	1	Immediately	GP 110.09.2.1.11 .1
Monthly Safety Report	5	2	1	Within 5 Business Days after the end of the month	GP 110.09.2.1.11 .2
Open Trench Safety and Security Plan	3	2	1	Within 10 Business Days of excavating trenches greater than 50 feet in length	GP 110.09.2.2
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1 **110.10 Submittal Review Management**

2 **110.10.1 General Requirements**

3 Developer shall perform all Work in compliance with the requirements of Section GP 110.10 of
 4 the TPs. Section GP 110.10 of the TPs includes requirements related to Submittals and the
 5 Submittal review process for all Submittals required by the TPs. Developer shall be responsible
 6 for obtaining all required approvals from the applicable Governmental Entities, Utilities, and
 7 railroad .

8 **110.10.2 Administrative Requirements**

9 **110.10.2.1 General**

10 Developer shall provide Submittal packages via the Project document management system in
 11 accordance with the Contract Documents and the PMP along with all supporting information
 12 necessary for ADOT, Governmental Entities, Utility Owners, and railroads to conduct a review
 13 and to ensure that the design is progressing appropriately. Submittal packages must include the
 14 following:

- 15 A. Administrative documents (PMP, other plans, etc.)
- 16 B. Design Documents
- 17 C. Construction Documents

18 **110.10.2.2 Submittal Format**

19 Submittal packages must have a unique alphanumeric identifier that remains with the package
 20 and identifies each Submittal stage (e.g., Initial Design Submittal, Final Design Submittal, RFC
 21 Submittal, etc.). The alphanumeric identifier must remain constant and track the design package
 22 through the life of the Project.

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- 1 Developer shall submit all Submittal documents in hardcopy and electronic format as specified
 2 in Table 110-12 unless otherwise specified in the Contract Documents.

Table 110-12 Submittal Format				
Submittal Stage/Deliverable	Hardcopy		Electronic	
	Paper	11x17	Native	PDF
Administrative Documents (e.g., PMP, Project Schedule)	X		X	X
Specifications, Technical Reports, Calculations, Modeling, Input and Output Files, etc.	X		X	X
Initial Design Submittal		X	X	X
Final Design Submittal		X	X	X
RFC Submittal		X	X	X
Final Design Documents Submittal		X	X	X
Shop and Working Drawings	X			X
Request for Information				X
Design Changes		X		X
Record Drawings	X		X	X
Other Governmental Entities, Utility Companies, and railroad Submittals*				X
Note:				
* Developer shall determine the additional format requirements required by the applicable Governmental Entity, Utility Company, and/or railroad.				

3 **110.10.2.3 CAD Requirements**

- 4 Developer shall prepare all drawings, plans, and exhibits in accordance with the ADOT 2010
 5 *ADOT Drafting Guides for Use in Office and Field* (Drafting Guide) and the Computer Aided
 6 Design (CAD) Requirements included on [http://www.azdot.gov/business/engineering-and-](http://www.azdot.gov/business/engineering-and-construction/CADD)
 7 [construction/CADD](http://www.azdot.gov/business/engineering-and-construction/CADD), unless otherwise modified by the TPs.

8 **110.10.2.4 Hardcopy Format**

- 9 Developer shall prepare all Plans on sheets 22 inches in height and 34 inches in length with
 10 1-1/4-inch margins on the left and right sides, and 3/4-inch margins on the top and bottom,
 11 unless otherwise noted in the Contract Documents. A blank space, 4 inches wide by 3 inches
 12 high, must be left inside the margin in the lower right hand corner. All Plans must be made in
 13 such a manner that clear and legible copies can be made from them. Developer shall prepare
 14 half-size copies on standard 11 inch x 17 inch sheets. The number of hardcopies indicated in
 15 the "Nonexclusive Submittals List" tables in the TPs for Plans indicates half-size copies.
 16 Developer shall prepare exhibits on 8.5 inch x 11 inch, 11 inch x 17 inch, or 22 inch x 34 inch
 17 sized sheets.

- 18 All documents, reports, and calculations must be prepared on 8.5 inch x 11 inch sheets, unless
 19 otherwise noted in the Contract Documents.

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1 **110.10.2.5 Electronic Format**

2 Developer shall submit, as identified in the Contract Documents, electronic Submittals
3 compatible with existing ADOT program systems and/or software. Systems and software
4 currently being used by ADOT include the following:

- 5 A. Microsoft Windows 7 (operating system)
- 6 B. Microsoft Office with Word, Excel, Outlook, and Media Player
- 7 C. Bentley's MicroStation V8i (2D and 3D files)
- 8 D. Bentley's InRoads Suite SS2 (Existing Ground Model and design files) or newer
- 9 E. SignCAD
- 10 F. HEC-RAS
- 11 G. FLO2D
- 12 H. HEC-HMS
- 13 I. Oracle Primavera P6

14 Developer shall submit electronic files to ADOT as identified in the Contract Documents on
15 electronic media (e.g., CDs, DVDs, flash drives) or electronically through the EDMS. Developer
16 shall submit Plans in both full-size (22 inch x 34 inch) and half-size (11 inch x 17 inch) PDFs.

17 **110.10.2.5.1 Existing Ground Model**

18 Developer shall create an integrated-model of the existing condition to create a digital terrain
19 model (DTM) using Bentley's InRoads/Site/Survey Select CAD. The existing ground model must
20 include existing ground surface and subsurface elements (including the best available
21 information for: drainage structures, Utilities, and bridge and wall foundations), features utilizing
22 data from light detection and ranging (LiDAR), subsurface Utility evaluation, field surveys, and
23 existing plans data collection including currently available LiDAR or other existing ground
24 surface data (.dtm or .tin format). Developer shall verify the DTM for accuracy through field
25 procedures of locating well-defined and random check points (not included in the creation of the
26 DTM surface) systematically dispersed throughout the Site and compared to the DTM.
27 Developer shall comply with the requirements in the following manuals available from ADOT at
28 <http://www.azdot.gov/business/engineering-and-construction/EngineeringSurvey> in creating
29 DTMs: (1) *Manual for Field Surveys*, (2) *Location Survey P-codes for Bentley InRoads*, and (3)
30 *General Specifications for Photogrammetric Mapping*. Developer shall include the existing
31 ground model in both DTM and LandXML format with the 3D Models.

32 **110.10.2.5.2 InRoads Files (Design Files)**

33 Developer shall prepare InRoads Design Files including template library (*.itl), the preference
34 files (*.xin), alignment files in both *.alg and LandXML formats, and new design surfaces in
35 LandXML format.

36 **110.10.2.5.3 MicroStation Files (3D and 2D)**

37 Developer shall utilize 3D methodologies and techniques to develop the geometric design and
38 3D design model for the Project. The 3D model must include 3D graphical elements including
39 roadway components for horizontal and vertical alignments, contours, superelevation transitions
40 limits, and existing and proposed finish grade triangles that are representative of the design
41 model and DTM surface files.

42 Developer shall include the following key existing and proposed 3D design features in the 3D
43 Model:

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- 1 A. Roadway (including intersections, turnouts, driveways, curb and gutter, barrier,
2 sidewalks, guardrail and pads, etc.);
- 3 B. Drainage (including pipes, catch basins, manholes, and junction structures);
- 4 C. Structures (including sufficient detail to show top of deck surface, structure type, bottom
5 of beam surface, and pier, abutment and retaining wall locations)
- 6 D. Utilities (including zones of protection);
- 7 E. Signing (including overhead span or cantilever sign structure locations and structure
8 type);
- 9 F. Lighting (including pole and foundation locations);
- 10 G. Signals (including controller, pole and foundation locations); and
- 11 H. Existing and proposed railroad horizontal and vertical alignments, superelevation data,
12 surfaces and features as follows:
 - 13 1. All elements of the Work;
 - 14 2. Foundations, including drilled shafts, of columns, abutments, retaining walls, high
15 mast lighting, and any other ground penetration to be shown to scale of width and
16 depth; and
 - 17 3. Existing structures to remain inside of the Project ROW.

18 Developer shall prepare all Plans in 2D using Bentley's MicroStation.

19 **110.10.2.5.4 3D Models, 4D Model, and Visual Animation**

20 Developer shall use 3D, 4D, and visual animation techniques to improve quality, reduce risk,
21 and improve Developer, ADOT, and Project Stakeholder collaboration; in communicating the
22 construction sequence, existing and design feature conflict avoidance, and provisions for
23 maintenance of traffic. Developer shall prepare 3D Models, a 4D Model Simulations, and Visual
24 Animation for the Project.

25 **110.10.2.5.4.1 General**

26 Developer shall prepare the 3D Models, 4D Model Simulations, and Visual Animation in any
27 commercially available software (e.g., Bentley, Autodesk, etc.).

28 **110.10.2.5.4.2 3D Model**

29 Developer shall prepare 3D Models that contain existing conditions in 3D format and the
30 proposed 3D key design features. 3D Models are virtual models that contain representations of
31 physical objects in 3D (x, y, and z) as surfaces or solids. 3D Models must include existing
32 conditions model(s), design model(s), and construction model(s).

33 The existing condition 3D Model(s) must contain existing ground surface and certain subsurface
34 elements including drainage structures, utilities and zones of protection, and bridge and wall
35 foundations, shown on the Plans or the existing ground surface data (*.dtm).

36 Design and construction 3D Models must incorporate proposed 3D design features for the
37 following elements of Work:

- 38 A. Roadway
- 39 B. Drainage (including pipes, catch basins, and junction structures)
- 40 C. Structures (including sufficient detail to show top of deck surface, structure type, bottom
41 of beam surface, pier locations, abutment locations, and retaining wall locations, and
42 clearances)

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- 1 D. Foundations, including all ground penetrations shall be shown to scale of width and
- 2 depth
- 3 E. Utilities (including zones of protection)
- 4 F. Signing (including overhead signs and foundations)
- 5 G. Signals & lighting (including controller, pole and foundation locations)

6 Prior to the first pre-construction coordination meeting, Developer shall submit the 3D Models to
7 ADOT for review and comment.

8 **110.10.2.5.4.3 4D Model Simulation**

9 Developer shall prepare 4D Model Simulations that presents the key design features in a time
10 scaled appearance of model elements/objects. The 4D Model Simulations must be an
11 aggregation of virtual models that are linked to the Project Schedule that shows an ordered,
12 time scaled appearance of model elements/objects. The Project Schedule that is integrated to
13 the 3D Model (4D model) must be kept current (all revisions and updates) on a monthly basis.
14 The 4D Model Simulations must contain one or more virtual models and at least one link to the
15 Project Schedule. 4D Model Simulations must include the utility requirements in the Contract
16 Documents. With every Project Schedule Submittal, Developer shall submit the 4D Model
17 Simulations to ADOT for review and comment.

18 **110.10.2.5.4.4 Visual Animation**

19 Developer shall prepare a Visual Animation that is a walkthrough of a virtual model of the
20 constructed Project that supports movement and display and contains photo-simulations to
21 more accurately depict existing and construction build-out conditions both under and above
22 ground. Visual animations prepared by Developer must be based on either 3D Models or 4D
23 models. Prior to Substantial Completion, Developer shall submit the Visual Animation to ADOT
24 for review and comment.

25 **110.10.2.6 Design Review Process**

26 Developer shall not be relieved of its responsibility for the satisfactory completion of the Work in
27 accordance with the Contract Documents by ADOT's participation in design reviews. ADOT may
28 require resubmittal of any Design Documents and/or Construction Documents, as it deems
29 appropriate. ADOT will have the right to refuse and reject any Submittal that does not comply
30 with the Contract Documents, including QA/QC requirements. If any Submittal is rejected,
31 Developer shall notify all recipients to remove all copies from circulation. Developer shall
32 redistribute the replacement Submittal to ADOT and other appropriate Governmental Entities,
33 as authorized by ADOT.

34 ADOT will provide review comments to Developer numbered in a manner corresponding to the
35 drawing or report page in question. Developer shall provide space after each comment for a
36 brief response by Developer. Developer is advised that comments on the Submittals received
37 from parties other than ADOT may not follow the above-described ADOT comment format. In
38 addition, Developer may receive separate comment packages from each party that reviews a
39 Submittal. With the PSQMP, Developer shall prepare and submit a Comment Resolution Form
40 to ADOT. Developer shall compile all Submittal review comments on a Comment Resolution
41 Form. The Comment Resolution Form is a living document in which Developer shall incorporate
42 all comments and resulting resolutions for the Submittal package for the duration of the
43 Submittal. Developer shall include previous Submittal comments, if applicable, and Comment
44 Resolution Form(s) with each subsequent Submittal identified with an alphanumeric tracking
45 number corresponding to the package submission in accordance with Section GP 110.10.2.2 of

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1 the TPs. With the subsequent Submittal, Developer shall prepare and submit written Review
2 Comment Responses to ADOT.

3 Developer shall schedule a comment resolution meeting (CRM) to address unresolved
4 comments. Developer may request ADOT to waive a CRM. ADOT may waive a CRM at its sole
5 discretion. The purpose of the CRM is to discuss Developer's responses to review comments,
6 determine which of the review comments Developer shall incorporate into the Work, and
7 discuss and resolve the pending comments. More than one CRM per Submittal may be
8 necessary to discuss all review comments provided to Developer. Developer shall attend the
9 CRM. Within 5 Business Days of the CRM, Developer shall prepare and submit CRM Notes to
10 ADOT. The Project Manager, Design Manager, responsible engineer, and all Developer staff
11 requested by ADOT must attend the CRM. The Parties will escalate review comments not
12 resolved after the first complete CRM to the CRM comment resolution board consisting of
13 ADOT, Project Manager, and Design Manager. The Parties will use the Project's partnering
14 process in accordance with Section 22.1 of the Agreement to address review comments not
15 resolved at the CRM comment resolution board.

16 Developer shall address all Initial Design Submittal comments by the Final Design Submittal
17 prior to submitting the RFC Submittal. Developer acknowledges and agrees that resubmittal of
18 the Final Design Documents, RFC packages, or other design Submittals may be required by
19 ADOT. Developer shall resubmit the Final Design Documents as many times as necessary to
20 obtain approval of the Final Design Documents. No additional compensation and/or time
21 extension is allowed for any resubmittals.

22 **110.10.2.6.1 Over-the-Shoulder Reviews**

23 Over-the-shoulder reviews are informal examinations by ADOT of Design Documents during the
24 Project design process and are not considered formal reviews as specified in Section GP
25 110.10.2.7 of the TPs. Over-the-shoulder reviews are mainly intended to assess whether the
26 requirements and design criteria of the Contract Documents are being followed and whether
27 Professional Services Quality Management Plan (PSQMP) activities are being undertaken in
28 accordance with the QMP.

29 The intent of these reviews is to check for concept, level of detail, design criteria, and patent
30 flaws. Comments made by ADOT are considered nonbinding. Developer shall conform to the
31 requirements of the Contract Documents. These reviews are not intended to routinely include
32 detailed calculation or drawing reviews, although ADOT will have the right to perform detailed
33 reviews of any item at any time. If mutually agreed upon between the Parties for specific review
34 items, the over-the-shoulder review may consist of an exchange of electronic files between
35 Developer's designer and ADOT.

36 The QMP must define the frequency, timing, content, and format of the over-the-shoulder
37 reviews. Developer shall schedule over-the-shoulder reviews with ADOT during the course of
38 the development of each design package. The over-the-shoulder reviews are not critical activity
39 points that restrict the progress of design. They are simply reviews of the design as it
40 progresses and opportunities for ADOT to provide comments and feedback on the design.

41 If over-the-shoulder reviews are performed, ADOT will conduct them, as appropriate, in either
42 Developer's office or at ADOT's offices, and in the presence of Developer's personnel with the
43 intent to minimize disruption of ongoing Design Work. Formal assembly and submittal of
44 drawings or other documents may not be required. The review may be of progress prints,
45 computer images, draft documents, working calculations, draft specifications or reports, or other
46 Design Documents.

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1 ADOT will have no obligation to conduct over-the-shoulder reviews.

2 **110.10.2.6.2 Segment Limits Map and Submittal Schedule**

3 Developer shall prepare a Segment Limits Map and Submittal Schedule for the development,
4 scheduling, and characterization of Developer's design segment plan. The intent of the
5 Segment Limits Map and Submittal Schedule is to enable ADOT to adequately plan its review
6 resources.

7 Developer shall prepare a Segment Limits Map that identifies how Developer intends to divide
8 the Project into design segments for the intent of submitting design Submittal packages to
9 ADOT. ADOT will not accept or review a single design package for the entire Project, with the
10 exception of the Final Design Documents Submittal. Developer may, with prior approval by
11 ADOT, modify the Segment Limits Map as the design effort progresses.

12 Developer shall prepare a Submittal Schedule that identifies all design Submittal packages up to
13 and including RFC Submittal for each design segment Developer intends to submit to ADOT.
14 The Submittal Schedule must identify individual Submittal packages for each bridge and wall
15 structure.

16 Prior to issuance of NTP 2, Developer shall submit the Segment Limits Map and Submittal
17 Schedule to ADOT for approval in ADOT's good faith discretion. Developer may request, as part
18 of the Segment Limits Map and Submittal Schedule deliverables, authorization from ADOT for
19 the right to make weekly Submittals in excess of the stipulated maximum number during the
20 design period. ADOT will have the right to withhold approval if it deems the request
21 unreasonable or if ADOT personnel cannot accommodate the additional reviews.

22 Developer shall incorporate in the Project Schedule the review periods for each Submittal
23 package to be submitted as identified in the Segment Limits Map. ADOT will not guarantee any
24 specific review period for Governmental Entities, Utility Companies, and railroads. The review
25 period for each review to be performed by a Governmental Entity is established by the
26 Governmental Entity, at its discretion, after a Submittal package has been provided to the
27 Governmental Entity.

28 **110.10.2.6.3 Submittal Review Periods**

29 Developer shall coordinate with other Governmental Entities, Utility Owners, and railroads to
30 determine those entities' submittal review requirements.

31 Developer acknowledges and agrees that Submittals at all Submittal stages require the review
32 period duration applicable for that category of Submittal as reflected in Table 110-13 below.
33 Review times are applicable only for the submission of complete and comprehensive
34 documents that are deemed acceptable by ADOT for review.

Table 110-13 Submittal Review Periods		
Category	Submittal To	Review Period (Business Days)
<u>Professional Services</u>		
A	ADOT	10
B	ADOT (Design Variances)	20
C	ADOT (Design Exceptions and Change of Access)	20 ²

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Table 110-13 Submittal Review Periods		
Category	Submittal To	Review Period (Business Days)
D	ADOT (ROW Submittals)	10 ¹
E	Other Governmental Entities, Utility Companies, and railroads	Varies ²
Construction		
F	Design Changes	10 ²
G	Record Drawings	20 ²
Notes:		
1. Additional requirements for ADOT review of ROW Submittals are further described in <u>Section GP 110.10.2.6.3.1 of the TPs.</u>		
2. Developer shall coordinate with other Governmental Entities, Utility Companies, and railroads to determine the entities' submittal requirements.		

1 A maximum of 10 Submittals can be submitted per week per technical discipline. Technical
2 disciplines for the purpose of maximum review Submittals include:

- 3 A. Land Surveying
- 4 B. Geotechnical/Earthwork
- 5 C. Pavement
- 6 D. Environmental
- 7 E. Public Information
- 8 F. Utilities
- 9 G. Railroad
- 10 H. Roadway
- 11 I. Drainage
- 12 J. Aesthetics and Landscaping
- 13 K. Structures
- 14 L. Hydraulics
- 15 M. Traffic
- 16 N. Maintenance of Traffic
- 17 O. Intelligent Transportation System

18 Developer acknowledges and agrees that no more than 10 Submittals per technical discipline in
19 the aggregate may be pending for review by ADOT at any given time. Developer may request
20 authorization from ADOT for the right to make Submittals in excess of the stipulated maximum
21 number stated in this Section GP 110.10.2.6.3. ADOT will have the right to withhold
22 authorization if ADOT deems the request unreasonable or if ADOT personnel cannot
23 accommodate the additional reviews.

24 **110.10.2.6.3.1 ADOT Review of ROW Submittals**

25 The maximum review period of 10 Business Days for Project ROW reviews applies separately
26 to each of the following:

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- 1 A. ROW Exhibits;
- 2 B. Legal Descriptions;
- 3 C. Appraisals;
- 4 D. Acquisition Packages;
- 5 E. Condemnation Packages; and
- 6 F. All other ROW Submittals.

7 No more than 10 ROW Submittals for each of the following may be pending for review by ADOT
8 at any given time:

- 9 A. ROW Exhibits;
- 10 B. Legal Descriptions;
- 11 C. Appraisals;
- 12 D. Acquisition Packages;
- 13 E. Condemnation Packages; and
- 14 F. All other ROW Submittals.

15 Developer shall indicate the priority of review of ROW Submittals when Developer Submittals
16 exceed the requirements above.

17 **110.10.2.7 Design Requirements**

18 Developer shall prepare all Design Documents by or under the supervision of a Professional
19 Engineer of the applicable discipline. All RFC packages and Final Design Documents must be
20 stamped, signed, and dated by the responsible engineer.

21 Except as otherwise specified in the Contract Documents or approved by ADOT, Developer
22 shall develop formal Submittals of Design Documents following the steps described in Section
23 GP 110.10.2.7 of the TPs. The primary design Submittal package stages are:

- 24 A. Initial Design Submittal
- 25 B. Final Design Submittal
- 26 C. RFC Submittal
- 27 D. Final Design Documents Submittal

28 Notwithstanding the foregoing, Developer may request the right to propose to eliminate a design
29 package step identified herein, as reflected by Developer's proposed Project Baseline
30 Schedule. ADOT will have the right to withhold approval of such request.

31 Developer shall coordinate with other Governmental Entities, Utility Owners, and railroads to
32 determine those entities' submittal requirements and make appropriate Submittals, providing
33 concurrent copies of any such submittals and respective correspondence to ADOT. Developer
34 shall immediately notify ADOT of any additional Governmental Entity's requirements. Developer
35 shall be responsible for all costs and schedule impacts for all Governmental Entities'
36 requirements.

37 **110.10.2.7.1 Plans**

38 Developer shall prepare Plans for the Project in accordance with the Contract Documents.
39 Developer shall ensure that all non-ADOT standards drawings/details are detailed on Plans. All
40 Plans must include all proposed and actual changes to the Schematic ROW. If Developer's
41 design requires changes to the Schematic ROW, the Submittal package must clearly indicate

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1 the Project ROW changes proposed, and must include a narrative detailing the need for the
2 change.

110.10.2.7.2 Specifications

4 Developer shall prepare specifications for the Project that must be complete and ready for
5 construction, including all specifications to support the Plans, description of Work, material
6 requirements, methods of construction, and indicate inspection and testing requirements.

110.10.2.7.3 Initial Design Submittal

8 To supplement or augment Developer's design schematic included in the Proposal and when
9 the design for a given element or segment is approximately 60 percent complete, Developer
10 shall prepare and submit Design Documents to ADOT. The Initial Design Submittal must include
11 Plans, specifications, and other pertinent data needed to verify the design, as applicable with
12 each Initial Design Submittal.

110.10.2.7.4 Final Design Submittal

14 When the design for a given element or area is approximately 95 percent complete, Developer
15 shall prepare and submit a Final Design Submittal to ADOT for review and comment. Each Final
16 Design Submittal must include Plans, specifications, technical memorandums, reports, studies,
17 calculations, and other pertinent data, as applicable. The Final Design Submittal must also
18 include a Comment Resolution Form showing how the Final Design Submittal addresses the
19 review comments generated during the previous Submittal reviews.

110.10.2.7.5 RFC Submittal

21 When the design for a given element or area is 100 percent complete and all previous
22 comments have been addressed and appropriately incorporated, Developer shall prepare and
23 submit the RFC Submittal to ADOT. The RFC Submittal must include Plans, specifications,
24 technical memorandums, reports, studies, calculations, and other pertinent data, as applicable
25 with the RFC Submittal. The RFC Submittal must also include a Comment Resolution Form
26 showing how the RFC Submittal has addressed the review comments generated during
27 previous submittal reviews. The engineer-of-record (by discipline) must sign and seal the RFC
28 Submittal prior to construction of the relevant Project component.

29 ADOT's review of any RFC package does not constitute approval of subsequent construction
30 and does not relieve Developer of its responsibility to comply with the requirements of the
31 Contract Documents. Developer shall ensure construction complies with the requirements of the
32 Contract Documents, Laws, and Governmental Approvals. Developer shall bear the risk of any
33 required modifications to the component construction due to subsequent Design Changes
34 resulting from further design development.

110.10.2.7.6 Final Design Documents Submittal

36 Developer shall combine the RFC packages for the entire Project upon completion of all design
37 Work into a Final Design Documents package. The purpose of the Final Design Documents
38 Submittal is to create a single package of the design Plans for the entire Project, for ADOT
39 record-keeping purposes. Developer shall organize the RFC Submittals for individual Work
40 items, components, elements, or phases such that the Final Design Documents Submittal is
41 assembled in a manner similar to the standard construction documents typically provided to
42 ADOT for conventional project bidding.

43 Within 20 Business Days after the submittal of the final RFC Submittal to ADOT, Developer
44 shall submit the Final Design Documents Submittal to ADOT for review and comment.

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1 Developer acknowledges and agrees that resubmittal of the Final Design Documents Submittal
2 or other design submittals may be required by ADOT.

3 **110.10.2.8 Construction Requirements**

4 **110.10.2.8.1 Shop Drawings and Working Drawings**

5 Developer shall prepare Shop Drawings and Working Drawings necessary to construct the
6 Project. Shop Drawings and Working Drawings must include drawings on 22 inch x 34 inch
7 sized sheets, calculations, and certifications, describe the methods of construction proposed,
8 and adequately define and control the Work. PSQM must review and certify Shop Drawings and
9 Working Drawings in accordance with Section GP 110.07 of the TPs. At least 10 Business Days
10 prior to implementation, Developer shall submit Design Manager approved Shop Drawings and
11 Working Drawings to ADOT.

12 **110.10.2.8.2 Request for Information**

13 Design issues may arise in ongoing Work reflected in RFC packages. Developer may utilize the
14 RFI process as a communication tool between design and construction. RFIs may be initiated
15 by Developer or ADOT. Developer-initiated RFIs must reflect the following: the general nature,
16 location, and description of the issue; Developer's proposed mitigation with supporting
17 documentation of the issue; and the CQM's approval of such mitigation. ADOT will provide
18 Developer an RFI for issues identified by ADOT. ADOT will submit ADOT-initiated RFIs to
19 Developer for incorporation into the RFI process. Developer shall submit RFIs to the Design
20 Manager, Construction Manager, or Project Manager, as appropriate, to obtain the proposed
21 mitigation with supporting documentation.

22 When an issue or change arises, including those identified by ADOT-initiated RFIs, Developer
23 shall place the RFI in an RFI Log to track all open issues. Every week, Developer shall submit
24 RFIs and the updated RFI Log to ADOT. Developer shall provide an independent and unique
25 numbering system for Developer-initiated RFIs, different from ADOT-initiated RFIs or those of
26 any other Governmental Entity. Within 5 Business Days of receipt of the ADOT-initiated RFIs,
27 Developer shall submit a Response to ADOT-initiated RFIs to ADOT.

28 **110.10.2.8.3 Design Changes**

29 During Construction Work, adjustments to the design may be required to fit field conditions. The
30 engineer-of-record for the design at the time of the Design Change must provide written
31 approval for any Design Change that occur during construction, or Design Changes that occur
32 to Design Documents, unless otherwise specifically authorized in writing by ADOT. All Design
33 Changes must undergo the same QMP checks, reviews, and certifications and are subject to
34 the same review process beginning at Final Design Submittal, as the original design. Design
35 Changes must include plan sheets, specifications, technical memorandums, reports, studies,
36 calculations, and other pertinent data, as applicable per the deliverable content required by the
37 level of the submittal.

38 Plan change documentation must include confirmation that:

- 39 A. The Design Change has been designed in accordance with the requirements of the
40 Contract Documents, applicable Laws, and Governmental Approvals
- 41 B. The Design Change has been checked in accordance with Developer's PSQMP
- 42 C. The Design Change has been prepared consistently with other elements of the original
43 design
- 44 D. The Design Change complies with the design certification requirements as set forth in
45 the QMP

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1 E. ADOT comments are resolved

2 Developer shall request and schedule an interim and final Design Review(s) for all Design
3 Changes made during construction or to the Final Design Documents. Developer shall
4 document all changes made through the Design Change process in the Record Drawings in
5 accordance with Section GP 110.10.2.8.4 of the TPs.

6 **110.10.2.8.4 Record Drawings**

7 Developer shall prepare Record Drawings in accordance with the ADOT *Redline and As-Built*
8 *Procedures and Guidelines*. Record Drawings must show locations and number of potential
9 Grand Canyon State Logo Signs. As a condition of Final Acceptance in accordance with Section
10 6.6.4.2 of the Agreement, Developer shall submit Record Drawings as a composite set of plans
11 for the Project and the As-Built Schedule as set forth in Section GP 110.06.2.12 of the TPs to
12 ADOT for review and comment. The Design Manager or engineer of record must professionally
13 endorse (sign and seal) the Record Drawings. The Professional Services Quality Manager must
14 certify the Record Drawings comply with the QMP.

15 **110.10.3 Submittals**

16 Table 110-14 reflects a nonexclusive list of Submittals identified in Section GP 110.10 of the
17 TPs and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
18 determine and submit all Submittals as required by the Contract Documents, Governmental
19 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
20 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
21 specified in the Contract Documents, Developer shall submit the following to ADOT in the
22 formats described in Section GP 110.10.2.2 of the TPs:

Table 110-14 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
3D Models	4	0	1	Prior to the first pre-construction coordination meeting	GP 110.10.2.5.4.2
4D Simulation	4	0	1	With every Project Schedule Submittal	GP 110.10.2.5.4.3
Visual Animation	4	0	1	Prior to Substantial Completion	GP 110.10.2.5.4.4
Comment Resolution Form	5	2	1	With the PSQMP	GP 110.10.2.6
Review Comment Responses	5	2	1	With the subsequent Submittal	GP 110.10.2.6
CRM Notes	5	2	1	Within 5 Business Days of the CRM	GP 110.10.2.6
Segment Limits Map	2	2	1	Prior to issuance of NTP 2	GP 110.10.2.6.2
Submittal Schedule	2	2	1	Prior to issuance of NTP 2	GP 110.10.2.6.2

ADDENDUM #2

Table 110-14 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Initial Design Submittal	5	2	1	When the design for a given element or segment is approximately 60 percent complete	GP 110.10.2.7.3
Final Design Submittal	4	2	1	When the design for a given element or area is approximately 95 percent complete	GP 110.10.2.7.4
RFC Submittal	5	2	1	When the design for a given element or area is 100 percent complete and all previous comments have been addressed and appropriately incorporated	GP 110.10.2.7.5
Final Design Documents Submittal	4	2	1	20 Business Days after the submittal of final RFC Submittal by ADOT	GP 110.10.2.7.6
Shop and Working Drawings	5	2	1	10 Business Days prior to implementation	GP 110.10.2.8.1
RFIs and RFI Log	5	2	1	Every week	GP 110.10.2.8.2
Response to ADOT-initiated RFIs	5	2	1	Within 5 Business Days of receipt of the ADOT-initiated RFIs	GP 110.10.2.8.2
Design Changes	4	2	1	Varies	GP 110.10.2.8.3
Record Drawings	4	2	1	As a condition of Final Acceptance in accordance with <u>Section 6.6.4.2 of the Agreement</u>	GP 110.10.2.8.4
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1 **110.11 Documentation of the Site**

- 2 Developer shall perform all Work in compliance with the requirements of this Section GP
3 110.11. Developer shall be responsible for the preservation of all public and private property
4 and shall protect carefully from disturbance or damage all land monuments and property marks.

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1 Land monuments and property marks shall not be moved by Developer until directed by ADOT.
2 Existing fences, pole lines, signs, buildings and structures that are to remain in place shall be
3 protected from injury or damage.

4 **110.11.1 Existing Conditions Site Documentation**

5 Developer shall prepare an Existing Conditions Site Documentation that identifies and
6 documents the existing conditions within the Site, including videotaping the whole Project.
7 Developer shall investigate, videotape, and photograph existing elements in the Project ROW
8 that are planned to remain in place to determine its condition, size, material, location, and other
9 pertinent information. The Existing Conditions Site Documentation must include adjacent
10 roadways, drainage channels or flowing waterways, fences, walls, houses, buildings, wells,
11 sensitive habitats, irrigation systems, and areas where activities will be performed by Developer
12 or Subcontractors. Developer shall include in the Existing Condition Site Documentation all
13 facilities and Utilities that may be impacted by the Work including downstream drainage
14 channels, adjacent roadway conditions, and sensitive habitats. The videotape must show details
15 of the condition of all properties and structures, pavement conditions of crossroads, and
16 proposed and potential haul routes. Prior to construction, Developer shall submit the Existing
17 Conditions Site Documentation to ADOT for review and comment.

18 **110.11.2 Site Documentation**

19 At commencement of construction, and every month following through Final Acceptance,
20 Developer shall photograph and videotape construction activities covering the following:

- 21 A. All structures and properties;
- 22 B. The Work reflecting the activities underway during the month; and
- 23 C. Any accidents, unusual conditions, and complaints.

24 Developer shall prepare the Site Documentation so that it includes video footage and digitally
25 produced photographs. Developer shall organize all such photographs and video footage
26 according to activity and date. Developer shall obtain all necessary permission from property
27 owners to enter their property for any Site Documentation of the Site. Upon ADOT's request,
28 Developer shall submit the Site Documentation on digital versatile disc (DVD) format to ADOT
29 for review and comment.

30 **110.11.3 Submittals**

31 Table 110-15 reflects a nonexclusive list of Submittals identified in Section GP 110.11 of the
32 TPs and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
33 determine and submit all Submittals as required by the Contract Documents, Governmental
34 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
35 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
36 specified in the Contract Documents, Developer shall submit the following to ADOT in the
37 formats described in Section GP 110.10.2.2 of the TPs:

ADDENDUM #2

Table 110-15 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Existing Conditions Site Documentation	4	2	1	Prior to construction	GP 110.11.1
Site Documentation	4	0	3	Upon ADOT's request	GP 110.11.2
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1
2

End of Section

SECTION B
DESIGN REQUIREMENTS (DR)

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ADDENDUM #2

1 DR 408 THIRD-PARTY AGREEMENTS

2 408.1 GENERAL REQUIREMENTS

3 Developer shall perform all Third-Party Agreement Work in compliance with the requirements of
4 Section DR 408 of the TPs.

5 408.2 ADMINISTRATIVE REQUIREMENTS

6 The Third-Party Agreements are listed in Table 408-1. TP Attachment 408-1 lists ADOT's
7 responsibility for each Third-Party Agreement. Developer shall perform all ADOT obligations
8 under or pursuant to the Third-Party Agreements except to the extent that TP Attachment 408-1
9 states that an obligation is allocated to ADOT. In the event that the Work necessitates a change
10 to an existing Third-Party Agreement, or issuance of a new Third-Party Agreement, Developer
11 shall be responsible for all Work necessary to obtain the amended or new Third-Party
12 Agreement.

Table 408-1 Third-Party Agreements				
TP Attachment	Governmental Entity	Description	Status	Availability Date
408-1.1	City of Phoenix	Project Master Maintenance Agreement	Development In Progress	<i>[to be provided in Addendum 4]</i>
408-1.2	City of Phoenix	Local Street Turnback	Development In Progress	<i>[to be provided in Addendum 4]</i>

13

14

End of Section

ADDENDUM #2

1 DR 410 LAND SURVEYING

2 410.1 GENERAL REQUIREMENTS

3 Developer shall perform all land surveying Design Work in compliance with the requirements of
4 Section DR 410 of the TPs. Developer shall ensure that all land surveying Design Work is
5 performed under the supervision of the Survey Manager. All survey data provided by Developer
6 to ADOT must be certified by the Survey Manager.

7 410.2 ADMINISTRATIVE REQUIREMENTS

8 410.2.1 Standards

9 Developer shall perform all land surveying Design Work in accordance with the standards,
10 manuals, and guidelines listed in Table 410-1.

Table 410-1 Standards		
No.	Agency	Title
1	ADOT	Intermodal Transportation Division Engineering Technical Group Engineering Survey Section Manual for Field Surveys
2	Arizona State Board of Technical Registration	Arizona Boundary Survey Minimum Standards

11 All mapping created for the Project, whether by aerial photogrammetry or LIDAR scanning must
12 adhere to the accuracy standards contained in the ADOT *General Specifications for Aerial*
13 *Mapping*. Photogrammetric mapping must comply with ADOT *Intermodal Transportation*
14 *Division Engineering Technical Group Engineering Survey Section General Specifications for*
15 *Photogrammetric Mapping*.

16 410.2.2 Survey Data Provided to Developer

17 The existing survey and mapping data that ADOT provides to Developer is contained in the
18 RIDs. Developer shall review existing survey and mapping data and determine the requirements
19 for updating or extending the survey and mapping data. Developer shall be responsible for the
20 precision, accuracy, and comprehensiveness of all survey and mapping data. Developer shall
21 verify all survey control information contained in the *Results of Survey for Project No. 202L MA*
22 *000 H5439*, by Stanley Consultants, included in the RIDs, and shall immediately and in any
23 event prior to proceeding with any land surveying Design Work notify ADOT of any
24 discrepancies. Developer shall be responsible for all surveys necessary for the Work.

25 410.3 DESIGN REQUIREMENTS

26 410.3.1 Units of Measure

27 Developer acknowledges and agrees as follows:

- 28 A. The unit of linear measurement is international feet;
- 29 B. Linear measurements and station/offsets must be expressed to two places to the right of
30 the decimal point;
- 31 C. Coordinates must be expressed to three places to the right of the decimal point;

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- 1 D. Angular measurement units must be in degrees, minutes, and seconds expressed to the
2 nearest second; and
- 3 E. Directional units must be in bearings expressed in degrees, minutes, and seconds
4 expressed to the nearest second.

5 **410.3.2 Survey Control**

6 Developer shall establish Project survey control by utilizing those primary horizontal control
7 points depicted on the *Results of Survey for Project No. 202L MA 000 H5439*, by Stanley
8 Consultants, included in the RIDs. Developer shall establish secondary survey control points
9 throughout the Project alignment at intervals not to exceed 1,000 feet. These points must
10 include horizontal and vertical data sufficient to control construction. These survey control points
11 and bench marks must be shown on the Plans and expressed in northings, eastings, elevations,
12 stations, and offsets.

13 **410.3.2.1 Survey Control Datum**

14 Developer shall base the horizontal coordinate system on North American Datum (NAD) 1983
15 (HARN 92), Arizona State Plane Coordinate System, Central Zone. Developer shall achieve the
16 Project survey control system by applying the grid adjustment factor of 1.00016 to the Arizona
17 State Plane Coordinate System grid values as depicted on the *Results of Survey for the Loop*
18 *202L (Ref. 3) Project*, by Stanley and Consultants, included in the RIDs. Developer shall base
19 the vertical control on North American Vertical Datum (NAVD) 1988, originating and terminating
20 at a First Order Bench Mark.

21 **410.3.2.2 Survey Control Adjustments and Accuracy**

22 Developer shall ensure that survey control accuracy is as follows:

- 23 A. Horizontal control accuracy must be in accordance with the Arizona State Board of
24 Technical Registration *Arizona Boundary Survey Minimum Standards*.
- 25 B. Vertical control accuracy must not be less than Second Order, Class 2 or 0.035 X
26 square root of miles in accordance with the ADOT *Intermodal Transportation Division*
27 *Engineering Technical Group Engineering Survey Section Manual for Field Surveys*.
- 28 C. Angular accuracy must not be less than 3 seconds per station in accordance with the
29 ADOT *Intermodal Transportation Division Engineering Technical Group Engineering*
30 *Survey Section Manual for Field Surveys*.

31 After achieving these accuracy levels, Developer shall apply a least squares adjustment to the
32 horizontal control. Developer shall also proportionately apply vertical control errors to
33 established elevations.

34 **410.3.3 Design Survey Records and Reports**

35 Developer shall maintain neat, accurate, and complete documentation in connection with all
36 land surveying Design Work. This documentation must include all calculations, mapping, staking
37 notes, and field crew daily diaries. Developer shall compile and prepare a formal Design Survey
38 Report that includes all those items specified in the ADOT *Intermodal Transportation Division*
39 *Engineering Technical Group Engineering Survey Section Manual for Field Surveys*, as well as
40 the following:

- 41 A. All survey calculations related to control survey and design survey data;
- 42 B. Documentation of the information and rationale used to perform the land surveying
43 Work;
- 44 C. Field notes;

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- 1 D. Data collection downloads;
- 2 E. Research information, including deeds, title reports, assessors' data, plats, records of
- 3 surveys, etc.;
- 4 F. Maps; and
- 5 G. CAD files.

6 Developer shall ensure that the Design Survey Report is sealed by a land surveyor registered in
7 the State. Prior to the first Initial Design Submittal for each Project segment, Developer shall
8 submit the Design Survey Report to ADOT.

9 **410.4 SUBMITTALS**

10 Table 410-2 reflects a nonexclusive list of Submittals identified in Section DR 410 of the TPs
11 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
12 determine and submit all Submittals as required by the Contract Documents, Governmental
13 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
14 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
15 specified in the Contract Documents, Developer shall submit the following to ADOT in the
16 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 410-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Design Survey Report	5	0	1	Prior to the first Initial Design Submittal for each Project segment	DR 410.3.3
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

17

18

End of Section

ADDENDUM #2

1 **DR 416 GEOTECHNICAL**

2 **416.1 GENERAL REQUIREMENTS**

3 Developer shall perform all geotechnical Design Work in compliance with the requirements of
4 Section DR 416 of the TPs.

5 **416.2 ADMINISTRATIVE REQUIREMENTS**

6 **416.2.1 Standards**

7 Developer shall perform all geotechnical Design Work in accordance with the standards,
8 manuals, and guidelines listed in Table 416-1.

Table 416-1 Standards		
No.	Agency	Name
1	AASHTO	LRFD (Load and Resistance Factor Design) Bridge Design Specifications, 2012, 6th Edition
2	FHWA	Rockfall Catchment Area Design Guide: Final Report, Report No. SPR-3(032)
3	FHWA	Geotechnical Engineering Circular No. 10, Drilled Shafts: Construction Procedures and LRFD Design Methods, NHI Training Course No. 132014, Publication No. FHWA-NHI-10-016, 2010
4	FHWA	Geotechnical Engineering Circular No. 11, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, NHI Courses No. 132042 and 132043, Publication No. FHWA-NHI-10-025, Volumes I and II, 2009
5	FHWA	Geotechnical Engineering Circular No. 7, Soil Nail Walls, Report No. FHWA-IF-03-017, 2003

9 **416.2.2 Existing Geotechnical Information**

10 Geotechnical reports prepared by ADOT and additional geotechnical information available from
11 other sources are provided in the RIDs. Although the geotechnical reports and geotechnical
12 information included in the RIDs may include interpretations, extrapolations, analyses, and
13 recommendations concerning data, design solutions, technical issues and solutions, and
14 construction means and methods, such interpretations, extrapolations, analyses, and
15 recommendations are subject to all the provisions of Sections 1.6 of the Agreement and are:

- 16 A. Preliminary in nature;
- 17 B. Not intended to represent the views or preferences of ADOT or any other Governmental
18 Entity or represent any statement of approval or acceptance thereof by ADOT or any
19 other Governmental Entity; and
- 20 C. Without representation or warranty by, or recourse to, ADOT

21 Developer shall perform its own complete and thorough investigation and analysis to design and
22 construct the Project. Developer shall determine the need for additional geotechnical data and
23 testing in accordance with the applicable standards and sound engineering judgment, shall
24 perform geotechnical investigations to obtain any additional data required, and shall perform
25 tests, analyses, and calculations to develop independent geotechnical recommendations for the
26 Project to support Developer's design.

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1 **416.2.3 Software Requirements**

2 Developer may use the software programs set forth below in this Section DR 416.2.3 of the TPs
3 for geotechnical Work. In the event that Developer proposes to use any software other than that
4 listed and as part of the Basis of Design Report in accordance with Section GP 110.01.2.2 of
5 the TPs, Developer shall submit proposed Geotechnical Software (including input and output
6 files for verification data) to ADOT for approval.

7 Acceptable Geotechnical Software for Design Work includes: ALLPILE, APILE, CBEAR,
8 EMBANK, Shoring Suite, Driven, FoSSA, gINT, GSTABL, Goldnail, GRL WEAP, GROUP,
9 LPILE Plus, MSEW, ReSSA, RetainPro, RockPack, RocFall Version 4.0 or 5.0, Settle3D, Shaft
10 2012, Slide, Snail, SNAILZWin, TZPile, UNISETTLE, PCSTABL, XSTABL, CRSP Version 4.0 or
11 5.0 (CRSP 3D Version must not be used), and Strain Wedge Model.

12 **416.2.4 Equipment Requirements**

13 Developer shall ensure that SPT hammers to be used for the geotechnical investigation have
14 been tested for energy efficiency within the last 12 months prior to use, with the energy
15 efficiency ratio reported in the boring logs and drilling records.

16 **416.3 DESIGN REQUIREMENTS**

17 Developer shall conduct field explorations and subgrade testing necessary to design the Work
18 in accordance with the requirements of the applicable standards listed in Section DR 416.2.1 of
19 the TPs.

20 **416.3.1 Subsurface Geotechnical Investigation by Developer**

21 The subsurface investigation must include soil borings, test pits, rock coring, geophysical
22 surveys, and other field testing deemed necessary by Developer. Developer shall perform
23 subsurface geotechnical investigations, testing, research, and analysis as necessary to design
24 the roadway, pavement, foundations, structures, embankments, excavation, slopes, and other
25 facilities for the Project.

26 Developer shall employ field investigation measures that avoid groundwater contamination and
27 pollutant discharge and shall perform for all geotechnical investigation associated mitigation
28 and/or restoration in accordance with Sections DR 420 and CR 420 of the TPs.

29 **416.3.2 Geotechnical Engineering Reports**

30 Developer shall prepare and update Geotechnical Engineering Reports documenting the
31 assumptions, conditions, and results of the geotechnical investigations and analyses. The
32 report(s) must include the following:

- 33 A. Cover page.
- 34 B. Table of contents.
- 35 C. Description of the study area and existing site conditions, including vicinity map.
- 36 D. Description of the geology and topography of the study area, including soil and rock
37 types, and drainage characteristics.
- 38 E. Description of the field investigations and laboratory testing used to characterize
39 subsurface conditions. Field investigations must include descriptions of the soil/rock
40 types, penetration test results, in situ test results, and recovery and rock quality
41 designation for rock cores. Laboratory test results must include classification and
42 engineering properties for all major soil and rock strata in the study area.

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- 1 F. A discussion of geological and geotechnical conditions and results with reference to
2 specific locations on the Project.
- 3 G. Recommendations for:
- 4 1. Structures, including foundation type studies, capacities, lateral earth pressures, and
5 related design parameters for bridges, culverts, retaining walls, noise walls, sign
6 supports and standards, and lighting standards.
 - 7 2. Roadway embankments, including material types and suitability, foundation
8 conditions and improvements, settlement impacts and remediation, and evaluation of
9 borrow areas.
 - 10 3. Roadway excavations, including material types and suitability for use in
11 embankments.
 - 12 4. Temporary and permanent cut and fill slopes, including slope stability analyses for
13 embankment fill slopes and cut slopes, rock cut slope designs, rockfall containment,
14 and slope stabilization designs.
 - 15 5. Impacts of compressible, hydro-collapsible, and/or expansive soils, if present, and
16 proposed mitigations.
 - 17 6. Scour and stream bank erosion protection.
 - 18 7. Erosion abatement design for permanent cut and fill slopes.
 - 19 8. Corrosion potential of soils on construction materials.
 - 20 9. Impacts on, and from, groundwater, including necessary remedial actions.
 - 21 10. Construction and inspection considerations.
 - 22 11. Specification requirements and special provisions related to geotechnical
23 recommendations.
 - 24 12. Details and objectives of any instrumentation plan.
 - 25 13. Suitability of materials (borrow, aggregates, riprap, etc.) that can be obtained from
26 Project excavations, including source, quality, and availability.
- 27 H. Appendix, including the following:
- 28 1. Plan view locations of field sampling/testing (e.g., borings, test pits, test trenches,
29 surface samples, geologic maps, geophysical surveys, etc.).
 - 30 2. Copies of the boring logs and field/laboratory test data used for the analysis and
31 design.
 - 32 3. Other field test data (e.g., geophysical surveys, pressure meter tests, percolation
33 tests, etc.).
 - 34 4. Summary of laboratory testing methods and tabulated results.
 - 35 5. Copies of geotechnical calculations used for analysis and design, background
36 information, published verification or hand-calculated verification, and other pertinent
37 data on computer programs or spreadsheets.
 - 38 6. Copy of the SPT hammer(s) energy calibration.
 - 39 7. Photographs of all rock cores and proper identification labels.
 - 40 8. Instrumentation Plan.

41 At the same time as the Initial Design Submittal of the associated design, Developer shall
42 submit an initial Geotechnical Engineering Report to ADOT. At the same time as Final Design
43 Submittal of the associated design, Developer shall submit a final Geotechnical Engineering
44 Report to ADOT for review and comment. The final Geotechnical Engineering Report must be

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1 signed and sealed by the responsible Professional Engineer and include the Comment
2 Resolution Form showing how the Final Design Submittal addressed ADOT's review comments.

3 Developer shall prepare Geotechnical Supplements to incorporate changes made during the
4 development of the Work and shall incorporate any such Geotechnical Supplements into the
5 final Geotechnical Engineering Report(s). At the same time as subsequent Submittal of the
6 associated design, Developer shall submit Geotechnical Supplements to ADOT for review and
7 comment.

8 Developer shall prepare an As-Built Geotechnical Engineering Report that compiles all final
9 Geotechnical Engineering Reports and Geotechnical Supplements into one report. As part of
10 the Record Drawings Submittal, Developer shall submit the As-Built Geotechnical Engineering
11 Report to ADOT for review and comment.

12 **416.3.3 Geotechnical Analyses and Design**

13 **416.3.3.1 Rock Cut Slopes**

14 Developer shall design rock cut slopes and shall use global slope stability safety factors in
15 accordance with the applicable American Association of State Highway and Transportation
16 Office (AASHTO) and FHWA standards listed in Section DR 416.2.1 of the TPs. Developer shall
17 provide continuous finished cut slopes in accordance with ADOT Slope Sculpting Details
18 (Exhibits L5.5 and L5.6 of the LAADCR), except terracing will not be allowed.

19 Developer shall design rockfall containment facilities and catchments to provide a minimum
20 95 percent rockfall retention rate with 100 percent of the retained rockfall not intruding into travel
21 lanes in accordance with the applicable standards listed in Section DR 416.2.1 of the TPs.
22 Developer shall perform computer simulation rockfall modeling for the design of all rock slope
23 configurations not addressed in the applicable standards. Version 4.0 or 5.0 of the CRSP, or
24 Version 4.0 or 5.0 of the RocFall program must be used for modeling purposes. Developer shall
25 field verify the input parameters to the computer simulation rockfall modeling. Developer shall
26 design rockfall containment facilities that are accessible and maintainable by heavy equipment
27 with a minimum width of 12 feet.

28 **416.3.3.2 Instrumentation**

29 Developer shall prepare an Instrumentation Plan for all geotechnical Work that requires
30 monitoring in accordance with the applicable standards listed in Section DR 416.2.1 of the TPs.
31 The Instrumentation Plan must include proposed types of instruments, locations, depths,
32 installation details, manufacturers' information, monitoring frequency, and reporting. As part of
33 the initial Geotechnical Engineering Report(s), Developer shall submit the Instrumentation Plan
34 to ADOT for review and comment.

35 **416.3.3.3 Tolerable Deformations**

36 Developer shall design the Work in accordance with the following deformation criteria:

37 A. Highway bridge substructures:

- 38 1. Maximum total settlement of 1 inch after bridge superstructure has been constructed
- 39 2. Maximum differential settlement of 3/4 inch after the bridge superstructure has been
40 constructed

41 B. Retaining walls and miscellaneous structures:

42 Maximum total and differential settlements and lateral movements (including settlement
43 and lateral movements attributable to stresses imposed by embankments) must result in

ADDENDUM #2

1 no distress to the structures and visual treatments of walls, including cracking and
 2 spalling of concrete, tilting of wall panels, and separation or crushing at joints.

3 C. Embankments and subgrade

4 Developer shall address settlement of embankment (total and differential settlements) so
 5 that the settlement will not negatively impact the functionalities and performance of
 6 facilities, immediately on top or adjacent to the embankment, and service life of these
 7 facilities in accordance with the Contract Documents.

8 **416.4 SUBMITTALS**

9 Table 416-2 reflects a nonexclusive list of Submittals identified in Section DR 416 of the TPs
 10 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 11 determine and submit all Submittals as required by the Contract Documents, Governmental
 12 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 13 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 14 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 15 formats described in Section 110.09.2.1.1 of the TPs:

Table 416-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Geotechnical Software	3	0	1	As part of the Basis of Design Report	DR 416.2.3
Initial Geotechnical Engineering Report	5	4	1	At the same time as Initial Design Submittal of the associated design	DR 416.3.2
Final Geotechnical Engineering Report	4	4	1	At the same time as Final Design Submittal of the associated design	DR 416.3.2
Geotechnical Supplement	4	4	1	At the same time as subsequent Submittal of the associated design	DR 416.3.2
As-Built Geotechnical Engineering Report	4	4	1	As part of the Record Drawing Submittal	DR 416.3.2
Instrumentation Plan	4	4	1	As part of the Geotechnical Engineering Report(s)	DR 416.3.3.2
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

16

17

End of Section

ADDENDUM #2

1 **DR 417 EARTHWORK**

2 *Intentionally left blank*

3

4

End of Section

ADDENDUM #2

1 DR 419 PAVEMENT

2 419.1 GENERAL REQUIREMENTS

3 Developer shall perform all pavement design Work in compliance with the requirements of
4 Section DR 419 of the TPs. Pavements for roadways and streets other than ADOT shall be
5 performed in accordance with the authority having jurisdiction.

6 Developer shall identify the necessary limits of work on roadways and streets to meet the
7 requirements of the Project. The localized limit of work shall conform to the following:

- 8 A. Widening or reconstruction of any portion of an asphaltic roadway shall require that the
9 entire roadway width be, at a minimum, resurfaced within the longitudinal limits of the
10 widening or reconstruction;
- 11 B. Addition of sidewalks outside an existing roadway or curb and gutter replacement shall
12 not require that the existing road be resurfaced;
- 13 C. Developer shall resurface the entire width of a roadway after any portion of the roadway
14 has been subject to eradication of permanent or temporary pavement markings for a
15 longitudinal distance of 50 feet beyond the last eradicated marking; and
- 16 D. Utility patching on roadways within 150 feet of the otherwise established paving or
17 resurfacing limits shall require that the paving or resurfacing limits be extended to cover
18 the utility patching.

19 The limits of milling and resurfacing for roadways intersecting the Project shall extend beyond
20 the curb return or to the limits of Construction Work required to tie into existing pavement,
21 whichever is greater.

22 419.2 ADMINISTRATIVE REQUIREMENTS

23 419.2.1 Standards

24 Developer shall perform all pavement design Work in accordance with the standards, manuals,
25 and guidelines listed in Table 419-1.

Table 419-1 Standards		
No.	Agency	Name
1	AASHTO	Guide for Design of Pavement Structures, 1993 (I-GDPS-4) and 1998 Supplement
2	ADOT	Materials Preliminary Engineering and Design (MPE&D) Manual
3*	ADOT	Pavement Design Standard Report Items
4*	ADOT	Construction Standard Drawings (C-standards)

*Developer must use items 3 and 4 for Non-Maintained Elements to be owned by ADOT. These items are not required for Developer maintained areas.

26 419.3 DESIGN REQUIREMENTS

27 419.3.1 Pavement Design

28 Developer shall base pavement design for general purpose lanes, high occupancy vehicle
29 (HOV) lanes, auxiliary lanes, frontage roads, ramps, and crossroads upon Developer's
30 determination of the design traffic loading forecast. Developer may use the MAG Travel

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1 Demand Model (2013-08 MAG Travel Demand Model Output.zip) for reference to determine the
2 design traffic loading forecasts and truck percentages. Developer is responsible for forecasting
3 the traffic loading and truck percentages for periods beyond the forecasts provided.

4 The required residual pavement design life (in years) at the time of Handback must comply with
5 the requirement in Section MR 501 of the TPs.

6 **419.3.2 Related Pavement Materials Specifications**

7 Unless otherwise specified herein, pavement materials for Non-Maintained Elements owned by
8 ADOT must comply with the requirements of the documents noted below.

- 9 A. *ADOT Standard Specifications for Road and Bridge Construction*;
10 B. *ADOT Stored Specifications*; and
11 C. *ADOT Materials Pavement Design Standard Items* (refer to
12 [http://www.azdot.gov/docs/default-source/materials-library/design-report-standard-](http://www.azdot.gov/docs/default-source/materials-library/design-report-standard-items.pdf?sfvrsn=16)
13 [items.pdf?sfvrsn=16](http://www.azdot.gov/docs/default-source/materials-library/design-report-standard-items.pdf?sfvrsn=16)).

14 **419.3.3 Pavement Type Selection**

15 Pavement types must be as follows:

- 16 A. Mainline. Pavement for the SR 202 mainline must comply with the requirements of
17 Section DR 419 of the TPs. Pavement for the I-10 Papago mainline must be the same
18 pavement section (materials and depths) as the existing roadway pavement
19 B. Shoulders. Pavement for the shoulders of all roadways must be constructed with the
20 same pavement section (materials and depths) as the adjacent roadway pavement.
21 C. Ramp Pavements. Ramp pavements must be constructed with the same pavement
22 material type as the adjacent mainline pavement.
23 D. Widened Pavement Sections. For all widened sections, the interface between the new
24 widened pavement and the existing pavement must provide a uniform surface of the
25 same material type across all adjacent lanes.
26 E. Frontage Roads, Crossroads and Local Streets. Developer shall design pavements for
27 Frontage Roads, Crossroads and Local Streets in accordance with the procedures and
28 requirements of the authority having jurisdiction. The minimum pavement section for City
29 of Phoenix arterial streets consists of 7.5 inches of asphaltic concrete overlying prepared
30 subgrade.

31 **419.3.4 Asphaltic Rubber-Asphaltic Concrete Friction Course**

32 Developer shall include an asphaltic rubber - asphaltic concrete friction course (AR-ACFC)
33 overlay as specified below..

34 **419.3.4.1 General Placement Limits & Requirements**

35 For a 1-inch thick AR-ACFC overlay, Developer shall provide a 20-foot long transition from 1
36 inch to 0.5 inches thickness at the end of all AR-ACFC placement limits.

37 Where a 1-inch thick AR-ACFC overlay does not extend to the face of curb or barrier, the last 1
38 foot of width of the AR-ACFC overlay must incorporate a transition in thickness from 1 inch to
39 0.5 inches.

40 Developer shall show the location of the AR-ACFC limits on the final plans, the limits of which
41 are to be approved by ADOT.

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1 **419.3.4.2 Mainline**

2 AR-ACFC placement along the mainline shall extend to the limits noted below.

3 A. Low side shoulder – place AR-ACFC to 2 feet beyond the edge line/stripe.

4 B. High side shoulder – place AR-ACFC to face of barrier or curb flowline.

5 **419.3.4.3 Bridges**

6 If AR-ACFC is used on bridges, it must extend to the limits noted below.

7 A. Place AR-ACFC to the face of barrier on the high side of the bridge deck.

8 B. Place AR-ACFC to 2 feet beyond the edge line/stripe on the low side of the bridge deck
9 if the shoulder on the bridge deck is 12 feet or more in width.

10 If AR-ACFC is not used on bridges, Developer shall not include AR-ACFC on bridge approach
11 slabs and protective pavement systems.

12 **419.3.4.4 Service Interchange Ramps**

13 AR-ACFC placement along service interchange ramps shall extend to 50 feet beyond the back
14 of paved gore.

15 **419.3.4.5 System Interchange Ramps**

16 AR-ACFC placement along system interchange ramps shall extend from the face of barrier or
17 curb flow line on the high side to the face of barrier or lip of curb on the low side.

18 **419.3.4.6 Removal and Replacement Limits**

19 Developer shall remove and replace existing AR-ACFC without damaging the existing PCCP as
20 noted below.

21 A. I-10 Papago mainline roadway from the back of the 75th Avenue TI west ramp gores to
22 the back of the 43rd Avenue TI east ramp gores.

23 B. I-10 Papago service interchange ramps between 75th Avenue TI and 43rd Avenue TI.
24 When the existing AR-ACFC extends beyond the limits of Ramp reconstruction then the
25 existing AR-ACFC shall be replaced to the existing limits.

26 C. SR 202 Santan mainline roadway to the HOV lanes east of the system interchange.

27 D. SR 202 Santan ramps to the back of gores.

28 **419.3.5 Pavement Design Summary**

29 Developer shall prepare an initial Pavement Design Summary (PDS) and final PDS.

30 The initial and final PDS must include the following, as appropriate:

31 A. A summary of the existing pavement history.

32 B. A full description of the planned improvements.

33 C. A discussion of the design traffic loadings used for determination of pavement sections.

34 D. The design parameters used for the determination of pavement sections.

35 E. Recommended pavement structural sections.

36 At the same time as Initial Design Submittal of the pavement structural section Plans, Developer
37 shall submit an initial PDS to ADOT. At the same time as Final Design Submittal of the
38 pavement structural section Plans, Developer shall prepare and submit a final PDS that
39 addresses ADOT's comments to ADOT for review and comment.

ADDENDUM #2

1 **419.3.6 Materials Design Report**

2 Developer shall prepare and submit to ADOT for review and comment an initial Materials
3 Design Report (MDR) and a final MDR. The initial and final MDR must include the following, as
4 appropriate:

5 A. Required pavement structural sections.

6 B. Vicinity map.

7 C. Typical sections and joint details.

8 D. Subgrade acceptance chart.

9 E. Subgrade, subbases, and bases standard report items.

10 F. Surface treatments and pavements standard report items.

11 G. Material sources standard report items.

12 H. Geotechnical information standard report items: ground compaction, earthwork factors
13 and slopes, water, pH and resistivity, borrow requirements, etc.

14 I. Other standard report items as required by the proposed pavement design.

15 At the same time as Initial Design Submittal of the pavement structural section Plans, Developer
16 shall submit an initial MDR to ADOT. At the same time as Final Design Submittal of the
17 pavement structural section Plans, Developer shall prepare and submit a final MDR that
18 addresses ADOT's comments to ADOT for review and comment.

19 **419.4 SUBMITTALS**

20 Table 419-2 reflects a nonexclusive list of Submittals identified in Section DR 419 of the TPs
21 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
22 determine and submit all Submittals as required by the Contract Documents, Governmental
23 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
24 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
25 specified in the Contract Documents, Developer shall submit the following to ADOT in the
26 formats described in Section GP 110.10.2.1.1 of the TPs:

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Table 419-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Initial PDS	5	2	1	At the same time as Initial Design Submittal of the pavement structural section Plans	DR 419.3.5
Final PDS	4	2	1	At the same time as Final Design Submittal of the pavement structural section Plans	DR 419.3.4.6, 419.3.5
Initial MDR	5	2	1	At the same time as Initial Design Submittal of the pavement structural section Plans	DR 419.3.6
Final MDR	4	2	1	At the same time as Final Design Submittal of the pavement structural section Plans	DR 419.3.6
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1
2

End of Section

ADDENDUM #2

1 DR 420 ENVIRONMENTAL

2 420.1 GENERAL REQUIREMENTS

3 Developer shall perform all Design Work in compliance with the requirements of Section DR 420
4 of the TPs.

5 420.2 ADMINISTRATIVE REQUIREMENTS

6 420.2.1 Standards

7 Developer shall perform all Design Work in accordance with the standards, manuals, and
8 guidelines listed in Table 420-1.

Table 420-1 Standards		
No.	Agency	Title
1	ADOT	South Mountain Freeway (Loop 202) Final Environmental Impact Statement and Section 4(f) Evaluation (FEIS)
2	ADOT	South Mountain Freeway (Loop 202) Record of Decision (ROD)
3	ADOT	Noise Abatement Policy dated July 13, 2011

9 420.2.2 Environmental Management Program

10 Developer shall develop, operate, and maintain a comprehensive Environmental Management
11 Program for the Work that complies with all applicable Law (including Environmental Law),
12 Project commitments, and Governmental Approvals issued thereunder, whether obtained by
13 ADOT, a Utility Company, or Developer. The Environmental Management Program must
14 obligate Developer to and Developer shall:

- 15 A. Protect the environment and document the measures taken during the performance of
16 the Work to avoid and minimize impacts on the environment from the design,
17 construction, and maintenance activities of the Project;
- 18 B. Effectively demonstrate in detail Developer's knowledge of all applicable environmental
19 Governmental Approvals, environmental issues, and environmental commitments and
20 any applicable Environmental Laws;
- 21 C. Provide concise, consistent environmental monitoring and reporting activities throughout
22 the Term, applicable to the environmental activities being performed;
- 23 D. Describe the processes that are followed during the course of the Work to comply with
24 those environmental Governmental Approvals, environmental issues, environmental
25 commitments, and Law, as well as the documentation required to verify and validate
26 environmental compliance;
- 27 E. Describe the documentation required to verify and validate compliance of the
28 Environmental Management Program with all applicable Environmental Laws,
29 environmental Governmental Approvals, and Contract Documents;
- 30 F. Establish a goal of zero environmental violations during the performance of all Work, and
31 provide detailed processes for rectifying such violations in an appropriate and timely
32 way;

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- 1 G. Provide design certifications with every Design Submittal indicating that an
2 environmental review of the design package has been completed and that the design
3 does not change any conditions of the original National Environmental Policy Act
4 (NEPA) Approval; and
- 5 H. Provide qualified staff for each of the environmental disciplines.

6 **420.2.3 Environmental Management Plan**

7 Developer shall prepare an Environmental Management Plan (EMP) that describes Developer's
8 approach to implementing the environmental commitments. The EMP must include, at a
9 minimum, the following elements:

- 10 A. Developer's environmental personnel and training
- 11 B. Developer's environmental commitments
- 12 C. Environmental monitoring plan that indicates times, locations, and other primary
13 monitoring parameters
- 14 D. Weekly environmental monitoring report content
- 15 E. Monthly report content that combines the weekly report forms into a document that
16 summarizes the month's environmental monitoring activities
- 17 F. Documentation confirming that Developer has provided each Subcontractor, including its
18 agents associated with the design, construction, and maintenance of the Project with a
19 copy of all permits issued by Governmental Entities for the Project
- 20 G. Environmental notification contact list
- 21 H. Pre-construction survey plan for sensitive species, including Western burrowing owls,
22 Sonoran desert tortoises, other reptiles and amphibians, and nesting birds.
- 23 I. Schedule of EMP activities
- 24 J. Spill containment and countermeasure plan describing Developer's plans to prevent,
25 contain, clean up, remove, dispose of, and mitigate all regulated material spills caused
26 by Developer or its subcontractors and/or agents associated with the design,
27 construction, and maintenance of the Project. The spill containment and countermeasure
28 plan must be in accordance with the July 2002 United States Environmental Protection
29 Agency (EPA) update. The spill containment and countermeasure plan must include a
30 notification list for containing and reporting.
- 31 K. Plan for verifying that all personnel entering the Site have completed the Project-specific
32 environmental awareness training
- 33 L. Hazardous Materials Management Plan, including procedure for discovery of
34 unanticipated hazardous waste or contaminated materials
- 35 M. Unanticipated archeological discovery plan
- 36 N. Noise analysis and mitigation plan
- 37 O. Pre- and post-construction surveys for structures located within one-half mile of the area
38 of blasting and/or heavy ripping in the event any blasting and/or heavy ripping is planned
39 for construction purposes
- 40 P. Air quality management plan
- 41 Q. Asbestos control management plan (demolition)
- 42 R. Lead-based paint control management plan (demolition)
- 43 S. Sedimentation and erosion control plan

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1 Prior to issuance of NTP 2, Developer shall submit the EMP to ADOT for approval in ADOT's
2 good faith discretion. Developer shall not perform any Construction Work prior to ADOT's and
3 FHWA's approval of the EMP. Developer shall review, revise, and update the EMP annually to
4 reflect the Project's current state and to incorporate any changes attributable to revisions of
5 State or Federal guidelines. Developer shall prepare interim EMP revisions, in the form of
6 addenda, if revisions to the EMP are needed before the annual update.

7 **420.2.3.1 Environmental Communications Protocol**

8 The EMP must provide for the development, documentation, and implementation of an
9 environmental communications protocol (ECP). The ECP must describe the process to be used
10 for compliance and non-compliance reporting, unanticipated archaeological or hazardous
11 material discoveries, personnel's roles, procedures for internal and external communications,
12 and communications with ADOT. The ECP must be consistent with Developer's Public
13 Involvement Plan and the EMP. The ECP must include organizational charts that identify
14 Developer's Environmental Compliance Manager (ECM) and other personnel who will be
15 assisting the ECM to ensure compliance with all permit conditions, performance standards, and
16 environmental commitments.

17 **420.2.3.1.1 Internal Communications**

18 For internal communications procedures, Developer shall ensure that the EMP:

- 19 A. Describes Developer's organizational hierarchy and identify compliance roles and
20 internal reporting responsibilities;
- 21 B. Includes a clear discussion regarding which Key Personnel, in addition to the ECM, have
22 the authority to stop Work to prevent a violation from occurring; and
- 23 C. Describes the process for identifying and reacting to Non-compliance Events.

24 **420.2.3.1.2 External Communications**

25 For external communications procedures, Developer shall ensure that the EMP describes the
26 procedures that defines how all external communications received by Developer shall be
27 documented and handled, including how ADOT will be involved. External communications may
28 originate from Tribes, local jurisdictions, regulatory agencies, and the public. Issues may range
29 from public noise complaints to violation notices from regulatory agencies. Where appropriate,
30 this communication procedure must be consistent with the EMP. ADOT will remain the main
31 point of contact (unless Developer is otherwise directed by ADOT) with the public and for
32 environmental and permit coordination with Tribes, local jurisdictions, and regulatory agencies.
33 ADOT will lead all communication related to cultural resources and the Section 106 of the
34 *National Historic Preservation Act* process. Developer shall be responsible for external
35 notification and reporting requirements associated with the permits Developer obtains and for
36 which Developer is listed as the permittee, including reporting protocols identified within
37 Developer's spill containment and countermeasure plan.

38 **420.2.3.1.3 ADOT Communications**

39 For communications with ADOT, Developer shall ensure that the EMP:

- 40 A. Describes interactions between Developer and ADOT in regard to reporting non-
41 compliance issues.
- 42 B. Describes Developer's communication process and Key Personnel who are responsible
43 for recognizing when a design change and/or alternative construction technique may
44 require a permit modification or new approval.

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1 C. Describes Developer's strategy for managing design changes that may require permit
2 modifications or additional approvals.

3 **420.2.4 Project Environmental Commitment Requirements**

4 Developer shall comply with environmental commitments and requirements included in the
5 ROD. The table provided in TP Attachment 420-1 includes the Project-specific environmental
6 commitments associated with the ROD. Environmental mitigation measures have been
7 reviewed and approved by FHWA for the construction of the Project. These mitigation measures
8 are not subject to change without prior written approval from FHWA. Developer shall be
9 responsible for all environmental commitment requirements in TP Attachment 420-1, except
10 those requirements that are specifically identified as an ADOT action.

11 If, at any time, Developer is not in compliance with any applicable Laws, including any
12 Environmental Laws, and Governmental Approvals, ADOT may suspend the Work, in whole or
13 in part, under Section 18.2.1 of the Agreement until such time as the Errors, deficiencies, or
14 noncompliant situations have been corrected. Developer shall be responsible for any associated
15 monetary fines and any environmental restoration activities required to resolve violations are the
16 responsibility of Developer.

17 **420.2.5 Environmental Protection Training Program**

18 Developer shall design and implement an environmental protection training program for all
19 Developer and Subcontractor employees. Every Developer and Subcontractor employee who
20 Works on the Project (management through workers, including each new employee who begins
21 Work after issuance of NTP 1) must participate in an environmental protection training program.
22 The environmental protection training program must be complete prior to an individual
23 performing any Work on the Site. The training program must orient Developer employees and
24 Subcontractors to the following:

- 25 A. The overall importance of environmental issues in achieving a successful Project
- 26 B. The particular environmental sensitivities of the Project (including environmental
27 monitoring requirements)

28 ADOT will provide assistance regarding clarification and understanding of ADOT environmental
29 goals and policies. Developer shall notify the Governmental Entities and Project staff of the
30 training sessions and invite them to participate.

31 Developer shall include a schedule for implementation of the environmental protection training
32 program in the EMP. The schedule must include training sessions on the environmental
33 commitment requirements in TP Attachment 420-1 and must include a 6 week written
34 notification to ADOT for requesting cultural sensitivity training conducted by the Gila River
35 Indian Community (GRIC).

36 **420.2.6 Governmental Approvals**

37 **420.2.6.1 NEPA Approval**

38 The Governmental Approvals that ADOT is responsible for acquiring (ADOT-provided
39 approvals), and their status, are set forth in Table 420-2. The ADOT-provided approvals are
40 based on the ADOT *Final L/DCR* that is provided in the RIDs. Copies of ADOT-provided
41 approvals that ADOT has already secured are provided in the RIDs.

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Table 420-2 ADOT-Provided Approvals				
TP Attachment	Governmental Entity	ADOT-Provided Approval	Status	Availability Date
420-1	FHWA	South Mountain Freeway (Loop 202) Interstate 10 (Papago Freeway) to Interstate 10 (Maricopa Freeway) Final Environmental Impact Statement and Section 4(f) Evaluation, and Record of Decision (ROD) (“NEPA Approval”)	Executed	September 26, 2014; March 13, 2015

1 Developer acknowledges and agrees that changes to the Schematic ROW or incorporation of
 2 Developer-Designated ROW into the Project may require re-evaluation, amendment, or
 3 supplement to the NEPA Approval as the Work progresses. Developer shall be responsible for
 4 all Work in connection with such re-evaluation, amendment, or supplement in accordance with
 5 Section 4.3 of the Agreement. Developer shall identify any such changes and notify ADOT
 6 immediately. ADOT, in conjunction with FHWA, will determine whether an additional
 7 environmental study, re-evaluation, amendment, or modification is necessary.

8 Developer may request ADOT’s assistance and cooperation in connection with re-evaluations,
 9 amendments, or supplements to the NEPA Approval in accordance with and subject to the
 10 requirements in Section 4.3.8 of the Agreement. Developer shall prepare a NEPA Approval
 11 Package that includes material in connection with the re-evaluations, amendments, or
 12 supplements to the NEPA Approval, including the application for amended approvals. Developer
 13 shall submit the NEPA Approval Package to ADOT for review and approval by ADOT, in
 14 ADOT’s sole discretion. Upon ADOT’s approval with the NEPA Approval Package, ADOT will
 15 submit the NEPA Approval Package to the Governmental Entity having jurisdiction for
 16 consideration.

17 Developer shall comply with the obligations appearing in the NEPA Approval. Developer shall
 18 perform all obligations of the NEPA Approval except to the extent allocated to ADOT or FHWA
 19 as identified in TP Attachment 420-1. Developer shall not construct Work outside of the NEPA
 20 cleared areas.

21 Developer shall provide ADOT all documentation and perform analysis, as required, to ensure
 22 that ADOT can complete coordination and resolution of all environmental issues with affected
 23 interests and regulatory agencies as noted in the TP Attachment 420-1. Developer shall
 24 document the resolution of issues for the correspondence file, including meeting minutes and
 25 memoranda for the record. Developer shall document the permit requirements and contacts with
 26 the permitting agencies.

27 **420.2.6.2 Governmental Approvals Applied For or Issued in ADOT’s Name**

28 Developer shall provide assistance for Governmental Approvals that must be formally submitted
 29 or issued in ADOT’s name. In cases that require ADOT or FHWA to act as the coordinating
 30 party for Governmental Approvals, Developer shall provide all required data to support, to
 31 secure, or comply with the conditions of such Governmental Approvals. ADOT has undertaken
 32 certain preliminary work, including applications, exhibits, and correspondence, concerning such
 33 Governmental Approvals which are included in the RIDs. The following is a list of Governmental
 34 Approvals that must be applied for or issued in ADOT’s name, including a description of the

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1 preliminary work that ADOT has performed to date and certain requirements to be performed by
2 Developer with respect to such approvals:

3 A. *Section 404 of the Clean Water Act Permitting.*

4 ADOT has undertaken certain preliminary work concerning this application and has
5 obtained an approved Preliminary Jurisdictional Delineation by the United States Army
6 Corps of Engineers (USACE).

7 Developer shall submit a complete design and information package in conformance with
8 the 404 permit application requirements to ADOT for ADOT to coordinate with USACE
9 for submittal of the Section 404 permit application.

10 B. *Section 401 of the Clean Water Act Certification.*

11 Developer shall submit a complete design and information package in conformance with
12 the 401 application requirements to ADOT for ADOT to coordinate with Arizona
13 Department of Environmental Quality for certification under Section 401.

14 Typical USACE application review periods are contained within the *Operating*
15 *Agreement between the FHWA, USACE, and ADOT* provided in the RIDs.

16 For Governmental Approvals that must be applied for or issued in ADOT's name, Developer
17 shall prepare Governmental Approval Package(s) that provide complete design information and
18 include applications and all other required documentation. Developer shall submit the
19 Governmental Approval Package(s) to ADOT for approval in ADOT's good faith discretion.

20 **420.2.6.3 All Other Governmental Approvals**

21 Developer shall obtain all Governmental Approvals, other than the NEPA Approval, to complete
22 the Work. Prior to submittal to the Governmental Entity having jurisdiction, Developer shall
23 submit any and all Applications for Governmental Approvals to ADOT.

24 **420.3 ENVIRONMENTAL REQUIREMENTS**

25 Developer shall comply with the environmental requirements contained in the TP Attachment
26 420-1 during the Term. Developer shall not conduct or perform any ground disturbance activities
27 until the appropriate environmental clearance (i.e., cultural resources, hazardous materials, or
28 biological evaluations) has been issued for the applicable parcel. Developer shall coordinate
29 with ADOT to confirm if appropriate environmental clearance is issued.

30 **420.3.1 Environmentally Sensitive Areas**

31 Developer shall protect environmentally sensitive areas. Environmentally sensitive areas include
32 cultural resources as defined in the NEPA Approval, as well as those areas that may be
33 identified during the permitting and the preconstruction environmental survey(s) process.
34 Developer shall map environmentally sensitive areas on all Design Documents and identify and
35 address them in the EMP.

36 The Project is subject to inspections from the Governmental Entities. Developer shall allow
37 access to and follow the instructions from any Governmental Entities pertaining to requirements
38 for the protection or mitigation of impacts on environmentally sensitive areas.

39 **420.3.1.1 Environmentally Sensitive Avoidance Areas**

40 Developer shall fence the boundary of Environmentally Sensitive Avoidance Areas in
41 accordance with Section DR 420.3.1.2 of the TPs. Developer shall ensure that all Construction
42 Work or ground disturbing activities within the Environmentally Sensitive Avoidance Area Buffer
43 is monitored by ADOT or its designee. If the mainline is located within the airspace of the
44 Environmentally Sensitive Avoidance Area, Developer shall ensure that it is aligned at the

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1 farthest extents of the Environmentally Sensitive Avoidance Area and is entirely outside of the
2 Environmentally Sensitive Avoidance Area Protected Air Space.

3 **420.3.1.2 Environmentally Sensitive Area Fencing**

4 At the direction of ADOT, Developer shall protect environmentally sensitive areas by installing 4-
5 foot tall orange plastic barrier fencing with metal t-posts at the direction of ADOT around all
6 environmentally sensitive areas within the Project ROW, Temporary Construction Easements,
7 or Developer's Temporary Work Areas prior to any ground-disturbing activities. Developer shall
8 notify ADOT a minimum of 14 Business Days prior to installing environmentally sensitive area
9 fence to schedule coordination of installation of fence. During Construction Work near these
10 areas, Developer shall provide daily inspection of environmentally sensitive areas in accordance
11 with the EMP, and immediately report any damage or impact to ADOT and appropriate
12 Governmental Entity. Developer shall coordinate with ADOT on such damage or impacts and
13 provide potential on-site or off-site mitigation for such impacts, as required by permitting and
14 Governmental Entities.

15 Developer shall remove fencing from environmentally sensitive areas prior to Final Acceptance.
16 Developer shall notify ADOT a minimum of 14 Business Days prior to the removal of fencing
17 around environmentally sensitive areas to schedule the coordination of the fence removal.

18 **420.3.2 Archaeological**

19 Archaeological testing and recovery is not required within the environmentally cleared Project
20 area. However, Developer shall survey any access or other ancillary use areas outside of what
21 is currently environmentally cleared to locate and evaluate cultural resources. Developer shall
22 be responsible for any additional permitting, surveying, testing, or data recovery that might be
23 necessary, in accordance with the *Section 106 Programmatic Agreement*. Prior to any ground
24 disturbance, Developer shall prepare and submit all Archaeological Documentation and
25 Reporting to ADOT for review and comment. ADOT, in conjunction with FHWA, will be
26 responsible for submitting any draft or final report to the State Historic Preservation Office
27 (SHPO) or other consulting Governmental Entities.

28 **420.3.3 Cultural Resources**

29 ADOT will fulfill the commitments made in the ROD and *Section 106 Programmatic Agreement*
30 for the known cultural resources. A draft of the *Section 106 Programmatic Agreement* (2015-01
31 Draft SMF EIS Revised PA.PDF) is included in the RIDs. This will include any required data
32 recovery and the implementation of the *Traditional Cultural Property* enhancement and
33 mitigation plan for the Project as presented in TP Attachment 420-1. ADOT will notify Developer
34 of clearance of parcels with cultural resources in accordance with Section DR 470 of the TPs.

35 If human remains or funerary objects are encountered during activity related to the construction
36 of the freeway, Developer shall cease all further disturbances and activities within 300 feet of
37 the human remains or funerary objects and notify ADOT. Developer shall manage unexpected
38 cultural resources discoveries according to WUS-3 and CUL-10 of TP Attachment 420-1.

39 To comply with the *2015 Section 106 Programmatic Agreement*, ADOT will submit Developer's
40 Schematic Design and the Initial Design Submittal(s) to consulting parties for a 30 day review
41 and comment period. ADOT will not provide the consulting parties the Final Design Submittal or
42 RFC Submittal for review, unless the changes between Initial Design Submittal and Final
43 Design Submittal or Final Design Submittal and RFC Submittal are significant, as determined by
44 ADOT in its sole discretion. If such changes are determined significant, ADOT will submit the
45 Submittals to the consulting parties for a 30 day review and comment period.

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1 **420.3.4 Hazardous Materials**

2 Developer shall manage Hazardous Materials discovered during construction in accordance
3 with HZM-7 of TP Attachment 420-1.

4 **420.3.5 Noise**

5 Developer shall prepare a Final Technical Noise Analysis and Mitigation Report that complies
6 with the ADOT *Noise Abatement Policy* dated July 13, 2011. At the same time as the Initial
7 Design Submittal of the roadway design, Developer shall submit the Final Technical Noise
8 Analysis and Mitigation Report to ADOT for approval in ADOT's good faith discretion. In
9 accordance with Section 4a of the ADOT *Noise Abatement Policy*, Developer shall use a design
10 year of 2035 for prediction of future noise levels. In accordance with Section 4d of the ADOT
11 *Noise Abatement Policy*, Developer shall use the MAG regional travel demand output provided
12 in the RIDs (2013-08 MAG Travel Demand Model Output.zip) as the future traffic volumes. For
13 vehicle mix, Developer shall assume that the heavy vehicle volume from the MAG model
14 represents FHWA vehicle category classes 4 through 13, inclusive. Developer shall use hard
15 soil settings for ground type characteristics in the traffic noise model.

16 **420.3.6 Biological Resources**

17 ADOT has completed an initial survey of habitat suitability for the Sonoran desert tortoise. This
18 study (2014-12 AGFD Sonoran Desert Tortoise Survey Report.PDF) and any additional studies
19 are included in the RIDs. Developer shall use this information in the design of the Project.

20 **420.3.7 Waters of the United States**

21 Developer shall make every effort to not:

- 22 A. Create new drainage ditches or channels that the USACE would consider jurisdictional
- 23 or
- 24 B. Increase waters of the US jurisdictional area.

25 **420.3.8 Stormwater**

26 Developer shall:

- 27 A. Comply with the current Arizona Pollutant Discharge Elimination System (AZPDES)
- 28 Municipal Separate Storm Sewer System (MS4) permit;
- 29 B. Design and install post-construction controls for all newly developed or redeveloped
- 30 roads that discharge stormwater runoff in accordance with the ADOT *Post-Construction*
- 31 *Best Management Practices Manual for Water Quality*;
- 32 C. Coordinate with regulated MS4s within the Project regarding existing connections and
- 33 comply with the regulated MS4s' requirements; and
- 34 D. Provide permanent best management practices for the first flush volume (0.5-inches of
- 35 rainfall) for impervious areas within the Project ROW.

36 **420.3.9 Wildlife Crossings**

37 **420.3.9.1 Fencing**

38 Developer shall include complete exclusion barrier or fencing (also called funnel or non-
39 permeable fencing) that ties into crossing structures (culvert headwalls, bridge abutments, etc.)
40 or other barriers to movement (noise walls, rock cut, etc.) at the multiuse crossings.

- 41 A. For deer, the fence shall be a minimum of 6.5 feet tall above ground, secured or buried
- 42 in ground.

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1 B. For tortoise, the fence shall be buried 2 feet deep, 1.5 feet tall above ground, and of
2 materials with no openings or small openings, such as mesh or chain link fence. Fence
3 shall overhang at top to inhibit climbing; maintain without vegetation directly adjacent to
4 fence or barrier. Guardrail mounted fence has worked well on some projects; reptile
5 exclusion walls are an alternate approach.

6 Escape options such as ramp on the road side of barrier for tortoise and one-way jump-out for
7 deer shall be included.

8 **420.3.9.2 Structures**

9 Developer shall design new drainage structures (pipes and culverts) between 17th Avenue and
10 51st Avenue of the Project to promote crossing by tortoises and riparian amphibians and
11 reptiles. Developer shall:

- 12 A. Include natural substrate
13 B. Minimize length of culvert perpendicular to road and line up culverts across divided
14 highways
15 C. Not include drop-offs such as may be caused by erosion on downstream side of a
16 concrete-bottom drainage structure or stepped elevation within a structure
17 D. Not include rip rap blocking access to the structure; rip rap shall be grouted or buried
18 and maintained so that it does not block tortoises from entering structure
19 E. Use materials that are not toxic to aquatic life and are not prone to erosion

20 Developer shall provide multiuse crossing structures in the area of the South Mountains for deer
21 and other mammals. The multiuse crossing structures must be bridges and have:

- 22 A. A minimum opening of 100 feet from toe of slope to toe of slope (piers may be located
23 within the opening as long as the component areas remain 50 feet between piers or
24 between a pier and a toe of slope);
25 B. An open appearance (no exposed vertical walls greater than 25 percent of the vertical
26 clearance and slopes no steeper than 2:1);
27 C. Natural substrate floors; and
28 D. Not have rip-rap across any portion of the wildlife pathway.

29 **420.4 SUBMITTALS**

30 Table 420-3 reflects a nonexclusive list of Submittals identified in Section DR 420 of TPs and is
31 not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall determine
32 and submit all Submittals as required by the Contract Documents, Governmental Approvals,
33 and Governmental Entities. Unless otherwise indicated, Developer shall submit all Submittals in
34 both electronic format and hardcopy format. At a minimum and unless otherwise specified in the
35 Contract Documents, Developer shall submit the following to ADOT in the formats described in
36 Section GP 110.10.2.1.1 of the TPs:

Table 420-3 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Environmental Management Plan	2	6	1	Prior to issuance of NTP 2	DR 420.2.3
NEPA Approval Package	1	2	1	As determined by Developer	DR 420.2.6.1

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Table 420-3 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Governmental Approval Package(s)	2	2	1	As determined by Developer	DR 420.2.6.2
Applications for Governmental Approvals	5	2	1	Prior to submittal to the Governmental Entity having jurisdiction	DR 420.2.6.3
Archaeological Documentation and Reporting	4	2	1	Prior to any ground disturbance	DR 420.3.2
Final Technical Noise Analysis and Mitigation Report	2	2	1	At the same time as Initial Design Submittal of the roadway design	DR 420.3.5
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1

2

End of Section

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1 **DR 425 PUBLIC INFORMATION**

2 Refer to Section CR 425 of the TPs for public information provisions during the design phase.

3

4

End of Section

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1 **DR 430 UTILITIES**

2 **430.1 GENERAL REQUIREMENTS**

3 Developer shall perform all Utility Design Work in compliance with the requirements of Section
4 DR 430 of the TPs. Traffic signals, street lighting, and intelligent transportation systems (ITS)
5 and freeway management systems are not considered “Utilities” to be adjusted under Section
6 DR 430 or the TPs.

7 **430.2 ADMINISTRATIVE REQUIREMENTS**

8 **430.2.1 Standards**

9 Developer shall perform all Utility design Work in accordance with the standards, manuals, and
10 guidelines listed in Table 430-1.

Table 430-1 Standards		
No.	Agency	Name
1	ADOT	Guideline for Accommodating Utilities on Highway Rights-of-Way
2	ADOT	Encroachment Permit (azdot.gov/business/permits/encroachment-permits)
3	Varies	Utility Company Standards

11 Developer shall perform the Utility Adjustment Work in accordance with the applicable Utility
12 Company's standards, 23 CFR 645 for Utilities, and the Contract Documents.

13 **430.2.2 Utility Coordination**

14 **430.2.2.1 Utility Coordination Plan**

15 Developer shall prepare a Utility Coordination Plan that includes the following information:

- 16 A. Description of the Utility Adjustment Coordinator staff, their roles, and responsibilities
- 17 B. Description of the procedures and schedule for contacting Utility Companies
- 18 C. Description of the documentation of all Work with the Utility Companies
- 19 D. Description of the process of coordinating Utility Design Work with Utility Companies
- 20 E. Description of the process of coordinating Utility Construction Work with Utility
21 Companies
- 22 F. Appendix
 - 23 1. Utility coordination staff organizational chart
 - 24 2. Utility contact list
 - 25 3. Utility coordination flow chart
 - 26 4. Utility coordination check list
 - 27 5. Utility conflict matrix
 - 28 a. Conflict
 - 29 b. Proposed mitigation
 - 30 c. Relocation/adjustment cost analysis

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1 6. Prior rights determination matrix

2 Prior to issuance of NTP 2, Developer shall submit the Utility Coordination Plan to ADOT for
3 review and comment.

4 **430.2.2.2 Utility Coordination Meetings**

5 The Utility Adjustment Coordinator shall hold utility coordination meetings on a weekly basis or
6 more often as needed, with ADOT and the Utility Companies to communicate with the Utility
7 Companies, Developer's staff, and others to ensure that conflicts are being resolved throughout
8 the duration of the design of the Project.

9 **430.2.3 ADOT-Provided Information**

10 A Utility data search has been conducted for the Project that includes the collection of as-built
11 drawings and system maps from Utility Companies and the designation of Utilities by field
12 location surveys. Potholing was not performed. Utilities have been designated along the
13 Schematic Design; however, the designation may not include all Utilities within the Project
14 ROW. Developer shall verify the presence of all Utilities within the Project ROW. An existing
15 Utility CAD file and inventory matrix was developed for the Project. The Utility inventory matrix,
16 Utility CAD file, and any maps provided by the Utility Companies are included in the RIDs. Maps
17 and plans provided by the City of Phoenix Water Services Department are not included in the
18 RIDs. Developer shall secure the appropriate security clearance required to receive that
19 information from the City of Phoenix.

20 Several Utility meetings were held with the Utility Companies. A general Utility informational
21 meeting was held with Utility Companies on October 23, 2014. The purpose of the meeting was
22 to inform the Utility Companies of the Project, the method of Project delivery, and potential
23 Utility Adjustment process.

24 Additional meetings were held with Utility Companies to discuss their facilities in greater detail
25 and document any issues or requirements. For such meetings, a discussion items document
26 was produced; this document details the Utility Company's facilities known to be present, any
27 prior rights claims, anticipated Utility Adjustments, and any coordination, review requirements,
28 or construction issues that may be associated with the Utility. These discussion items
29 documents are provided in the RIDs, along with any other system maps, guidelines, conflict
30 reviews, or prior rights documents that were provided.

31 **430.2.4 Procedures and Agreements**

32 **430.2.4.1 Prior Rights Determination**

33 Utilities that have prior rights are those that existed before the construction of a public highway,
34 or by ownership of the land, or by possession of an easement or other compensable land right.
35 ADOT will approve or disapprove of any prior right claims. Final prior rights determinations have
36 not been made for all Utilities on the Project and must be determined. Preliminary prior rights
37 determinations are included in the RIDs. Developer shall coordinate with ADOT and the Utility
38 Company to ensure all required documents have been provided by the Utility Company,
39 evaluate the information, provide a recommendation to ADOT and ensure a final prior rights
40 decision is made by ADOT. Developer shall document all coordination throughout the approval
41 process, including the final approval disposition.

42 **430.2.4.2 Utility Agreements**

43 Developer is responsible for preparing, negotiating and entering into Utility Agreements with all
44 Utility Companies affected by Utility Adjustment Work. The Utility Agreement shall define who

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1 will have the responsibility to perform the design and construction of the Utility Adjustment
2 Work, the time frames under which the Utility Adjustment Work will occur, and compensation
3 terms, if any, between the parties performing the Utility Adjustment Work. Refer to Section
4 5.10.2.4 of the Agreement for Utility Agreement requirements.

5 Except as provided in Sections 5.10.2.5 or 5.10.2.6 of the Agreement, ADOT will not be a party
6 to Utility Agreements. If a Utility Company has proper Prior Rights Documentation in connection
7 with a Utility Adjustment, then ADOT, together with Developer and the Utility Company, will be a
8 party to the corresponding Utility Agreement. In such a case, ADOT will be a signatory to the
9 Utility Agreement for the sole purpose of indicating its consent thereto and agreeing to the terms
10 and conditions in the Utility Agreement respecting the Utility Company's prior rights. ADOT will
11 be signatory to all Utility Adjustments with the City of Phoenix, or other Governmental Entity, as
12 may be required, for the Project.

13 Developer shall coordinate and facilitate the securing of all Utility Agreements. Developer shall
14 prepare all Utility Agreements in coordination with ADOT and shall provide originals, not copies,
15 of the Utility Agreements. A sample ADOT Utility Agreement format is included in the RIDs.

16 **430.2.4.3 Utility Clearance Letters**

17 Developer shall prepare Utility Clearance Letters for each Project Segment. A sample utility
18 clearance letter is included in the RIDs; however, the initial Utility Clearance Letters must
19 include the following:

- 20 A. Each Utility Company within the Project Segment listed separately, showing the
21 information below:
- 22 1. The name of the Utility Company and contact information
 - 23 2. For each of the Utility Company's Utilities, a description of each Utility and one or the
24 other of the following statements:
 - 25 a. The Utility is not in conflict with construction. This statement is to be used only if:
 - 26 i. A Utility is present, but does not need to be the subject of a Utility
27 Adjustment, or
 - 28 ii. A Utility is present, and it needs to be specifically avoided or protected in
29 place
 - 30 b. The Utility is in conflict and a Utility Adjustment is needed. A description of the
31 required adjustment must be included, and the status of each adjustment, which
32 must include one of the following statements:
 - 33 i. Adjustment completed
 - 34 ii. Adjustment to be done by Developer during construction
 - 35 iii. Adjustment to be done by the Utility Company during construction, with
36 estimated completion date or number of working days tied to another
37 milestone
 - 38 iv. Adjustment is currently in progress, by who, with an estimated completion
39 date

40 At least 10 Business Days prior to any Construction Work within the Project Segment,
41 Developer shall submit initial Utility Clearance Letter(s), along with copies of correspondence
42 from Utility Companies verifying the information contained in the letter is accurate, to ADOT for
43 review and comment.

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1 Developer shall prepare a final Utility Clearance Letter for each Project Segment indicating that
2 all needed Utility Adjustments have been completed and all Utilities have been mitigated. Within
3 10 Business Days of the completion of all Utility Adjustments within the applicable Project
4 Segment, Developer shall submit a final Utility Clearance Letter for each Project Segment to
5 ADOT for review and comment.

6 **430.3 DESIGN REQUIREMENTS**

7 **430.3.1 General Requirements**

8 Developer shall minimize impacts to all Utilities. Utility Adjustments or protection of Utilities
9 within the Project ROW must comply with the requirements of the ADOT *Guide for*
10 *Accommodating Utilities on Highway Right-of-Way*, except as modified in the Contract
11 Documents.

12 **430.3.2 Utility Identification**

13 Developer shall verify the location of all Utilities within the Project limits or otherwise affected by
14 the Work. Utility Companies known to have facilities within the Project limits include the
15 following:

- 16 A. Arizona Public Service – 230 kV power
- 17 B. AT&T – fiber optic
- 18 C. CenturyLink – telephone and fiber optic
- 19 D. City of Phoenix – water and sewer; also maintains Laveen Area Conveyance Channel
- 20 E. Cox Communications – cable and fiber optic
- 21 F. Kinder Morgan El Paso Natural Gas – pipeline for natural gas
- 22 G. Kinder Morgan Petro – pipelines for petroleum
- 23 H. Level3 (and former Williams) – fiber optic
- 24 I. Peninsula-Horowitz - irrigation
- 25 J. Roosevelt Irrigation District – irrigation canal and pipes
- 26 K. Salt River Project Irrigation – irrigation pipelines, ditches, and wells
- 27 L. Salt River Project Power – 500 kV, 230 kV, 69 kV, 12 kV, and primary power
- 28 M. Southwest Gas – pipelines for natural gas
- 29 N. Sprint – fiber optic
- 30 O. Verizon (and former MCI) – fiber optic
- 31 P. Western Area Power Administration – 230 kV power
- 32 Q. Zayo Group – fiber optic

33 Developer shall ensure that all Utilities within the Project ROW have been designated and
34 included in the base CAD file(s). Permit logs that may contain additional information are
35 available from ADOT, Maricopa County, and City of Phoenix for review.

36 **430.3.3 Utility Report**

37 Developer shall prepare Utility Reports for each Project Segment that documents the progress
38 of the Utility coordination efforts. The Utility Report must be signed and sealed by the
39 responsible Professional Engineer and must contain a narrative detailing the various Utility
40 conflicts and resolutions, the updated Utility matrix, and copies of all correspondence, including
41 meeting minutes. The narrative must include:

- 42 A. A list of all Utility Companies and contact information;

ADDENDUM #2

- 1 B. The basis of the Utility Information;
- 2 C. A summary, by Utility Company, of the Utility facilities, conflicts, and considerations for
- 3 relocation or mitigation;
- 4 D. Pothole data acquired;
- 5 E. Anticipated Utility Adjustment costs, broken out by prior right/non-prior right;
- 6 F. Agreement status;
- 7 G. Right-of-Way needed for relocations and acquisition status;
- 8 H. Anticipated relocation design and construction schedules; and
- 9 I. ADOT *Encroachment Permit* status.

10 Every 3 months, Developer shall submit the Utility Report(s) to ADOT for review and comment.
11 Within 20 Business Days of the completion of construction for each Project Segment Developer
12 shall prepare and submit a final Utility Report to ADOT for review and comment.

13 **430.3.4 Utility Adjustments**

14 Except for those Utility Adjustments for which ADOT is entering into Utility Agreements as noted
15 herein, Developer shall perform Utility Adjustments or ensure that the adjustments are made by
16 the Utility Companies to accommodate the Project in accordance with the ADOT *Guideline for*
17 *Accommodating Utilities on Highway Rights-of-Way* and the Contract Documents.

18 ADOT is executing Utility Agreements for certain Utility Adjustments as follows:

19 A. SRPP 69kV and APS 230kV power lines that currently cross the corridor centered
20 approximately 540 feet east of 40th Street. The adjustment will result in two crossings of
21 the corridor. The adjusted SRP 69kV lines will cross the corridor in the same location as
22 the western-most existing crossing utilizing one new pole within the Project ROW, and
23 will provide clearance to the Schematic Design. The existing SRP 69kV lines which run
24 east from this crossing will remain and their easements must remain accessible. The
25 easternmost SRP 69kV existing crossing will be removed. The adjusted APS 230kV
26 lines will cross the corridor approximately 730 feet east of it's existing crossing utilizing
27 two new poles within the Project ROW, and will provide clearance to the Schematic
28 Design.

29 This Utility Adjustment is expected to be complete by November 30, 2016.

30 B. WAPA 230kV power lines that currently cross the corridor centered approximately 1,225
31 feet east of 51st Avenue. The adjustment will result in pole #26/3 being removed and
32 replaced with two poles to be placed approximately 250 feet northeast, outside of the
33 Project ROW, and will provide clearance to the Schematic Design. The H-poles located
34 within the Project ROW will remain in place. Pole #26/2 located north of the Project
35 ROW will be replaced in approximately the same location.

36 This Utility Adjustment is expected to be complete by March 31, 2017.

37 C. WAPA 230kV power lines that currently cross the corridor approximately one-half mile
38 north of Broadway Road (Elwood Street alignment). The Utility Adjustment will remove
39 the existing poles located either side of the corridor and will place two new taller poles
40 approximately 50 feet east of the current poles, and will provide clearance to the
41 Schematic Design.

42 This Utility Adjustment is expected to be complete by April 30, 2017.

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1 Developer shall incorporate the Utility Adjustments that ADOT is executing in its design and
2 schedule.

3 No Utilities will be allowed on or within any existing or proposed bridges. Abandonment of
4 Utilities within the Project ROW must comply with the requirements in the ADOT *Guideline for*
5 *Accommodating Utilities on Highway Rights-of-Way*.

6 Developer shall coordinate access requirements of the Utility Companies. Developer shall
7 provide for such access as may be requested by the Utilities and shall ensure that it is
8 acceptable to ADOT. For prior right Utilities, Developer shall design any replacement access
9 roads that may be displaced by the proposed improvements.

10 Developer shall replace all eight existing SRP Irrigation siphons along I-10 (Papago) between
11 77th Avenue and 43rd Avenue.

12 **430.3.5 Utility Service Connections**

13 Developer shall provide new Utility service connections as required for the Project, including
14 lighting, freeway management systems, traffic signals, irrigation controllers, or other facilities in
15 accordance with the Contract Documents. Developer shall also provide any temporary service
16 connections as may be needed during construction. Developer shall coordinate with the
17 appropriate Utility Companies and Governmental Entities to disconnect existing services that
18 may be present and set up new or temporary services in accordance with the appropriate Utility
19 Company's or Governmental Entity's requirements.

20 Developer shall prepare Utility Service Request Letters(s) to establish new services in
21 accordance with the applicable Utility Company standards. At least 10 Business Days prior to
22 planned submittal of a Utility Service Request Letter to the associated Utility Company,
23 Developer shall submit Utility Service Request Letter(s) to ADOT. Utility Service Request
24 Letters must include the service address and information for the individual responsible for
25 paying the utility bill. Developer shall obtain and comply with all permit requirements for all Utility
26 service establishment and disconnections needed for the Project.

27 Developer shall remove any temporary Utility facilities no longer required. Developer shall
28 furnish the necessary equipment and furnishings required by the Utility Companies, as
29 applicable, at the point of source. This includes any and all necessary special trench, conduit
30 and backfill, and fence enclosures or gates required by each Utility Company. If extensions of a
31 Utility are required to provide the new service, Developer shall be responsible for the extension,
32 including any land rights that may be needed.

33 **430.3.6 Utility Plans**

34 Developer shall incorporate all Utility information into the Design Documents. Developer's utility
35 base CAD file must indicate the quality and reliability of existing Utility information. Vertical
36 locations of underground Utilities must be shown on all cross sections and details in the Design
37 Documents.

38 Prior to permit application, Developer shall obtain Utility Company approval of Utility Adjustment
39 design plans prepared by Developer. Developer shall provide Utility Adjustment design plans
40 approved by the Utility Company to ADOT as part of the Utility Report(s).

41 Developer shall design all Utility Adjustments to city- or county-owned water, sanitary sewer,
42 and storm drain facilities, as needed, and shall obtain approval of the design from the
43 appropriate Governmental Entities. Unless otherwise agreed to in writing by Developer, the
44 applicable Utility Company must design all other Utility Adjustments.

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1 **430.3.7 ADOT Encroachment Permits**

2 Developer shall coordinate with the Utility Companies and ADOT to secure, prior to
3 commencing any construction within the Project ROW, an ADOT encroachment permit is
4 obtained for each Utility that will be installed, adjusted, or remain in the Project ROW. The Utility
5 Company must file the permit application. See the ADOT website
6 (<http://azdot.gov/business/Permits/encroachment-permits>) for more information regarding
7 encroachment permits.

8 **430.3.8 Utility Encasement**

9 Developer shall determine if Utilities require encasement and shall encase Utilities in
10 accordance with the ADOT *Guideline for Accommodating Utilities on Highway Rights-of-Way*,
11 unless otherwise specified in the Contract Documents.

12 All proposed siphons must include a casing pipe.

13 Existing utility crossings that are to remain, electric and telephone conduits, ductbanks, gravity
14 sewers, and storm drains crossing beneath the roadways does not require encasement,
15 provided that the strength of the utility line is capable of withstanding the load.

16 **430.4 SUBMITTALS**

17 Table 430-2 reflects a nonexclusive list of Submittals identified in Section DR 430 of the TPs
18 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
19 determine and submit all Submittals as required by the Contract Documents, Governmental
20 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
21 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
22 specified in the Contract Documents, Developer shall submit the following to ADOT in the
23 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 430-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Utility Coordination Plan	4	2	1	Prior to issuance of NTP 2	DR 430.2.2.1
Initial Utility Clearance Letter(s)	4	2	1	At least 10 Business Days prior to any Construction Work within the Project Segment	DR 430.2.4.3
Final Utility Clearance Letter(s)	4	2	1	Within 10 Business Days of the completion of all Utility Adjustments within the applicable Project segment	DR 430.2.4.3
Utility Report(s)	4	0	1	Every 3 months	DR 430.3.3
Final Utility Report(s)	4	2	1	Within 20 Business Days of the completion of construction for that Project segment	DR 430.3.3

ADDENDUM #2

Table 430-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Utility Service Request Letter(s)	5	2	1	At least 10 Business Days prior to submitting the Utility Service Request Letter to the associated Utility Company	DR 430.3.5
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1

2

End of Section

ADDENDUM #2

1 DR 436 RAILROAD

2 436.1 GENERAL REQUIREMENTS

3 Developer shall perform all Design Work impacting the railroad in compliance with the
4 requirements of Section DR 436 of the TPs.

5 436.1.1 Existing Railroad Crossings

6 The Project interfaces with the railroad corridor owned and operated by Union Pacific Railroad
7 (UPRR). There is an existing railroad at-grade crossing of the UPRR within the Project, which
8 has specific a USDOT number as reflected in Table 436-1.

Table 436-1 Existing Railroad Crossing Locations		
Railroad Crossing Locations	USDOT Crossing No.	Railroad MP
59th Avenue	741811U	899.69

9 436.2 ADMINISTRATIVE REQUIREMENTS

10 436.2.1 Standards

11 Developer shall perform all design Work impacting the railroad in accordance with the
12 standards, manuals, and guidelines listed in Table 436-2.

Table 436-2 Standards		
No.	Agency	Name
1	BNSF/UPRR	Guidelines for Railroad Grade Separation Projects
2	AREMA	Manual for Railway Engineering

13 Developer shall perform the design Work impacting the railroad in accordance with the 23 CFR
14 646, *UPRR Construction and Maintenance Agreements*, and Arizona Corporation Commission
15 (ACC) authorization.

16 436.2.2 Railroad Scope

17 Developer's design and coordination related railroad Work includes at least the following
18 activities:

- 19 A. Preparation and furnishing of Railroad Submittal Packages for each of the proposed
20 roadway and off-site drainage crossings of the railroad.
- 21 B. Providing any information required to support ADOT with the UPRR review and approval
22 processes.
- 23 C. Providing any information required to support ADOT with the ACC review and approval
24 processes required for all needed grade separation, temporary and permanent crossings
25 of the railroad.

ADDENDUM #2

- 1 D. Assisting ADOT in securing executed *UPRR Construction and Maintenance Agreements*
- 2 for each crossing as further described herein.
- 3 E. Complying with the requirements of the *UPRR Construction and Maintenance*
- 4 *Agreements*, including entering into a right of entry agreement and entering into or
- 5 obtaining any other necessary agreements, etc.
- 6 F. Obtaining and complying with all applicable design specifications and requirements for
- 7 each Work location that is on or adjacent to UPRR right-of-way.
- 8 G. Arranging for and obtaining all temporary rights-of-entry and access onto railroad
- 9 property, and comply with all railroad requirements for access, entry, and safety training
- 10 for all personnel involved.
- 11 H. Identifying and coordinating with UPRR for railroad flagging operations, and pay for
- 12 costs of flagging.
- 13 I. Complying with and performing roadway worker training courses for all personnel that
- 14 may enter any UPRR right-of-way.

15 Based on Design Documents provided by Developer as further defined herein, ADOT will
16 provide the information to UPRR in accordance with Section DR 436.3.1 of the TPs. UPRR and
17 ADOT will be signatories to the *UPRR Construction and Maintenance Agreements*. ADOT will
18 apply to the ACC for authorization for each railroad crossing. Developer shall ensure that all
19 railroad track Work, all railroad signal Work, and any UPRR-owned facilities impacted by the
20 Project are designed by UPRR.

21 **436.2.3 UPRR Requirements**

22 Developer shall obtain a temporary UPRR construction license to construct the improvements at
23 each crossing location within UPRR right-of-way. Developer shall arrange for UPRR to provide
24 flagging services necessary for the safety of UPRR's property and the operation of UPRR's
25 trains during all Project-related activities which occur within UPRR right-of-way. Developer shall
26 ensure that its initial UPRR contact is the Manager of Industrial and Public Projects. As part of
27 obtaining the necessary rights of entry and licenses, Developer shall arrange for UPRR to
28 provide a contract project coordinator to serve as the UPRR contact.

29 **436.2.4 UPRR Agreements**

30 Developer shall comply with the requirements of all executed *UPRR Construction and*
31 *Maintenance Agreements* in connection with the performance of the Work on proposed railroad
32 crossings. Standard language and requirements of a *UPRR Construction and Maintenance*
33 *Agreement* is included in the example agreement included in the RIDs. Each final executed
34 UPRR Construction and Maintenance Agreement language may differ from the example
35 provided in the RIDs. Developer's rights and responsibilities regarding *UPRR Construction and*
36 *Maintenance Agreements* approval are included in Section 5.11.2 of the Agreement.

37 Prior to entering UPRR right-of-way, Developer shall obtain railroad *Right-of-Entry Agreements*
38 with UPRR and shall coordinate entry directly with UPRR. Additionally, Developer shall obtain
39 any other permits and approvals necessary to perform Work in UPRR right-of-way. Prior to
40 entering UPRR right-of-way, Developer shall submit a copy of the executed Railroad Right-of-
41 Entry Agreement to ADOT.

42 **436.3 DESIGN REQUIREMENTS**

43 **436.3.1 Railroad Submittal Packages**

44 Developer shall prepare a Railroad Submittal Package for each proposed railroad crossing to
45 assist ADOT in securing an *executed UPRR Construction and Maintenance Agreement* for each

ADDENDUM #2

1 crossing. No Work may occur within UPRR right-of-way prior to receipt of executed and
2 recorded *UPRR Construction and Maintenance Agreements*, unless otherwise authorized by
3 ADOT and UPRR.

4 Developer shall provide Railroad Submittal Packages consistent with the requirements set forth
5 in Section DR 436.2.1 of the TPs, unless modified herein. A complete Railroad Submittal
6 Package must include the following:

- 7 A. Plans reflected as a 100% Submittal as defined by UPRR;
- 8 B. All information required for a design Submittal, with the incorporation of ADOT design
9 Submittal comments;
- 10 C. Temporary and permanent horizontal clearances in accordance with Burlington Northern
11 Santa Fe (BNSF)/UPRR *Guidelines for Railroad Grade Separation Projects*;
- 12 D. Temporary and permanent vertical clearances in accordance with TP Attachment 440-1;
- 13 E. Provision for underdeck lighting for bridges as required by the BNSF/UPRR *Guidelines*
14 *for Railroad Grade Separation Projects*;
- 15 F. Pier protection in conformance with BNSF/UPRR *Guidelines for Railroad Grade*
16 *Separation Projects* and AREMA requirements;
- 17 G. Bridge cross sections with sufficient data to determine geometry;
- 18 H. Demolition considerations;
- 19 I. Top of rail survey per BNSF/UPRR *Guidelines for Railroad Grade Separation Projects*;
- 20 J. Access roads and bridge elevation;
- 21 K. Railroad identification information (mile post, subdivision, etc.);
- 22 L. Foundation plans showing bent(s), column(s), and foundation locations for foundations
23 located in UPRR right-of-way;
- 24 M. Construction impact limits to construct all improvements adjacent to and within UPRR
25 right-of-way;
- 26 N. Estimated cost of flagging work, so that the estimate can be included in each of the
27 *UPRR Construction and Maintenance Agreements*; Developer acknowledges and
28 agrees that such estimate does not relieve Developer of its obligations to pay the actual
29 costs of flagging; and
- 30 O. Any additional information, data, and/or supporting information as required by ADOT.

31 Developer shall submit all Railroad Submittal Package(s) to ADOT for approval in ADOT's good
32 faith discretion, and to UPRR for review and approval. If acceptable, Developer shall prepare
33 and submit final Railroad Submittal Package(s) to ADOT for approval in ADOT's good faith
34 discretion. ADOT will submit the Railroad Submittal Package to UPRR within 7 Business Days
35 of receipt of a complete Railroad Submittal Package.

36 **436.3.2 ACC Submittal**

37 Developer acknowledges and agrees that all grade separation and temporary and permanent
38 crossings of the railroad require ACC approval. *Procedures for Requesting a New Crossing or*
39 *Upgrading of an Existing Crossing* includes typical requirements for ACC approval and is
40 included in the RIDs.

41 After receiving UPRR approval of the plans and having executed and delivered all *UPRR*
42 *Construction and Maintenance Agreements*, Developer shall prepare an ACC Submittal
43 Package for each crossing. An on-site meeting between ACC and Developer may be required, if

ADDENDUM #2

1 requested by ACC. A complete ACC Submittal Package is comprised of Plans and information
2 as follows:

- 3 A. Introductory letter;
- 4 B. Executed *UPRR Construction and Maintenance Agreement*;
- 5 C. 100% Plans as defined by UPRR and approved by UPRR; and
- 6 D. Other information as required by ACC.

7 Developer shall submit one original and thirteen copies of each ACC Submittal Package to
8 ADOT for review and approval by ADOT, in ADOT's sole discretion, and ACC. If acceptable,
9 ADOT will submit each ACC Submittal Package to ACC within 7 Business Days of receipt of a
10 complete ACC Submittal Package.

11 **436.3.3 Railroad Operations**

12 Developer shall coordinate and schedule with UPRR all activities that affect the railroad.
13 Developer shall coordinate and schedule all Work within UPRR right-of-way to occur within the
14 time gaps between trains.

15 Prior to performing any Work within UPRR right-of-way, Developer shall execute Exhibit C and
16 C-1 of the "Agreement between UPRR and the Contractor," which is attached to each executed
17 *UPRR Construction and Maintenance Agreements* between ADOT and UPRR.

18 **436.3.4 Railroad Flagging**

19 Developer shall determine the number of flagging days required and submit a request to UPRR
20 for any flagging Work. Developer shall be responsible for any schedule impacts and costs
21 associated with flagging required for the Project, and such flagging Work must be performed by
22 UPRR flaggers in accordance with the executed *UPRR Construction and Maintenance*
23 *Agreements*.

24 Developer shall not commence the Work or permit the Work to commence until Developer
25 receives, in writing, assurance from UPRR's designated representative that arrangements have
26 been made for flagging service, and receives the UPRR Work Authorization. Prior to any Work
27 within UPRR right-of-way, Developer shall submit copies of the UPRR Work Authorization(s) to
28 ADOT.

29 **436.3.5 Operational Safety**

30 Developer must prove successful completion of roadway worker training courses by all
31 personnel entering UPRR right-of-way. Developer shall ensure that all personnel working within
32 UPRR right-of-way comply with roadway worker training courses requirements and the railroad
33 requirements regarding personal protective equipment (PPE) and Work within the UPRR right-
34 of-way.

35 **436.4 SUBMITTALS**

36 Table 436-3 reflects a nonexclusive list of Submittals identified in Section DR 436 of the TPs
37 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
38 determine and submit all Submittals as required by the Contract Documents, Governmental
39 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
40 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
41 specified in the Contract Documents, Developer shall submit the following to ADOT in the
42 formats described in Section GP 110.10.2.1.1 of the TPs:

ADDENDUM #2

Table 436-3 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Railroad Right-of-Entry Agreement	5	2	1	Prior to entering UPRR right-of-way	DR 436.2.4
Railroad Submittal Package(s)	2	0	1	As determined by Developer	DR 436.3.1
Final Railroad Submittal Package(s)	2	1	1	As determined by Developer	DR 436.3.1
ACC Submittal Package(s)	1	14	1	As determined by Developer	DR 436.3.2
UPRR Work Authorization(s)	5	2	1	Prior to any Work within UPRR right-of-way	DR 436.3.4
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1
2

End of Section

ADDENDUM #2

1 **DR 440 ROADWAY**

2 **440.1 GENERAL REQUIREMENTS**

3 Developer shall perform all roadway Design Work in compliance with the requirements of
4 Section DR 440 of the TPs.

5 **440.2 ADMINISTRATIVE REQUIREMENTS**

6 **440.2.1 Standards**

7 Developer shall perform all roadway Design Work in accordance with the standards, manuals,
8 and guidelines listed in Table 440-1.

Table 440-1 Standards		
No.	Agency	Name
1	ADOT	Design Exception and Design Variance Process Guide
2	U.S. Access Board	ADA Accessibility Guidelines
3	U.S. Access Board	Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
4	AASHTO	A Policy on Geometric Design of Highways and Streets
5	AASHTO	Roadside Design Guide
6	AASHTO	A Policy on Design Standards – Interstate System

9 **440.3 DESIGN REQUIREMENTS**

10 **440.3.1 Access Control**

11 The access control line for a fully access controlled freeway must be broken at its intersection
12 with the crossroad at an interchange as depicted in Figure 506A of the ADOT *Roadway Design*
13 *Guidelines*. Full access control must extend along the crossroad a minimum of 660 feet beyond
14 the end of exit ramp radius returns. From entrance ramps, full access control must extend along
15 the crossroad a minimum of 330 feet beyond the radius return. Between 330 feet and 660 feet
16 from the entrance ramp returns, access along the crossroad must be limited to right-in / right-out
17 only.

18 When frontage roads join the ramps at an interchange with a crossroad, the access control must
19 be broken across the frontage road from the back of the ramp paved gore to the outside of the
20 frontage road. The access control must continue along the outside of combined ramp and
21 frontage road from 100 feet beyond the back of ramp paved gore to the intersection with the
22 crossroad and extend along the crossroad as described above and depicted in Figure 506B of
23 the ADOT *Roadway Design Guidelines*.

24 Access control limits must be depicted graphically on the roadway Plans. The actual control
25 dimensions must be shown and described on the ROW plans. Variances to the minimum
26 access control requirements are included in the RIDs.

ADDENDUM #2

1 **440.3.2 Design Criteria**

2 Developer shall design the roadway in accordance with the design criteria shown in TP
3 Attachment 440-1 and TP Attachment 440-2. All Design Work on the interstate system must
4 comply with the requirements in the AASHTO *A Policy on Design Standards – Interstate*
5 *System*.

6 **440.3.2.1 Sight Distance**

7 Sight distance requirements for all roadways must comply with Section 201 of the ADOT
8 *Roadway Design Guidelines*.

9 Developer shall provide 2 times the stopping sight distance given in Figure 201.2 of the ADOT
10 *Roadway Design Guidelines* on the mainline at lane drops.

11 Developer shall provide 1.5 times the stopping sight distance given in Figure 201.2 of the ADOT
12 *Roadway Design Guidelines* on the mainline at the approaches to ramp entrances and exits.
13 The sight distance is measured from the center of the right-hand approach lane to the center of
14 the right-hand ramp lane at the entrance and exit nose control points as shown in Figures 504.7
15 and 504.8A of the ADOT *Roadway Design Guidelines*.

16 **440.3.2.2 Superelevation**

17 Mainline axis of rotation must comply with the requirements in Section 202.2 of the ADOT
18 *Roadway Design Guidelines*. Maximum superelevation rates for roadways are shown in TP
19 Attachment 440-1. Superelevation transitions must comply with the requirements in Section
20 202.3 of the ADOT *Roadway Design Guidelines*. Roadway design must not include spiral
21 curves.

22 **440.3.2.3 Horizontal Alignment**

23 Mainline horizontal alignment must comply with the requirements in Section 203 of the ADOT
24 *Roadway Design Guidelines*. Roadway design must not include spiral curves.

25 **440.3.2.4 Vertical Alignment**

26 Mainline vertical alignment must comply with the requirements in Section 204 of the ADOT
27 *Roadway Design Guidelines*. The maximum mainline grade shall be 3 percent except for the
28 area east of Ivanhoe Street and west of 27th Avenue where the maximum grade shall be 4
29 percent.

30 **440.3.2.5 Mainline Transitions and Tapers**

31 When adding a lane, the approach transition must have a taper rate of 25 to 1. The transition
32 when dropping a lane must have a taper rate of design speed to one. Add lanes and drop lanes
33 must occur on the right.

34 Taper rates from narrow to wider shoulder widths in the direction of traffic must be 15 to 1.
35 When tapering from wider to narrower shoulder widths, the taper rate must be design speed to
36 one.

37 **440.3.2.6 Cross Section Elements**

38 The standard cross slope for all types of paved surfaces shall be 0.02 ft/ft. The entire width of
39 each roadway shall have a uniform cross slope. The cross slope of the shoulder must match the
40 cross slope of the adjacent lane, except at ramp gores.

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- 1 Mainline and ramp shoulder wedges must be 6:1 or flatter and a minimum of 10 feet from edge
2 of shoulder to the slope hinge as depicted in Figure 303.1 of the ADOT *Roadway Design*
3 *Guidelines*.
- 4 Mainline and ramp curbs must comply with the requirements in Section 302.2 of the ADOT
5 *Roadway Design Guidelines*. Crossroads within access control limits must be curbed.
- 6 Shoulder widths provided in TP Attachment 440-1 must be the minimum continuous usable
7 width of paved shoulder. Widening to provide minimum shoulder widths at median pier locations
8 must comply with the requirements in Section 304.2 of the ADOT *Roadway Design Guidelines*.
- 9 Roadside recovery areas must comply with the requirements in Section 303.2 of the ADOT
10 *Roadway Design Guidelines*. A barn-roof approach shall not be used to eliminate barrier.
- 11 Median slopes must be 6:1 or flatter.
- 12 Side slopes shall comply with Figure 306.4B and Figure 504.4A of the ADOT *Roadway Design*
13 *Guidelines*. Fill slopes must be 6:1 or flatter for embankment heights up to 8 feet. Fill slopes of
14 2:1 maximum are permitted in the area east of Ivanhoe Street and west of 27th Avenue.
- 15 Slopes within rock cuts must comply with the geotechnical recommendations in the
16 Geotechnical Engineering Report(s) and the Contract Documents. Cut slopes steeper than 3:1
17 must be outside the recovery area width as determined by using the foreslope of the cut as the
18 appropriate fill slope rate or be barrier protected.
- 19 Developer shall provide a minimum clearance of 12 feet between the drainage channel or ROW
20 line and the toe of a fill slope. For cut slopes, the clearance from the outer edge of slope
21 rounding or crown drainage system must be a minimum of 10 feet from the ROW, except as
22 otherwise provided in Section DR 440.3.2.9 of the TPs.
- 23 **440.3.2.7 Roadside Safety Devices**
- 24 All roadside safety devices must comply with the requirements of the National Cooperative
25 Highway Research Program (NCHRP) Report 350, *Recommended Procedures for the Safety*
26 *Performance Evaluation of Highway Features* or the *AASHTO Manual for Assessing Safety*
27 *Hardware (MASH)*.
- 28 Permanent roadway barriers must be F-shape concrete barriers, exclusive of end treatments.
29 Median barrier must be a minimum of 42 inches in height. Barrier on the outside of the roadway
30 must be a minimum of 32 inches in height. Barriers must meet minimum test level TL-4 when
31 placed against the top of retaining walls or protecting slopes to the top of walls located within
32 the clear zone.
- 33 Unshielded ends of the concrete barrier within the clear zone must have crashworthy end
34 treatments and meet minimum test level TL-3. Developer shall not bury the end of the barrier as
35 an end treatment at the approach end. Developer shall not solely taper the height of the barrier
36 at the approach end.
- 37 Median barriers shall be provided for median widths of 75 feet or less.
- 38 Median barrier transitions must be in accordance with Figure 305.9 of the ADOT *Roadway*
39 *Design Guidelines*. Barrier height transitions must be at the rate of 10:1 or flatter.
- 40 Light poles located in the median must comply with the configuration shown in Figure 305.9 of
41 the ADOT *Roadway Design Guidelines*. The top of the median barrier must have adequate
42 width to place the pole anchor in lieu of notching the barrier and placing the anchor at a location
43 below the top of the barrier.

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1 Developer shall replace cable barrier systems that are removed with new cable barrier or
2 F-shape concrete barrier.

3 Developer shall not use temporary concrete barrier in a permanent configuration.

4 **440.3.2.8 Frontage and Collector Distributor Roads**

5 Developer shall design all frontage and collector distributor roads in accordance with Section
6 309 of the ADOT *Roadway Design Guidelines*.

7 **440.3.2.9 Maintenance Access**

8 Developer shall provide 12-foot-wide maintenance access at the toe of fill and cut slopes along
9 both sides of the Freeway. The maintenance access must be continuous with the exception of
10 through the South Mountain ridges, across the Laveen Area Conveyance Channel, across the
11 Salt River, and across the Union Pacific Railroad. Developer may use frontage and access
12 roads as maintenance roads.

13 Developer shall design maintenance access to channels in accordance with Section DR
14 445.3.6.4 of the TPs.

15 **440.3.2.10 Sidewalk**

16 Developer shall provide sidewalk on all crossroads within the access control limits. Sidewalk
17 must be a minimum of 5 feet in width; unless there is existing sidewalk greater than 5 feet in
18 width, Developer shall replace in-kind or protect in-place the existing sidewalk. Outside of the
19 access control limits, Developer shall replace sidewalk in-kind, including any sidewalks that
20 must be included with proposed frontage roads in accordance with the standards in Table
21 440-1.

22 **440.3.2.11 ROW Fencing**

23 Developer shall provide fencing at the ROW or along the control of access, except where walls
24 or other physical barriers define the ROW, where public access to the ROW is permitted, or as
25 defined in Section DR 420 of the TPs.

26 ROW fence must be 6 foot tall chain link, or as defined in Section DR 420 of the TPs.

27 **440.3.2.12 Temporary Roads**

28 Detour roadways must comply with the requirements in Section 316 of the ADOT *Roadway*
29 *Design Guidelines*.

30 **440.3.2.13 Traffic Interchanges and Crossroads**

31 Ramp-crossroad intersections must comply with the requirements in Section 403 and
32 Section 505 of the ADOT *Roadway Design Guidelines* and must meet the desirable criteria.
33 Median Urban Designs shall not be used. Ramp-crossroad intersections must not have stop
34 control.

35 Crossroad improvements must not encroach on GRIC ROW.

36 Developer shall provide the number of through lanes at all interchanges as shown in TP
37 Attachment 440-2. Sight distances at ramp-crossroad intersections must comply with the
38 requirements in Section 408 of the ADOT *Roadway Design Guidelines* and permit for right turns
39 on red signals.

40 The maximum grade of crossroads within 400 feet of ramp termini is 3 percent.

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1 Crossroad median widths under structures must provide 2 feet minimum from the face of curb to
2 the face of pier. The median width without piers must be at least 4 feet.

3 Ramps must comply with the requirements in Section 504 of the ADOT *Roadway Design*
4 *Guidelines*. Service interchange entrance ramps must be two lanes and taper to a single lane at
5 the entrance to the mainline in accordance with Figure 504.8B of the ADOT *Roadway Design*
6 *Guidelines*. Directional interchange ramps must be two lanes with the exception of HOV ramps
7 that may be one lane. Lanes added to I-10 by directional entrance ramps must be dropped no
8 sooner than one per successive service interchange crossroad location.

9 Entrance or exit ramps on the left are not allowed with the exception of HOV ramps.

10 **440.3.3 Local Streets and Intersections**

11 Local streets and intersections outside of ADOT access control limits that are affected by the
12 Project must be designed in accordance with City of Phoenix standards and guidelines and the
13 criteria shown in TP Attachment 440-2.

14 **440.3.3.1 Bus Stops and Amenities**

15 Developer shall coordinate the location of existing bus stops within the Project limits with the
16 City of Phoenix Street Transportation Department. Developer shall design, construct, and
17 relocate bus stops and associated amenities in accordance with the standards and
18 requirements of City of Phoenix Street Transportation Department. Developer shall be
19 responsible for the relocation of existing shelters and amenities.

20 Developer shall keep all bus stops open and operational within the Project limit unless otherwise
21 approved by the City of Phoenix. Developer shall provide temporary bus stop relocations, as
22 required by the City of Phoenix.

23 **440.3.4 ADA Compliance**

24 All pedestrian facilities must comply with the U.S. Access Board *Americans with Disabilities Act*
25 *and Architectural Barriers Act Accessibility Guidelines (ADAAG)* and the U.S. Access Board
26 *Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way*
27 (PROWAG). Developer shall evaluate all existing pedestrian facilities within the Project ROW,
28 including the I-10 intersections from 43rd Avenue to 75th Avenue for conformance with ADAAG
29 requirements. Developer shall prepare an initial ADA Compliance and Feasibility Report that
30 demonstrates that the Project complies with all applicable ADAAG requirements. Existing
31 pedestrian facilities that comply with ADAAG requirements may remain in place. Existing
32 pedestrian facilities that do not comply with ADAAG must be replaced with facilities that comply
33 with PROWAG requirements. All new pedestrian facilities must comply with PROWAG
34 requirements.

35 At the same time as Initial Design Submittal for the Design Work, Developer shall submit the
36 initial ADA Compliance and Feasibility Report to ADOT. Developer shall update the ADA
37 Compliance and Feasibility Report and prepare a final ADA Compliance and Feasibility Report.
38 At the same time as Final Design Submittal of the Design Work, Developer shall submit the final
39 ADA Compliance and Feasibility Report to ADOT.

40 **440.3.5 Design Exceptions and Design Variances**

41 The Schematic Design includes design elements that require Design Exceptions for horizontal
42 stopping sight distance at the I-10 (Papago)/South Mountain Freeway System traffic
43 interchange (TI), including the HOV ramp, ramp NE, ramp NW, ramp WS, and ramp ES. FHWA
44 has reviewed the designs, but has not approved Design Exceptions based on the preliminary

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1 nature of the design and potential for design changes by Developer. Developer shall prepare
2 Design Exception requests for these design elements based on Developers design.

3 Developer is discouraged from creating additional Design Exceptions or Design Variances. If
4 Developer's design creates additional Design Exceptions or Design Variances, Developer must
5 demonstrate on a case-by-case basis that substantial benefits to the project would result from
6 the request.

7 For each Request for Design Exception or Request for Design Variance request, Developer
8 shall prepare all documentation in accordance with the ADOT *Design Exception and Design*
9 *Variance Process Guide*. At the same time as Initial Design Submittal for the associated Work,
10 Developer shall submit any Request(s) for Design Exception(s) or Request(s) for Design
11 Variance(s) to ADOT for review and approval by ADOT, in ADOT's sole discretion. Developer is
12 advised that ADOT may withhold approval of any such request(s) at its sole discretion and must
13 schedule sufficient time for evaluation of all requests. Following review of any Request(s) for
14 Design Exception(s), ADOT will submit the Request(s) for Design Exception(s) to FHWA for
15 review and approval. All Design Exceptions must be reviewed by ADOT and reviewed and
16 approved by FHWA. All Design Variances must be approved by ADOT.

17 Developer shall prepare a Design Exception and Design Variance Report that consolidates all
18 Design Exceptions and Design Variances, all supporting documentation, and copies of the
19 ADOT and FHWA approval letters. At the same time as Final Design Submittal for the
20 associated Work, Developer shall submit the Design Exception and Design Variance Report to
21 ADOT.

22 440.4 SUBMITTALS

23 Table 440-2 reflects a nonexclusive list of Submittals identified in Section DR 440 of the TPs
24 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
25 determine and submit all Submittals as required by the Contract Documents, Governmental
26 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
27 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
28 specified in the Contract Documents, Developer shall submit the following to ADOT in the
29 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 440-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Initial ADA Compliance and Feasibility Report	5	0	1	At the same time as Initial Design Submittal for the associated Work	DR 440.3.4
Final ADA Compliance and Feasibility Report	5	0	1	At the same time as Final Design Submittal for the associated Work	DR 440.3.4
Request(s) for Design Exception	1	0	1	At the same time as Initial Design Submittal for the associated Work	DR 440.3.5

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Table 440-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Request(s) for Design Variance	1	0	1	At the same time as Initial Design Submittal for the associated Work	DR 440.3.5
Design Exception and Design Variance Report	5	0	1	At the same time as Final Design Submittal for the associated Work	DR 440.3.5
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1
2

End of Section

ADDENDUM #2

1 **DR 445 DRAINAGE**

2 **445.1 GENERAL REQUIREMENTS**

3 Developer shall perform all drainage Design Work in compliance with the requirements of
4 Section DR 445 of the TPs. Developer shall provide a highway drainage design that minimizes
5 off-site impacts while maintaining a frequency of protection for the highway in accordance with
6 Section DR 445 of the TPs.

7 **445.2 ADMINISTRATIVE REQUIREMENTS**

8 **445.2.1 Standards**

9 Developer shall perform all drainage Design Work in accordance with the standards, manuals,
10 and guidelines listed in Table 445-1.

Table 445-1 Standards		
No.	Agency	Title
1	FHWA	Hydraulic Design of Highway Culverts, Hydraulic Design Series No. 5
2	FHWA	Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22

11 **445.2.2 Data Collection**

12 Developer shall collect all data, including those elements outlined in Section DR 445 of the TPs
13 and in accordance with Section 5.2 of the ADOT *Highway Drainage Design Manual –*
14 *Hydraulics*, to determine all historic and proposed tributary flows to the proposed drainage
15 system.

16 Developer shall investigate and videotape or photograph existing drainage elements in the
17 Project ROW that are planned to remain in place to determine its condition, size, material,
18 location, and other pertinent information when documentation is not available. Developer shall
19 use this information, at a minimum, to assess whether the elements need to be replaced due to
20 its condition.

21 The data collected must be documented as outlined in Section DR 445 of the TPs and in
22 accordance with Chapter 4 of the ADOT *Highway Drainage Design Manual – Hydraulics*.

23 **445.2.3 Coordination with Other Agencies and Governmental Entities**

24 Developer shall coordinate all drainage designs with all affected interests, Governmental
25 Entities, Utility Owners, and railroads, as applicable.

26 If a FEMA map revision is found to be warranted based on the Drainage Reports, Developer
27 shall prepare documentation, perform the design, and provide to the local floodplain
28 administrators all information and technical data needed to file conditional letter of map revision
29 and letter of map revision with Federal Emergency Management Agency (FEMA).

30 **445.2.4 Software**

31 Developer shall use drainage software that is compatible with the software in use by ADOT or
32 fully transferrable to the software currently in use by ADOT in accordance with Section GP

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1 110.10 of the TPs. Culvert hydraulic software must comply with the requirements of FHWA
2 Hydraulic Design Series Number 5.

3 **445.3 DESIGN REQUIREMENTS**

4 **445.3.1 General**

5 Developer shall design all elements of the drainage system(s) for the Project to provide a
6 complete and functional drainage system that complies with the requirements in Section DR 445
7 of the TPs. Developer shall design all drainage improvements in a manner that accounts for all
8 existing and proposed tributary areas within or outside the Schematic ROW. Tributary areas
9 must incorporate future land-use plans and/or potential land uses from applicable Governmental
10 Entities with drainage areas discharging to the Project ROW. Developer may assume the
11 following for existing and future land uses:

- 12 A. Retention/detention basins are 80 percent effective, including underground retention;
- 13 B. Local retention/detention basin storage volumes may be estimated using a 100 year-2
14 hour retention requirement if existing drainage reports are not available;
- 15 C. Commercial, schools, industrial, and multi-family use areas provide the required 100
16 year-2 hour retention for areas east of Main Ridge South;
- 17 D. Retention/detention is not provided between the North Ridge and South Ridge;
- 18 E. North of the Salt River, the 75th Avenue storm drain is in place and no additional 100
19 year-2 hour retention/detention is assumed in sub-basins that are currently agricultural
20 or open land; and
- 21 F. Land use coverage based on the May 2009 aerials included in the RIDs.

22 The drainage improvements must be designed based on the future land use as determined by
23 the Governmental Entity with jurisdiction and must not cause objectionable backwater and/or
24 excessive velocities as specified in the standards listed in Table 445-1, which may negatively
25 affect traffic safety, embankment stability, adjacent property, natural drainage courses, drainage
26 facilities, floodplain developments, upstream drainage systems, and the use of downstream
27 receiving waters. The drainage improvements must be designed such that post-Project flow
28 conditions are at or below pre-Project flow conditions. Developer shall design the drainage
29 systems aesthetics in accordance with Section DR 450 of the TPs.

30 Where drainage patterns are changed from existing patterns, Developer shall obtain all permits,
31 drainage easements, and ADOT and Governmental Entity approval prior to construction of any
32 drainage improvements.

33 **445.3.2 Drainage Master Plan**

34 Developer shall prepare a Drainage Master Plan that depicts the existing and proposed
35 drainage system, including size, for the Project in accordance with the requirements for a
36 drainage report identified in Chapter 4 of the ADOT *Highway Drainage Design Manual –*
37 *Hydraulics*. The Drainage Master Plan is intended to be a schematic analysis of the drainage
38 systems that provides an overview of the overall drainage system for the Project. Developer
39 shall ensure that the Drainage Master Plan is the basis for the roadway drainage design.
40 Developer shall update the Drainage Master Plan as the development of the roadway drainage
41 design proceeds. The Drainage Master Plan must include hydrology calculations, evaluation of
42 existing conditions, documentation used to size the ultimate off-site drainage improvements,
43 and a comparison of the existing and proposed flow conditions.

44 At the same time as Initial Design Submittal of the roadway drainage, roadway design, and/or
45 bridge hydraulic design, Developer shall submit the Drainage Master Plan to ADOT for review

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1 and comment by ADOT. Prior to submitting a drainage design Submittal that is not consistent
 2 (e.g. Changes in tributary areas, concentration points, basin locations, etc.) with the Drainage
 3 Master Plan, Developer shall submit an updated Drainage Master Plan to ADOT.

4 **445.3.3 Drainage Report**

5 Developer shall prepare a preliminary Drainage Report(s) for the Project drainage system(s) in
 6 accordance with Chapter 4 of the ADOT *Highway Drainage Design Manual – Hydraulics* and
 7 shall include all calculations and analysis in the report as required by the Contract Documents.
 8 Developer may prepare the preliminary Drainage Report(s) per drainage system, Project
 9 Segment, or for the entire Project.

10 At the same time as Initial Design Submittal for the associated drainage improvements,
 11 Developer shall submit a preliminary Drainage Report to ADOT for review and comment.
 12 Developer shall prepare a final Drainage Report based on the final drainage design. The final
 13 Drainage Report must address ADOT comments from the preliminary Drainage Report. At the
 14 same time as Final Design Submittal for the associated drainage improvements, Developer
 15 shall submit a final Drainage Report to ADOT.

16 Developer shall prepare an As-Built Drainage Report that compiles all final Drainage Reports
 17 into one report. As part of the Record Drawing Submittal, Developer shall submit the As-Built
 18 Drainage Report to ADOT.

19 **445.3.4 Storm Frequency and Design Discharge**

20 **445.3.4.1 Design Frequencies**

21 Developer shall use the design frequencies listed in Table 445-2 and Table 445-3.

Table 445-2 Minimum Design Storm Frequency	
Highway Level and Condition	Design Storm Frequency* (years)
New construction	50
Reconstruction	50
Structure affected by major project	50
*Design storm frequencies may be controlled by other considerations.	

22

Table 445-3 Design Storm Frequency for Pavement Drainage Systems	
Roadway Type and Condition	Design Storm Frequency (years)
Non-Depressed Roadways:	
Storm drain systems:	
Hydraulic grade line 6 inches below top of grate	10
Cut and median ditches:	
Hydraulic grade line no higher than subgrade	10*

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Table 445-3 Design Storm Frequency for Pavement Drainage Systems	
Roadway Type and Condition	Design Storm Frequency (years)
Hydraulic grade line no higher than 3 inches below pavement	See Table 445-2
Depressed Roadways:	
Storm drain systems:	
Hydraulic grade line 6 inches below top of grate	50
Note: Pavement drainage systems include inlets, catch basins, storm sewers, main drains, storage reservoirs, and pump stations.	
* For divided highways with median widths ≤ to 50 feet, it may not be practical to achieve criteria	

1 **445.3.4.2 Allowable Spread**

2 Developer shall design drainage systems to limit ponding to the widths for the design frequency
 3 event in accordance with the requirements in Table 445-4 and Figure 603.2A of the ADOT
 4 *Roadway Design Guidelines*.

Table 445-4 Allowable Spread, 10-year Storm Event	
Roadway	Spread Criterion
Two-lane roadway and two-way frontage road	Shoulder, turn lane, or parking lane
Multilane roadway and one-way frontage road	½ lane + shoulder, turn lane, or parking lane
Ramp	
One lane	Unponded width of 12 feet
Two lane	½ lane + shoulder
One-lane directional ramp	Less than or equal to 8 feet
Two-lane directional ramp	½ lane + shoulder
At ramp gores	See Figure 603.2A of the ADOT <i>Roadway Design Guidelines</i>
Auxiliary lanes	½ auxiliary lane + shoulder
Note: Refer to roadway cross section and apply appropriate one- or multilane roadway criteria. For one-directional crowned roadways, the ½-lane spread shall be included only on one side.	

5 **445.3.4.3 Additional Requirements**

6 Developer shall not permit any increase in water surface elevation from existing conditions
 7 upstream or downstream of the Project ROW. Modifications must be made to new or existing
 8 drainage features to achieve no rise in water surface elevation outside ADOT ROW or in
 9 existing drainage easements due to the Work.

10 Discharge, velocity, or water surface elevation at the outfalls to existing drainage conveyance
 11 features must not increase from the existing conditions. Mitigation to offset any increase of

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1 discharge, velocity, or water surface elevation at the outfalls to existing drainage conveyance
2 features must be in the form of providing storage capacity at locations within the Schematic
3 ROW.

4 Runoff from roadway ditches must not cause additional erosion, scour, or undermining to bridge
5 abutments.

6 Developer shall verify that the proposed flow to the existing pump station does not exceed the
7 existing pump station's capacity if the proposed improvements convey flow to an existing pump
8 station. Developer shall design the changes to the existing pump station to comply with the
9 design requirements in the ADOT *Highway Drainage Design Manual, Hydraulics* if the capacity
10 is exceeded at any impacted pump station.

11 **445.3.5 Hydrology**

12 Developer shall determine design flows based on the following sources, given in order of
13 relative importance:

14 A. Existing hydrologic studies: Where highway facilities encroach on established or planned
15 regulatory floodplains, the flood frequency curve approved by FEMA for the site must be
16 the primary source of data for use in design. In the absence of a FEMA flood frequency
17 curve, runoff rates from drainage studies by other Governmental Entities must be
18 evaluated for use in establishing a design flood frequency curve. Such studies must be
19 reviewed for appropriateness with regard to the needs of the facility being designed.
20 There may be instances where two hydrologic values must be used: (1) the FEMA or
21 other agency value, to evaluate the impacts of the ADOT system on the existing FEMA
22 floodplain/floodway; and (2) an ADOT value, to size the drainage facilities.

23 B. Rainfall-runoff models: Rainfall-runoff models must be used where stream runoff data
24 are not available. For drainage areas of 160 acres or less, the rational method may be
25 used. For drainage areas greater than 160 acres, the USACE computer program HEC-
26 HMS must be used. Developer shall comply with the approved procedures and
27 recommended parameter values for the Rational Method and HEC-HMS based on the
28 local jurisdiction requirements. Developer shall use the Green and Ampt method to
29 estimate rainfall losses. Developer shall use the S-curve or the Clark unit hydrograph to
30 calculate the unit hydrograph parameters.

31 **445.3.6 Drainage Improvements**

32 **445.3.6.1 Inlets**

33 Developer shall provide stormwater drainage improvements behind proposed retaining walls
34 and barriers to convey side slope runoff to the wall into the proposed storm drain system and
35 prevent stormwater from ponding or draining over the walls.

36 Non-standard ADOT inlets must adhere to the standards in Section DR 445.2.1 of the TPs.
37 Inlets on roadways that allow bicycle travel must be bicycle-safe grates.

38 Developer shall design all off-roadway inlets within the roadway recovery area with 3 inches or
39 less local depression. Developer shall account for a potential reduction of inflow capacity
40 attributable to clogging using the capture ratios shown in Table 445-5.

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Table 445-5 Inlet Capture Ratios	
Grate Inlets	Capture Ratio
On grade	0.50
Sump	0.50
Curb Inlets	
On grade	0.80
Sump	0.80
Combined Curb and Grate	
On grade	
Curb inlet	0.80
Grate inlet	0.50
Sump	
Curb inlet	0.80
Grate inlet	0.50
Combined Slotted and Grate	
On grade	
Slotted inlet	0.67
Grate inlet	0.50
Sump	
Slotted inlet	0.50
Grate inlet	0.50

1 445.3.6.2 Storm Drain System

2 Where precluded from handling runoff with open channels by physical site constraints, or as
 3 directed in Section DR 445 of the TPs, Developer shall design enclosed storm drain systems to
 4 collect and convey runoff to appropriate discharge points.

5 Developer shall prepare storm drain documentation encompassing all storm drain systems that
 6 contains, at a minimum, the following items:

- 7 A. Drainage area maps for each storm drain inlet with pertinent data, such as boundaries of
- 8 the drainage area, topographic contours, runoff coefficients, time of concentration, and
- 9 land use, design runoff coefficients, discharges, and ponding;

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- 1 B. Location and tabulation of all existing and proposed pipe and drainage structures,
2 including size, class, or gauge; catch basin spacing; detailed structure designs; and any
3 special designs;
- 4 C. Specifications for the pipe bedding material and structural pipe backfill on all proposed
5 pipes and pipe alternates; and
- 6 D. Complete pipe profiles, including pipe size, type, and gradient; station offsets from the
7 centerline of the roadway; length of pipe; class/gauge of pipe; and numbered drainage
8 structures with elevations.

9 Developer shall include the storm drain documentation as part of the preliminary and final
10 Drainage Reports.

11 The maximum allowable hydraulic grade line elevation for the design frequency must not
12 exceed 6 inches below the lip of gutter, the top of manhole cover, and as specified in Table 445-
13 3 of Section DR 445.3.4.1 of the TPs.

14 Manhole covers must be identified as shown on the *ADOT Construction Standard Drawing*
15 *No. C-18.10.*

16 **445.3.6.3 Pipes**

17 Developer shall design storm drain pipes with a minimum velocity of 3 fps when flowing full, for
18 "self cleaning" purposes using the appropriate design flow. Developer shall design all storm
19 drains to sustain all loads using fill heights and D-loads for determining pipe classifications.
20 Developer shall design pipes in accordance with the following requirements:

- 21 A. Pipe diameter: 18 inches minimum
- 22 B. Pipe depth of cover: 6 inches minimum (top of pipe to bottom of finished subgrade)
- 23 C. Provide outfall protection when the outlet velocity is greater than 1.4 times the natural
24 stream velocity
- 25 D. When outfall protection is required, Developer shall provide calculations to document the
26 design.

27 The design life of new pipe and pipe extensions must comply with the criteria for a 75-year
28 "maintenance free" service life for the Project. Developer shall determine the class of new pipe
29 in accordance with the *ADOT Standard Pipe Selection Guidelines*. Evaluation documentation
30 must be included with the design calculations. Developer shall include "new pipe summary
31 sheets" in the Plans.

32 Developer shall use the Manning's "n" values included in Table 445-6.

Table 445-6 Manning's "n"	
Pipe Type	"n"
Concrete pipe	0.012
Cast-in-place concrete	0.014
Smooth plastic: polyethylene	0.012
Spiral rib: galvanized steel	0.014

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1 **445.3.6.4 Channels and Ditches**

2 Developer shall ensure that the design for drainage channels provides 10-foot-wide vehicular
3 maintenance access ramps, from the maintenance road where possible, to the channel bottom
4 upstream and downstream of hydraulic structures. Developer shall not locate access ramps
5 closer than 100 feet from the nearest channel transition and must be located on the high side
6 of the channel invert. Access ramps must slope downward in the downstream direction.

7 Developer shall include erosion control measures in the drainage channels and ditches,
8 including flexible or rigid channel linings, to prevent scour and sedimentation.

9 Side slopes of aggregate lined and unlined channels must not be steeper than 3:1 (H:V).
10 Concrete-lined channels must have side slopes no steeper than 2:1. Developer shall provide
11 maintenance access for channels having a length of 500 feet or more.

12 Developer shall ensure that the minimum freeboard is 1 foot for a 100-year storm event, where
13 overtopping would permit stormwater to break out of ADOT ROW and whose failure would
14 endanger life or property.

15 For leveed channels where the water surface elevation is higher than natural ground, Developer
16 shall provide an additional 1 foot of freeboard to accommodate surface irregularities and
17 alignment adjustments.

18 If a ditch drains to a drainage structure designed to a lower frequency storm, Developer shall
19 take into account the lower frequency storm in the ditch design at the discharge location of the
20 ditch. At the discharge location, Developer shall size ditches for the structure design storm
21 capacity at the bank-full depth instead of adding freeboard to the water depth of the design
22 storm. Developer shall also take into account the backwater attributable to the ponding at
23 culverts and other structures in the water depth computations.

24 **445.3.6.4.1 Drainage Outlets into Major Watercourses**

25 Developer shall design the drainage outlet to the design peak flow of the channel concurrent
26 with the 10-year peak flow in the main watercourse. Developer shall also design for the 10-year
27 peak flow in the channel concurrent with the design peak flow in the main watercourse.
28 Developer shall take into account water levels of the design peak flow in either the main
29 watercourse or flood channel (not concurrent peaks) for bank protection measures at the outlet
30 and nearby channel.

31 **445.3.6.5 Stormwater Storage Facilities**

32 Developer shall design stormwater storage facilities in accordance with the Arizona national
33 pollutant discharge elimination system regulations for water quality and rate control
34 requirements or the Governmental Entity with jurisdiction, whichever is more stringent. All
35 stormwater storage facilities calculations must be included in the preliminary and final Drainage
36 Report.

37 Developer shall ensure that stormwater storage facilities comply with the following
38 requirements:

- 39 A. Outflow discharges from the stormwater storage facilities must not cause peak
40 discharges downstream greater than peak discharges without the Project.
- 41 B. Detention basins must not retain standing water longer than 36 hours after inflow.
- 42 C. The maximum depth of a stormwater storage facility must not exceed 25 feet.
- 43 D. Stormwater storage facilities must have an emergency spillway that is designed to allow
44 overflow of runoff when the outlet is blocked and the storage is exhausted.

ADDENDUM #2

1 E. Bottoms of storage facilities must be stabilized.

2 Developer shall design the Project without jurisdictional dams. Jurisdictional dams are defined
3 as an artificial barrier for the impounding or diversion of water either 25 feet or more in height or
4 having a storage capacity of more than 50 acre-feet.

5 **445.3.6.6 Culverts**

6 Developer shall analyze existing and proposed culverts, drainageways, and associated
7 appurtenances affected, replaced, or created by the Project design for any localized flooding
8 deficiencies.

9 Where the culvert design is influenced by upstream storage owned by a Governmental Entity for
10 the purpose of stormwater storage, Developer shall incorporate the analysis of the storage into
11 the design of the culvert. Developer shall analyze all water levels for backwater and design all
12 culverts so backwater does not increase above existing conditions that extend onto adjacent
13 properties.

14 Developer shall ensure that culverts comply with the following requirements:

15 A. The minimum box culvert height, inside dimension, must be 4 feet.

16 B. For the design flood, the headwater level must be no higher than 3 inches below the
17 pavement. The headwater depth to culvert height ratio must not exceed 1.5.

18 C. The 100-year floodwater levels must not increase the flood damage potential on areas
19 outside of ADOT ROW.

20 D. Flow capacity of any culvert must be investigated whenever the invert of the culvert is
21 embedded below the natural streambed thalweg. Developer shall not include embedded
22 area in the effective culvert waterway opening where the embedded area is backfilled
23 with erosion-resistant material or where siltation to the original grade can be anticipated.

24 E. All culverts must have end sections or headwalls.

25 F. Culverts with a span or diameter greater than or equal to 48 inches must have concrete
26 headwalls.

27 G. Concrete box culverts must have inlet cut-off walls. Concrete box culverts must have an
28 outlet cut-off wall with a minimum 4 foot depth.

29 H. Culverts with a span or diameter 48 inches or greater must have an apron with cut-off
30 wall.

31 I. Concrete cut-off walls, headwalls, and partial headwalls must extend at least 2 feet
32 below the ultimate bed elevation and a minimum of 4 feet below culvert inverts.

33 J. Cut-off walls, headwalls, partial headwalls, and aprons must be attached to the culvert.

34 K. Outlets must have riprap whenever the outlet velocity is between 4 and 15 feet per
35 second.

36 L. Outlets with velocity greater than 15 feet per second must have an energy dissipator.

37 Developer shall design bridge culverts subject to traffic loading in accordance with Section DR
38 455 of the TPs. Culverts crossing beneath railroad tracks must be of size and material approved
39 by the railroad in accordance with Section DR 436 of the TPs.

40 **445.3.6.7 Temporary Drainage Facilities**

41 Developer shall design temporary drainage systems to:

42 A. Provide safe operation during construction;

ADDENDUM #2

1 B. Accommodate both existing and construction area runoff water; and

2 C. Comply with Good Industry Practice.

3 Developer shall provide drainage design details for each stage of construction. Developer shall
4 design temporary stormwater conveyance systems such that stormwater is confined to the
5 shoulders and no water encroaches into the travel lanes.

6 445.4 SUBMITTALS

7 Table 445-7 reflects a nonexclusive list of Submittals identified in Section DR 445 of the TPs
8 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
9 determine and submit all Submittals as required by the Contract Documents, Governmental
10 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
11 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
12 specified in the Contract Documents, Developer shall submit the following to ADOT in the
13 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 445-7 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Drainage Master Plan	4	2	1	At the same time as Initial Design Submittal of the roadway drainage, roadway design, and/or bridge hydraulic design	DR 445.3.2
Updated Drainage Master Plan	5	2	1	Prior to submitting a drainage design Submittal that is not consistent with the original Drainage Master Plan	DR 445.3.2
Preliminary Drainage Report(s)	4	2	1	At the same time as Initial Design Submittal for the associated drainage improvements	DR 445.3.3
Final Drainage Report(s)	5	2	1	At the same time as Final Design Submittal for the associated drainage improvements	DR 445.3.3
As-Built Drainage Report	5	2	1	As part of the Record Drawing Submittal	DR 445.3.3
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

14

15

End of Section

ADDENDUM #2

1 **DR 450 AESTHETICS AND LANDSCAPING**

2 **450.1 GENERAL REQUIREMENTS**

3 Developer shall perform all aesthetics and landscaping Design Work in compliance with the
4 requirements of Section DR 450 of the TPs.

5 **450.2 ADMINISTRATIVE REQUIREMENTS**

6 **450.2.1 Standards**

7 *Intentionally left blank*

8 **450.2.2 Meetings**

9 **450.2.2.1 Pre-design Coordination Meeting**

10 Developer shall conduct an aesthetics and landscaping pre-design coordination meeting prior to
11 beginning aesthetics and landscaping design Work. The aesthetics and landscaping predesign
12 coordination meeting must include all personnel involved in the design and construction of the
13 aesthetics and landscaping for the Project.

14 **450.2.2.2 Task Force Meetings**

15 Developer and ADOT shall establish an aesthetics and landscaping task force, including
16 representatives of Developer, ADOT, and representatives of Governmental Entities as
17 determined by ADOT.

18 The purpose of the aesthetics and landscaping task force is to:

- 19 A. Review and refine the Aesthetics and Landscape Master Plan and
- 20 B. Review, refine, and approve Developer's Aesthetics and Landscaping Plans,
21 specifications, and details.

22 The aesthetics and landscaping task force must be established, hold the initial meeting, and
23 meet at the frequency noted in Section GP 110.02.4 of the TPs.

24 **450.2.2.3 Technical Work Group Meeting**

25 Developer shall conduct aesthetics and landscaping TWG meetings every other week
26 throughout the Design Work of the aesthetics and landscaping for any Project segment, unless
27 otherwise directed by ADOT. ADOT staff will participate in these TWG meetings and be
28 available for over-the-shoulder plan reviews. Developer may combine design aesthetics and
29 landscaping TWG meetings with construction aesthetics and landscaping TWG meetings.

30 **450.2.3 Plant Inventory**

31 Developer shall inventory all saguaros, barrel cacti, ocotillos, and all native trees, including blue
32 palo verde, foothills palo verde, ironwood, and mesquite, with a caliper 4 inches or greater,
33 measured 6 inches above existing ground, and noxious and invasive species within the Project
34 ROW. Developer shall inventory the plants as parcels become available for Developer's use per
35 Project segment. Developer shall inventory the Center Segment no earlier than one year prior to
36 issuance of NTP 3. Each plant inventoried must be given an identification (ID) number that is
37 associated with that plant through the salvaging, nursery, and replanting process. Developer
38 shall prepare a matrix of inventoried plants that includes plant ID number, the species, caliper,
39 and height of all trees, as well as the height of all saguaros and barrel cacti. The matrix must
40 also identify whether each plant listed is salvageable or non-salvageable for all inventoried

ADDENDUM #2

1 plants. Developer shall prepare plant inventory exhibits that indicate the location of each
2 inventoried plant and its associated ID number.

3 Developer shall prepare a Plant Inventory for the Project that includes the following:

- 4 A. Cover page
- 5 B. Table of contents
- 6 C. Discussion
- 7 D. The matrix of inventoried plants
- 8 E. Plant Inventory exhibits

9 Prior to issuance of NTP 2, Developer shall submit the Plant Inventory for review and comment
10 by ADOT. Within 15 Business Days after new parcels become available for Developer's use,
11 Developer shall prepare and submit updated Plant Inventories to ADOT for review and
12 comment.

13 **450.2.4 Salvage Operation Plan**

14 Developer shall prepare a Salvage Operation Plan that details the processes for plant salvage,
15 nursery setup and operation, and replanting of salvaged plants. Developer shall salvage all
16 native woody vegetation under healthy condition that has a single trunk diameter or combined
17 trunk diameter of at least 4 inches, measuring 6 inches above existing ground at the root
18 location. The Salvage Operation Plan must include the following:

- 19 A. Cover page
- 20 B. Table of contents
- 21 C. Timing for salvage operations for optimum success
- 22 D. Anticipated phasing schedule for salvage and replanting of plant materials
- 23 E. Details on how Developer shall accomplish:
 - 24 1. Field pruning
 - 25 2. Side boxing
 - 26 3. Boxing support and bottoming
 - 27 4. Transporting boxed materials to the nursery
 - 28 5. Salvaging and transporting saguaros and cacti
- 29 F. Nursery details, including:
 - 30 1. Anticipated nursery location(s)
 - 31 2. Security measures for nursery site(s)
 - 32 3. Plant irrigation at the nursery(ies)
- 33 G. Methods and details for replanting boxed trees, saguaros, and cacti

34 At the same time as the submittal of the Plant Inventory, Developer shall submit the Salvage
35 Operation Plan to ADOT for review and comment. Developer shall update the Salvage
36 Operation Plan as the Plant Inventory is updated. At the same time as the submittal of each
37 updated Plant Inventory, Developer shall submit the updated Salvage Operation Plan to ADOT
38 for review and comment.

39 **450.2.5 Noxious and Invasive Species Control Plan**

40 Developer shall prepare a Noxious and Invasive Species Control Plan that describes the
41 proposed methods and products for minimizing the spread and growth of noxious and invasive
42 species found during the Plant Inventory, from the beginning of construction through Project

ADDENDUM #2

1 Handback. If noxious and invasive species were not found during the Plant Inventory, Developer
 2 shall state so in the Noxious and Invasive Species Control Plan. A list of Arizona introduced
 3 invasive and noxious plants can be found on the United States Department of Agriculture
 4 website. The Noxious and Invasive Species Control Plan must include the following:

- 5 A. Cover page
- 6 B. Table of contents
- 7 C. Discussion, including the following:
 - 8 1. Information on the species that are found in the Project ROW
 - 9 2. Proposed chemical or mechanical means to minimize germination of these plants

10 At least 15 Business Days prior to any ground disturbance, Developer shall submit the Noxious
 11 and Invasive Species Control Plan to ADOT for review and comment. Developer shall prepare
 12 an updated Noxious and Invasive Species Control Plan as the Plant Inventory is updated. No
 13 later than 10 Business Days after the submittal of each updated Plant Inventory, Developer shall
 14 submit the updated Noxious and Invasive Species Control Plan to ADOT for review and
 15 comment.

16 **450.2.6 Plating Report (Topsoil)**

17 Developer shall conduct soils sampling throughout the entire Project ROW. Sampling must be
 18 performed in accordance with the Natural Resource Conservation Service requirements and
 19 must include a minimum of 12 samples from each of the soil types found in the Project ROW.
 20 Boring samples must vary in depth from 1 to 6 feet below existing site grade. Developer shall
 21 analyze the samples for the agronomic-based saturated paste determinations of pH, soluble
 22 salts, sodium adsorption ratio, and estimated exchangeable sodium percent. Developer shall
 23 also analyze the samples for organic matter, nitrate, bicarbonate phosphorus, potassium, sulfur,
 24 DTPA soluble zinc, iron, manganese, copper, boron, gypsum requirement, and gravel.

25 From this sampling, Developer shall determine what amendments are needed for optimum plant
 26 growth. Topsoil must comply with the soil characteristics included in Table 450-1.

Table 450-1 Soil Characteristics		
Characteristics	Test Method	Requirement (Average of Six Samples)
pH	ARIZ 237	6.0–8.3
Soluble salts (ppm)	ARIZ 237	2,000 maximum
Calcium carbonate	ARIZ 732	8% maximum
Exchangeable sodium	ARIZ 729	5% maximum
Exchangeable sodium (ppm)	ARIZ 729	300 maximum
P.I.	AASHTO T 90	5–20
Gradation: 2 inch ½ inch No. 40	ARIZ 201	% Passing 100 85–100 35–100

ADDENDUM #2

Table 450-1 Soil Characteristics		
Characteristics	Test Method	Requirement (Average of Six Samples)

1 If alternative topsoil is to be used in lieu of or in addition to on-site material, Developer shall
 2 provide independent soil laboratory results showing that the topsoil complies with the
 3 requirements in Table 450-1. Developer shall prepare a Plating Report that includes the
 4 following:

- 5 A. Cover page
- 6 B. Table of contents
- 7 C. Discussion, including the following:
 - 8 1. Introduction
 - 9 2. Description of existing soil
 - 10 3. Proposed amendments
 - 11 4. How Developer shall excavate, transport, stockpile, and place topsoil
 - 12 5. What equipment Developer shall use
- 13 D. Appendix, including the following:
 - 14 1. Summary and results of the soil analyses
 - 15 2. Sources of all topsoil
 - 16 3. Laboratory testing results
 - 17 4. Independent soil laboratory testing results
 - 18 5. Sampling map showing where test samples were taken

19 At the same time as first Initial Design Submittal of any landscape Submittal, Developer shall
 20 submit the Plating Report to ADOT for review and comment.

21 **450.2.7 Aesthetics and Landscape Master Plan**

22 Developer shall prepare an Aesthetics and Landscape Master Plan that includes the following:

- 23 A. Roll plot(s) at a legible scale that shows the Project layout and the following:
 - 24 1. Areas to be planted or seeded shaded in green;
 - 25 2. Landform graphic areas shaded in brown;
 - 26 3. Areas to receive decomposed granite only shaded yellow;
 - 27 4. Sound walls with accents indicated by symbol or line pattern; and
 - 28 5. Sound walls and retaining walls highlighted with color or thick line weight.
- 29 B. A separate matrix that provides the total square footage within each Character Area and
 30 Aesthetic Area for:
 - 31 1. Planted or seeded areas;
 - 32 2. Landform graphic areas; and
 - 33 3. Decomposed granite only areas.

34 At the first Task Force meeting, Developer shall submit the Aesthetics and Landscape Master
 35 Plan to ADOT for review and comment.

ADDENDUM #2

1 **450.2.8 Visual Analysis**

2 Developer shall prepare a Visual Analysis for each Character Area when the layout of the
3 freeway mainline is complete for each Character Area and there is a preliminary understanding
4 of the cut and fill slopes, the height and location of bridges, retaining walls, and similar features,
5 the extents of the mountain cuts, and the layout of drainage features and crossings. Each Visual
6 Analysis must include the following:

7 A. Title sheet;

8 B. Table of contents;

9 C. Narrative describing and quantifying the existing visual quality;

10 D. Narrative describing and quantifying how the Project will impact viewers, both of the
11 Project and from the Project; and

12 E. An appendix that includes photographs, renderings, simulations

13 The Visual Analysis must allow the reader to:

14 A. Determine elements and conditions that will impact the use and design of the landscape;

15 B. Locate built and natural elements;

16 C. Locate microclimates based on prevailing wind directions, patterns of sun and shade,
17 existing topography, and soil type;

18 D. Identify positive vistas and views; and

19 E. Identify unappealing views.

20 After the Design Kickoff meeting and prior to submitting a planting Initial Design Submittal,
21 Developer shall submit the Visual Analysis to ADOT for review and comment.

22 **450.3 DESIGN REQUIREMENTS**

23 The Project is divided into five Aesthetic Areas and five Character Areas. Each Aesthetic Area
24 has its own theme, rustication pattern, and landform graphic pattern and is described in the
25 LAADCR. Each Character Area has its own character theme and planting theme and is
26 described in the LAADCR.

27 **450.3.1 Aesthetics**

28 Rustication is defined as any change in the pattern or texture of built structure as compared with
29 a standard smooth finish. Rustication, whether it protrudes out or is inset into the wall, must
30 comply with the structure requirements in Section 455 of the TPs. The dimensions of rustication
31 relief as shown in Exhibits L2.13 through L2.35 of the LAADCR are the minimums allowed.

32 All exposed surfaces of built structures must be rusticated, except the undersides of bridges.
33 Built structures, as defined herein, include bridge barrier walls, bridge abutments, bridge wing
34 walls, bridge piers, noise walls, retaining walls, lightweight panels, and other similar site
35 structures. Built structures do not include lined drainage channels, drainage head walls, or
36 roadside or median barriers.

37 Developer shall paint the exposed structural surfaces specified in Section 610-3.05 of the ADOT
38 *Standard Specifications for Roadway and Bridge Construction* and paint all light and sign
39 foundations located on the outside shoulder of the roadway, that are exposed by 2 feet or more,
40 with the colors as shown in Table 450-2. Developer shall paint concrete with a flat finish,
41 accents with a gloss finish, masonry with a gloss finish, and metal with a semigloss finish. Paint
42 must extend to 2 feet below finished grade. Lined drainage channels, drainage head walls, and
43 roadside and median barriers shall not be painted.

ADDENDUM #2

Table 450-2 Color Palette	
Location	Color
Entire freeway corridor base field color	Silt
Aesthetic Area 1 Ocatillo Settlement Pattern accent color	Ocotillo Bloom
Aesthetic Area 2 Cholla Ocotillo Pattern accent color	Earth Red
Aesthetic Area 3 River Bank Pattern accent color	Yellow Ochre
Aesthetic Area 4 Leaf Portal Pattern accent color	Field Green
Aesthetic Area 5 Mountain Urban Link Pattern accent color	Ocotillo Bloom and Warm Earth
Salt River Bridge accent colors	Earth Red

1 **450.3.1.1 All Aesthetic Areas**

2 **450.3.1.1.1 Bridge**

3 Developer shall provide rustication on the non-traffic side of all bridge barriers. Developer shall
4 provide rustication on the non-traffic side of all median barriers separated by 2 feet or more.

5 **450.3.1.1.2 Walls**

6 All bridge abutment walls, sound walls, and retaining walls throughout the freeway corridor must
7 receive the same horizontal rustication and base field paint color. Simulations of all the
8 Aesthetic Areas, including the Salt River Bridge pattern, with the horizontal rustication pattern
9 on the bridge abutment and sound walls are shown in Exhibits L2.2, L2.4, L2.6, L2.8, L2.10, and
10 L2.12 of the LAADCR.

11 Developer shall paint existing ADOT walls in the new base color between 55th Avenue and 63rd
12 Avenue to transition between the existing I-10 theme at 59th Avenue and the new South
13 Mountain Freeway theme.

14 **450.3.1.1.3 Landform Graphics**

15 Developer shall provide landform graphics in Aesthetic Areas 1, 3, and 4 that cover 15 percent
16 of the total Project landscaped area for each Aesthetic Area, excluding basins, channels, and
17 maintenance roads. Developer shall provide landform graphics that cover 35 percent of the total
18 Project landscaped area in Aesthetic Area 5, excluding channels and maintenance roads.
19 Landform graphics may be either concrete graphics or graphics using decomposed granite. For
20 calculating cover, landscaped areas do not include drainage basins or channels, right-of-way in
21 wash crossings, maintenance roads, and side slopes between 17th Avenue and 51st Avenue.

22 Landform graphics are intended for sloped areas at interchanges between the mainline and the
23 on- and off-ramps. Landform graphics may also be located along sloped mainline sections, but
24 single landform graphic area shall not exceed one-half mile in length. Developer shall show
25 locations of landform graphics in the Visual Analysis.

26 Developer shall provide landform graphic for each Aesthetic Area that resembles Exhibits L2.39
27 through L2.44 of the LAADCR.

ADDENDUM #2

1 **450.3.1.1.4 Crossroad Landscape**

2 Crossroad medians between the on- and off-ramp intersections shall not be vegetated. Medians
3 shall be hardscaped with pavers or concrete a pattern or finish to complement the Aesthetic
4 Area aesthetics in which they occur.

5 Developer shall design median and road side landscape areas beyond the on- and off-ramp
6 intersections in coordination with the City of Phoenix.

7 **450.3.1.1.5 Accessory Structures**

8 Accessory structures such as node buildings and irrigation equipment enclosures shall be
9 designed in materials and colors to match the Aesthetic Area in which it is located and in
10 accordance with the LAADCR.

11 **450.3.1.2 Aesthetic Area 1**

12 Aesthetic Area 1 is located between 48th Street and a half mile east of Desert Foothills
13 Parkway. The aesthetic theme is the Ocotillo Settlement Pattern, expressed through crisp
14 geometric forms, horizontal lines, and triangular shapes. Exhibit L2.2 of the LAADCR is a
15 simulation of these forms on a typical sound wall and bridge structure. The final designs shall
16 resemble these simulations.

17 **450.3.1.2.1 Bridges**

18 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge
19 abutment walls in Aesthetic Area 1 in accordance with Exhibits L2.14, L2.15, and L2.17 of the
20 LAADCR. The final designs shall resemble these simulations. The 48th Street bridge does not
21 need to be painted to match the Aesthetic Area unless the bridge is modified by Developer's
22 design.

23 **450.3.1.2.2 Walls**

24 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic
25 Area 1 in accordance with Exhibit L2.16 of the LAADCR. The final designs shall resemble these
26 simulations.

27 **450.3.1.3 Aesthetic Area 2**

28 Aesthetic Area 2 is located between a half mile east of Desert Foothills Parkway to just east of
29 51st Avenue (north of the GRIC boundary). The aesthetic theme is the Cholla/Ocotillo Pattern,
30 expressed through forms that are representative of the simple shapes and forms found on
31 cholla and ocotillo cactus. Exhibit L2.4 of the LAADCR is a simulation of these forms on a
32 typical sound wall and bridge structure. The final designs shall resemble these simulations.

33 **450.3.1.3.1 Bridges**

34 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge
35 abutment walls in Aesthetic Area 2 in accordance with Exhibits L2.18, L2.19, and L2.21 of the
36 LAADCR. The final designs shall resemble these simulations.

37 **450.3.1.3.2 Walls**

38 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic
39 Area 2 in accordance with Exhibit L2.20 of the LAADCR. The final designs shall resemble these
40 simulations.

ADDENDUM #2

1 **450.3.1.4 Aesthetic Area 3**

2 Aesthetic Area 3 is located between just east of 51st Avenue (north of the GRIC boundary) and
3 half a mile north of Baseline Road. The aesthetic theme is the River Bank Pattern, expressed
4 through shapes that are representative of water carving river banks, channels, and steep
5 mountain slopes. Exhibit L2.6 of the LAADCR is a simulation of these forms on a typical sound
6 wall and bridge structure. The final designs shall resemble these simulations.

7 **450.3.1.4.1 Bridges**

8 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge
9 abutment walls in Aesthetic Area 3 in accordance with Exhibits L2.22, L2.23, and L2.25 of the
10 LAADCR. The final designs shall resemble these simulations.

11 **450.3.1.4.2 Walls**

12 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic
13 Area 3 in accordance with Exhibit L2.24 of the LAADCR. The final designs shall resemble these
14 simulations.

15 **450.3.1.5 Aesthetic Area 4**

16 Aesthetic Area 4 is located between half a mile north of Baseline Road and Elwood Street
17 alignment. The aesthetic theme is the Leaf Portal Pattern, expressed through shapes that
18 suggest the agricultural heritage of this area. Circular shapes in the pattern represent portals
19 into the future or out of the past. Exhibit L2.8 of the LAADCR is a simulation of these forms on a
20 typical sound wall and bridge structure. The final designs shall resemble these simulations.

21 **450.3.1.5.1 Bridges**

22 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge
23 abutment walls in Aesthetic Area 4 in accordance with Exhibits L2.26, L2.27, and L2.29 of the
24 LAADCR. The final designs shall resemble these simulations.

25 **450.3.1.5.2 Walls**

26 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic
27 Area 4 in accordance with Exhibit L2.28 of the LAADCR. The final designs shall resemble these
28 simulations.

29 **450.3.1.6 Aesthetic Area 5**

30 Aesthetic Area 5 is located between Elwood Street alignment and I-10 and along I-10 between
31 75th and 43rd Avenues. The aesthetic theme is the Mountain Urban Link Pattern, expressed
32 through interlocking shapes that representationally tie the South Mountain Freeway to the I-10
33 freeway. Exhibit L2.10 of the LAADCR is a simulation of these forms on a typical sound wall and
34 bridge structure. The final designs shall resemble these simulations.

35 **450.3.1.6.1 Bridges**

36 Developer shall provide rustication patterns on all new bridge barrier walls, bridge piers, and
37 bridge abutment walls in Aesthetic Area 5 in accordance with Exhibits L2.30, L2.31, and L2.33
38 of the LAADCR. The final designs shall resemble these simulations. Developer shall paint the
39 existing 59th Avenue bridge with the Aesthetic Area 5 base color. If the 63rd Avenue bridge is
40 replaced, it shall have the same rustication as the existing structure, and Developer shall paint
41 bridge with the same Aesthetic Area 5 base color.

ADDENDUM #2

1 **450.3.1.6.2 Walls**

2 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic
3 Area 5 in accordance with Exhibit L2.32 of the LAADCR. The final designs shall resemble these
4 simulations.

5 **450.3.1.7 River Bridge Aesthetics**

6 The river bridge aesthetics applies only to the bridge crossing the Salt River. The bridge barrier
7 walls, as shown in Exhibit L2.12 of the LAADCR, have a rustication pattern called the wave
8 pattern that relates this bridge to other ADOT bridges crossing the Salt River.

9 **450.3.1.7.1 Bridge**

10 Developer shall provide rustication patterns on bridge barrier walls on bridges crossing the Salt
11 River in accordance with Exhibit L2.12 of the LAADCR. The final designs shall resemble these
12 simulations.

13 **450.3.1.7.2 Walls**

14 Developer shall provide horizontal rustication on Salt River Bridge abutment walls in accordance
15 with Exhibits L2.12 and L2.13 of the LAADCR. The final designs shall resemble these
16 simulations.

17 **450.3.2 Landscape**

18 Developer shall select all landscape plant materials from the lists defined TP Attachment 450-1
19 and/or from the plants salvaged and transplanted from on site. All plants from a Character Areas
20 list shall be used in the planting design in a manner that provides variety of the species
21 throughout the Character Area, and makes the best use of the low-water use plants, reserving
22 the higher water-use plants for select areas. No substitution of species will be allowed.

23 **450.3.2.1 Planting Design**

24 The plant material shall provide an evident sense of uniformity and continuity in pattern,
25 material, size, color, and intensity throughout the five Character Areas. Landscape shall be
26 designed to address the following broad objectives:

- 27 A. Use vegetative buffers to screen views both of the roadway and from the roadway.
- 28 B. Use strategic gaps in plantings to frame positive views.
- 29 C. Transplant large saguaros, mature trees, and cacti to visually sensitive or critical
30 roadway areas.
- 31 D. Use measures to blend retention basins and their landscape treatments into the
32 surroundings.
- 33 E. Place landscape treatments on the periphery of right-of-way areas, at overpass
34 locations, and on areas adjacent to residential development.
- 35 F. Cluster groupings of plant material in informal patterns to break up the linear form of the
36 freeway.
- 37 G. Emphasize shade in key pedestrian areas along city crossroads.
- 38 H. Consider ease and efficiency of landscape and irrigation maintenance.
- 39 I. Avoid creating “hidden” areas for transient habitation.
- 40 J. Ensure that maintenance access areas, pull boxes, light poles, sign foundations and
41 impact devices are free of vegetation.
- 42 K. Do not plant in areas of total shade.

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1 Trees shall be used in mass plantings and groups, where possible, to provide vertical structure
2 and relief, vegetative texture accent, and seasonal interest, while breaking up the monotony of
3 the horizontal plane. Tree plantings shall be used to focus desirable views while screening
4 undesirable ones.

5 Shrubs and accents shall be used to provide a year round layer of texture and color that shall
6 serve to articulate the ground plane and provide intermediate vertical relief. Given limited right-
7 of-way and plant spacing requirements, mass plantings of shrubs shall further delineate
8 naturalistic or geometric forms as identified by the surrounding landscape configuration.

9 Developer shall lay out plant material as it relates to planting in the recovery zone in accordance
10 with the ADOT *Roadway Design Guidelines*. Developer shall not place trees or shrubs so as to
11 conceal the view of any highway sign or signal.

12 **450.3.2.1.1 Character Area 1**

13 Character Area 1, referred to as the Ahwatukee Neighborhoods, is located between 48th Street
14 and a half mile east of Desert Foothills Parkway. It is defined by the proximity of existing
15 medium-density residential development.

16 The Character Area 1 planting concept blends the landscape of the existing I-10/SR 202
17 interchange landscape with that of the existing surrounding residential neighborhoods. Plants
18 used in Character Area 1 must be from the plants listed in TP Attachment 450-1A. Per each
19 category of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given
20 for how much each species shall be represented in the final plan. The remaining percentage
21 shall be at the discretion of the Landscape Architect. The landscape layout design shall create a
22 transition between existing I-10 at Pecos Road landscape and the new South Mountain
23 Freeway Character Area 1 landscape.

24 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type
25 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30
26 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

27 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5
28 gallon minimum, 5 accents/cacti per tree.

29 **450.3.2.1.2 Character Area 2**

30 Character Area 2, referred to as the Ahwatukee Foothills, is located between a half mile east of
31 Desert Foothills Parkway to just east of 51st Avenue (north of the GRIC boundary). It is defined
32 by the proximity of existing lower-density residential development, increased topography, and
33 large areas of undisturbed native desert.

34 The Character Area 2 planting concept is native desert. Salvaged desert trees and cacti and
35 seeding with native desert shrubs must blend the freeway landscape with the adjacent South
36 Mountain Park/Preserve (SMPP). All inventoried, salvageable plants must be located within
37 Character Area 2, and each location must be identified with the plant's ID number. Plants used
38 in Character Area 2 must be from the plants listed in TP Attachment 450-1B. Per each category
39 of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given for how
40 much each species shall be represented in the final plan. The remaining percentage shall be at
41 the discretion of the Landscape Architect.

42 Tree density shall be a minimum of 14 trees per acre using all the salvaged trees and
43 supplementing them as needed with nursery grown trees at a minimum 15 gallon size. The
44 minimum shrub size must be 1 gallon at a minimum density of 15 per acre. Saguaros must be at
45 a minimum density of 1 per acre using all the salvaged saguaros and supplementing them as

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1 needed with purchased saguaros at a minimum size of 8-foot spear. Accents/cacti must be at a
2 minimum density of 2 per acre, using all the salvaged material and supplementing as needed
3 with nursery grown material at a minimum 1 gallon size. These minimums are in addition to the
4 seeding.

5 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5
6 gallon minimum, 5 accents/cacti per tree.

7 **450.3.2.1.3 Character Area 3**

8 Character Area 3, referred to as the Laveen Village, is located between just east of 51st Avenue
9 (north of the GRIC boundary) and the Salt River. It is defined by agricultural fields, pastures,
10 and low-density residential development. The portion of Character Area 3 landscape limits
11 between just east of 51st Avenue (north of the GRIC boundary) to half a mile north of Elliot
12 Road must be landscaped in accordance with the requirements for Character Area 2.

13 The Character Area 3 planting concept is agriculturally themed. Plantings must be arranged in
14 straight lines to mimic the furrows and hedgerows found in the adjacent farm fields. Plants used
15 in Character Area 3 must be from the plants listed in TP Attachment 450-1C. Per each category
16 of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given for how
17 much each species shall be represented in the final plan. The remaining percentage shall be at
18 the discretion of the Landscape Architect.

19 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type
20 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30
21 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

22 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5
23 gallon minimum, 5 accents/cacti per tree.

24 **450.3.2.1.4 Character Area 4**

25 Character Area 4, referred to as the Estrella Village, is located between the Salt River and I-10.
26 It is defined by a mix of agricultural fields, pastures, and medium-density residential
27 development transitioning to industrial and commercial land uses.

28 The Character Area 4 planting concept is to blend with the plant palette for the City of Phoenix's
29 Estrella Urban Village and the surrounding residential and industrial developments. Plants used
30 in Character Area 4 must be from the plants listed in TP Attachment 450-1D. Per each category
31 of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given for how
32 much each species shall be represented in the final plan. The remaining percentage shall be at
33 the discretion of the Landscape Architect.

34 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type
35 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30
36 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

37 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5
38 gallon minimum, 5 accents/cacti per tree.

39 **450.3.2.1.5 Character Area 5**

40 Character Area 5, referred to as the I-10 Traffic Interchange, is located along I-10 between 75th
41 and 43rd Avenues. It is defined by the existing freeway landscape character as well as the
42 adjacent residential development to the north and industrial development to the south.

43 The Character Area 5 planting concept blends the new South Mountain Freeway landscape with
44 that of the existing I-10 landscape. Plants used in Character Area 5 must be from the plants

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1 listed in TP Attachment 450-1E. Per each category of plant (large tree, small tree, large shrub,
2 small shrub, accent), minimum are given for how much each species shall be represented in the
3 final plan. The remaining percentage shall be at the discretion of the Landscape Architect. The
4 landscape layout design shall create a transition between existing I-10 at 59th Avenue
5 landscape and the new South Mountain Freeway Character Area 1 landscape.

6 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type
7 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30
8 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

9 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5
10 gallon minimum, 5 accents/cacti per tree

11 **450.3.2.1.6 Seeding**

12 Seeding shall be used in Character Area 2 as the method of establishing understory plants.
13 Developer shall seed within the traffic clear zone/recovery areas. The seed mixes below
14 represent the desired mix of species and density.

15 Developer shall provide low grasses and forbs seed mix in the bottom of all retention basins and
16 within the traffic clear zone/recovery areas within Character Area 2. Developer shall apply clear
17 zone seed mix within 20 feet behind guardrails/barrier walls, or within 20 feet of the inlets and
18 outlets of drainage facilities or to the flow paths of the inlets and outlets of drainage facilities.
19 Low grass and forb seed mix must be in accordance with TP Attachment 450-2A.

20 Developer shall apply tall background seed mix to revegetate areas beyond the traffic clear
21 zone/recovery areas and all other unpaved disturbed areas, except maintenance roads, within
22 Character Area 2. The Tall Background Seed Mix shall not be applied within 20 feet behind
23 guardrails/barrier walls, or within 20 feet of the inlets and outlets of drainage facilities or to the
24 flow paths of the inlets and outlets of drainage facilities. Tall background seed mix must be in
25 accordance with TP Attachment 450-2B.

26 Developer shall apply wash seed mix as a landscape ecological restoration buffer next to the
27 edge of drainage areas along the flow path and beyond the traffic clear zone/recovery areas
28 within Character Area 2. Seed mix must be in accordance with TP Attachment 450-2C.

29 **450.3.3 Irrigation Design**

30 **450.3.3.1 Irrigation Water Use and Conservation Plan**

31 Developer shall analyze and determine the projected water use, for all phases of the project, for
32 planting in each Character Area identified in the *SR 202 South Mountain Freeway Landscape
33 Architecture & Aesthetics Design Concept Report (LAADCR)*, which is included in the RIDs.
34 Developer shall perform irrigation calculations for water needs during the construction phase,
35 the plant establishment period, and the Maintenance Period. The irrigation calculations must
36 account for estimated monthly water needs.

37 The irrigation water use shall not exceed the City of Phoenix maximum annual water use
38 requirements specified in Table 450-3.

Table 450-3 City of Phoenix Maximum Annual Water	
Year	Annual Water Use (MGal/Year)
1-2	6.6

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Table 450-3 City of Phoenix Maximum Annual Water	
Year	Annual Water Use (MGal/Year)
3-4	10.9
5-7	13.0
8-10	17.9
11-14	21.8
15-18	19.6
19-25	17.9
26-30	15.3

1 Developer shall prepare an initial Irrigation Water Use and Conservation Plan based on the
 2 Aesthetics and Landscape Plans. The initial Irrigation Water Use and Conservation Plan must
 3 include the following:

- 4 A. Cover page
- 5 B. Table of contents
- 6 C. Discussion, including the following:
- 7 D. Detailed methodology proposed to determine how much irrigation water will be applied
- 8 during the planting, establishment, and maintenance phases of the contract. The Plan
- 9 shall include an approved method of measuring soil moisture at the root balls of trees
- 10 and shrubs at four locations per controller at locations and intervals approved by the
- 11 Engineer.
 - 12 1. Description of how the schedule will be developed and how water use will be
 - 13 monitored
 - 14 2. Plan for conserving irrigation water
 - 15 3. Plan for recording water meter use at regular monthly intervals and delivering the
 - 16 results for review
 - 17 4. Proposed controller programming schedule
 - 18 5. Description of planting design theory describing how the majority of plants to be used
 - 19 will be the lowest water users and where and how the higher water using plants will
 - 20 be located.
- 21 E. Appendices, including the following, at a minimum:
- 22 1. Calculations.

23 At the same time as Initial Design Submittal of any landscape Submittal, Developer shall submit
 24 the initial Irrigation Water Use and Conservation Plan to ADOT for review and comment.

25 Developer shall prepare the final Irrigation Water Use and Conservation Plan based on the
 26 updated planting and irrigation design. At the same time as Final Design Submittal of any
 27 landscaping Submittal Developer shall submit the final Irrigation Water Use and Conservation
 28 Plan to ADOT for review and comment.

ADDENDUM #2

1 **450.3.3.2 Irrigation Requirements**

2 Developer shall not provide a permanent irrigation system for Character Area 2. Developer shall
3 design the irrigation system in accordance with the following criteria:

- 4 A. Minimum design pressure 60 pounds per square inch.
- 5 B. Maximum pipe water velocity 5 feet per second.
- 6 C. Minimum 50 pounds per square inch operating pressure at individual remote control
7 valve locations.
- 8 D. Minimum 86% distribution uniformity.
- 9 E. Include flow monitoring and flow control.
- 10 F. Include remote monitoring of controllers through a central control.
- 11 G. Include the ability to operate the irrigation system with hand-held devices.
- 12 H. Include pressure compensating low-flow drip emitter system for all planting.
- 13 I. Trees and shrubs must be valved separately.
- 14 J. All control valves, mainlines, and pressure regulators must be placed a minimum of:
15 1. 20 feet behind curb and gutter;
16 2. 8 feet behind all barriers when along freeway mainline and ramps; or
17 3. Within first 5 feet behind sidewalks.
- 18 K. Irrigation pipes and equipment must comply with all applicable health code
19 requirements.
- 20 L. Irrigation systems for Character Areas 1, 3, 4, and 5 must tap into existing City of
21 Phoenix water lines.
- 22 M. Irrigation control system shall have the ability to monitor current weather conditions and
23 monitor soil moisture conditions at specific representative plant locations throughout the
24 project area using advanced soil sensing equipment.
- 25 N. Irrigation control system shall have the ability to initiate, adjust, or cancel an irrigation
26 cycle based on actual real-time soil moisture readings.

27 **450.3.3.3 City Right-of-Way Irrigation**

28 Irrigation systems for landscape within the City of Phoenix right-of-way must be independent
29 from the freeway irrigation system.

30 **450.3.4 Ground Treatment**

31 All rock mulch and rock riprap used for erosion/sediment control must be fractured/crushed rock
32 that is angular in shape. Natural river-run materials, including rounded natural river
33 rocks/cobblestones and pebbles, are not acceptable for erosion/sediment control. Developer
34 shall provide decomposed granite and granite mulch in a gradation that minimizes erosion
35 (rilling of the slopes).

36 All ground surfaces within the Project limits not paved with asphalt or concrete must receive 1 ¼
37 inch minus granite mulch to minimize dust pollution and erosion and as an aesthetic ground
38 treatment. The granite mulch must comply with the gradation requirements listed in Table 450-4.

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Table 450-4 Gradation Requirements	
Passing Sieve	Percent
1 ¼ inch	100
¾ inch	60-80
½ inch	45-65
No. 40	5-20

1 Character Areas 1, 3, 4, and 5 must receive 1 ¼ inch minus granite mulch, at the nominal depth
 2 of 2 inches, in the colors listed in Table 450-5. See Section CR 450.3.2.3 of the TPs for
 3 approved suppliers.

Table 450-5 Ground Treatment	
Character Area	Granite Color
1	Coral
2	Not applicable
3	Brown
4	Gold
5	Gold

4 Landscaped areas of city crossroads must receive ¾ inch screened decomposed granite at the
 5 nominal depth of 2 inches. Character Area 2 and all other areas not otherwise specified herein
 6 must receive 3 inch minus desert pavement, at the nominal depth of 2 inches, and seeding.
 7 Desert pavement is an approximation of the native desert ground cover found in undisturbed
 8 desert areas. It is a combination of cobble, vegetation, and soil from the top 4 to 8 inches of the
 9 native desert areas of Character Area 2.

10 Mountain cut slopes steeper than 1:1 (H:V) are exempt from receiving a ground treatment.

11 450.3.5 Aesthetics and Landscape Plans

12 Developer shall prepare Full Elevations, Colored Renderings, and 3D Animations with
 13 MicroStation software of Aesthetic Architectural rustication for each Aesthetic Area. This
 14 includes roll plots, rendered in color, of the landscape design. Prior to preparing the Aesthetics
 15 and Landscape Plans as described below, Developer shall submit the Full Elevations, Colored
 16 Renderings, and 3D Animations to ADOT for review and comment.

17 Developer shall prepare Aesthetics and Landscape Plans that include the following:

- 18 A. Face sheet
- 19 B. Standard sheets, if applicable

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- 1 C. Design sheet
- 2 D. Summary sheet, including the following:
 - 3 1. Legends
 - 4 2. General notes
- 5 E. Rustication detail sheets
- 6 F. Rustication layout sheets
- 7 G. Landform graphics and inert materials detail sheets
- 8 H. Landform graphics and inert materials layout sheets
- 9 I. Planting and inert materials detail sheets
- 10 J. Planting and inert materials layout sheets
- 11 K. Irrigation detail sheets, including the following:
 - 12 1. Installation details for each product used
 - 13 2. Trenching
 - 14 3. Emitter layout
- 15 L. Irrigation layout sheets, including the following:
 - 16 1. Plans show layout of piping and placement of valves, controllers, backflow
 - 17 preventers, and all other irrigation equipment
- 18 M. SWPP index sheet
- 19 N. SWPP detail sheets, if applicable

20 Developer shall submit Aesthetics and Landscape Plans to ADOT for review and comment.

21 450.4 SUBMITTALS

22 Table 450-6 reflects a nonexclusive list of Submittals identified in Section DR 450 of the TPs
 23 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 24 determine and submit all Submittals as required by the Contract Documents, Governmental
 25 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 26 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 27 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 28 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 450-6 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Plant Inventory	4	2	1	Prior to issuance of NTP 2	DR 450.2.3
Updated Plant Inventories	4	2	1	15 Business Days after parcels become available for Developer's use	DR 450.2.30
Salvage Operation Plan	4	2	1	At the same time as the submittal of the Plant Inventory	DR 450.2.4
Updated Salvage Operation Plan	4	2	1	At the same time as the submittal of each updated Plant Inventory	DR 450.2.4

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Table 450-6 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Noxious and Invasive Species Control Plan	4	2	1	15 Business Days prior to any ground disturbance	DR 450.2.5
Updated Noxious and Invasive Species Control Plan	4	2	1	No later than 10 Business Days after the submittal of each updated Plant Inventory	DR 450.2.5
Plating Report	4	2	1	At the same time as the first Initial Design Submittal of any landscape Submittal	DR 450.2.6
Aesthetics and Landscape Master Plan	4	2	1	Prior to the Design Kickoff meeting.	DR 450.2.7
Visual Analysis	4	2	1	After the Design Kickoff meeting and prior to submitting a planting Initial Design Submittal	DR 450.2.8
Initial Irrigation Water Use and Conservation Plan	4	2	1	At the same time as the first Initial Design Submittal of any landscape Submittal	DR 450.3.3.1
Final Irrigation Water Use and Conservation Plan	4	2	1	At the same time as the Final Design Submittal for any landscaping Submittal	DR 450.3.3.1
Aesthetics and Landscape Plans	4	2	1	As determined by Developer	DR 450.3.5
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1
2

End of Section

ADDENDUM #2

1 DR 455 STRUCTURES

2 455.1 GENERAL REQUIREMENTS

3 Developer shall perform all structures Design Work in compliance with the requirements of
4 Section DR 455 of the TPs.

5 455.2 ADMINISTRATIVE REQUIREMENTS

6 455.2.1 Standards

7 Developer shall perform all structures Design Work in accordance with the standards, manuals,
8 and guidelines listed in Table 455-1.

Table 455-1 Standards		
No.	Agency	Title
1	AASHTO	LRFD Bridge Design Specifications
2	AASHTO	LRFD Bridge Construction Specifications
3	AASHTO	Construction Handbook for Bridge Temporary Works
4	AASHTO	Guide Specifications – Thermal Effects in Concrete Bridge Superstructures
5	AASHTO	Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals
6	AASHTO	Manual on Subsurface Investigations
7	AASHTO/AWS	D1.5 Bridge Welding Code
8	AASHTO	Guide Design Specifications for Bridge Temporary Works
9	AASHTO	Manual for Bridge Evaluation
10	AASHTO	Guide Specifications for Design and Construction of Segmental Concrete Bridges
11	AASHTO	Guide Specifications for Structural Design of Sound Barriers
12	AASHTO	LRFD Guide Specifications for the Design of Pedestrian Bridges
13	AASHTO	Manual for Assessing Safety Hardware (MASH)
14	AWS	American Welding Society (AWS) 1.1 Welding Code
15	UPRR/BNSF	Guidelines for Railroad Grade Separation Projects, BNSF Railway – Union Pacific Railroad
16	SRP	Design Guidelines and Specifications for Bridge Crossings of Salt River Project (SRP) Canals, Salt River Project Water Shareholder Operations

9 455.3 DESIGN REQUIREMENTS

10 Structures design aesthetic features must comply with the requirements in Section DR 450 of
11 the TPs.

ADDENDUM #2

1 Foundations for bridges and retaining walls must be shallow (spread) foundations, driven piles,
2 or drilled shafts for both abutments and piers. In the case of piers, the transition from drilled
3 shafts to columns must occur below finished grade, in which case the drilled shaft reinforcing
4 steel must extend above finished grade to form the pier columns, provided arrangements have
5 been made for removal of temporary casing and the ability to provide an acceptable concrete
6 finish.

7 Developer shall not use spread footings in locations where potential for scour is present.

8 **455.3.1 Structure Type Selection**

9 Developer shall prepare a Foundation Report(s) for bridges and retaining walls in accordance
10 with the applicable standards and guidelines listed in Table 445-1. As part of the Structure Type
11 Study Report(s), Developer shall submit each Foundation Report(s) to ADOT for review and
12 comment for the selection of particular foundation types.

13 Developer shall prepare a Structure Type Study Report(s) for all bridges and retaining walls.
14 Cost analysis between several structure types is not required. The Structure Type Study
15 Report(s) must identify which bridges are designed to carry construction overload vehicles. The
16 Structure Type Study Report(s) must include Plans for each structure that includes, at a
17 minimum, the following information:

- 18 A. Location plan
- 19 B. Elevation
- 20 C. Typical sections
- 21 D. Girder type and spacing
- 22 E. Superstructure depth
- 23 F. Bridge deck thickness
- 24 G. Minimum vertical and horizontal clearance dimensions and location
- 25 H. Abutment, pier, and foundation type
- 26 I. Expansion and fixity conditions
- 27 J. Deck joint type
- 28 K. Flow rate and high water elevation for 50- and 500-year storm events (if applicable)
- 29 L. Roadway lane, roadway shoulder, and total bridge widths
- 30 M. General notes with all loading conditions for bridge elements
- 31 N. General notes with design stresses for all bridge elements

32 Prior to submitting any Initial Design Submittals for the associated structure Developer shall
33 submit the Structure Type Study Report(s) to ADOT for review and comment . Developer shall
34 not make any subsequent design submittal with respect to any particular structure until the all
35 Structure Type Study Report comments for such structure have been addressed.

36 **455.3.2 Roadway Bridges**

37 Developer shall design all new roadway bridges and retaining walls in accordance with the
38 *AASHTO LRFD Bridge Design Specifications*. Developer shall design bridges for a 75 year
39 design life.

ADDENDUM #2

1 455.3.2.1 Geometry

2 All fill and cut slopes along the longitudinal axis of bridges with spill through abutments must not
3 be steeper than 2:1 (H:V). Slopes steeper than 3:1 must have concrete slope paving with
4 exposed aggregate surface.

5 Vertical clearances must be in accordance with TP Attachment 440-1.

6 455.3.2.2 Loads

7 Developer shall design bridges for the following loading:

8 A. Dead load – A reserve superimposed dead load of 25 psf must be included in the design
9 of all bridge elements to provide for a future deck overlay.

10 B. Live load – All new vehicular structures must be designed for HL93 live loading. Bridges
11 proposed to carry construction overload vehicles must be designed per Section 16 of the
12 ADOT *Bridge Group Practice Guidelines*.

13 455.3.2.3 Uplift

14 Developer shall proportion bridge spans to prevent uplift at supports for all LRFD limit states
15 except for the extreme event limit state per the AASHTO *LRFD Bridge Design Specifications*.

16 455.3.2.4 Stress Limits for Concrete

17 Developer shall ensure that all concrete structures comply with the stress limits identified in
18 Table 455-2.

Table 455-2 Stress Limits for Concrete						
		Before Time- Dependent Losses	After Losses			
			DC + Prestress	Service Limit I	Service Limit III	0.5(DW + DC + Prestress) + (LL + IM)
Compression (ksi)		$0.6f'_{ci}$	$0.45f'_c$	$0.6\phi_w f'_c$	N/A	$0.4f'_c$
Tension (ksi)	Any region of a prestressed component in which prestressing causes compressive stresses and service load effects cause tensile stresses	N/A	0 for post- tensioned boxes N/A for precast prestressed members	N/A	$0.0948\sqrt{f'_c}$ (For post- tensioned structures built on falsework, this value shall be zero. No tension shall be allowed.	N/A
	Other Regions	$0.0948\sqrt{f'_{ci}}$ ≤ 0.2 ksi	N/A	N/A	N/A	N/A

19 455.3.2.5 Structural Concepts and Design

20 Developer shall satisfy the following criteria for structure types and components:

ADDENDUM #2

- 1 A. Cable stayed bridge types must not be used.
- 2 B. External post-tensioning must not be used.
- 3 C. A minimum of three girders must be used to provide redundant load path structures.
- 4 D. Fracture critical members must not be used.
- 5 E. The use of the approximate analysis methods for curved bridges in Article 4.6.2.2.4 of
- 6 the AASHTO *LRFD Bridge Design Specifications* is not permitted. Curved bridges are
- 7 defined in Article 4.6.1.2 of the AASHTO *LRFD Bridge Design Specifications*.
- 8 F. The use of the V-load method for curved steel I-girders or the M/R method for curved
- 9 steel box girders is not permitted.

10 **455.3.2.6 Bridge Barriers**

11 Bridge barriers must be F-Shape concrete bridge barriers complying with NCHRP Report 350,
12 *Recommended Procedures for the Safety Performance Evaluation of Highway Features* or the
13 AASHTO *Manual for Assessing Safety Hardware (MASH)* and AASHTO *LRFD Bridge Design*
14 *Specification* requirements with minimum test level TL-4, unless described otherwise specified
15 in the Contract Documents. Bridge barriers in system interchanges with directional ramps must
16 be minimum test level TL-5. Bridge barriers where pedestrian traffic is accommodated must be
17 combination pedestrian-bridge barriers complying with NCHRP Report 350, *Recommended*
18 *Procedures for the Safety Performance Evaluation of Highway Features* or the AASHTO *Manual*
19 *for Assessing Safety Hardware (MASH)* and AASHTO *LRFD Bridge Design Specification*
20 requirements. Fencing on structures shall be 1/2" - #13 expanded metal, flattened smooth with
21 no sharp edges.

22 Outside bridge railings for system-to-system traffic interchanges must be a 44-inch barrier.
23 Outside bridge railings for all other bridges must be a 34-inch barrier. Median barriers for all
24 bridges must be a 44-inch barrier. Bridge barriers must not be slip formed.

25 **455.3.2.7 Approach Slabs**

26 Developer shall provide a 15-foot minimum length reinforced concrete bridge approach slab with
27 approach slab anchors at the ends of each new bridge. The bridge approach slabs must extend
28 the full width of the roadway. For concrete pavement, Developer shall provide a protective
29 pavement system to prevent movement and damage of the pavement to induce loads on the
30 bridge.

31 **455.3.2.8 Bridge Deck**

32 All structural deck slabs must be concrete. Developer shall minimize the number of deck joints
33 wherever possible. Aluminum, finger, or sliding plate bridge joints must not be used. The bridge
34 deck designs must:

- 35 A. Be controlled by Service Limit State I;
- 36 B. Be considered elastic for bridge deck behavior;
- 37 C. Be designed by the working stress method;
- 38 D. Have allowable tensile stress in reinforcing steel, f_s , be limited to 24 ksi; and
- 39 E. Have a minimum clear cover for reinforcing steel in new deck slabs of 2.5-inches for top
40 reinforcement and 1-inch for the bottom reinforcement for corrosion protection.

41 New bridge deck thicknesses must be designed in 0.5-inch increments with the minimum
42 thicknesses shown in Table 455-3. Effective span lengths greater than 13 feet is not be allowed.

ADDENDUM #2

Table 455-3 Minimum Bridge Deck Thickness					
S (feet)	≤7	7< and ≤8.5	8.5< and ≤10	10< and ≤11.5	11.5< and ≤13
t (inches)	8.0	8.5	9.0	9.5	10.0
Where: S = the effective span length specified in the AASHTO LRFD Article 9.7.2.3 t = Minimum thickness of deck slab					

1 Sidewalks on bridges must be in compliance with ADA standards. The minimum width of
2 useable sidewalk on bridges must be 6'-0".

3 **455.3.3 Pedestrian Bridges**

4 Developer shall design pedestrian bridges in accordance with *AASHTO LRFD Guide*
5 *Specifications for the Design of Pedestrian Bridges*.

6 **455.3.4 Retaining Walls and Wingwalls**

7 Developer shall provide 42-inch metal hand rail on top of retaining walls of 48 inches in height or
8 greater, except when protected by barrier wall against the top of retaining wall.

9 Mechanically stabilized earth (MSE) walls must not be used to support abutment foundations on
10 the Project.

11 **455.3.5 Noise Walls**

12 Developer shall design noise walls at the locations as determined by Developer in accordance
13 with Section DR 420 of the TPs.

14 Noise walls must be designed in accordance with *AASHTO LRFD Bridge Design Specifications*.
15 For noise walls supported on retaining walls (i.e., combination walls), strength and serviceability
16 requirements must apply per *AASHTO LRFD Bridge Design Specifications* for load conditions
17 that include wind loads.

18 Fire hose access holes must be provided at noise walls at approved locations. Covers must be
19 placed on each of the fire hose access holes. Developer shall coordinate with the local fire
20 departments adjacent to the Project to obtain design requirements and approval for locations
21 and cover type.

22 Noise walls adjacent to landscaped areas where failure due to vehicular collision does not result
23 in adjacent property damage or debris impact to travel ways; do not require designs to
24 accommodate collision forces.

25 Noise walls located on bridges and adjacent to traffic hazards must be designed to not allow a
26 catastrophic failure due to vehicle impact load and must limit the risk of falling debris resulting
27 from vehicle impact. Noise walls on the bridges must be placed behind bridge barrier.

28 Masonry walls shall be designed to prevent water seepage into the wall system.

29 **455.3.6 Drainage Structures, Sign Structures, Temporary Structures**

30 Developer shall design drainage structures, sign structures, and temporary structures in
31 accordance with the applicable standards in Table 455-1.

ADDENDUM #2

1 **455.3.7 Plans and Design Calculations**

2 **455.3.7.1 Plans**

3 Developer shall request structure names and structure numbers for each bridge from ADOT by
4 the Initial Design Submittal. The following bridges have been assigned structure numbers and
5 names:

- 6 A. Str. No. 20024 – UPRR OP
- 7 B. Str. No. 20025 – SB Frontage Rd UPRR OP
- 8 C. Str. No. 20026 – NB Frontage Rd UPRR OP

9 Developer shall prepare bridge plans in accordance with the ADOT *Standardized Dictionary of*
10 *Work Tasks*. Multiple bridge designs must not be combined on the same Plans. Bridge Plans
11 must be submitted separately for individual bridges. The structure Plans must include the
12 following:

- 13 A. General plan, including Plan, elevation, and typical section
- 14 B. General notes, including bridge load rating
- 15 C. Foundation sheets
- 16 D. Abutment details
- 17 E. Wing wall details
- 18 F. Pier details
- 19 G. Slope protection
- 20 H. Superstructure sheets
- 21 I. Bearings
- 22 J. Prestressing details (if applicable)
- 23 K. Girder layout and elevation
- 24 L. Girder details
- 25 M. Special details (if applicable)
- 26 N. Pile records (if applicable)

27 **455.3.7.2 Design Calculations**

28 **455.3.7.2.1 Structure Calculations**

29 Developer shall prepare a Structure Calculations Report that includes a table of contents, all
30 structure calculations, references to computer programs in the calculations, and computer
31 documentation that includes name of program, vendor, version, and release date. The Structure
32 Calculations Report must be bound and all pages must be numbered. Within 5 Business Days
33 of ADOT's request, Developer shall submit a Structures Calculations Report(s) to ADOT.

34 **455.3.7.2.2 Bridge Load Rating**

35 Developer shall load rate all NBI qualified bridges carrying vehicular traffic (20ft in length or
36 more), including culverts that are defined as bridges and prepare a Load Rating Report(s) in
37 accordance with the AASHTO *Manual for Bridge Evaluation*. The minimum operating load rating
38 factor for all new bridges must be 2.0. The minimum length of structures that are required to be
39 load rated and the loading requirements must be in accordance with the AASHTO *Manual for*
40 *Bridge Evaluation*. At the same time as the Initial Design Submittal of a bridge Plan, Developer
41 shall submit an initial Load Rating Report(s) to ADOT for review and comment. At the same time

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1 as the Final Design Submittal of a bridge Plan, Developer shall submit a final Load Rating
2 Report(s) to ADOT for review and comment.

3 **455.4 SUBMITTALS**

4 Table 455-4 reflects a nonexclusive list of Submittals identified in Section DR 455 of the TPs
5 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
6 determine and submit all Submittals as required by the Contract Documents, Governmental
7 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
8 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
9 specified in the Contract Documents, Developer shall submit the following to ADOT in the
10 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 455-4 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Foundation Report(s)	4	2	1	As part of the Structure Type Study Report(s)	DR 455.3.1
Structure Type Study Report(s)	4	2	1	Prior to submitting any Initial Design Submittals for the associated structure	DR 455.3.1
Structure Calculations Report	5	2	1	Within 5 Business Days of ADOT's request	DR 455.3.7.2.1
Initial Load Rating Report(s)	4	2	1	At the same time as the Initial Design Submittal of a bridge Plan	DR 455.3.7.2.2
Final Load Rating Report(s)	4	2	1	At the same time as the Final Design Submittal of a bridge Plan	DR 455.3.7.2.2
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

11

12

End of Section

ADDENDUM #2

1 **DR 457 BRIDGE HYDRAULICS**

2 **457.1 GENERAL REQUIREMENTS**

3 Developer shall perform all hydraulic Design Work in compliance with the requirements of
4 Section DR 457 of the TPs.

5 **457.2 ADMINISTRATIVE REQUIREMENTS**

6 **457.2.1 Standards**

7 Developer shall analyze and design all hydraulic structures and appurtenances in accordance
8 with the standards, manuals, and guidelines listed in Table 457-1.

Table 457-1 Standards		
No.	Agency	Title
1	ADOT	Bridge Hydraulics Guidelines

9 **457.2.2 Data Collection**

10 Developer shall collect all necessary data to design bridges to accommodate the historical
11 hydrologic flows in the Project and that comply with the hydraulic requirements of Section DR
12 457 of the TPs.

13 Developer shall collect available data identifying all water resource issues, including water
14 quality requirements as imposed by State and federal government regulations, National Wetland
15 Inventory and other wetland/protected waters inventories, Effective FEMA Special Flood Hazard
16 Zone, and official documents concerning the Project, such as the FEIS or other drainage and
17 environmental studies.

18 Developer shall give careful consideration to existing studies, such as any existing floodplain
19 studies that may have been performed by FEMA or local jurisdictions.

20 All hydraulic computations, designs, and recommendations must consider past studies and
21 projects in the area by USACE, FEMA, and other State or federal agency studies and projects.

22 Developer shall collect all available geotechnical reports and studies, including sediment
23 transport analysis, regarding the scour resistance of the soil strata to stream forces.

24 **457.2.3 Coordination with Other Agencies and Disciplines**

25 Developer shall coordinate all hydraulics and water resource designs and obtain all applicable
26 approvals from all affected Governmental Entities, Utility Owners, and Railroads.

27 **457.3 DESIGN REQUIREMENTS**

28 **457.3.1 General**

29 Developer shall determine if hydraulic structures and appurtenances are defined as a bridge in
30 accordance with ADOT *Bridge Hydraulics Guidelines*. The aesthetics for hydraulics structures
31 must be in accordance with Section DR 450 of the TPs.

ADDENDUM #2

1 **457.3.2 Discharge Rates**

2 Developer shall determine discharge rates in accordance with ADOT *Bridge Hydraulics*
3 *Guidelines*. Design discharge rates must be confirmed with the applicable governing
4 Governmental Entity prior to use.

5 For a crossing on the same waterway as a stream gauging station, Developer shall use the flow
6 data available from the stream gauging station to determine design flows, if the stream gauging
7 station has a length of record of at least 25 years within the last 50 years and there are no major
8 control structures between the stream gauging station and the design site.

9 **457.3.3 Design Frequency**

10 The freeway that is part of the Project is designated as Class I route based on drainage
11 frequency classification by ADOT. Storm frequency and hydraulic requirements within Effective
12 FEMA Special Flood Hazard Zone must be in accordance with FEMA Code of Federal
13 Regulations (CFR) for the National Flood Insurance Program: 44 CFR Parts 60 and 65, EO
14 11988, and 23 CFR 650.

15 **457.3.4 Floodplains**

16 Developer shall evaluate water surface elevations within the regulatory 100-year FEMA effective
17 floodway to ensure no rise in water surface elevation profile due to the hydraulic structure(s).
18 Water surface elevation increases within the floodplain must be limited to the designated
19 regulatory floodway elevation.

20 **457.3.5 Hydraulic Analysis**

21 Developer shall evaluate water surface elevations in the main channel for existing and proposed
22 conditions for sizing of bridge waterway openings. The hydraulic analysis and design must
23 account for the presence of any additional existing control structures that may affect the
24 hydraulic performance and design of the structure. Developer shall identify and mitigate all
25 negative hydraulic impacts caused by the Project.

26 Developer shall ensure that the hydraulic analysis of bridge crossings at Effective FEMA Special
27 Flood Hazard Zone adhere to those mandates as outlined by the applicable Governmental
28 Entity and federal mandates as contained within FEMA Code of Federal Regulations (CFR) for
29 the National Flood Insurance Program: 44 CFR Parts 59, 60, 65, and 70.

30 Developer shall use HEC-RAS Water Surface Profile Program (the most current version as of
31 the Setting Date) to perform hydraulic analyses at bridge crossings, including culvert structures
32 that meet bridge definitions, for both existing and proposed conditions.

33 Developer shall perform a preliminary assessment of possible drainage (hydrology and
34 hydraulics) effects on adjacent public and private properties. If existing hydrologic studies are
35 used, validity of assumptions and accuracy of the results of such studies must be verified by
36 Developer.

37 **457.3.6 Scour Analysis**

38 Bridge foundations must be designed to withstand the effects of scour, as estimated using the
39 methods described in FHWA's HEC 18 and HEC 23 publications and ADOT's *Bridge Hydraulics*
40 *Guidelines*, unless otherwise authorized in writing by ADOT. The recommendations from these
41 publications must be the basis for the design of bridge foundations and for the design of scour
42 countermeasures of waterway bridges.

ADDENDUM #2

1 Deep foundations (piles and drilled shafts) must not rely on lateral support from soil within the
2 estimated scour depth. If the pile or the drilled shaft is embedded into a rock formation,
3 Developer shall confirm that the rock is not subject to erosion.

4 All bridges must account for debris loading in accordance with ADOT standards and HEC-18
5 methodologies.

6 All piers and abutment foundations must be evaluated for superflood conditions and must be
7 designed to be stable for the calculated scour. Revetment at abutments must be designed in
8 accordance with the procedures outlined in HEC-23. Alternatives to random revetment for
9 bridge abutments in urban areas or those frequently used by pedestrians is not allowed, unless
10 authorized in writing by ADOT.

11 Developer shall evaluate the scour effects of any gravel mining operations within 1 mile
12 upstream and 2 miles downstream of the bridges.

13 **457.3.7 Bridge Deck Drainage**

14 Runoff from Bridge decks must be conveyed off the bridge, unless otherwise specified in the
15 Contract Documents, and must comply with Section DR 420 of the TPs. The roadway drainage
16 design must include bridge approach drains to intercept gutter flow at both ends of the bridge.
17 Developer shall ensure that all stormwater flowing toward any bridge is intercepted upstream
18 from the approach or anchor slab. These drains, or temporary drains, are to be constructed at
19 time of bridge deck placement to prevent erosion.

20 Deck drains shall be spaced to comply with the design spread criteria in Section DR 445.3.4.2
21 of the TPs. Deck drainage outfalls must avoid corrosion of bridge structural members, erosion of
22 embankments, and splashing of moving traffic and sidewalk areas below the bridge. The
23 drainage system must intercept pavement drainage at both ends of bridges.

24 Runoff from bridge deck drainage must be treated as required by ADEQ or other applicable
25 regulation prior to discharge to natural waters of the United States. Bridge deck drains must not
26 discharge directly into natural waters of the United States, except for the Salt River after said
27 treatment. The bridge deck drainage system must not discharge against any part of the
28 structure.

29 Developer shall ensure that deck drains conform to the following requirements:

- 30 A. Bridge deck drainage downspouts at piers must have outfall erosion protection.
- 31 B. Bridge deck drains must be in conformance with the guidelines included in FHWA's
32 *HEC_21 – Design of Bridge Deck Drainage*.

33 **457.3.8 Bridge Hydraulics Report**

34 Developer shall prepare an initial Bridge Hydraulics Report for each bridge over a waterway in
35 accordance with the ADOT *Bridge Hydraulics Guidelines*. The initial Bridge Hydraulics Report
36 must include, at a minimum, the following:

- 37 A. A comparison of water surface elevations at each bridge waterway opening between the
38 existing condition and the proposed condition
- 39 B. All electronic HEC-RAS files
- 40 C. Concurrences from all applicable Governmental Entities that the design does not affect
41 the effective floodplain in the final Bridge Hydraulics Report
- 42 D. A discussion regarding if the constraints from FEMA studies or the impact of the Project
43 to the existing drainage patterns is significant enough to alter concentration of flow
44 patterns to existing structures.

ADDENDUM #2

1 At the same time as the Initial Design Submittal for each bridge, Developer shall submit an initial
 2 Bridge Hydraulics Report to ADOT. At the same time as the Final Design Submittal for each
 3 bridge, Developer shall address ADOT comments on the initial Bridge Hydraulics Report in a
 4 final Bridge Hydraulics Report and shall submit the final Bridge Hydraulics Report to ADOT for
 5 review and comment.

6 **457.3.9 Bridge Plans**

7 Bridge Plans must be prepared in accordance with the requirements in the Contract Documents.
 8 Bridge Plans elevation view must also clearly indicate the following:

- 9 A. The design discharge value, the water surface elevation, and the channel cross section;
- 10 B. The 100-year design discharge elevations of the Effective FEMA Special Flood Hazard
- 11 Zone; and
- 12 C. The super flood discharge (either 500-year discharge or overtopping discharge).
- 13 D. Consensus scour depth.

14 **457.4 SUBMITTALS**

15 Table 457-2 reflects a nonexclusive list of Submittals identified in Section DR 457 of the TPs
 16 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 17 determine and submit all Submittals as required by the Contract Documents, Governmental
 18 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 19 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 20 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 21 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 457-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Initial Bridge Hydraulics Reports	5	0	1	At the same time as the Initial Design Submittal for each bridge	DR 457.3.8
Final Bridge Hydraulics Reports	4	0	1	At the same time as the Final Design Submittal for each bridge	DR 457.3.8
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

22

23

End of Section

ADDENDUM #2

1 **DR 460 TRAFFIC**

2 **460.1 GENERAL REQUIREMENTS**

3 Developer shall perform all traffic Design Work in compliance with the requirements of Section
4 DR 460 of the TPs.

5 **460.2 ADMINISTRATIVE REQUIREMENTS**

6 **460.2.1 Standards**

7 Developer shall perform all traffic Design Work in accordance with the relevant requirements of
8 the standards, manuals, and guidelines listed in Table 460-1.

Table 460-1 Standards		
No.	Agency	Title
1	FHWA	Manual on Uniform Traffic Control Devices (MUTCD)
2	ADOT	Arizona Supplement to the MUTCD
3	ADOT	Manual of Approved Signs
4	FHWA	Road Safety Audit Guidelines

9 **460.2.2 Software**

10 Developer may use the following software programs to analyze and achieve the level of service
11 (LOS):

- 12 A. Traffic signal capacity, cycle length, split timing, and level of service: Synchro/SimTraffic
13 or HCM/Cinema 3.0
- 14 B. Traffic signal coordination timing, including optimal cycle length, phase sequence, and
15 offsets: Synchro
- 16 C. Signal coordination, queuing, and turn bay storage: SimTraffic, CORSIM, VISSIM, or
17 Trans Modeler
- 18 D. Roundabout analysis and design: RODEL

19 In the event that Developer proposes to use any software other than that listed, with the Basis of
20 Design Report in accordance with Section GP 110.01.2.2 of the TPs, Developer shall submit
21 proposed Traffic Software (including input and output files for verification data) to ADOT for
22 approval.

23 **460.2.3 Existing Signs**

24 Developer shall prepare a Sign Inventory of existing signs within the Project ROW. The Sign
25 Inventory must extend outside the Project ROW, where necessary, to show how the existing
26 signs work with the proposed signing system to provide a complete and functional signing
27 system. The Sign Inventory must include the following:

- 28 A. Title sheet
- 29 B. Table of contents

ADDENDUM #2

1 C. Inventory of signs

- 2 1. Listing of all existing signs (description, size, dimensions, mounting type, post type,
3 etc.)
- 4 2. Approximate location of existing signs
- 5 3. Description if the existing signs do not comply with current standards
- 6 4. Proposed disposition (salvaged, relocated, replaced, etc.)

7 Prior to issuance of NTP 2, Developer shall submit the Sign Inventory to ADOT.

8 **460.3 DESIGN REQUIREMENTS**

9 **460.3.1 General**

10 Developer shall design traffic improvements that require Utility service in accordance with
11 Section DR 430 of the TPs. Developer shall utilize ADOT standards, manuals, and guidelines
12 for all Non-Maintained Elements to be owned by ADOT.

13 Developer shall segregate lighting circuits based on the requirements of the authorities having
14 jurisdiction.

15 **460.3.2 Traffic Operational Requirements**

16 Developer shall prepare an intersection/interchange Traffic Report(s) for the Project. Each
17 Traffic Report must include all traffic analysis, including the following:

- 18 A. Cover page signed and stamped by a registered engineer
- 19 B. Table of contents
- 20 C. Discussion
 - 21 1. Purpose
 - 22 2. Methodology
 - 23 3. Summary
- 24 D. Calculations

25 Developer shall use a design year of 2035 for traffic analysis. Developer shall use the design
26 year traffic projections from the MAG regional travel demand output provided in the RIDs (2013-
27 08 MAG Travel Demand Model Output.zip). Developer shall assume heavy vehicles from the
28 MAG model represent FHWA vehicle category classes 4 through 13, inclusive, for use in the
29 design traffic loading forecast. Traffic intersections must not operate below an overall LOS C.
30 Individual movement must not operate below LOS D.

31 Prior to any highway Initial Design Submittal, Developer shall submit each Traffic Report(s) to
32 ADOT.

33 **460.3.3 Pavement Markings**

34 Pavement marking layout must comply with the ADOT *Signing and Marking Standard Drawings*.
35 Developer shall design a complete and functional pavement marking system for the Project that
36 complies with the following requirements:

- 37 A. Provides for the orderly and predictable movement of all traffic;
- 38 B. Provides guidance and warnings as needed to ensure the safe and informed operation
39 of individual elements of the traffic stream; and
- 40 C. Consistent with pavement markings on the ADOT transportation system.

ADDENDUM #2

1 The minimum retro-reflectivity values for all preformed plastic pavement markings must be as
2 follows:

- 3 A. White long line markings: 500 millicandelas per square meter per lux ($\text{mcd}/\text{m}^2/\text{lux}$)
- 4 B. Yellow long line markings: 300 $\text{mcd}/\text{m}^2/\text{lux}$
- 5 C. White arrows, symbols, legends, short lines: 350 $\text{mcd}/\text{m}^2/\text{lux}$

6 The minimum retro-reflectivity values for all other final pavement markings must be as follows:

- 7 A. White markings: 350 millicandelas per square meter per lane ($\text{mcd}/\text{m}^2/\text{ln}$)
- 8 B. Yellow markings: 200 $\text{mcd}/\text{m}^2/\text{ln}$

9 Developer shall not use paint for final pavement markings.

10 Developer shall provide bridge and barrier markers in accordance with ADOT *Standard*
11 *Drawings M-32 and M-33*.

12 **460.3.3.1 Raised/Reflective Pavement Markers**

13 Reflective raised pavement markers shall be installed on the mainline, ramps, and frontage
14 roads in accordance with ADOT *Signing and Marking Standard Drawings*.

15 **460.3.3.2 Pavement Marking Plans**

16 Developer shall prepare permanent pavement marking plans that show edge and lane line
17 striping, stop lines, crosswalks, arrows, legends, gore areas, symbols, elongated route markings
18 and legends, raised pavement markers, object markers, delineation, or other required markings
19 in accordance with the MUTCD and the *Arizona Supplement to the MUTCD*.

20 **460.3.4 Signs**

21 Signing layout must comply with the ADOT *Signing and Marking Standard Drawings* and Good
22 Industry Practice. Developer shall design all components of the signing system for the Project to
23 provide a complete and functional system that complies with the following requirements:

- 24 A. Relocate existing signs or provide temporary signs during all phases of construction until
25 such time that the permanent signs are in place
- 26 B. Remove and dispose of all conflicting signs and sign structures
- 27 C. All signs and support structures must be new

28 Developer shall coordinate with Grand Canyon State Logo Signs, a program of ADOT, for the
29 locations of specific service logo signs at each interchange and exit ramps. Grand Canyon State
30 Logo Signs is responsible for contracting the fabrication and installation of the specific service
31 logo signs.

32 The signing system must include HOV violation signs indicating a \$400 minimum fine.

33 All warning signs must use fluorescent yellow sheeting.

34 All signs to be maintained by ADOT during the Maintenance Period must comply with the ADOT
35 *Traffic Engineering Policy Guidelines and Procedures* 480 for sign sheeting.

36 Developer shall not locate signs where they will be obstructed by future vegetation growth.
37 Developer shall minimize placement of non-regulatory signs to obscure rustication patterns.

38 **460.3.4.1 Sign Panels**

39 All sign panels must be aluminum. Developer shall not use overlaid sign panels or overlaid
40 plywood sign panels. All ground mounted sign supports used must be in accordance with the

ADDENDUM #2

1 ADOT *Signing and Marking Standard Drawings*. Developer shall not use U-channel posts for
2 sign mountings.

3 **460.3.4.2 Overhead Sign Structures**

4 Minimum sign clearance for overhead signs must be in accordance with TP Attachment 440-1
5 over the entire width of the pavement, including shoulders and gutters. The minimum sign
6 clearance for signs mounted on bridge structures must not be less than the bridge clearance
7 requirements specified in the Contract Documents. The bottom of signs mounted on bridge
8 structures must be 6 inches above the soffit of the structure. Developer shall locate overhead
9 sign structures required in areas other than the mainline and ramps in such a manner as to
10 provide a minimum of 2 feet of horizontal clearance from the face of vertical curb.

11 **460.3.4.3 Signing Plans**

12 Developer shall prepare a Signing Concept Plan showing all existing and proposed guide,
13 warning, regulatory, marker signs, and DMS and their disposition for the Project. At the same
14 time as the Initial Design Submittal for signing Plans, Developer shall submit a Signing Concept
15 Plan to ADOT.

16 Developer shall prepare the following Plans as part of the Design Documents:

- 17 A. Signing Plans and signing summary sheets that include the location of signs, the size of
18 the sign, the legend of the sign, and the mounting type
- 19 B. Sign format Plan sheets for all signs that are not included in the ADOT *Manual of*
20 *Approved Signs*. Developer shall develop sign formats using SignCAD and ADOT's
21 current policy for the formatting of guide signs.
- 22 C. Sign elevation sheets that show the sign position in relation to the travel lanes and the
23 position of the sign lighting fixtures, if required, in relation to the sign panel for all
24 overhead signs, spacing between stringers, and the number of stringers used.
- 25 D. Sign mounting details for all overhead signs mounted on bridges, non-standard sign
26 structures details, and non-standard sign structure foundations details

27 **460.3.5 Traffic Signal Systems**

28 Traffic signal layout must comply with the ADOT *Signal and Lighting Standard Drawings*,
29 MUTCD, and the ADOT *Arizona Supplement to the MUTCD*. Developer shall design all
30 components necessary to provide a complete and functional traffic signal system that complies
31 with the following requirements:

- 32 A. Developer shall modify, as appropriate, any existing traffic signals affected by
33 Developer's design.
- 34 B. Developer shall coordinate with the appropriate Governmental Entities for
35 interconnection and synchronization of traffic signal networks.
- 36 C. The traffic signal system must:
 - 37 1. Provide traffic movement based on Developer's analysis;
 - 38 2. Provide communication between all traffic signals and ADOT traffic operations
39 center in accordance with Section DR 466 of the TPs;
 - 40 3. Accommodate pedestrians as required by local, state, and federal regulations, and
41 the Contract Documents;
 - 42 4. Include vehicle detection, closed circuit television (CCTV) remote monitoring in
43 accordance with Section DR 466 of the TPs, and communication links for signal
44 coordination; and

ADDENDUM #2

1 5. Provide temporary traffic signals at any location that currently has traffic signals and
2 that are removed for construction or locations that are required to facilitate
3 maintenance of traffic.

4 6. Provide a traffic signal uninterruptible power supply (UPS) for each traffic signal to
5 maintain the operation of the traffic signals in the event of a power outage that
6 complies with the requirements in TP Attachment 460-1.

7 All signal cabinets must be TS2 Type 1 with Econolite Cobalt Controllers. Developer shall
8 design all signalized intersection approaches with adequate sight distance to allow for right turn
9 on red in accordance with the MUTCD, ADOT *Arizona Supplement to the MUTCD*, and the
10 ADOT *Roadway Design Guidelines*.

11 **460.3.6 Lighting**

12 Developer shall design the roadway lighting system in accordance with the requirements in the
13 AASHTO *Roadway Lighting Design Guide*, the ADOT *Standard Specifications for Road and*
14 *Bridge Construction*, and the ADOT *Standard Drawings*. The lighting system must be a
15 continuous LED lighting system that provides illumination and uniformity levels on the highway
16 in accordance with the AASHTO *Roadway Lighting Design Guide*. Developer shall design
17 frontage road lighting for the Project.

18 LED lighting must have a correlated color temperature of 4000° Kelvin.

19 Where opposing traffic shares a median barrier, roadway lighting is to be on a median lighting
20 system that lights the freeway from the median edge line to the outside shoulder edge line in
21 both directions. Service and system interchanges must have supplemental lighting with high
22 mast poles and other lighting standards to attain lighting levels. On freeway ramps, roadway
23 lighting must light the ramp between the lane lines from the gore area to within 75 feet of the
24 crossroad. The required level of maintained horizontal illuminance, measured in foot-candles,
25 on the roadway must be an average of 0.6 to 0.9 for intermediate areas and 0.6 to 1.1 for
26 commercial areas, with a 0.2 minimum, with an average to minimum uniformity ratio of 3:1. The
27 light loss factor used in light level calculations must be 0.8, unless a manufacturer's fixture
28 recommendation is less than 0.8. Developer shall not use a light loss factor greater than 0.8.

29 Developer shall design and construct an underdeck lighting system for all bridge crossings of
30 the roadways, the railroad, and the pedestrian path at Laveen Channel. Developer shall provide
31 lighting for pedestrian crossings with a minimum of 1 candela per square foot.

32 Each LED light fixture shall support installation of an Electronic Control Module (ECM) for
33 dimming and fixture performance monitoring.

34 Developer shall maintain consistent light levels within the Project ROW when adjacent to
35 existing residential properties. Developer shall minimize luminaire glare and trespass lighting
36 into neighboring residences. Developer shall check the light levels at the edge of the Project
37 ROW every 100 feet along the entire Project limits to verify the light levels and to avoid any
38 nuisance light outside the roadway prism. The roadway lighting design must keep light levels at
39 the edge of right-of-way less than 0.20 foot-candles. Developer shall prepare a Photometric
40 Analysis Strip Map that displays all 0.2 iso-contours. Developer shall reevaluate for avoidance
41 any 0.2 iso-contour that falls outside of the Project ROW, adjacent to neighboring residences.
42 As part of the Lighting Design Report, Developer shall submit the Photometric Analysis Strip
43 Map to ADOT.

44 Developer shall perform load calculations and voltage drop calculations for each circuit.
45 Developer shall not use more than a 3 percent voltage drop from the load center cabinet to the
46 branch circuits to size conductors. The conductors from the load center to the point of service

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1 must be sized using a 1 percent voltage drop. All new lighting load center cabinets must be
2 metered for 240/480 Volt.

3 Light poles must comply with the requirements in the *AASHTO Standard Specifications for*
4 *Structural Supports for Highway Signs, Luminaires, and Traffic Signals*. All new light poles must
5 be aluminum, except high mast poles and median barrier mounted type U poles. Developer
6 shall provide a permanent level maintenance pad for all high mast lighting. Developer shall
7 provide a maintenance platform where the roadway side slope is greater than 4:1 (H:V).

8 Developer shall provide a pull box at the intersection of each foundation conduit and the
9 mainline conduit that runs parallel with the freeway. All lighting pull boxes and lids must comply
10 with ANSI/SCTE 77 requirements with a Tier 22 load requirement and must be tamper-resistant.

11 Developer shall prepare a Lighting Design Report that provides all necessary engineering data
12 to support the conclusions arrived at by Developer for the roadway lighting design. The Lighting
13 Design Report must include equipment type, photometric analyses, layout, voltage drop
14 calculations, load calculations, and conductor sizing information. The Lighting Design Report
15 must be signed and sealed by a Professional Engineer. At the same time as the Initial Design
16 Submittal of the roadway lighting system Developer shall submit the Lighting Design Report to
17 ADOT.

18 **460.3.6.1 Power Metering Requirements**

19 Developer shall design lighting power supplies to separately meter the following lighting
20 systems:

21 A. Power supplied for all Non-Maintained Elements to be owned by ADOT, including the
22 following:

- 23 1. Mainline lighting
- 24 2. Ramp lighting
- 25 3. ADOT frontage road lighting
- 26 4. ADOT crossroad street lighting
- 27 5. Underdeck lighting on all bridge crossings of roadways.

28 B. Power supplied for elements within the Maintenance Service Limits, including the
29 following:

- 30 1. Mainline lighting
- 31 2. Ramp lighting
- 32 3. ADOT Frontage Road lighting
- 33 4. ADOT crossroad street lighting
- 34 5. Underdeck lighting on all bridge crossings of ADOT roadways and the railroad.

35 C. Power provided by City of Phoenix

- 36 1. City Frontage Road lighting
- 37 2. City streets and crossroad lighting (including Durango Connector)
- 38 3. Pedestrian path lighting at Laveen Channel
- 39 4. Pedestrian crossing lighting (at Elwood)
- 40 5. Underdeck lighting on all bridge crossings of City crossroads

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1 460.3.6.2 Lighting Plans

2 Developer shall prepare lighting system Plans for the Project. The lighting system Plans must
3 show all existing and new electrical features, all details, pole and conductor schedules,
4 distribution schedule for each lighting service, notes, and special provisions. The plans must
5 include information regarding conduit used to intercept existing circuits to be used for new
6 lighting and for new conduit crossing locations for median lighting. The lighting system plans
7 must also include lighting summary sheets giving the location of the lighting poles, pull box, and
8 load centers, and the conductor summary.

9 460.4 SUBMITTALS

10 Table 460-2 reflects a nonexclusive list of Submittals identified in Section DR 460 of the TPs
11 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
12 determine and submit all Submittals as required by the Contract Documents, Governmental
13 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
14 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
15 specified in the Contract Documents, Developer shall submit the following to ADOT in the
16 formats described in Section GP 110.10.2.1 of the TPs:

Table 460-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Traffic Software	3	1	1	With the Basis of Design Report	DR 460.2.2
Sign Inventory	5	2	1	Prior to issuance of NTP 2	DR 460.2.3
Traffic Report(s)	5	2	1	Prior to any highway Initial Design Submittal	DR 460.3.2
Signing Concept Plan	5	2	1	At the same time as the Initial Design Submittal for signing Plans	DR 460.3.4.3
Photometric Analysis Strip Map	5	3	1	As part of the Lighting Design Report	DR 460.3.6
Lighting Design Report	5	3	1	At the same time as the Initial Design Submittal of the roadway lighting system	DR 460.3.6
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

17

18

End of Section

ADDENDUM #2

1 **DR 462 MAINTENANCE OF TRAFFIC**

2 **462.1 GENERAL REQUIREMENTS**

3 Developer shall perform all maintenance of traffic (MOT) Design Work in compliance with the
4 requirements of Section DR 462 of the TPs.

5 **462.2 ADMINISTRATIVE REQUIREMENTS**

6 **462.2.1 Standards**

7 Developer shall perform all MOT Design Work in accordance with the standards, manuals, and
8 guidelines listed in Table 462-1.

Table 462-1 Standards		
No.	Agency	Name
1	FHWA	Manual on Uniform Traffic Control Devices (MUTCD)
2	ADOT	Arizona Supplement to the MUTCD
3	ADOT	ENG 07-03 ITG Policy

9 **462.2.2 Maintenance of Traffic Task Force**

10 Developer shall establish a MOT Task Force, including representatives of Developer, ADOT,
11 cities, counties, tribal entities, law enforcement agencies, emergency response providers,
12 Governmental Entities, and other agencies whose operations affect or are affected by the
13 Project.

14 The purpose of the MOT Task Force is to:

- 15 A. Review and refine the Transportation Management Plan (TMP) and its implementation
- 16 B. Review and refine Developer's MOT plans, specifications, and details
- 17 C. Disseminate MOT information to task force meeting attendees
- 18 D. Determine additional membership invitees affected by the MOT, as needed

19 The MOT Task Force must be established, hold the initial meeting, and meet at the frequency
20 noted in Section GP 110.02.4 of the TPs.

21 **462.2.3 Transportation Management Plan**

22 Developer shall develop, implement, and maintain a Transportation Management Plan (TMP)
23 for the Project that complies with the ADOT *ENG 07-03 ITG Policy*. The TMP must include the
24 following items:

- 25 A. Work zone Traffic Control Plans including entrances and exits from the Site and
26 proposed haul routes.
- 27 B. Procedures to communicate TMP information to the Public Relations Officer, other public
28 information personnel, and ADOT, and notify the public of MOT issues in accordance
29 with Section CR 425 of the TPs.

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- 1 C. An emergency vehicle access plan that describes procedures to provide notification and
2 access to Emergency responders (e.g., police, fire, ambulance, Arizona Department of
3 Public Safety (DPS), school districts, Flood Control District of Maricopa County)
4 throughout the Site, including critical flood control structures being constructed or
5 reconstructed within the Project limits. Developer shall obtain approval of the emergency
6 vehicle access plan from all applicable Emergency responders.
- 7 D. Descriptions of the duties of the traffic personnel, by name and level of authority, with
8 MOT responsibilities.
- 9 E. Procedures to identify and incorporate the needs of Emergency service providers, law
10 enforcement entities, Governmental Entities, Utility Companies, and other related
11 corridor users and must be presented in the emergency vehicle access plan.
- 12 F. Procedures to provide access and minimize disruption to U.S. mail, parcel delivery
13 services, school buses, refuse collection, Governmental Entities and Utility Owner
14 maintenance activities, etc.
- 15 G. Procedures to address special circumstances, such as equipment malfunction, traffic
16 incidents, Lane Closures not reopening on time, motorists' property being damaged, and
17 special events.
- 18 H. Identification of, and procedures for addressing and resolving, Project-related
19 construction traffic impact issues on the Project, and recommendation of mitigation
20 measures for Project-related construction traffic impacts.
- 21 I. Identification of all special events.
- 22 J. Procedures to minimize Project-related traffic delays and potential accidents by the
23 effective application of traditional traffic mitigation strategies and an innovative
24 combination of public and motorist information, demand management, incident
25 management, system management, alternate route strategies, construction strategies,
26 or other strategies.
- 27 K. Procedures to modify the TMP as needed to adapt to current Project circumstances.

28 Prior to issuance of NTP 2, Developer shall submit the TMP to ADOT for review and comment.
29 Developer shall present the TMP at the first pre-construction coordination meeting. The TMP is
30 considered a living document. As changes occur in the MOT strategies proposed by Developer,
31 but no later than 30 Business Days prior to submittal of any RFC Submittal, Developer shall
32 amend and submit the updated TMP to ADOT for review and comment.

33 **462.3 DESIGN REQUIREMENTS**

34 **462.3.1 Temporary Construction Traffic Control Conditions**

35 Developer shall design and post speed limits in the construction zone in accordance with Good
36 Industry Practice. Developer shall not reduce the posted speed limits on the I-10 freeway to less
37 than 55 mph.

38 **462.3.1.1 Temporary Auxiliary Lanes and Exit Ramp Extensions**

39 Temporary lanes and extension for exit ramps must be designed and constructed to comply with
40 the following requirements:

- 41 A. Existing traffic must not have to slow down in the through lanes to less than 50 miles per
42 hour (mph) in order to safely gain access to the temporary auxiliary lane
- 43 B. The temporary auxiliary lane must be long enough so that traffic leaving the through lane
44 at 50 mph can slow down safely to a speed of 30 mph

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- 1 C. The temporary auxiliary lane must have a minimum paved surface width of 11 feet and a
 2 minimum paved shoulder width of 3 feet
- 3 D. Acceleration lanes must be designed to comply with the requirements in Section DR 440
 4 of the TPs
- 5 E. All temporary auxiliary lanes and extensions for exit ramps must be provided with
 6 temporary overhead lighting
- 7 F. A minimum 2-foot lateral reaction distance must be provided for any temporary or
 8 permanent barrier device, including portable temporary concrete barrier

9 **462.3.1.2 Lanes and Shoulders**

10 The minimum allowable lane widths are 11 feet on the mainline, Pecos Road, and 59th Avenue
 11 and 10 feet on the crossroads. Developer shall maintain the minimum number of lanes as
 12 reflected in Table 462-2.

Table 462-2 Number of Lanes to Remain Open	
Location/Direction	Number of Lanes
I-10 EB (Papago Freeway)	4 general purpose lanes and 1 HOV lane (SR 101L to I-17)
I-10 EB (Maricopa Freeway)	3 general purpose lanes and 1 HOV lane (Warner Road to SR 202L)
	3 general purpose lanes (SR 202L to Queen Creek Road)
I-10 WB (Papago Freeway)	4 general purpose lanes and one HOV lane (I-17 to SR 101L)
I-10 WB (Maricopa Freeway)	3 general purpose lanes (Queen Creek Road to SR 202L)
	3 general purpose lanes and 1 HOV lane (SR 202L to Elliot Road)
SR 202 (Santan Freeway)	A minimum of 2 lanes of traffic in each direction of traffic.
Pecos Road and 59th Avenue	A minimum of 2 lanes of traffic in each direction of traffic.
Crossroad Facilities	A minimum of 1 lane of traffic in each direction of traffic.
	Minimum of 1 left turn lane where left turn lanes exist

13 Differential pavement elevations within the same travel lanes or adjacent travel lanes will not be
 14 allowed.

15 A nominal two-foot right and left shoulder must be provided during all phases of construction.

16 **462.3.1.3 Pedestrian and Bicycle Access**

17 Developer shall maintain and provide access along existing sidewalks, trails, bike lanes, and
 18 intersections along all streets. Access along crossroads through bridge construction limits must
 19 be maintained at a minimum on one side at all times. If access cannot be maintained, Developer
 20 shall prepare a Pedestrian Access Modification/Closure Request that includes plans showing
 21 the proposed modification/closure and signs and indicating the applicable ADA path of travel
 22 and associated ADA requirements. At least 10 Business Days prior to the planned

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1 modification/closure, Developer shall submit the Pedestrian Access Modification/Closure
2 Request to ADOT and the applicable Governmental Entities for review and comment.

3 **462.3.1.4 Detours**

4 Developer shall prepare Detour Plans for all proposed detours. Detour Plans must include
5 detour dates and duration, horizontal and vertical clearances, weight restrictions, and all
6 proposed signs, and must ensure that all detoured vehicle types can negotiate the detoured
7 path. The Detour Plans must also address disruptions to public services, including the following:

8 A. Emergency responders

9 B. U.S. Mail and parcel delivery services

10 C. School buses

11 D. Public transportation services

12 E. Refuse collection

13 F. Normal commercial activities (e.g., materials and products pick-ups and deliveries,
14 customer access)

15 G. Safe routes to school plans

16 At least 15 Business Days prior to implementation of the proposed detour, Developer shall
17 submit Detour Plans to ADOT and all applicable Governmental Entities.

18 **462.3.1.5 Truck Routes**

19 Developer shall submit all truck routes, and any subsequent modifications to truck routes in
20 effect, to ADOT and the applicable Governmental Entities for review and approval, in their sole
21 discretion. Developer shall notify ADOT in writing a minimum of 20 Business Days prior of any
22 proposed reduction of current vertical or horizontal clearance.

23 **462.3.1.6 Mail Services**

24 Developer shall temporarily or permanently relocate mail boxes, as required, in such a manner
25 as to permit uninterrupted mail services. Developer shall comply with all applicable
26 Governmental Entity requirements for the relocation of mail boxes.

27 **462.3.2 Traffic Control Plans**

28 Developer shall prepare Traffic Control Plans that provide for all construction stages and
29 phasing in accordance with the requirements of the Contract Documents. The Traffic Control
30 Plans must include any proposed changeable message board legends and proposed messages
31 on existing DMS. Developer shall coordinate with all appropriate Governmental Entities and
32 affected parties in the development of the Traffic Control Plans. Developer shall design Traffic
33 Control Plans without the use of DPS. Prior to work involving traffic, Developer shall submit
34 Traffic Control Plans to ADOT for approval. Developer shall obtain all permits and approvals
35 from all applicable Governmental Entities.

36 **462.3.3 Lane and Shoulder Closures**

37 At least 10 Business Days in advance of any Lane Closure, except for major Lane Closures and
38 Lane Closures in cases of Emergency, Developer shall submit a written Lane Closure Request
39 along with Traffic Control Plans to ADOT for approval in ADOT's good faith discretion. ADOT
40 will input all Closures into the ADOT Highway Condition Reporting System upon ADOT's
41 approval of the Lane Closure Request or, if possible, in cases of Emergency. Approval is
42 subject to availability as set forth in Section 6.5.2.1 of the Agreement. Developer shall
43 participate in ADOT training prior to obtaining read access to the ADOT highway condition

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1 reporting system. Developer shall notify ADOT immediately as soon as Developer becomes
2 aware of a delayed or canceled scheduled Lane Closure.

3 Developer shall coordinate Lane Closure times with adjacent projects that may affect traffic
4 during the same period and disclose all adjacent project closures when requesting Lane
5 Closures.

6 Developer shall not close two adjoining corridors in the same direction at the same time.
7 Developer shall not close two corridors that would act as alternates to each other at the same
8 time.

9 **462.3.3.1 Freeway and Ramps**

10 Unless approved by ADOT in its sole discretion, full or partial Lane Closures must occur only
11 during the periods reflected in Table 462-3. Unless the closure results from construction
12 emergencies or non-foreseeable events, Developer shall submit proposed freeway or ramp
13 closures occurring outside the noted hours to ADOT for approval not less than 10 Business
14 Days prior to the first day of such proposed closure. Lane Closure times include setup and take
15 down of all traffic control devices.

16 A full closure must not exceed 3 miles. During any partial closure, Developer shall maintain a
17 minimum of two open through lanes, unless approved otherwise by ADOT.

Table 462-3 Allowable Lane Closure Periods	
Nighttime Lane Closures	Full Weekend Closures
9:00 p.m. Sun to 5:00 a.m. Mon	10:00 p.m. Fri to 5:00 a.m. Mon
9:00 p.m. Mon to 5:00 a.m. Tues	
9:00 p.m. Tues to 5:00 a.m. Wed	
9:00 p.m. Wed to 5:00 a.m. Thurs	
9:00 p.m. Thurs to 5:00 a.m. Fri	
10:00 p.m. Fri to 7:00 a.m. Sat	
10:00 p.m. Sat to 9:00 a.m. Sun	

18 Developer shall not implement a full closure of mainline lanes in both directions at the same
19 time. Developer shall not implement rolling closures to transfer any equipment or perform any
20 Work except at night with ADOT approval a minimum of 10 Business Days in advance of the
21 proposed rolling closure. Developer shall not implement consecutive ramp closures unless both
22 are within an ADOT-approved full closure.

23 Major Lane Closures are closures that reduce the number of mainline lanes to less than three
24 as determined by ADOT at its sole discretion and that require a major Lane Closure approval
25 process. In order to obtain approval for a major Lane Closure, Developer shall prepare Major
26 Lane Closure Package(s) that contains the following:

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- 1 A. Location and vicinity maps showing the State highway(s), local street network, and other
- 2 adjacent Lane Closures or nearby work that may affect traffic during the same period
- 3 (including special events)
- 4 B. Dates, times, and locations of the Lane Closure(s)
- 5 C. Description of the Work being performed during the Lane Closure(s)
- 6 D. Description of each Lane Closure and its anticipated effect on traffic
- 7 E. Amount of expected delay and corresponding queue length for each Lane Closure
- 8 F. Summary of TMP strategies that Developer shall use to reduce delay and motorist
- 9 inconvenience during the Lane Closure(s)
- 10 G. A copy of the TMP
- 11 H. A contingency plan

12 During the Maintenance Period, shoulder closures will be allowed on weekdays as approved by
13 ADOT. Weekday shoulder closures must be scheduled after 9:00 am and be opened by 3:00
14 pm.

15 A minimum of 15 Business Days in advance of the proposed major Lane Closure, Developer
16 shall submit Major Lane Closure Package(s) to ADOT for approval.

17 **462.3.3.2 Crossroads**

18 Acceptable Lane Closures on crossroads must be in accordance with permit requirements from
19 the applicable Governmental Entity. Developer shall maintain access to the Foothill Reserve
20 Community at all times.

21 **462.3.3.3 Holiday Restrictions**

22 Lane or freeway closures are not allowed on holidays or weekends that are adjacent to or
23 following a holiday. The restricted holidays include New Year's Day, Martin Luther King, Jr. Day,
24 President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day,
25 Thanksgiving Day, and Christmas Day. Lane Closures will not be allowed between
26 November 15 and the weekend following January 1. Developer shall remove all traffic control for
27 temporary Lane Closures prior to holidays or weekends that adjoin a holiday.

28 **462.3.3.4 Special Events Restrictions**

29 Developer shall coordinate Work activities with local special events in the area so that the
30 special events will not be affected. Special events are events that attract more than
31 30,000 people per day and may occur during the Term. Lane restrictions may be denied if
32 severe traffic congestion is expected. Special events may include events that attract fewer
33 people, but are considered special events by the applicable Governmental Entities due to
34 economic impact to the community or events that attract dignitaries or politicians. Partial or full
35 closures are not permitted where a special event is occurring.

36 Developer is responsible for identifying and verifying the actual dates of all special events and
37 for planning Work activities around the events. Special events may take place at various
38 venues, including the following locations:

- 39 A. University of Phoenix Stadium, Glendale;
- 40 B. Phoenix International Raceway, Avondale;
- 41 C. Chase Field, Phoenix;
- 42 D. US Airways Center, Phoenix;
- 43 E. Gila River Arena, Glendale;

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- 1 F. Ak-Chin Pavilion, Phoenix; and
 2 G. Arizona State Fair Grounds.

3 **462.3.4 Phasing and Construction Sequence Report(s)**

4 Developer shall prepare a Phasing and Construction Sequence Report for each phase of
 5 construction Work. Each Phasing and Construction Sequence Report must address, at a
 6 minimum, construction activities, construction stage limits, construction sequencing, and traffic
 7 control. At the same time as the Traffic Control Plans, Developer shall submit Phasing and
 8 Construction Sequence Reports to ADOT for approval.

9 **462.4 SUBMITTALS**

10 Table 462-4 reflects a nonexclusive list of Submittals identified in Section DR 462 of the TPs
 11 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 12 determine and submit all Submittals as required by the Contract Documents, Governmental
 13 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 14 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 15 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 16 formats described in Section GP 110.10.2.1 of the TPs:

Table 462-4 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Transportation Management Plan	4	2	1	Prior to issuance of NTP 2	DR 462.2.3
Updated TMP	4	2	1	As changes occur in the MOT strategies proposed by Developer, but no later than 30 Business Days prior to submittal of any RFC Submittal	DR 462.2.3
Pedestrian Access Modification/ Closure Request	4	2	1	15 Business Days prior to the planned modification/ closure	DR 462.3.1.3
Detour Plans	3	2	1	15 Business Days prior to implementation of the proposed detour	DR 462.3.1.4
Traffic Control Plans	3	2	1	Prior to Work involving traffic	DR 462.3.2
Lane Closure Request	2	2	1	10 Business Days in advance of any Lane Closure	DR 462.3.3
Major Lane Closure Package	3	2	1	A minimum of 15 Business Days in advance of the proposed major Lane Closure	DR 462.3.3.1

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Table 462-4 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Phasing and Construction Sequence Reports	3	2	1	At the same time as the Traffic Control Plans	DR 462.3.4
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1

2

End of Section

ADDENDUM #2

1 **DR 466 INTELLIGENT TRANSPORTATION SYSTEM**

2 **466.1 GENERAL REQUIREMENTS**

3 Developer shall perform all intelligent transportation system (ITS) Design Work in compliance
4 with the requirements of Section DR 466 of the TPs.

5 **466.2 ADMINISTRATIVE REQUIREMENTS**

6 **466.2.1 Standards**

7 Developer shall design the ITS in accordance with the standards, manuals, and guidelines listed
8 in Table 466-1.

Table 466-1 Standards		
No.	Agency	Name
1	ADOT	Intelligent Transportation System Design Guide
2	ADOT	Ramp Metering Design Guide
3	ADOT	ITS Standard Drawings
4	ADOT	Statewide Dynamic Message Sign Masterplan
5	ADOT	FMS Communication Masterplan

Note: Developer acknowledges and agrees that all provisions in the standards, manuals, and guidelines, including figures and tables, listed in Table 466-1 are mandatory and Developer shall treat all such standards, manuals, and guidelines as requirements, to be satisfied and/or performed by Developer. All words such as "should," "may," "must," "might," "could," and "can" appearing in the standards, manuals, and guidelines setting forth Developer's obligations, liabilities and duties, including the requirements to be satisfied and/or performed by Developer, mean "shall" unless the context requires otherwise, as determined in the sole discretion of ADOT. Additionally, where the standards, manuals, and guidelines indicate that an item, thing, circumstance, or result, including any work, is "desired," Developer shall treat such items, things, circumstances, or results, including work, as required or requirements. ADOT will determine, in its sole discretion, when the context does not require a provision to be mandatory.

9 **466.2.2 Technical Work Group Meetings**

10 Developer shall conduct monthly ITS TWG meetings throughout the ITS Design Work and in
11 accordance with Section GP 110.02.4 of the TPs. The ITS Design Manager and ITS
12 Construction Manager must attend all ITS TWG meetings.

13 **466.2.3 Existing ITS Elements**

14 Developer shall prepare an ITS Inventory of existing ITS elements within the Project ROW. The
15 ITS Inventory must include items outside the Project ROW, where necessary, to show how the
16 existing ITS is to function with the proposed ITS to provide a complete and functional ITS. The
17 ITS Inventory must include the following:

- 18 A. Title Sheet
- 19 B. Table of Contents
- 20 C. Inventory of ITS elements
 - 21 1. Listing of all ITS elements (description, size, and type)

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- 1 2. Exact location of each ITS element
- 2 3. The condition, adequacy, and compatibility with the proposed ITS
- 3 4. Photo log
- 4 Prior to issuance of NTP 2, Developer shall submit the ITS Inventory to ADOT.

5 **466.3 DESIGN REQUIREMENTS**

6 **466.3.1 General**

7 Developer shall complete an ADOT Systems Engineering Checklist for the Project. Prior to
8 submitting an Initial Design Submittal for any ITS element, Developer shall submit the ADOT
9 Systems Engineering Checklist to ADOT for approval. Developer shall comply with the
10 requirements in the FHWA approved ADOT Systems Engineer Checklist.

11 **466.3.2 ITS Master Plan**

12 Developer shall prepare an ITS Master Plan that depicts the existing and proposed ITS.
13 Developer shall ensure that the ITS Master Plan is the basis for the ITS design. The ITS Master
14 Plan must be a plan that includes the following:

- 15 A. Proposed locations of all ITS elements
- 16 B. Spacing between DMS
- 17 C. Spacing between DMS and traffic signs

18 At the same time as the first Initial Design Submittal of any ITS element, Developer shall submit
19 the ITS Master Plan to ADOT. Developer shall update the ITS Master Plan as the development
20 of the Project design proceeds. Prior to submitting an ITS design to ADOT that is not consistent
21 with the ITS Master Plan, Developer shall submit the updated ITS Master Plan to ADOT.

22 **466.3.3 ITS Elements**

23 Developer shall design a fully operational ITS for the Project that integrates with the existing
24 ADOT ITS elements at the proposed I-10 (Maricopa) and I-10 (Papago) freeways interchanges
25 to the Traffic Operations Center (TOC). Developer shall inspect all existing ITS elements and
26 software for adequacy and compatibility with the proposed ITS. The ITS elements must include
27 the following:

- 28 A. ITS backbone communication network
- 29 B. Dynamic message signs
- 30 C. Closed circuit television cameras
- 31 D. Detection stations
- 32 E. Ramp meters
- 33 F. Node buildings
- 34 G. Weigh-in-motion systems

35 Developer shall prepare a written ITS Element Number Request that includes the element type,
36 the element location, and a site map or strip map of sufficient detail to clearly define the
37 relationship of the street names and names of the pertinent features in the vicinity of the ITS
38 element. With each ITS Final Design Submittal, Developer shall submit an ITS Element Number
39 Request to ADOT. ADOT will provide ITS element numbers to Developer within 10 Business
40 Days of receipt of the written request. Developer shall ensure that ITS element numbers are
41 shown on the Plans.

ADDENDUM #2

1 **466.3.3.1 ITS Backbone Communication Network**

2 Developer shall design the ITS backbone communication network. The network must include
3 fiber communication, power, and conduits. Developer shall design the ITS backbone
4 communication network as a redundant system located on both sides of the freeway and in
5 accordance with the ADOT *Intelligent Transportation System Design Guide*. The ITS backbone
6 conduit network must connect to the traffic signal cabinets and to all existing or proposed pump
7 houses.

8 **466.3.3.2 Dynamic Message Signs**

9 Developer shall design 15 Dynamic Message Signs (DMS) as part of the ITS for the Project in
10 accordance with the ADOT *Statewide Dynamic Message Sign Masterplan*. Developer shall not
11 locate DMS between 51st Avenue and 17th Avenue. Developer shall locate eight DMS (Four
12 westbound and four eastbound) north of 51st Avenue and six DMS (Three westbound and three
13 eastbound) east of 17th Avenue along the Loop 202 mainline. Developer shall locate one DMS
14 on westbound I-10 (Papago Freeway), east of the Loop 202 to provide 2 DMS within 4 miles of
15 system interchange. Developer shall locate DMS at locations where they are visible by CCTV
16 cameras for message verification. Developer shall design DMS on ADOT standard structural
17 details and in accordance with Section DR 460.3.4.2 of the TPs. Developer shall show all
18 proposed DMS on the Signing Concept Plan and the signing Plans.

19 **466.3.3.3 Closed Circuit Television Cameras**

20 Developer shall design a CCTV system as part of the ITS. The CCTV system must be
21 compatible with the existing ITS system. Developer shall design all CCTV cameras with
22 lowering devices integral to the pole. Developer shall place CCTV cameras to provide complete
23 coverage of the freeway mainline, traffic interchanges ramps and gores, system interchange
24 ramps from termini to termini, all interchange ramp junctions with crossroads, and DMS
25 message verification. Developer shall account for all field conditions that may restrict required
26 visibility and design the CCTV system accordingly.

27 **466.3.3.4 Detection Stations**

28 Developer shall include detection stations in the ITS in accordance with the ADOT *Intelligent*
29 *Transportation System Design Guide*.

30 **466.3.3.5 Ramp Meters**

31 Developer shall prepare Ramp Meter Warrant Analysis for all proposed entrance ramps in
32 accordance with the ADOT *Ramp Metering Design Guidelines*. Developer shall estimate speeds
33 based on traffic engineering modeling or the Transportation Research Board *Highway Capacity*
34 *Manual*. Developer shall base the Ramp Meter Warrant Analysis on year 2020 traffic projections
35 and such analysis must include the following:

- 36 A. Cover Page
- 37 B. Table of Contents
- 38 C. Discussion
- 39 D. Warrant Analysis
- 40 E. Exhibits

41 At the same time as the Initial Design Submittal of the ITS, Developer shall submit Ramp Meter
42 Warrant Analysis to ADOT.

43 If ramp meters are warranted, Developer shall design and provide ramp meters in accordance
44 with the ADOT *Ramp Metering Design Guidelines*.

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1 466.3.3.6 Node Building

2 Developer shall design one new node building as part of the ITS. Such building must be located
3 approximately half way between nodes 11 and 16. Developer shall size node building to house
4 all associated equipment and the buildings must not have an inside dimension less than 8 feet
5 4.5 inches in height by 19 feet 7.5 inches in length by 10 feet 7.75 inches in width. Developer
6 shall locate all communication hardware for the proposed ITS elements between I-10
7 (Maricopa) and I-10 (Papago) in the new node building.

8 Developer shall connect the proposed ITS system to existing node buildings 11 and 16.

9 466.3.3.7 Weigh-In-Motion Systems

10 Developer shall design two weigh-in-motion stations. The stations must connect to the ITS
11 located approximately at the following locations:

- 12 A. North or south of the Salt River
- 13 B. Between 51st Avenue and 17th Avenue

14 466.3.4 Specifications

15 Those elements of the ADOT *Draft Intelligent Transportation Systems Specifications for South*
16 *Mountain Freeway* included in the RIDs are set forth in or expressly incorporated into the TPs,
17 are thereby made part of the Contract Documents and are mandatory minimum requirements
18 for ITS Work. Developer shall prepare ITS specifications using the ADOT *Draft Intelligent*
19 *Transportation Systems Specifications for South Mountain Freeway* and in accordance with
20 Section GP 110.10.2.2.2 of the TPs.

21 466.4 SUBMITTALS

22 Table 466-2 reflects a nonexclusive list of Submittals identified in Section DR 466 of the TPs
23 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
24 determine and submit all Submittals as required by the Contract Documents, Governmental
25 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
26 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
27 specified in the Contract Documents, Developer shall submit the following to ADOT in the
28 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 466-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
ITS Inventory	5	0	1	Prior to issuance of NTP 2	DR 466.2.3
ADOT Systems Engineering Checklist	3	0	1	Prior to submitting an Initial Design Submittal for an ITS element	DR 466.3.1
ITS Master Plan	5	2	1	At the same time as the first Initial Design Submittal of any ITS element	DR 466.3.2
Updated ITS Master Plan	5	2	1	Prior to submitting an ITS design that is not consistent with the ITS Master Plan	DR 466.3.2

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Table 466-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
ITS Element Number Request	5	0	1	With each ITS Final Design Submittal	DR 466.3.3
Ramp Meter Warrant Analysis	5	0	1	At the same time as the Initial Design Submittal of the ITS	DR 466.3.3.5
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1
2

End of Section

ADDENDUM #2

1 DR 470 RIGHT-OF-WAY

2 470.1 GENERAL REQUIREMENTS

3 Developer shall perform all Project ROW Work in compliance with the requirements of Section
4 DR 470 of the TPs. Section DR 470 of the TPs sets forth the Project ROW requirements,
5 including pre-acquisition, acquisition, and post-acquisition activities. Developer shall provide all
6 services necessary to acquire title to the Project ROW in the name of the State, in a manner
7 acceptable to ADOT, including relocation of displacees and clearance/demolition of the
8 improvements from the Project ROW as more fully described in Section DR 470 of the TPs.

9 470.2 ADMINISTRATIVE REQUIREMENTS

10 470.2.1 Standards

11 Developer shall perform all Project ROW Work in accordance with the standards, manuals, and
12 guidelines listed in Table 470-1.

Table 470-1 Standards		
No.	Agency	Name
1	FHWA	Uniform Relocation Assistance and Real Property Acquisition Policies Act, 42 U.S. Code, Chapter 61 (the "Uniform Act")
2	FHWA	FHWA 49 CFR Part 24 Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs
3	FHWA	FHWA 23 CFR 710 Right-of-Way and Real Estate. (Note, CFR 710.313 Design-Build Projects applies to this Project.)
4	Arizona Revised Statutes (A.R.S.)	A.R.S. Title 28, Chapter 20, Article 6 and Article 7
5	Arizona Administrative Code	Title 17, Article 3
6	ADOT	Right of Way Procedures Manual

13 Developer shall utilize the ADOT *Right of Way Procedures Manual* as a guideline, except to the
14 extent it is inconsistent with the provisions of State or Federal Law or Section DR 470 of the
15 TPs. All ADOT forms referenced in Section DR 470 of the TPs may be found in the ADOT *Right*
16 *of Way Procedures Manual* or in TP Attachment 470-1.

17 470.2.2 ROW Coordination Meetings

18 Unless otherwise directed by ADOT, Developer shall hold weekly Project ROW coordination
19 meetings with ADOT throughout the duration of the ROW Work, to discuss Project ROW
20 Activities. The ROW Acquisition Manager must attend all ROW coordination meetings.

21 470.2.3 Documentation and Reporting

22 All correspondence with ADOT and property owners relating to Project ROW Work, and all
23 reports and Submittals, must include a heading with the following information:

- 24 A. Transportation Accounting System (TRACS)/Federal Project number Highway
25 Designation
- 26 B. Project limits

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- 1 C. ADOT parcel number (when applicable)
- 2 D. Name of record owner(s) (when applicable)

3 In administering and managing its Project ROW Work, Developer shall:

- 4 A. Prepare and maintain a Project ROW Status Report that provides the status for each
5 parcel in the Project ROW. The Project ROW Status Report must include the following
6 information for each parcel:
 - 7 1. Actual cost expended to date for Project ROW (acquisition, relocation, and
8 demolition);
 - 9 2. Monthly forecast of Project ROW costs;
 - 10 3. Actual cost obligated, but not yet expended to date for Project ROW;
 - 11 4. Appraisal status;
 - 12 5. Acquisition status;
 - 13 6. Relocation status; and
 - 14 7. Demolition status.

15 Every week commencing upon the issuance of NTP 1, Developer shall submit the
16 Project ROW Status Report to ADOT for approval.

- 17 B. Prepare and maintain a complete parcel file for each Developer-Acquired Parcel in
18 accordance with the ADOT *Right of Way Procedure Manual*. Developer shall maintain all
19 documentation related to the purchase of the real property interests (housed separately
20 from the relocation files). Developer shall retain and secure the parcel files for
21 Developer-Acquired Parcels in a locking file cabinet in the Project Collocated Office, or
22 as otherwise approved by ADOT. Upon completion of the acquisition of each parcel,
23 Developer shall submit all signed Original Documents to ADOT for approval in ADOT's
24 good faith discretion.
- 25 C. Input and update parcel status in a web-based tracking system that is accessible by
26 ADOT or its designees.

27 All ROW Submittals must include a written certification signed by the ROW Quality Control
28 Specialist certifying that the ROW Submittal has been processed through QA/QC procedures
29 and complies with the Contract Documents.

30 **470.2.4 ROW Activity Plan**

31 Developer shall prepare a ROW Activity Plan that includes the following:

- 32 A. Developer's ROW organizational chart, including any Subcontractors;
- 33 B. A description of the approach to the Project ROW Work, the goals and milestones
34 established for Project ROW acquisition, Project ROW Plans, ROW Exhibits, and Legal
35 Descriptions, relocation assistance, Appraisals, Appraisal Review, and
36 clearance/demolition of the improvements from the Project ROW (except for parcels
37 where ADOT will remain responsible for demolition);
- 38 C. A sample of typical parcel acquisition schedule, including survey, Appraisal, acquisition,
39 relocation, closing by deed of conveyance, and eminent domain, and how this schedule
40 is integrated into the Preliminary Project Baseline Schedule;
- 41 D. Quality control procedures and quality review standards for the acquisition of Project
42 ROW in accordance with Section GP 110.07 of the TPs;
- 43 E. The name of the title company(ies) licensed in the State to be used for title services; and

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1 F. The name of the demolition Subcontractor to be used for demolition services. The
2 demolition Subcontractor must comply with requirements in TP Attachment 470-2.

3 The ROW Activity Plan must establish the specific means by which Developer shall:

4 A. Ensure all ROW Work are properly documented and reported

5 B. Integrate the Project ROW schedule into the Project Baseline Schedule

6 C. Provide sufficient personnel to achieve, in accordance with the Project Baseline
7 Schedule, the goals and milestones established for Project ROW acquisition, relocation
8 assistance, Appraisals and Appraisal Review, and clearance/demolition of the
9 improvements from the Project ROW.

10 Developer shall not contact property owners until ADOT approves the ROW Activity Plan.
11 Developer shall ensure that the ROW Activity Plan remain valid and updated as appropriate
12 throughout the Term. Developer shall propose updates to the ROW Activity Plan in the event of
13 the following:

14 A. The occurrence of any changes to the ROW personnel, approach to the Project ROW
15 Work, or ROW QC procedures;

16 B. The occurrence of other changes necessitating revision to the ROW Activity Plan; and

17 C. As otherwise directed by ADOT.

18 In accordance with Section 5.3.1 of the Agreement, Developer shall submit the ROW Activity
19 Plan to ADOT for approval in ADOT's good faith discretion. No later than 10 Business Days
20 after the occurrence of any change or direction triggering the need for the revisions to the ROW
21 Activity Plan, Developer shall submit the updated ROW Activity Plan to ADOT for approval in
22 ADOT's good faith discretion.

23 **470.2.5 Parcels within the Schematic ROW**

24 Real property interests that must be acquired to construct the Project as identified in the ROD
25 are identified in TP Attachment 470-3. TP Attachment 470-3 identifies which parcels ADOT will
26 acquire and anticipated dates for access. ADOT has no obligation to provide Developer access
27 for the parcels ahead of the dates set forth in TP Attachment 470-3. Pursuant to applicable Law,
28 Developer shall acquire Project ROW parcels assigned to Developer as shown on TP
29 Attachment 470-3 and any Developer-Designated ROW on behalf of the State, but without the
30 direct participation of ADOT except as otherwise set forth in this Section 470.2.5, subject to
31 ADOT's rights of review, approval, and audit.

32 **470.2.6 Temporary Entry**

33 Developer shall obtain all temporary entry necessary to perform the Work in accordance with
34 the ADOT *Right of Way Procedures Manual*.

35 **470.2.7 Utility Property Interests**

36 Developer shall acquire Replacement Utility Property Interests (even though not part of the
37 Project ROW) required to complete the Project in accordance with the requirements of the
38 Contract Documents.

39 **470.3 PRE-ACQUISITION ACTIVITIES**

40 **470.3.1 ROW Exhibits and Legal Descriptions**

41 For each Developer-Acquired Parcel, Developer shall prepare a ROW Exhibit. The ROW
42 Exhibits must include gross Project ROW acquisition area and net Project ROW acquisition area

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1 and notations that reference the *Results of Survey for Project No. 202L MA 000 H5439*, by
2 Stanley Consultants, included in the RIDs.

3 Developer shall tie Legal Descriptions to existing section corners and/or quarter corners,
4 identified on the *Results of Survey for Project No. 202L MA 000 H5439*, by Stanley Consultants,
5 included in the RIDs. Said section corners and quarter corner references must include a
6 description of the found monument. Developer shall ensure that ADOT parcel numbers are
7 consistent with these same plans. If Developer identifies parcels necessary for the Project, but
8 said parcels do not have parcel numbers, then ADOT will assign the parcel number.

9 Developer shall prepare ROW Exhibits and Legal Descriptions for the Project. An Arizona
10 registered land surveyor must sign and seal ROW Exhibits and Legal Descriptions. Developer
11 shall perform all Work in the preparation of Project ROW Exhibits and Legal Descriptions in a
12 manner that complies with the minimum requirements set forth by the Arizona Board of
13 Technical Survey Registrants. Legal Descriptions must also specify acquisition of underlying fee
14 of public roadways that may exist by only easement.

15 Developer shall submit ROW Exhibits and Legal Descriptions for review and approval by ADOT
16 in accordance with Section GP 110.10 of the TPs and Contract Documents. Whenever the
17 Project ROW is updated, Developer shall prepare and submit ROW Electronic Files that include
18 all sectional data, Legal Description coordinates and CAD files, survey centerlines, and Project
19 ROW requirements to ADOT.

20 Developer shall stake the new Project ROW line prior to construction in a manner that complies
21 with the requirements set forth by the Arizona State Board of Technical Registration and the
22 requirements of Section CR 410.3 of the TPs.

23 Developer shall monument the new Project ROW line upon completion of construction in a
24 manner that complies with the requirements set forth in Section CR 410.3 of the TPs.

25 Developer shall acquire fee title to Project ROW except in the following instances:

- 26 A. Temporary Construction Easements (TCEs)
- 27 B. Acquisitions occurring from public, municipal, Governmental, or utility entities where fee
28 title is not routinely conveyed
- 29 C. Other easements for drainage and drainage slopes

30 Developer shall prepare all warranty deeds, special warranty deed and TCEs needed for the
31 Project acquisition. Said instruments must include the ADOT parcel number, Federal project
32 number, TRACS number, highway name, and section name.

33 **470.3.2 Title Services**

34 Developer shall perform title services Work in accordance with the relevant requirements of the
35 ADOT *Right of Way Procedures Manual*. Developer shall:

- 36 A. Select and contract with one or more title companies licensed in the State and provide to
37 ADOT a 5-year sales history, a preliminary title commitment or preliminary title report,
38 and, if necessary or appropriate, copies of all underlying documents and a plot of all
39 easements, including Existing Utility Property Interests, referenced therein for each
40 parcel (including fee acquisitions and easements) to be acquired by ADOT for the
41 Project. Each preliminary title commitment or preliminary title report must be dated not
42 more than 90 days prior to the date of submittal to ADOT of the Acquisition Package or
43 offer to the property owner for such parcel. Developer shall review each title report to
44 ensure that it complies with the following required format: clearly indicate which

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1 exclusions and exceptions must be deleted upon acquisition of the subject parcel and
2 must clearly indicate any required submittals to the title company to clear identified
3 exclusions and exceptions. Title reports must be in accordance with Good Industry
4 Practice. Developer shall notify the title company, by letter, which exceptions must be
5 removed, including easements that (a) are appurtenant to and/or of benefit to the parcel
6 but not included in the parcel to be acquired, and (b) are a burden on the parcel and not
7 acceptable to ADOT.

8 B. Review the preliminary title commitment or report to ensure that all current owners of
9 record title are contacted and that negotiations or condemnation actions are conducted
10 with all appropriate parties.

11 C. Work with the current owners of record title to each parcel or interest in a parcel or their
12 designee and all other appropriate parties to clear any title exceptions or exclusions not
13 acceptable to ADOT.

14 D. Secure a Title Policy that is, a standard owner's policy of title insurance in the amount of
15 the total acquisition cost, which includes cost of the property, and improvements for each
16 parcel from a title company acceptable to ADOT for each parcel acquired insuring title.
17 The title insurance amount must exclude those amounts attributable to severance
18 damages and cost to cure. All Project ROW must be acquired, and ADOT's title in the
19 Project ROW must be insured, in fee simple absolute or easement interest, as
20 appropriate, free and clear of any and all liens and encumbrances. The Title Policy must
21 show title vested in the "State of Arizona by and through its Department of
22 Transportation".

23 **470.3.3 Introduction to Property Owners for Purposes of ROW Acquisition**

24 Developer shall prepare Letters of Introduction for ADOT's signature introducing Developer to
25 the property owners. The Letters of Introduction must clearly describe the Project, as well as
26 ADOT's need for the owner's property, and must include the name and telephone number of a
27 Developer's representative. Developer shall submit the Letters of Introduction to ADOT for
28 approval in ADOT's good faith discretion. ADOT will sign the letters on ADOT letterhead. ADOT
29 will mail the Letters of Introduction to all property owners of Developer-Acquired Parcels and will
30 provide copies to Developer. Developer cannot contact property owners, for purposes of Project
31 ROW acquisition, unless and until the following conditions have been met:

32 A. ADOT has issued NTP 1;

33 B. ADOT has approved the ROW Activity Plan; and

34 C. 5 Business Days have passed since the mailing of the Letter of Introduction to the
35 relevant property owner.

36 **470.3.4 Environmental Site Assessment**

37 Unless previously prepared by or on behalf of ADOT, Developer shall cause a Phase I
38 Environmental Site Assessment Report to be prepared documenting the environmental
39 condition of each parcel to be acquired by Developer. An environmental professional that
40 complies with the qualifications set forth in ASTM E-1527-13 *Standard Practice for*
41 *Environmental Site Assessments: Phase 1 Environmental Site Assessment Process* must
42 prepare each Phase I Environmental Site Assessment Report that conforms to the American
43 Society of Testing and Materials (ASTM) E 1527-13 requirements. As part of the Acquisition
44 Package, Developer shall prepare and submit the Phase I Environmental Site Assessment
45 Report to ADOT for review and approval by ADOT, in ADOT's sole discretion. Developer shall
46 complete the Phase I Environmental Site Assessment Report in coordination with the
47 Appraiser(s), and the Phase I Environmental Site Assessment Report must be available to the

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1 Appraiser(s). If it is determined that a potential environmental risk (recognized environmental
2 condition, controlled recognized environmental condition, or possibly historical recognized
3 environmental condition) exists based on the Phase I Environmental Site Assessment Report,
4 and if not previously prepared by or on behalf of ADOT, then Developer shall cause the
5 environmental professional to perform a phase II ESA investigation and prepare a Phase II
6 Environmental Site Assessment Report. Before a payment request is submitted for the
7 purchase of the parcel or a Condemnation Package is submitted for approval, Developer shall
8 submit the Phase II Environmental Site Assessment Report to ADOT for approval in ADOT's
9 good faith discretion. The Phase II Environmental Site Assessment Report must contain
10 sufficient information about the contaminant severity and distribution to estimate the
11 approximate cost to remediate the parcel in accordance with applicable Law to achieve the
12 goals of the Project. If, despite diligent efforts, Developer is unable to access a parcel to perform
13 a phase II ESA or remedial efforts, Developer may submit a Condemnation Package to ADOT
14 without the Phase II Environmental Site Assessment Report. However, Developer shall be
15 responsible for performing and receiving approval from ADOT for all required ESAs after
16 possession of the property has been obtained through condemnation.

17 **470.3.5 Appraisals**

18 **470.3.5.1 Appraisal Services**

19 Developer shall ensure that all Appraisals are prepared in conformance with applicable Law
20 (including the Uniform Act), and in accordance with professional appraisal methods and USPAP
21 for all parcels to be acquired, including a breakdown of realty vs. personality. Developer shall:

- 22 A. Select Appraisers that comply with the requirements in Section GP 110.08 of the TPs.
- 23 B. Require Appraisers to attempt to establish personal pre-appraisal contact with each
24 owner of record title and each occupant, and document all contacts
- 25 C. Require Developer's Appraiser to contact the record title owners or their designated
26 representatives, in writing, to offer them the opportunity to accompany the Appraiser on
27 the Appraiser's inspection of the parcel, and to maintain a record of all such contacts and
28 attempts to contact in the Appraiser's file.
- 29 D. Cause the Appraiser to prepare a complete Appraisal report for each parcel to be
30 acquired, with the report covering the portion to be acquired, and any damage to the
31 remainder, and cost to cure, when applicable. A complete before and after Appraisal
32 must be performed for partial acquisitions. Appraisals must be completed for TCEs and
33 any other easements needed for the Project. Each Appraisal must also apportion the just
34 compensation between those with any compensable interest in the property. It must also
35 include all improvements on the whole property. Developer shall include special
36 analyses, studies, or reports, as necessary, as a part of each Appraisal, including all
37 ESA reports. The Appraiser must use the most current edition of USPAP and must
38 continually monitor these standards to ensure that the Appraisals conform to the most
39 current requirements of professional appraisal practice and Federal requirements in Title
40 49 CFR Part 24.
- 41 E. Obtain copies of all written leases, licenses, and other occupancy agreements, including
42 outdoor advertising/sign agreements, that are not already included in the title
43 commitment in order to identify lessees, licenses, and other occupants with potential
44 compensable interests in each parcel and to determine the value of each such interest.
- 45 F. Enter into Subcontracts with the Appraisers and the Subcontracts must require the
46 Appraiser to update the Appraisal and to testify as an expert witness or provide expert
47 witness services required by ADOT in connection with all eminent domain proceedings

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1 through the order to show cause hearing. Further, Subcontracts with all Appraisers must
2 require the Appraiser to be available for depositions, other discovery, pre-hearings or
3 pre-trial meetings, and expert witness testimony at trial, as directed by ADOT in
4 consultation with the Office of the Attorney General though and including all appeals.

5 G. Cause the Appraiser to coordinate with the review Appraiser regarding corrections
6 and/or additional information that may be required for a particular Appraisal.

7 H. Instruct the Approved Appraiser, upon notice by ADOT of the order to show cause, to
8 prepare an Appraisal updated to the date of value for the condemnation suit (the date of
9 the summons and complaint). No later than 5 Business Days before the order to show
10 cause hearing date, Developer shall submit Appraisals to ADOT for review and approval
11 by ADOT, in ADOT's sole discretion. Developer shall also prepare an Appraisal review
12 of the updated Appraisal when required by ADOT. All updated Appraisals must include a
13 copy of the Project Right-of-Way Plans, ROW Exhibits, and Legal Descriptions and
14 current photographs of the property being acquired, clearly showing the area being
15 acquired, even though the original Appraisal report contained photographs of the subject
16 and the area of the acquisition. Developer shall discuss specific updating requirements
17 for any complex Appraisals with ADOT before beginning the assignment.

18 I. Upon request by ADOT, Developer shall prepare and submit Appraiser's Parcel File(s)
19 to ADOT.

20 J. Before the Appraisal is completed, complete and furnish, to the Approved Appraiser and
21 relocation agent, *ADOT Realty Personally Classification Agreement*.

22 K. Enter into Subcontracts with any other experts retained by Developer to consult or
23 provide opinions regarding the parcel to Developer or the Appraiser upon whom ADOT
24 based the offer of just compensation, that require the expert to testify as an expert
25 witness or provide expert witness services required by ADOT in connection with the
26 eminent domain proceedings through the order to show cause hearing. Further,
27 Subcontracts with all experts must require the expert to be available for depositions,
28 other discovery, pre-hearings or pre-trial meetings, and expert witness testimony at trial,
29 as directed by ADOT in consultation with the Office of the Attorney General up though
30 and including all appeals.

31 L. Ensure that, if other experts retained by Developer have consulted or provided opinions
32 regarding the parcel to Developer or the Appraiser who prepared the Appraisal upon
33 which ADOT based the offer of just compensation, then the other expert report must be
34 completed and forwarded to the Appraiser before the Appraiser completes an Appraisal
35 or updated Appraisal.

36 **470.3.5.2 Appraisal Review**

37 In connection with Appraisal Review, Developer shall:

38 A. Select Appraisal Reviewers that satisfy the requirements in Section GP 110.08 of the
39 TPs.

40 B. Cause an Appraisal Reviewer to review all Appraisal reports for each parcel to
41 determine consistency of methodology, supporting documentation related to the
42 conclusion reached, and compliance with the requirements set forth in Section DR
43 470.3.5.1 of the TPs for Appraisal reports. The Appraisal Reviewer must use the most
44 current edition of the standards referenced above and continually monitor these
45 standards to ensure that the Appraisals conform to the most current requirement of
46 professional appraisal practice.

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- 1 C. Cause the Appraisal Reviewer to determine, after reviewing an Appraisal and in
2 consultation with ADOT, if additional appraisal reports are required in order to properly
3 evaluate a parcel.
- 4 D. Cause the Appraisal Reviewer to personally inspect the subject properties and all the
5 sale properties used in direct comparison for each Appraisal being reviewed.
- 6 E. Upon completion of the review outlined above, cause the Appraisal Reviewer to certify in
7 writing to ADOT that all required standards have been met. This certification must occur
8 by signing on page 1 of each *ADOT Form ROW-11.05 (Real Estate Appraisal Report)* or
9 *ADOT Review Sheet (Real Estate Appraisal Report)* in the block provided.
- 10 F. In accordance with providing a ROW Quality Control Specialist(s) as stated in Section
11 GP 110.08 of the TPs, ensure that Appraisal consistency and quality for the entire
12 Project is monitored for Project-wide controls and consistency. Data and mapping must
13 be maintained and readily available.

14 Developer shall prepare Appraisal Reviews in accordance with the requirements in this Section
15 DR 470.3.5.2. With each Appraisal, Developer shall submit Appraisal Reviews to ADOT for
16 review and approval by ADOT, in ADOT's sole discretion.

17 **470.3.6 Project ROW Acquisition Package Approval**

18 Developer shall prepare an Acquisition Package for each parcel that includes, at a minimum,
19 the following:

- 20 A. A cover sheet setting forth the following information for each parcel:
 - 21 1. ADOT parcel number
 - 22 2. TRACS/Project number highway designation
 - 23 3. Name of record owner(s)
 - 24 4. Location of parcel
 - 25 5. Extent of acquisition (partial or whole acquisition)
 - 26 6. Type of conveyance (fee, easement, etc.)
- 27 B. A title report, current within 90 days, including copies of all documents identified in the
28 exceptions listed therein and a plot of all easements identified therein.
- 29 C. Developer's analysis of each preliminary title report or title commitment to determine
30 potential problems and proposed methods to cure title deficiencies. Developer shall
31 perform title curative Work. Within 48 hours after obtaining knowledge of required
32 curative measures, Developer shall submit copies of all Curative Documents to ADOT
33 for approval. Within 48 hours after obtaining knowledge, Developer shall inform ADOT of
34 bankruptcies or other federal tax liens which could require condemnation to resolve title
35 requirements. Decision to proceed directly to condemnation must be made by ADOT.
- 36 D. A copy of the ROW Exhibits and Legal Descriptions.
- 37 E. A copy of the Approved Appraisal with a date of value no more than 180 days prior to
38 the date of the submittal of the Acquisition Package, together with all supporting
39 documentation.
- 40 F. A copy of the Appraisal Review.
- 41 G. The proposed initial offer letter, purchase agreement, conveyance document, and any
42 other documents, prepared on Developer's letterhead or as otherwise directed.
43 Developer shall use the forms of such documents as set forth in the ADOT *Right of Way*
44 *Procedure Manual*. Documents referred to in Section DR 470 of the TPs are
45 standardized by ADOT and Developer shall keep to a minimum modification of

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- 1 standardized documents. All changes are subject to ADOT's written approval, in ADOT's
2 sole discretion.
- 3 H. *Summary Statement of Offer to Purchase and Improvement Report.*
- 4 I. *Mortgage 3rd Party Authorization Release.*
- 5 J. *Completed unsigned State W-9 Form.*
- 6 K. *Extended occupancy agreement on all fee acquisitions (three originals required), if*
7 *applicable.*
- 8 L. *A copy of the Phase I Environmental Site Assessment Report, Phase II Environmental*
9 *Site Assessment Report, as applicable, and all amendments as described in Section DR*
10 *470.3.4 of the TPs, and an estimate of the mitigation costs if applicable and available.*
- 11 M. *A completed and signed real/personal property report detailing the items making up*
12 *each parcel classified as real estate, tenant-owned improvements, or personal property.*
13 *Developer shall pay particular attention to items that have questionable classifications.*
- 14 N. *Documentation establishing relocation eligibility and benefits, including replacement*
15 *housing calculations, notification of business eligibility, all comparables used in*
16 *estimating the replacement housing calculations, and letter to displacee(s) explaining*
17 *replacement housing calculations. A relocation agent must prepare and review*
18 *calculations and replacement housing benefit package in conformance with the Uniform*
19 *Act and all other applicable Laws.*
- 20 O. *Any other ADOT forms required by the ADOT *Right of Way Procedure Manual*.*

21 Developer shall submit Acquisition Package(s) to ADOT for review and approval by ADOT, in
22 ADOT's sole discretion to the extent provided in Section 5.5.2 of the Agreement.

23 **470.4 ACQUISITION ACTIVITIES**

24 **470.4.1 Project ROW Negotiations**

25 Developer shall conduct all Project ROW negotiations in accordance with the requirements of
26 applicable Law. In conjunction with such negotiations, Developer shall:

- 27 A. *Within 5 Business Days of ADOT's approval of the initial 20 Acquisition Packages,*
28 *contact each property owner or owner's designated representative, in person where*
29 *possible, to present the offer and deliver the approved Appraisal and appropriate*
30 *brochures. Developer shall provide the approved Appraisal to the property owner at the*
31 *time of the initial offer. Developer shall also maintain a file record of receipt of Appraisal*
32 *signed by the property owner. Developer shall also maintain follow-up contacts and*
33 *secure the necessary documentation and title curative work upon acceptance of the*
34 *purchase offer.*
- 35 B. *At the time of offer, distribute, to all property owners and displacees, ADOT provided*
36 *acquisition, relocation and Title VI brochures, as applicable.*
- 37 C. *Within 5 days after presenting the first written offer, post the notice required by A.R.S.*
38 *28-7098(C) for all parcels (whether commercial, residential, or other).*
- 39 D. *Confirm lessees, licensees, occupants, or other parties with potential compensable*
40 *interests, including outdoor advertising sign owners and homeowner's associations, and,*
41 *if appropriate, after consultation with ADOT, negotiate with such parties for the*
42 *acquisition of their compensable interests.*
- 43 E. *Advise the property owners, lessees, licensees, occupants, and other holders of*
44 *compensable interests, as applicable, of the Administrative Settlement Offer process.*
45 *Developer shall confer with ADOT on any Administrative Settlement Offer from property*

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1 owners, lessees, licensees, occupants, or other holders of any compensable interest, as
2 applicable, including a detailed recommendation of whether to accept the offer or make
3 a counter offer. Developer shall submit Administrative Settlement Offer(s) to ADOT for
4 approval in ADOT's good faith discretion. ADOT will determine whether to accept or
5 reject an Administrative Settlement Offer or continue negotiations. Delivery of the
6 Administrative Settlement Offer and Developer's recommendation to ADOT must occur
7 within 7 Business Days following Developer's receipt of the Administrative Settlement
8 Offer request.

9 F. Provide a letter with ADOT's response to any Administrative Settlement Offer from the
10 property owner, lessee, licensee, occupant, or other holder of a compensable interest,
11 as applicable. Developer shall deliver ADOT's response to the owner's counter offer in
12 person or by mail (return receipt requested) within 5 Business Days after receipt. If
13 Developer selects the mailing option, Developer shall make a telephone call to the
14 property owner to discuss the Administrative Settlement Offer prior to mailing the
15 response letter.

16 G. Provide responses to the verbal or written inquiries of any property owner, lessee,
17 licensee, occupant, or other holder of a compensable interest, within 5 Business Days
18 after receipt.

19 H. Prepare a negotiator contact report detailing each meeting, conversation, or attempt to
20 contact property owners (or their appointed representative(s) supported by a written
21 confirmation of appointment) who have a compensable interest in each parcel, on the
22 *ADOT Contact Report Form*.

23 I. Prepare and deliver to the property owner, lessee, licensee, occupant, or other holder of
24 any compensable interest, as applicable, documents of conveyance, and obtain their
25 execution of the same. All signatures on documents to be recorded must be notarized in
26 accordance with Arizona Law.

27 J. All Administrative Settlement Offers must be approved by ADOT and ADOT reserves the
28 right to require Developer to continue negotiations.

29 **470.4.2 Relocation Assistance**

30 Developer shall perform all activities necessary to relocate displacees in accordance with the
31 Uniform Act and other applicable Laws. ADOT will determine relocation eligibility for all
32 displacees.

33 Developer shall obtain and maintain a minimum of one relocation office within the 59th Avenue
34 segment of the Project. Developer shall not locate the relocation offices in the Project
35 Collocated Office or field offices. The relocation offices must comply with all applicable building
36 and fire codes and ADA requirements. Developer shall obtain all facility space, permits,
37 licenses, and approvals and pay for all utility services for the relocation offices. The relocation
38 offices must be staffed by qualified relocation personnel during office hours. Office hours must
39 be posted and the office must, at a minimum, be open during the office hours below:

40 A. Monday through Friday: 8:00 am to 5:00 pm

41 B. Saturday: 9:00 am to 12:00pm

42 C. Sunday: office may be closed

43 In addition to the office hours listed above, Developer shall make reasonable attempts to be
44 available to all displacees for relocation services at the convenience of the displacees.

45 With respect to relocation assistance, Developer shall:

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- 1 A. Assist with all relocation appeal requests and be responsible for carrying out decisions
2 made by ADOT or a court.
- 3 B. Direct in writing any questions as to the eligibility of a potential displacee to ADOT.
- 4 C. Locate available comparable functionally equivalent housing and maintain related files.
- 5 D. Locate available commercial, retail, and industrial sites and maintain related files.
- 6 E. Prior to submission to displacees, Developer shall compute and submit Relocation
7 Supplement Requests to ADOT for approval in ADOT's good faith discretion.
- 8 F. Maintain contact report on a relocation advisory assistance – parcel record.
- 9 G. Attend all closings on replacement properties, if requested by any party involved, and
10 assure supplemental payments, if any, are properly distributed.
- 11 H. Notify ADOT immediately if a displacee has not moved after the required vacate date.
12 Developer shall submit the written Displacee Move Facilitation Recommendation to
13 ADOT for approval in ADOT's good faith discretion.
- 14 I. Be available for any administrative appeals or court hearings.
- 15 J. Prepare and submit Relocation Payment Claim Submissions for all displacees and all
16 relocation assistance benefits to ADOT for review and approval by ADOT, in ADOT's
17 sole discretion.
- 18 K. Maintain a complete relocation file, separate from acquisition files, on each displacee
19 and make it available for inspection by ADOT.
- 20 L. Be responsible for all relocation activities that occur after deposit or payment of the bond
21 required by an order for immediate possession, when a parcel referred to the Office of
22 the Attorney General for eminent domain also has a relocation issue. Developer shall
23 adjust relocation computations based on the approved Administrative Settlement Offer
24 or court award.
- 25 M. Prepare all correspondence to the displacees or their representative(s) on Developer's
26 letterhead and have Developer's correspondence signed by Developer's relocation
27 agent.
- 28 N. Maintain Utility service to occupied properties until relocation is complete.
- 29 O. Provide adequate access to all occupied parcels until relocation is complete

30 **470.4.3 Closing Services**

31 For purposes of closing services, Developer shall:

- 32 A. Deliver the State warrant to the title company as requested by ADOT.
- 33 B. Immediately after closing, obtain and submit all Original Recorded Instruments of
34 Conveyance to ADOT for review and approval by ADOT, in ADOT's sole discretion.
- 35 C. Within 30 days following closing, obtain and submit an Original Issued Title Policy to
36 ADOT for approval in ADOT's good faith discretion.

37 **470.4.4 Payment of Property Owners and Displacees**

38 Developer shall prepare a Payment Submittal for any item that ADOT is responsible to pay to or
39 on behalf of property owners, displacees, and title companies. A Payment Submittal must
40 include:

- 41 A. A completed *Payment Request* form for each type of payment
- 42 B. All required appropriate documents as shown on each *Payment Request* form.
- 43 C. A completed and signed *W-9 Form* for all payees.

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1 The State's warrant will be returned to Developer's ROW Acquisition Manager. Upon request of
2 ADOT, Developer shall deliver to the payee the State warrant. Developer shall submit Payment
3 Submittal(s) to ADOT for approval in ADOT's good faith discretion.

4 **470.4.5 Condemnation Support**

5 If Developer and the property owner cannot negotiate an agreed-upon conveyance by deed
6 acceptable to ADOT, Developer shall prepare a Condemnation Package that must include two
7 copies each of the following documents:

- 8 A. A condemnation transmittal
- 9 B. Condemnation briefing statement summarizing the significant issues and conditions that
10 lead to the file being submitted to condemnation.
- 11 C. All contact reports, including contact logs associated with the negotiations of the
12 property
- 13 D. A summary statement of offer to purchase and improvement report
- 14 E. ROW Exhibits
- 15 F. Legal Descriptions
- 16 G. Appraisal (not more than 180 days old) upon which the final offer was based
- 17 H. The Appraisal Review sheet
- 18 I. An updated title report (not more than 30 days old)
- 19 J. Proposed condemnation letter
- 20 K. Documents creating a compensable interest as disclosed by the updated title report
- 21 L. ESAs relating to the parcel (if any)
- 22 M. A copy of the resolution of establishment adopted by the Arizona State Transportation
23 Board authorizing the acquisition of the parcel
- 24 N. An Exhibit A (the legal description marked as Exhibit A)
- 25 O. An Exhibit B (a ROW Exhibit marked as Exhibit B)
- 26 P. An Exhibit C (a map of the Project marked as Exhibit C but without addresses)
- 27 Q. An Exhibit D (a "Parties Defendant List" marked as Exhibit D, with all parties' physical
28 addresses for service of process)
- 29 R. Any purchase agreements, releases, property management agreements, lease
30 agreements
- 31 S. All correspondence related to the parcel

32 Developer shall submit Condemnation Package(s) to ADOT for review and approval by ADOT,
33 in ADOT's sole discretion. Upon written approval of the Condemnation Package by ADOT,
34 Developer shall prepare and deliver an ADOT Condemnation Letter on Developer's letterhead,
35 to the property owners. Developer's ROW Acquisition Manager must be sign the ADOT
36 Condemnation Letter. Within 2 days after delivery to the property owner, Developer shall submit
37 a copy of the ADOT Condemnation Letter to ADOT for approval. Developer shall not send an
38 ADOT Condemnation Letter until ADOT provides written approval of the Condemnation
39 Package.

40 Developer shall be responsible for providing condemnation support services as directed by
41 ADOT. Such support services include providing all expert witnesses requested by ADOT,
42 including valuation experts and experts having sufficient knowledge of the design of the Project,
43 to appear at all condemnation proceedings, including the order to show cause hearing for order
44 for immediate possession and relocation appeals. (See Section DR 470.3.5.1(F) to (L) of the

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1 TPs.) Developer shall be responsible for preparing all exhibits and photographs associated with
2 condemnation services and proceedings requested by ADOT through an order to show cause
3 hearing for order for immediate possession and any relocation appeals. ADOT will coordinate
4 with the Office of the Attorney General to provide legal counsel to prepare and file the complaint
5 in condemnation. ADOT will obtain an order for immediate possession within 180 days of
6 approval of the Condemnation Package. ADOT will provide a copy of the order for immediate
7 possession to Developer within 5 Business Days after receiving the signed and certified order
8 for immediate possession from the court.

9 Developer shall not contact the Office of the Attorney General or an Assistant Attorney General
10 handling a specific parcel that has been filed for eminent domain action or is in the process of
11 settlement unless authorized to do so by ADOT.

12 Developer shall conduct all applicable eminent domain-condemnation activities in accordance
13 with the policies and procedures as described in Chapter 4.09 of the ADOT *Right of Way*
14 *Procedure Manual*.

15 Developer shall require the Approved Appraiser to update the approved Appraisal as set forth in
16 Section 470.3.5.1(H) of the TPs.

17 **470.4.6 Eviction**

18 After an acquisition of a property or entry of an order from immediate possession, Developer
19 shall use diligent efforts to obtain the cooperation of each parcel owner/tenant in vacating the
20 property. Developer shall notify ADOT immediately if Developer is unable (or anticipates that it
21 will be unable), after diligent efforts, to reach agreement with a parcel owner/tenant on vacating
22 the parcel. Developer shall not have any discussions regarding eviction or evict property
23 owners/tenants.

24 Developer shall prepare an Eviction Memorandum explaining the circumstances warranting
25 eviction for each parcel with respect to which Developer requests an eviction. Developer shall
26 submit such an Eviction Memorandum for each parcel with respect to which Developer requests
27 an eviction to ADOT for review and approval by ADOT, in ADOT's sole discretion. ADOT will
28 determine if eviction proceedings are to commence.

29 **470.4.7 Clearance/Demolition of Project ROW**

30 Developer is responsible for clearance/demolition of all parcels not retained by ADOT as
31 identified in TP Attachment 470-3. Developer shall only use asbestos testing, asbestos
32 abatement, and asbestos oversight and demolition Subcontractors that comply with ADOT's
33 prequalification standards set forth in TP Attachment 470-1. Prior to executing any Subcontract
34 with any such Subcontractor, Developer shall submit the Subcontractor Qualifications of such
35 Subcontractor to ADOT for approval.

36 Prior to demolition of any improvements, Developer shall prepare and submit Demolition
37 Photographs, that include photographs of the Property and all improvements, to ADOT.
38 Developer shall also take photographs of personal property, real property, and any other
39 disputed items in a quality suitable for presentation as evidence in court, following acquisition
40 and prior to demolition and clearance.

41 Developer shall:

42 A. Within 10 days after vacancy of the property, complete the securing and protection of the
43 buildings, improvements, and fixtures on the property until they are disposed of or
44 demolished. Developer shall board-up, mow, fumigate, and winterize as required by
45 applicable Law.

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- 1 B. Secure swimming pools, spas, and all other water features with 6 foot chain link fence
2 within 24 hours of ADOT's notification to Developer the property is vacated and drain in
3 accordance with City of Phoenix codes/ordinances. Developer shall demolish and
4 backfill swimming pools, spas, or any other depression or excavation exceeding 4-feet in
5 depth within 48 hours of completion of asbestos testing and abatement and receipt of all
6 necessary permits. If permits are not required to backfill, then Developer shall backfill
7 within 48 hours of vacate.
- 8 C. Terminate all Utility service(s) to a parcel after the parcel is vacated. Developer shall
9 assess all Utilities serving the property and make requests for each individual Utility
10 Company to abandon their services to the Utility main in preparation for demolition.
- 11 D. Coordinate with the owner and occupants to ensure the clearance of personal property
12 from the property as applicable.
- 13 E. Provide for any insect and rodent control and initiate extermination as required to protect
14 adjacent properties and rid the property from infestations.
- 15 F. Dispose of improvements, fixtures, and buildings in accordance with applicable Laws
16 and promptly submit Complete Disposal Documentation to ADOT.
- 17 G. Prepare a Vacated Parcel Notification for any real and/or personal property remaining on
18 the Project ROW after vacated by the occupants and not acquired as part of the
19 acquisition, after vacated by the occupants. Before posting, Developer shall submit the
20 proposed Vacated Parcel Notification to ADOT.
- 21 H. Assess property being demolished for any Hazardous Materials, endangered/protected
22 animals/plants, dry wells, and water wells. If any of such items are discovered,
23 Developer shall make arrangements to have those items abated and/or abandoned.
24 Developer shall remove and backfill septic tanks to natural grade.
- 25 I. Pending demolition, secure property to be demolished with temporary fencing or
26 security, depending on individual circumstances associated with the subject property.
- 27 J. Prior to demolition, arrange for asbestos and lead paint testing by a Subcontractor that
28 complies with State standards.
- 29 K. Obtain an Asbestos Hazard Emergency Response Act (AHERA) *Asbestos Report*
30 completed by an AHERA certified building inspector with asbestos samples analyzed by
31 a National Voluntary Laboratory Accreditation Program accredited lab referenced by the
32 aforementioned asbestos and lead paint survey report. In accordance with Maricopa Air
33 Quality Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)
34 regulations, Developer shall update all expired reports with re-inspection. Before
35 demolition of any improvements, Developer shall submit an AHERA Asbestos Report(s)
36 to ADOT for approval.
- 37 L. Cause the AHERA certified asbestos abatement Subcontractor to prepare a NESHAP
38 Notification (based on the presence of any regulated asbestos material, if applicable) as
39 required by 40 C.F.R. Section 61.145, and to prepare a NESHAP Notification for
40 Renovation and Demolition Activities, Arizona Department of Transportation Facilities.
41 Prior to submitting to ADEQ, Developer shall submit NESHAP Notification(s) to ADOT
42 for review and approval. Prior to submitting to ADEQ, Developer shall submit the
43 NESHAP Notification for Renovation and Demolition Activities, Arizona Department of
44 Transportation Facilities to ADOT for review and approval.
- 45 M. Ensure that no Project ROW Work begins prior to the 10 day maturity date of the
46 NESHAP Notification, and the filing of the Maricopa County air quality dust permit, and
47 after all Utilities being abandoned at the Site.

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- 1 N. Inspect during and after asbestos abatement in order to ensure NESHAP, OSHA, and
2 air quality compliance.
- 3 O. Upon completion of abatement Work, submit all Demolition Closeout Documents to
4 ADOT for approval.
- 5 P. Remove any refrigerants or ammonia from all refrigeration systems per EPA guidelines.
6 Reference EPA Guidelines: 40 CFR 82.162.
- 7 Q. Comply with the stormwater requirements in accordance with Section 420 of the TPs.
- 8 R. Hold a pre-demolition meeting on the site of demolition Work with Developer, ADOT, and
9 the demolition Subcontractor's superintendent and/or lead in order to familiarize
10 everyone with the demolition Work.
- 11 S. Ensure that all necessary documents are present on site during demolition.
- 12 T. Cause the demolition Subcontractor to sign ADOT's demolition authorization form, a
13 check list ensuring that all regulatory, environmental, and physical obligations will be met
14 by Developer and demolition Subcontractor and any of their subcontractors.
- 15 U. Ensure that any salvaging operations are performed only by the assigned demolition
16 Subcontractor. Developer shall not use ADOT property for staging and/or the sale of
17 salvaged materials to anyone not within the employ of Developer.

18 ADOT may, but is not obligated to, inspect the demolition site during and upon completion of the
19 demolition and to ensure compliance with applicable Law and Governmental Approvals.
20 Developer shall resolve all issues during the demolition process, including approval of removal
21 of previously unidentified site improvements. Developer shall ensure that the demolition
22 Subcontractor secures the site with a ditch, a berm, and/or fencing, and implements a dust
23 preventive measure prior to demobilizing from the demolition site. Within 48 hours after
24 completion of the demolition, Developer shall submit a written Demolition Completion
25 Notification to ADOT.

26 470.5 SUBMITTALS

27 Table 470-2 reflects a nonexclusive list of Submittals identified in Section DR 470 of the TPs
28 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
29 determine and submit all Submittals as required by the Contract Documents, Governmental
30 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
31 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
32 specified in the Contract Documents, Developer shall submit the following to ADOT in the
33 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 470-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Project ROW Status Report	3	0	1	Every week beginning at issuance of NTP 1	DR 470.2.3
Original Documents	2	1	1	Upon completion of the acquisition of each parcel	DR 470.2.3
ROW Activity Plan	2	0	1	In accordance with <u>Section 5.3.1 of the Agreement</u>	DR 470.2.4

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Table 470-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Updated ROW Activity Plan	2	0	1	No later than 10 Business Days after the occurrence of any change or direction triggering the need for the revisions to the ROW Activity Plan	DR 470.2.4
ROW Exhibits	1	1	1	In accordance with <u>Section GP 110.10 of the TPs and Contract Documents</u>	DR 470.3.1
Legal Descriptions	1	1	1	In accordance with <u>Section GP 110.10 of the TPs and Contract Documents</u>	DR 470.3.1
ROW Electronic Files	5	0	1	Whenever the Project ROW is updated	DR 470.3.1
Letter(s) of Introduction	2	1	1	Varies	DR 470.3.3
Phase I Environmental Site Assessment Report	1	1	1	As part of the Acquisition Package(s)	DR 470.3.4
Phase II Environmental Site Assessment Report	2	1	1	Before a payment request is submitted for the purchase of the parcel or a Condemnation Package is submitted for approval	DR 470.3.4
Appraisals	1	1	1	No later than 5 Business Days before the order to show cause hearing date	DR 470.3.5.1
Appraiser's Parcel File	5	1	1	Upon request by ADOT	DR 470.3.5.1
Appraisal Reviews	1	1	1	With each Appraisal	DR 470.3.5.2
Curative Documents	3	1	1	Within 48 hours after obtaining knowledge of required curative measures	DR 470.3.6
Acquisition Package(s)	1	1	1	As determined by Developer	DR 470.3.6
Administrative Settlement Offer(s)	2	1	1	As determined by Developer	DR 470.4.1
Relocation Supplement Requests	2	1	1	Prior to submission to displacees	DR 470.4.2

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Table 470-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Displacee Move Facilitation Recommendation	2	1	1	As requested by Developer	DR 470.4.2
Relocation Payment Claim Submissions	1	1	1	Varies	DR 470.4.2
Original Recorded Instruments of Conveyance	1	1	1	Immediately after closing	DR 470.4.3
Original Issued Title Policy	2	1	1	Within 30 days following closing	DR 470.4.3
Payment Submittal(s)	2	1	1	As determined by Developer	DR 470.4.4
Condemnation Packages	1	1	1	As requested by Developer	DR 470.4.5
ADOT Condemnation Letter(s)	3	1	1	Within 2 days after delivery to the property owner	DR 470.4.5
Eviction Memorandum	1	1	1	As requested by Developer	DR 470.4.6
Subcontractor Qualifications	3	2	1	Prior to executing any Subcontract with any such Subcontractor	DR 470.4.7
Demolition Photographs	5	1	1	Prior to demolition of any improvements	DR 470.4.7
Complete Disposal Documentation	5	1	1	Promptly	DR 470.4.7
Vacated Parcel Notification	5	0	1	After vacated by the occupants	DR 470.4.7
AHERA Asbestos Report(s)	3	0	1	Before demolition of any improvements	DR 470.4.7
NESHAP Notification(s)	2	0	1	Prior to submitting to the appropriate regulating agency	DR 470.4.7
Demolition Closeout Documents	3	0	1	Upon completion of abatement work	DR 470.4.7
Demolition Completion Notification	5	1	1	48 hours after completion of the demolition	DR 470.4.7
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1

2

End of Section

SECTION C
CONSTRUCTION REQUIREMENTS (CR)

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1 **CR 408 THIRD-PARTY AGREEMENTS**

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3

4

End of Section

ADDENDUM #2

1 **CR 410 LAND SURVEYING**

2 **410.1 GENERAL REQUIREMENTS**

3 Developer shall perform all land surveying Construction Work in compliance with the
4 requirements of Section CR 410 of the TPs. Developer shall provide all surveying, construction
5 staking, and layout required to complete the Work in accordance with the Contract Documents.
6 Developer shall perform all land surveying Construction Work under the supervision of the
7 Survey Manager.

8 **410.2 ADMINISTRATIVE REQUIREMENTS**

9 **410.2.1 Standards**

10 Developer shall perform all land surveying Construction Work in accordance with the standards,
11 manuals, and guidelines listed in Table 410-1.

Table 410-1 Standards		
No.	Agency	Title
1	Arizona State Board of Technical Registration	Arizona Revised Statutes Title 33
2	Arizona State Board of Technical Registration	Arizona Boundary Survey Minimum Standards

12 **410.3 CONSTRUCTION REQUIREMENTS**

13 **410.3.1 Perpetuation of Survey Monuments**

14 Developer shall locate and maintain all existing survey monuments, including section line, right-
15 of-way, and roadway monuments. Developer shall re-establish all disturbed monuments in
16 accordance with Arizona State Board of Technical Registration *Arizona Revised Statutes Title*
17 *33* and the *Arizona Boundary Survey Minimum Standards*. Developer shall ensure that the
18 referencing and re-setting of any impacted aliquot corners and major street monumentation is
19 signed and stamped by the Survey Manager.

20 Developer shall set all ROW monuments in accordance with ADOT *Intermodal Transportation*
21 *Division Engineering Technical Group Engineering Survey Section Manual of Field Surveys*.

22 **410.3.2 Construction Surveys**

23 Developer shall verify Schematic ROW boundaries and location as parcels become available for
24 Developer's use, prior to construction staking at such parcels. Developer shall perform all land
25 surveying Construction Work necessary to facilitate all construction operations during the Term.

26 **410.3.3 Construction Survey Records, As-Built Surveys, and Reports**

27 Developer shall maintain accurate and complete documentation for all land surveying
28 Construction Work. These records must include all calculations, mapping, staking notes, cut
29 sheets, and field crew daily diaries. Developer shall perform as-built surveys for the Project in

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1 accordance with the ADOT *Construction Manual*. Developer shall compile and prepare a
 2 complete formal Construction Survey Report that includes the materials listed in the ADOT
 3 *Construction Manual* and the following:

- 4 A. All survey calculations related to control survey and design survey data;
- 5 B. Documentation of the information and rationale used to perform the land surveying
 6 Construction Work;
- 7 C. Field notes;
- 8 D. Cut sheets;
- 9 E. Data collection downloads;
- 10 F. Maps;
- 11 G. CAD files; and
- 12 H. As-built survey.

13 Developer shall ensure that the Construction Survey Report is sealed by a land surveyor
 14 registered in the State of Arizona. At the same time as the Record Drawings Submittal,
 15 Developer shall submit the Construction Survey Report to ADOT.

16 **410.4 SUBMITTALS**

17 Table 410-2 reflects a nonexclusive list of Submittals identified in Section CR 410 of the TPs
 18 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 19 determine and submit all Submittals as required by the Contract Documents, Governmental
 20 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 21 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 22 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 23 formats described in Section GP 110.10.2.1.1 of the TPs.

Table 410-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Construction Survey Report	5	0	1	At the same time as the Record Drawings Submittal	CR 410.3.3
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

24
 25

End of Section

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1 **CR 416 GEOTECHNICAL**

2 **416.1 GENERAL REQUIREMENTS**

3 Developer shall perform all geotechnical Construction Work in compliance with the requirements
4 of Section CR 416 of the TPs.

5 **416.2 ADMINISTRATIVE REQUIREMENTS**

6 **416.2.1 Standards**

7 Developer shall perform all geotechnical Construction Work in accordance with the standards,
8 manuals, and guidelines listed in Table 416-1.

Table 416-1 Standards		
No.	Agency	Name
1	FHWA	Geotechnical Engineering Circular No. 10, Drilled Shafts: Construction Procedures and LRFD Design Methods, NHI Training Course No. 132014, Publication No. FHWA-NHI-10-016, 2010
2	FHWA	Geotechnical Engineering Circular No. 11, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, NHI Courses No. 132042 and 132043, Publication No. FHWA-NHI-10-025, Volumes I and II, 2009
3	FHWA	Geotechnical Engineering Circular No. 7, Soil Nail Walls, Report No. FHWA-IF-03-017, 2003

9 **416.3 CONSTRUCTION REQUIREMENTS**

10 **416.3.1 Drilled Shaft Foundations**

11 Developer shall construct drilled shaft foundations in accordance with the FHWA *Geotechnical*
12 *Engineering Circular No. 10, Drilled Shafts: Construction Procedures and LRFD Design*
13 *Methods*.

14 If drilled shaft foundations load testing is performed, Developer shall perform such tests in
15 accordance with the recommendations presented in FHWA *Geotechnical Engineering Circular*
16 *No. 10, Drilled Shafts: Construction Procedures and LRFD Design Methods*. Developer shall
17 perform the load tests on a sacrificial, non-production drilled shaft(s) and shall design such load
18 tests to measure the nominal axial resistance of the test drilled shaft and load transfer
19 characteristics of the shaft/soil profile. Both conventional (top-down) and bi-directional
20 Osterberg Cell ("O Cell") drilled shaft load testing methods are permitted.

21 Developer shall prepare a Drilled Shaft Load Test Program that includes the following:

- 22 A. Design plans, specifications, and special provisions detailing the design and construction
23 of the test drilled shaft(s), including test shaft materials, reinforcing cage, access tubes
24 for integrity testing, estimated shaft capacities, test loads, loading/unloading increments
25 and sequences, and instrumentation types and locations;
- 26 B. Details and capacities of the loading frame and reaction shafts, or Osterberg cell
27 assemblies;
- 28 C. Test drilled shaft instrumentation plan, including details and calibration certificates of all
29 test instrumentation proposed for monitoring of the test drilled shaft, such as sister bar

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- 1 strain gauges, linear vibrating wire displacement transducers, compression telltales,
2 vibrating wire pressure transducers, pressure gauges, data acquisition system and all
3 associated software, and survey points and methods, for monitoring the test drilled shaft;
- 4 D. Installation plan for the test drilled shaft and reaction shafts in accordance with the
5 Drilled Shaft Installation Plan requirements in this Section CR 416.3.1;
- 6 E. Drilled Shaft Load Test Report(s), which must include the following items:
- 7 1. Description of the test drilled shaft details, construction, instrumentation, and test
8 procedures;
- 9 2. Tables presenting all monitoring and Instrumentation Data;
- 10 3. Plots of load versus displacement for each stage of the test;
- 11 4. Plots of load transfer along the length of the test drilled shaft determined from the
12 strain gauge data for at least ten applied load increments;
- 13 5. Summaries of mobilized unit side resistance along the length of the drilled shaft, and
14 mobilized tip resistance;
- 15 6. Plots of creep displacement for each loading direction and increment; and
- 16 7. Plot of equivalent top-down load versus displacement curve for the test drilled shaft,
17 developed from the load test data.

18 No later than 20 Business Days prior to performing the load test(s), Developer shall submit the
19 Drilled Shaft Load Test Program to ADOT for review and comment.

20 Subsequent to completion of the drilled shaft load test such that the test drilled shaft is no longer
21 needed, Developer shall cut the test drilled shaft off at least 5 feet below final grade. Developer
22 shall prepare a Drilled Shaft Load Test Report in accordance with the Drilled Shaft Load Test
23 Program. Prior to construction of any production drilled shafts in the area(s) represented by the
24 load test(s), Developer shall submit the Drilled Shaft Load Test Report to ADOT for review and
25 comment.

26 Developer shall prepare a Drilled Shaft Installation Plan that includes the following information:

- 27 A. List of proposed equipment to be used including cranes, drills, augers, bailing buckets,
28 final cleaning equipment, desanding equipment, slurry pumps, sampling equipment,
29 tremies or concrete pumps, casing, etc.
- 30 B. Details of overall construction operation sequence and the sequence of shaft
31 construction in bents or groups
- 32 C. Details of shaft excavation methods, including equipment and procedures for checking
33 the dimensions and alignment of each shaft excavation.
- 34 D. When slurry is required, details of the method proposed to mix, circulate and desand
35 slurry, and methods proposed.
- 36 E. Details of methods to clean the shaft excavation.
- 37 F. Details of reinforcement placement, including support and centralization methods, lifting
38 equipment, and staging location for tied steel reinforcement cages prior to placement.
- 39 G. Details of concrete placement, including concrete volumetric charts.
- 40 H. Details of casing dimensions, material, and splice details.
- 41 I. Details of concrete mix designs and mitigation of possible loss of slump during
42 placement.
- 43 J. List of work experience for previous similar projects.
- 44 K. Other information shown on the plans or requested by ADOT.

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1 L. Emergency horizontal construction joint method if unforeseen stoppage of Work or
2 interruption in concrete delivery occurs.

3 M. Details of any special access or setup requirements needed to position the drill
4 equipment to advance drilled shaft excavations.

5 Not less than 20 Business Days prior to drilled shaft construction, Developer shall submit the
6 Drilled Shaft Installation Plan to ADOT for review and comment.

7 Developer shall perform quality assurance testing and integrity testing of all constructed drilled
8 shaft foundations in accordance with Section GP 110.07 of the TPs. Quality assurance testing
9 and integrity testing must include ultrasonic crosshole testing in accordance with ASTM D6760
10 and geophysical logging (gamma logging) in accordance with ASTM D6274. Developer shall
11 perform construction quality control of the test drilled shaft, including mechanical or sonic
12 caliper, concrete sampling and strength testing, ultrasonic cross-hole logging, and geophysical
13 logging (gamma logging). Developer shall test, at minimum, all shafts constructed using the wet
14 method and 10 percent of the shafts constructed using the dry method (2 tests minimum).
15 Developer shall test all drilled shafts regardless if they are constructed using the wet method or
16 dry method, for all structures that do not have redundant shafts. If a defect is found in a dry
17 shaft test, Developer shall test all dry shafts for the associated bridge. Developer shall perform
18 drilled shaft testing no earlier than 48 hours after placement.

19 Developer shall prepare a Drilled Shaft Quality Assurance Report which presents the results of
20 quality assurance and integrity testing of drilled shaft foundations. Not less than 10 Business
21 Days prior to construction of any structure on the associated drilled shaft foundations,
22 Developer shall submit the Drilled Shaft Quality Assurance Report to ADOT for review and
23 comment.

24 **416.3.2 MSE Walls**

25 Developer shall construct MSE walls in accordance with the FHWA *Geotechnical Engineering*
26 *Circular No. 11, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced*
27 *Soil Slopes*.

28 Developer shall determine placement tolerances for MSE wall facing elements that must be
29 included in Developer's special provisions for MSE walls.

30 **416.3.3 Soil Nail Walls**

31 Developer shall construct soil-nail retaining walls in accordance with the FHWA *Geotechnical*
32 *Engineering Circular No. 7, Soil Nail Walls*.

33 Developer shall identify wall zones based on subsurface geotechnical conditions, with one value
34 of design pull-out resistance assigned to each wall zone on the plans.

35 Developer shall perform a minimum of two verification load tests on sacrificial verification soil-
36 nails for each wall zone before starting excavation for the wall zone. Developer's soil-nail load
37 testing equipment must be calibrated by a qualified testing laboratory which is independent of
38 Developer's soil-nail installation Subcontractor(s).

39 Developer shall perform proof load tests on sacrificial proof test soil-nails. The number of
40 sacrificial proof test soil-nails must be a minimum of 10 percent of the total number of production
41 soil-nails. Developer shall include the locations of proposed proof test nails on the Plans.

42 Developer's special provisions for soil-nail walls must include acceptance criteria for verification
43 and proof tests. The acceptance criteria must include criteria for (1) maximum allowable creep
44 movement (creep rate and total creep movement), (2) total measured nail movement at the

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1 maximum test load relative to the theoretical elastic elongation of the test nail un-bonded length,
2 and (3) pullout failure criteria. Developer shall reject tested nails which do not comply with the
3 acceptance criteria.

4 **416.3.4 Blasting**

5 **416.3.4.1 General**

6 Developer's shall perform blasting operations, including the storage, handling, and use of
7 explosives and blasting agents, in accordance with the applicable provisions of the ADOT
8 *Standard Specifications for Road and Bridge Construction*, and all other pertinent Federal,
9 State, and local regulations. Whenever explosives are used by Developer, they must be of such
10 character and in such amount as is permitted by the State and local laws and ordinances and all
11 respective agencies having jurisdiction over explosives, including the City of Phoenix Fire
12 Department. Developer is responsible for the effects, including damages, of his blasting
13 operations on adjacent public or private property, including objects, structures, and utilities.

14 Developer shall control ground vibrations and air-blast when blasting may affect objects,
15 structures, or utilities that may be susceptible to damage from blasting, and shall use properly
16 designed delay sequences and allowable charge weights per delay.

17 Developer shall prevent or remove deleterious drill hole traces, machine scars, and marks from
18 machine scaling or other excavation equipment in the final roadway cut faces. Deleterious
19 conditions is defined to include the following: (1) Individual drill holes whose remaining traces
20 total more than 3 feet aggregate length; (2) any portion of any roadway cut bearing drill hole
21 traces whose aggregate length totals more than 25 percent of the total length of controlled blast
22 holes drilled to form that portion of the cut; (3) machine scars traceable for more than 12 feet
23 which parallel the natural geologic structure, bedding, or principal fracture direction; (4) machine
24 scars traceable for more than 6 feet which do not parallel the natural geologic structure, bedding
25 or principal fracture direction; and (5) machine scars that are approximately parallel and
26 repetitive (groups of two or more scars).

27 Developer shall scale all slopes for stability, regardless of excavation technique or slope finish
28 required.

29 Developer shall minimize blast damage behind the trim line. Blast damage is defined to include
30 the following: widening and loosening of the existing joints, bedding planes, or foliation of the
31 rock mass to remain; displacement of blocks of intact rock to remain; and creation of new
32 fractures on the slope to remain.

33 Developer shall prepare a Test Plot Slope Cut Plan that depicts the proposed location of the
34 proposed cut slope location. No later than 15 Business Days prior to the first test blast,
35 Developer shall submit the Test Plot Slope Cut Plan to ADOT for review and comment.
36 Developer shall schedule a meeting with ADOT to review the Test Plot Slope Cut Plan to assure
37 the finished cut slope is acceptable with ADOT.

38 **416.3.4.2 Protection of Utilities**

39 Developer shall comply with the requirements of the Utility Companies relative to protection of
40 their individual Utilities from the effects of blasting operations. Developer shall also comply with
41 the following requirements when blasting operations are within 1,000 feet of transmission line
42 areas:

43 A. Electric detonators must not be used within 500 feet of any transmission line, unless the
44 safety of their use is demonstrated and documented in the Blasting Plan, including
45 measurements of stray and induced currents.

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- 1 B. Developer shall provide written notification to Utility Companies a minimum of 10
2 Business Days prior to blasting within 1,000 feet of any transmission line.
- 3 C. Once blasting operations have begun, Developer shall proceed as continuously as
4 practicable with blasting operations in that area.
- 5 D. Developer shall prevent fly rock when any portion of any blast is within 300 feet of the
6 outside phase of the closest transmission line. Fly rock prevention measures include
7 covering the entire shot with mats or soil.

8 **416.3.4.3 Control of Vibrations and Air-blast**

9 Developer shall locate seismographs between the blast area and the closest susceptible object,
10 structure, or utility. Developer shall use seismographs whenever the blast is located within 500
11 feet of an existing building, box culvert, retaining wall, bridge structure, pipeline, utility pole, or
12 transmission tower.

13 Developer shall protect all existing facilities from damage from blasting vibrations and air-blast.
14 Developer shall deploy and monitor an air-blast monitoring system between the main blasting
15 area and the location(s) subject to blast damage or annoyance.

16 **416.3.4.4 Blast Monitoring Plan**

17 Developer shall prepare a Blast Monitoring Plan that includes the following elements:

- 18 A. Types of instruments proposed for use, including seismographs and transducers for
19 ground vibration, and sensors for air-blast;
- 20 1. Seismographs must be capable of recording ground motion particle velocity for three
21 mutually perpendicular components of vibration in the frequency range generally
22 found with controlled blasting;
- 23 2. Air-blast sensors must be specifically manufactured for the purpose of making
24 blasting noise and sound pressure measurements;
- 25 B. Planned locations (distance and direction) of the monitoring instruments relative to blast
26 locations;
- 27 C. Proposed methods of adjusting blast hole patterns, detonation systems, and/or
28 stemming to prevent venting of blasts and to bring air-blast and noise levels produced by
29 blasting operations within applicable limits;
- 30 D. Proposed method(s) of documenting occurrence of fly rock;
- 31 E. Qualifications and experience of the instrument operators; and
- 32 F. Proposed methods to protect the public during blasting operations, including notifying
33 the public, locations and types of signage, fencing, and look-outs.

34 Not less than 15 Business Days prior to the first test blast, Developer shall submit a Blast
35 Monitoring Plan to ADOT for approval.

36 **416.3.4.5 Blasting Information Report**

37 Developer shall prepare a Blasting Information Report that includes the following:

- 38 A. Names and experience of Blasting Supervisors and Blasters in Charge.
- 39 B. Methods for and locations of explosives storage, delivery, and handling; a scaled
40 drawing of the location of any magazine to be located within 5 miles of the site; and
41 name and contact information for contact person responsible for assuring the security of
42 blasting materials and supplies stored for use on the Project.

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- 1 C. Name, address, and telephone number of all explosives suppliers; and identification of
2 all explosives delivery vehicles and operators.
- 3 D. Manufacturers' safety data sheets (and cut sheets) for all explosives, primers, and
4 initiators to be employed.
- 5 E. Methods to be employed for traffic control and other public safety precautions in the use,
6 storage, and transportation of explosives.
- 7 F. Materials, equipment, and excavation and/or blasting methods that Developer proposes
8 to use to build stable finished rock cut slopes, to include general methods and approach
9 to blasting which account for the full range of geologic settings and physical conditions
10 present on the Site; and description of how the method and approach accounts for
11 various cut geometries, rock types, access problems, categories of fracturing and
12 faulting, and required face contours.
- 13 G. Equipment intended to be used in or in support of blasting operations.
- 14 H. Methods to prevent fly rock.
- 15 I. Methods for preventing rock material from escaping the construction limits, and
16 contingency measures for unanticipated rock-fall.
- 17 J. Method of vibration control, vibration monitoring instrumentation, and the identity of the
18 person or persons collecting and analyzing the data.
- 19 K. Proposed sequence of excavation of the various major elements of the Project.

20 Not less than 10 Business Days prior to commencing drilling and blasting operations, Developer
21 shall submit a Blasting Information Report to ADOT for approval.

22 **416.3.4.6 Test Blasting**

23 Developer shall perform a minimum of one test blast at each cut location where blasting is
24 proposed, to demonstrate the adequacy of the proposed Blast Monitoring Plan and the
25 effectiveness of the proposed fly rock control measures. Developer shall prepare a Test Blast
26 Report for each test blast. Each Test Blast Report must include the following:

- 27 A. Details of the test blast;
- 28 B. Locations and details of blast monitoring;
- 29 C. Fly rock control measures;
- 30 D. Results of ground vibration and air-blast monitoring;
- 31 E. Video of the test blast;
- 32 F. Documentation of fly rock, including particle sizes and travel distances; and
- 33 G. Developer's proposed fly rock control measures based on the test blast results.

34 Not less than 5 Business Days after completion of each test blast, Developer shall submit the
35 Test Blast Report to ADOT for approval.

36 **416.3.4.7 Blasting Plan**

37 Developer shall prepare a Blasting Plan that includes the following:

- 38 A. Proposed excavation sequence for the cut.
- 39 B. Station limits of each proposed shot.
- 40 C. Elevations of the tops and bottoms of each lift.

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- 1 D. For each shot, scale drawings showing plan and section views of all variations of the
- 2 proposed drill pattern, including clearing limits, free face, burden, blast hole spacing, drill
- 3 hole location, sub-drill depths, lift height, blast hole diameters, and blast hole angles.
- 4 E. For each shot, loading diagram showing powder factor, type and amount of explosives,
- 5 primers, initiators, and locations and heights of stemming for all substantial variations
- 6 within the pattern.
- 7 F. For each shot, the initiation method and sequence of blast holes, including delay times
- 8 and delay system.
- 9 G. Fly rock control measures to be used on each shot.
- 10 H. Estimated quantities of volume of rock in-place and length of both production and
- 11 controlled blast drill hole.
- 12 I. Location and attitude of significant fracturing, rock type changes, faulting, and special
- 13 circumstances to be accounted for in the shot design.
- 14 J. Vibration criteria, predicted ground motions at sensors, and sensor locations.

15 Developer shall record each blast on videotape. At the end of each month, Developer shall
16 make the unedited videotape recording available at all times to ADOT. Not less than 5 Business
17 Days prior to commencing drilling and blasting operations, Developer shall submit a Blasting
18 Plan to ADOT for approval.

19 Developer shall prepare a Blasting Report for all blasts that includes the following:

- 20 A. The start and finish of drilling and loading, along with a log of actual explosive loading
- 21 and any changes in pattern.
- 22 B. A copy of the blasting shop drawing.
- 23 C. Approximate average drilling rate, soft seams or faults, and any occurrences of water,
- 24 lost circulation, voids, stuck drill steel, or other complications to drilling.
- 25 D. Depth measurements of all production and control holes.
- 26 E. Name of blasting foreman and date and time of blast.
- 27 F. Vibration and air blast records (original printout).
- 28 G. Video of each blast

29 Within 5 Business Days after blasting, Developer shall submit Blasting Report(s) to ADOT for
30 approval.

31 **416.3.5 Slope Stability & Protection**

32 Developer is responsible for slope stability throughout the Project, both within and adjacent to
33 the Schematic ROW. If any slope instability develops during construction, Developer shall cease
34 all Work in the immediate area within and around the unstable ground until the situation is fully
35 assessed by Developer. Developer shall implement temporary slope stabilization measures to
36 ensure the safety of the public and Developer's personnel prior to returning to Work in the area
37 of unstable ground.

38 All permanent slope stabilization measures must comply with the minimum global slope stability
39 safety factors in accordance with the *AASHTO LRFD Bridge Design Specifications*, the *FHWA*
40 *Soil Slope and Embankment Design and Construction - Reference Manual (FHWA-NHI-01-026,*
41 *2002)* and the *FHWA Rock Slopes - Reference Manual (FHWA-NHI-99-007, 1998)*.

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1 **416.3.6 Instrumentation Report(s)**

2 Developer shall prepare an Instrumentation Report(s) containing the data and results of the
3 monitoring of instrumentation of all geotechnical Work which requires monitoring as described in
4 Section DR 416.3.3.2 of the TPs. The Instrumentation Report(s) must include the following:

- 5 A. The types, locations, and depths of installed instruments;
- 6 B. Description of the reading procedures and frequencies;
- 7 C. Updated summary plots of readings;
- 8 D. A brief commentary which identifies all significant changes in the measured parameters
9 since the previous Instrumentation Report;
- 10 E. Probable causes of these changes; and
- 11 F. Recommended mitigation action(s).

12 Developer's data interpretation procedure must include evaluation of the data to determine
13 reading correctness and to detect changes requiring immediate action. Developer shall correlate
14 instrument readings with other factors (cause and effect relationships) and evaluate the
15 deviation of the readings from the predicted behavior. The Instrumentation Report must also
16 include a certification from the Geotechnical Manager confirming that the objectives of the
17 Instrumentation Plan have been achieved and construction of the subject Work may proceed. In
18 accordance with the requirements described in the Instrumentation Plan, Developer shall submit
19 Instrumentation Report(s) to ADOT for approval. However, within 1 Business Day of each
20 recording, Developer shall submit all Instrumentation Data for each recording to ADOT.

21 **416.4 SUBMITTALS**

22 Table 416-2 reflects a nonexclusive list of Submittals identified in Section CR 416 of the TPs
23 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
24 determine and submit all Submittals as required by the Contract Documents, Governmental
25 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
26 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
27 specified in the Contract Documents, Developer shall submit the following to ADOT in the
28 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 416-2 Nonexclusive Submittals List					
Submittal	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Drilled Shaft Load Test Program	4	2	1	No later than 20 Business Days prior to performing the load test(s)	CR 416.3.1
Drilled Shaft Load Test Report	4	2	1	Prior to construction of any production drilled shafts in the area(s) represented by the load test(s)	CR 416.3.1
Drilled Shaft Installation Plan	4	2	1	Not less than 20 Business Days prior to drilled shaft construction	CR 416.3.1

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Table 416-2 Nonexclusive Submittals List					
Submittal	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Drilled Shaft Quality Assurance Report	4	2	1	Not less than 10 Business Days prior to construction of any structure on the associated drilled shaft foundations	CR 416.3.1
Test Plot Slope Cut Plan	4	2	1	Not less than 15 Business Days prior to the first test blast	CR 416.3.4.1
Blast Monitoring Plan	3	2	1	Not less than 15 Business Days prior to the first test blast	CR 416.3.4.4
Blasting Information Report	3	2	1	Not less than 10 Business Days prior to commencing drilling and blasting operations	CR 416.3.4.5
Test Blast Report	3	2	1	Not less than 5 Business Days after completion of each test blast	CR 416.3.4.6
Blasting Plan	3	2	1	Not less than 5 Business Days prior to commencing drilling and blasting operations	CR 416.3.4.7
Blasting Report(s)	3	2	1	Not less than 5 Business Days after blasting	CR 416.3.4.7
Instrumentation Report(s)	3	2	1	In accordance with the requirements in the Instrumentation Plan	CR 416.3.6
Instrumentation Data	5	2	1	Within 1 Business Day of each recording	CR 416.3.6
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the P3 Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1

2

End of Section

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1 **CR 417 EARTHWORK**

2 **417.1 GENERAL REQUIREMENTS**

3 Developer shall perform all earthwork operation Work in compliance with the requirements of
4 Section CR 417 of the TPs.

5 **417.2 ADMINISTRATIVE REQUIREMENTS**

6 Developer shall perform earthwork operation Work in accordance with the standards, manuals,
7 and guidelines listed in Table 417-1.

Table 417-1 Standards		
No.	Agency	Title
1	ADOT	Standard Specifications for Road and Bridge Construction
2	ADOT	Stored Specifications 203ERWK, 203PRWTR, and 203QCEW

Note: For ADOT Stored Specification 203ERWK, if borrow is called for in the Developer's Materials Design Report, Developer shall determine the formula value for Subsection 203-9.02

8 **417.3 CONSTRUCTION REQUIREMENTS**

9 **417.3.1 Waste Material**

10 Developer acknowledges and agrees that all waste material is the property of Developer.
11 Developer shall be responsible for disposal of waste material at suitable waste disposal
12 locations. The final location of waste material must not be within ADOT ROW.

13 All material removed from the South Mountain must be processed, used, placed, or left within
14 the vicinity of the South Mountain (51st Avenue to 17th Avenue). Developer shall not use such
15 removed material in concrete or asphalt.

16 **417.3.2 Borrow**

17 Developer shall evaluate and determine that borrow source complies with the *ADOT Standard*
18 *Specifications for Road and Bridge Construction*. Developer shall secure the borrow source,
19 haul borrow material, and obtain all permits required by Governmental Entities.

20 **417.3.2.1 Environmental Analysis**

21 Developer shall prepare an Environmental Analysis under any of the following conditions:

22 A. If Developer elects to provide material from a Developer furnished source, which is
23 defined as any source other than where ADOT has prospected, taken samples, tested,
24 prepared an Environmental Analysis, and which may be available for Developer's use,
25 including commercial operations.

26 B. If Developer elects to use any site to set up a plant for the crushing or processing of
27 base, surfacing, or concrete materials, not located on a site furnished by ADOT or the
28 site of a commercial operation. Developer may request an exemption from the
29 requirement to prepare an Environmental Analysis if all of the following conditions apply:

- 30 1. The site is exclusively used for the processing of materials;
- 31 2. The site will not be used for excavation of borrow material;

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- 1 3. The site was developed as a processing area on or before January 1, 1999;
- 2 4. The site is currently operating as a processing area; and
- 3 5. The plant is located within that portion of the site that was disturbed prior to January
- 4 1, 1999.
- 5 C. If Developer requests that ADOT approve access to controlled access highway at points
- 6 other than legally established access points.
- 7 Developer shall prepare an Environmental Analysis(es) that addresses all environmental
- 8 effects, including the following:
 - 9 A. The location of the proposed source and haul road, and the distance from the source to
 - 10 either an existing highway or an established alignment of a proposed Federal, State or
 - 11 County highway along with vicinity maps, sketches or aerial photographs.
 - 12 B. The ownership of the land.
 - 13 C. The identity and location of nearby lakes, streams, parks, wildlife refuges and other
 - 14 similar protected areas.
 - 15 D. The former use, if known, of the source, and haul road and their existing condition.
 - 16 E. The identification of present and planned future land use, zoning, etc., and an analysis of
 - 17 the compatibility of the removal of materials with such use.
 - 18 F. The anticipated volume of material to be removed; the width, length and depth of the
 - 19 excavation; as well as the length and width of the haul road, and other pertinent features
 - 20 and the final condition in which the excavated area and haul road will be left, such as
 - 21 sloped sides, topsoil replaced, the area seeded, etc.
 - 22 G. The archaeological survey of the proposed source prepared by a person who complies
 - 23 with the Secretary of the Interior's Professional Qualification Standards (48 FR 44716)
 - 24 and possesses a current permit for archaeological survey issued by the Arizona State
 - 25 Museum (ASM). Developer shall prepare the survey in a State Historic Preservation
 - 26 Office standardized format. The survey must identify all historic properties within the
 - 27 area of potential effect, as defined by the National Historic Preservation Act (36 CFR
 - 28 800.4). This includes the materials source, processing area, and the haul road.
 - 29 Additionally, the survey report must identify the effects of the proposed source on any
 - 30 historic properties within the area of potential effect, and recommend measures to avoid,
 - 31 minimize, or mitigate those effects.
 - 32 H. If the proposed source, or haul road utilizes prime and unique farm land or farm land of
 - 33 statewide importance, a description of such remaining land in the vicinity and an
 - 34 evaluation whether such use will precipitate a land use change.
 - 35 I. A description of the visual surroundings and the impact of the removal of materials on
 - 36 the visual setting.
 - 37 J. The effect on access, public facilities and adjacent properties, and mitigation of such
 - 38 effects.
 - 39 K. The relocation of businesses or residences.
 - 40 L. Procedures to minimize dust in pits and on haul roads and to mitigate the effects of such
 - 41 dust.
 - 42 M. A description of noise receptors and procedures to minimize impacts on these receptors.
 - 43 N. A description of the impact on the quality and quantity of water resulting from the
 - 44 materials operation. Developer shall address the potential to introduce pollutants or
 - 45 turbidity to live streams and/or nearby water bodies. Developer shall coordinate

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- 1 measures to mitigate potential water quality impacts through the EPA, for sites located
2 on tribal land, and the ADEQ, for sites located on non-tribal land.
- 3 O. A description of the impact on endangered or threatened wildlife and plants and their
4 habitat. Developer shall coordinate the analysis of potential impact to plants and wildlife
5 through the Arizona Game and Fish Department and U.S. Fish and Wildlife Service.
6 Developer shall coordinate compliance with the Arizona Native Plant Law through the
7 Arizona Commission of Agriculture and Horticulture.
- 8 P. A discussion of the effects of hauling activities upon local traffic and mitigating measures
9 planned where problems are expected.
- 10 Q. A description of the permits required, such as zoning, health, mining, land use, flood
11 plains (see Section 404 of the Clean Water Act), etc.
- 12 R. The effect of removing material and/or stockpiling material on stream flow conditions and
13 the potential for adverse impacts on existing or proposed improvements within the flood
14 plain which could result from these activities. Developer shall coordinate measures to
15 mitigate potential water quality impacts through the EPA, for sites located on tribal land,
16 and the ADEQ, for sites located on non-tribal land.

17 Guidance in preparing the environmental analysis is available on ADOT's Internet Website
18 through the Environmental Planning Group, or by calling Environmental Planning Group at 602-
19 712-7767.

20 Developer may incorporate an existing Environmental Analysis approved after January 1, 1999,
21 provided that the analysis is updated to be in compliance with current regulations and with the
22 Developer's planned activities.

23 Regulatory changes, specification changes, or other reasons may preclude the approval of a
24 materials source. Developer acknowledges and agrees that ADOT may refuse to approve a
25 material source even if ADOT has approved or approves the source for other projects.

26 The Environmental Analysis must include all areas of proposed excavation, crushing,
27 processing, and haul roads. For the purposes of this Section CR 417.3.2.1, a haul road is
28 defined as any road on material excavation, processing, or crushing sites, and any road
29 between the respective site and a public highway that may be used by Developer.

30 Not less than 45 days prior to use of the borrow site, Developer shall submit the Environmental
31 Analysis to ADOT for approval. ADOT will review the Environmental Analysis and consult with
32 the appropriate jurisdictions and/or Governmental Entities within 45 days after receipt of the
33 Submittal, or subsequent resubmittal.

34 **417.3.3 Backfill**

35 Developer shall evaluate and secure material source and obtain all necessary haul permits
36 required by Governmental Entities.

37 **417.4 SUBMITTALS**

38 Table 417-2 reflects a nonexclusive list of Submittals identified in Section CR 417 of the TPs
39 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
40 determine and submit all Submittals as required by the Contract Documents, Governmental
41 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
42 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
43 specified in the Contract Documents, Developer shall submit the following to ADOT in the
44 formats described in Section GP 110.10.2.1.1 of the TPs:

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Table 417-2 Nonexclusive Submittals List					
Submittal	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Environmental Analysis	3	2	1	Not less than 45 days prior to use of the borrow site	CR 417.3.2.1
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the P3 Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

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End of Section

ADDENDUM #2

1 **CR 419 PAVEMENT**

2 **419.1 GENERAL REQUIREMENTS**

3 Developer shall perform all pavement Construction Work in compliance with the requirements of
4 Section CR 419 of the TPs.

5 **419.2 ADMINISTRATIVE REQUIREMENTS**

6 *Intentionally left blank*

7 **419.3 CONSTRUCTION REQUIREMENTS**

8 **419.3.1 Pavement Subgrade Materials Requirements**

9 Developer shall ensure and verify that the materials encountered or imported comply with the
10 effective modulus of subgrade reaction (rigid pavement), resilient modulus (flexible pavement),
11 or other design subgrade support value as utilized by Developer for the structural section
12 design.

13 **419.3.2 Asphaltic Concrete Pavement**

14 Developer shall evaluate the asphaltic concrete friction course (ACFC) or asphalt rubber-
15 asphaltic concrete friction course (AR-ACFC) surface treatment for smoothness for each 0.1
16 lane-mile increment in accordance with the provisions of *Arizona Test Method 829*. Developer
17 shall not perform smoothness testing when the ambient air temperature is less than 40 °F, or
18 during rain or other precipitation. Developer shall perform smoothness testing within 10
19 Business Days of placement of the ACFC or AR-ACFC surface treatment. Developer shall
20 perform smoothness testing on traffic lanes longer than 0.3 mile.

21 Developer shall repair full lane widths in any segment of asphaltic concrete pavement having an
22 international roughness index (IRI) greater than 50 inches/mile.

23 Upon completion of any necessary corrective actions, Developer shall retest the 0.1 lane-mile
24 increments containing repaired areas in accordance with the provisions of *Arizona Test*
25 *Method 829*.

26 **419.3.3 Portland Cement Concrete Pavement**

27 Developer shall prepare a Paving Plan(s) for each segment of the Project. Each Paving Plan
28 must include the following:

- 29 A. A detailed sequence and schedule of concrete placement operations, including the
30 following:
- 31 1. Width of pavement to be placed,
 - 32 2. Proposed equipment,
 - 33 3. Production rates,
 - 34 4. Working hours,
 - 35 5. Concrete hauling,
 - 36 6. Placement methods, and
 - 37 7. Curing, sawing, and sealing methods.
- 38 B. A detailed staking plan for subgrade controls, including offset requirements.
- 39 C. Details of the layout of all longitudinal, transverse, weakened plane, and expansions
40 joints, including joint sequence, dimensions, and locations of dowels and dowel baskets.

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1 D. A Traffic Control Plan for pavement construction operations that includes provisions for
2 the placement and maintenance of barriers required to protect the pavement from traffic
3 for a minimum of 7 days after concrete placement.

4 Not less than 20 Business Days prior to paving, Developer shall submit each Paving Plan(s) to
5 ADOT for review and comment.

6 If Developer constructs paving widths that are less than the full main roadway width, Developer
7 shall locate longitudinal construction joints on the lane line or at the edge of the main roadway.
8 Developer shall not locate longitudinal construction joints in the wheel-paths.

9 Developer shall evaluate Portland cement concrete pavement (PCCP) thickness in accordance
10 with Section 401-4.04 of the ADOT *Standard Specifications for Road and Bridge Construction*
11 and the Contract Documents. Developer shall ensure that the PCCP thickness and compressive
12 strength complies with the material and construction requirements of Developer's pavement
13 designs and the Contract Documents.

14 All PCCP joints shall be sealed and be compatible with an overlay.

15 Developer shall evaluate PCCP, whether it will be overlaid or not with ACFC or AR-ACFC, for
16 smoothness in accordance with *Arizona Test Method 801* and Section 401-4.02 of the ADOT
17 *Standard Specifications for Road and Bridge Construction* and the Contract Documents. The
18 profile index of the PCCP must be a maximum of 9 inches/mile for every 0.1 lane mile section.

19 Developer shall test the PCCP surface with a 10-foot-long straightedge in accordance with
20 Section 401-4.02 of the ADOT *Standard Specifications for Road and Bridge Construction* and
21 the Contract Documents. The pavement surface must not vary in any direction by more than
22 1/8 inch, except at longitudinal and transverse construction joints. The pavement surface must
23 not vary by more than 1/4 inch across any longitudinal or transverse construction joint.
24 Developer must grind high areas or bumps not meeting the required pavement tolerances.

25 Upon completion of any necessary corrective actions, Developer shall retest repaired PCCP
26 areas to verify that corrections have produced the required improvements.

27 Developer shall longitudinally tine all PCCP roadway surfaces not overlaid with AR-ACFC in
28 accordance with Section 401-3.04(F) of the ADOT *Standard Specifications for Road and Bridge*
29 *Construction* and the Contract Documents.

30 **419.3.4 Pavement Mix Design**

31 Developer shall prepare Pavement Mix Design(s) for the Project. Pavement Mix Design(s) are
32 considered Shop Drawings and Working Drawings. Not less than 20 Business Days prior to
33 paving, Developer shall submit Pavement Mix Design(s) to ADOT for review and comment.

34 **419.4 SUBMITTALS**

35 Table 419-1 reflects a nonexclusive list of Submittals identified in Section CR 419 of the TPs
36 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
37 determine and submit all Submittals as required by the Contract Documents, Governmental
38 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
39 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
40 specified in the Contract Documents, Developer shall submit the following to ADOT in the
41 formats described in Section GP 110.10.2.1.1 of the TPs:

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Table 419-1 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Paving Plan(s)	4	2	1	Not less than 20 Business Days prior to paving	CR 419.3.3
Pavement Mix Design(s)	4	2	1	Not less than 20 Business Days prior to paving	CR 419.3.4
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1
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End of Section

ADDENDUM #2

1 **CR 420 ENVIRONMENTAL**

2 **420.1 GENERAL REQUIREMENTS**

3 Developer shall perform all Construction Work in compliance with the requirements of Section
4 CR 420 of the TPs.

5 **420.2 ADMINISTRATIVE REQUIREMENTS**

6 **420.2.1 Standards**

7 Developer shall perform all Construction Work in accordance with the standards, manuals, and
8 guidelines listed in Table 420-1.

Table 420-1 Standards		
No.	Agency	Title
1	ADOT	South Mountain Freeway (Loop 202) Final Environmental Impact Statement and Section 4(f) Evaluation (FEIS)
2	ADOT	South Mountain Freeway (Loop 202) Record of Decision (ROD)
3	ADOT	Noise Abatement Policy dated July 13, 2011

9 **420.3 CONSTRUCTION REQUIREMENTS**

10 **420.3.1 Project Environmental Commitment Requirements**

11 Developer shall comply with environmental commitments and requirements included in the
12 ROD. The table provided in TP Attachment 420-1 includes the Project-specific environmental
13 commitments associated with the ROD. Environmental mitigation measures have been
14 reviewed and approved by FHWA for the construction of the Project. These mitigation measures
15 are not subject to change without prior written approval from FHWA. Developer shall be
16 responsible for all environmental commitment requirements in TP Attachment 420-1, except
17 those requirements that are specifically identified as an ADOT action.

18 If, at any time, Developer is not in compliance with any applicable Laws, including any
19 Environmental Laws, and Governmental Approvals, ADOT may suspend the Work, in whole or
20 in part, under Section 18.2.1 of the Agreement until such time as the Errors, deficiencies, or
21 noncompliant situations have been corrected. Developer shall be responsible for any associated
22 monetary fines or any environmental restoration activities required to resolve violations are the
23 responsibility of Developer.

24 **420.3.2 Prevention of Landscape Defacement; Protection of Streams, Lakes and 25 Reservoirs**

26 **420.3.2.1 General**

27 Developer shall give attention to the effect of Developer's operations upon the landscape, and
28 shall maintain natural surroundings undamaged.

29 The General Aquifer Protection Permit 1.12 has been established by the Arizona Department of
30 Environmental Quality (ADEQ) requiring control of wastewater to an impoundment from washing

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1 concrete from trucks, pumps, and ancillary equipment. Developer shall comply with the General
2 Aquifer Protection Permit 1.12 (Arizona Administrative Code 18-9-B301.L).

3 Developer shall implement the requirements of the Arizona Pollutant Discharge Elimination
4 System (AZPDES) for erosion and sediment control as specified in the “General Permit For
5 Discharge From Construction Activities to the Waters Of The United States,” issued by the
6 ADEQ. That document is hereinafter referred to as the AZPDES *General Permit*.

7 The Project may discharge runoff into watercourses designated by ADEQ as “Impaired”,
8 “Outstanding Arizona Waters” or “Not-Attaining.” As a consequence, Developer shall include, in
9 Developer’s finalized Storm Water Pollution Prevention Plan (SWPPP), sufficient erosion and
10 sediment control Best Management Practices (BMPs) to assure that discharges do not cause or
11 contribute to non-attainment of Surface Water Quality Standards. In addition, Developer shall
12 provide a monitoring plan, as specified in Section CR 420.3.2.2.2 of the TPs.

13 Useful information related to stormwater controls and erosion and sediment control measures is
14 presented in the *Fact Sheet For The Issuance Of An AZPDES Construction General Permit*,
15 available from ADEQ, and the ADOT *Erosion and Pollution Control Manual*, available on
16 ADOT’s website at
17 [http://www.azdot.gov/inside_azdot/OES/WaterQuality/Stormwater/Erosion_Pollution_Control Ma
18 nual.asp](http://www.azdot.gov/inside_azdot/OES/WaterQuality/Stormwater/Erosion_Pollution_Control_Manual.asp). Except as otherwise specified herein, Developer’s monitoring plan shall comply with
19 the ADOT *Storm Water Monitoring Guidance Manual for Construction Activities*, dated August
20 23, 2006. That document is hereinafter referred to as the ADOT *Monitoring Guidance Manual*.

21 Developer shall ensure that the work includes providing, installing, maintaining, removing, and
22 disposing of erosion and sediment control measures, such as gravel filter berms, dikes, catch
23 basin inlet protection, end of pipe filtering devices, silt fences, dams, sediment basins, earth
24 berms, netting, geotextile fabrics, slope drains, seeding, stream stabilization, and other erosion
25 control devices or methods. Erosion control, as hereinafter referenced, must include control of
26 erosion and the mitigation of any resulting sediment. Erosion control measures may be
27 temporary or permanent. Developer shall prepare and process all documents required in the
28 AZPDES *General Permit*.

29 Except with respect to the Notice of Intent (NOI) Form, Developer shall provide all signatures
30 required of [or from] Developer by the AZPDES *General Permit*, including those required for the
31 Notice of Termination (NOT), SWPPP, and Inspection reports, by [or from] a duly authorized
32 representative of Developer, as defined in Part VIII.J.2 of said permit. A responsible corporate
33 officer of the Developer, as defined in Part VIII.J.1 of the AZPDES *General Permit*, must sign
34 the NOI.

35 Developer shall not start any clearing, grubbing, earthwork, or other work elements affected by
36 the erosion control requirements in the SWPPP until the SWPPP is reviewed and approved by
37 ADEQ, the NOI is completed and filed in accordance with Section CR 420.3.2.3 of the TPs, and
38 the SWPPP is implemented.

39 **420.3.2.2 Stormwater Pollution Prevention Plan**

40 **420.3.2.2.1 General**

41 Developer shall include descriptions of the following in the SWPPP: temporary and permanent
42 erosion control measures; a project description; percent impervious area, including paved
43 areas, rooftops, and other similar surfaces, for both pre-construction and post-construction
44 conditions; inspection schedule; and site specific diagrams indicating proposed locations where
45 erosion and sediment control devices or pollution control measures may be required during

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1 successive construction stages. The SWPPP may also include an initial schedule detailing the
2 proposed sequence of construction and related erosion control measures.

3 Developer shall review the preliminary information, including the erosion control features and
4 phasing, evaluate all SWPPP requirements for adequacy in addressing pollution prevention
5 during construction, and prepare a draft SWPPP, including monitoring plan, for review by
6 ADOT.

7 Developer shall designate the Erosion Control Coordinator as an authorized representative of
8 Developer in accordance with Part VIII.J.2 of the AZPDES *General Permit*.

9 Developer shall prepare a draft SWPPP that includes all information required in the AZPDES
10 *General Permit*, including the following: a site map; identification of receiving waters and
11 wetlands impacted by the project; a list of potential pollutant sources; inspection schedule; any
12 onsite or off-site material storage sites; additional or modified stormwater, erosion, and
13 sediment controls; procedures for maintaining temporary and permanent erosion control
14 measures; a list of Developer's pollution prevention practices; and other permit requirements
15 stipulated in the AZPDES program as well as other applicable state or local programs.

16 The draft SWPPP must also identify any potential for discharge into a municipal separate storm
17 sewer system (MS4), including the name of the owner/operator of the system.

18 Unless otherwise approved by ADOT, Developer shall not expose a surface area of greater than
19 750,000 square feet to erosion through clearing and grubbing, or excavation and filling
20 operations within the Project ROW, until temporary or permanent erosion control devices for
21 that portion of the Project have been installed by Developer and accepted by ADOT.

22 Developer shall indicate each 750,000 square-foot sub-area in the draft SWPPP, along with
23 proposed erosion control measures for each sub-area. The draft SWPPP must also include the
24 sequence of construction for each sub-area, and installation of the required temporary or
25 permanent erosion control measures.

26 Developer shall give installation of permanent erosion control measures priority over reliance on
27 temporary measures. Developer shall install permanent erosion control measures and drainage
28 structures as soon as possible in the construction sequencing of the Project. However, except
29 as specified in Part IV, Section B.2 of the AZPDES *General Permit* and approved by ADOT,
30 Developer shall install erosion control measures no later than 14 days after construction activity
31 has temporarily or permanently ceased for the affected sub-area. For areas within 50 feet of an
32 impaired or unique water, as shown on the Plans, Developer shall install erosion control
33 measures within 7 days after construction activity has temporarily or permanently ceased.

34 Temporary or permanent sedimentation basins may be required for reducing or eliminating
35 sediment from stormwater runoff. When required, Developer shall complete such basins before
36 any clearing and grubbing of the Site is initiated. Developer shall evaluate the need and
37 attainability of installing sediment basins as described in the AZPDES permit and include the
38 basins in the SWPPP as appropriate. The Plans may also include sediment basins as part of
39 the preliminary information.

40 The draft SWPPP must also identify and address erosion control at on-site fueling operations,
41 waste piles, material storage sites, and off-site dedicated asphalt and concrete plants,
42 contractor-use areas, storage areas, and support activity locations which are used solely for the
43 Project and are covered by the AZPDES *General Permit*. The draft SWPPP must also
44 accommodate all requirements for Developer's pollution prevention practices specified in
45 Section CR 420.3.2.4 of the TPs. In addition, the SWPPP must specifically identify the erosion

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1 control measures proposed by Developer during any vegetation removal and salvaging phases
2 of the Project (such as during timber harvesting or native plant salvaging).

3 The draft SWPPP must specify the mechanism whereby Developer or ADOT may propose
4 revisions to and incorporate such revisions into the SWPPP during the Term, including review
5 and approval procedure. Changes to the monitoring plan, such as number or location of
6 samples, or required testing, are considered revisions to the SWPPP.

7 Developer shall list the Subcontractors responsible for implementing all or portions of the
8 SWPPP in the draft SWPPP, along with the measures for which such Subcontractors are
9 responsible.

10 The Plans must include preliminary erosion control measures and additional information to be
11 included in the SWPPP, as specified in Section CR 420.3.2.2 of the TPs. Prior to ground
12 disturbance activities, issuance of NTP 2, and submittal of the Notice of Intent (NOI), Developer
13 shall submit a draft SWPPP to ADOT for approval. When the draft SWPPP is approved by
14 ADOT, ADOT and Developer shall sign the finalized SWPPP. After finalizing and signing the
15 SWPPP, Developer shall submit a copy of the SWPPP to ADOT.

16 Developer shall implement the requirements of the SWPPP. Developer shall not start any
17 clearing, grubbing, earthwork, or other work elements affected by the erosion control
18 requirements in the SWPPP until the SWPPP has been approved, the NOI completed and filed
19 in accordance with Section CR 420.3.2.3 of the TPs, and the SWPPP implemented.

20 Developer shall maintain all related erosion control elements in proper working order throughout
21 the Term. Work under this section also includes inspections, record-keeping, and
22 implementation of pollution prevention practices as described in Section CR 420.3.2.4 of the
23 TPs.

24 Developer shall update the approved SWPPP whenever a change in design, construction
25 method, operation, maintenance procedure, or other activity may cause a significant effect on
26 the discharge of pollutants to surface waters, or when a change is proposed to the personnel
27 responsible for implementing any portion of the SWPPP. Developer shall amend the SWPPP if
28 inspections indicate that the SWPPP is ineffective in eliminating or significantly reducing
29 pollutants in the discharges from the Site. Developer shall make all necessary modifications to
30 the SWPPP within 7 days following the inspection that revealed the deficiency. After amending
31 the SWPPP, Developer shall submit the amended SWPPP to ADOT for approval.

32 Developer shall keep a copy of the approved SWPPP at the Site during the Construction Period.

33 ADEQ may notify Developer at any time that the SWPPP does not comply with the permit
34 requirements. The notification may identify the provisions of the permit that are not being met
35 and parts of the SWPPP that require modification. Within 15 Business Days of receipt of such
36 notification from ADEQ, Developer shall make the required changes to the SWPPP and submit
37 a written certification to ADEQ that the requested changes have been made.

38 Developer shall ensure that the Erosion Control Coordinator maintains the SWPPP along with
39 completed inspection forms and other AZPDES records in a three ring binder. The Erosion
40 Control Coordinator must maintain a current copy of the SWPPP, including all associated
41 records and forms, at the Site during the Construction Period. The SWPPP must be available
42 for inspection by ADEQ, FHWA, and other entities identified in the AZPDES *General Permit*,
43 and for use by ADOT. Developer shall ensure that the Erosion Control Coordinator provides
44 copies of any or all of such documents to ADOT upon request. When requested, Developer
45 shall ensure that such copies are provided within 3 Business Days of the request.

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1 Developer shall be responsible for all requirements under other environmental statutes or
2 regulations by any condition of the AZPDES *General Permit* or the SWPPP.

3 **420.3.2.2.2 Monitoring Plan**

4 Developer shall prepare a construction monitoring plan to monitor discharges into the affected
5 receiving water.

6 The monitoring plan must comply with the ADOT *Monitoring Guidance Manual*, and must
7 include a description of the pollutant of concern, the activities or materials that may generate the
8 pollutant, the location of such activities or materials, and methods to ensure that transport of the
9 pollutant to the waterway is minimized. The monitoring plan must specify the location of
10 monitoring points, as well as the methods, equipment, and reporting processes necessary to
11 accurately measure water quality.

12 Except as specified herein, the monitoring plan and related work activities must comply with all
13 applicable elements of the ADOT *Monitoring Guidance Manual*, including sample locations,
14 monitoring schedule, documentation, and reporting requirements. ADEQ may require revisions
15 to the monitoring plan during the review process. Developer shall make such revisions before
16 beginning any Work involved in the SWPPP.

17 The minimum number and type of monitoring points must be as specified herein. Developer
18 shall determine the appropriate locations based on the ADOT *Monitoring Guidance Manual*.

19 Developer shall contact ADOT for specific restrictions for the affected waterway. Information
20 must include type of pollutant and receiving water, and allowable numeric concentration value
21 (tmdl), if required. Developer shall include Project-specific requirements, such as number of
22 monitoring points and type of monitoring, as provided by ADOT.

23 Developer shall ensure that the Erosion Control Coordinator, or other qualified personnel as
24 approved by ADOT, performs sampling and any onsite testing called for in the ADOT *Monitoring*
25 *Guidance Manual*.

26 Monitoring techniques for all locations must include visual monitoring, photo documentation, and
27 analytical monitoring, including turbidity. When included in the special provisions, specific
28 impairment monitoring and subsequent laboratory testing is also required. Developer shall
29 complete a monitoring report after each inspection and shall include the report in the SWPPP.
30 The monitoring plan must include a process to evaluate of the effectiveness of the erosion
31 control measures at controlling runoff. Developer shall use the form provided in the ADOT
32 *Monitoring Guidance Manual*.

33 Should laboratory testing of water be required, Developer shall select an appropriate laboratory
34 that is licensed, accredited, and certified by the Arizona Department of Health Services.
35 Developer shall prepare a Laboratory Testing Location Plan that includes the laboratory name,
36 address, telephone number, contact name, contact title, licensure, accreditations, and
37 certifications. At least 15 days before submittal of any samples for analysis, Developer shall
38 submit Laboratory Testing Location Plan to ADOT for approval.

39 Developer shall ensure that the Erosion Control Coordinator is responsible for the preparation,
40 accuracy, and completeness of all reports and readings required by the monitoring plan, and
41 submits all submittals required in the ADOT *Monitoring Guidance Manual*, including the monthly
42 discharge monitoring report to ADEQ.

43 Developer shall initiate the monitoring plan concurrently with the start of ground disturbing
44 activity or when any water, including storm water, is discharged from the Site, whichever occurs
45 first, and shall ensure that such adherence to the plan continues throughout the Term.

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1 **420.3.2.3 Notice of Intent and SWPPP Submittal**

2 After the SWPPP has been approved by ADOT and prior to submission to ADEQ, Developer
3 shall prepare and submit a notice of intent (NOI) to ADOT for approval. Developer shall ensure
4 that a responsible corporate officer of Developer, as defined in Part VIII.J.1 of the AZPDES
5 *General Permit*, signs and dates the certification statement included in the NOI and that the
6 name and title of that officer is included in the certification. After the SWPPP, including
7 monitoring plan, and the NOI has been approved by ADOT, Developer shall submit the SWPPP
8 and NOI to ADEQ at the address shown below for review.

9 Arizona Department of Environmental Quality
10 Surface Water Section/Permits Unit/Stormwater NOIs (5415A-1)
11 1110 W. Washington Street
12 Phoenix, Arizona 85007
13 or fax to (602) 771-4528

14 Developer may also submit the NOI electronically, through ADEQ's Smart NOI website at
15 <https://az.gov/app/smarnoi>. By submission of the NOI, Developer shall be deemed to certify
16 that Developer and its Subcontractors have read and shall comply with all provisions of the
17 AZPDES *General Permit*.

18 ADOT typically receives notification from ADEQ within 32 Business Days of submittal as to
19 whether Work may proceed under the AZPDES *General Permit*, or whether the SWPPP needs
20 revisions. ADOT expects to receive an authorization certificate issued by ADEQ if the NOI and
21 SWPPP have been accepted. If notification is not received in this time-frame, Developer shall
22 contact ADEQ and verify that the NOI and SWPPP have been received and accepted prior to
23 commencement of Work. Developer shall include a copy of the authorization certificate with the
24 NOI.

25 If ADEQ determine that revisions are needed, Developer shall make the necessary changes
26 and, after acceptance by ADOT, resubmit the SWPPP to ADEQ for approval. Prior to approval,
27 ADEQ may require that the SWPPP be modified to implement specific controls or design
28 criteria, or may require changes to the monitoring plan. When re-submittal is required,
29 Developer shall not begin SWPPP implementation until final approval is received from ADEQ.

30 Developer may anticipate needing a minimum of 7 weeks for the ADEQ review process, during
31 which period Developer shall not start or otherwise perform any clearing, grubbing, earthwork,
32 or other work elements affected by the erosion control requirements in the SWPPP.

33 Prior to any ground disturbing activities, Developer shall submit a copy of the NOI and
34 Authorization Certificate to ADOT. At any time after authorization, ADEQ may determine that
35 Developer's stormwater discharges may cause or contribute to non-attainment of any applicable
36 water quality standards. If ADEQ makes that determination, ADOT expects Developer to receive
37 written notice of the same from ADEQ. In such event, Developer shall develop a supplemental
38 erosion control action plan describing SWPPP modifications to address the identified water
39 quality concerns. If the written notice from ADEQ requires a response, failure to respond in a
40 timely manner constitutes a permit violation. All responses must be in accordance with the
41 AZPDES *General Permit*.

42 If there is a potential to discharge into a MS4, Developer shall submit a copy of the authorization
43 certificate to the owner/operator of the system. Also, if Developer is operating under an
44 approved local sediment and erosion plan, grading plan, or stormwater management plan other
45 than the Stormwater Management Plan, Developer shall submit a copy of the authorization
46 certificate to the local authority upon its request.

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1 Developer shall post its NOI and the information required in the AZPDES *General Permit* on the
2 construction site bulletin board throughout the Construction Period. Developer shall also keep a
3 copy of the AZPDES *General Permit* shall at the Site at all times.

4 **420.3.2.4 Pollution Prevention Practices and Requirements**

5 The SWPPP must specify Developer's pollution prevention practices and requirements,
6 including vehicle wash down areas, onsite and offsite tracking control, protection of equipment
7 storage and maintenance areas, methods to minimize generation of dust, and sweeping of
8 highways and roadways related to hauling activities. Developer shall show each planned
9 location of service and refueling areas on the SWPPP's site map. Changes to Developer's
10 pollution prevention practices that are related to construction phasing must also be shown on
11 the SWPPP.

12 Developer shall prevent pollution of streams, lakes, and reservoirs with fuels, oil, bitumen,
13 calcium chloride, fresh Portland cement, fresh Portland cement concrete, raw sewage, muddy
14 water, chemicals or other harmful materials. Developer shall not discharge any of these
15 materials into any channels leading to streams, lakes, or reservoirs. The SWPPP must include
16 the implementation of spill prevention and material management controls and practices to
17 prevent the release of pollutants into stormwater. The SWPPP must also provide storage
18 procedures for chemicals and construction materials, disposal procedures, cleanup procedures,
19 Developer's plans for handling such pollutants, and other pollution prevention measures as
20 required.

21 Developer shall locate machinery service and refueling areas away from streambeds or washes,
22 and in a manner which prevents discharges into streams or washes.

23 Developer shall dispose of waste materials from blasting, including explosives containers, offsite
24 in accordance with applicable federal regulations. Developer shall remove from the Site and
25 dispose of waste materials, such as used cans, oils, machine and equipment parts, paint,
26 hazardous materials, plastic and rubber parts, discarded metals, and building materials,
27 according to applicable State and federal regulations.

28 Where Developer's Work encroaches on a running or intermittent stream, Developer shall
29 construct and maintain barriers between the Work areas and the stream bed adequate to
30 prevent the discharge of any contaminants. The SWPPP must identify the location of streams
31 that may be affected and the specific types of barriers proposed for protecting these resources.

32 Unless otherwise approved in writing by ADOT, Developer shall not ford running streams with
33 construction equipment.

34 Developer shall not construct temporary bridges, unless authorized by permitting through the
35 applicable Governmental Entity with jurisdiction. Developer shall not operate equipment in
36 running streams.

37 Developer shall clear streams, lakes, and reservoirs of all falsework, piling, debris, or other
38 obstructions resulting from Developer's activities, inadvertently placed thereby or resulting from
39 construction operations, within 24 hours from the time the obstruction was first observed.

40 Developer shall include spill prevention, containment, and counter measures in the SWPPP if
41 the volume of fuel in a single container exceeds 660 gallons, or if the total fuel storage volume
42 at any one site exceeds 1,320 gallons.

43 In the event of a spill of a hazardous material, Developer shall modify the SWPPP as necessary
44 within 14 days of the discharge. Developer shall modify the SWPPP to include a description of
45 the release, the circumstances leading to the release, and the date of the release.

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1 **420.3.2.5 Inspections**

2 **420.3.2.5.1 General**

3 The Erosion Control Coordinator must inspect the Project with ADOT at least every 7 days, and
4 also within 24 hours after any storm event of 0.50 inches or more. The inspections must include
5 disturbed areas that have been temporarily stabilized, areas used for storage of materials,
6 locations where vehicles enter or exit the Site, and all of the erosion and sediment controls
7 included in the SWPPP. Developer shall monitor rainfall on the Site with a commercially
8 manufactured rain gauge accurate to within 0.10 inches of rain. Developer shall prepare Rainfall
9 Records that include daily rainfall data from the rain gauges. On a weekly basis, Developer shall
10 submit Rainfall Records to ADOT.

11 For each inspection, the Erosion Control Coordinator must complete and sign a Compliance
12 Evaluation Report as described in the permit. A sample Compliance Evaluation Report is
13 included in the RIDs. Developer shall retain copies of the completed reports at the Site in the
14 SWPPP file throughout the Construction Period. Following each inspection, Developer shall
15 submit a copy of the Compliance Evaluation Report to ADOT.

16 All inspections must be made jointly with ADOT.

17 **420.3.2.5.2 Adjustments**

18 When deficiencies are noted during scheduled inspections, Developer shall take immediate
19 steps to make the required corrections as soon as practical. Developer shall correct deficiencies
20 within 4 Business Days or by the next anticipated storm event, whichever is sooner. Developer
21 shall correct deficiencies noted between designated inspections, but not later than 4 Business
22 Days after observation.

23 Developer shall correct direct inflows of sediment into a watercourse by the end of the same day
24 or work shift in which the inflow was observed.

25 **420.3.2.6 Non-Compliance**

26 ADOT may reject the Erosion Control Coordinator if the conditions of the AZPDES *General*
27 *Permit* or the approved SWPPP are not being fulfilled. ADOT may reject the Erosion Control
28 Coordinator for failure to complete any of the following:

- 29 A. Should ADOT determine that the SWPPP is not being properly implemented, ADOT may
30 notify Developer in writing of such deficiencies. The Erosion Control Coordinator must
31 fully implement the requirements of the approved SWPPP within 3 Business Days.
- 32 B. Should any corrective measures required in Section CR 420.3.2.5 of the TPs not be
33 completed within the time periods specified therein, ADOT may notify Developer in
34 writing. Developer shall complete all required corrective measures within 2 Business
35 Days of such notification, except that Developer shall correct direct inflows of sediment
36 into a watercourse within 24 hours.
- 37 C. Should ADOT determine that routine maintenance of the Project's erosion control
38 measures is not being adequately performed, ADOT may notify Developer in writing.
39 Within 3 Business Days, the Erosion Control Coordinator must demonstrate to ADOT
40 that such steps have been taken to correct the problem.

41 In the event of the Erosion Control Coordinator's failure to comply with any of the above
42 requirements, ADOT may direct Developer to stop all affected Work and propose a new Erosion
43 Control Coordinator as soon as possible. However, Developer must maintain all erosion and
44 pollution control items specified in the SWPPP at all times. Developer shall not perform any

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1 additional Construction Work affected by the SWPPP until a new Erosion Control Coordinator
2 has been approved by ADOT.

3 **420.3.2.7 Record of Major Construction and Erosion Control Measures**

4 In addition to completing and signing the original Compliance Evaluation Report, Developer
5 shall record the dates of the following activities, including the erosion control measures
6 associated with these activities:

7 A. When major grading activities (including clearing and grubbing, excavation, and
8 embankment construction) occur in a particular area or portion of the site.

9 B. When construction activities cease in an area, temporarily or permanently.

10 C. When an area is stabilized, temporarily or permanently.

11 Developer shall note such information within 2 Business Days of the occurrence of any of the
12 listed activities, and shall include a copy of the report in the SWPPP. Within 3 days of
13 completion or amendment to the Compliance Evaluation Report, Developer shall submit the
14 amended Compliance Evaluation Report to ADOT.

15 **420.3.2.8 Notice of Termination**

16 Fifteen Business Days after final stabilization in accordance with ADEQ, Developer shall
17 complete and mail a Notice of Termination (NOT) for the Project to the address shown below.

18 Arizona Department of Environmental Quality
19 Surface Water Section/Stormwater & General Permits (5415A-1)
20 1110 W. Washington Street
21 Phoenix, Arizona 85007
22 or fax to 602 771-4528

23 The NOT submitted by Developer must include a certification statement which is signed and
24 dated by an authorized representative of Developer, as defined in Part VIII.J.2 of the AZPDES
25 *General Permit*, and include the name and title of that authorized representative.

26 Alternatively, Developer may submit the NOT electronically, through ADEQ's Smart NOI website
27 at <https://az.gov/app/smartnoi>. Concurrent with the submittal of the NOT to ADEQ, Developer
28 shall submit a copy of the NOT to ADOT.

29 When the approved SWPPP includes the use of Class II seeding as an erosion control
30 measure, Developer shall maintain seeded areas for 45 calendar days, as specified in the
31 special provisions, and approved by ADOT before Developer's NOT can be submitted. Seeding,
32 when used in the SWPPP as an erosion control measure, is not considered as part of any
33 Landscape Establishment Phase that may be included with the Project.

34 Developer shall prepare Water Quality Records that include the SWPPP (including inspection
35 forms) and all data used to complete the NOI and NOT. At Substantial Completion, Developer
36 shall submit the Water Quality Records to ADOT. Developer shall retain its own records for a
37 period of at least 3 years from the filing of Developer's NOT.

38 **420.3.3 Developer's Responsibility for Work**

39 Developer shall implement the requirements of the AZPDES for erosion control due to storm
40 water runoff during construction, as specified in Section CR 420.3.2 of the TPs.

41 Until Final Acceptance, Developer shall have the charge and care thereof and shall take every
42 precaution against injury or damage to any part thereof by the action of the elements, or from
43 any other cause, whether arising from the execution or from the nonexecution of the Work.

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1 Developer shall rebuild, repair, restore, and make good all injuries or damages to any portion of
2 the Work occasioned by any of the above causes before final acceptance.

3 In case of suspension of Work from any cause, Developer shall be responsible for the Project
4 and shall prevent, including taking all necessary precautions to prevent, damage to the Project
5 and provide for normal drainage. Developer shall also erect any necessary temporary
6 structures, signs, or other facilities. During such period of suspension of Work, Developer shall
7 properly and continuously maintain in an acceptable growing condition all living material in
8 newly established plantings, seedings and soddings, and shall protect new tree growth and
9 other important vegetative growth against injury.

10 **420.3.4 Stormwater Management Plan**

11 Developer shall develop and maintain a Stormwater Management Plan that is in compliance
12 with applicable Law and shall obtain all Governmental Approvals in connection therewith. The
13 Stormwater Management Plan must include provisions for control of sedimentation and erosion,
14 runoff, SWPPP, and water quality during the Construction Period and the Term. Specific
15 guidelines for stormwater management can be found in the ADOT *Erosion and Pollution Control*
16 *Manual*. At the same time as the first Initial Design Submittal, Developer shall submit a
17 Stormwater Management Plan to ADOT for approval.

18 **420.3.5 Prevention of Air and Noise Pollution**

19 Developer shall control, reduce, remove, and prevent air pollution in all its forms, including air
20 contaminants, in the performance of Developer's Work.

21 Developer shall comply with the applicable requirements of Arizona Revised Statutes Section
22 49-401 et seq. (Air Quality) and with the Arizona Administrative Code, Title 18, Chapter 2 (Air
23 Pollution Control).

24 Developer shall comply with all local sound control and noise level rules, regulations and
25 ordinances which apply to the Work.

26 Developer shall ensure that each internal combustion engine used for any purpose on the Work
27 or related to the Work is equipped with a muffler of a type recommended by the manufacturer.
28 Developer shall not operate any internal combustion engine without its muffler being in good
29 working condition.

30 Developer shall not burn trash, debris, plant material, wood, or any other waste materials.

31 **420.3.6 Source of Supply and Quality Requirements**

32 Unless otherwise specified in the Contract Documents, Developer shall be responsible for
33 furnishing all water required for the Work. Water obtained from sources within the Salt River or
34 Verde River watersheds and administered by Salt River Project (SRP), or obtained from Salt
35 River Valley Water Users Association (SRVWUA) delivery canals within the Phoenix
36 metropolitan areas, is subject to the following conditions:

37 A. For water obtained from rivers, streams, lakes, or other sources within the watershed,
38 Developer shall obtain a Construction Water Exchange Permit. Water obtained from
39 surface water sources or wells in close proximity to a river, stream, or lake located within
40 the watershed may also require a Construction Water Exchange Permit and, for such
41 water, Developer shall obtain any required permit.

42 B. For water obtained from SRVWUA canals, Developer shall contact SRP to determine the
43 most appropriate delivery method and associated permits and costs, and shall obtain

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1 such permits and pay such costs. As an example, a Permit for Operation of Mobile Tank
2 Trucks is required for water pumped into mobile water trucks.

3 Developer shall contact SRP at the address shown below to determine whether its anticipated
4 water sources is subject to SRP regulations and, if necessary, the appropriate requirements,
5 permits, and fees.

6 Salt River Project
7 Water Contract Accounting & Data Services SSW302
8 PO Box 52149
9 Phoenix, Arizona 85072-2149
10 (602) 236-2255
11 (602) 236-3313
12 Fax (602) 236-5082

13 Developer shall not obtain water from sources as specified herein until Developer has furnished
14 ADOT with a completely executed copy of the appropriate permits.

15 **420.3.7 Archaeological Features**

16 The attention of Developer is directed to Title 41, Article 4, Archaeological Discoveries, Sections
17 41-841, et seq., of the Arizona Revised Statutes, which make it a felony, punishable by a fine
18 and imprisonment, to investigate, explore, or excavate on State land, in or on prehistoric ruins,
19 ancient burial grounds, fossilized footprints, hieroglyphics, and all other archaeological features
20 of Arizona without permits from the Arizona State Museum.

21 Section 6(a) of the Federal Archaeological Resources Protection Act of 1979 specifies that no
22 person may excavate, remove, damage, or otherwise alter or deface any archaeological
23 resource located on public (Federal) lands or Indian lands unless such activity is pursuant to a
24 permit issued under Section 4 of the Act. Violations of this act are considered a felony and are
25 punishable by fine and imprisonment.

26 While, prior to construction, ADOT will endeavor to identify all cultural resources in the
27 Schematic ROW, previously unidentified archaeological materials could be found during the
28 construction of the Project. When archaeological, historical or paleontological features are
29 encountered or discovered during any activity related to the construction of the Project,
30 Developer shall stop Work immediately at that location and shall secure the preservation of
31 those features and notify ADOT.

32 ADOT will direct how to protect the features. Developer shall not resume Construction Work at
33 that Project Segment until Developer is so directed by ADOT.

34 **420.3.8 Historic Preservation**

35 The attention of Developer is directed to Title 41, Chapter 4.2, Historic Preservation, Section 41-
36 861 et seq., Arizona Revised Statutes, which makes it a felony to intentionally possess, sell or
37 transfer any human remain, funerary object or other artifact.

38 While, prior to construction, ADOT will endeavor to identify all items that require Historic
39 Preservation in the Schematic ROW, previously unidentified human remains, funerary objects,
40 or artifacts may be found during the construction of the Project. When human remains, funerary
41 objects or artifacts are encountered or discovered during any activity related to the construction
42 of the Project, Developer shall stop Work immediately at that location and shall secure the
43 preservation of those items and notify ADOT.

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1 ADOT will direct how to protect the items. Developer shall not resume Construction Work at that
2 Project Segment until Developer is so directed by ADOT.

3 **420.4 SUBMITTALS**

4 Table 420-2 reflects a nonexclusive list of Submittals identified in Section CR 420 of the TPs
5 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
6 determine and submit all Submittals as required by the Contract Documents, Governmental
7 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
8 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
9 specified in the Contract Documents, Developer shall submit the following to ADOT in the
10 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 420-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Draft SWPPP	3	2	1	Prior to ground disturbance activities, issuance of NTP 2, and submittal of the NOI	CR 420.3.2.2
SWPPP	5	2	1	After finalizing and signing the SWPPP	CR 420.3.2.2
Amended SWPPP	3	2	1	After amending the SWPPP	CR 420.3.2.2
Laboratory Testing Location Plan	3	2	1	At least 15 days before submittal of any samples for analysis	CR 420.3.2.2.2
NOI	3	2	1	After the SWPPP has been approved by ADOT and prior to submission to ADEQ	CR 420.3.2.3
NOI and Authorization Certificate	5	2	1	Prior to any ground disturbing activities	CR 420.3.2.3
Rainfall Records	5	2	1	On a weekly basis	CR 420.3.2.5.1
Compliance Evaluation Report	5	2	1	Following each inspection	CR 420.3.2.5.1
Amended Compliance Evaluation Report	5	2	1	Within 3 days of completion or amendment to the Compliance Evaluation Report	CR 420.3.2.7
Notice of Termination	3	2	1	Concurrent with the submittal of the NOT to ADEQ	CR 420.3.2.8
Water Quality Records	5	2	1	At Substantial Completion	CR 420.3.2.8
Stormwater Management Plan	3	2	1	At the same time as the first Initial Design Submittal	CR 420.3.4

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Table 420-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

1

2

End of Section

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1 **CR 425 PUBLIC INFORMATION**

2 **425.1 GENERAL REQUIREMENTS**

3 Developer shall perform all public information Work in compliance with the requirements of
4 Section CR 425 of the TPs. Section CR 425 of the TPs includes provisions for activities
5 occurring in the design phase.

6 **425.2 PUBLIC INVOLVEMENT PROGRAM**

7 Developer acknowledges and agrees that the residential and business characteristics of the
8 Project requires that Developer shall engage in a high degree of personal contact with property
9 owners and residents, which personal contact Developer shall make possible by a “real time”
10 public involvement program that must provide rapid responses to Public concerns. Developer
11 also acknowledges and agrees that an exceptional awareness of the importance of the Project’s
12 public involvement program and close coordination with ADOT is required of Developer to
13 ensure that the communications effort in support of the public involvement program is
14 considered to be effective as the Project advances.

15 Developer shall develop and implement a public involvement program for the Project that
16 includes extensive community outreach to the general public, Project stakeholders (e.g.,
17 adjacent neighborhoods, schools, and business owners), and Governmental Entities. Developer
18 shall design the public involvement program to:

- 19 A. Allow for two-way flow of information and successful implementation of the Project
- 20 B. Enable identification of community issues early in the Term, so that issues may be
21 addressed and/or mitigated
- 22 C. Reduce the probability of Project delays
- 23 D. Work closely with Project stakeholders to keep them apprised of the Project Schedule
24 and progress achieved to ensure that their issues and concerns are addressed by the
25 appropriate staff
- 26 E. Actively seek and respond to input from the public throughout the D&C Period
- 27 F. Prevent unnecessary disruptions for motorists and neighboring properties
- 28 G. Ensure access to and from residences, businesses, park-and-ride lots, and agricultural
29 fields
- 30 H. Ensure safe movement of construction equipment, personnel, and materials to and from
31 work zones, in a manner least disruptive to others
- 32 I. Minimize noise and dust pollution
- 33 J. Avoid encroachment on private properties adjacent to the highway corridor
- 34 K. Maximize effectiveness of traffic control schemes
- 35 L. Coordinate with other projects that might occur within the area(s) adjacent to the Project
36 concurrent with this Project

37 Developer shall provide task-specific Project information that must contribute to early
38 identification of community relations and information issues that must be addressed by the
39 public involvement program, under the direction of ADOT.

40 Developer may, at ADOT’s discretion, accompany ADOT and other designated ADOT
41 representative(s) to preconstruction briefings to be held with primary stakeholders (e.g.,
42 neighborhood groups, business owners, property managers, government officials, media, etc.),
43 as required following Contract execution. In conjunction with ADOT, Developer shall become

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- 1 familiar with Project customers and allow these customers to become familiar with Developer,
- 2 thus allowing each an opportunity to gain a greater mutual understanding of the challenges to
- 3 be faced by each other throughout the Term.
- 4 Allocation of public involvement program responsibilities between ADOT and Developer are
- 5 reflected in Table 425-1. All documents are to be made available to FHWA for information and
- 6 review as part of ADOT's partnership with FHWA.

Table 425-1 Public Involvement Program Responsibility Matrix		
Activity	ADOT	Developer
Community events	Review	Develop master list of potential events, coordinate and manage participation
Documentation, reporting, and tracking	Review, determine strategy for final resolution; review and approve Construction Operations Survey	Create Stakeholder Inquiry Form and Construction Operations Survey and associated processes for implementation
Emergency communication	Review and approve	Develop crisis communications plan as part of the PIP
GRIC Community	Lead and provide direction to Developer	Create Project flyers, brochures, notification material, PowerPoint presentations, maps, and other collateral as needed to implement the PIP
Hotline	Maintain phone account	Setup, manage, monitor, log, respond, and document all calls
Media relations	Lead and provide direction to Developer	Establish media tour procedures; log and forward all media inquiries to ADOT; provide information, materials, and staff
Meetings	Determine level of Developer assistance and participation	Manage notification, conduct, and documentation of meetings
Notification	Review and approve	Manage notification process, including creating collateral material
Project collateral	Review and approve	Create Project fliers, brochures, notification material, PowerPoint presentations, maps, and other collateral as needed to implement the PIP consistent with the South Mountain Freeway Summary Report: Public Involvement for the Draft Environmental Impact Statement (DEIS) provided in the RIDs
Public interaction	Provide guiding protocols as appropriate	Develop and document processes for developing and maintaining stakeholder relationships and for responding to and resolving public inquiries, comments, or complaints
Public Involvement Plan (PIP)	Review and approve	Prepare, implement, and revise as needed
Speakers bureau	Review and approve	Develop list of speakers, coordinate logistics, and provide support/materials
Stakeholder database	Provide existing relevant database(s) and/or database template instructions	Develop and maintain, including regular updates

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Table 425-1 Public Involvement Program Responsibility Matrix		
Activity	ADOT	Developer
Title VI	Review and approve	Develop activities/techniques as part of the PIP to meet needs of all populations, including Title VI populations
Website	Host the site; provide templates/specifications; manage all information updates	Create content, including text and graphics; and provide timely updates

1 **425.2.1 Staffing**

2 Developer shall provide a Public Relations Officer and additional public information staff as
3 required to work in conjunction with ADOT to implement the public involvement program.
4 Developer shall ensure that its staff provides day-to-day identification of community relations
5 and public information issues and needs, including response to customer inquiries, rapid
6 resolution of job-site customer-related conflicts, and handling of complaints from the public.
7 Developer shall coordinate appropriate responses to these issues and needs in concert with
8 ADOT.

9 Developer shall coordinate and notify property owners, businesses, schools, residents, and
10 Governmental Entities regarding disruptions attributable to the Work scheduled in their
11 respective areas.

12 **425.2.2 Public Involvement Plan**

13 **425.2.2.1 Goals and Objectives**

14 Developer shall create a Public Involvement Plan (PIP) that addresses the following goals and
15 objectives:

- 16 A. Develop public understanding of the Project.
- 17 B. Provide opportunities for early and continuing public participation in the decision-making
18 process, including during the design phase, as appropriate, and encourage participation.
- 19 C. Develop and maintain accountability, credibility, and accessibility of ADOT and
20 Developer.
- 21 D. Obtain input from a broad range of community representatives, such as business
22 owners, residents, and community organizations.
- 23 E. Provide support to ADOT in its efforts to inform the media and maximize potential for
24 informed media coverage.

25 **425.2.2.2 Guiding Principles**

26 Developer shall coordinate with ADOT in developing a PIP to implement the public involvement
27 program built on the following principles:

- 28 A. Public involvement activities must be directly linked to Project milestones, technical
29 activities, and, as appropriate, decision making.
- 30 B. Adequate opportunities for public involvement and time for public review and comment
31 must be made available.

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- 1 C. Reasonable access to technical and policy information must be available to the public
2 throughout the design and construction of the Project.
- 3 D. Demonstration of explicit consideration and response to public input must be provided
4 whenever possible.
- 5 E. Solicitation and consideration of the needs of those traditionally underserved by existing
6 transportation systems must be obtained to ensure that their involvement in decision-
7 making prevents disproportionately high and adverse impacts on these stakeholders and
8 to ensure that they receive a proportionate share of benefits. Traditionally underserved
9 populations include low-income and minority households, ADA populations, Title VI
10 protected populations, and Native Americans.
- 11 F. Quarterly reviews of the effectiveness of the public involvement program must be
12 conducted to ensure that full and open access is being provided to all who are interested
13 or who could be interested in the Project.
- 14 G. Coordination with Governmental Entities and other stakeholders, such as business
15 owners, residents, and community organizations.
- 16 H. Provision of timely information to Government Entities and other stakeholders, including
17 those representing other local jurisdiction concerns.

18 Prior to issuance of NTP 2, Developer shall submit the PIP for approval in ADOT's good faith
19 discretion.

20 **425.2.2.3 Description of Activities**

21 The PIP must include full details and descriptions for accomplishing the goals, objectives, and
22 activities described in Section CR 425 of the TPs, as follows:

- 23 A. Activities and processes for preparing and distributing public information, including:
 - 24 1. Notice of traffic, utility, or other disruption, including timing and method of such
25 notification in accordance with the Contract Documents.
 - 26 2. General construction progress updates.
 - 27 3. Process for contributing information as needed to the Project website updates and
28 the development of public information and marketing communications.
 - 29 4. Collateral materials (e.g., Project newsletter, fact sheet, and media briefing kit).
 - 30 5. Public and stakeholder meetings, including timing and method of meeting
31 notification.
- 32 B. Schedule of activities (e.g., website updates, collateral production, public meetings,
33 summary reports, and public comment/contact and response logs).
- 34 C. Identification of and participation in community activities such as community and
35 neighborhood celebrations and fairs, business organization events, and homeowners'
36 association meetings.
- 37 D. Creation and management of a Project speakers bureau.
- 38 E. Project hotline management and maintenance.
- 39 F. Strategies and techniques for addressing the communication needs of all populations,
40 including Title VI populations, members of the disabled community, and culturally
41 diverse populations.
- 42 G. Media relations procedures.
- 43 H. Crisis communications plan.

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- 1 I. Process for developing and maintaining a stakeholder database, using ADOT's existing
- 2 Loop 202 South Mountain Freeway stakeholder database as a starting point.
- 3 J. Procedures for logging, responding to, and documenting stakeholder and public
- 4 comment, contact, and inquiry.

5 **425.2.3 Roles and Responsibilities**

6 **425.2.3.1.1 Meetings**

7 Developer shall attend meetings as described in the PIP, including construction progress
8 meetings as needed to inform the community of its progress and to entertain comments and
9 address concerns from the community. These meetings must be attended by the Public
10 Relations Officer and/or other Developer public involvement staff as deemed appropriate by
11 ADOT.

12 Developer shall assist ADOT in planning, coordinating details of, and participating in Project
13 public involvement kickoff meetings with ADOT and property owners and tenants in location(s)
14 within 5 miles of the Project that are selected to maximize convenience for potential attendees.
15 At those meetings, Developer shall address community concerns and provide information on its
16 construction approach and emergency plan.

17 Developer, in coordination with ADOT, shall ensure that the subjects of community relations and
18 community impact from construction operations are included on the agenda of each
19 construction progress meeting.

20 Developer shall participate in any other Project-related meetings that may be called as needed
21 at the direction of and in coordination with ADOT.

22 Developer shall provide ADOT access to all Project planning and scheduling meetings and any
23 meetings associated with the development of traffic control planning by Developer.

24 **425.2.3.1.2 Public Inquiries**

25 ADOT is primarily responsible for coordinating the resolution of complaints from the property
26 owners and tenants. Developer shall process complaints and provide logs or other notification
27 on a regular basis, as defined in the PIP.

28 Developer shall setup and manage a new Project telephone hotline. Subject to ADOT review
29 and approval, Developer shall assign appropriate staffing to answer hotline calls Monday
30 through Friday during regular business hours, develop appropriate messages and response
31 protocols for after-hours callers, and log, respond to, and document calls in accordance with the
32 PIP.

33 **425.2.3.1.3 Media Relations**

34 Developer shall not speak to the media about the Project without prior authorization from ADOT
35 and shall direct all questions from the media to ADOT. ADOT is primarily responsible for
36 interfacing with the media and the general public; however, Developer shall provide information,
37 materials, Public Release Notification(s), and/or a designated representative to be available for
38 media interviews as determined by ADOT. At least 5 Business Days prior to a scheduled
39 notification release, Developer shall submit Public Release Notifications to ADOT.

40 In the PIP, Developer shall establish procedures and processes to facilitate media tours of the
41 Site. Developer shall ensure that media on the Site are accompanied by ADOT at all times.

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1 **425.2.3.1.4 Emergency Communication and Management**

2 Developer shall create a crisis communications plan that identifies an individual and an alternate
3 who must be available and can be contacted 24/7/365 when an Emergency is identified by
4 ADOT. At all times, Developer shall make Emergency and alternate telephone numbers
5 available to the public. The crisis communications plan must include the following commitments:

- 6 A. In the event of an Emergency, Developer shall follow the crisis communications plan
7 prepared as part of the PIP and in accordance with procedures established by ADOT.
- 8 B. In the event of an Emergency, the Developer's designated contact person must contact
9 the key individuals (as identified in the crisis communications plan approved by ADOT)
10 within a half hour.
- 11 C. Developer shall prepare a written report documenting the incident and submit it to
12 person(s) identified in the crisis communications plan within 24 hours of the incident. The
13 report shall document the time, location, participants, and cause of the incident, as well
14 as the Developer's action (or intended action) to resolve the incident.

15 **425.2.3.1.5 Notification**

16 Developer shall keep ADOT informed of Construction Work and traffic changes on a daily basis
17 to assist the program for community awareness and to avoid major congestion or other site-
18 specific conflicts. Developer shall:

- 19 A. Provide a minimum 3 Business Day advance notice to ADOT of any change in
20 construction activities or traffic changes.
- 21 B. Provide information as requested for weekly construction status reports and traffic
22 control reports in coordination with ADOT. Developer provided information must discuss
23 the next 7 days of traffic control schemes, locations and types of construction, potential
24 impacts on traffic, and the date and time for such impacts. Developer provided
25 information must form the basis for weekly email and fax newsletters to be shared with
26 the public.
- 27 C. Provide day-to-day coordination and notification to affected property owners,
28 businesses, and residents regarding disruptions attributable to the Work scheduled in
29 their areas. Developer shall establish the timing of notifications in the PIP.
- 30 D. Provide advance notice to the public using portable changeable message signs (PCMS)
31 in the following situations with the indicated minimum duration of advance notice shown:
32 1. Full street closure – Minimum of 7 days advance notice to the public.
33 2. Peak hour reduction in through lanes on arterial and/or collector streets – Minimum
34 of 7 days advance notice to the public.
35 3. Left-turn prohibitions at signalized intersections of arterial and/or collector streets –
36 Minimum of 3 days advance notice to the public.
37 Advance notice using PCMS may be required in other situations as determined solely by
38 ADOT.
39 Developer shall place the PCMS at adjoining arterial and collector roadways. Developer
40 shall remove the PCMS no less than 48 hours after the indicated traffic restrictions have
41 commenced, unless otherwise determined by ADOT.
42 Use of static signs for advance notice may be feasible in limited situations. Use of static
43 signs must be approved by ADOT in advance pursuant to the Traffic Control Plan (TCP).
- 44 E. Provide information as required to ADOT; however, ADOT will respond to news media
45 inquiries and will determine news media assignments.

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1 **425.2.3.1.6 Reporting and Tracking**

2 Developer shall track all stakeholder-initiated communications, coordinate a response with
3 ADOT, provide a record of response times to such communications, and conduct a review of
4 actions taken in response, all as described in and consistent with the PIP. ADOT will conduct
5 periodic surveys of customers to determine overall satisfaction ratings with the performance of
6 the Work and the effectiveness of its public information and community relations endeavors.
7 Developer shall use two tracking mechanisms, as follows:

- 8 A. Developer shall prepare and submit to ADOT for review and comment a “Stakeholder
9 Inquiry Form” to record all community member-initiated inquiries. Developer shall record
10 the nature of the inquiry and recommend a response. Within 5 Business Days of receipt
11 of an inquiry from a community member, Developer shall submit Stakeholder Inquiry
12 Forms to ADOT. At the end of each month, Developer shall provide a monthly report
13 outlining the number and nature of community member-initiated inquiries and a summary
14 of those inquiries.
- 15 B. Developer shall develop and submit a quarterly “Construction Operations Survey” to
16 ADOT to be issued by Developer on behalf of ADOT to measure customer satisfaction
17 with the Project regarding traffic control, dust control, noise control, access interference,
18 encroachments onto private property, advance warnings of potential construction
19 impacts on daily routines, and the reliability of information emanating from the Project.
20 Developer shall disseminate surveys in areas affected by Construction Work, with the
21 Project locations to be surveyed to be determined in concert with ADOT and based on
22 magnitude of Work (i.e., where magnitude of Work has the greatest potential for adverse
23 impacts to properties or the traveling public). Developer shall poll residents, schools,
24 businesses and motorists affected by construction using a methodology agreed to by
25 ADOT in the PIP.

26 **425.3 SUBMITTALS**

27 Table 425-2 reflects a nonexclusive list of Submittals identified in Section CR 425 of the TPs
28 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
29 determine and submit all Submittals as required by the Contract Documents, Governmental
30 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
31 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
32 specified in the Contract Documents, Developer shall submit the following to ADOT in the
33 formats described in Section GP 110.10.2.1.1 of the TPs:

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Table 425-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Public Involvement Plan	2	2	1	Prior to issuance of NTP 2	CR 425.2.2
Public Release Notification(s)	5	2	1	Within 5 Business Days of schedule notification release	CR 425.2.3.1.3
Stakeholder Inquiry Form	5	2	1	Within 5 Business Days of receipt of an inquiry from a community member	CR 425.2.3.1.6
Construction Operations Survey	5	2	1	Quarterly	CR 425.2.3.1.6
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1
2

End of Section

ADDENDUM #2

1 **CR 430 UTILITIES**

2 **430.1 GENERAL REQUIREMENTS**

3 Developer shall perform all Utility Construction Work in compliance with the requirements of
4 Section CR 430 of the TPs.

5 **430.2 ADMINISTRATIVE REQUIREMENTS**

6 **430.2.1 Standards**

7 Developer shall perform all Utility Construction Work in accordance with the standards,
8 manuals, and guidelines listed in Table 430-1.

Table 430-1 Standards		
No.	Agency	Name
1	ADOT	Guideline for Accommodating Utilities on Highway Rights-of-Way
2	ADOT	Encroachment Permit (http://azdot.gov/business/permits/encroachment-permits)
3	Varies	Utility Company Standards

9 **430.2.2 Sewage Discharge Prevention Plan**

10 Developer shall prepare a Sewage Discharge Prevention Plan that describes the Construction
11 Work that may impact active sanitary sewer lines and the methods Developer plan to prevent
12 breakage and spills of such sanitary sewer lines. Construction Work that may impact an active
13 sanitary sewer lines includes any of the following:

- 14 A. Any Work that interrupts, diverts, relocate, plug, or abandon a sewer line or service
15 connection, or brace, or tie into a sewer line or service connection.
- 16 B. Any Work crossing beneath the pipe, at any angle, regardless of vertical separation.
- 17 C. Any Work crossing over the pipe, at any angle, within 2 feet of the top of pipe.
- 18 D. Work located parallel to the pipe within the following areas:
 - 19 1. For the area from the bottom of the pipe to 2 feet above the top of the pipe, any
20 Work within 2 feet horizontally of the pipe wall.
 - 21 2. For the area below the bottom of the pipe, any Work located below an imaginary
22 line beginning at the pipe springline and progressing downward at a slope of 1.5
23 feet vertically to 1.0 feet horizontally.

24 The Sewage Discharge Prevention Plan must include the following for each location where
25 Construction Work activity involves an active sanitary sewer line:

- 26 A. Description of the proposed Work in general, including the reasons for the work, scope,
27 objectives, locations, dates, and estimated times the Work will be conducted. Include
28 project Plan sheets detailing the proposed Work, and indicating the peak flow rates of
29 active sewer lines, determined as specified.

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- 1 B. Determination for all existing sanitary sewer pipes whether the lines are active or
2 abandoned and the peak flow rates of lines in service, as provided by the owner of the
3 utility.
- 4 C. List the personnel (crew foreman, superintendent, and manager) that are proposed to
5 perform the Work (include phone numbers).
- 6 D. Description of the Work in step-by-step detail for each location, including excavation
7 plans and how both the new and existing structures and utilities will be identified and
8 protected.
- 9 E. Detailed listing of any hardware, fittings, pipe plugs, flex couplings, tools, and materials
10 needed to accomplish the Work, and note the status of these items (on-hand, to be
11 fabricated, on order with expected delivery date, etc.). Include any manufacturer's
12 specifications or recommendations, especially for any pipe plugs, sewer line fittings, and
13 patching materials.
- 14 F. List all major equipment to be used to perform the Work. Include in this item any pumps
15 that will be used to perform the Work and the rated capacity of the pumps at the
16 anticipated suction head.
- 17 G. List all equipment to be used in the event of an unplanned release and specify how the
18 equipment will be used. The locations of standby pumps shall be specified in this item.
19 The plan shall indicate that all standby equipment to be used in the event of an
20 unplanned discharge can be delivered to the site and put into service within two hours of
21 identification of any unplanned flow.
- 22 H. List the safety equipment to be used, and describe any unique safety procedures. Cite
23 the applicable OSHA standards covering the work.
- 24 I. Describe any contingency plans Developer will implement in the event of unplanned
25 releases and/or damage to existing facilities. List all personnel and subcontractors that
26 will be responsible for responding to unplanned releases or damaged lines. Provide
27 qualifications for all such personnel and subcontractors, including education, formal
28 training, and relevant experience.
- 29 J. Description of how the public will be protected during the Work, and include or cite any
30 applicable traffic control plans.
- 31 K. Description how temporary plugs or flow control devices will be secured, monitored, and
32 removed.

33 The Sewage Discharge Prevention Plan must include any diagrams or sketches for clarity. At
34 least 15 Business Days prior to any Work involving an active sanitary sewer line, Developer
35 shall submit the Sewage Discharge Prevention Plan to ADOT for review and comment.
36 Developer shall submit the Sewage Discharge Prevention Plan to the associated Utility Owner
37 concurrent with the Submittal to ADOT.

38 **430.3 CONSTRUCTION REQUIREMENTS**

39 **430.3.1 Utility Adjustment Work by Developer**

40 Developer shall perform the Utility Adjustment Work in accordance with the requirements of the
41 applicable Utility Company and the ADOT *Guideline for Accommodating Utilities on Highway*
42 *Rights-of-Way*. All materials for Utility Adjustment Work must comply with Buy America.
43 Developer shall perform all Utility Adjustment Work and shall protect and work around existing
44 Utilities so as to avoid damage to all Utilities. Until issuance of the Maintenance NTP, Developer
45 shall be the Arizona 811 field locator and shall perform all requirements as prescribed in A.R.S.

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1 §§ 40-360.21 through 40-360.29 for all underground facilities that Developer installs for the
2 Project.

3 Developer shall perform all adjustments to city- or county-owned water, sanitary sewer, and
4 storm drain facilities, and shall obtain approval of the Adjustments from the appropriate
5 Governmental Entities. Unless otherwise agreed to in writing between Developer and the Utility
6 Company, all other Utilities in conflict with the Project must be constructed by the appropriate
7 Utility Company.

8 Developer shall perform well relocation and abandonment Work in accordance with the
9 requirements of the Arizona Department of Water Resources and Section 5.8 of the Agreement.

10 **430.3.1.1 Inspection**

11 Developer acknowledges and agrees that each Utility Company, through its representative, has
12 the right to inspect the Construction Work performed on its Utilities by Developer to ensure the
13 location, alignment, and grade are in accordance with the approved Utility plans and the Utility
14 Company's requirements. Developer shall provide access to the Site to allow for the Utility
15 Company's inspection. Developer shall leave the installation exposed for inspection by the
16 Utility Company or expose the Utility or Utilities for inspection by the Utility Company if the
17 installation is covered prior to the Utility Company's inspection and approval. Developer shall
18 contact the respective Utility Company at least 5 Business Days in advance to request an
19 inspection of installed facilities.

20 **430.3.1.2 Approval**

21 Developer shall obtain a written acceptance of the Utility Adjustment Work from the Utility
22 Company directed to ADOT. If the Utility Owner is unwilling to provide a written acceptance,
23 Developer shall prepare a Utility Work Acceptance Request that describes the Utility Adjustment
24 Work and the request to the Utility Company to accept the Utility Adjustment Work. Developer
25 shall submit a copy of the Utility Work Acceptance Request to ADOT as a notification that the
26 Utility Work has been completed, but the Utility Company is unwilling to provide a written
27 acceptance. Developer shall schedule a meeting with the Utility Company and ADOT to resolve
28 the matter. Notwithstanding Developer's submittal of a Utility Work Acceptance Request, if the
29 Utility Company is not satisfied with the Work, Developer shall remain responsible for the
30 reconstruction portions or all of the Utility Work.

31 **430.3.1.3 Access Responsibilities during Construction**

32 Developer shall take all appropriate measures to make certain that all Utilities remain fully
33 operational during all phases of Construction Work, including coordinating with Utility
34 Companies to develop a plan so Utility Companies may access their facilities for maintenance
35 and repair during Construction Period. Developer shall construct any replacement access roads
36 prior to disruption of the existing access roads.

37 **430.3.1.4 Utility Record Drawings**

38 Developer shall prepare Utility Record Drawings for Utility Adjustments performed by Developer.
39 Developer shall prepare Utility Record Drawings in the format required by each Utility Company.
40 The Utility Record Drawings must show the location of, and label as such, all abandoned
41 Utilities. The Utility Record Drawings must indicate the installation horizontal and vertical control
42 of all facilities installed, with size and materials noted. Developer shall submit Utility Record
43 Drawings to the associated Utility Company as required by the Utility Company. Developer shall
44 request a Letter of Acceptance of the Utility Adjustment Work from the Utility Company after
45 submittal of the Utility Record Drawings to the Utility Company. Within 10 Business Days of

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1 receipt, Developer shall submit the original Letter of Acceptance of the Utility Adjustment Work
2 from the Utility Owner to ADOT. Developer shall incorporate the Utility Record Drawings into the
3 Project Record Drawings.

4 **430.3.2 Providing Magnetic Detection for Underground Facilities**

5 All new underground utility, drainage facilities, and ITS empty conduits, including service
6 connections, placed within Project ROW must be magnetically detectable with standard locating
7 instruments. Developer shall place continuous detectable tracer for all the underground facilities
8 that lack a continuous and integral metal component capable of detection by standard locating
9 instruments, in accordance with Section 104.15 of the ADOT *Standard Specifications for Road
10 and Bridge Construction*.

11 **430.3.3 Utility Adjustment Work by Utility Companies**

12 Developer shall coordinate with Utility Companies to develop a plan so Utility Companies may
13 access the Site to perform Utility Adjustments. Developer shall inspect all Utility Work performed
14 by the Utility Companies and/or their contractors and subcontractors within the Site to verify
15 compliance with the Contract Documents. Developer shall inspect and approve the construction
16 performed by each Utility Company to verify that the construction complies with the
17 requirements of the Contract Documents and the approved plans and permits for such
18 construction. Developer shall request and receive, or alternatively create, Utility Record
19 Drawings that include horizontal and vertical control with size and materials noted for the Utility
20 Adjustments performed by the Utility Companies. Developer shall provide a written Developer
21 construction inspection approval letter to the Utility Company after Utility Record Drawings have
22 been received from the Utility Company. Developer shall prepare a Utility Adjustment Package
23 that includes Developer's construction inspection approval and Utility Record Drawings. Within
24 10 Business Days of receipt of the written Developer construction inspection approval letter
25 from the Utility Company, Developer shall submit a Utility Adjustment Package to ADOT.
26 Developer shall immediately notify ADOT in writing regarding any noncompliance.

27 **430.3.4 Utility Abandonment**

28 Developer shall perform abandonment of Utilities within the Project ROW in accordance with the
29 ADOT *Guideline for Accommodating Utilities on Highway Rights-of-Way*.

30 **430.4 SUBMITTALS**

31 Table 430-2 reflects a nonexclusive list of Submittals identified in Section CR 430 of the TPs
32 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
33 determine and submit all Submittals as required by the Contract Documents, Governmental
34 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
35 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
36 specified in the Contract Documents, Developer shall submit the following to ADOT in the
37 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 430-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Sewage Discharge Prevention Plan	4	2	1	At least 15 Business Days prior to any Work involving an active sanitary sewer line	CR 430.2.2

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Table 430-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Utility Work Acceptance Request	5	1	1	If the Utility Owner is unwilling to provide a written approval	CR 430.3.1.2
Letter of Acceptance	5	1	1	Within 10 Business Days of receipt	CR 430.3.1.4
Utility Adjustment Package	5	1	1	Within 10 Business Days of receipt	CR 430.3.3
<p>*Levels of Review</p> <ol style="list-style-type: none"> 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>) 					

1

2

End of Section

ADDENDUM #2

1 **CR 436 RAILROAD**

2 **436.1 GENERAL REQUIREMENTS**

3 Developer shall perform all Construction Work impacting the railroad in compliance with the
4 requirements of Section CR 436 of the TPs.

5 **436.1.1 Existing Railroad Crossings**

6 The Project interfaces with the railroad corridor owned and operated by UPRR. There is an
7 existing railroad at-grade crossing of the UPRR within the Project, which has a specific USDOT
8 number as reflected in Table 436-1.

Table 436-1 Existing Railroad Crossing Locations		
Railroad Crossing Locations	USDOT Crossing No.	Railroad MP
59th Avenue	741811U	899.69

9 **436.2 ADMINISTRATIVE REQUIREMENTS**

10 **436.2.1 Standards**

11 Developer shall perform all construction Work impacting the railroad in accordance with the
12 standards, manuals, and guidelines listed in Table 436-2.

Table 436-2 Standards		
No.	Agency	Name
1	BNSF/UPRR	Guidelines for Railroad Grade Separation Projects
2	AREMA	Manual for Railway Engineering

13 Developer shall perform the construction Work impacting the railroad in accordance with the 23
14 CFR 646, UPRR Construction and Maintenance Agreements, and Arizona Corporation
15 Commission (ACC) authorization.

16 **436.2.2 Railroad Scope**

17 Developer's construction and coordination related railroad Work includes at least the following
18 activities:

- 19 A. Obtaining and complying with all applicable construction specifications and requirements
20 for each Work location that is on or adjacent to UPRR right-of-way.
- 21 B. Complying with the requirements of the UPRR Construction and Maintenance
22 Agreements.
- 23 C. Arranging for and obtaining all temporary rights-of-entry and access onto railroad
24 property, and comply with all railroad requirements for access, entry, and safety training
25 for all personnel involved.

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1 D. Identifying and coordinating with UPRR for railroad flagging operations, and pay for
2 costs of flagging as set forth in Section 5.11 of the Agreement.

3 E. Complying with and performing roadway worker training courses for all personnel that
4 may enter UPRR right-of-way.

5 F. Coordinating with UPRR during construction activities within UPRR right-of-way.

6 Developer shall ensure that all railroad track Work, all railroad signal Work, removal Work, and
7 any Work on UPRR-owned facilities impacted by the Project are performed by UPRR.

8 **436.2.3 UPRR Requirements**

9 Developer shall obtain a UPRR temporary construction license to construct the improvements at
10 each crossing location within UPRR right-of-way. Developer shall arrange for UPRR to provide
11 flagging services necessary for the safety of UPRR's property and the operation of UPRR's
12 trains during all Project-related activities which occur within UPRR right-of-way. Developer shall
13 ensure that the initial UPRR contact is the Manager of Industrial and Public Projects. As part of
14 obtaining the necessary rights of entry and licenses, Developer shall arrange for UPRR to
15 provide a contract project coordinator to serve as the UPRR contact.

16 **436.2.4 UPRR Agreements**

17 Developer shall comply with the requirements of all executed UPRR Construction and
18 Maintenance Agreements in connection with the performance of the Work on proposed railroad
19 crossings. Standard language and requirements of a UPRR Construction and Maintenance
20 Agreement is included in the example agreement included in the RIDs. Each final executed
21 UPRR Construction and Maintenance Agreement language may differ, from the example
22 provided in the RIDs. Developer's rights and responsibilities regarding UPRR Construction and
23 Maintenance Agreements and ACC approval are included in Section 5.11.2 of the Agreement.

24 Prior to entering the UPRR right-of-way, Developer shall obtain railroad *Right-of-Entry*
25 *Agreements* with UPRR and shall coordinate entry directly with UPRR. Additionally, Developer
26 shall obtain any other permits and approvals necessary to perform Work in UPRR right-of-way.

27 **436.3 CONSTRUCTION REQUIREMENTS**

28 **436.3.1 Railroad Operations**

29 Developer shall coordinate and schedule with UPRR all activities that affect the railroad.
30 Developer shall coordinate and schedule all Work within the UPRR right-of-way to occur within
31 the time gaps between trains.

32 Prior to performing any Work within UPRR right-of-way, Developer shall execute Exhibit C and
33 C-1 of the "Agreement between UPRR and the Contractor," which is attached to each executed
34 UPRR Construction and Maintenance Agreements between ADOT and UPRR.

35 **436.3.2 Railroad Flagging**

36 Developer shall determine the number of flagging days required and submit a request to UPRR
37 for any flagging Work. Developer shall be responsible for any schedule impacts and costs
38 associated with flagging required for the Project, and such flagging Work must be performed by
39 UPRR flaggers in accordance with the executed UPRR Construction and Maintenance
40 Agreements.

41 Developer shall not commence the Work or permit the Work to be commenced until Developer
42 receives, in writing, assurance from UPRR's designated representative that arrangements have

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1 been made for flagging service, as may be necessary, and receives permission from UPRR's
2 designated representative to proceed with the Work.

436.3.3 Operational Safety

4 Developer shall prove successful completion of roadway worker training courses by all
5 personnel entering UPRR right-of-way. Developer shall ensure that all personnel working within
6 UPRR right-of-way comply with roadway worker training courses requirements and the railroad
7 requirements regarding personal protective equipment (PPE) and Work within UPRR right-of-
8 way.

9

10

End of Section

ADDENDUM #2

1 **CR 440 ROADWAY**

2 **440.1 GENERAL REQUIREMENTS**

3 Developer shall perform all roadway Construction Work in compliance with the requirements of
4 Section CR 440 of the TPs.

5 **440.2 ADMINISTRATIVE REQUIREMENTS**

6 *Intentionally left blank*

7 **440.3 CONSTRUCTION REQUIREMENTS**

8 Prior to installation, Developer shall submit Barrier, End Treatment, and Crash Cushion
9 Certifications to confirm that the proposed barriers, barrier end treatments, and crash cushions
10 comply with the requirements of NCHRP Report 350, *Recommended Procedures for the Safety*
11 *Performance Evaluation of Highway Features*, or AASHTO *Manual for Assessing Safety*
12 *Hardware (MASH)* to ADOT for review and comment. Developer shall not install barriers, barrier
13 end treatments, or crash cushions prior to ADOT approval of the certifications.

14 **440.4 SUBMITTALS**

15 Table 440-1 reflects a nonexclusive list of Submittals identified in Section CR 440 of the TPs
16 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
17 determine and submit all Submittals as required by the Contract Documents, Governmental
18 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
19 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
20 specified in the Contract Documents, Developer shall submit the following to ADOT in the
21 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 440-1 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Barrier, End Treatment, and Crash Cushion Certifications	4	2	1	Prior to installation	CR 440.3
*Levels of Review					
1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)					
2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)					
3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)					
4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)					
5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

22

23

End of Section

ADDENDUM #2

1 **CR 445 DRAINAGE**

2 **445.1 GENERAL REQUIREMENTS**

3 Developer shall perform all drainage Construction Work in compliance with the requirements of
4 Section CR 430 of the TPs.

5 **445.1.1 Providing Magnetic Detection for Underground Facilities**

6 All new drainage facilities placed within Project ROW must be magnetically detectable and
7 comply with the requirements specified in Section CR 430.3.2 of the TPs.

8

9

End of Section

ADDENDUM #2

1 **CR 450 AESTHETICS AND LANDSCAPING**

2 **450.1 GENERAL REQUIREMENTS**

3 Developer shall perform all aesthetics and landscaping Construction Work in compliance with
4 the requirements of Section CR 450 of the TPs.

5 **450.2 ADMINISTRATIVE REQUIREMENTS**

6 **450.2.1 Standards**

7 Developer shall perform all aesthetics and landscaping Construction Work in accordance with
8 the standards, manuals, and guidelines listed in Table 450-1.

Table 450-1 Standards		
No.	Agency	Title
1	Arizona Nursery Association	Container Grown Tree Guide
2	American Nursery and Landscape Association	Z60 American Standard for Nursery Stock

9 **450.2.2 Meetings**

10 **450.2.2.1 Preconstruction Coordination Meeting**

11 Developer shall conduct an aesthetics and landscaping preconstruction coordination meeting
12 prior to constructing any aesthetics and landscape elements for the Project. The aesthetics and
13 landscaping construction coordination meeting must include all personnel involved in the design
14 and construction of the aesthetics and landscaping for the Project.

15 **450.2.2.2 Technical Work Group Meeting**

16 Unless otherwise directed by ADOT, Developer shall conduct aesthetics and landscaping TWG
17 meetings every other week during the aesthetics and landscaping Construction Work for any
18 Project segment. The purpose of the aesthetics and landscaping TWG meetings during
19 construction is to review and refine Developer's aesthetics and landscaping construction shop
20 drawings and working drawings. Developer may combine construction aesthetics and
21 landscaping TWG meetings with design aesthetics and landscaping TWG meetings.

22 **450.3 CONSTRUCTION REQUIREMENTS**

23 **450.3.1 Aesthetics**

24 **450.3.1.1 Mockups**

25 Developer shall prepare full-size Mockups with cement finish and paint colors of each Aesthetic
26 Area rusticated elements. These include:

- 27 A. Bridge barrier wall rustication, including the Salt River Bridge. The Mockup size for the
28 bridge barrier wall rustication must be a minimum of 10 feet long x 34 inches high.

ADDENDUM #2

- 1 B. Full size Mockups of the angled accent rustication for the sound wall of one Aesthetic
2 Area. The minimum width shall be 20 feet, capturing the full angled accent rustication
3 and the taper along the top of the wall, by the full height of the intended sound wall and
4 accent. This Mockup will double as the Mockup for the typical sound wall and retaining
5 wall.
- 6 C. Full size Mockups of the angled accent rustication of the other four areas Aesthetic
7 Areas.
- 8 D. Full size Mockups of a bridge pier for each Aesthetic Area.
- 9 E. Full size Mockups of each areas Aesthetic Area corner rustication pattern at the wing
10 walls.
- 11 F. Full size Mockups of slope paving for each Aesthetic Area, where applicable. The
12 minimum size shall be 20 feet wide by the height at the respective location.

13 At least 40 Business Days prior to construction of the associated Element, Developer shall
14 submit Mockups to ADOT for review and comment. Mockups for each Aesthetic Area shall be
15 placed on site in the respective Aesthetic Area in context with the environment of the intended
16 rustication pattern.

17 **450.3.1.2 Paint Draw Downs**

18 Developer shall prepare Paint Draw Downs which includes samples of each color to be used. At
19 a minimum there will be seven colors: the base color, the accent color for each Aesthetic Area,
20 and the accent color for the Salt River Bridge. At least 40 Business Days prior to painting,
21 Developer shall submit Paint Draw Downs to ADOT for review and comment.

22 **450.3.1.3 Paint Quality**

23 All paint used in the project area shall resist chipping, flaking, fading, staining, and chalking.

24 **450.3.2 Landscaping**

25 Developer shall comply with the requirements of the Arizona Native Plant Law and the Arizona
26 Revised Statutes Section 3-901, et seq. Developer shall provide the Arizona Department of
27 Agriculture at least 10 Business Days notice prior to any clearing operations. Native plants as
28 defined by the Statutes shall not be transported from the land or offered for sale without the
29 written permission of the Commission.

30 Notice shall be sent to:

31 Assistant Director
32 Division of Compliance
33 Arizona Department of Agriculture
34 State Office Building, Room 414
35 1688 West Adams Street
36 Phoenix, Arizona 85007

37 Developer shall not dispose debris from construction operation that creates a blemish on the
38 landscape. Developer shall obtain the appropriate permits in accordance with applicable state
39 and federal regulations to stockpile material in running or intermittent streams, or other waters of
40 the U.S.

41 Developer shall install plants in such a manner as to provide optimum growth and health of the
42 plants.

ADDENDUM #2

1 All nursery stock plant material must comply with the applicable requirements and standards of
 2 the Arizona Nursery Association *Container Grown Tree Guide* and the American Nursery and
 3 Landscape Association *Z60 American Standard for Nursery Stock*.

4 Developer shall be aware there often shortages of plant materials in the Phoenix area. Contract
 5 growing is one allowable option for ensuring the plants needed for the project will be available at
 6 the time of construction.

7 **450.3.2.1 Seeding**

8 Developer shall install seed such that the growth coverage success rate is 80 percent. Success
 9 is measured by a growth coverage area with bare spots no larger than 8 square inches and with
 10 barren areas not exceeding 20 percent of the total seeded area. Plants in the growth coverage
 11 areas must be healthy.

12 **450.3.2.2 Irrigation**

13 Developer shall install a fully functional automatic drip irrigation system to all plant material
 14 within Character Areas 1, 3, 4, and 5. Developer shall irrigate Character Area 2 through a
 15 temporary system. Plant material within the City of Phoenix ROW must be on a separate drip
 16 irrigation system.

17 Developer shall install irrigation system(s) in accordance with all applicable national, state, and
 18 local plumbing and health and safety codes.

19 Developer shall establish all plants for 12 months after installation and then maintain
 20 appropriate irrigation levels to all plant materials to promote sustained growth and health of all
 21 plants while not exceeding the maximum allowable available water use requirements on an
 22 annual basis.

23 **450.3.2.3 Ground Treatment**

24 Developer shall install granite mulch and decomposed granite so that the installed material
 25 resists erosion (rilling of the slope).

26 Developer shall prepare Color Samples of each ground treatment material proposed and in
 27 each color and supplier proposed. The sample must be spread to 10-foot x 10-foot area to a
 28 minimum depth of 2 inches to represents how the desert pavement will look. Materials include,
 29 but are not limited to, granite mulch, decomposed granite, and rock mulch. At least 40 Business
 30 Days prior to the scheduled construction of the associated Element. Developer shall submit
 31 Color Samples to ADOT for review and comment.

32 The approved suppliers of granite mulch and decomposed granite are included in Table 450-2.

Table 450-2 Granite Mulch and Decomposed Granite		
Color	Granite Name	Supplier
Coral	Yavapai Coral	Pioneer Landscape Materials
	Pink Coral	Red Mountain Mining
	Palomino Coral	Kalamazoo Materials
	Grande Rose	Pioneer Landscape Materials
Brown	Express Brown	Granite Express

ADDENDUM #2

Table 450-2 Granite Mulch and Decomposed Granite		
Color	Granite Name	Supplier
	Mountain Vista Brown	Kilauea Crushers
	Apache Brown	Kalamazoo Materials
	Table Mesa Brown	Pioneer Landscape Materials
Gold	Express Gold	Granite Express
	Madison Gold	Madison Granite
	Palomino Gold	Kilauea Crusher

1 450.3.2.4 Landform Graphic Layout

2 The Landform Graphic Artist must layout the landform graphic and submit a written notification
3 to ADOT for approval. Construction of the final landform graphic shall not begin until final
4 approval is given for the layout by ADOT.

5 Adjustments may require multiple enlargements, reductions, shaping, and positioning to achieve
6 the satisfactory visual results to fit the site conditions and provide maximum visual appeal from
7 the roadway, ramps, and bridge perspectives.

8 The graphic configurations shall be laid out with flexible material and spray painted florescent
9 along the centerlines of the graphics, for approval. Paint shall not conflict with Blue Stake
10 standard colors.

11 Rebar with safety caps and line string shall be installed with PVC pipe to provide reference
12 points and centerlines for subsequent paver and/or metal edging installation.

13 Spray point shall be used to mark graphic beginning and ending points and other lines.

14 Traffic control shall be coordinated with the Engineer and landscape contractor.

15 The approved artist shall be responsible for, and shall review, the landscape contractor's
16 layouts and installation of metal edging, pavers, placement of granite mulch and river rock
17 materials for conformance to graphic layout and colors specified on landscape design plans.

18 450.3.3 Landscape Establishment for Non-Maintained Elements

19 For landscape in the Non-Maintained Elements area, Developer shall maintain and establish the
20 landscape elements for the landscape establishment period specified in Section 6.12.3 of the
21 Agreement. The landscaping establishment work shall consist of the care of all salvaged and
22 installed plant materials as part of the project in accordance with accepted horticultural
23 practices; supplying and applying all irrigation water; repairing, adjusting or replacing bracing;
24 repairing public or weather damage to all landscape areas; furnishing and applying sprays, dust
25 and/or cages to combat vandalism, disease, insects and other pests; noxious weed control,
26 pruning; and the reconfiguring, maintaining, and operating the temporary drip irrigation system
27 as specified by the Developer.

ADDENDUM #2

1 The landscape establishment activities shall include providing sufficient water to keep the
2 installed plants in a healthy condition and the reconfiguration, modification maintenance, repair,
3 replacement and operation of the temporary water distribution system by the Developer to meet
4 the landscape establishment needs of the Project. The Developer shall be responsible to keep a
5 log of all landscape establishment activities. The log shall contain a record of the time and date
6 of field inspections, watering time durations and dates, fertilizer applications, repairs,
7 replantings, and other operations conducted by Developer. Developer shall provide for approval
8 the format for recording these activities prior to undertaking the work. Developer has the option
9 of maintaining the nursery(ies) past the salvage and replanting operations completed as part of
10 the D&C Period for use during the landscape establishment project. The continuation of
11 maintaining these nursery(ies) as part of the landscape establishment project is at the discretion
12 of Developer, as approved by ADOT, and all cost associated with this effort is considered
13 incidental to the work included in landscape establishment.

14 The tree ties and stakes shall be removed at the end of the landscaping establishment period or
15 as directed by ADOT. All trees shall stand erect on their own without stakes when brought to
16 this site. If the tree cannot stand on its own when nursery stakes are removed, the tree shall be
17 removed and replaced.

18 **450.3.3.1 Plant Protection**

19 All landscape plants shall be provided protection which shall include, but not be limited to,
20 eradication or control of insects, mites, fungi, and non-fungus diseases. The application of
21 appropriate insecticide, miticide and fungicide may only be used with the prior approval of
22 ADOT. No insecticides, fungicides and miticides employed during the term of the contract shall
23 cause the extermination of any landscape plant material, or cause damage to the growth
24 characteristics such that plants will not be able to recover in a normal manner.

25 No chemical shall stain or cause damage to any portion of the site or improvements including
26 landscape plant materials. If staining or damage occurs, repairs or replacements shall be made
27 at Developer's expense to the satisfaction of ADOT. Application of chemicals shall be in such a
28 manner so as to not cause injury to the personal health of anyone working on the project,
29 observing, or passing by. Care shall be taken such that no puddles or pools of water which may
30 contain toxic amounts of chemicals shall remain after completion of operations. Chemicals shall
31 not be allowed to fall on or migrate to areas other than the work site. All laws and local codes
32 shall be followed regarding application methods and personnel.

33 Subcontracting of the landscaping establishment work shall not be permitted except for weed
34 eradication with herbicides, because of the special licensing required as covered under
35 Subsection 807-3.02 of the ADOT *Standard Specifications for Road and Bridge Construction*.

36 **450.3.3.2 Establishment Irrigation**

37 During each watering cycle during the landscape establishment period, Developer shall supply
38 water to a minimum depth of 12 inches to all Saguaros and trees (regardless of species).
39 Developer shall provide adequate water to each installed plant to maintain optimum health
40 through the completion of its applicable plant establishment period.

41 **450.3.3.3 Establishment Inspections**

42 ADOT will perform visual inspections in the presence of Developer once every 30 days during
43 the landscaping establishment period, unless ADOT and Developer agree to other
44 arrangements in writing. Developer shall modify the maintenance practices and water delivery to
45 the plants to maintain optimum growing conditions as directed by ADOT. Saguaro

ADDENDUM #2

1 measurements identified in Section 806 of the ADOT *Standard Specifications for Road and*
2 *Bridge Construction* will be conducted every 4 months, as applicable.

3 During the landscape establishment period Developer shall provide the necessary care to keep
4 all plant material equal in health and vigor under the use of standard horticultural practice to
5 combat detriments known as; rodents, mammals, pest, disease, bacteria, mites, fungi, nutrient
6 deficiency, harmful exposure to sunlight, and drought conditions. In addition to inspecting
7 salvage plant material for damage to its appearance in health and/or vigor resulting from any of
8 the previously mentioned detriments, ADOT will also inspect the salvage plant material and new
9 plant material for symptoms that indicate poor health. Poor health symptoms will include items
10 such as; wrinkled, loose or damaged cambium layers; evidence of transplant 'shock', i.e. leaf
11 drop and discolored foliage; no observable improvement to the condition of the salvage or new
12 plant material after it has received adequate irrigation or rain; change in color not consistent with
13 color changes to identical species existing in the given area; and failure to leaf out when
14 identical specie of the existing area are consistently found in leaf. The previously mentioned
15 criteria shall be used by ADOT to determine if both the salvage and new plant material is in
16 close conformity in health and/or vigor and acceptable for payment or determined unacceptable
17 for no payment by the ADOT. Developer is required to replace the unacceptable or dead stock
18 plant materials with the same species, size, appearance and quality as originally planted, as
19 determined by ADOT. No further payment will be made to Developer for maintenance of any
20 plant materials determined as unacceptable by ADOT. Local stock shall be the priority for
21 replacement plants and the use of any collected/open stock requires advance approval.

22 Transporting of any plant materials for the landscape establishment activities shall be in
23 compliance with all State and local requirements. Developer shall be responsible to obtain all
24 necessary permits and tags for transporting plant materials on public roadways; no separate
25 payment will be made to Developer for the permits. Permits and tags shall be made available to
26 ADOT upon request. Developer shall maintain all non-planted areas within the freeway right-of-
27 way and project limits, including the freeway median, drainage basins, cross-street medians,
28 shoulder areas, and all other areas as depicted on the project plans.

29 **450.3.3.4 Planted Stock and Seeding Establishment**

30 The tree ties and stakes shall be removed at the end of the landscaping establishment period or
31 as directed by ADOT. All trees shall stand erect on their own without stakes when brought to
32 this site. If the tree cannot stand on its own when nursery stakes are removed, the tree shall be
33 removed and replaced.

34 Developer shall apply approved pre-emergent herbicide according to manufacturer
35 recommendations on all unpaved or landscaped areas of the right-of-way including the freeway
36 median, maintenance pathways, areas of decomposed granite, granite mulch, rock mulch, and
37 ADOT AB as depicted on the project plans, and as directed by ADOT.

38 The application shall first be completed midway through the landscape establishment period
39 and the second application shall be completed 30 days prior to completion of the landscape
40 establishment period. Watering shall be completed in accordance with the manufacturer's
41 recommendations, as included and as related to each application.

42 The pre-emergent herbicide shall be applied in accordance with the recommendations of the
43 preemergent herbicide manufacturer, as approved by ADOT. The control of weeds shall be
44 accomplished by the use of herbicides or manual removal. Manual removal of weeds shall be
45 required in the seeded areas, and in the decomposed granite and granite mulch areas after
46 herbicides have taken effect.

ADDENDUM #2

1 Developer shall maintain the existing seeded areas on the project, including any erosion repair,
2 reseeding and/or restoration, as directed by ADOT.

3 **450.3.3.5 Plant Replacement**

4 During the second half of the landscaping establishment period, Developer shall provide, where
5 required, plant replacements based on the original size. The plant material replacement shall be
6 considered as included in the D&C work.

7 All dead or unhealthy plant stock shall be removed and replaced as directed within 21 days from
8 the date of the inspection and Developer shall notify ADOT in writing when the replacement
9 work has been completed.

10 **450.3.3.6 Plant Survivability**

11 The new plants in the Non-Maintained Elements owned by ADOT must have a survivability rate
12 of 100% at the end of the plant establishment period. Plants that are salvaged and replanted
13 must have a survivability rate of 80% at the end of the plant establishment period.

14 **450.4 SUBMITTALS**

15 Table 450-3 reflects a nonexclusive list of Submittals identified in Section CR 450 of the TPs
16 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
17 determine and submit all Submittals as required by the Contract Documents, Governmental
18 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
19 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
20 specified in the Contract Documents, Developer shall submit the following to ADOT in the
21 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 450-3 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Mockups	4	26	0	At least 40 Business Days prior to construction of the associated Element	CR 450.3.1.1
Paint Draw Downs	4	7	0	At least 40 Business Days prior to painting	CR 450.3.1.2
Color Samples	4	7	0	At least 40 Business Days prior to construction of the associated Element	CR 450.3.2.3

*Levels of Review

1. Sole discretion or absolute discretion approval (Section 3.1.3.1 of the Agreement)
2. Good faith discretion approval (Section 3.1.3.2 of the Agreement)
3. Reasonableness approval (Section 3.1.4.2 of the Agreement)
4. Review and comment (Section 3.1.5 of the Agreement)
5. Submit/receive and file or comment/no hold point (Section 3.1.6 of the Agreement)

22

23

End of Section

ADDENDUM #2

1 **CR 455 STRUCTURES**

2 **455.1 GENERAL REQUIREMENTS**

3 Developer shall perform all structures Construction Work in compliance with the requirements of
4 Section CR 455 of the TPs.

5 **455.2 ADMINISTRATIVE REQUIREMENTS**

6 **455.2.1 Standards**

7 Developer shall perform the structures Construction Work in accordance with the standards,
8 manuals, and guidelines listed in Table 455-1.

Table 455-1 Standards		
No.	Agency	Title
1	AASHTO	Guide Specifications for Bridge Temporary Works
2	AASHTO	Construction Handbook for Bridge Temporary Works
3	ADOT	Bridge Load Rating Guidelines

9 **455.3 CONSTRUCTION REQUIREMENTS**

10 **455.3.1 Bridge Material Properties**

11 Normal weight non-prestressed concrete must have the minimum strengths, f'_c , at 28 days, as
12 shown in Table 455-2.

Table 455-2 Minimum Concrete Strength	
Components	f'_c (ksi)
Decks (except barriers)	4.5
Bridge concrete barriers	4.0
Substructures (abutments, piers, foundation, and drilled shafts)	3.5
All other class 'S' concrete	3.0

13 **455.3.2 Structure Shop Drawings and Working Drawings**

14 Shop Drawings and Working Drawings, which include drawings for falsework, shoring, soldier
15 piles, cofferdams, temporary bridges, and other major temporary support structures, must be
16 prepared by and bear the seal and signature of a Professional Engineer.

17 Developer shall prepare MSE Wall Drawings that include the design and construction
18 requirements of the MSE wall. MSE Wall Drawings are considered Shop Drawings and Working

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1 Drawings. Not less than 10 Business Days prior to implementation, Developer shall submit MSE
2 Wall Drawings to ADOT.

3 The following Shop Drawings and Working Drawings, if applicable, must become part of the
4 Record Drawings structure drawings:

- 5 A. Post-tensioning details;
- 6 B. Expansion joint details;
- 7 C. Proprietary bearing details;
- 8 D. Proprietary retaining wall details;
- 9 E. Proprietary sound barrier wall details;
- 10 F. Precast and stay-in-place deck panels;
- 11 G. Precast girder; and
- 12 H. Other Shop Drawing and Working Drawings for atypical structures as specified in the
13 special provisions.

14 **455.3.3 Falsework and Forms**

15 Developer shall design and construct falsework and forms in accordance with the following:

- 16 A. *AASHTO Guide Specifications for Bridge Temporary Works*
- 17 B. *AASHTO Construction Handbook for Bridge Temporary Works*
- 18 C. *AASHTO LRFD Bridge Construction Specifications*

19 Developer shall prepare Falsework Drawings that includes the design and construction
20 requirements of the falsework and forms. Falsework Drawings are considered Shop Drawings
21 and Working Drawings. Not less than 10 Business Days prior to implementation, Developer
22 shall submit Falsework Drawings to ADOT.

23 **455.3.4 Steel Fabrication**

24 Lap splices or mechanical connectors must be used for all reinforcing steel splices and
25 connections. Developer shall not allow or permit welding of reinforcing steel.

26 **455.3.5 Concrete**

27 Developer shall ensure that concrete pours are not conducted over live traffic.

28 Developer shall saw longitudinal grooves on bridge decks that are not overlaid with AR-ACFC in
29 accordance with Section 402-5 of the *ADOT Standard Specifications for Road and Bridge*
30 *Construction*.

31 **455.3.6 Load Rating Report**

32 Developer shall prepare an As-Built Load Rating Report(s) based on as-built condition in
33 accordance with the *AASHTO Manual for Bridge Evaluation* and shall include both inventory
34 and operating ratings of the “as-built” structures. At the same time as the Record Drawing
35 Submittal, Developer shall submit the As-Built Load Rating Report(s) to ADOT for review and
36 comment.

37 **455.4 SUBMITTALS**

38 Table 455-3 reflects a nonexclusive list of Submittals identified in Section CR 455 of the TPs
39 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
40 determine and submit all Submittals as required by the Contract Documents, Governmental
41 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all

ADDENDUM #2

- 1 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 2 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 3 formats described in Section GP 110.10.2.1.1 of the TPs:

Table 455-3 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
MSE Wall Drawings	5	2	1	Not less than 10 Business Days prior to implementation	CR 455.3.2
Falsework Drawings	5	2	1	Not less than 10 Business Days prior to implementation	CR 455.3.2
As-Built Load Rating Report(s)	4	2	1	At the same time as the Record Drawing Submittal	CR 455.3.6
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Contract</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Contract</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Contract</u>) 4. Review and comment (<u>Section 3.1.5 of the Contract</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Contract</u>)					

4

5

End of Section

ADDENDUM #2

1 **CR 457 BRIDGE HYDRAULICS**

2 *Intentionally left blank*

3

4

End of Section

ADDENDUM #2

1 **CR 460 TRAFFIC**

2 **460.1 GENERAL REQUIREMENTS**

3 Developer shall perform all traffic Construction Work in compliance with the requirements of
4 Section CR 460 of the TPs.

5 **460.2 ADMINISTRATIVE REQUIREMENTS**

6 **460.2.1 Standards**

7 Developer shall perform all traffic Construction Work in accordance with the relevant
8 requirements of the standards, manuals, and guidelines listed in Table 460-1.

Table 460-1 Standards		
No.	Agency	Title
1	FHWA	Manual on Uniform Traffic Control Devices (MUTCD)
2	ADOT	Arizona Supplement to the MUTCD
3	ADOT	Manual of Approved Signs

9 **460.3 CONSTRUCTION REQUIREMENTS**

10 **460.3.1 Pavement Marking**

11 Temporary pavement marking must comply with the FHWA *Manual on Uniform Traffic Control*
12 *Devices (MUTCD)* and the ADOT *Arizona Supplement to the MUTCD*. Pavement markings
13 must not be placed on the final pavement surface course unless it is the final pavement marking
14 at its final location. Temporary pavement markings, if used, must not leave ghost markings on
15 the final pavement surface.

16 **460.3.2 Signs**

17 Prior to removing existing sign structures, Developer shall remove all sign lighting fixtures,
18 exposed conduit, and wiring to the nearest pull box serving the structure.

19 Developer shall coordinate with Grand Canyon State Logo Signs, a program of ADOT, for the
20 engineering of integration and locations of specific service logo signs at each interchange in the
21 ROW and exit ramps. Grand Canyon State Logo Signs is responsible for contracting the
22 fabrication and installation of the specific service logo signs.

23 **460.3.3 Traffic Signal Systems**

24 Developer shall design and implement any temporary traffic signal timing or any phasing
25 required for traffic management during construction. Fifteen Business Days prior to
26 implementing the proposed timing or phasing changes, Developer shall prepare and submit a
27 written Traffic Signal Modification Request for any proposed timing or phasing changes,
28 including temporary signal head placement, to ADOT for review and comment. For traffic signal
29 modifications at intersections controlled by the City of Phoenix, 15 Business Days prior to
30 implementing the proposed timing or phasing changes, Developer shall also submit the Traffic
31 Signal Modification Request to the City for review and comment.

ADDENDUM #2

1 Ten Business Days prior to implementing temporary phasing changes, Developer shall prepare
2 and submit a written Temporary Phasing Controller Programing Request to ADOT for approval.
3 ADOT will program the controller, no greater than 7 Business Days after receipt of the written
4 request, after which Developer may implement the temporary phasing.

5 Developer shall deliver permanent traffic signal cabinets to ADOT Traffic Operations, 2104 S.
6 22nd Avenue, Phoenix, AZ 85009, for assembling and testing by ADOT within 30 Business
7 Days prior to scheduled traffic signal turn-on date. Upon successful testing, Developer will pick
8 up the cabinet for installation.

9 **460.3.4 Lighting**

10 Developer shall maintain existing lighting levels during construction where existing lighting
11 exists. All luminaires must be individually fused. Developer shall place the in-line fuse of high
12 mast light fixtures that are mounted on lowering devices in the fixture housing. Developer shall
13 place the in-line fuses of all other fixtures in the nearest pull box.

14 Developer shall record Global Positioning System (GPS) positions for each pull box in
15 accordance with the ADOT *Standard Specifications for Road and Bridge Construction* and the
16 ADOT *Stored Specifications*. Developer shall prepare a Pull Box Location Report that includes
17 the GPS positions for all pull boxes. Developer shall submit the Pull Box Location Report to
18 ADOT for review and comment.

19 Developer shall attach an ADOT-provided maintenance unit device decal 42 inches above the
20 base plate at 45 degrees in the direction of oncoming traffic on each electrical cabinet and
21 lighting pole. Developer shall prepare and submit a written Maintenance Unit Device Decal
22 Request to ADOT. ADOT will make unit device decals available for pickup at ADOT Traffic
23 Operations, 2104 S. 22nd Avenue, Phoenix, AZ 85009, within 30 days of receipt of the
24 Maintenance Unit Device Decal Request. Developer shall install all maintenance unit device
25 decals on all equipment prior to opening to traffic.

26 Developer shall attach a permanent metal tag to the pole above the hand hole stating the
27 manufacture's name, pole type per the plans, ADOT pole drawing number (if applicable), shaft
28 length, and gage number. Pictures of sample metal tags are included in the RIDs.

29 Developer shall provide, erect, and maintain all necessary barricades, suitable and sufficient
30 lights, danger signals, signs and other traffic control devices and shall take all necessary
31 precautions for the protection of the work and safety of the public. Highways closed to traffic
32 must be protected by effective barricades, and obstructions must be illuminated during hours of
33 darkness. Suitable warning lights shall be provided to control and direct traffic properly.

34 Developer shall erect warning signs in advance of any place on the Project where operations
35 may interfere with the use of the road by traffic, and at all intermediate points where the Work
36 crosses or coincides with an existing road.

37 All signs, barricades, lights, temporary signals, and other protective devices must conform to the
38 requirements of the Manual of Uniform Traffic Control Devices (MUTCD) and associated
39 Arizona Department of Transportation Supplement (ADOT Supplement).

40 **460.4 SUBMITTALS**

41 Table 460-2 reflects a nonexclusive list of Submittals identified in Section CR 460 of the TPs
42 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
43 determine and submit all Submittals as required by the Contract Documents, Governmental
44 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
45 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise

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- 1 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 2 formats described in Section GP 110.10.2.1 of the TPs:

Table 460-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Traffic Signal Modification Request	4	3	1	15 Business Days prior to implementing the proposed timing or phasing changes	CR 460.3.3
Temporary Phasing Controller Programming Request	3	3	1	10 Business Days prior to implementing temporary phasing	CR 460.3.3
Pull Box Location Report	4	3	1	In accordance with the ADOT <i>Standard Specifications for Road and Bridge Construction</i> and the ADOT <i>Stored Specifications</i>	CR 460.3.4
Maintenance Unit Device Decal Request	5	1	1	As determined by Developer	CR 460.3.4
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

3

4

End of Section

ADDENDUM #2

1 **CR 462 MAINTENANCE OF TRAFFIC**

2 **462.1 GENERAL REQUIREMENTS**

3 Developer shall perform all maintenance of traffic Construction Work in compliance with the
4 requirements of Section CR 462 of the TPs.

5 **462.2 ADMINISTRATIVE REQUIREMENTS**

6 **462.2.1 Standards**

7 Developer shall perform all maintenance of traffic Construction Work in accordance with the
8 standards, manuals, and guidelines listed in Table 462-1.

Table 462-1 Standards		
No.	Agency	Name
1	FHWA	Manual on Uniform Traffic Control Devices (MUTCD)
2	ADOT	Arizona Supplement to the MUTCD

9 **462.3 CONSTRUCTION REQUIREMENTS**

10 **462.3.1 General**

11 Developer shall manage traffic in accordance with the procedures and guidelines specified in
12 the FHWA *MUTCD*, the ADOT *Arizona Supplement to the MUTCD*, and the Developer's Traffic
13 Control Plans.

14 Developer shall not close lanes on the mainline, ramps, adjacent freeways, or local roadways,
15 prior to approval of the TMP by ADOT.

16 **462.3.2 Traffic Control Devices**

17 All traffic control devices must comply with the requirements of the NCHRP Report 350,
18 *Recommended Procedures for the Safety Performance Evaluation of Highway Features* or
19 *AASHTO Manual for Assessing Safety Hardware (MASH)*, in accordance with Federal
20 Guidelines, Part VI of the MUTCD and the ADOT *Arizona Supplement to the MUTCD*.

21 Developer shall inspect and maintain all traffic control devices a minimum of two times a day.

22 All orange signs must use fluorescent orange sheeting.

23 **462.3.2.1 Signs**

24 Developer shall provide advance signing notifying all users of the proposed closure a minimum
25 of 5 Business Days prior to the proposed closure. The advance signing must include the closure
26 dates and duration. Developer shall provide advance notification through PCMS for all closures
27 and for each direction of traffic that is affected. Advance signing notification must be provided as
28 noted in Table 462-2.

ADDENDUM #2

Table 462-2 Advance Signing Notification	
Event	Advance Notification
Major weekend restrictions	5 Business Days
Construction phase changes	5 Business Days
Lane restrictions or closures of ramps and crossroads	5 Business Days
Lane restrictions with detour implications or if traffic delays are expected	5 Business Days

1 The text for all temporary guide signs must be at least 10-inches in height.

2 Developer shall cover all signs that are in conflict with the Work during construction. Developer
3 shall ensure that any modifications to the existing signing system during construction include: an
4 exit sign at the exit gore and a minimum of one advance notice exit sign. If such sign are
5 temporary signs, the temporary signs must remain in place until the permanent signs are
6 installed.

7 **462.3.2.2 Temporary Guardrail, Barrier, Attenuators, and Glare Screen**

8 Developer shall use temporary guardrail or barrier and attenuators to protect the travelling
9 public from, at a minimum, the following:

- 10 A. Fixed objects within the clear zone;
- 11 B. Drop-offs greater than 2 inches that are not in accordance with the traffic control
12 treatment of longitudinal joint and edge drop-off guidelines;
- 13 C. Slopes steeper than 4:1 (H:V);
- 14 D. Separate opposing travel lanes; and
- 15 E. Separate work zones.

16 Developer shall install glare screens when barriers separate opposing lanes of traffic and are
17 less than 42 inches in height.

18 **462.3.3 Staging Areas**

19 Developer shall secure all proposed staging areas, including obtaining and performing all
20 applicable environmental and ROW Work in accordance with the Contract Documents.

21 **462.3.4 Arizona Department of Public Safety**

22 Developer may request DPS officers to be on-site for freeway Lane Closures. Developer shall
23 submit a request for DPS services directly with DPS. Developer shall be responsible for
24 providing for public safety notwithstanding the presence of DPS at the Site.

25

26

End of Section

ADDENDUM #2

1 **CR 466 INTELLIGENT TRANSPORTATION SYSTEM**

2 **466.1 GENERAL REQUIREMENTS**

3 Developer shall perform all intelligent transportation system (ITS) Construction Work in
4 compliance with the requirements of Section CR 466 of the TPs.

5 **466.2 ADMINISTRATIVE REQUIREMENTS**

6 **466.2.1 Standards**

7 Developer shall construct the ITS in accordance with the standards, manuals, and guidelines
8 listed in Table 466-1.

Table 466-1 Standards		
No.	Agency	Name
1	ADOT	ITS Standard Drawings

9 **466.2.2 ITS Preactivity Meetings**

10 Developer shall conduct ITS preactivity meetings in accordance with Section 738.7 of the ADOT
11 *Draft Intelligent Transportation Systems Specifications for South Mountain Freeway* included in
12 the RIDs.

13 **466.3 CONSTRUCTION REQUIREMENTS**

14 **466.3.1 General**

15 Developer shall maintain or exceed the level of ITS functionality during construction to provide
16 freeway management, incident detection, and traveler information to the public. The maximum
17 disruption of service for all ITS elements must be no longer than 24 continuous hours. The
18 maximum disruption of service for an individual ITS element must be no longer than 72
19 continuous hours.

20 **466.3.2 ITS Elements**

21 **466.3.2.1 ITS Backbone Communication Network**

22 *Intentionally left blank*

23 **466.3.2.2 Dynamic Message Signs**

24 DMS must be Skyline VMSLED-W-3-18F-27x125-I.

25 **466.3.2.3 Closed Circuit Television Cameras**

26 CCTV cameras must be one of the following models:

- 27 A. Cohu 3960 HD 720-30x HD35-7000,
- 28 B. WTI Sidewinder SW720-H.264-HD30,
- 29 C. Bosch MIC-7130-PW4, or
- 30 D. Approved equal.

31 **466.3.2.4 Count Stations**

32 *Intentionally left blank*

ADDENDUM #2

1 **466.3.2.5 Ramp Meters**

2 *Intentionally left blank*

3 **466.3.2.6 Node Buildings**

4 If Developer plans to enter a node building, Developer shall prepare a Node Building Access
5 Request that includes the date and time Developer needs access to the node building, node
6 building number, purpose of the requested access, and a description of the Work to be
7 performed in the node building. A minimum of 5 Business Days prior to any planned Work within
8 an existing node building, Developer shall submit a written Node Building Access Request to
9 ADOT for approval.

10 **466.3.2.7 Weigh-In-Motion Systems**

11 Developer shall construct weigh-in-motion system in accordance with ADOT *Standard Drawings*
12 T.S. 6-3, T.S. 6-4, and T.S. 6-7.

13 **466.3.3 Temporary ITS Devices**

14 Developer may use solar powered ITS devices for temporary service until permanent power is
15 installed. Power supply for temporary ITS devices must be uninterrupted. Developer shall
16 remove temporary ITS devices prior to Final Acceptance.

17 **466.3.4 Testing**

18 Developer shall test the ITS, including the existing ITS elements, for the fully operational ITS for
19 the Project. Developer shall perform the tests in accordance with manufacturer's requirements
20 and the testing requirements identified in the ADOT *Draft Intelligent Transportation Systems*
21 *Specifications for South Mountain Freeway* included in the RIDs. ADOT will conduct subsystem
22 tests in accordance with the ADOT *Draft Intelligent Transportation Systems Specifications for*
23 *South Mountain Freeway*. Developer shall prepare ITS Testing Documentation that includes all
24 test results as identified in this Section CR 466.3.4. Prior to issuance of Final Acceptance,
25 Developer shall submit all ITS Testing Documentation to ADOT for approval.

26 **466.3.5 Certificates**

27 Developer shall prepare and obtain ITS Certifications as required by the ADOT *Draft Intelligent*
28 *Transportation Systems Specifications for South Mountain Freeway* included in the RIDs. Prior
29 to Final Acceptance, Developer shall submit all ITS Certifications to ADOT.

30 **466.3.6 Record Drawings**

31 Developer shall prepare Record Drawings for the ITS in accordance with the Section 747 of the
32 ADOT *Draft Intelligent Transportation Systems Specifications for South Mountain Freeway*
33 included in the RIDs and Section GP 110.10.2.3.4 of the TPs.

34 **466.3.7 Training**

35 Developer shall arrange for and provide a training course for the equipment components for
36 equipment that is not currently in use by ADOT. The course must be of adequate duration to
37 cover the subject matter and must have an instructor competent in the technical aspects of the
38 equipment installed in the nodes. The training course must provide training to up to 12 ADOT
39 personnel.

40 Developer shall prepare ITS Training Material that includes a syllabus, training materials, and a
41 schedule for the ITS equipment training course. Reference materials must include the course
42 outline, material describing the course, and operations and maintenance manuals with any
43 additional information needed to adequately describe the subject being taught. Training

ADDENDUM #2

1 materials must not be copyrighted. Prior to the proposed start of ITS equipment training,
 2 Developer shall submit the ITS Training Material to ADOT for review and comment. Developer
 3 shall schedule the training no sooner than 10 Business Days from addressing ADOT comments
 4 on the ITS Training Material.

5 **466.4 SUBMITTALS**

6 Table 466-2 reflects a nonexclusive list of Submittals identified in Section CR 466 of the TPs
 7 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
 8 determine and submit all Submittals as required by the Contract Documents, Governmental
 9 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
 10 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
 11 specified in the Contract Documents, Developer shall submit the following to ADOT in the
 12 formats described in Section GP 110.10.2.1.1 of the TPs.

Table 466-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Node Building Access Request	3	2	1	A minimum of 5 Business Days prior to any planned Work within an existing node building	CR 466.3.2.6
ITS Testing Documentation	3	2	1	Prior to Final Acceptance	CR 466.3.4
ITS Certifications	5	1	1	Prior to Final Acceptance	CR 466.3.5
ITS Training Material	4	12	1	Prior to the proposed start of ITS equipment training	CR 466.3.7
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

13

14

End of Section

ADDENDUM #2

1 **CR 470 RIGHT-OF-WAY**

2 *Intentionally left blank*

3

4

End of Section

SECTION D
MAINTENANCE REQUIREMENTS (MR)

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ADDENDUM #2

1 **MR 200 REFERENCES**

2 **200.1 GENERAL REQUIREMENTS**

3 All design and construction for Maintenance Services during the Maintenance Period must
4 comply with the requirements and specifications for design and construction set forth in the
5 Technical Provisions:

- 6 A. Section A - General Provisions of the TPs
- 7 B. Section B - Design Requirements of the TPs
- 8 C. Section C - Construction Requirements of the TPs

9 **200.2 APPLICABLE STANDARDS**

10 Refer to Sections GP 110.01.2.1 and MR 200.2.1 of the TPs.

11 **200.2.1 Modification to Standards for Certain Maintenance Services**

- 12 A. For Routine Maintenance Services, Developer shall replace materials, equipment, and
13 facilities to the original design using standards required at time of original construction of
14 the Project in accordance with the General Provisions (GPs), Design Requirements
15 (DRs), and Construction Requirements (CRs) of the TPs, as the same may be changed
16 by ADOT pursuant to Section 8.1.2 of the Agreement. When equipment, materials or
17 parts required by those provisions are commercially unavailable, Developer shall
18 propose that Routine Maintenance Services be performed to a new standard acceptable
19 to ADOT. Developer shall follow the requirements set forth in Section GP 110.01.1.1 of
20 the TPs to obtain ADOT acceptance of the new standards.
- 21 B. Devices and systems used to control traffic for temporary traffic control must be in
22 accordance with then-current ADOT standard specifications, standard drawings, and
23 ADOT engineering directives, including all then-currently approved statewide and
24 regional modifications.

25 **MR 201 COOPERATION WITH ADOT**

26 Developer shall reasonably accommodate ADOT activities in the Maintenance Services Limits
27 and in the Project area, including:

- 28 A. ADOT operations activities, such as traffic signals, ITS, Incident and Emergency
29 management, vehicle recovery, patrols, and other operations;
- 30 B. Traffic control and MOT activities related to ADOT operations;
- 31 C. Related Transportation Facilities and Adjacent Work; and
- 32 D. Third party infrastructure improvements and maintenance, including encroachment
33 permits and adjustment of utilities.

34 Developer shall review plans and/or construction documents that may affect the Project,
35 prepared by ADOT or third parties, for improvements in the Project area to be constructed by
36 others. Work by third parties must be coordinated through ADOT.

37 ADOT may conduct inspections or Surveillance of the Project, in addition to specific instances
38 enumerated in this Section D. Developer shall accommodate any such requests, including
39 requests to uncover Work, in accordance with terms of the Agreement.

ADDENDUM #2

1 **MR 202 MAINTENANCE DURING CONSTRUCTION**

2 Developer shall perform Maintenance During Construction of all existing facilities throughout the
3 Project ROW as listed below:

4 Prior to commencing construction, Developer shall satisfy itself of the preconstruction condition
5 of the lighting system, landscape and irrigation systems, ITS, and drainage system. Developer
6 shall not start construction unless Developer satisfies itself of the preconstruction condition as
7 described above. Developer shall schedule field meetings with ADOT to review and document
8 the preconstruction condition of the lighting system, landscape and irrigation systems, ITS, and
9 drainage system in a manner acceptable to ADOT.

10 Maintenance During Construction must include:

- 11 A. "PM -10" sweeping twice weekly;
- 12 B. litter and trash pickup and removal once weekly;
- 13 C. maintain drainage features;
- 14 D. graffiti removal, including removal of graffiti from all surfaces within the ROW;
- 15 E. guardrail, concrete barrier, glare screen, and crash attenuator repair or replacement;
- 16 F. fencing; and
- 17 G. landscape and irrigation systems maintenance.

18 ADOT may direct Developer to perform additional Maintenance During Construction Work and
19 in such event, will provide compensation in accordance with Section 6.11.2 of the Agreement.

20

21

End of Section

ADDENDUM #2

1 **MR 400 MAINTENANCE SERVICES**

2 **400.1 GENERAL REQUIREMENTS**

3 Throughout the Maintenance Period, Developer shall be responsible for and shall carry out
4 Maintenance Services for the Elements identified in TP Attachment 500-1 within the
5 Maintenance Service Limits.

6 For Elements in the Developer's design not addressed in TP Attachment 500-1, Developer shall
7 propose additions to the Asset Condition Score Table for ADOT's approval. The proposed
8 additions to the Asset Condition Score Table must set forth the proposed Inspection intervals,
9 condition requirements, temporary and permanent cure times, and condition target for the
10 subject Elements.

11 The Schematic Design identifies the Maintenance Service Limits assuming no changes or
12 additions to the Project ROW from that shown for the Schematic ROW. However, the
13 Maintenance Service Limits must be adjusted to encompass changes or additions to the Project
14 ROW from that shown for the Schematic ROW. The Maintenance Service Limits do not include
15 areas that the City of Phoenix agrees to maintain in the Third-Party Agreements. The
16 Maintenance Service Limits for the Maintenance Period must be as shown on the Final Design
17 Documents as described in Section GP 110.10 of the TPs; and as updated prior to Final
18 Acceptance.

19 Developer shall establish and maintain an organization that effectively manages all
20 Maintenance Services in a manner set forth in the approved Maintenance Management Plan
21 (MMP) and the requirements of the TPs. Developer shall:

- 22 A. Establish a maintenance organization, including management, coordination, reporting,
23 Inspection, Surveillance, design, construction, documentation, quality, traffic
24 management, maintenance, and repair functions.
- 25 B. Prepare and update the MMP, including supplementary plans as required in Section MR
26 400.2.1 of the TPs as elements of the Project Management Plan as set forth in Section
27 GP 110.04 of the TPs.
- 28 C. Provide an annual report on all Maintenance Services that is compatible with ADOT
29 maintenance management systems.
- 30 D. Participate in annual review of Maintenance Services jointly with ADOT.
- 31 E. As part of the Handback Requirements, Developer shall submit a Handback condition
32 report and Handback Transition Plan to ADOT for approval in ADOT's good faith
33 discretion.
- 34 F. Deliver the Project at the end of the Maintenance Period in the condition required by the
35 Contract Documents.
- 36 G. Provide evidence of insurance coverage and bonds for Maintenance Services in
37 accordance with the Agreement.
- 38 H. Provide and maintain a secure web-accessible database of Elements, Maintenance
39 Services, asset condition, and other pertinent information.
- 40 I. Conduct periodic Inspections and Surveillance of the Project and Elements within the
41 Project as set forth in Section MR 400.3 of the TPs and in TP Attachment 500-1.
- 42 J. Respond to Notifications from ADOT and other entities regarding Project deficiencies.
- 43 K. Make Emergency repairs, temporary repairs, and permanent repairs to the Project in
44 accordance with the Contract Documents.

ADDENDUM #2

- 1 L. Perform Capital Asset Replacement Work.
- 2 M. Minimize the risk of damage, disturbance, or destruction of third-party property during
- 3 the performance of Maintenance Services.
- 4 N. Coordinate with ADOT and others with statutory duties or functions in relation to the
- 5 Project, and permit ADOT and such other parties to perform such duties and functions.
- 6 O. Perform routine and preventative maintenance, systematic Inspections, and Surveillance
- 7 of the Project.
- 8 P. Perform Maintenance Services in accordance with the provisions of MMP and the
- 9 Contract Documents.
- 10 Q. Perform periodic sweeping and litter removal.
- 11 R. Provide location information to others in the Project regarding subsurface Elements
- 12 through the “Arizona 811” utility locates program.
- 13 S. Maintain a current record drawing set accurately describing the Project in accordance
- 14 with Section GP 110 of the TPs.
- 15 T. Participate in joint Inspections/Surveillance with ADOT or other jurisdictions’ personnel
- 16 as reasonably required by ADOT.
- 17 U. Provide qualified field and supervisory personnel to perform the Inspections, specialty
- 18 Inspections, Routine Maintenance Services, Capital Asset Replacement Work, and all
- 19 required related activities.
- 20 V. Promptly investigate reports or complaints regarding Project maintenance received from
- 21 all sources.

22 In carrying out the Maintenance Services, where there is a requirement for design, Developer
23 shall ensure that the Project is restored either to the original design used for the construction of
24 the Project, or to a different design that is in accordance with the Contract Documents.

25 **400.2 ADMINISTRATIVE REQUIREMENTS**

26 **400.2.1 Maintenance Management Plan**

27 The MMP comprises an update to the PMP referenced in Section GP 110.04 of the TPs that
28 addresses the Maintenance Services activities during the Maintenance Period.

29 **400.2.1.1 Maintenance Management Plan Content**

30 The MMP must address the following:

- 31 A. Organization of maintenance establishment;
- 32 B. Coordination responsibilities and lines of communications;
- 33 C. Coordination with others and response to Notifications;
- 34 D. Establishment of Maintenance Information System (MIS);
- 35 E. Required certifications, training, and expertise for different classifications of Work;
- 36 F. Qualifications and availability of personnel;
- 37 G. Staffing plan;
- 38 H. Dedicated Maintenance Services staff, qualifications, requirements, hiring, personnel
- 39 policies, adjustments to staff, and adequacy in meeting requirements of Maintenance
- 40 Services, including response times and nature of the Maintenance Services;

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- 1 I. Dedicated Maintenance Services equipment fleet, adjustments to fleet mix, and
- 2 adequacy in meeting requirements of Maintenance Services, including response times
- 3 and nature of the Maintenance Services;
- 4 J. Safety during maintenance activities; address safety of workers and the public in a
- 5 Maintenance Safety Management Plan (MSMP);
- 6 K. Asset Condition Score reporting;
- 7 L. Maintenance Quality Management Plan (MQMP);
- 8 M. Transportation Management Plan (TMP), and process for preparing and submitting
- 9 associated Traffic Control Plans (TCPs) in accordance with Section 8.4 of the
- 10 Agreement;
- 11 N. Environmental Management Plan (EMP);
- 12 O. Stormwater management (may be within the EMP);
- 13 P. Remediation of Nonconforming Work (may be within the MQMP);
- 14 Q. Inspections and Surveillance;
- 15 R. Design and construction standards for Maintenance Services;
- 16 S. Routine, preventative, temporary, and permanent Maintenance Services;
- 17 T. Capital Asset Replacement Work, except for Capital Asset Replacement Work in
- 18 connection with Handback; and
- 19 U. Maintenance Services during and in response to Incidents and Emergencies as set forth
- 20 in Section MR 400.4 of the TPs.

21 The MMP must include supplementary plans as follows:

- 22 A. Maintenance Safety Management Plan (MSMP) as referenced in Section MR 400.2.7 of
- 23 the TPs
- 24 B. Maintenance Quality Management Plan (MQMP) as referenced in Section MR 400.2.8 of
- 25 the TPs
- 26 C. Transportation Management Plan (TMP) as referenced in Section MR 400.2.9 of the TPs
- 27 D. Environmental Management Plan (EMP) as referenced in Section MR 400.2.10 of the
- 28 TPs
- 29 E. Capital Asset Replacement Work Plan as referenced in Section 8.3.2 of the Agreement.

30 **400.2.1.2 MMP Acceptance and Reviews**

31 The MMP and revisions thereto shall be subject to the submission, review and approval process

32 set forth in Section 8.9 of the Agreement.

33 **400.2.2 Maintenance Establishment**

34 Developer shall provide maintenance organization facilities, staff and equipment to manage and

35 provide the Maintenance Services.

36 **400.2.2.1 Maintenance Organization**

37 Organization of the maintenance establishment must address at least the following:

- 38 A. Management
- 39 B. Administration
- 40 C. Document control
- 41 D. Reporting
- 42 E. Safety

ADDENDUM #2

- 1 F. Quality
- 2 G. Environmental compliance
- 3 H. Maintenance of traffic (MOT)
- 4 I. Inspections and Surveillance
- 5 J. Routine and preventative maintenance practices
- 6 K. Communications
- 7 L. Incident response
- 8 M. Emergency response
- 9 N. Staffing / personnel
- 10 O. Equipment
- 11 P. Maintenance Services disciplines
 - 12 1. Roadway
 - 13 2. Drainage
 - 14 3. Landscaping
 - 15 4. Structures
 - 16 5. Lighting and traffic
 - 17 6. Pavements

18 **400.2.2.2 Maintenance Facilities**

19 Developer shall provide support facilities in proximity to the Project. See Section MR 400.2.6 of
20 the TPs for information concerning use of ADOT property for these facilities.

21 **400.2.2.2.1 Maintenance Office**

22 Developer shall provide office space within a 10-mile distance of the Project to house
23 Developer's management and data storage functions. Developer shall provide secure, (off-site)
24 back-up for the MIS. Developer shall provide staff performing management, coordination,
25 communications, information management systems, and document control duties. Front-office
26 function; i.e. public accommodation at the office is not required.

27 **400.2.2.2.2 Maintenance Yard**

28 Developer shall provide a maintenance yard(s) within a 10-mile distance of the Project for
29 equipment, supplies, materials, staff parking, and other staff facilities.

30 **400.2.3 Coordination Responsibilities**

31 Developer shall timely receive and process communications and Notifications from ADOT and
32 third parties reasonably requested by ADOT concerning Defects or other deficiencies.
33 Developer shall timely respond to these communications with:

- 34 A. Acknowledgement of receipt of communications
- 35 B. Planned response
- 36 C. Report of progress of response
- 37 D. Final quality documentation of any Maintenance Services
- 38 E. Final disposition and closeout of Emergencies and Incidents to extent that Developer's
39 forces were involved in resolving or rectifying conditions on the Project.

40 Developer shall provide 24-hour Emergency contact information for responsible in-charge party
41 and alternate(s).

ADDENDUM #2

1 Developer shall coordinate with ADOT and others to develop a reporting system that properly
2 prioritizes and delivers Notifications. Developer shall provide documented “work-flow” protocols
3 for all communications, including routing, timelines, responsibilities, and final disposition of
4 Incident.

5 **400.2.4 Maintenance Information System**

6 Developer shall develop a secure, searchable web accessible electronic database, referred to
7 as the Maintenance Information System (MIS), addressing the Maintenance Services
8 documentation and reporting requirements. Developer shall coordinate the MIS with the
9 maintenance requirements in TP Attachment 500-1. The MIS must include the Auditable
10 Sections, inventory Elements, required and achieved response times, Noncompliance Points
11 reporting requirements, and other pertinent characteristics.

12 The MIS is supplementary to and must be compatible with the Electronic Document
13 Management System (EDMS) described in Section GP 110.04.2 of the TPs. Developer shall
14 coordinate with ADOT on information technology requirements in developing the MIS
15 Architecture, including ADOTs maintenance management and inventory systems. Currently
16 available reference information on ADOT’s maintenance management structure, designated the
17 “feature inventory system”, is provided for information in the RIDs. Developer is cautioned that
18 the architecture, reporting categories, and technical systems requirements of ADOT’s
19 maintenance management system may change from time to time. Developer shall
20 accommodate any such changes. The MIS must be compatible with the ADOT maintenance
21 management system at the database level by periodic batch or data transfer.

22 Developer shall log all incidents, that Developer is notified of, and Maintenance Services in the
23 MIS.

24 Developer shall maintain a user log of the MIS. Developer shall manage access to the MIS
25 database to allow ADOT personnel, and other third parties that ADOT may reasonably request,
26 to access the database in real-time on a read-only basis.

27 Developer shall provide a link and web interface through ADOT’s website for public input to
28 address Project conditions; and Developer shall also publically post Project status information.

29 Developer shall submit documentation of the MIS Architecture in a work breakdown system
30 (WBS), along with flow charts of the work-flows for the Notifications, work orders, and other
31 required processes, to ADOT for approval.

32 Developer shall regularly update the MIS documentation as required to maintain current
33 documentation of and information in the MIS. It is the intent that the MIS Architecture remains
34 relatively stable through the term. However, from time to time if warranted for clarity in reporting
35 or management, Developer may propose changes to MIS Architecture for approval by ADOT.
36 Changes to MIS Architecture must also change the MMP (which is a controlled document) and,
37 therefore, must be approved by ADOT.

38 **400.2.4.1 Timeliness for MIS reporting**

39 Developer shall place MIS source documents in the MIS within 5 days of origination and shall
40 complete QC of such documents within 10 days of origination of data. Developer shall adhere to
41 the reporting timelines for other documents in the MIS, in accordance with the approved MMP,
42 and, as to Noncompliance Events, in accordance with Section 17.2.1.1 of the Agreement.

ADDENDUM #2

400.2.5 Qualifications and Availability of Personnel

- A. The Maintenance Manager is one of the designated Key Personnel, Developer shall set forth in the MMP Developer's management approach, Maintenance Manager's time on-site and the method of communication with ADOT, with the deputy maintenance manager(s), and with the rest of the maintenance organization.
- B. The Deputy Maintenance Manager must report directly to the Maintenance Manager and must be available full time to the Project. This person must not have any other responsibilities on the Project. The Deputy Maintenance Manager or designee must be available on call within 1 hour of Emergency Notifications.
- C. Bridge Inspectors must meet the qualifications stated in *29 CFR Part 650.309 National Bridge Inspection Standards* for types of bridges and Inspections that they perform.
- D. Maintenance workers working on traffic, lighting, and other electrical systems must have the relevant International Municipal Signal Association and/or American Traffic Safety Services Association certifications.
- E. Elements may require Specialty Inspectors. Developer shall follow current FHWA and ADOT guidance, and Good Industry Practice in furnishing Specialty Inspectors for such Elements.
- F. The above list of qualifications is not exhaustive. All workers must be properly qualified for the duties they are performing and must be adequately supervised. The MMP must set forth the required certifications and training for the various classifications of work as required for the Maintenance Period.

400.2.6 Use of Project ROW and Other ADOT Property

Developer may occupy Project ROW and, provided Developer first applies for and obtains a duly authorized TCP and/or ROW permit as reasonably needed, other Property in the Project area owned by ADOT to perform Maintenance Services.

Use of Project ROW during Emergencies will be as authorized by ADOT personnel.

Portions of ADOT property in the Project area may be made available to Developer to establish an equipment storage yard, laydown area, maintenance shop, and/or office facilities. Any such use is governed by Section GP 110.05.5 of the TPs.

400.2.7 Safety Management

Developer shall conduct all Maintenance Services in a safe manner. Developer shall assign a maintenance safety officer to the Project for the Maintenance Period. The maintenance safety officer must develop and administer the Maintenance Safety Management Plan (MSMP).

Developer shall prepare a MSMP that specifically addresses safety for Maintenance Services. The MSMP must be a supplement to the Safety Management Plan described in Section GP 110.09 of the TPs; and must adopt all of the requirements of the Safety Management Plan. In addition, the MSMP must address at least the following topics as they relate to the Maintenance Services:

- A. Safety of the travelling public; vehicular, bicycle, and pedestrian;
- B. Railroad safety;
- C. Safety during Inspections and Surveillance;
- D. Safety during routine and preventative Maintenance Services;
- E. Safety of Maintenance Services performed during Emergencies; and
- F. Safety during Capital Asset Replacement Work.

ADDENDUM #2

1 As part of the MMP, Developer shall submit the MSMP to ADOT for approval in ADOT's good
2 faith discretion.

3 **400.2.8 Quality Management**

4 Developer shall perform Maintenance Services under the authority of a Maintenance Quality
5 Management Plan (MQMP). The MQMP must be a supplement to the Quality Management Plan
6 (QMP) described in Section GP 110.07 of the TPs; and must adopt all of the requirements of the
7 QMP. As part of the MMP, Developer shall submit the MQMP to ADOT for approval in ADOT's
8 good faith discretion.

9 The MQMP must address at least the following topics as they relate to the Maintenance
10 Services:

- 11 A. Administration and document control
- 12 B. Inspections and Surveillance
- 13 C. Routine and preventative Maintenance Services
- 14 D. Maintenance Services performed during Emergencies
- 15 E. Capital Asset Replacement Work

16 **400.2.9 Transportation Management**

17 Developer shall perform Maintenance Services that affects the travelling public under the
18 authority of the Transportation Management Plan (TMP). The TMP must be as described in
19 Section DR 462.2.3 of the TPs. As part of the MMP, Developer shall submit the TMP to ADOT
20 for approval in ADOT's good faith discretion.

21 The TMP must address at least the following topics as they relate to the Maintenance Services:

- 22 A. Inspections and Surveillance
- 23 B. Routine and preventative Maintenance Services
- 24 C. Maintenance Services performed during Emergencies
- 25 D. Capital Asset Replacement Work

26 Developer shall follow the requirements of Section DR 462 of the TPs, and the then-current
27 ADOT standard specifications, standard drawings, and ADOT engineering directives, including
28 all then-currently approved statewide and regional modifications to standards. Developer shall
29 provide separate current TCPs for each activity that requires temporary traffic control.
30 Developer shall use the then-current ADOT practice in filing TCPs and notifying the Highway
31 Condition Reporting System.

32 **400.2.10 Environmental Management**

33 Developer shall summarize remaining environmental commitments delegated to Developer that
34 require continued action by Developer in an Environmental Management Plan (EMP) update for
35 the Maintenance Period. The EMP must set forth the responsibilities and activities that remain
36 Developer's responsibility during the Maintenance Period. As part of the MMP, Developer shall
37 submit the EMP to ADOT for approval in ADOT's good faith discretion.

38 The EMP must address environmental management and compliance related to the following:

- 39 A. Routine preventative and emergency Maintenance Services;
- 40 B. Capital Asset Replacement Work;
- 41 C. Stormwater compliance efforts as they relate to Maintenance Services, further detailed
42 in Section MR 400.2.10.1 of the TPs below;

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- 1 D. Protection of cultural resources in the Project area as they relate to Maintenance
- 2 Services; and
- 3 E. Emissions or other limitations placed on equipment used for Maintenance Services such
- 4 as limitations on emissions for mechanical sweeper trucks.

5 **400.2.10.1 Stormwater Reporting**

6 Developer shall create a separate section within the MIS for stormwater Elements and report
7 annually to ADOT. The calendar year for stormwater reporting must be the 12 calendar months
8 starting July 1. The annual report is due to ADOT by August 31 each year. The following
9 Elements and activities must be addressed:

- 10 A. How many miles of ditch and canals are cleaned;
- 11 B. How much sediment removed;
- 12 C. How much trash collected;
- 13 D. How many outfalls are Inspected;
- 14 E. How any illicit discharges are detected, classified, eliminated; and
- 15 F. How many post-construction best management practices (BMP) Elements are
- 16 Inspected.

17 A list of BMPs for reporting follows:

- 18 A. Inspect outfalls for dry weather discharges;
- 19 B. Investigate illicit discharges;
- 20 C. Number of storm drain cross connections investigated;
- 21 D. Number of illicit discharges investigated;
- 22 E. Respond to complaints;
- 23 F. Number of complaints received;
- 24 G. Number of complaints responded to;
- 25 H. Average response time (in days);
- 26 I. Take action to eliminate existing dry weather flows;
- 27 J. Number of existing dry weather discharges eliminated;
- 28 K. Take action to eliminate sources of illicit discharges;
- 29 L. Number of storm drain cross connection eliminated;
- 30 M. Number of illicit discharges eliminated;
- 31 N. Number of dry weather discharges eliminated;
- 32 O. Coordinate with local Governmental Entities for complaint response and investigation;
- 33 P. Number of illicit discharges reported to other jurisdictions for follow-up;
- 34 Q. Number of highway accident spills responded to;
- 35 R. Number of highway accident spills prioritized (potential for discharge);
- 36 S. Install post-construction stormwater control BMPs;
- 37 T. Number of new post-construction stormwater control BMPs installed;
- 38 U. Inspect storm sewer system;
- 39 V. Number of Inspections performed;
- 40 W. Develop maintenance schedules and priorities;
- 41 X. Perform repair, maintenance, and cleaning;

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- 1 Y. Number of miles of roadways repaired/maintained;
- 2 Z. Number of inlets cleaned;
- 3 AA. Number of drain inlets containing significant materials;
- 4 BB. Require certification/license;
- 5 CC. Number of licensed pesticide applicators;
- 6 DD. Stabilize roadway slopes; and
- 7 EE. Acres of roadway slopes stabilized.

8 **400.2.11 Underground Facilities**

9 Developer shall timely provide information to ADOT and third parties on horizontal and vertical
10 location of subsurface Elements as requested. Developer shall become member of the locates
11 organization administered by the Arizona Corporations Commission designated the “Arizona
12 811” program and shall respond to call-outs for information through this system during the
13 Maintenance Period.

14 **400.2.12 Intelligent Transportation Systems**

15 Developer’s Maintenance Services do not include the obligation to maintain or repair the ITS,
16 except that Developer shall be responsible to repair or replace damage from an Incident or
17 other event to conduit (but not fiber) located in or on any structure within the Maintenance
18 Service Limits.

19 **400.3 INSPECTIONS, SURVEILLANCE, ROUTINE PREVENTATIVE MAINTENANCE** 20 **AND CAPITAL ASSET REPLACEMENT WORK**

21 **400.3.1 Auditable Sections**

22 For purpose of conducting preventative maintenance, Inspections and reporting, Developer
23 shall divide the Project into Auditable Sections. The Auditable Sections must comprise discrete
24 measurable separate Project segments such as:

- 25 A. A mainline roadway segment no longer than 1 mile long; e.g., Mainline Westbound MP
26 2.0 – 3.0
- 27 B. A bridge or major structure
- 28 C. An exit or entrance ramp to mainline
- 29 D. A minor linear Element that is not mainline or ramp such as fence, conduit or conductor
30 system, or sound wall between interchanges (can be more than 1 mile)
- 31 E. An intersection

32 Developer shall prepare a map or exhibit of the proposed Auditable Sections with a
33 corresponding WBS and a table indicating the inventory of Elements within each Auditable
34 Section. As a part of the MMP, Developer shall submit the Auditable Sections exhibit and WBS
35 to ADOT for approval.

36 Together the Auditable Sections must comprise the entirety of the Project with no overlap of
37 inventory between Auditable Sections. It is the intent that the Auditable Sections remain
38 relatively stable through the Maintenance Period. However, Developer may propose changes
39 from time to time if warranted for clarity in reporting or management. Changes to Auditable
40 Sections must also change the MMP (which is a controlled document) and, therefore is subject
41 to approval by ADOT.

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1 **400.3.2 Inspections and Surveillance**

2 **400.3.2.1 Surveillance**

3 Developer shall perform Surveillance of the entire Project weekly, using adequate personnel to
4 note deficiencies that are visually apparent. Developer shall develop a checklist for this
5 surveillance activity and include it in the MMP. If a Defect or other deficiency is found through
6 Surveillance, then Developer shall enter the information into the MIS and shall schedule an
7 Inspection of the applicable Element.

8 Elements and other matters subject to Surveillance include:

- 9 A. Pavement breaches/gaps/potholes
- 10 B. Pavement cracks
- 11 C. Pavement markings
- 12 D. Expansion joints
- 13 E. Deck joints
- 14 F. Ponding/flooding
- 15 G. Erosion/slope stability
- 16 H. Fence condition
- 17 I. Sound wall and retaining wall condition
- 18 J. Lighting
- 19 K. Sign condition
- 20 L. Landscaping
- 21 M. Debris
- 22 N. Litter
- 23 O. Graffiti
- 24 P. Traffic signal function
- 25 Q. Barrier condition, including end treatments
- 26 R. Attenuator condition

27 **400.3.2.2 Inspections**

28 Developer shall carry out Inspections as indicated in Section MR 400.3.2 of the TPs and as set
29 forth in TP Attachment 500-1. For each Inspection Developer shall make an entry into the MIS
30 concerning the Inspection and the results and actions resulting from that Inspection.

- 31 A. Defects and other deficiencies noted from Surveillance must be the subject of an
32 Inspection.
- 33 B. For Elements that require an annual Inspection, Developer shall develop a protocol that
34 randomly selects 10 percent of the Auditable Sections each month and shall inspect all
35 of the Elements within those Auditable Sections for that month.
- 36 C. For Elements that require Inspection every other year, Developer shall develop a
37 protocol that randomly selects 5 percent of the Auditable Sections each month and shall
38 inspect the Elements within those Auditable Sections for that month.
- 39 D. Developer shall inspect the pavement Element for the entire mainline lanes, ramps,
40 frontage roads, and intersections every other year for ride quality and pavement
41 condition. In addition, Developer shall conduct Inspections and perform repairs of the
42 pavement Element when the Capital Asset Replacement Work is being performed.

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1 E. Developer shall conduct overhead sign Inspections such that 20 percent of overhead
2 signs are Inspected annually. This must include visual Inspection for structural integrity,
3 lighting (if present) and legibility, and measured reflectivity readings.

4 F. Developer shall provide Specialty Inspection of the following Elements at year 10, year
5 20, and at Handback:

- 6 1. Bridge expansion joints
- 7 2. Steel structure coating systems

8 Developer shall carry out the Specialty Inspections in a manner and at a level of detail
9 such that the Remaining Useful Life of each of these Elements is determined. Included
10 in the planned annual activities section of the Annual Maintenance Services Report in
11 accordance with Section MR 400.3.4 of the TPs, Developer shall submit a Specialty
12 Inspection Plan for the required Elements, including qualifications of Specialty
13 Inspectors, proposed testing and diagnostics protocols, and proposed reporting, to
14 ADOT for approval.

15 G. In addition to the above Inspection frequency requirements, when notified of a Defect or
16 other deficiency by ADOT or by a third party, or if a Defect or other deficiency is
17 discovered in the course or as a result of Surveillance or otherwise, Developer shall
18 Inspect the Element in question, and shall report to ADOT the results of the Inspection. If
19 the nature of the Defect or other deficiency is routine, Developer may report via the
20 normally scheduled Inspection and reporting. If the nature of the Defect or other
21 deficiency is non-routine, Developer shall report in accordance with the provisions of
22 Section MR 400.3.5 of the TPs.

23 **400.3.3 Inspections by ADOT**

24 ADOT and third parties may make inspections of the Project or Elements. ADOT will make
25 reasonable efforts to communicate and coordinate with Developer concerning ADOT and third
26 party inspections.

27 ADOT will perform the FHWA required bridge inspections and will share the bridge inspection
28 reports with Developer. ADOT inspections of bridges will discharge the regulatory requirements
29 for bridge inspections; however, Developer shall still be responsible for undertaking Surveillance
30 and Inspections of bridges.

31 **400.3.4 Reporting**

32 A. Monthly Maintenance Services Report – On or before the 15th of each month during the
33 Maintenance Period, Developer shall submit to ADOT a monthly report of previous
34 month's Maintenance Services. In the MMP, Developer shall address the format and
35 outline for this report and method of making this report available. The preferred form of
36 transmission of this report is through the MIS.

37 B. Annual Maintenance Services Report – On or before the last Business Day of January
38 each year during the Maintenance Period, Developer shall submit an annual report of
39 the previous year's Maintenance Services to ADOT. Developer shall address the format
40 and outline for this report, and method of making this report available, in the MMP. The
41 annual report must include an electronic tabular summary of all Maintenance Services
42 carried out in the previous year that is formatted to conform to requirements of ADOT's
43 then-current maintenance management system. The report must address planned
44 activities for the forthcoming year. A section of the annual report must address
45 stormwater reporting in accordance with Section MR 400.2.10.1 of the TPs.

ADDENDUM #2

- 1 C. Annual Maintenance Services meeting – Developer shall participate in an annual
2 Maintenance Services meeting with ADOT to be mutually scheduled in the 1st quarter of
3 every year during the Maintenance Period. Developer shall provide an agenda for this
4 meeting. The meeting must address at least the following: results, safety, MOT/TCP
5 issues, management, Incidents and Emergencies for which Maintenance Services was
6 required, process improvement, Capital Asset Replacement Work as required by Section
7 8.3.2 of the Agreement, changes to the MMP, including updates every 2 years to the
8 Capital Asset Replacement Work Plan, and planned activities for the forthcoming year.
9 Developer shall revise the planned activities as agreed in the annual meeting if
10 necessary, and within 15 days of the annual meeting, Developer shall present revised
11 annual planned activities to ADOT for approval.
- 12 D. Updates to MMP and supplementary plans – Developer shall update the MMP, MSMP,
13 MIS, MQMP, TMP, and EMP at least annually and as may be more frequently required
14 during the Maintenance Period. These documents are all controlled documents that
15 require ADOT approval for changes. At least 30 days prior to the annual maintenance
16 meeting, Developer shall submit proposed changes to ADOT for approval in ADOT's
17 good faith discretion. Within 15 days after the annual meeting, Developer shall submit
18 final revised documents as necessary to resolve ADOT's comments, including
19 comments at the annual meeting, to ADOT for approval in ADOT's good faith discretion.

20 **400.3.5 Routine Preventative Maintenance**

21 Routine preventative maintenance, which is part of Routine Maintenance, consists of periodic
22 system checks, minor refurbishments, cleaning, and repairs that prevents unexpected downtime
23 and improves reliability of Elements. Developer shall prepare checklists for appropriate
24 Elements and undertake routine preventative maintenance in accordance with the schedule set
25 forth in the MMP.

26 Developer shall perform routine preventative maintenance on all Elements that benefit from
27 routine preventative maintenance. The routine preventative maintenance must address at least
28 the Elements shown in TP Attachment 500-1.

29 **400.3.6 Capital Asset Replacement Work**

30 This Section MR 400.3.6 addresses Capital Asset Replacement Work other than in connection
31 with satisfying the Handback Requirements. For Capital Asset Replacement Work in connection
32 with satisfying the Handback Requirements refer to Section MR 501 of the TPs.

33 Developer shall plan and execute Capital Asset Replacement Work in accordance with this
34 Section MR 400.3.6 and Section 8.3 of the Agreement. The following Elements are subject to
35 Capital Asset Replacement Work requirements:

- 36 A. Roadway pavement
37 B. Signage

38 Developer shall provide ADOT all documentation and perform analysis, as required, to ensure
39 all necessary clearances, including environmental, right-of-way, utilities, and materials, are
40 obtained between 6 months and 30 days prior to commencing Capital Asset Replacement
41 Work.

ADDENDUM #2

1 **400.3.6.1 Capital Asset Replacement Work Trigger**

2 **400.3.6.1.1 Roadway Pavement**

3 When either of the following occurs with respect to roadway pavement, Developer shall initiate
4 and complete Capital Asset Replacement Work.

5 A. Pavement Ride: Auditable Sections representing 35 percent or more of area of roadway
6 of the Project, exhibit an pavement ride condition score of D or worse in accordance with
7 TP Attachment 500-1 reference line 2.1 and Table 400-2 of Section MR 400.6.6.1 of the
8 TPs.

9 B. Other Pavement Distress Factors: Auditable Sections representing 35 percent or more
10 of area of roadway of the Project exhibit a pavement distress condition score of D or
11 worse in accordance with TP Attachment 500-1 reference line 3.1 and Table 400-1 of
12 Section MR 400.6.1 of the TPs.

13 **400.3.6.1.2 Signage**

14 When the following occurs with respect to signage, Developer shall initiate and complete Capital
15 Asset Replacement Work.

16 Auditable Sections representing 35 percent or more of the Project signage, exhibit a signage
17 condition score of D or worse in accordance with TP Attachment 500-1 reference line 4.3 and
18 Table 400-1 of Section MR 400.6.6 of the TPs.

19 **400.3.6.2 Capital Asset Replacement Work Reporting**

20 As part of the annual report required in Section MR 400.3.4 of the TPs, and in addition to the
21 information to be reported under Section 8.11.3 of the Agreement, Developer shall present a
22 summary of the:

- 23 A. Roadway – pavement ride
- 24 B. Roadway – other pavement distress factors
- 25 C. Signage condition

26 Developer shall express aggregate condition as a percentage of the Project totals for each of
27 these Elements.

28 **400.4 INCIDENTS AND EMERGENCIES**

29 When Developer receives Notification or otherwise becomes aware of an Incident or
30 Emergency, Developer shall mobilize an Inspection team within 1 hour to provide a preliminary
31 Inspection of the Element in question or affected Project area. Developer shall mobilize needed
32 resources to begin effecting repairs of damage to the Project caused by the Incident or
33 Emergency or third party response thereto within 2 hours of Notification. As soon as practicable,
34 but in no case later than 24 hours after inception of the Incident or Emergency, Developer shall
35 provide to ADOT a preliminary action plan that includes the temporary repairs necessary to
36 rectify the situation to protect the life safety of the travelling public. Within 30 days after the
37 temporary or permanent repairs have been completed, Developer shall submit an Incident or
38 Emergency Incident Report that describes the particulars of the Emergency, nature of the
39 repairs, need for follow up permanent repairs, and lessons learned from the Incident or
40 Emergency to ADOT.

41 **400.5 CONTROL OF WORK**

42 Developer shall adhere to the following:

ADDENDUM #2

- 1 A. Conduct Maintenance Services in compliance with General Provisions, Construction
2 Requirements, and as applicable with Design Requirements of the TPs; all in
3 accordance with the Inspection frequencies required in TP Attachment 500-1.
- 4 B. If Maintenance Services are proposed that require a modification to standards, conform
5 to the requirements of Section MR 200.2 of the TPs.
- 6 C. Report status of Maintenance Services in the MIS.
- 7 D. Provide Notification of routine or preventative Maintenance Services through the MIS
8 system and in accordance with other ADOT practices.
- 9 E. For Maintenance Services during or as a result of Incidents or Emergencies, follow the
10 communication protocols set forth in Section MR 400.3.5 of the TPs and in the MMP.
- 11 F. Nonconforming Work requires noncompliance reporting, corrective action, and remedial
12 work protocol as set forth in the MQMP.
- 13 G. Final disposition of Maintenance Services will require a suitable record entry in the MIS
14 that the work has been successfully completed (including closure of any related
15 Nonconforming Work process).
- 16 H. Record changes to Project on a set of record drawings accurately describing the Project
17 in accordance with Section GP 110 of the TPs at least annually.

18 **400.6 ASSET CONDITION BASELINE AND ASSET CONDITION SCORING**

19 **400.6.1 Asset Condition Baseline**

20 Developer shall prepare a comprehensive Asset Condition Score Table based on TP
21 Attachment 500-1. The Asset Condition Score Table must comprise all Elements for all
22 Auditable Sections, thus creating an inventory of the entire Project. ADOT will review and
23 approve of the Asset Condition Score Table as part of the MMP reviews. Developer or ADOT
24 may suggest changes to the Asset Condition Score Table from time to time. Developer shall
25 document such changes as modifications to the MMP, and therefore the changes are subject to
26 ADOT approval. For clarity, an example of the Asset Condition Score Table, partially filled out,
27 is shown in TP Attachment 500-2.

28 ADOT may propose changes in the Asset Condition Score Table as follows:

- 29 A. Changes related to changes in inventory for Auditable Sections
- 30 B. Changes in measurement method, or test method
- 31 C. Changes in Maintenance Services practices

32 Developer shall propose changes in the Asset Condition Score Table if the following occurs:

- 33 A. Changes related to changes in inventory for Auditable Sections
- 34 B. Changes in measurement method, or test method
- 35 C. Changes in Maintenance Services practices

36 ADOT and Developer may also mutually agree to other changes in the Asset Condition Score
37 Table that aid effectiveness in discharge of Maintenance Services, or that aid in reporting or
38 documentation.

39 Within 30 days after Final Acceptance, ADOT will use the accepted Asset Condition Score
40 Table and will conduct an inspection and Surveillance of the Project and create a Baseline
41 Asset Condition Score. Developer shall make the Maintenance Manager and appropriate
42 support staff available to accompany ADOT in the asset condition scoring. Developer shall use

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1 the Baseline Asset Condition Score as a baseline for Developer's ongoing Asset Condition
2 Scoring.

3 **400.6.2 Annual Asset Condition Scoring**

4 Developer shall score the asset (that is, Developer shall perform Asset Condition Scoring based
5 upon Inspections and Surveillance) annually prior to the annual maintenance services meeting.

6 **400.6.3 Asset Condition Scoring for Interim Asset Recovery**

7 In addition to complying with the annual asset condition scoring requirements, at year 10 and
8 year 20 of the Maintenance Period, Developer shall perform Interim Asset Condition scoring of
9 all Auditable Sections for purposes of establishing an Interim Asset Recovery Plan. Developer
10 shall derive the Asset Condition Score for each Auditable Section from current Inspections or
11 Inspections undertaken within the immediately preceding 24 months in accordance with the
12 following: The Asset Condition Score of an Auditable Section that was the subject of an
13 Inspection within 24 months of the Maintenance Period year 10 and year 20 asset condition
14 scoring is acceptable and such Auditable Section does not need to be the subject of an
15 additional Performance Inspection and re-scored if Surveillance indicates that the condition of
16 the Auditable Section has not significantly changed. Requirements for Inspections and Asset
17 Condition Scoring at years 10 and 20 are more particularly set forth Section MR 400.6.3 and
18 Section MR 400.6.4 of the TPs.

19 **400.6.4 Interim Asset Condition Recovery**

20 Within 60 days after Interim Asset Condition scoring has been completed. Developer shall
21 prepare and submit to ADOT an Interim Asset Condition Recovery Plan, acceptable to ADOT,
22 and shall fully implement all improvements required by the accepted plan within 2 years of the
23 Interim Asset Condition scoring. Within 60 days after Interim Asset scoring has been completed,
24 Developer shall submit the Interim Asset Condition Recovery Plan to ADOT for approval.

25 Developer shall fully perform all Maintenance Services in accordance with the approved Interim
26 Asset Condition Recovery Plan within 24 months of the Interim Asset Condition scoring.

27 **400.6.5 Exceptions to Interim Asset Condition Recovery**

28 Developer shall not be required to perform Maintenance Services with respect to the following:

- 29 A. Minor age-related non-structural weathering of concrete structures consisting of minor
30 scaling and/or non-structural hairline cracks classified as shrinkage, mass concrete or
31 temperature related, (as referenced in FHWA publication NHI 03-001).
- 32 B. Bridge expansion joints, provided that they are determined to have 20 years of
33 Remaining Useful Life by Inspection carried out in accordance with Section MR
34 400.3.2.2 of the TPs.
- 35 C. Steel structures coating systems, provided that steel structures coating systems are
36 determined to have 20 years of Remaining Useful Life by Inspection carried out in
37 accordance with Section MR 400.3.2.2 of the TPs. However, Developer shall include
38 touch-ups and local repairs of steel coating in the Interim Asset Recovery Plan and
39 perform these Maintenance Services.
- 40 D. Retroreflectivity and legibility of overhead signs, provided that they are within 75 percent
41 of specified requirements for new materials.
- 42 E. Retroreflectivity and legibility of other signs, provided that they are within 75 percent of
43 specified requirements for new materials.

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1 **400.6.6 Development of Asset Condition Score and Adjectival Rating System**

2 For purposes of arriving at an Asset Condition Score each Element of each Auditable Section
 3 scored must be rated with an adjectival score. The rating must reflect how the measurement
 4 record listed in TP Attachment 500-1 for each Element compares to the target condition listed in
 5 TP Attachment 500-1. The adjectival rating system is as shown in Table 400-1 of Section MR
 6 400.6.6 of the TPs.

Table 400-1 Adjectival Rating System			
Rating	Numeric score	Condition	Description
A	5	Excellent	The target for the Performance Requirement is fully achieved. Element is fully functional and/or fully maintained, in new or near new condition and appearance, in correct location.
B	4	Good	The target for the Performance Requirement is substantially achieved. Element is fully functional, in good condition and appearance. Element may be slightly displaced or weathered.
C	3	Average	The target for the Performance Requirement is marginally achieved. Element is functional, may have some appearance problems. Element may be slightly displaced or not achieve full capacity, but is comfortably above replacement values, displacement tolerances or capacity needs.
D	2	Poor	The target for the Performance requirement is not achieved. Element is functional, but has significant appearance or displacement problems. Element is at or only slightly above replacement values displacement tolerances, or capacity needs.
F	0	Unacceptable	The target for the Performance Requirement is not achieved. The Element is lacking in functionality, capacity, or condition. Element is below replacement values displacement tolerances, or capacity needs.

7 **400.6.6.1 Pavement Ride Scoring**

8 Developer shall use Table 400-2 in Section MR 400.6.6.1 of the TPs for rating pavement ride
 9 (Element 2.1 in TP Attachment 500-1). Developer shall use the adjectival rating Table 400-1 of
 10 Section MR 400.6.6 of the TPs for all other entries. The numbers in Table 400-2 of Section MR
 11 400.6.6.1 of the TPs are explained in Table 400-3 of Section MR 400.6.6.1 of the TPs.

Table 400-2 Pavement Ride Condition Scoring					
Location	Rating				
	A=5	B=4	C=3	D=2	F=0
Mainline lanes	60 or lower	61 - 94	95 - 119	120 - 150	>150
Ramps	60 or lower	61 - 94	95 - 119	120 - 150	>150

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Table 400-2 Pavement Ride Condition Scoring					
Location	Rating				
	A=5	B=4	C=3	D=2	F=0
Frontage Roads	70 or lower	71 - 104	105 - 144	145 – 170	>170

1 A description of the IRI scale for pavement smoothness is as follows:

Table 400-3 IRI Scale for Pavement Smoothness	
IRI Scale (inches/mile)	Description
< 60	Very Smooth
61 – 120	Smooth
121 – 170	Fair
171 – 220	Rough
> 220	Very Rough

2 **400.6.7 Calculation of Asset Condition Score**

3 Annually, Developer shall calculate an Asset Condition Score using the most recent values for
4 the condition of each Element in each Auditable Section. The score of each Element in each
5 Auditable Section is determined by multiplying the rating by the weighting factor presented in
6 Table 400-4 in this Section MR 400.6.7.

7 If ADOT and Developer cannot agree on the condition to be assigned to an Element within 60
8 days from original reporting of the disputed condition, then dispute resolution procedures in
9 accordance with Section 22.2 of the Agreement must be followed. For purposes of the annual
10 Asset Condition Score, Elements for which the condition is in dispute will be excluded from the
11 Asset Condition Score calculation by reducing total available points for calculation.

12 The rating of each element in each Auditable Section must be weighted by multiplying the rating
13 by the weighting factor presented in Table 400-4 in this Section MR 400.6.7.

Table 400-4 Asset Condition Score Weighting Table			
Item	Description	Asset Condition Score TP Attachment 500-1 reference line	Weight
1	Public appearance factors (debris, curb and sidewalk condition, sweeping, litter, graffiti, sound-walls, signals, landscaping)	1.1-1.8	20%

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Table 400-4 Asset Condition Score Weighting Table			
Item	Description	Asset Condition Score TP Attachment 500-1 reference line	Weight
2	Pavement condition	2.1	35%
3	Roadway pavement distress factors	3.1-3.2	10%
4	Safety and security (attenuators, barrier, fences, sign, lighting pavement markings) Structures	4.1 – 4.5	15%
5	Structures	5.1-5.3	10%
6	Ponding, flooding, drainage, slopes	6.1-6.4	10%

- 1 The Asset Condition Score is the sum of each Element in each Auditable Section multiplied by
- 2 the adjectival rating numeric score multiplied by the appropriate weighting factor in the Asset
- 3 Condition Score Weighting Table 400-4 of this Section MR 400.6.7.
- 4 The total available points for Baseline Asset Condition Score is the sum of each Element in
- 5 each Auditable Section multiplied by five (which is the highest adjectival rating numeric score)
- 6 multiplied by the appropriate weighting factor in the Asset Condition Score Weighting Table
- 7 400-4 in this Section MR 400.6.7.
- 8 Developer shall present the overall condition of the asset (Asset Condition) as a percentage of
- 9 the adjusted Baseline Asset Condition Score.
- 10 In years 10-30 of the Maintenance Period, Developer shall adjust the Baseline Asset Condition
- 11 Score downwards in accordance with the Baseline Asset Condition Score Adjustment Table
- 12 400-5 in this Section MR 400.6.7 to account for weathering and normal aging of the asset.

Table 400-5 Baseline Asset Condition Score Adjustment	
Maintenance Period Year	Baseline Asset Condition Score adjustment factor
0-9	100%
10-19	96.0%
20-24	92.0%
25-29	88.0%
30	85.0%

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1 At years 10, 20, 25, and 29 of the Maintenance Period, the score from each Auditable Section
2 must be derived from Inspections undertaken within the immediately preceding 24 months, as
3 provided in Section MR 400.6.2 of the TPs.

4 Every Inspection of every Element must result in an adjectival rating for that Element. Developer
5 shall display the adjectival rating in the associated Inspection report, and shall duly report it in
6 the monthly maintenance report described in Section MR 400.3.4 of the TPs. ADOT will have
7 the right to dispute an adjectival rating within 30 days after ADOT receives the monthly report. If
8 ADOT does dispute an adjectival rating of an Element, the Parties will jointly inspect that
9 disputed Element.

10 If ADOT and Developer subsequently timely agree on an adjectival score in or as a result of the
11 follow-up joint Inspection, that score must be used for that Element. Developer shall then correct
12 the monthly report to reflect the agreed adjectival score. Developer shall keep and report a
13 record of corrections.

14 If ADOT and Developer cannot agree on the condition to be assigned to an Element within 60
15 days from original reporting of the disputed condition, then, the Dispute shall be resolved in
16 accordance with the Dispute Resolution Procedures. For purposes of the annual Asset
17 Condition Score, Elements for which the condition is in Dispute must be included in the Asset
18 Condition Score calculation using ADOT's determination, subject to adjustment up, and as
19 necessary to reflect the final resolution of the Dispute.

20 Nothing in these specifications prohibits Developer and ADOT from mutually establishing a
21 rating system for an Element or Elements based on a specific Inspection metric to aid in
22 adjectival scoring, such as assigning numeric values for certain conditions.

23 **400.6.7.1 Actions Resulting from Asset Condition Score**

24 A. If the Asset Condition Score is between 100 percent and 85 percent of the Adjusted
25 Baseline Asset Condition Score, then no Noncompliance Points will be assessed for
26 asset condition as provided at line * of Exhibit 18-2 to the Agreement.

27 B. If the Asset Condition Score is below 85 percent but not below 60 percent of the
28 Adjusted Baseline Asset Condition Score, then Noncompliance Points will be assessed
29 as provided at line * of Exhibit 18-2 to the Agreement

30 C. If the Asset Condition Score is below 60 percent of the Adjusted Baseline Asset
31 Condition Score, then Developer shall, within 90 days, accelerate the Maintenance
32 Services to bring the Asset Condition Score to at least 85 percent of the Adjusted
33 Baseline Asset Condition Score, as demonstrated by a new Asset Condition Scoring
34 exercise.

35 If Developer fails to bring the Asset Condition Score up to at least 85 percent of the Adjusted
36 Baseline Asset Condition Score within 90 Days, ADOT may begin maintenance activities using
37 its own forces or pursue other remedies under the terms of the Agreement.

38 **400.6.8 Summary of Asset Condition Scoring during the Maintenance Period**

39 A summary of Asset Condition Scoring requirements is set forth below to summarize the timing
40 number, basis, and purposes for required Asset Condition Scoring activities during the
41 Maintenance Period. Asset Condition Scoring will be carried out using the then-current
42 approved Asset Condition Score Table in accordance with Section MR 400.6.1 of the TPs; and
43 will be scored in accordance with Section MR 400.6.1 through MR 400.6.7 of the TPs. In
44 addition to the summary presented here, other Asset Condition Scores may be required of

ADDENDUM #2

1 Developer in accordance with Section MR 400.6.7.1 of the TPs; or may be generated by ADOT
2 as part of their oversight activities discussed in Section B of the TPs.

3 **400.6.8.1 Baseline Asset Condition Score**

4 ADOT with cooperation and participation by Developer will, within 30 days after Final
5 Acceptance, perform a comprehensive Inspection and Surveillance of all Elements for the
6 purpose of establishing a Baseline Asset Condition Score. This is further discussed in Section
7 MR 400.6.1 of the TPs.

8 **400.6.8.2 Annual Asset Condition Scores for Years 1-25 of the Maintenance Term**

9 Developer shall, within 30 days prior to the annual maintenance meeting for each of years 1-25
10 of the Maintenance Period, develop an Asset Condition Score for the Project. Developer shall
11 use the previous year's random Inspections and Surveillance as representative of the condition
12 of the Project to develop the Asset Condition Score. Developer shall use the Asset Condition
13 Score for purposes of assessing Noncompliance Points, establishing the proposed maintenance
14 activities for the upcoming year, and updating the Capital Asset Replacement Work Plan every
15 2 years. At years 10 and 20, specialty inspections are required for bridge expansion joints and
16 for steel coatings to establish Remaining Useful Life for these elements.

17 **400.6.8.3 Annual Asset Condition Scores for Years 26-29 of the Maintenance Period**

18 Developer shall, within 30 days prior to the annual maintenance meeting for each of years 26-29
19 of the Maintenance Period, develop an Asset Condition Score for the Project. Developer shall
20 use the previous year's random Inspections and Surveillance as representative of the condition
21 of the Project to develop the Asset Condition Score. Developer shall use the Asset Condition
22 Score so derived for purposes of assessing Noncompliance Points, updating the Handback
23 Plan, updating the needed Capital Asset Replacement Work to satisfy the Handback
24 Requirements set forth in Section MR 501.1 of the TPs, and establishing the proposed
25 maintenance activities, including Capital Asset Replacement Work, for the upcoming year.

26 **400.6.8.4 Asset Condition Score for Final Punchlist**

27 ADOT (with the cooperation of and participation by Developer) will, approximately 6 months
28 prior to the end of the Maintenance Period, perform a comprehensive Inspection and
29 Surveillance of the Project, including all Elements for purpose of establishing an Asset Condition
30 Score for Final Punchlist. Developer shall provide an engineering report that documents
31 Remaining Useful Life in accordance with Section MR 501.1 of the TPs. Developer shall use the
32 Asset Condition Score so derived for purposes of assessing Noncompliance Points, ensuring
33 that asset condition at the end of the Maintenance Period satisfies all the Handback
34 requirements set forth in Section MR 100.1.1 of the TPs, and in order to establish a punchlist of
35 deficiencies that must be rectified before the end of the Maintenance Period.

36 **400.7 SUBMITTALS**

37 Table 400-6 reflects a nonexclusive list of Submittals identified in Section MR 400 of the TPs
38 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
39 determine and submit all Submittals as required by the Contract Documents, Governmental
40 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
41 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
42 specified in the Contract Documents, Developer shall submit the following to ADOT in the
43 formats described in Section GP 110.10.2.1.1 of the TPs:

ADDENDUM #2

Table 400-6 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Draft MMP	2	2	1	No later than 90 days prior to Substantial Completion	MR 400.2.1
Final MMP	2	2	1	Before Substantial Completion	MR 400.2.1
MSMP	2	2	1	With MMP Submittals	MR 400.2.7
MQMP	2	2	1	With MMP Submittals	MR 400.2.8
TMP	2	0	Thru MIS	With MMP Submittals and for each incidence where temporary traffic control measures are required.	MR 400.2.9
EMP	2	2	1	With MMP Submittals	MR 400.2.10
Auditable Sections Table	3	2	1	With MMP Submittals	MR 400.3.1
MIS Architecture	3	2	1	With MMP Submittals	MR 400.2.4
Proposed updates to MMP	2	2	1	Annually by annual maintenance meeting	MR 400.3.4
Final approved update to MMP	2	2	1	Within 15 days after annual maintenance meeting	MR 400.3.4
Monthly Maintenance Services report of previous month's maintenance activities	5	0	Thru MIS	By 15th of each month	MR 400.2
Annual Maintenance Services report of previous year's maintenance activities	3	2	1	Annually 30 days prior to annual maintenance meeting	MR 400.2
Planned Maintenance Services activities	3	2	1	Annually 30 days prior to annual maintenance meeting	MR 400.2
Emergency and Incident reports	5	0	Thru MIS	Within 30 days of Incident or Emergency	MR 400.4

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Table 400-6 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Inspection plan and results of Remaining Useful Life for bridge expansion joints and steel coatings for Interim Asset Condition Score for year 10	3	2	Thru MIS	6 months prior to year 10 Interim Asset Condition scoring	MR 400.3.2.2.
Interim Asset Condition Score for Year 10	3	0	Thru MIS	Year 10 of the Maintenance Period	MR 400.6.3
Year 10 Interim Asset Condition Recovery Plan	3	2	1	Within 60 days of 10 year Interim Asset Condition scoring	MR 400.6.4
Inspection plan and results of remaining useful life for bridge expansion Joints and steel coatings for Interim Asset Condition Score for year 20	3	2	Thru MIS	6 months prior to year 20 Interim Asset Condition scoring	MR 400.3.2.2
Interim Asset Condition Score for Year 20	3	0	Thru MIS	Year 20 of the Maintenance Period	MR 400.6.3
Year 20 Interim Asset Condition Recovery Plan	3	2	1	Within 60 days of 20 year Interim Asset Condition scoring	MR 400.6.4
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

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2

End of Section

ADDENDUM #2

1 MR 500 NONCOMPLIANCE EVENT REPORTING

2 500.1 GENERAL REQUIREMENTS

3 Developer shall perform all Noncompliance Event reporting in compliance with Section 17.2.1 of
4 the Agreement.

5

6

End of Section

ADDENDUM #2

1 **MR 501 HANDBACK**

2 **501.1 GENERAL REQUIREMENTS**

3 Developer shall implement the accepted Handback Plan and perform all Capital Asset
4 Replacement Work and other Maintenance Services necessary to deliver the Project to ADOT
5 at the end of the Maintenance Period in a condition that complies with the Handback
6 Requirements as set forth in this Section MR 501 of the TPs. The Handback Requirements
7 include a minimum Asset Condition Score as required by this Section MR 501 of the TPs and
8 the applicable Remaining Useful Lives as set forth in Table 501-1 in Section MR 501.3 of the
9 TPs.

10 **501.2 ADMINISTRATIVE REQUIREMENTS**

11 **501.2.1 Asset Condition Score for Handback Recovery**

12 At year 25 of the Maintenance Period, ADOT will use the then-current accepted Asset Condition
13 Score Table and will perform Inspections and Surveillance and create an Asset Condition Score
14 for determining Capital Asset Replacement Work and other Maintenance Services required for
15 Handback. Specifics on Asset Conditions Scoring are in Section MR 400.6 of the TPs.
16 Developer shall make adjustments to the Asset Condition Score Table in accordance with
17 Section 400.6.1 of the TPs. Developer shall make the Maintenance Manager and appropriate
18 support staff available to accompany ADOT in the Asset Condition Scoring. Developer shall
19 apply ADOT's Asset Condition Score to establish Developer's Capital Asset Replacement Work
20 and other actions that will be necessary for satisfying the Handback Requirements.

21 **501.2.2 Handback Plan**

22 Developer shall prepare a Handback Plan, acceptable to ADOT, in its good faith discretion, that
23 contains the methodologies and activities to be undertaken or employed to meet the Handback
24 Requirements at the end of the Term. Developer shall fully implement all improvements required
25 by the accepted Handback Plan by the end of the Maintenance Period.

26 In preparing the Handback Plan, Developer shall compare the Asset Condition Score developed
27 under Section MR 501.2.1 of the TPs to the Adjusted Baseline Asset Condition Score, and shall
28 describe the steps necessary to bring the Project from the then-current condition to the Adjusted
29 Baseline Asset Condition, and shall compare the Remaining Useful Life of each Element to the
30 required Remaining Useful Life at Handback required by Section MR 501.3 of the TPs.

31 The Handback Plan must include (a) a detailed description, by Element, of all planned Capital
32 Asset Replacement Work and Routine Maintenance necessary to bring the Project from the
33 then-current condition to the Adjusted Baseline Asset Condition Score, (b) a detailed
34 description, by Element, of all planned Capital Asset Replacement Work and Routine
35 Maintenance to restore each Element to its required Remaining Useful Life at Handback, (c) a
36 resource and cost-loaded schedule for carrying out such Capital Asset Replacement Work and
37 (d) an updated Capital Asset Replacement Work Schedule for carrying out such Capital Asset
38 Replacement Work, as more particularly provided in Section 8.3.2 of the Agreement, and a
39 schedule for carrying out such Routine Maintenance, with substantial completion targeted to be
40 no later than 6 months before the end of the Maintenance Period and completion of punch list
41 items by the end of the Maintenance Period.

ADDENDUM #2

1 **501.2.3 Handback Plan Reviews**

2 No later than 60 days after ADOT delivers to Developer the Asset Condition Score for
3 Handback described in Section MR 501.2.1 of the TPs, Developer shall submit a draft
4 Handback Plan to ADOT for approval in ADOT's good faith discretion.

5 ADOT will review and provide comments to the draft Handback Plan within 30 days after
6 receipt. Within 10 days after Developer receives ADOT's comments, Developer and ADOT will
7 convene a review meeting to resolve ADOT's comments.

8 No later than 30 days after the comment resolution meeting Developer shall resolve all
9 comments to the satisfaction of ADOT and shall submit the final Handback Plan to ADOT for
10 approval in ADOT's good faith discretion.

11 **501.2.4 Handback Transition Plan**

12 Developer shall prepare and implement a Handback Transition Plan. As provided in Section
13 24.13 of the Agreement, Developer shall submit a Handback Transition Plan to ADOT for
14 approval in ADOT's good faith discretion. In addition to the matters described in Section 24.13
15 of the Agreement, the Handback Transition Plan must include:

- 16 A. Current status of Handback recovery Work, and expected status at end of Maintenance
17 Period of Handback recovery Work;
- 18 B. Remaining Useful Lives;
- 19 C. Current MIS Architecture documentation;
- 20 D. MIS training protocols for ADOT personnel;
- 21 E. Inventory, location, and condition of any spares and materials on hand, and method of
22 Handback of these items to ADOT maintenance yard;
- 23 F. Relinquishing any portions of the ROW used by Developer during the Maintenance
24 Period in accordance with land use agreement(s);
- 25 G. Punch list protocol to begin Handback acceptance procedures with ADOT;
- 26 H. Transition protocols for stormwater management and for "Arizona 811" locates
27 responsibilities;
- 28 I. Document turnover for maintenance records; and
- 29 J. Final walk-through and acceptance.

30 **501.2.5 Asset Condition Score for Final Punchlist**

31 No later than 6 months prior to the end of the Maintenance Period, ADOT will use the then-
32 current accepted Asset Condition Score Table and will conduct Surveillance and inspection of
33 the Project and create an Asset Condition Score for final punchlist. Developer shall make the
34 Maintenance Manager and appropriate support staff available to accompany ADOT in the Asset
35 Condition Scoring. Developer shall apply ADOT's Asset Condition Score to establish
36 Developer's Capital Asset Replacement Work and other actions for completing the final
37 punchlist and satisfying the Handback Requirements.

38 **501.3 REMAINING USEFUL LIFE AT HANDBACK**

39 **501.3.1 Remaining Useful Life Requirements**

40 Each Element of the Project must have a Remaining Useful Life at Handback as required in
41 these provisions. Table 501-1 of this Section sets forth the required Remaining Useful Life at
42 Handback for each Element.

ADDENDUM #2

Table 501-1 Remaining Useful Life at Handback			
Ref.	Element	Remaining Useful Life / Other Performance Requirement	Components/Additional Terms
1.5	Traffic signals	10 years	All components except UPS batteries
1.6	Landscaped areas (Character Areas 1,3,4,5)	80% plant establishment	All landscaped areas are maintained
		5 years	Irrigation systems emitters, pressure regulators, and control valves. Latest version of irrigation controller software to be installed.
1.7	Landscaped areas (Character Area 2)	50% plant establishment	All landscaped areas are maintained
2.1	Pavement and structural section	10 years	All mainline lanes, frontage roads, and ramps
4.1	Safety barriers	20 years	All components except sand barrel arrays, which are 10 years.
4.2	Fence/gates	10 years	
4.3	Signage, delineators, and posts	10 years	
4.5	Lighting	10 years	Luminaires
4.6	Pavement marking	3 years	
5.1	Bridges	45 years	All components except expansion joints and structural steel coatings
5.1	Bridge expansion joints	20 years	
5.1	Structural steel coatings	20 years	
5.2	Retaining walls	45 years	
5.3	Structures for sign supports	20 years	
5.3	Structures for lighting supports	10 years	
6.2	Detention and retention basins	50 years	
6.3	Piped and open channel drainage systems	10 years 20 years	Exposed Buried

- 1 Pavement must exhibit a Remaining Useful Life of 10 years with a ride quality of “good” in
- 2 accordance with Table 400-3 in Section MR 400.6.6.1 of the TPs using traffic forecasts
- 3 approved by ADOT for the 10 years subsequent to the Maintenance Period.

ADDENDUM #2

1 **501.3.2 Exceptions**

2 Developer may elect to deliver one or more of the following Elements without meeting the
3 respective required Remaining Useful Lives, provided that Developer elects to use an exception
4 by paying an in-lieu fee as set forth in Section 8.11.4 of the Agreement:

- 5 A. Pavement and structural section condition – reference line 3.1 of Table 501-1 in Section
6 MR 501.3.1 of the TPs
- 7 B. Signage – reference line 5.3 of Table 501-1 in Section MR 501.3.1 of the TPs
- 8 C. Pavement markings – reference line 5.6 of Table 501-1 in Section MR 501.3.1 of the
9 TPs

10 ADOT will determine the Remaining Useful Life for each excepted Element as part of the Asset
11 Condition Scoring described in Section MR 501.2.1 of the TPs, and shall reassess the
12 Remaining Useful Life for these Elements annually for the remaining Maintenance Period.
13 ADOT will use the Remaining Useful Life determination for these Elements to determine the in-
14 lieu fee in accordance with Section 8.11.4 of the Agreement.

15 **501.3.3 Remaining Useful Life Determination and Report**

16 Developer shall use a professional engineer licensed in the State to determine Remaining
17 Useful Life. Developer shall document the Remaining Useful Life in an engineering report duly
18 stamped and sealed by such professional (that is, a Remaining Useful Life Report). The report
19 must address:

- 20 A. Scope
- 21 B. Methods of measurements tests and Inspections
- 22 C. The Remaining Useful Life requirements in Table 501-1 in Section MR 501.3.1 of the
23 TPs
- 24 D. Results of measurements, tests and Inspections
- 25 E. Calculations of Remaining Useful Life for Elements within each reporting category
- 26 F. Results showing the Remaining Useful Life for each Element
- 27 G. Noted deficiencies and areas where future Inspections or investigations may be
28 warranted.

29 The report must demonstrate that the Handback requirements are met.

30 The Remaining Useful Life Report must accompany the Handback Transition Plan. Therefore,
31 Developer shall submit the Remaining Useful Life Report together with the Handback Transition
32 Plan to ADOT for approval in ADOT's good faith discretion. The Remaining Useful Life Report is
33 subject to the review requirements of the Handback Transition Plan as set forth in Section MR
34 501.2.4 of the TPs.

35 ADOT, as its option, may retain its own licensed engineer to independently verify Remaining
36 Useful Life. Any Dispute regarding Remaining Useful Life, or the Work necessary to deliver the
37 Elements at the end of the term with the required Remaining Useful Life, is to be resolved
38 according to the Dispute Resolution Procedures. Pending such resolution, ADOT will have the
39 right to issue Directive Letters regarding such Work.

40 **501.4 FINAL PUNCHLIST**

41 By the end of the Maintenance Period, Developer shall complete to the satisfaction of ADOT
42 remaining Capital Asset Replacement Work and other Maintenance Services identified in the
43 Asset Condition Score for final punchlist described in Section MR 501.2.5 of the TPs.

ADDENDUM #2

1 ADOT may, but is not obligated to, allow minor call outs or final resolution of ongoing minor
2 issues to continue up to 90 days after the end of the Term.

3 **501.5 SUBMITTALS**

4 Table 501-2 reflects a nonexclusive list of Submittals identified in Section MR 501 of the TPs
5 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall
6 determine and submit all Submittals as required by the Contract Documents, Governmental
7 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all
8 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise
9 specified in the Contract Documents, Developer shall submit the following to ADOT in the
10 formats described in Section GP 110.09.2.1.1 of the TPs:

Table 501-2 Nonexclusive Submittals List					
Submittals	Level of Review*	Number of Copies		Submittal Schedule	Section Reference
		Hardcopies	Electronic		
Draft Handback Plan	2	2	1	Within 60 days of Asset Condition Scoring for Handback by ADOT	MR 501.2.3
Final Handback Plan	2	2	1	Within 30 days of review comments adjudication	MR 501.2.3
Draft Handback Transition Plan	2	1	1	As mutually agreed, 6-18 months prior to end of Maintenance Period	MR 501.2.4
Final Handback Transition Plan	2	1	1	Within 30 days of review comments adjudication	MR 501.2.4
Remaining Useful Life Report	2	1	1	With Handback Transition Plan	MR 501.3
All Maintenance Services Documentation not previously submitted	3/5	0/1 as needed	1	Not later than 90 days of end of Maintenance Period	MR 100.1.1 and <u>Section 24.13 of the Agreement</u>
*Levels of Review 1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>) 2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>) 3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>) 4. Review and comment (<u>Section 3.1.5 of the Agreement</u>) 5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)					

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End of Section