

**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

**CONNECT 202 PARTNERS, LLC**

**TECHNICAL PROVISIONS**

**Dated as of: February 26, 2016**

**Amended and Restated as of: February 15, 2019**

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## CONFORMED – AMENDED AND RESTATED

### 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 design  
8 allows for the future ultimate configuration connection points when seeking review of the Design  
9 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 in  
12 the preliminary plans included in the Reference Information Documents (RIDs). Developer  
13 shall demonstrate Project design compatibility with respect to the following aspects:

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

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### 1 B. I-10 Light-Rail Transit Corridor

2 In 2007, Valley Metro initiated a study of high-capacity transit options within the I-10  
3 (Papago Freeway) corridor. Light rail has been identified as the preferred transit mode  
4 and a preferred alignment has been determined. The preferred route connects to the  
5 existing light rail service in downtown Phoenix. From downtown Phoenix, the route heads  
6 west to I-17 and then north to I-10 along the frontage road that is just west of I-17. At I-10,  
7 the route contemplates that light rail operates in the freeway median for approximately 3  
8 miles between I-17 and 47th Avenue. The route then transitions via a bridge over the  
9 westbound freeway traffic lanes to the north side of I-10. At that point, the route remains  
10 on the north side of the freeway until it reaches the existing 79th Avenue Park-and-Ride.  
11 The I-10 Light-Rail Transit Corridor, which includes the preferred route, is shown in 2014-  
12 08 Valley Metro Capitol\_I-10 West Advanced Conceptual Engineering.pdf included in the  
13 RIDs.

### 14 **110.01.2 References**

#### 15 **110.01.2.1 Applicable Standards**

16 Developer shall design and construct the Project in accordance with the Contract Documents,  
17 Good Industry Practice, Occupational Safety & Health Administration requirements, and all  
18 applicable Laws. For all portions of the Project within the Maintenance Service Limits, Developer  
19 shall design and construct in accordance with the Technical Provisions and Developer shall have  
20 the right, but not the obligation, to apply ADOT standards, manuals, and guidelines not already  
21 incorporated into the Technical Provisions and in accordance with Section GP 110.01.2.2 of the  
22 TPs. For all Non-Maintained Elements to be owned by ADOT, Developer shall design and  
23 construct in accordance with ADOT standards, manuals, and guidelines, unless otherwise  
24 specified in the Contract Documents. For all other Non-Maintained Elements, Developer shall  
25 design and construct in accordance with the applicable Governmental standards, manuals, and  
26 guidelines, unless otherwise specified in the Contract Documents. The standards, manuals, and  
27 guidelines listed throughout the Contract Documents are not a comprehensive list; other  
28 applicable publications may be required to complete the Project. Developer shall determine the  
29 applicable standard, manual, and/or guideline for the Work and shall understand any  
30 modifications to those standards set forth in the Contract Documents. Applications for Deviations  
31 must be in accordance with Section 6.2.4 of the Agreement.

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

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### 1 **110.01.2.2 Basis of Design Report**

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

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

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

### 19 **110.01.2.3 Reference Information Documents**

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

### 22 **110.01.3 Work Performed by Developer**

23 Developer shall:

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

### 29 **110.01.3.1 Basic Configuration**

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

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



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- 1           8. The approximate location of frontage roads;
- 2           B. Within the lines delineating the outside boundaries of the Project set forth in the Schematic
- 3           ROW, as such boundaries may be adjusted from time to time in accordance with the
- 4           Contract Documents (including adjustments for ADOT Additional Properties, Developer-
- 5           Designated ROW and avoided parcels or partial parcels, in whole or in part);
- 6           C. The control of access limits as set forth in Section DR 440 of the TPs;
- 7           D. The provision of maintenance roads;
- 8           E. A pedestrian bridge at the Elwood Street alignment (mid-mile between Broadway Road
- 9           and Lower Buckeye Road);
- 10          F. A connector road at the Durango Street alignment (just south of the Roosevelt Irrigation
- 11          District canal) between the northbound and southbound frontage roads; and
- 12          G. The avoidance of the environmentally sensitive areas as further described in Section DR
- 13          420 of the TPs.

### 14 **110.01.3.2 Coordination of the Work**

15 Developer shall coordinate the Design Work and Construction Work with all development

16 planning, design, and construction projects that may impact the Work. Developer shall monitor

17 and coordinate Work with such projects, whether performed by ADOT or another Governmental

18 Entity, community groups, landowners, Utility Companies, Utility Companies' consultants or

19 contractors, resource agencies, environmental groups, or any other Person. Developer shall be

20 aware of the impact all such work may have on the Project and shall account for all such impacts

21 in the Design Documents and Construction Documents.

22 Developer shall identify and examine features of any work for each project that may impact the

23 Project, and shall demonstrate full compatibility in horizontal and vertical alignment and other

24 pertinent technical data between the Work and the work of such project(s). The Design

25 Documents must resolve any inconsistencies or design conflicts between the Design Work and

26 the work of such project(s).

### 27 **110.01.3.2.1 Future Projects**

28 It is anticipated that work by other contractors on the projects listed in Table 110-1 may be in

29 progress adjacent to or within the Site during progress of the Work. The anticipated future projects

30 shown in Table 110-1 are nonexclusive, and may be incomplete. A table/map (City of Phoenix –

31 SMF Adjacent Projects Database 08-15-15.PDF) of active developments in the area of the Project

32 is included in the RIDs. Developer shall prepare a Future Projects List that includes the projects

33 in Table 110-1, any other projects that may impact the Project, and the project status. Each

34 quarter, Developer shall submit an updated Future Projects List to ADOT. During the design and

35 construction of the Project, Developer shall actively and aggressively pursue and implement

36 measures to facilitate the overall construction of the Project in coordination with Adjacent Work.

| <b>Table 110-1<br/>Future Projects</b>  |
|---|
| 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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| <b>Table 110-1<br/>Future Projects</b>                      |
|---|
| Arizona Public Service – 40th Street Utility Relocations    |
| City of Phoenix - Laveen 59th Avenue Park-and-Ride Facility |
| ADOT – I-10 / SR 303 System Interchange Phase II            |
|   |

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 formats  
 8 described in Section GP 110.10.2.2 of the TPs:

| <b>Table 110-2<br/>Nonexclusive Submittals List</b>  |                  |                  |            |  |                   |
|--|------------------|------------------|------------|--|-------------------|
| 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 of 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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 110.02.  
 11 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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| <b>Table 110-3<br/>Meetings</b>            |  |   |                                |
|--|--|---|--------------------------------|
| <b>Description</b>                         | <b>Period<br/>(Design and<br/>Construction [D&amp;C]<br/>and/or<br/>Maintenance)</b> | <b>Frequency</b>  | <b>Section<br/>Reference</b>   |
| Project kick-off meeting                   | D&C  | Once  | GP 110.02.1                    |
| Partnering Meetings                        | D&C  | Per Article 22 of<br>the Agreement                              | Article 22 of the<br>Agreement |
| Progress meetings                          | D&C and<br>Maintenance   | Monthly   | GP 110.02.2                    |
| Pre-design coordination meetings           | D&C and<br>Maintenance (Capital<br>Improvements)                                     | Once per<br>discipline  | GP 110.02.3                    |
| Technical work group meetings              | D&C and<br>Maintenance (Capital<br>Improvements)                                     | As determined by<br>Developer                                   | GP 110.02.4                    |
| Aesthetics and landscaping TWG<br>meetings | D&C  | Every other week  | DR 450.2.2.3<br>CR 450.2.2.2   |
| Aesthetics and Landscaping Task<br>Force   | D&C  | Monthly during<br>design or as<br>directed by ADOT              | GP 110.02.5                    |
| MOT Task Force                             | D&C and<br>Maintenance   | Monthly during<br>design or as<br>adjusted by MOT<br>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<br>meetings  | D&C and<br>Maintenance (Capital<br>Improvements)                                     | Prior to any<br>Construction Work<br>and once per<br>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 meeting.
- 9 The Meeting Notes must include the date of the meeting, list of all attendees, issues considered
- 10 by the participants, and related responses or decisions for the issues. Within 5 Business Days
- 11 after the meeting, Developer shall submit copies of such Meeting Notes to ADOT for review and
- 12 comment. Developer shall incorporate ADOT’s comments and prepare final Meeting Notes.

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1 Within 5 Business Days of receipt of ADOT’s comments, Developer shall submit final Meeting  
2 Notes to ADOT.

### 3 **110.02.1 Project Kick-off Meeting**

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

### 8 **110.02.2 Progress Meeting**

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

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

### 19 **110.02.3 Pre-Design Coordination Meetings**

20 Developer shall schedule a pre-design coordination meeting, per discipline, with ADOT to  
21 familiarize the designers and ADOT’s review personnel with the design concepts, issues, status,  
22 and review procedures. Developer shall conduct the first pre-design coordination meeting no later  
23 than 1) 10 Business Days prior to any Design Work associated with NTP 1 or 2) issuance of NTP  
24 2.

### 25 **110.02.4 Technical Work Group Meetings**

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

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

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

### 38 **110.02.5 Aesthetic and Landscaping Task Force**

39 Developer shall establish an aesthetic and landscaping task force as noted in Section DR  
40 450.2.2.2 of the TPs. The aesthetic and landscaping task force must be established and convene  
41 for an initial meeting at least 1) 10 Business Days prior to any aesthetic or landscaping activities  
42 associated with NTP 1 or 2) 30 days after issuance of NTP 2. Developer shall schedule and chair  
43 aesthetic and landscaping task force meetings monthly throughout the duration of the design of

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1 the aesthetics and landscaping, unless otherwise directed by ADOT. The aesthetic and  
2 landscaping task force must continue to meet as necessary throughout the Construction Period.

### 3 **110.02.6 MOT Task Force**

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

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

### 13 **110.02.7 Pre-Construction Coordination Meetings**

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

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

### 22 **110.02.8 Maintenance Period Kick-off Meeting**

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

### 27 **110.02.9 Submittals**

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

| Table 110-4<br>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         |

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| <b>Table 110-4<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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                |
| Final Meeting Notes  | 4                       | 1                       | 1                 | Within 5 Business Days of receipt of ADOT's comments.               | GP 110.02                |
| TWG Minutes  | 4                       | 1                       | 1                 | Within 5 Business Days after each TWG meeting                       | GP 110.02.4              |
| 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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 110.03.  
 3 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 by  
 7 ADOT for issuance of NTP 2 or the Maintenance NTP.

| <b>Table 110-5<br/>NTP Submittals</b> |                                       |                         |                                |  |                          |
|---------------------------------------|---------------------------------------|-------------------------|--------------------------------|--|--------------------------|
| <b>No.</b>                            | <b>Description</b>                    | <b>Level of Review*</b> | <b>Required Prior to NTP 2</b> | <b>Required Prior to Maintenance NTP</b> | <b>Section Reference</b> |
| 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          |

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| <b>Table 110-5<br/>NTP Submittals</b> |   |                         |                                |  |   |
|---------------------------------------|---|-------------------------|--------------------------------|--|---|
| <b>No.</b>                            | <b>Description</b>  | <b>Level of Review*</b> | <b>Required Prior to NTP 2</b> | <b>Required Prior to Maintenance NTP</b> | <b>Section Reference</b>                      |
|                                       | ○ 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                               |
|                                       | • 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 400.2.1                                    |
| 2                                     | ROW Activity Plan   | 2                       | X                              |  | Section 5.3.1 of the Agreement and DR 470.2.4 |
| 3                                     | Collocated Office Layout Plan                                       | 4                       | X                              |  | GP 110.05.2                                   |
| 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                                    |

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| Table 110-5<br>NTP Submittals  |                      |                  |                         |                                   |                                |
|--|----------------------|------------------|-------------------------|-----------------------------------|--------------------------------|
| No.  | Description          | Level of Review* | Required Prior to NTP 2 | Required Prior to Maintenance NTP | Section Reference              |
| 16   | DBE Utilization Plan | 2                | X                       |                                   | Section 9.2.5 of the Agreement |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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.

5 **110.04 Project Management Plan**

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

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

| Table 110-6<br>Elements of the Project Management Plan |   |                   |
|--|---|-------------------|
| 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        |



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| Table 110-6<br>Elements of the Project Management Plan |                             |                   |
|--|-----------------------------|-------------------|
| PMP Chapter  | PMP Chapter Title           | Section Reference |
| 4  | Public Involvement Plan     | CR 425.2.2        |
| 5  | Safety Management Plan      | GP 110.09.2.1     |
| 6  | Maintenance Management Plan | MR 400.2.1        |
|  |                             |                   |

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

- 5 A. The occurrence of any changes to the Key Personnel, other personnel, Quality  
 6 Management Plan, Safety Management Plan, or Project administration policies and  
 7 procedures;
- 8 B. The occurrence of other changes necessitating revision to the PMP; or
- 9 C. As otherwise directed by ADOT.

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

13 ADOT may audit and monitor the activities described in the PMP to assess Developer’s  
 14 performance. All commitments and requirements contained in the PMP must be verifiable.

15 **110.04.1 Project Administration**

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

- 17 A. Organization: Include an organization diagram;
- 18 B. Personnel: Establish Key Personnel and other personnel, and provide names, contact  
 19 details, titles, and job roles. Include resumes for all Key Personnel and other personnel as  
 20 identified in Section GP 110.08 of the TPs;
- 21 C. Subcontractors: Discuss Developer’s Subcontractor approval process;
- 22 D. Schedule: Discuss schedule management procedures;
- 23 E. PMP Updates: Include procedures for preparation of amendments and submission of  
 24 amendments to any part of the PMP;
- 25 F. Audit: Include procedures to facilitate review and audit by ADOT a minimum of every 6  
 26 months, auditing and management review of Developer’s own activities under the PMP,  
 27 and auditing and management review of Subcontractors’ activities and management  
 28 procedures;
- 29 G. Document Management: Include document management procedures in accordance with  
 30 Section GP 110.04.2 of the TPs; and
- 31 H. Site Documentation Plan: Discuss the process and procedures to prepare Existing  
 32 Conditions Site Documentation and Site Documentation in accordance with Section GP  
 33 110.11 of the TPs.

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

### 3 **110.04.2 Document Management**

4 Developer shall establish and maintain a web-based Electronic Document Management System  
5 (EDMS) to transfer, store, catalog, and retrieve all Project-related documents. Unless otherwise  
6 provided in the Contract Documents or directed by ADOT, Developer shall provide ADOT and  
7 ADOT’s designated representatives access to the EDMS records throughout the Term. At  
8 Substantial Completion, Developer shall provide the records to ADOT as a condition of Final  
9 Acceptance. All electronic information provided must be text searchable and legible. The  
10 proposed EDMS is subject to review and comment by ADOT as part of the review and comment  
11 on the PMP.

12 Developer shall prepare a Document Management Plan that:

- 13 A. Describes Developer’s document control system to store and record all documents,  
14 correspondence, design inputs, drawings, progress reports, technical reports,  
15 specifications, Contract Documents, Submittals, calculations, test results, inspection  
16 reports, Non-Conformance Reports, administrative documents, and other documents  
17 generated under the Contract Documents. This includes all hardcopy and electronic  
18 records;
- 19 B. Identifies how records are to be maintained and kept throughout the Term;
- 20 C. Describes the methods by which all documents Developer issues or receives are to be  
21 logged, tracked, retrieved, and approved;
- 22 D. Identifies how all documents are to be tracked using a unique document control number;
- 23 E. Describes how Developer intends to submit all Submittals and other documentation  
24 required by the Contract Documents to ADOT’s project management information system;
- 25 F. Describes how Developer intends to transfer all Project data to ADOT after at the end of  
26 the D&C Period and at the end of the Maintenance Period.

27 Developer shall provide ADOT with EDMS procedures, software for accessing all documents  
28 generated under the Contract Documents, and access to Developer’s document control database  
29 in accordance with the requirements of the Contract Documents and as deemed necessary by  
30 ADOT. Developer shall submit the Document Management Plan to ADOT as part of the Project  
31 Administration Chapter.

### 32 **110.04.3 Site Documentation Plan**

33 Developer shall prepare a Site Documentation Plan that:

- 34 A. Describes Developer’s policies, procedures, and staffing to perform and provide Existing  
35 Condition Site Documentation as required by Section GP 110.11.1 of the TPs and
- 36 B. Describes Developer’s policies, procedures, and staffing to perform and provide Site  
37 Documentation as required by Section GP 110.11.2 of the TPs.

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

### 40 **110.04.4 Submittals**

41 Table 110-7 reflects a nonexclusive list of Submittals identified in Section GP 110.04 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

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- 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 formats  
 3 described in Section GP 110.10.2.2 of the TPs:

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

### 4 **110.05 Project and Facilities Management**

#### 5 **110.05.1 General Requirements**

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

- 13 A. The posters as shown on the ADOT Engineering and Construction Posters website  
 14 (<http://www.azdot.gov/business/engineering-and-construction/construction/posters>);  
 15 B. The wage decision included in Attachment 3 to Exhibit 4 to the Agreement;  
 16 C. The EEO Policy of Developer and Subcontractors with contracts greater than \$10,000;  
 17 D. List of safety officers for Developer and major Subcontractors; and  
 18 E. The Notice of Intent for Storm Water Discharges (EPA form 3510-618-98).

19 Developer shall post the following items at the collocated office and field office:

- 20 A. Name and telephone number of Contractor's EEO policy enforcement officer;

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- 1 B. Emergency contact telephone numbers; and
- 2 C. OSHA postings and other Project safety and security information, as identified in the
- 3 Safety Management Plan.

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

### 5 **110.05.2 Collocated Office Requirements**

6 Developer shall provide and maintain in good operating condition and repair the collocated office  
7 and other building space, including office space for ADOT, and all facilities, equipment, and  
8 parking for vehicles necessary to design, construct, and maintain the Project. The ADOT office  
9 space in the collocated office must accommodate a staff size of approximately 60 people  
10 composed of ADOT, ADOT representatives, and guests. Developer shall provide sufficient office  
11 space in Developer's office in the collocated office for simultaneous occupancy by both design  
12 and construction personnel. At a minimum, Key Personnel and the Construction Independent  
13 Quality Manager (CIQM) must collocate with ADOT in the collocated office.

#### 14 **110.05.2.1 Location**

15 Except where noted elsewhere in the Contract Documents, Developer shall continue to be  
16 collocated with ADOT until 90 days after Final Acceptance to facilitate Project coordination and  
17 daily communication. The definition of "collocate" is to occupy office spaces that are in the same  
18 building along or adjacent to the Project and that are within 3 miles of the Schematic ROW. ADOT  
19 facilities area must be a separate area than the Developer facilities area, unless otherwise  
20 specified in the Contract Documents.

#### 21 **110.05.2.2 Office Facilities and Equipment**

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

- 23 A. General. Developer shall obtain all facility space, permits, licenses, and approvals, install  
24 and pay for all utility services, and operate and maintain the facilities as part of the Work.
- 25 B. Code requirements. Developer shall comply with all applicable building and fire code  
26 requirements.
- 27 C. Access and security. Developer shall provide a separate ADOT entrance(s)/exit(s) to and  
28 from the building, secured with an electronic door lock(s) plus a deadbolt lock(s).  
29 Developer shall provide security badge card access with locking doors running on time  
30 zone/holiday schedules for entry doors, as well as other designated areas (e.g., server  
31 room, document storage, and offices). Developer shall provide software for maintaining  
32 access to ADOT office spaces. Developer shall not access the ADOT office space without  
33 ADOT's prior authorization.
- 34 D. Lighting and electricity. Developer shall provide all interior spaces with overhead lighting  
35 complying with Occupational Safety and Health Administration (OSHA), building, and  
36 electrical and energy code requirements for similar office spaces (provide nominal 30-foot  
37 candles of light at 30 inches above finish floor). Developer shall provide each office space  
38 with at least four duplex receptacles, with minimum circuit capacity of 20 amperes.
- 39 E. Flooring. Developer shall provide carpeted flooring with non-static flooring in server room.
- 40 F. Window coverings. Developer shall provide blinds (no drapes) for all windows.
- 41 G. Power circuits. Developer shall provide dedicated electrical power circuits for copiers and  
42 a minimum of six duplex receptacles with three dedicated isolated ground 20-amp circuits  
43 terminating in National Electrical Manufacturers Association (NEMA) 5-20R receptacles  
44 and one dedicated isolated ground 30-amp circuit terminating in a NEMA 6-30R receptacle  
45 for the server room.

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- 1 H. Network/electrical outlets. Developer shall provide each office and conference room with  
2 a minimum of two wall plates (comprising three RJ-45 jacks; two data and one voice) per  
3 room, and one modular furniture plate (comprising three RJ-45 jacks; two data and one  
4 voice) per cubicle, as well as outlets at all designated printer, facsimile, and copier  
5 locations and any and all shared areas (e.g., workroom, storage room, etc.). Developer  
6 shall install all data/voice outlets near power outlets. All data and voice cabling must use  
7 Category 5e unshielded twisted pair (UTP) with plenum rating. Developer shall place a  
8 minimum of two duplex NEMA 5-15 or 5-20 outlets within 6 feet of each work surface.
- 9 I. Network/data network. Each of the data outlets must provide a minimum of a 100 megabits  
10 per second (Mbps) switched Ethernet connection. Developer shall connect all networked  
11 outlets to a managed Ethernet switch with the capability of each port being configured to  
12 a designated virtual local area network (VLAN) as determined by the network architecture.  
13 Developer shall provide patch cables long enough to safely reach from the data network  
14 outlets to the designated computer(s) and printer(s). Developer shall install all cable  
15 raceways and J hook cable supports in accordance with Building Industry Consulting  
16 Services International and National Electrical Code standards. Each location must allow  
17 for ADOT-provided computer equipment to be installed and operated.
- 18 J. Janitorial and trash services. Developer shall provide daily janitorial service (except  
19 Saturdays, Sundays, and holidays) and maintain trash containers and trash pickup service  
20 for the building and areas beyond the ADOT office space. Daily janitorial service must  
21 include sweeping and mopping floors, cleaning restrooms and break rooms, emptying  
22 wastebaskets, weekly dusting, and furnishing of toilet paper, paper towels and/or hand  
23 dryer, soap, and other restroom/kitchen supplies. Developer shall obtain and pay for  
24 janitorial services for the ADOT office space.
- 25 K. Recycling Services. Developer shall provide recycling receptacles for paper, cardboard,  
26 plastic bottles, and aluminum cans. Developer shall obtain and pay for weekly recycling  
27 services, including recycling pickup service for the ADOT office space.
- 28 L. Exterior maintenance. Developer shall maintain the exterior areas of office spaces,  
29 including access to parking areas.
- 30 M. Accessibility and licensing. All facilities must be in accordance with the access  
31 requirements of the Americans with Disabilities Act (ADA) Accessibility Guidelines, as  
32 amended (42 USC §§ 12101, et seq.) and the applicable building code(s). Developer shall  
33 obtain approval of the Collocated Office Layout Plans from all applicable Governmental  
34 Entities.
- 35 N. Restrooms, break room/kitchen, and entry space. Developer shall provide access to  
36 women’s and men’s restrooms, individual break room space, and building entry space;  
37 these spaces may be shared with Developer’s office space/staff. All office space must be  
38 accessible 24 hours a day, 7 days a week, including holidays. Instead of access to a  
39 common break room, Developer shall provide a 200-square-foot break room/kitchen within  
40 the ADOT office space, with a 16 cubic foot refrigerator with freezer compartment, ice  
41 machine, sink with hot and cold running water, including waste disposer, and microwave  
42 oven. The break room/kitchen must have a storage closet (minimum of 25 square feet)  
43 and cabinets with drawers and countertops. If restrooms are not directly accessible from  
44 a common building entry/lobby, Developer may provide separate restrooms for the ADOT  
45 office space. If it is necessary to locate a separate break room and/or restrooms within the  
46 ADOT office space, Developer shall increase the ADOT office space allocation to  
47 accommodate these spaces.
- 48 O. HVAC. Developer shall provide electrical, and heating, ventilation, and air-conditioning  
49 (HVAC) systems capable of maintaining temperatures between 65 and 75 degrees

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- 1 Fahrenheit in all spaces, 24 hours a day, 7 days a week, including holidays. The server  
2 room must have dedicated air-conditioning/cooling system capable of maintaining  
3 temperatures between 70 and 76 degrees Fahrenheit and 20 to 60 percent relative  
4 humidity at all times.
- 5 P. Utilities. Developer shall obtain all permits and approvals and provide all installation,  
6 maintenance, and utility service costs throughout the Term.
- 7 Q. Emergency contacts. Developer shall provide a 24-hour emergency contact telephone  
8 number for Developer.
- 9 R. Emergency equipment. Developer shall provide emergency equipment, such as first aid  
10 kits and defibrillators. Developer shall provide fire extinguishers and smoke detectors in  
11 accordance with all Laws and as may be directed by the applicable Governmental Entity's  
12 fire marshal.
- 13 S. Insurance. Developer shall obtain and maintain insurance covering the collocated office  
14 in accordance with Exhibit 12 of the Agreement.
- 15 T. Disposal and removal. Developer shall dispose of and remove all collocated office  
16 facilities, including Developer's facilities, and provide any Site restoration Work needed to  
17 return the Site to the original condition, and as directed by ADOT.
- 18 U. Furniture. Developer shall provide the ADOT office spaces in the collocated office with  
19 furniture comparable to ADOT typical office furniture.

### 20 **110.05.2.3 Offices, Rooms, and Areas**

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

- 23 A. General. Developer shall wire all offices, cubicles, conference rooms, and work areas for  
24 power, telephone, and network connectivity. Developer shall equip the reception area,  
25 offices, cubicles, and work areas with lighting, trash receptacles, desks, chairs, and  
26 multi-line telephones.
- 27 B. Offices.
- 28 1. Developer shall provide six enclosed office rooms of 12 feet x 12 feet (144 square feet)  
29 each. All offices must have a small round meeting table with four chairs, two extra  
30 chairs for visitors, a file cabinet, a book shelf, and lockable doors.
- 31 2. Developer shall provide 12 enclosed office rooms of 10 feet x 10 feet (100 square feet)  
32 each. All offices must have two extra chairs for visitors, a file cabinet, a book shelf,  
33 and lockable doors.
- 34 C. Cubicles. Developer shall provide 60 total cubicle area spaces for administrative staff  
35 (nominally 80 square feet each). Developer may provide power supply and data and  
36 communication lines to cubicles through power pole drops.
- 37 D. Conference rooms. Developer shall provide three enclosed conference rooms, one to seat  
38 at least 24 people and accommodate at least 50 people, and two to seat at least 12 people  
39 and accommodate at least 24 people each. All conference rooms must have dimmable  
40 lighting. Developer shall provide each conference room with a conference room table and  
41 chairs. Developer shall also provide 10 additional chairs alongside walls. Developer shall  
42 provide a 4-foot x 8-foot dry erase board in each conference room.
- 43 E. Reception area. Developer shall provide an approximately 300-square-foot total  
44 receptionist space with a waiting area with seating for at least four visitors, arranged with  
45 a reception area at a nominal 14 feet x 14 feet (196 square feet) and visitors' waiting area

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- 1 at a nominal 8 feet x 12 feet (96 square feet). Developer and ADOT will jointly determine  
2 other furniture. The reception area must include a telephone switch board.
- 3 F. Work room. Developer shall provide a work room (nominally 150 square feet) with 30-inch-  
4 high wall-mounted counters (15 lineal feet of counter-top space, 36 inches deep).  
5 Developer shall locate the workroom near the center of the ADOT office space.
- 6 G. Storage and filing. Developer shall provide one lockable space for storage and filing,  
7 nominally 10 feet x 15 feet (150 square feet).
- 8 H. Server room. Developer shall provide one computer server room (100 square feet) that  
9 has limited and controlled access and is locked via security card access. The server room  
10 must be accessible via a hallway entry not sharing any walls with the exterior of the  
11 building and must have no windows, a non-static floor covering, and at least three  
12 dedicated isolated ground 20-amp power circuits and one dedicated isolated ground 30-  
13 amp circuit. Developer shall locate all patch panels (phone and data) within the designated  
14 server room. Developer shall maintain server room temperature with a dedicated air-  
15 conditioning/cooling system, as described above. Developer shall provide uninterruptable  
16 power supply (UPS) system in the server room capable of providing spike and brown out  
17 protection for all Developer and ADOT server room equipment.
- 18 I. Kitchen/break room. Developer shall provide a kitchen/break room that is approximately  
19 12 feet x 18 feet (216 square feet). Developer shall arrange and furnish the kitchen/break  
20 room with office-type appliances and kitchen cabinets and drawers.
- 21 J. Parking area. Developer shall provide a parking area for ADOT for at least 100 vehicles  
22 (85 staff/15 visitors). The parking area must be reasonably level (all-weather surface and  
23 all-weather access). The parking area must include an additional lockable fenced parking  
24 area to accommodate 25 ADOT vehicles.
- 25 K. Exterior lighting. Developer shall provide sufficient exterior security lighting that is  
26 automatically activated at low light levels to maintain 2-foot candles of lighting within the  
27 building and parking areas.
- 28 L. Office work space. Work surface area in all office rooms and cubicles must be a minimum  
29 of 8 linear feet and 30 inches in depth to allow for the installation of two monitors and still  
30 have room for spreading out books, reports, or maps.

### 31 **110.05.2.4 Office Condition**

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

### 39 **110.05.2.5 Losses or Damage**

40 If ADOT office space in the collocated office, related facilities, or fixtures is destroyed, damaged,  
41 or stolen then, except as provided below, Developer shall, at its cost and within 10 Business Days  
42 after the occurrence of such Loss, repair the items to their original condition or replace them.  
43 However, in the case of lost, damaged, or stolen office equipment (e.g., computers, facsimile  
44 machines, copy machines, and printers), replacement must occur within 2 Business Days.  
45 Notwithstanding the foregoing, however, if the Loss occurs as a direct result of the willful  
46 misconduct of ADOT or its personnel or consultants **and** such Loss is not covered by insurance  
47 actually carried, or deemed to be carried pursuant to Section 11.2.4 of the Agreement, by

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1 Developer, then Developer shall repair or replace the affected items within the timeframes  
2 specified herein, and ADOT will reimburse Developer for the actual reasonable documented costs  
3 incurred to repair or replace, including the amount of any deductible.

### 4 **110.05.2.6 Collocated Office Layout Plan**

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

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

### 11 **110.05.3 Field Office Requirements**

12 Developer shall provide and maintain in good operating condition and repair a field office  
13 approximately 6,000-square-foot, for ADOT's field construction staff use. ADOT field office must  
14 be adjacent to Developer's field office. The field office must accommodate the anticipated ADOT  
15 field construction staffing level of 30 field personnel. Developer shall make the ADOT field office  
16 available for occupancy as a condition of issuance of NTP 2. The ADOT field office must be  
17 available for ADOT's use until issuance of the Certificate of Substantial Completion.

#### 18 **110.05.3.1 Location**

19 Developer shall provide the ADOT field office within 3 miles of the I-10 (Papago Freeway)  
20 connection.

#### 21 **110.05.3.2 Office Facilities and Equipment**

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

- 23 A. General. Developer shall obtain all facility space, permits, licenses, and approvals, install  
24 and pay for all utility services, and operate and maintain the facilities as part of the Work.
- 25 B. Code requirements. Developer shall comply with all applicable building and fire code  
26 requirements.
- 27 C. Access and security. Developer shall provide separate buildings or trailers for ADOT staff  
28 that includes at least two entrance(s)/exit(s) secured with door lock(s) plus a deadbolt  
29 lock(s).
- 30 D. Lighting and electricity. Developer shall provide all interior spaces with overhead lighting  
31 complying with OSHA, building, and electrical and energy code requirements for similar  
32 office spaces (provide nominal 30-foot candles of light at 30 inches above finish floor).  
33 Developer shall provide each office space with at least four duplex receptacles, with  
34 minimum circuit capacity of 20 amperes.
- 35 E. Flooring. Developer shall provide carpeted flooring with non-static flooring in server room.
- 36 F. Window coverings. Developer shall provide blinds (no drapes) for all windows.
- 37 G. Power circuits. Developer shall provide dedicated electrical power circuits for copiers and  
38 a minimum of six duplex receptacles with three dedicated isolated ground 20-amp circuits  
39 terminating in NEMA 5-20R receptacles and one dedicated isolated ground 30-amp circuit  
40 terminating in a NEMA 6-30R receptacle for the server room.
- 41 H. Network/electrical outlets. Developer shall provide each office and conference room with  
42 a minimum of two wall plates (comprising three RJ-45 jacks; two data and one voice) per  
43 room, and one modular furniture plate (comprising three RJ-45 jacks; two data and one  
44 voice) per cubicle, as well as outlets at designated printer, facsimile, and copier locations



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1 and any and all shared areas (e.g., workroom, storage room, etc.). All data/voice outlets  
2 must be installed near power outlets. All data and voice cabling must use Category 5e  
3 unshielded twisted pair (UTP) with plenum rating. Developer shall place a minimum of two  
4 duplex National Electrical Manufacturers Association (NEMA) 5-15 or 5-20 outlets within  
5 6 feet of each work surface.

- 6 I. Network/data network. Each of the data outlets must provide a minimum of a 100 megabits  
7 per second (Mbps) switched Ethernet. Developer shall connect all networked outlets to a  
8 managed Ethernet switch with the capability of each port being configured to a designated  
9 virtual local area network (VLAN) as determined by the network architecture.. Developer  
10 shall provide patch cables long enough to safely reach from the data network outlets to  
11 the designated computer(s) and printer(s). Developer shall install all cable raceways and  
12 J hook cable supports in accordance with Building Industry Consulting Services  
13 International and National Electrical Code standards. Each location must allow for ADOT-  
14 provided computer equipment to be installed and operated.
- 15 J. Janitorial and trash services. Developer shall provide daily janitorial service (except  
16 Saturdays, Sundays, and holidays) and maintain trash containers and trash pickup service  
17 for the building and areas beyond the ADOT office space. Daily janitorial service must  
18 include sweeping and mopping floors, cleaning restrooms and break rooms, emptying  
19 wastebaskets, weekly dusting, and furnishing of toilet paper, paper towels and/or hand  
20 dryer, soap, and other restroom/kitchen supplies. Developer shall obtain and pay for  
21 janitorial services for the ADOT office space.
- 22 K. Recycling Services. Developer shall provide recycling receptacles for paper, cardboard,  
23 plastic bottles, and aluminum cans. Developer shall obtain and pay for weekly recycling  
24 services, including recycling pickup service for the ADOT office space.
- 25 L. Exterior maintenance. Developer shall maintain the exterior areas of office spaces,  
26 including access to parking areas.
- 27 M. Accessibility and licensing. All facilities must be in accordance with the access  
28 requirements of the ADA Accessibility Guidelines, as amended (42 USC §§ 12101, et  
29 seq.) and the applicable building code(s). Developer shall prepare and obtain approval of  
30 all field office layout plans from all applicable Governmental Entities.
- 31 N. Restrooms, break room/kitchen, and entry space. Developer shall provide access to  
32 women's and men's restrooms, individual break room space, and building entry space;  
33 these spaces may be shared with Developer's office space/staff. All office space must be  
34 accessible 24 hours a day, 7 days a week, including holidays. Instead of access to a  
35 common break room, Developer shall provide a 200-square-foot break room/kitchen within  
36 the ADOT office space, with a 16 cubic foot refrigerator with freezer compartment; ice  
37 machine, sink with hot and cold running water, including waste disposer, and microwave  
38 oven. The break room/kitchen must have a storage closet (minimum of 25 square feet)  
39 and cabinets with drawers and countertops. If restrooms are not directly accessible from  
40 a common building entry/lobby, Developer may provide separate restrooms for the ADOT  
41 office space. If it is necessary to locate a separate break room and/or restrooms within the  
42 ADOT office space, Developer shall increase the ADOT office space allocation to  
43 accommodate these spaces.
- 44 O. HVAC. Developer shall provide electrical and HVAC systems capable of maintaining  
45 temperatures between 65 and 75 degrees Fahrenheit in all spaces, 24 hours a day, 7 days  
46 a week, including holidays. The server room must have dedicated air-conditioning/cooling  
47 system capable of maintaining temperatures between 70 and 76 degrees Fahrenheit and  
48 20 to 60 percent relative humidity at all times.

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- 1 P. Utilities. Developer shall obtain all permits and approvals and provide all installation,  
2 maintenance, and utility service costs throughout the Term.
- 3 Q. Emergency contacts. Developer shall provide a 24-hour emergency contact telephone  
4 number for Developer.
- 5 R. Emergency equipment. Developer shall provide emergency equipment such as first aid  
6 kits and defibrillators. Developer shall provide fire extinguishers and smoke detectors in  
7 accordance with all Laws and as may be directed by the applicable Governmental Entity's  
8 fire marshal.
- 9 S. Insurance. Developer shall obtain and maintain insurance covering the field office in  
10 accordance with Exhibit 12 of the Agreement.
- 11 T. Disposal and removal. Developer shall dispose of and remove all field office facilities,  
12 including Developer's facilities, and provide any Site restoration Work needed to return  
13 the Site to the original condition, and as directed by ADOT.
- 14 U. Furniture. Developer shall provide the ADOT office spaces with furniture comparable to  
15 ADOT typical field office furniture.

### 16 **110.05.3.3 Offices, Rooms, and Areas**

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

- 20 A. General. Developer shall wire all offices, cubicles, conference rooms, and work areas for  
21 power, telephone, and network connectivity. Developer shall equip all offices, cubicles,  
22 and work areas with lighting, trash receptacles, desks, chairs, and multi-line telephones.
- 23 B. Offices. Developer shall provide four enclosed office rooms of 12 feet x 12 feet (144 square  
24 feet) each. All offices must have a small round meeting table with four chairs, two extra  
25 chairs for visitors, a file cabinet, a book shelf, and lockable doors.
- 26 C. Cubicles. Developer shall provide 15 total cubicle area spaces for administrative staff  
27 (nominally 80 square feet each). Developer may provide power supply and data and  
28 communication lines to cubicles through power pole drops.
- 29 D. Conference rooms. Developer shall provide one conference room (enclosed) to seat at  
30 least 24 people and accommodate at least 50 people. The conference room must have  
31 dimmable lighting. Developer shall provide the conference room with a conference table  
32 and chairs. Developer shall also provide 10 additional chairs along side walls. Developer  
33 shall provide a 4-foot x 8-foot dry erase board in each conference room.
- 34 E. Work room. Developer shall provide a work room (nominally 150 square feet) with 30-inch-  
35 high wall-mounted counters (15 lineal feet of counter-top space, 36 inches deep).  
36 Developer shall locate the workroom near the center of the field office.
- 37 F. Storage and filing. Developer shall provide one lockable space for storage and filing,  
38 nominally 10 feet x 10 feet (100 square feet) with shelving and lockable door.
- 39 G. 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 room  
41 must be accessible via hallway entry not sharing any walls with the exterior of the building  
42 and must have no windows, a non-static floor covering, and at least three dedicated  
43 isolated ground 20-amp power circuits and one dedicated isolated ground 30-amp circuit.  
44 Developer shall locate all patch panels (phone and data) within the designated server  
45 room. Developer shall maintain server room temperature with a dedicated air-  
46 conditioning/cooling system, as described above. Developer shall provide UPS system in

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1 the server room capable of providing spike and brown out protection for all Developer and  
2 stakeholder server room equipment.

3 H. 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 kitchen/break  
5 room with office-type appliances and kitchen cabinets and drawers.

6 I. Parking area. Developer shall provide parking area for at least 55 vehicles (50 staff/5  
7 visitors) at the field office. The parking area must be reasonably level (all-weather surface  
8 and all-weather access). The parking area must include an additional lockable fenced  
9 parking area to accommodate 25 ADOT vehicles.

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

### 16 **110.05.3.4 Office Condition**

17 The field office must be in good and serviceable condition, at least of the same quality as that of  
18 Developer's counterpart field office space and available for occupancy as specified in Section GP  
19 110.05.3 of the TPs. Developer and ADOT will participate in a facility condition survey prior to and  
20 at the completion of occupancy. ADOT will return possession of Developer-provided ADOT office  
21 space to Developer in essentially the same condition as when ADOT occupied the facilities,  
22 except for reasonable wear and tear and except for alterations or Loss or damage caused by any  
23 member of a Developer-Related Entity.

### 24 **110.05.3.5 Losses or Damage**

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

### 36 **110.05.4 Computer and Equipment Requirements**

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

#### 40 **110.05.4.1 Original Equipment Manufacturers**

41 Developer shall use:

42 A. Commercial off-the-shelf equipment when available;

43 B. New and suitable original equipment manufacturers (OEM) hardware components for the  
44 purposes specified herein; and

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1 C. Hardware of the OEM's current design and equipped with the current revisions, manuals,  
2 and equipment updates at the time of issuance of NTP 1. Hardware must comply with all  
3 applicable quality control (QC) standards of the OEM.

4 Developer shall prepare an Equipment Demobilization Plan that includes Developer's strategy for  
5 the methods and processes to discontinue the use of all computer and related equipment, and  
6 how Developer shall erase Project-sensitive information from the equipment. At least 30 Business  
7 Days prior to scheduled Substantial Completion, Developer shall submit the Equipment  
8 Demobilization Plan to ADOT for approval.

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

13 Developer shall provide, install, and maintain the following for all ADOT office spaces in the  
14 collocated office and field office, unless otherwise specified below:

15 A. Telephone. Developer shall provide at least one touch-tone telephone for each personal  
16 office area with a unique direct-dial telephone number. Developer shall provide service  
17 and Developer shall provide such service using voice over Internet protocol (VoIP) or  
18 analog means. Each telephone number must have voicemail, conference-call capability,  
19 call hold capabilities, and speaker telephone capabilities for the telephones in enclosed  
20 offices/rooms.

21 B. File server. The file server solutions must utilize an industry standard compliant operating  
22 system compatible to ADOT server operating systems. At initial installation, the proposed  
23 system must operate at no more than 35 percent of capacity (for processor, memory, disk,  
24 and input/output performance). The system must continue processing without server  
25 failure should any one component fail. A minimum of RAID 5 (disk striping with parity) and  
26 hot swap disks are required, along with dual controllers/paths to the disk. The file server  
27 must also have redundant components such as power, fan, controllers, and network cards.  
28 The file server must have sufficient main memory, disk capacity, and processing capability  
29 to support the collocated office electronic data storage needs and transmission of large  
30 numbers of electronic data files. The file server hardware must have expansion  
31 capabilities to comply with and support future requirements as determined by ADOT. The  
32 file server must initially have a warranty with a 5-year next Business Day on-site service  
33 agreement and then an extended warranty for the remainder of the projected life of the  
34 collocated office.

35 C. Internet. Developer shall provide ADOT with symmetrical business class Internet service  
36 with a minimum of two public static IP addresses; 50Mbps in the collocated office and 20  
37 Mbps in field office.

38 D. Printer services. Developer shall provide the following printers with a maintenance  
39 contract to include paper, toner, and next business day maintenance service at the field  
40 office:

- 41 1. One high-speed Ethernet network laser printers capable of 11 inch x17 inch output  
42 with a print quality up to 1,200 x 1,200 dots per inch (dpi) and at least one tray with a  
43 500 sheet capacity.
- 44 2. One high-speed Ethernet network color duplex printers capable of 11 inch x 17 inch  
45 output with a print quality up to 600 x 600 dpi and at least one tray with a 500 sheet  
46 capacity.

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- 1 E. Copier services. Developer shall provide maintain the following multifunction devices with  
2 a maintenance contract to include paper, toner, and next business day service at the field  
3 office:
- 4 1. Two high-speed Ethernet network color duplex multifunction devices capable of  
5 printing, scanning, and copying 11 inch x17 inch media with a print quality up to 1,200  
6 x 1,200 dpi, copy resolution of 600 x 600 dpi, and scan resolution up to 600 dpi and at  
7 least one tray with a 500 sheet capacity.
- 8 F. Wide area network (WAN). Developer shall provide a secure service gateway meeting  
9 ADOT specifications to establish an internet based VPN connection back to ADOT  
10 systems.
- 11 G. IT equipment. Developer shall provide rack space, cooling, power, and cable management  
12 to allow for the installation and operation of additional network equipment supplied by  
13 ADOT. Developer shall provide a locking computer cabinet, a minimum of 42 rack units  
14 high, in a standard 19-inch equipment rack configuration, for each client party. Developer  
15 shall provide 120 VAC power for the additional network equipment with a minimum of four  
16 power outlets of style NEMA 5-20R for the client's equipment. Developer shall provide  
17 cable management systems to support running patch cabling from the floor cabling patch  
18 panels to each of the cabinets. Developer shall maintain a secure equipment room with  
19 controlled and restricted access for use in operating all the IT. The equipment room must  
20 be climate controlled and capable of maintaining an ambient temperature range of 70 to  
21 76 degrees Fahrenheit with a relative humidity between 20 and 60 percent at all times.  
22 Developer shall terminate all Category 5e UTP cable in data patch panels in the server  
23 room and any additional telecommunications room(s).
- 24 H. Wireless local area networks (WLAN). Utilizing the most current industry 802.11 standard,  
25 Developer shall provide a WLAN in the collocated office and in field office facility. Each  
26 WLAN must provide a unique service set identification (SSID) and be protected using  
27 current WLAN best practices.
- 28 I. Conference rooms. Developer shall provide an audio visual solution to support the  
29 collocated office and field office conference rooms, including a projector and conference  
30 telephone and integrated audio, video, displays, and control systems. Developer shall  
31 provide a conference telephone for each conference room facility.
- 32 J. Disaster recovery. Developer shall prepare a Computer Disaster Recovery Plan to identify  
33 Project-specific core systems and processes and to determine acceptable levels of  
34 disruptive-to-Project operations. The Computer Disaster Recovery Plan must outline the  
35 data backup scenario used to ensure proper backup of all Project data. Twenty Business  
36 Days following the issuance of NTP 2, Developer shall submit the Computer Disaster  
37 Recovery Plan to ADOT.
- 38 K. Non-disruptive operations. During normal business hours, network downtimes must not  
39 be due to hardware or software system improvements and/or repairs. Developer shall  
40 provide a minimum of 1 day advance written notice to ADOT for all scheduled routine  
41 maintenance. In case emergency maintenance (i.e. equipment failure, virus detection,  
42 malware, etc.) cannot be scheduled during non-peak hours, Developer shall notify ADOT  
43 immediately. Developer shall prepare an Action Report that includes an explanation of the  
44 root cause, the solution employed, and a prevention plan of the cause of the emergency  
45 maintenance. No later than two days of the emergency maintenance, Developer shall  
46 submit an Action Report to ADOT and an after action report shall be distributed to ADOT  
47 within two working days explaining the root cause, the solution employed, and the  
48 prevention plan moving forward.

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### 1 **110.05.4.2 Network Administration Plan**

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

### 5 **110.05.4.3 Project Vehicles**

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

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

### 30 **110.05.5 Construction and Maintenance Yards**

31 Developer shall be responsible for obtaining all approvals, permits, and Governmental Approvals  
32 for obtaining locations for construction and maintenance yards for the Project. Developer shall  
33 not locate construction yards adjacent to residential areas. See Section 5.13 of the Agreement  
34 for use of designated ADOT property.

### 35 **110.05.6 Submittals**

36 Table 110-8 reflects a nonexclusive list of Submittals identified in Section GP 110.05 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 formats  
42 described in Section GP 110.10.2.2 of the TPs:

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| <b>Table 110-8<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>                           | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| Collocated Office Layout Plan  | 4                       | 2                       | 1                 | Prior to issuance of NTP 2                          | GP<br>110.05.2.6         |
| Equipment Demobilization Plan  | 4                       | 2                       | 1                 | 30 Business Days prior to Substantial Completion    | GP<br>110.05.4.1         |
| Computer Disaster Recovery Plan  | 5                       | 2                       | 1                 | 20 Business Days following the issuance of NTP 2    | GP<br>110.05.4.1         |
| Action Report  | 5                       | 2                       | 1                 | No later than two days of the emergency maintenance | GP<br>110.05.4.1         |
| Network Administration Plan  | 4                       | 2                       | 1                 | Within 30 Business Days following issuance of NTP 1 | GP<br>110.05.4.2         |
| Vehicle Project Logo   | 2                       | 2                       | 1                 | Prior to construction                               | GP<br>110.05.4.3         |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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 to  
 10 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 (c)  
 18 must designate lead responsibility for each activity, and (d) clearly identify each Project  
 19 Schedule Submittal. Resubmissions of Project Schedules must use the same revision  
 20 number as the original submission individually identified by a sequential appended letter

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- 1 (A, B, etc.), as an indication of a revised version. Developer shall identify Work being  
2 performed by Disadvantaged Business Enterprise (DBE) firms as separate CPM activities.
- 3 B. Cost Allocation. Allocate Price and commodity quantities throughout the Project activities  
4 in the Project Schedule. Accurately reflect Developer's cost allocation for each Project  
5 activity. All Work must be represented by cost resource-loaded Project activities.  
6 Developer shall not artificially inflate, imbalance, or front-load line items in the Project  
7 Schedules. The price of each Project activity must be all-inclusive and include all direct  
8 and indirect costs, overhead, risks, and profit.
- 9 C. Milestones. Developer shall separately identify each Project milestone, conforming to the  
10 scheduling requirements set forth in the Contract Documents.
- 11 D. Activity Information. Developer shall divide the Work into activities with appropriate logic  
12 ties to show Developer's overall approach to the planning, scheduling, and execution of  
13 the Work. Developer shall base duration and logical relationships of the Project activities  
14 (or summaries at phase level) on the actual duration and relationships anticipated. Each  
15 activity must have a duration not exceeding 20 Business Days.
- 16 E. Constraints. Developer shall not use calendar dates or constraints to logically begin or  
17 complete any Project activity unless calendar dates are shown in the TPs or other relevant  
18 Contract Documents. The Project Schedule must not contain unspecified milestones,  
19 constraints, Float suppression techniques, or use of Project activity durations, logic ties,  
20 and/or sequences deemed unreasonable by ADOT. Any schedule showing an early  
21 completion date must show the time between the scheduled completion date(s) and the  
22 applicable Completion Deadline(s) as Float.
- 23 F. Float.
- 24 1. Float is a jointly owned Project resource and must comply with the requirements in  
25 Section 7.10.2 of the Agreement.
- 26 2. Developer shall not utilize (1) Float suppression techniques in the Schedule, including  
27 interim dates imposed by Developer other than Project milestone(s), or (2) the  
28 inclusion of activities or constraints in a path or chain leading to a Project milestone  
29 which are unrelated to the Work as stated and specified in the Contract Documents,  
30 or (3) activity durations or sequences deemed by ADOT to be unreasonable in whole  
31 or in part.
- 32 3. Preferential sequencing (i.e., whereby activities that could be performed concurrently  
33 and are established in the Project Schedule as sequential simply to consume Float)  
34 and/or indicating artificial activity durations (i.e., inflating activities in the schedule to  
35 consume Float and influence the Critical Path) are unacceptable. Sequestering of  
36 Float is cause for rejection of Developer's schedule Submittal. In the event that Float  
37 sequestering is identified, Developer shall revise the schedule appropriately.
- 38 4. Developer shall impose, code, and separately identify all time(s) and milestones in all  
39 Monthly Progress Schedule Submittals in conformance to the milestone(s) and time(s)  
40 set forth in the Contract Documents. Developer shall impose no other date restraints  
41 in the Schedule, unless an explanation of their bases is provided and such explanation  
42 is acceptable to ADOT.
- 43 5. ADOT will consider extensions of time for performance of the Work required under the  
44 Agreement only to the extent that the equitable time adjustment for activities affected  
45 by any condition or event which entitles Developer to a time extension exceed the  
46 Float along the path of the activities affected at issuance of NTP for Supplemental  
47 Agreement or commencement of any delay or condition for which an adjustment is  
48 warranted under the Contract Documents.



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- 1           6. If Developer is delayed in performing the Work, Developer shall absorb any related  
2 delay, disruption, interference, hindrance, extension, or acceleration costs, however  
3 caused, except as otherwise provided in Article 14 of the Agreement. Developer may  
4 use Float to absorb Project delays, if any. Developer shall include a description of the  
5 cause of delay, the projected amount of Float to be used, and the revised Monthly  
6 Progress Schedule showing the use of the Float in the Monthly Progress Report.  
7 Developer shall work cooperatively with ADOT, other contractors, and third parties to  
8 identify and implement, to the maximum extent possible, no-cost measures to recover  
9 all schedule delays, regardless of the cause of the delays. One example of such  
10 measures is no-cost re-sequencing of Work activities.
- 11           G. Progress. Developer shall show actual progress and not calculated progress in the  
12 Monthly Progress Schedule. Developer shall incorporate logic changes and Work changes  
13 into the Monthly Project Schedule. Each Monthly Project Schedule Submittal must clearly  
14 and individually define the progression of the Work within the applicable timeframe by  
15 using separate Project activities.
- 16           H. Resources. Developer shall indicate any resources such as commodities, labor, or  
17 equipment quantities with the associated Project activity field. Developer shall base labor-  
18 loading of activities on total number of workers, not total number of crews, and shall assign  
19 applicable activities for major construction equipment to be used by Developer and  
20 Subcontractors in prosecuting Work. The quantity must represent the estimated effort in-  
21 place for the Project activity field.

### 22 **110.06.2.3     Schedule Submission Process**

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

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

- 27           A. Hard copies of the schedule on half-size (11 inches x 17 inches) color plot sheets;  
28           B. Electronic version of the schedule in both native (including activity data, logic, and coding)  
29           and PDF format on IBM PC compatible electronic media;  
30           C. Schedule Narrative in accordance with Section GP 110.06.2.4 of the TPs;  
31           D. Look-Ahead Schedule in accordance with Section GP 110.06.2.9 of the TPs;  
32           E. Recovery Schedule, as needed, in accordance with Section GP 110.06.2.10 of the TPs;  
33           and  
34           F. Time Impact Analysis, as needed, in accordance with Section GP 110.06.2.11 of the TPs.

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

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

44 ADOT's review of and comment on a Project Schedule does not do the following:

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- 1 A. Imply approval of any particular construction methods or relieve Developer of its  
2 responsibility to provide sufficient materials, equipment, and labor to complete the Project  
3 in accordance with the Contract Documents;
- 4 B. Attest to the validity of assumptions, activities, relationships, sequences, resource  
5 allocations, or any other aspect of the Project Schedule;
- 6 C. Imply Developer is entitled to any Supplemental Agreement extending the Completion  
7 Deadline or adjusting the Price; and
- 8 D. Relieve Developer from compliance with the requirements of the Contract Documents, or  
9 result in the approval of any variation from the Contract Documents.

10 Failure to include any element of Work required by the Contract Documents in the Project  
11 Schedule does not release or relieve Developer from responsibility to perform such Work.

### 12 **110.06.2.4 Schedule Narrative**

13 At each Project Schedule Submittal, Developer shall prepare and submit a stand-alone Schedule  
14 Narrative with sufficient detail to explain the basis of the submitted Project Schedule to ADOT.  
15 The Schedule Narrative must describe the activities, including how the activities interrelate.  
16 Developer shall ensure that the Schedule Narrative includes the following information:

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

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### 1 **110.06.2.5 Schedule Deliverable Requirements**

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

- 3 A. Project Baseline Schedule;
- 4 B. Monthly Progress Schedule; and
- 5 C. Recovery Schedule (as needed).

6 Developer shall also prepare and maintain the following schedules:

- 7 A. Look-Ahead Schedule and
- 8 B. As-Built Schedule

### 9 **110.06.2.6 Project Baseline Schedule**

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

28 Prior to issuance of NTP 2, Developer shall submit a Project Baseline Schedule to ADOT for  
29 approval in ADOT's good faith discretion. Developer shall use the Project Baseline Schedule as  
30 the basis for Monthly Progress Schedule Submittals. The completion/approval of the Project  
31 Baseline Schedule is a condition to commencement of any Construction Work.

32 Developer shall use the Project Baseline Schedule to coordinate all activities on the Project,  
33 including those with other entities, such as Subcontractors, vendors and suppliers, Utility  
34 Companies, Governmental Entities, and ADOT.

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

### 37 **110.06.2.7 Monthly Progress Schedule**

38 Developer shall prepare a Monthly Progress Schedule that updates the Project Baseline Schedule  
39 during the D&C Period, commencing after issuance of NTP 2, until the closing for final payment  
40 for the Work associated with NTP 2. The Monthly Progress Schedule must reflect progress up to  
41 the closing date, forecast finish for in-progress activities and re-forecast early dates for activities  
42 planned in the next update period. The Monthly Progress Schedule must include the following:

- 43 A. Actual start and finish dates for completed activities;
- 44 B. Actual start dates, percentage complete, and remaining duration for activities in progress;

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- 1 C. All proposed activities, logic, and restraint date revisions required to:
  - 2 1. Implement changes in the Work,
  - 3 2. Detail all impacts on preexisting activities, sequences and restraint dates,
  - 4 3. Reflect Developer’s current approach for Work remaining,
  - 5 4. Incorporate any delays that are being negotiated between ADOT and Developer, and
  - 6 5. Reflect “or equal” or substitution proposals.
- 7 D. Planned start and finish dates for future activities; and
- 8 E. Progress for the current invoice submittal for Project activities.

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

13 Concurrent with the draft invoice submittal, Developer shall submit the Monthly Progress  
14 Schedule to ADOT for approval in ADOT’s good faith discretion, and for discussion at the progress  
15 meeting, as set forth in Section GP 110.06.2 of the TPs and in Section 13.2.3.2 of the Agreement.  
16 Once the Monthly Progress Schedule is accepted by ADOT, Developer shall use the Monthly  
17 Progress Schedule as the basis for the next Monthly Progress Schedule. ADOT has no obligation  
18 to approve payment of an invoice until ADOT receives an acceptable Monthly Progress Schedule  
19 and all other conditions for approval have been satisfied.

### 20 **110.06.2.8 Monthly Progress Report**

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

- 24 A. Description of coordination with Utility Companies and accomplishing Utility Work;
- 25 B. Bar chart schedule sorted by elements, indicating the physical status of all activities as of  
26 date of the update;
- 27 C. Graphical report, which compares Developer’s progress to planned progress by elements;
- 28 D. Design Document Submittals for the forthcoming period;
- 29 E. Tabular report listing all activities with 14 days or less Float;
- 30 F. 60-day look ahead report identifying all of ADOT and Governmental Approvals required;
- 31 G. 180-day look ahead bar chart schedule sorted by WBS and activity early start dates;
- 32 H. Critical items graphical report for each Critical Path sorted by activity early start date,  
33 including major Work completion, long-term Closures of travel lanes beginning and  
34 ending, etc.;
- 35 I. Time-scaled Critical Path network plot indicating the status of all activities as of the date  
36 of the update;
- 37 J. Project ROW acquisition status per parcel;
- 38 K. Monthly expenditure projects and cash expenditure curves by WBS;
- 39 L. Discussion of actions/corrections to be taken to achieve Project Baseline Schedule  
40 milestones; and
- 41 M. Reporting of Noncompliance Events from the previous month.

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

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### 1 **110.06.2.9 Look-Ahead Schedule**

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

### 10 **110.06.2.10 Recovery Schedule**

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

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

13 Within 10 Business Days of receipt of ADOT's written direction or when any Critical Path item  
14 slips by 28 days or more, Developer shall submit the Recovery Schedule to ADOT for approval in  
15 ADOT's good faith discretion. Developer shall not be required to prepare a Recovery Schedule if  
16 Developer requests and demonstrates, in writing, entitlement to an extension of the D&C Period,  
17 due to Relief Event Delay(s), and ADOT concurs schedule recovery is not required at that time.  
18 Within 5 Business Days after any rejection by ADOT of the Recovery Schedule, Developer shall  
19 resubmit a revised Recovery Schedule incorporating ADOT's comments. When ADOT accepts  
20 Developer's Recovery Schedule, Developer shall, within 5 Business Days after ADOT's  
21 acceptance, incorporate such schedule in the Project Schedule, deliver the same to ADOT, and  
22 proceed in accordance with the approved Recovery Schedule.

### 23 **110.06.2.11 Time Impact Analysis**

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

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

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

### 41 **110.06.2.12 As-Built Schedule**

42 Developer shall prepare an As-Built Schedule that includes actual start and actual finish dates for  
43 all activities. The As-Built Schedule, once accepted, serves as the final update of the Project

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1 Schedule. Developer shall include a written certification with the As-Built Schedule Submittal  
 2 signed by the Project Manager and an officer of Developer in accordance with the following:

3 “To the best of my knowledge, the enclosed final update of the Project Schedule reflects the actual  
 4 start and completion dates of the activities for the Project contained herein.”

5 Submittal of the final update of the Project Schedule and the Project Manager’s certification is a  
 6 condition to Final Acceptance in accordance with Section 6.6.4.1 of the Agreement.

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

9 **110.06.3 Submittals**

10 Table 110-9 reflects a nonexclusive list of Submittals identified in Section GP 110.06 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 formats  
 16 described in Section GP 110.10.2.2 of the TPs:

| <b>Table 110-9<br/>Nonexclusive Submittals List</b> |                         |                         |                   |   |                          |
|---|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>                                   | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|   |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| Schedule Narrative                                  | 5                       | 2                       | 1                 | At each Project Schedule Submittal  | GP<br>110.06.2.4         |
| Project Baseline Schedule                           | 2                       | 2                       | 1                 | Prior to issuance of NTP 2  | GP<br>110.06.2.6         |
| Monthly Progress Schedule                           | 2                       | 2                       | 1                 | Concurrent with the draft invoice submittal   | GP<br>110.06.2.7         |
| Monthly Progress Report                             | 5                       | 2                       | 1                 | At the monthly progress meetings  | GP<br>110.06.2.8         |
| Look-Ahead Schedule                                 | 5                       | 2                       | 1                 | 1 day prior to the weekly Project meeting   | GP<br>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<br>110.06.2.10        |
| Time Impact Analysis                                | 5                       | 2                       | 1                 | With each Relief Request  | GP<br>110.06.2.11        |
| As-Built Schedule                                   | 5                       | 2                       | 1                 | Within 20 Business Days after Final Acceptance  | GP<br>110.06.2.12        |

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| Table 110-9<br>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 **110.07 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. Regarding quality  
9 systems, quality plans and quality audits, the QMP must comply with International Standards  
10 Organization (ISO) 9001:2015 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:

- 14 A. Volume 1: Quality Management Plan (QMP) General Requirements (Section GP  
15 110.07.2.1.1 of the TPs);
- 16 B. Volume 2: Professional Services Quality Management Plan (PSQMP) (Section GP  
17 110.07.2.1.2 of the TPs);
- 18 C. Volume 3: Construction Quality Management Plan (CQMP) (Section GP 110.07.2.1.3 of  
19 the TPs); and
- 20 D. Volume 4: Maintenance Quality Management Plan (MQMP) (Section GP 110.07.2.1.4 of  
21 the TPs).

22 Developer shall prepare, implement, and update the QMP for the Term. The QMP must describe  
23 the systems, policies, and procedures that allow the Work to comply with the requirements of the  
24 Contract Documents and results in Quality Records that provide documented evidence. The  
25 approach must promote operational consistency, encourage process ownership, promote  
26 thorough documentation, and allow for efficient audit by the IQF, as appropriate and verification  
27 by ADOT.

28 The QMP must address all Work to be performed by Developer and Subcontractors of all tiers,  
29 and shall contain detailed procedures for Developer’s quality assurance (QA) and quality control  
30 (QC) activities. Developer’s quality process must address planned and systematic testing,  
31 inspection and audits undertaken by the Independent Quality Firm (IQF) for construction, Capital  
32 Asset Replacement Work and by Developer’s quality staff for Professional Services and other  
33 Maintenance Services. Developer shall conduct all quality activities, performance confirmation,  
34 and coordination among disciplines, in accordance with the QMP and the requirements of the  
35 Contract Documents.



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1 Developer shall prepare Quality Records which consist of all documentation and other support  
2 material of any type, in any medium, which demonstrates compliance with the requirements of  
3 Section GP 110.07 of the TPs.

4 Developer shall load all Quality Records to the EDMS immediately. Quality Records must be  
5 accessible at all times for inspection, review, and verification by ADOT. Upon request, Developer  
6 shall submit copies of Quality Records to ADOT.

7 Developer shall prepare Results of Internal Audits that includes the quality program audit findings  
8 and documentation specified in the respective volumes of the QMP. Within 5 Business Days of  
9 their completion, Developer shall submit all Results of Internal Audits to ADOT for review and  
10 comment. Upon issuance of a non-conformance event, Developer shall notify ADOT of the non-  
11 conformance. Upon resolution of a non-conformance event, Developer shall submit a Non-  
12 Conformance Report to ADOT for review and comment. The Non-Conformance Report must  
13 document the issue, resolution, and action plan to prevent future similar incidences.

14 Developer shall ensure that all plans and components of the QMP remain valid and updated in  
15 accordance with Section GP 110.04 of the TPs.

### 16 **110.07.2.1.1 Quality Management Plan – General Requirements**

17 Quality terminology, unless defined or modified elsewhere in the Contract Documents, has the  
18 meanings in ISO 9001. Terms used in ISO 9001 must include the following meanings:

- 19 A. Organization: Developer's organization, including any Affiliates and Subcontractors;
- 20 B. Customers: the users of the roadways, ADOT, and stakeholders; and
- 21 C. Product: the Work.

22 Developer shall prepare the Quality Management Plan General Requirements in accordance with  
23 the requirements in this Section GP 110.07.2.1.1. This volume must include procedures for  
24 interdisciplinary quality reviews and coordination. Prior to issuance of NTP 2, Developer shall  
25 submit the Quality Management Plan General Requirements to ADOT for approval in ADOT's  
26 good faith discretion.

### 27 **110.07.2.1.1.1 Quality Management Organization**

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

- 30 A. Resumes for all quality management personnel, including information on certifications  
31 held;
- 32 B. The organizational chart that identifies all quality management personnel, and their roles,  
33 authorities, and line reporting relationships;
- 34 C. Description of the roles and responsibilities of all quality management personnel and those  
35 who have the authority to stop Work;
- 36 D. Procedures for ensuring independence of quality staff and procedures for assuring their  
37 authority to effect changes in the event of Developer's failure to comply with the Contract  
38 Documents; and
- 39 E. Identification of the testing organization, including information on the organization's  
40 capability to provide the specific services required for the Work.

### 41 **110.07.2.1.1.2 Quality Policy**

42 The QMP must contain a complete description of the quality policies and objectives that  
43 Developer shall implement throughout its organization. The policy must demonstrate Developer's

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1 senior management commitment to implement and continually improve the quality management  
2 system for the Work.

### 3 **110.07.2.1.2 Professional Services Quality Management Plan**

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

#### 9 **110.07.2.1.2.1 PSQMP General Requirements**

10 The PSQMP must address the following general requirements:

- 11 A. Discuss the scope, Developer management support, and internal process for  
12 implementing and managing change to the PSQMP;
- 13 B. Discuss the structure, responsibilities, and hierarchy of the design quality organization;
- 14 C. Discuss the requirements of the release for construction (RFC) process, including how  
15 document history will be reflected, and how documents will be distributed and tracked;
- 16 1. Define internal procedures to assure that all documents ultimately released for  
17 construction have been subject to the appropriate checks and balances, regardless of  
18 their source or medium.
- 19 2. Define the potential RFC Submittal sources and mediums, and define how the process  
20 may change as portions of the Project transition from design to construction.
- 21 3. Define how RFC Submittal status will be tracked and how documents will be made  
22 available for use by all Project Parties.
- 23 D. Discuss methodology for assuring design consistency between multiple designers and  
24 design firms, and for assuring compatibility between technical disciplines;
- 25 1. Define the design QC and QA procedures that will apply to Professional Services work  
26 products.
- 27 2. Define procedures to assure that work products will be organized by discipline and  
28 sub-discipline, as appropriate (such as engineering - structural, utilities, and Project  
29 ROW). These procedures must specify measures to ensure that appropriate quality  
30 requirements are specified and included in the Professional Services work product.
- 31 3. Define measures that will control deviations from such requirements.
- 32 E. Discuss design production responsibilities, reviews, data control, data validation, and  
33 PSQMP training;
- 34 1. Define the specific QC and quality review procedures, including all required forms and  
35 checklists, for preparing, and checking all Professional Services work products.
- 36 F. Define the details of the design check process and discuss how, in addition to final Design  
37 Documents, the process also applies to calculations and other material intended to  
38 support the final design. Developer shall clearly identify the designer and checker on the  
39 face of all final Design Documents. Include specific procedures for checking the  
40 Professional Services work product and identify any computer programs and methods  
41 being used for such purposes. Include procedures for meeting documentation  
42 requirements of the Contract Documents;

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- 1 G. Discuss how design standardization and coordination will be achieved throughout the  
2 entire Project across multiple Project Segments. Define method for coordinating  
3 Professional Services performed by different individuals or firms working in the same area,  
4 in adjacent areas, or on related tasks to ensure that conflicts, omissions, or misalignments  
5 do not occur between drawings or between the drawings and the specifications or other  
6 applicable deliverables;
- 7 H. Discuss how Developer’s design quality organization will assure that constructability and  
8 maintenance considerations are incorporated into design reviews;
- 9 I. Define how the design process will assure that any RFC Submittals clearly and completely  
10 define the acceptance criteria that will be utilized by IQF and Owner Verification forces  
11 during construction;
- 12 J. Discuss the design checking, back-checking, internal auditing, and independent review  
13 requirements for Professional Services. Provide procedures and schedules for the  
14 performance of audits of Developer’s QC procedures under the PSQMP. Provide a  
15 summary of the documentation that will comprise the Professional Services Quality  
16 Records, and the procedures to make such Quality Records immediately available to  
17 ADOT for review. Provide a summary of anticipated Professional Services audit  
18 documentation to be submitted to ADOT, and the procedures to make sure that Developer  
19 shall submit the Results of Internal Audits for Professional Services to ADOT for review  
20 and comment;
- 21 K. Discuss Developer post design services process, staff, authority, scope, documentation,  
22 and product review process. Define the interface between design and construction  
23 personnel and related processes. Identify the role of the design team during construction;
- 24 L. Discuss the change process (including how those performing Professional Services will  
25 address Directive Letter), the related document control interface, and the construction  
26 documentation interface. This discussion shall include defining how documents produced  
27 after the initial design phase will be subject to appropriate internal design checks and  
28 balances before being released for construction; and
- 29 M. Discuss the responsibilities, activities, and source of information associated with the as-  
30 built process.

### 31 **110.07.2.1.2.2 Personnel and Staffing**

#### 32 **110.07.2.1.2.2.1 Personnel Performing Professional Services Quality Control**

33 Developer shall ensure that the training and experience of personnel performing Professional  
34 Services QC is commensurate with the scope, complexity, and nature of the Professional  
35 Services Work products to be reviewed. Qualifications must include appropriate experience,  
36 certifications, training, and licensure.

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

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

#### 41 **110.07.2.1.2.2.2 Professional Services Quality Assurance Staff**

42 Developer shall provide a QA staff under the direction of the Professional Services Quality  
43 Manager (PSQM) to perform oversight and review of all Professional Services performed by any  
44 member of Developer’s group.

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

### 5 **110.07.2.1.2.2.3 Professional Services Quality Assurance Staff Levels**

6 The size of the Professional Services QA staff must reflect the volume of QA activities necessary  
7 for the Work in progress and Developer shall maintain such staff in accordance with the approved  
8 PSQMP.

9 Developer shall update the Professional Services QA staffing requirements as necessary  
10 throughout the Term to reflect changes in the actual Project Schedule and specific Professional  
11 Services elements. Developer shall ensure that adequate Professional Services QA staff is  
12 available and that PSQMP activities are undertaken in a manner consistent with the Project  
13 Schedule and in a manner that enables Developer to timely achieve the Freeway Opening  
14 Deadline, Substantial Completion Deadline, and Final Acceptance Deadline.

### 15 **110.07.2.1.3 Construction Quality Management Plan**

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

20 Developer shall define processes and procedures for quality control to achieve compliance with  
21 the Contract Documents. Developer shall hire an Independent Quality Firm (IQF) to perform both  
22 materials testing and comprehensive product inspection, and IQF test results and inspection  
23 observations will be used in acceptance decisions as described in TP Attachment 110-2.

24 Developer shall construct the Work in accordance with the RFC Submittal, and other documents  
25 that have been formally released for construction as defined in Section GP 110.10.2.8.  
26 Developer's CQMP must contain detailed procedures for Developer's Construction QC and IQF  
27 activities. The CQMP must be consistent with the applicable procedures contained in the ADOT  
28 *Materials Quality Assurance Program* and the ADOT *Construction Manual*. Developer shall use  
29 the ADOT *Materials Testing Manual* when establishing sampling and testing procedures for  
30 standardization and consistency with ADOT procedures. The CQMP must establish clear  
31 distinction between Developer's QC and the IQF's Quality Acceptance activities and persons  
32 performing them. The quality process must also allow for verification sampling, testing, inspection  
33 and Independent Assurance activities by ADOT as defined in TP Attachment 110-2.

34 Developer shall ensure that personnel with appropriate training and qualifications for each  
35 appropriate item of Work (items produced on and off the Site) perform inspections, reviews, and  
36 testing using appropriate equipment that is accurately calibrated and maintained in good  
37 operating condition in accordance with the ADOT *Materials Quality Assurance Program, Section*  
38 *VI, "Laboratory Qualifications"*.

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

### 41 **110.07.2.1.3.1 CQMP General Requirements**

42 The CQMP must assure that construction quality requirements are explicitly defined, measurable,  
43 understood by both production and quality organization personnel, and that internal process for  
44 continuous construction quality documentation is in place and functioning properly, while always

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- 1 accommodating the Owner Verification activities. The CQMP must describe and include at least  
2 the following general requirements:
- 3 A. Discuss the CQMP production and updating process: Clearly define the authority and  
4 responsibility for the administration of the CQMP;
  - 5 B. Discuss the structure, responsibilities, and hierarchy of the construction quality  
6 organization. Discuss the roles and responsibilities of Developer management, quality  
7 control, and the IQF. Clearly define the distinction between the various components of  
8 the quality program. Discuss the interface between Developer's quality activities, IQF's  
9 Quality Acceptance activities and ADOT's Owner Verification and IA activities;
  - 10 C. Discuss the construction QC organization and staffing plan;
  - 11 D. Discuss the IQF organizational and staffing plan. Developer shall (a) show the period of  
12 time that the quality acceptance staff members must be present on the Site, and (b)  
13 state the required minimum knowledge, technical skills, and experience level of the  
14 personnel related to the various inspection functions, such as grading, drainage,  
15 structures, and electrical inspections, that will occur on the Work. Developer shall  
16 identify the administrative/clerical support staff for management of records/documents  
17 pertinent to Quality Acceptance for the IQF activities;
  - 18 E. Discuss the document control standards, the platform for data systems, document  
19 identification standards, and processes for logging and distributing controlled  
20 documents. Discuss the requirements and methods for controlling documents and  
21 discuss the document control system accessibility by quality organization personnel;
  - 22 F. Discuss the RFC process. Define the requirements related to the different types of  
23 construction documents that can be used in the field for construction, and discuss the  
24 procedures and processes in place to assure that only RFC Submittals are distributed  
25 for such use;
  - 26 G. Discuss methods to assure that all activities undertaken by or on behalf of Developer  
27 affecting the quality of the Work are prescribed by documented instructions, procedures,  
28 mix designs and appropriate drawings. Such instructions, procedures, mix designs and  
29 drawings must include quantitative and qualitative criteria to be used to determine  
30 compliance;
  - 31 H. Define measures to ensure that purchased materials, equipment, and services conform  
32 to the Contract Documents, Governmental Approvals, applicable Laws, rules, and the  
33 Design Documents. These measures must be consistent with Good Industry Practice  
34 and must include provisions for source evaluation and selection, objective evidence of  
35 quality furnished by Subcontractors and suppliers, inspection at the manufacture or  
36 vendor source, and examination of products upon delivery;
  - 37 I. Define procedures for processing a Request for Information (RFI) to resolve  
38 discrepancies and/or questions in the Plans and specifications, so that all changes are  
39 documented and approved by Developer's design engineers. Discuss the change  
40 management and RFI Process as it relates to construction and the quality organization.  
41 Discuss the interface between design and construction quality personnel and define the  
42 procedures that will assure that change of any type is not implemented outside of the  
43 RFC process;
  - 44 J. Describe the testing required to demonstrate compliance. The CQMP must require that  
45 test results be documented and evaluated to ensure that test requirements have been  
46 satisfied. The CQMP must also demonstrate how the IQF tracks its sampling and testing  
47 frequencies to ensure compliance with the Contract Documents, and how that  
48 information will be transmitted to ADOT, in a manner acceptable to ADOT, at least daily;

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- 1 K. Discuss procedures for inspecting, checking, and documenting the Work;
- 2 1. Discuss what will be inspected, how it will be inspected, who will be involved in the
- 3 inspection, what acceptance criteria will apply, and identify the IQF hold points and
- 4 hold point criteria that must be satisfied before proceeding. Define the manner in
- 5 which ADOT Owner Verification will be accommodated during the inspection
- 6 process
- 7 2. Define and provide an example of the IQF procedures that will be used for
- 8 documenting compliance of specific items of Work;
- 9 3. Identify the inspection references and other resources that are intended to be used;
- 10 4. Define and provide an example of the intended inspection documentation format for
- 11 technician diaries and test reports;
- 12 L. Discuss the use of Pre-construction coordination meetings. Identify the items that will
- 13 require a pre-activity meeting and define what a typical agenda includes, who will
- 14 typically participate in the meeting, and generally how such meetings will be used to
- 15 improve the quality of the product being constructed;
- 16 M. Define the how Developer shall address Nonconforming Work and how Developer shall
- 17 comply with the requirements of Section 6.7 of the Agreement. Discuss how Developer
- 18 shall identify, classify, resolve, and document Nonconforming Work, and who is involved
- 19 in the different steps in the process;
- 20 N. Discuss the role of Developer's quality program as it relates to implementation of the
- 21 Environmental Management Plan;
- 22 O. Discuss Developer's role as it relates to traffic control activities such as monitoring,
- 23 maintenance, and reporting;
- 24 P. Discuss how Developer accommodates inspections, sampling and tests by third parties
- 25 when applicable;
- 26 Q. Define test data organization methodology. Identify the planned materials information
- 27 database structure and define the sample identification methodology that includes
- 28 sample ID structure, material type and usage codes, and location referencing standards.
- 29 Material codes must be consistent with those identified in the SMF Minimum Sampling
- 30 Guide Schedule included in the RIDs.
- 31 R. Indicate methodology to transmit test data to ADOT in an electronic format acceptable
- 32 to ADOT
- 33 S. Define the intended materials test summary reports and provide examples;
- 34 T. Define the materials information management software and end user computer devices
- 35 that will be utilized for collecting, organizing, processing, retrieving, and reporting test
- 36 data. Discuss how Developer will capture data and export information to ADOT in an
- 37 electronic format acceptable to ADOT
- 38 U. Discuss the content and format of the sampling and testing requirements for all types of
- 39 materials that will be used on the project. Material sampling and testing requirements
- 40 must be consistent with those identified in the SMF Minimum Sampling Guide Schedule
- 41 included in the RIDs;
- 42 V. Discuss methodology that will be used to assure that all collected samples and
- 43 performed material tests are reported with the proper material codes. Discuss internal
- 44 quality control methodology that will be used to check and assure data integrity;
- 45 W. Discuss procedures for reviewing and approving quality acceptance test results,
- 46 categorizing test results in a manner acceptable to ADOT, transmitting quality

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- 1 acceptance test results to ADOT in a format acceptable to ADOT for use in fulfilling its  
2 statistical validation requirements, and working collaboratively with ADOT to resolve  
3 statistical non-validation between IQF and ADOT test results;
- 4 X. Address specific items, or components of items, that are planned to be accepted on the  
5 basis of certification. Define how material certificates will be collected or received, how  
6 they will be checked in the field by inspection, how they will be matched up and assigned  
7 to specific quantities of received material, how they will be stored and organized to  
8 facilitate future audits, what system will be used for tracking certificates and who will be  
9 responsible for managing the program;
- 10 Y. Define procedures for assessing compliance with the sampling and testing plan that  
11 include a process for tracking planned versus actual testing status. Define the nature  
12 and content of weekly reports that will be provided by Developer Quality Organization to  
13 show sampling and testing plan compliance, and discuss the manner in which non-  
14 compliance situations will be rectified, or otherwise justified.;
- 15 Z. Define the internal review and approval process of all portland cement concrete and  
16 asphaltic concrete mix designs;
- 17 AA. Discuss the methods and procedures to be utilized by Developer to obtain active  
18 participation of the production workforce in QC operations to achieve a high quality  
19 Project;
- 20 BB. Discuss procedures to ensure there is adequate quantity of material available for IQF  
21 sampling and testing and ADOT Owner Verification sampling and testing;
- 22 CC. Discuss procedures to ensure that the education, training, and certification of IQF  
23 personnel are achieved and maintained. Discuss procedures to make an electronic log  
24 available to ADOT that contains personnel certification status and expiration dates;
- 25 DD. Discuss procedures to track and assure that personnel performing IQF Quality  
26 Acceptance activities are evaluated annually by ADOT's Independent Assurance staff  
27 for the sampling and testing they perform. Discuss procedures for reporting to ADOT  
28 which individuals are due for evaluation;
- 29 EE. Define procedures to ensure that IQF personnel are present when Work is being  
30 performed. Developer shall identify and communicate inspection or hold points to the  
31 IQF, Construction Quality Control Manager (CQCM), and ADOT and develop  
32 procedures to proceed beyond inspection or hold points;
- 33 FF. Discuss the process by which the IQF may apply engineering judgment to substantiate  
34 the use of material failing to meet the specification if the material still meets the intended  
35 purpose. Developer shall incorporate the engineering judgment guiding principles from  
36 TP Attachment 110-2 into the CQMP and indicate how the IQF will comply with these  
37 guiding principles. Developer may add additional guiding principles, as appropriate;
- 38 GG. Discuss the format for documentation of the IQF's application of engineering judgment.  
39 At the least, this must include a unique identifying number for each instance, and a  
40 written document identifying the type and location of the non-conforming work, the  
41 circumstances and the engineering evaluation conclusions, and any supporting  
42 documentation such as calculations or sketches, as appropriate;
- 43 HH. Discuss procedures for identification and control of materials, equipment, and elements  
44 of the Work. These procedures must be consistent with current industry standards to  
45 ensure that identification of the item is maintained by appropriate means, either on the  
46 item or on records traceable to the item, as necessary, throughout fabrication, erection,  
47 installation and use of the item;

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- 1 II. Define procedures to indicate, by the use of markings, such as stamps, tags, labels,  
2 routing cards, or other suitable means, the status of inspections and tests performed  
3 upon individual items of the Work;
- 4 JJ. Define measures to ensure that tools, gauges, instruments, and other measuring and  
5 testing devices used in activities affecting quality are properly maintained, controlled,  
6 calibrated, certified, and adjusted at specified periods to maintain accuracy within  
7 industry standards;
- 8 KK. Include procedures to control the handling, storage, shipping, cleaning, and preservation  
9 of materials and equipment to prevent damage or deterioration;
- 10 LL. Discuss procedures to ensure that those conditions adverse to quality, such as failures,  
11 malfunctions, deficiencies, defective material and equipment, deviations, and other  
12 Nonconforming Work are promptly identified and corrected. The procedures must  
13 ensure that the cause of the condition is determined and corrective action taken to  
14 preclude repetition. Developer shall document and report in writing to ADOT and to  
15 appropriate levels of Developer's management (a) the identification of the significant  
16 condition adverse to quality, (b) the cause of the condition, and (c) the corrective action;
- 17 MM. Define a comprehensive system of planned and periodic internal audits of Developer's  
18 CQMP to determine adherence to and the effectiveness of the CQMP. IQF personnel  
19 must perform the audits in accordance with the written procedures or checklists.  
20 Developer shall document, review, and act upon audit results. Developer shall take  
21 follow-up action, including re-audit of deficient areas following corrective action, where  
22 indicated;
- 23 NN. Define procedures for ensuring compliance with Buy America requirements of 23 CFR  
24 635.410, including tracking quantities and dollars of domestic and foreign steel. The  
25 Developer shall make this information available to ADOT at least monthly;
- 26 OO. Define procedures for quality acceptance in the CQMP with respect to checking the  
27 accuracy and adequacy of construction stakes, lines, and grades established by  
28 Developer;
- 29 PP. Provide a summary of the documentation that comprises the construction Quality  
30 Records, and define the procedures to make sure Quality Records are immediately  
31 available to ADOT for review; and
- 32 QQ. Provide a summary of anticipated construction audit documentation to be submitted to  
33 ADOT, and the procedures to make sure all Results of Internal Audits for construction  
34 are submitted to ADOT within the timeline required in Section GP 110.07.3 of the TPs.

### 35 **110.07.2.1.3.2 Construction Quality Acceptance Staff Levels**

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

41 Developer shall update the construction quality acceptance staffing requirements as necessary  
42 throughout the Construction Period to reflect changes in the actual construction schedule.  
43 Developer shall ensure that adequate construction quality acceptance staff is available and that  
44 CQMP activities are undertaken in a manner consistent with the Project Schedule and in a manner  
45 that enables Developer to timely achieve the Freeway Opening Deadline, Substantial Completion  
46 Deadline, and Final Acceptance Deadlines.



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### 1 **110.07.2.1.3.3 Recording, Record Keeping and Documentation**

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

- 3 A. An electronic daily log of all inspections performed for both Developer and Subcontractor  
4 operations in a format acceptable to ADOT and must be made available to ADOT upon  
5 request. The daily inspection reports must identify inspections conducted, results of  
6 inspections, location and nature of defects found, causes for rejection, and remedial or  
7 corrective actions taken or proposed. The responsible technician and supervisor must sign  
8 the daily inspection reports. IQF shall provide the results of the daily inspections to ADOT  
9 in an electronic format within 24 hours after the work shift;
- 10 B. The IQF must be responsible for establishing an electronic system for recording all  
11 material test results and certifications. The responsible technician and his/her supervisor  
12 must sign the daily test reports. Developer shall provide the results of the daily test to  
13 ADOT within 24 hours of test completion; and
- 14 C. The IQF's inspection and materials quality program must deliver all inspection reports,  
15 laboratory and field test results to ADOT in an electronic format acceptable to ADOT. This  
16 electronic reporting is intended to allow Developer and ADOT to make timely and accurate  
17 decisions on workmanship and material quality issues.

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

22 Certificates must be specifically identified as either a "Certificate of Compliance" or a "Certificate  
23 of Analysis".

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

### 28 **110.07.2.1.4 Maintenance Quality Management Plan**

29 Developer shall prepare a comprehensive Maintenance Quality Management Plan (MQMP) which  
30 must fully incorporate the requirements of the Work during the Maintenance Period, with the  
31 primary function of establishing Developer's self-monitoring process and monitoring the  
32 performance of the Maintenance Services. The MQMP must be consistent with the design and  
33 construction quality requirements set forth in this Section GP 110.07.2.1.4. At a minimum, the  
34 MQMP must specify:

- 35 A. Detailed QA system for validating the information, accuracy, and results of the MQMP;
- 36 B. Procedures to validate the data, times, dates, calculations and other information that are  
37 the basis of Maintenance Services Noncompliance Events;
- 38 C. Methods and procedures that clearly define the distinction/authority/responsibility for the  
39 administration of the MQMP;
- 40 D. That Developer, suppliers, and Subcontractors designate an individual on each crew to  
41 be responsible for performing daily field Inspections of the crew's Work and for preparing  
42 a daily QC report to document the Inspections performed;
- 43 E. A Maintenance Services quality organization and staffing plan. The plan must describe  
44 the IQF's involvement during the Maintenance Period. The plan must show the period of  
45 time that the quality staff member must be present on the Site, must include resumes of

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- 1 the Key Personnel, and must state the experience/knowledge/skill levels of the quality  
2 support staff;
- 3 F. Procedures for Inspecting, checking, and documenting the Work. Developer shall perform  
4 Inspections, examinations, and measurements must be performed for each operation of  
5 the Work to assure quality;
- 6 G. Procedures to ensure that all activities affecting the quality of the Work are accomplished  
7 under controlled conditions using appropriate equipment for the task being performed;
- 8 H. Discuss how design standardization and coordination will be achieved throughout the  
9 entire Project across Capital Asset Replacement Areas;
- 10 I. Measures to ensure that purchased materials, equipment, and services conform to the  
11 Contract Documents, Governmental Approvals, applicable Laws, Rules, and the Design  
12 Documents. These measures must be consistent with current industry standards and must  
13 include provisions for source evaluation and selection, objective evidence of quality  
14 furnished by Subcontractors and suppliers, Inspection at the manufacture or vendor  
15 source, and examination of products upon delivery;
- 16 J. Procedures to indicate, by the use of markings such as stamps, tags, labels, routing cards,  
17 or other suitable means, the status of Inspections, and tests performed upon individual  
18 items of the Work;
- 19 K. Procedures to ensure that conditions adverse to quality, such as failures, malfunctions,  
20 deficiencies, defective material and equipment, deviations and other Nonconforming Work  
21 are promptly identified and corrected. The procedures must ensure that the cause of the  
22 condition is determined and corrective action taken to preclude repetition. To ensure  
23 corrective action is promptly taken, Developer shall document and report to ADOT in  
24 writing and to appropriate levels of Developer's management the identification of the  
25 significant condition adverse to quality, the cause of the condition and the corrective action  
26 taken;
- 27 L. A summary of the documentation that will comprise the Maintenance Services Quality  
28 Records, and the procedures to make such Quality Records immediately available to  
29 ADOT for review;
- 30 M. A summary of anticipated Maintenance Services audit documentation to be submitted to  
31 ADOT, and the procedures to make sure all Results of Internal Audits for Maintenance  
32 Services are submitted to ADOT within the timeline required in Section GP 110.07.2.1 of  
33 the TPs; and
- 34 N. Procedures to document Maintenance Services Noncompliance Events.

35 With the MMP, Developer shall submit the MQMP to ADOT for approval in ADOT's good faith  
36 discretion.

### 37 **110.07.3 Submittals**

38 Table 110-10 reflects a nonexclusive list of Submittals identified in Section GP 110.07 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 formats  
44 described in Section GP 110.10.2.2 of the TPs:

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| <b>Table 110-10<br/>Nonexclusive Submittals List</b>   |                  |                  |            |   |                   |
|--|------------------|------------------|------------|---|-------------------|
| 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          | With the MMP  | GP 110.07.2.1.4   |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                  |                  |            |   |                   |

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 requirements  
 11 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 assigned to the Project as set forth  
 16 below. The number of years of relevant experience listed for each Key Personnel position  
 17 represents a target goal for evaluation purposes and is not a mandatory, minimum requirement  
 18 for the position.

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

3 All Key Personnel must be actively engaged. Developer shall appoint the Key Personnel for the  
4 Project as follows:

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

### 16 **110.08.2.1 Project Manager**

17 The Project Manager is responsible for the overall design, construction, quality, and contract  
18 administration for the design and construction of the Project. This individual must be an employee  
19 of (i) Developer or (ii) an Equity Member that must hold at least a 1/3 beneficial interest in  
20 Developer, and must be on-site full time until Substantial Completion. The individual's relevant  
21 experience includes the following:

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

### 26 **110.08.2.2 Construction Manager**

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

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

### 34 **110.08.2.3 Design Manager**

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

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1 be a registered or licensed professional engineer, comparable to an Arizona registration, in some  
2 state or foreign jurisdiction at the time of SOQ submittal, and must be a Professional Engineer.  
3 The individual's relevant experience includes the following:

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

### 7 **110.08.2.4 Quality Manager**

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

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

### 22 **110.08.2.5 Safety Manager**

23 The Safety Manager is responsible for establishing and supervising Developer's safety program  
24 and implementing and coordinating the Transportation Management Plan (TMP) per 23 CFR  
25 630.1012. This individual must be an employee of (i) Developer or (ii) an Equity Member that  
26 holds at least a 1/3 beneficial interest in Developer, and must report directly to the Project  
27 Manager. This individual must be assigned to the Project full time and must be on-site until  
28 Freeway Opening. This individual must be familiar with FHWA work zone safety regulations and  
29 must have at least 10 years of experience working in roadway work zone safety and OSHA  
30 Regulations. The individual's relevant experience includes the following:

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

### 34 **110.08.2.6 Public Relations Officer**

35 The Public Relations Office is responsible for supporting ADOT's effort to involve the community  
36 in the Project. This individual can be an employee of (i) Developer, (ii) an Equity Member that  
37 holds at least a 1/3 beneficial interest in Developer, (iii) the Lead Engineering Firm or (iv) the Lead  
38 Maintenance Firm, or must have a contractual relationship with Developer. This individual must  
39 report to the Project Manager. This individual must be assigned to the Project full time until  
40 Freeway Opening. The individual's relevant experience includes the following:

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

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### 1 **110.08.2.7 ROW Acquisition Manager**

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

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

### 12 **110.08.2.8 Utility Adjustment Coordinator**

13 The Utility Adjustment Coordinator is responsible for coordinating the Utility Adjustment and  
14 relocation requirements for Developer and leading the efforts to resolve any utility conflicts that  
15 may arise during construction. This individual must be an employee of (i) Developer, (ii) an Equity  
16 Member that holds at least a 1/3 beneficial interest in Developer, or (iii) the Lead Engineering  
17 Firm, or must have a contractual relationship with Developer. This individual must report to the  
18 Construction Manager. This individual must be assigned to the Project full time and must be on-  
19 site until Freeway Opening. The individual's relevant experience includes the following:

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

### 22 **110.08.2.9 Environmental Compliance Manager**

23 The Environmental Compliance Manager is responsible for coordinating the environmental  
24 permitting requirements for Developer and ensuring that issues are resolved before Construction  
25 Work begins. This individual must be an employee of (i) Developer, (ii) an Equity Member that will  
26 hold at least a 1/3 beneficial interest in Developer, or (iii) the Lead Engineering Firm, or must have  
27 a contractual relationship with Developer. This individual must report to the Construction  
28 Manager. This individual must be assigned to the Project full time and must be on-site until  
29 Freeway Opening. The individual's relevant experience includes the following:

- 30 A. 10 years on complex highway infrastructure projects.
- 31 B. 5 years managing environmental compliance activities and permitting for major urban  
32 freeway project.

### 33 **110.08.2.10 Maintenance Manager**

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

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

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### 1 **110.08.2.11 DBE/OJT Outreach and Compliance Manager**

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

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

### 12 **110.08.3 Other Personnel**

#### 13 **110.08.3.1 Professional Services Quality Manager**

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

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

#### 25 **110.08.3.2 Construction Quality Manager**

26 Developer shall designate a CQM for the Project. The CQM must report directly to the Quality  
27 Manager and Developer shall ensure that the CQM is responsible for overall management of the  
28 CQMP. The CQM must be responsible for implementing, monitoring, and adjusting the processes  
29 to make certain that acceptable quality is achieved and maintained and for implementing quality  
30 planning and coordinating with the Independent Quality Firm (IQF). The CQM must be 100  
31 percent committed to the Project and must have no other role, duties, or responsibilities. The  
32 CQM must be authorized to stop any Construction Work that does not comply with the standards,  
33 specifications, or criteria established for the Project. The PSQM and CQM must be different  
34 people. The CQM's relevant experience includes the following:

- 35 A. 10 years of experience in the construction quality management of major urban freeway  
36 projects.

#### 37 **110.08.3.3 Construction Quality Control Staff**

38 Developer's construction work force are all considered to be members of Developer's construction  
39 QC staff as each and every one is responsible for the quality of the Work. Developer's Quality  
40 Control staff is responsible for ensuring the quality of the workmanship, and ensuring that  
41 materials meet the required specifications. Personnel responsible for performing QC must be  
42 knowledgeable and receive training to perform their QC duties. Personnel performing QC cannot  
43 be employees of the IQF.

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### 1 **110.08.3.4 Construction Independent Quality Manager**

2 Developer's IQF must identify an on-site Construction Independent Quality Manager (CIQM) who  
3 must be responsible for management of the quality acceptance aspects of the CQMP and the  
4 MQMP as it relates to Capital Asset Replacement Work. The CIQM must review, approve,  
5 authorize, examine, interpret, and confirm methods or procedures performed by Developer. The  
6 CIQM must be responsible for overseeing the quality acceptance testing and inspection and  
7 coordinating with ADOT's oversight inspection and testing staff in accordance with the  
8 requirements of the Contract Documents.

9 The CIQM must be a Professional Engineer and must be an employee of the IQF, with no  
10 responsibilities in connection with the production of the Work. The CIQM must report jointly to  
11 ADOT and an executive officer above the level of, and under a line of authority independent of,  
12 the Project Manager. The CIQM must not report to any person or party directly responsible for  
13 Design Work, Construction Work, or Maintenance Services.

14 The CIQM must be 100 percent committed to the Project while Construction Work and Capital  
15 Asset Replacement Work are underway and must have no other role, duties, or responsibilities.  
16 The CIQM must be authorized to stop any Construction Work or Capital Asset Replacement Work  
17 that does not comply with the standards, specifications, or criteria established for the Project. The  
18 PSQM and CIQM must be different people.

### 19 **110.08.3.5 Independent Quality Acceptance Staff**

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

25 The IQF testing and sampling staff must be employees of an IQF firm, with no responsibilities in  
26 connection with the production of the Work, and must meet the requirements of Section VII of the  
27 ADOT Materials Quality Assurance Program ("Sampling and Testing Personnel Qualification  
28 Requirements"). The IQF staff must be experienced in highway inspection and material testing.  
29 The training and experience of the construction quality acceptance staff must be commensurate  
30 with the scope, complexity, and nature of the activity to be controlled and tested. Qualifications  
31 must be consistent with ADOT's Materials Quality Assurance Program. Construction quality  
32 acceptance staff must report to the CIQM.

33 The IQF staff must provide appropriate level of oversight and perform audits of the QC program.  
34 The construction quality acceptance inspection staff must check compliance of all material,  
35 equipment, construction, installations, and operations. Personnel assigned to perform inspection,  
36 testing, or monitoring of characteristics for acceptance must not be those personnel performing  
37 or directly supervising the Work being accepted.

### 38 **110.08.3.6 Maintenance QC Manager**

39 Developer shall assign an on-site Maintenance QC Manager who must be responsible for  
40 management of the MQMP. The Maintenance QC Manager must not be involved with scheduling  
41 or production activities, and must report directly to Developer's management team. The  
42 Maintenance QC Manager is responsible for independently overseeing and performing QC for  
43 the Maintenance Services. The Maintenance QC Manager reports, develops, and implements  
44 corrective actions for any deviations to the methods and procedures contained in approved  
45 MQMP in the performance of the Work.



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### 1 **110.08.3.7 Maintenance Quality Control Staff**

2 The members of Developer's and Subcontractors' Maintenance Services work force are all  
3 considered to be members of Developer's QC staff as each and every one is responsible for the  
4 quality of the Work. Personnel performing QC inspection must ensure quality of workmanship and  
5 QC sampling and testing must ensure that materials meet the required specifications. Personnel  
6 responsible for performing QC inspection must be knowledgeable and receive training to perform  
7 their QC duties. Should any sampling and testing be required during the Maintenance Services,  
8 Maintenance QC Manager must be responsible for ensuring that sampling and testing procedures  
9 and methods meet the requirements in the MQMP.

### 10 **110.08.3.8 ROW Quality Control Specialist(s)**

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

### 17 **110.08.3.9 Survey Manager**

18 Developer shall designate a Survey Manager for the Project. The Survey Manager must be the  
19 point of contact for all survey Work and must be responsible for all survey Work, including directing  
20 and reviewing Subcontractor survey Work. The Survey Manager must be familiar with ADOT  
21 procedures and standards pertaining to ROW, design, and construction surveying. The Survey  
22 Manager must be a registered or licensed land surveyor, comparable to an Arizona registration,  
23 in some state or foreign jurisdiction at the time of Proposal submittal, and must be a registered  
24 land surveyor in the State. The individual's relevant experience includes the following:

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

### 27 **110.08.3.10 Geotechnical Manager**

28 Developer shall designate a Geotechnical Manager for the Project. The Geotechnical Manager  
29 must be the point of contact for all geotechnical Work and must be responsible for all geotechnical  
30 Work, including directing and reviewing Subcontractor geotechnical Work. The Geotechnical  
31 Manager must be familiar with ADOT guidelines, procedures, and standards pertaining to  
32 geotechnical investigation, analysis, and design. The Geotechnical Manager must be a registered  
33 or licensed professional engineer, comparable to an Arizona registration, in some state or foreign  
34 jurisdiction at the time of Proposal submittal, and must be a Professional Engineer. The  
35 individual's relevant experience includes 15 years of experience in matters relating to  
36 geotechnical subsurface exploration, geotechnical site characterization, analysis, design, and  
37 construction of bridge foundations, retaining walls and soundwalls, drainage structures, roadway  
38 embankments and roadway pavements, and excavation and fill slopes in soil and rock.

### 39 **110.08.3.11 Rock Engineer/Blasting Professional**

40 Developer shall designate a Rock Engineer/Blasting Professional for the Project, if warranted by  
41 Developer's design. The Rock Engineer/Blasting Professional must be the point of contact  
42 regarding all blasting Work. The Rock Engineer/Blasting Professional must be responsible for  
43 ensuring that all blasting Work is in accordance with the Contract Documents. The Rock  
44 Engineer/Blasting Professional must be a registered or licensed professional engineer,  
45 comparable to an Arizona registration, in some state or foreign jurisdiction at the time of Proposal

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1 submittal, and must be a registered Professional Engineer by the start of the associated Work.  
2 The individual's relevant experience includes a minimum of 10 years of practical applied  
3 experience in geological engineering with an emphasis on blasting for rock excavation, including  
4 designing and construction engineering of rock blasting and stabilization of roadway cut slopes,  
5 blasting techniques for roadway cut slope excavation, blast monitoring, control procedures for  
6 vibration, air-blast and fly rock, and rock fall protection measures.

### 7 **110.08.3.12 Blasting Supervisors**

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

### 15 **110.08.3.13 Blasters in Charge**

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

### 24 **110.08.3.14 Hazardous Materials Manager**

25 Developer shall designate a Hazardous Materials Manager for the Project. The Hazardous  
26 Materials Manager must provide expertise in the safe handling of Hazardous Materials required  
27 to perform the Work and those that may be discovered or impacted during the Term. The  
28 Hazardous Materials Manager must schedule and/or conduct Hazardous Materials training for  
29 Developer's employees, verify all necessary certifications prior to and required for any handling  
30 of Hazardous Materials, and maintain records of all Incidents involving Hazardous Materials and  
31 notify the Environmental Compliance Manager, ADOT, and appropriate Governmental Entities in  
32 writing of any such Incidents.

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

### 38 **110.08.3.15 Principal Investigator**

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

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### 1 **110.08.3.16 Qualified Biologist**

2 Developer shall designate a Qualified Biologist for the Project. The Qualified Biologist must  
3 demonstrate:

- 4 A. A bachelor's degree with an emphasis in biology, ecology, natural resource management,  
5 or related science
- 6 B. Three years of experience in field biology or current certification of a nationally recognized  
7 biological society, such as The Ecological Society of America or The Wildlife Society
- 8 C. Previous experience with applying the terms and conditions of a Biological Opinion
- 9 D. The appropriate permit and/or training for conducting focused or protocol surveys for listed  
10 species of concern to the Project including burrowing owls
- 11 E. Previous experience in writing biological review, survey, and monitoring documents
- 12 F. Previous experience in general federal threatened and endangered species habitat  
13 evaluations
- 14 G. Previous experience in federal, State and tribal sensitive species habitat evaluations and  
15 surveys
- 16 H. Previous experience in surveying for native plants and noxious weeds of central Arizona
- 17 I. Previous experience in handling reptiles

### 18 **110.08.3.17 Erosion Control Coordinator**

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

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

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

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

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

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

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- 1 A. Experience in the implementation of SWPPPs. The ECC's experience must demonstrate  
2 full-time responsibility for directly supervising construction personnel in the installation,  
3 monitoring, and maintenance of control measures.
- 4 B. Experience in stabilization of disturbed areas in environments similar to those on the  
5 Project. Experience in re-vegetation or restoration of disturbed areas. The ECC's  
6 experience must demonstrate full-time responsibility for directly supervising personnel in  
7 stabilization of disturbed areas.

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

- 10 A. Registration in the State as a Landscape Architect, with a minimum of 1 year of experience  
11 in the fields of erosion control and sediment transport.
- 12 B. Registration as a Professional Engineer with a minimum of 1 year of experience in the  
13 fields of erosion control and sediment transport.
- 14 C. Certification by the EnviroCert International, Inc. as a Certified Professional in Erosion and  
15 Sediment Control.

### 16 **110.08.3.18 Hydraulics Engineer**

17 Developer shall designate a Hydraulics Engineer for the Project. The Hydraulics Engineer must  
18 report directly to the Design Manager. Developer shall ensure that the Hydraulics Engineer is  
19 responsible for all matters regarding hydraulics for the Project. The Hydraulic Engineer must be  
20 a registered or licensed professional engineer, comparable to an Arizona registration, in some  
21 state or foreign jurisdiction at the time of Proposal submittal, and must be a Professional Engineer.  
22 Registration must be kept active throughout the duration of the Work. The individual's relevant  
23 experience includes 5 years of experience with hydraulics design for the projects on the Arizona  
24 State Highway System.

### 25 **110.08.3.19 Landscape Architect**

26 Developer shall designate a Landscape Architect for the Project. The Landscape Architect must  
27 report directly to the Design Manager. The Landscape Architect must be responsible for the  
28 landscaping and aesthetics for the Project and must be familiar with ADOT construction plan  
29 preparation. The Landscape Architect must be a registered or licensed landscape architect,  
30 comparable to an Arizona registration, in some state or foreign jurisdiction at the time of Proposal  
31 submittal, and must be a registered landscape architect in the State of Arizona. The individual's  
32 relevant experience includes 5 years of experience in developing landscape and aesthetic plans.

### 33 **110.08.3.20 Irrigation System Designer**

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

### 40 **110.08.3.21 Landform Graphic Layout Artist**

41 Developer shall designate a Landform Graphic Layout Artist for the Project. The Landform  
42 Graphic Layout Artist must be responsible for the complete layout and adjustment, as needed, of  
43 the landform graphics to meet actual site and visual conditions. The Landform Graphic Layout  
44 Artist must be responsible for providing all layout labor assistance, materials, tools, equipment,  
45 and roadway safety items necessary to layout the landform graphics. The Landform Graphic

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1 Layout Artist must have completed work on two major landform graphic projects that involved  
2 working with variable contours, grading and drainage, and site conditions with grade level  
3 changes other just flat surfaces. The Landform Graphic Layout Artist must have experience in the  
4 use of professional methods of construction, materials, and equipment for the construction of  
5 large-scale landform graphics.

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

### 9 **110.08.3.22 Appraisers and Appraisal Reviewers**

10 Each Appraiser and Appraisal Reviewer must be certified by the Arizona Board of Appraisers as  
11 a General Certified Real Estate Appraiser. Each Appraiser and Appraisal Reviewer must have a  
12 minimum 5 years of experience in appraising real property for eminent domain purposes,  
13 including partial taking appraisal, partial taking appraisal review, and expert witness testimony,  
14 unless otherwise approved by ADOT. Each Appraiser and Appraisal Reviewer must be familiar  
15 with appraisal and appraisal report review processes pursuant to the Uniform Standards of  
16 Professional Appraisal Practice (USPAP) and Federal requirements in Title 49 CFR Part 24. Both  
17 Appraisers and Appraisal Reviewers may be required to testify. The Appraisers and the Appraisal  
18 Reviewers must have separate and distinct duties, and Appraisers must be employed by different  
19 firms from the Appraisal Reviewers. Each Appraiser must submit three samples of previous  
20 appraisal work prepared for eminent domain purposes prior to performing any Work. All  
21 Appraisers preparing and signing appraisals must be approved by ADOT prior to performing any  
22 appraisals on the Project.

### 23 **110.08.3.23 Relocation Agents**

24 Each Relocation Agent must have a minimum of 3 years of experience in relocation assistance  
25 for ROW projects pursuant to the Uniform Relocation Assistance and Real Property Acquisition  
26 Policies Act. Relocation Agents responsible for business relocations must have an additional 2  
27 years of experience with business relocation. A Relocation Agent's responsibilities must include  
28 the following: Determining eligibility of all displacees; contacting all displacees and informing them  
29 of their benefits; maintaining a file of all documentation concerning the relocation of the  
30 displacees; and extending all relocation assistance advisory services.

### 31 **110.08.3.24 Acquisition Agents**

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

### 42 **110.08.3.25 Other ROW Personnel**

43 All other ROW personnel must have at least 3 years of experience in title review and curative  
44 matters. ROW personnel's responsibilities must include the following: maintain complete and  
45 accurate files of all transactions and contacts with the property owners and/or their

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1 representatives, coordinate and clear all title issues, and assist at closing for properties acquired  
2 for the Project.

### 3 **110.08.3.26 Deputy Maintenance Manager**

4 Developer shall designate a Deputy Maintenance Manager for the Project. The Deputy  
5 Maintenance Manager must report directly to the Maintenance Manager and must be assigned to  
6 the Project full time. The Deputy Maintenance Manager must have at least 5 years of experience  
7 managing or leading maintenance or operations of federally funded controlled access freeway  
8 system, including responsibility for structures, pavements, roadside appurtenances, and traffic  
9 control. This individual must not be assigned any other duties or responsibilities on this Project or  
10 any other projects. The Deputy Maintenance Manager or designee must be available on call within  
11 1 hour of emergency notification.

### 12 **110.08.3.27 ITS Design Manager**

13 Developer shall designate an ITS Design Manager for the Project. The ITS Design Manager must  
14 report directly to the Design Manager. Developer shall ensure that the ITS Design Manager is  
15 responsible for all matters regarding ITS elements for the Project. The ITS Design Manager must  
16 be familiar with the overall functionality of the FMS, its field elements and their technologies, and  
17 the connectivity between the field elements and their users. The ITS Design Manager must be a  
18 registered or licensed professional engineer, comparable to an Arizona registration, in some state  
19 or foreign jurisdiction at the time of Proposal submittal, and must be a Professional Engineer.  
20 Registration must be kept active throughout the duration of the Work. The individual's relevant  
21 experience includes a minimum of 10 years of experience in leading ITS design.

### 22 **110.08.3.28 ITS Construction Manager**

23 Developer shall designate an ITS Construction Manager for the Project. The ITS Construction  
24 Manager must report directly to the Construction Manager. Developer shall ensure that the ITS  
25 Construction Manager is responsible for the construction, installation, and systems acceptance  
26 testing (SAT) for the entire ITS system. The ITS Construction Manager must be familiar with the  
27 overall functionality of the ADOT FMS, its field elements and their technologies, and the  
28 connectivity between the field elements and their users. The individual's relevant experience  
29 includes the following;

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

### 33 **110.08.3.29 Maintenance Safety Officer**

34 Developer shall designate a Maintenance Safety Officer for the Project. The Maintenance Safety  
35 Officer must report directly to the Maintenance Manager. Developer shall ensure that the  
36 Maintenance Safety Officer is responsible for safety during the Maintenance Period. This  
37 individual must be assigned to the Project full time during the Maintenance Period and must be  
38 on-site during Maintenance Services. This individual must be familiar with FHWA work zone  
39 safety regulations and must have at least 10 years of experience working in roadway work zone  
40 safety and OSHA Regulations. The Maintenance Safety Officer must develop and administer the  
41 Maintenance Safety Management Plan (MSMP).

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### 1 **110.09 Safety Management**

#### 2 **110.09.1 General Requirements**

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

5 Developer shall have sole responsibility for safety on the Site until Final Acceptance. Developer  
6 shall ensure that all Developer employees and Subcontractors comply with the Safety  
7 Management Plan, applicable Laws, and associated elements of Developer’s injury and illness  
8 prevention program.

9 Developer shall comply with OSHA Regulations, including 29 CFR, Part 1926, and 29 CFR, Part  
10 1910, as well as all applicable standards of the U.S. Environmental Protection Agency (EPA), the  
11 Arizona Department of Environmental Quality (ADEQ), and the U.S. Mine Safety and Health  
12 Administration (MSHA). Developer shall maintain a copy of the specified OSHA Standards on the  
13 Site at all times.

#### 14 **110.09.2 Administrative Requirements**

##### 15 **110.09.2.1 Safety Management Plan**

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

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

22 Developer’s Safety Management Plan must:

- 23 A. Be consistent with the Project insurance requirements;
- 24 B. Be consistent with railroad safety requirements;
- 25 C. Clearly establish the safety organization described in Section GP 110.09.2.1.1 of the TPs;
- 26 D. Describe the process of conducting safety orientation for all employees;
- 27 E. Describe Developer’s alcohol and drug free workplace policy;
- 28 F. Describe employee training requirements;
- 29 G. Describe safety inspection procedures;
- 30 H. Describe procedures and policies for working in active traffic locations;
- 31 I. Describe Incident reporting procedures including near-miss Incidents;
- 32 J. Describe Developer’s hazard communication program;
- 33 K. Describe Developer’s management and auditing of the Safety Management Plan;
- 34 L. Describe personal protective equipment (PPE) requirements and policy;
- 35 M. Describe safety procedures for Developer’s employees working around and handling  
36 Hazardous Materials;
- 37 N. Describe the availability of first-aid, medical, and emergency equipment and services at  
38 the Site, including arrangements for emergency transportation;
- 39 O. Describe security procedures to prevent theft, vandalism, and other losses at the Site; and
- 40 P. Describe the process for submittal of *OSHA Forms for Recording Work-Related Injuries*  
41 *and Illnesses* to ADOT.

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

### 3 **110.09.2.1.1 Safety Organization**

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

### 17 **110.09.2.1.2 Process of Employee Safety Orientation**

18 The Safety Management Plan must describe the safety orientation process, including the  
19 following:

- 20 A. The extent and nature of the Project;
- 21 B. Any hazards that can typically be expected during the course of Work that are specific to  
22 the job assignment;
- 23 C. Required Work practices, job conduct, and injury-reporting procedures; and
- 24 D. Acquainting the employee with special Work and safety requirements at the site.

### 25 **110.09.2.1.3 Employee Training Requirements**

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

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

### 31 **110.09.2.1.4 Personal Protective Equipment Requirements and Policy**

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

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



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### 1 **110.09.2.1.5 Alcohol and Drug Free Workplace Policy**

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

### 8 **110.09.2.1.6 Safety Inspection Procedures**

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

### 13 **110.09.2.1.7 Emergency Procedures**

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

### 22 **110.09.2.1.8 Incident Response Procedures**

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

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

### 36 **110.09.2.1.9 Job Hazard Analysis and Communications**

37 Developer shall provide policy and procedures for job hazard analysis and how that analysis is  
38 communicated to forepersons and workers as the day's work and tasks are outlined. All  
39 employees involved with the task must discuss the hazards anticipated, equipment needed to  
40 work safely, and PPE to be provided and worn. The communications may include on-site  
41 gatherings where the task is to be performed. Developer shall give employees an opportunity to  
42 provide input regarding task steps, hazards identified, and appropriate control measures.  
43 Developer shall document all job hazard analysis training.

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### 1 **110.09.2.1.10 Materials Safety Procedures and Communication Policy**

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

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

### 9 **110.09.2.1.11 Managing and Auditing of Safety Management**

10 The Safety Management Plan must describe the audit process for safety management. The  
11 Safety Management Plan must describe frequency and scope of audit, how it is to be conducted,  
12 how the results are to be communicated, and how findings and corrective actions are to be  
13 tracked.

#### 14 **110.09.2.1.11.1 Safety Performance Analysis**

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

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

#### 29 **110.09.2.1.11.2 Safety Results and Statistics**

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

#### 34 **110.09.2.1.11.3 Periodic Updates to Safety Management Plan**

35 Developer shall update the Safety Management Plan yearly to incorporate corrective action  
36 recommendations and other minor clarifications. At a minimum, every year or as Work scope  
37 changes the workplace environment, a major regulation change requirement occurs, or at the  
38 request of ADOT, Developer shall review and update the Safety Management Plan for compliance  
39 with regulations, policies, and procedures.

### 40 **110.09.2.2 Temporary Fencing and Steel Plating**

41 In conjunction with the Safety Management Plan, Developer shall provide 72-inch temporary  
42 chain link fencing, or ADOT approved equal, around all major structure construction areas (i.e.,  
43 bridges, pump houses, drop structures, retaining walls, etc.) and around any unattended  
44 excavation deeper than 4 feet, with slopes steeper than 1:2 (V:H). Temporary fencing must

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1 completely enclose the referenced construction activity and must be secured after normal working  
2 hours to prevent unauthorized access.

3 Developer shall limit open utility trenches to 50 feet in length, except for cast-in-place pipe  
4 installations during non-working hours. Developer shall cover all open trenches where accessible  
5 to traffic with steel plates. Developer shall prepare an Open Trench Safety and Security Plan for  
6 all trenches greater than 50 feet in length that describes and details how Developer intends to  
7 construct the trench and to make it safe and secure for workers and the general public. Within 10  
8 Business Days of excavating trenches greater than 50 feet in length, Developer shall submit the  
9 Open Trench Safety and Security Plan to ADOT for approval.

### 10 **110.09.2.3 Audits/Inspections**

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

### 14 **110.09.2.4 Noncompliance with the Safety Program**

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

### 25 **110.09.3 Submittals**

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

| Table 110-11<br>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       |
| 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 |

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| <b>Table 110-11<br/>Nonexclusive Submittals List</b>   |                         |                         |                   |   |                           |
|--|-------------------------|-------------------------|-------------------|---|---------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b>  |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                           |
| Monthly Safety Report  | 5                       | 2                       | 1                 | Within 5 Business Days after the end of the month                             | GP<br>110.09.2.1.11<br>.2 |
| Open Trench Safety and Security Plan   | 3                       | 2                       | 1                 | Within 10 Business Days of excavating trenches greater than 50 feet in length | GP<br>110.09.2.2          |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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 Companies, 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; and
- 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.

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

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| <b>Table 110-12<br/>Submittal Format</b>   |                 |              |                   |            |
|--|-----------------|--------------|-------------------|------------|
| <b>Submittal Stage/Deliverable</b>   | <b>Hardcopy</b> |              | <b>Electronic</b> |            |
|  | <b>Paper</b>    | <b>11x17</b> | <b>Native</b>     | <b>PDF</b> |
| 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          |
| <b>Note:</b><br>* Developer shall determine the additional format requirements required by the applicable Governmental Entity, Utility Company, and/or railroad. |                 |              |                   |            |

1 **110.10.2.3 CAD Requirements**

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

6 **110.10.2.4 Hardcopy Format**

7 Developer shall prepare all Plans on sheets 22 inches in height and 34 inches in length with  
 8 1-1/4-inch margins on the left and right sides, and 3/4-inch margins on the top and bottom, unless  
 9 otherwise noted in the Contract Documents. A blank space, 4 inches wide by 3 inches high, must  
 10 be left inside the margin in the lower right hand corner. All Plans must be made in such a manner  
 11 that clear and legible copies can be made from them. Developer shall prepare half-size copies on  
 12 standard 11 inch x 17 inch sheets. The number of hardcopies indicated in the “Nonexclusive  
 13 Submittals List” tables in the TPs for Plans indicates half-size copies. Developer shall prepare  
 14 exhibits on 8.5 inch x 11 inch, 11 inch x 17 inch, or 22 inch x 34 inch sized sheets.

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

17 **110.10.2.5 Electronic Format**

18 Developer shall utilize or integrate with ADOT’s web-based project management information  
 19 system for electronic submittal of all data and documents to ADOT throughout the D&C Period. If

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1 the Developer chooses to integrate with ADOT's project management information system,  
2 Developer shall use data systems, standards and procedures compatible with those employed by  
3 ADOT and implement any new operating practices required as a result of ADOT's amendments  
4 to any such systems, standards and procedures. Web services application programming interface  
5 for real time integration using industry-standard protocols and event driven integrations triggered  
6 through structured workflows provide options to integrate with ADOT's project management  
7 information system. Developer shall obtain all software, licenses, training, and support to integrate  
8 or use ADOT's project management information system throughout the D&C Period.

9 Developer shall use ADOT-provided electronic forms and process, where applicable. Developer  
10 shall submit, as identified in the Contract Documents, electronic Submittals compatible with  
11 existing ADOT program systems and/or software. Systems and software currently being used by  
12 ADOT include the following:

- 13 A. Microsoft Windows 7 (operating system);
- 14 B. Microsoft Office with Word, Excel, Outlook, and Media Player;
- 15 C. Bentley's MicroStation V8i (2D and 3D files);
- 16 D. Bentley's InRoads Suite SS2 (Existing Ground Model and design files) or newer;
- 17 E. SignCAD;
- 18 F. HEC-RAS;
- 19 G. HEC-HMS; and
- 20 H. Oracle Primavera P6.

21 Developer shall submit electronic files to ADOT as identified in the Contract Documents  
22 electronically through ADOT's project management information system. Developer shall include  
23 a transmittal letter that is electronically signed by Developer with all electronic Submittals.  
24 Developer shall submit Plans in both full-size (22 inch x 34 inch) and half-size (11 inch x 17 inch)  
25 PDFs.

### 26 **110.10.2.5.1 Existing Ground Model**

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

### 41 **110.10.2.5.2 InRoads Files (Design Files)**

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

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### 1 **110.10.2.5.3 MicroStation Files (3D and 2D)**

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

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

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

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

### 26 **110.10.2.5.4 3D Models, 4D Model, and Visual Animation**

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

#### 32 **110.10.2.5.4.1 General**

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

#### 35 **110.10.2.5.4.2 3D Model**

36 Developer shall prepare 3D Models that contain existing conditions in 3D format and the proposed  
37 3D key design features. 3D Models are virtual models that contain representations of physical  
38 objects in 3D (x, y, and z) as surfaces or solids. 3D Models must include existing conditions  
39 model(s), design model(s), and construction model(s).

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

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1 Design and construction 3D Models must incorporate proposed 3D key design features for the  
2 following elements of Work:

- 3 A. Roadway;
- 4 B. Drainage (including pipes, catch basins, and junction structures);
- 5 C. Structures (including sufficient detail to show top of deck surface, structure type, bottom  
6 of beam surface, pier locations, abutment locations, and retaining wall locations, and  
7 clearances);
- 8 D. Foundations, including all ground penetrations shall be shown to scale of width and depth;
- 9 E. Utilities (including zones of protection);
- 10 F. Signing (including overhead signs and foundations); and
- 11 G. Signals & lighting (including controller, pole and foundation locations).

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

### 14 **110.10.2.5.4.3 4D Model Simulation**

15 Developer shall prepare 4D Model Simulations that presents the key design features in a time  
16 scaled appearance of model elements/objects. The 4D Model Simulations must be an  
17 aggregation of virtual models that are linked to the Project Schedule that shows an ordered, time  
18 scaled appearance of model elements/objects. The Project Schedule that is integrated to the 3D  
19 Model (4D model) must be kept current (all revisions and updates) on a monthly basis. The 4D  
20 Model Simulations must contain one or more virtual models and at least one link to the Project  
21 Schedule. 4D Model Simulations must include the underground Utilities. With every Project  
22 Schedule Submittal after the first pre-construction coordination meeting, Developer shall submit  
23 the 4D Model Simulations to ADOT for review and comment.

### 24 **110.10.2.5.4.4 Visual Animation**

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

### 31 **110.10.2.6 Design Review Process**

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

40 ADOT will provide review comments to Developer numbered in a manner corresponding to the  
41 drawing or report page in question. Developer shall provide space after each comment for a brief  
42 response by Developer. Developer is advised that comments on the Submittals received from  
43 parties other than ADOT may not follow the above-described ADOT comment format. In addition,  
44 Developer may receive separate comment packages from each party that reviews a Submittal.



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1 With the PSQMP, Developer shall prepare and submit a Comment Resolution Form to ADOT.  
2 Developer shall compile all Submittal review comments on a Comment Resolution Form. The  
3 Comment Resolution Form is a living document in which Developer shall incorporate all  
4 comments and resulting resolutions for the Submittal package for the duration of the Submittal.  
5 Developer shall include previous Submittal comments, if applicable, and Comment Resolution  
6 Form(s) with each subsequent Submittal identified with an alphanumeric tracking number  
7 corresponding to the package submission in accordance with Section GP 110.10.2.2 of the TPs.  
8 With the subsequent Submittal, Developer shall prepare and submit written Review Comment  
9 Responses to ADOT.

10 Developer shall schedule a comment resolution meeting (CRM) to address unresolved  
11 comments. Developer may request ADOT to waive a CRM. ADOT may waive a CRM at its sole  
12 discretion. The purpose of the CRM is to discuss Developer's responses to review comments,  
13 determine which of the review comments Developer shall incorporate into the Work, and discuss  
14 and resolve the pending comments. More than one CRM per Submittal may be necessary to  
15 discuss all review comments provided to Developer. Developer shall attend the CRM. Within 5  
16 Business Days of the CRM, Developer shall prepare and submit CRM Notes to ADOT. The Project  
17 Manager, Design Manager, responsible engineer, and all Developer staff requested by ADOT  
18 must attend the CRM. The Parties will escalate review comments not resolved after the first  
19 complete CRM to the CRM comment resolution board consisting of ADOT, Project Manager, and  
20 Design Manager. The Parties will use the Project's partnering process in accordance with Section  
21 22.1 of the Agreement to address review comments not resolved at the CRM comment resolution  
22 board.

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

### 29 **110.10.2.6.1 Over-the-Shoulder Reviews**

30 Over-the-shoulder reviews are informal examinations by ADOT of Design Documents during the  
31 Project design process and are not considered formal reviews as specified in Section GP  
32 110.10.2.7 of the TPs. Over-the-shoulder reviews are mainly intended to assess whether the  
33 requirements and design criteria of the Contract Documents are being followed and whether  
34 Professional Services Quality Management Plan (PSQMP) activities are being undertaken in  
35 accordance with the QMP.

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

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

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1 If over-the-shoulder reviews are performed, ADOT will conduct them, as appropriate, in either  
2 Developer's office or at ADOT's offices, and in the presence of Developer's personnel with the  
3 intent to minimize disruption of ongoing Design Work. Formal assembly and submittal of drawings  
4 or other documents may not be required. The review may be of progress prints, computer images,  
5 draft documents, working calculations, draft specifications or reports, or other Design Documents.  
6 ADOT will have no obligation to conduct over-the-shoulder reviews.

### 7 **110.10.2.6.2 Segment Limits Map and Submittal Schedule**

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

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

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

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

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

### 31 **110.10.2.6.3 Submittal Review Periods**

32 Developer shall coordinate with other Governmental Entities, Utility Companies, and railroads to  
33 determine those entities' submittal review requirements.

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

| <b>Table 110-13<br/>Submittal Review Periods</b> |                     |  |
|--|---------------------|--|
| <b>Category</b>                                  | <b>Submittal To</b> | <b>Review Period<br/>(Business Days)</b> |
| <b><u>Professional Services</u></b>              |                     |  |
| A  | ADOT                | 10                                       |

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| <b>Table 110-13<br/>Submittal Review Periods</b>  |   |  |
|---|---|--|
| <b>Category</b>   | <b>Submittal To</b>   | <b>Review Period<br/>(Business Days)</b> |
| B   | ADOT (Design Variances)                                       | 20                                       |
| C   | ADOT (Design Exceptions and Change of Access)                 | 20 <sup>2</sup>                          |
| D   | ADOT (ROW Submittals)   | 10 <sup>1</sup>                          |
| E   | Other Governmental Entities, Utility Companies, and railroads | Varies <sup>2</sup>                      |
| <b><u>Construction</u></b>  |   |  |
| F   | Design Changes  | 10 <sup>2</sup>                          |
| G   | Record Drawings   | 20 <sup>2</sup>                          |
| 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; and
- 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 authorization  
22 if ADOT deems the request unreasonable or if ADOT personnel cannot accommodate the  
23 additional reviews.

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### 1 **110.10.2.6.3.1 ADOT Review of ROW Submittals**

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

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

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

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

18 Developer shall indicate the priority of review of ROW Submittals when Developer Submittals  
19 exceed the requirements above.

### 20 **110.10.2.7 Design Requirements**

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

24 Except as otherwise specified in the Contract Documents or approved by ADOT, Developer shall  
25 develop formal Submittals of Design Documents following the steps described in Section GP  
26 110.10.2.7 of the TPs. The primary design Submittal package stages are:

- 27 A. Geometric Drawings;
- 28 B. Initial Design Submittal;
- 29 C. Final Design Submittal;
- 30 D. RFC Submittal; and
- 31 E. Final Design Documents Submittal.

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

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

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### 1 **110.10.2.7.1 Plans**

2 Developer shall prepare Plans that includes design drawings specific for the Project that show  
3 the location, character, dimensions, and details of the Work to be performed and is prepared in  
4 accordance with Good Industry Practice and the Contract Documents. Developer shall ensure  
5 that all non-ADOT standards drawings/details are detailed on Plans. All Plans must include all  
6 proposed and actual changes to the Schematic ROW. If Developer’s design requires changes to  
7 the Schematic ROW, the Submittal package must clearly indicate the Project ROW changes  
8 proposed, and must include a narrative detailing the need for the change.

### 9 **110.10.2.7.2 Specifications**

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

### 13 **110.10.2.7.3 Geometric Drawing**

14 Developer shall prepare a Geometric Drawing that includes the following:

- 15 A. Typical cross sections of the various roadway;
- 16 B. Plan view at a scale to show basic striping, topographic features, curve data, changes in  
17 alignment (i.e., begin of curve, end of curve, point on compound curve, angle points, etc.),  
18 dimensions, etc.;
- 19 C. Profiles and superelevation diagrams that identifies grades, vertical curves, changes in  
20 profile (i.e. begin vertical curve, end vertical curve, point of intersections, point of tangency,  
21 vertical curve lengths, grade breaks, etc.);
- 22 D. Identification of pedestrian/bicycle facilities;
- 23 E. Identification of structural and drainage facilities; and
- 24 F. Identification of any Design Exceptions or Design Variances.

25 Prior to submittal of any other design package, Developer shall submit the Geometric Drawing to  
26 ADOT.

### 27 **110.10.2.7.4 Initial Design Submittal**

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

### 33 **110.10.2.7.5 Final Design Submittal**

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

### 40 **110.10.2.7.6 RFC Submittal**

41 When the design for a given element or area is 100 percent complete and all previous comments  
42 have been addressed and appropriately incorporated, Developer shall prepare and submit the  
43 RFC Submittal to ADOT. The RFC Submittal must include Plans, specifications, technical

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1 memorandums, reports, studies, calculations, and other pertinent data, as applicable with the  
2 RFC Submittal. The RFC Submittal must also include a Comment Resolution Form showing how  
3 the RFC Submittal has addressed the review comments generated during previous submittal  
4 reviews. The engineer-of-record (by discipline) must sign and seal the RFC Submittal prior to  
5 construction of the relevant Project component.

6 ADOT's review of any RFC package does not constitute approval of subsequent construction and  
7 does not relieve Developer of its responsibility to comply with the requirements of the Contract  
8 Documents. Developer shall ensure construction complies with the requirements of the Contract  
9 Documents, Laws, and Governmental Approvals. Developer shall bear the risk of any required  
10 modifications to the component construction due to subsequent Design Changes resulting from  
11 further design development.

### 12 **110.10.2.7.7 Final Design Documents Submittal**

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

20 Within 20 Business Days after the submittal of the final RFC Submittal to ADOT, Developer shall  
21 submit the Final Design Documents Submittal to ADOT for review and comment. Developer  
22 acknowledges and agrees that resubmittal of the Final Design Documents Submittal or other  
23 design submittals may be required by ADOT.

### 24 **110.10.2.8 Construction Requirements**

#### 25 **110.10.2.8.1 Shop Drawings and Working Drawings**

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

#### 33 **110.10.2.8.2 Request for Information**

34 Design issues may arise in ongoing Work reflected in RFC packages. Developer may utilize the  
35 RFI process as a communication tool between design and construction. RFIs may be initiated by  
36 Developer or ADOT. Developer-initiated RFIs must reflect the following: the general nature,  
37 location, and description of the issue; Developer's proposed mitigation with supporting  
38 documentation of the issue; and the CQM's approval of such mitigation. ADOT will provide  
39 Developer an RFI for issues identified by ADOT. ADOT will submit ADOT-initiated RFIs to  
40 Developer for incorporation into the RFI process. Developer shall submit RFIs to the Design  
41 Manager, Construction Manager, or Project Manager, as appropriate, to obtain the proposed  
42 mitigation with supporting documentation.

43 When an issue or change arises, including those identified by ADOT-initiated RFIs, Developer  
44 shall place the RFI in an RFI Log to track all open issues. Every week, Developer shall submit the  
45 updated RFI Log to ADOT. No later than 1 Business Day prior to implementation of the associated

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1 RFI Work, Developer shall submit the RFIs to ADOT. Developer shall provide an independent  
2 and unique numbering system for Developer-initiated RFIs, different from ADOT-initiated RFIs or  
3 those of any other Governmental Entity. Within 5 Business Days of receipt of the ADOT-initiated  
4 RFIs, Developer shall submit a Response to ADOT-initiated RFIs to ADOT.

### 5 **110.10.2.8.3 Design Changes**

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

15 Plan change documentation must include confirmation that:

- 16 A. The Design Change has been designed in accordance with the requirements of the  
17 Contract Documents, applicable Laws, and Governmental Approvals;
- 18 B. The Design Change has been checked in accordance with Developer's PSQMP;
- 19 C. The Design Change has been prepared consistently with other elements of the original  
20 design;
- 21 D. The Design Change complies with the design certification requirements as set forth in the  
22 QMP; and
- 23 E. ADOT comments are resolved.

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

### 28 **110.10.2.8.4 Record Drawings**

29 Developer shall prepare Record Drawings in accordance with the ADOT *Redline and As-Built*  
30 *Procedures and Guidelines*. Record Drawings must show locations and number of potential  
31 Grand Canyon State Logo Signs. As a condition of Final Acceptance in accordance with Section  
32 6.6.4.1 of the Agreement, Developer shall submit Record Drawings as a composite set of plans  
33 for the Project and the As-Built Schedule as set forth in Section GP 110.06.2.12 of the TPs to  
34 ADOT for review and comment. The Design Manager or engineer-of-record must professionally  
35 endorse (sign and seal) the Record Drawings. The Professional Services Quality Manager must  
36 certify the Record Drawings comply with the QMP.

### 37 **110.10.3 Submittals**

38 Table 110-14 reflects a nonexclusive list of Submittals identified in Section GP 110.10 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 formats  
44 described in Section GP 110.10.2.2 of the TPs:

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| <b>Table 110-14<br/>Nonexclusive Submittals List</b> |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>                                    | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 3D Models  | 4                       | 0                       | 1                 | Prior to the first pre-construction coordination meeting   | GP<br>110.10.2.5.4.2     |
| 4D Simulation  | 4                       | 0                       | 1                 | With every Project Schedule Submittal after the first pre-construction coordination meeting  | GP<br>110.10.2.5.4.3     |
| Visual Animation                                     | 4                       | 0                       | 1                 | Prior to Substantial Completion  | GP<br>110.10.2.5.4.4     |
| Comment Resolution Form                              | 5                       | 2                       | 1                 | With the PSQMP   | GP<br>110.10.2.6         |
| Review Comment Responses                             | 5                       | 2                       | 1                 | With the subsequent Submittal  | GP<br>110.10.2.6         |
| CRM Notes  | 5                       | 2                       | 1                 | Within 5 Business Days of the CRM  | GP<br>110.10.2.6         |
| Segment Limits Map                                   | 2                       | 2                       | 1                 | Prior to issuance of NTP 2   | GP<br>110.10.2.6.2       |
| Submittal Schedule                                   | 2                       | 2                       | 1                 | Prior to issuance of NTP 2   | GP<br>110.10.2.6.2       |
| Geometric Drawing                                    | 5                       | 2                       | 1                 | Prior to submittal of any other design package   | GP<br>110.10.2.7.3       |
| Initial Design Submittal                             | 5                       | 2                       | 1                 | When the design for a given element or segment is approximately 60 percent complete  | GP<br>110.10.2.7.4       |
| Final Design Submittal                               | 4                       | 2                       | 1                 | When the design for a given element or area is approximately 95 percent complete   | GP<br>110.10.2.7.5       |
| 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<br>110.10.2.7.6       |
| Final RFC Submittal                                  | 5                       | 2                       | 1                 | Two Business Days prior to construction of the RFC Submittal   | GP<br>110.10.2.7.6       |



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| <b>Table 110-14<br/>Nonexclusive Submittals List</b>   |                  |                  |            |  |                    |
|--|------------------|------------------|------------|--|--------------------|
| Submittals   | Level of Review* | Number of Copies |            | Submittal Schedule   | Section Reference  |
|  |                  | Hardcopies       | Electronic |  |                    |
| Final Design Documents Submittal   | 4                | 2                | 1          | 20 Business Days after the submittal of final RFC Submittal by ADOT                    | GP<br>110.10.2.7.7 |
| Shop and Working Drawings  | 5                | 2                | 1          | 10 Business Days prior to implementation   | GP<br>110.10.2.8.1 |
| RFI Log  | 5                | 2                | 1          | Every week   | GP<br>110.10.2.8.2 |
| RFI  | 5                | 2                | 1          | No later than 1 Business Day prior to implementation of the associated RFI Work        | GP<br>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<br>110.10.2.8.2 |
| Design Changes   | 4                | 2                | 1          | Varies   | GP<br>110.10.2.8.3 |
| Record Drawings  | 4                | 2                | 1          | As a condition of Final Acceptance in accordance with Section 6.6.4.1 of the Agreement | GP<br>110.10.2.8.4 |
| <p>*Levels of Review</p> <ol style="list-style-type: none"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                  |                  |            |  |                    |

**1 110.11 Documentation of the Site**

2 Developer shall perform all Work in compliance with the requirements of this Section GP 110.11.  
 3 Developer shall be responsible for the preservation of all public and private property and shall  
 4 protect carefully from disturbance or damage all land monuments and property marks. Land  
 5 monuments and property marks shall not be moved by Developer until directed by ADOT. Existing  
 6 fences, pole lines, signs, buildings and structures that are to remain in place shall be protected  
 7 from injury or damage.

**8 110.11.1 Existing Conditions Site Documentation**

9 Developer shall prepare an Existing Conditions Site Documentation that identifies and documents  
 10 the existing conditions within the Site, including videotaping the whole Project. Developer shall  
 11 investigate, videotape, and photograph existing elements in the Project ROW that are planned to  
 12 remain in place to determine its condition, size, material, location, and other pertinent information.  
 13 Developer shall videotape the interior of all drainage facilities within I-10 (Papago Freeway) within  
 14 the Project ROW. The Existing Conditions Site Documentation must include adjacent roadways,  
 15 drainage facilities including pump stations, channels and flowing waterways, fences, walls,

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1 houses, buildings, wells, sensitive habitats, landscaping and irrigation systems, and areas where  
2 activities will be performed by Developer or Subcontractors. Developer shall include in the  
3 Existing Conditions Site Documentation all facilities and Utilities that may be impacted by the  
4 Work including downstream drainage facilities, adjacent roadway conditions, and sensitive  
5 habitats. The videotape must show details of the condition of all properties and structures,  
6 pavement conditions of crossroads, and proposed and potential haul routes. Developer shall  
7 schedule field meetings with ADOT to observe and participate in the Existing Conditions Site  
8 Documentation. Prior to construction, Developer shall submit the Existing Conditions Site  
9 Documentation to ADOT for review and comment.

### 10 **110.11.2 Site Documentation**

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

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

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

### 22 **110.11.3 Submittals**

23 Table 110-15 reflects a nonexclusive list of Submittals identified in Section GP 110.11 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 formats  
29 described in Section GP 110.10.2.2 of the TPs:

| Table 110-15<br>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> )  |                  |                  |            |                       |                   |

### 30 **110.12 Maintenance During Construction**

31 Developer shall perform Maintenance During Construction of all facilities in the Project ROW as  
32 specified in this Section GP 110.12.

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1 Maintenance During Construction consists of:

- 2 A. Street sweeping twice weekly during the D&C Period;
- 3 B. Litter and trash pickup and removal;
- 4 C. Maintain drainage features;
- 5 D. Graffiti removal, including removal of graffiti from all surfaces within the Project ROW;
- 6 E. Guardrail, concrete barrier, glare screen, and crash attenuator repair or replacement;
- 7 F. Repair fencing; and
- 8 G. Landscape and irrigation systems maintenance.

9 Developer shall perform Maintenance During Construction in accordance with the applicable  
10 Performance Requirements and repair response times and frequencies set forth in TP Attachment  
11 500-1, except as otherwise provided above for street sweeping; provided that, absent a  
12 Supplemental Agreement, Developer is not required to improve the condition of any Element  
13 subject to Maintenance During Construction above the condition indicated in the Existing  
14 Conditions Site Documentation.

15 ADOT may direct Developer to perform additional Maintenance During Construction in  
16 accordance with Section 6.11.2 of the Agreement.

### 17 **110.13 General Construction**

#### 18 **110.13.1 Inspection of Work**

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

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

26 Certain Governmental Entities, Utility Companies, or railroad corporations may have the right to  
27 inspect the Work. Such inspection does not in any sense make any Governmental Entity or any  
28 railroad corporation a party to the Agreement and does not in any way interfere with the rights of  
29 either Party to the Agreement.

#### 30 **110.13.2 Plant Access**

31 Developer shall ensure that ADOT and IQF have full entry at all times to such parts of the plant  
32 as may be involved in the manufacture or production of the materials being furnished. Developer  
33 shall ensure adequate safety measures are provided.

#### 34 **110.13.3 Sampling Device**

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

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

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

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

### 5 **110.13.4 Ice for Field Testing**

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

### 8 **110.13.5 Protection and Restoration of Property and Landscape**

9 Developer shall not dump materials removed during construction operations such as trees,  
10 stumps, building materials, irrigation and drainage structures, broken concrete and other similar  
11 materials on either private or public property unless Developer has obtained written permission  
12 from the owner or public agency with jurisdiction over the land. Written permission is not required,  
13 however, when materials are disposed of at an operating, public dumping ground.

14

15

**End of Section**

**SECTION B**  
**DESIGN REQUIREMENTS (DR)**

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1 **DR 408 THIRD-PARTY AGREEMENTS**

2 **408.1 GENERAL REQUIREMENTS**

3 Developer shall perform all Third-Party Agreement Work delegated to Developer in compliance  
4 with the requirements of 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 is retained by ADOT.

| <b>Table 408-1<br/>Third-Party Agreements</b> |                            |                       |                                  |
|---|----------------------------|-----------------------|----------------------------------|
| <b>TP Attachment</b>                          | <b>Governmental Entity</b> | <b>Project</b>        | <b>Status</b>                    |
| 408-1.1                                       | City of Phoenix            | Maintenance Agreement | Executed on<br>December 17, 2015 |
| 408-1.2                                       | City of Phoenix            | City Street Turnback  | Executed on<br>December 17, 2015 |
| 408-1.3                                       | City of Phoenix            | Pedestrian Overpass   | Executed on<br>January 12, 2016  |
|   |                            |                       |                                  |

10

11

**End of Section**

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## 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<br>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 northing, easting, elevation,  
12 station, and offset.

### 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 110.10.2.2 of the TPs:

| <b>Table 410-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 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**



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### 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<br>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 Good Industry Practice, shall perform  
24 geotechnical investigations to obtain any additional data required, and shall perform tests,  
25 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

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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 110.09.2.2 of the TPs:

| <b>Table 416-2<br/>Nonexclusive Submittals List</b>  |                  |                  |            |   |                   |
|--|------------------|------------------|------------|---|-------------------|
| 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> )  |                  |                  |            |   |                   |

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**End of Section**

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1 **DR 417 EARTHWORK**

2 *Intentionally left blank*

3

4

**End of Section**

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## 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<br>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. Unless otherwise specified in the Contract Documents, these items are not required for the Maintenance Service Limits.

### 26 419.3 DESIGN REQUIREMENTS

#### 27 419.3.1 Pavement Design

28 Developer shall base pavement design for mainline lanes (general purpose lanes, high  
29 occupancy vehicle (HOV) lanes, and auxiliary lanes), frontage roads, ramps, and crossroads

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1 upon Developer’s determination of the design traffic loading forecast. Developer may use the  
2 MAG Travel Demand Model (2013-08 MAG Travel Demand Model Output.zip) for reference to  
3 determine the design traffic loading forecasts and truck percentages. Developer is responsible  
4 for forecasting the traffic loading and truck percentages for periods beyond the forecasts  
5 provided.

6 The required residual pavement design life (in years) at the end of the Maintenance Period must  
7 comply with the requirement in Section MR 501 of the TPs.

### 8 **419.3.2 Related Pavement Materials Specifications**

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

- 11 A. *ADOT Stored Specifications*;
- 12 B. *ADOT Standard Specifications for Road and Bridge Construction*; and
- 13 C. *ADOT Materials Pavement Design Standard Items* (refer to  
14 [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)  
15 [items.pdf?sfvrsn=16](http://www.azdot.gov/docs/default-source/materials-library/design-report-standard-items.pdf?sfvrsn=16)).

### 16 **419.3.3 Pavement Type Selection**

17 Pavement types must be as follows:

- 18 A. Mainline Lanes. Pavement for the SR 202 mainline lanes (general purpose lanes, HOV  
19 lanes, and auxiliary lanes) must be constructed with the same pavement section  
20 (materials and depth) across any SR 202 mainline cross section and must comply with  
21 the requirements of Section DR 419 of the TPs. Pavement for the I-10 (Papago  
22 Freeway) mainline (general purpose lanes, HOV lanes, and auxiliary lanes) that are to  
23 be replaced or widened, must be 15 inches of dowelled PCCP over compacted  
24 subgrade.
- 25 B. Shoulders. Pavement for the shoulders of all roadways must be constructed with the  
26 same pavement section (materials and depths) as the adjacent roadway pavement.
- 27 C. Ramp Pavements. Ramp pavements must be constructed with the same pavement  
28 material type as the adjacent mainline pavement.
- 29 D. Widened Pavement Sections. For all widened sections, the interface between the new  
30 widened pavement and the existing pavement must provide a uniform surface of the  
31 same material type across all adjacent lanes.
- 32 E. Frontage Roads, Crossroads and Local Streets. Developer shall design pavements for  
33 Frontage Roads, Crossroads and Local Streets in accordance with the procedures and  
34 requirements of the authority having jurisdiction. The minimum pavement section for City  
35 of Phoenix arterial streets consists of 7.5 inches of asphaltic concrete overlying prepared  
36 subgrade.
- 37 F. Shared-use Path. The pavement section for the shared-use path shall consist of 3  
38 inches of asphaltic concrete on 8 inches of aggregate base. At locations where the  
39 shared-use path is on existing pavement, Developer shall mill and overlay 2 inches of  
40 asphaltic concrete.

### 41 **419.3.4 Asphaltic Rubber-Asphaltic Concrete Friction Course**

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



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### 1 **419.3.4.1 General Placement Limits & Requirements**

2 The maximum vertical differential between top of AR-ACFC overlay and top of pavement  
3 section where the AR-ACFC overlay ends is 0.5 inches. Developer shall provide an AR-ACFC  
4 overlay thickness transition over a minimum 1 foot horizontal distance where overlay ends.

5 Developer shall show the location of the AR-ACFC limits on the final Plans, the limits of which  
6 are to be approved by ADOT.

### 7 **419.3.4.2 Mainline**

8 AR-ACFC placement along the mainline must extend to the limits noted below.

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

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

### 11 **419.3.4.3 Bridges**

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

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

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

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

### 18 **419.3.4.4 Service Interchange Ramps**

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

### 21 **419.3.4.5 System Interchange Ramps**

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

### 24 **419.3.4.6 Removal and Replacement Limits**

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

27 A. I-10 (Papago Freeway) mainline roadway from the back of the 75th Avenue TI west  
28 ramp gores to the back of the 43rd Avenue TI east ramp gores.

29 B. I-10 (Papago Freeway) service interchange ramps between 75th Avenue TI and 43rd  
30 Avenue TI. When the existing AR-ACFC extends beyond the limits of Ramp  
31 reconstruction then the existing AR-ACFC shall be replaced to the existing limits.

32 C. SR 202 (Santan Freeway) mainline roadway to the HOV lanes east of the system  
33 interchange.

34 D. SR 202 (Santan Freeway) system interchange ramps to the back of gores.

### 35 **419.3.5 Pavement Design Summary**

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

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

38 A. A summary of the existing pavement history;

39 B. A full description of the planned improvements;

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- 1 C. A discussion of the design traffic loadings used for determination of pavement sections;  
 2 D. The design parameters used for the determination of pavement sections; and  
 3 E. Recommended pavement structural sections.

4 At the same time as Initial Design Submittal of the pavement structural section Plans, Developer  
 5 shall submit an initial PDS to ADOT. At the same time as Final Design Submittal of the  
 6 pavement structural section Plans, Developer shall prepare and submit a final PDS that  
 7 addresses ADOT’s comments to ADOT for review and comment.

### 8 **419.3.6 Materials Design Report**

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

- 12 A. Required pavement structural sections;  
 13 B. Vicinity map;  
 14 C. Typical sections and joint details;  
 15 D. Subgrade acceptance chart;  
 16 E. Subgrade, subbases, and bases standard report items;  
 17 F. Surface treatments and pavements standard report items;  
 18 G. Material sources standard report items;  
 19 H. Geotechnical information standard report items: ground compaction, earthwork factors  
 20 and slopes, water, pH and resistivity, borrow requirements, etc.; and  
 21 I. Other standard report items as required by the proposed pavement design.

22 At the same time as Initial Design Submittal of the pavement structural section Plans, Developer  
 23 shall submit an initial MDR to ADOT. At the same time as Final Design Submittal of the  
 24 pavement structural section Plans, Developer shall prepare and submit a final MDR that  
 25 addresses ADOT’s comments to ADOT for review and comment.

### 26 **419.4 SUBMITTALS**

27 Table 419-2 reflects a nonexclusive list of Submittals identified in Section DR 419 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 110.10.2.2 of the TPs:

| Table 419-2<br>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        |

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| <b>Table 419-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| Final PDS  | 4                       | 2                       | 1                 | At the same time as Final Design Submittal of the pavement structural section Plans   | DR 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |   |                          |

1

2

**End of Section**

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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.

| <b>Table 420-1<br/>Standards</b> |               |   |
|----------------------------------|---------------|---|
| <b>No.</b>                       | <b>Agency</b> | <b>Title</b>  |
| 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, bats, plants, 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; and  
44 T. The environmental communications protocol specified in DR 420.2.3.1 of the TPs.

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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; and

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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 and  
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, including cultural sensitivity training  
34 conducted by the Gila River Indian Community (GRIC). During the D&C Period, ADOT will  
35 coordinate with GRIC and prior to the end of the year publish a cultural sensitivity training  
36 schedule for the following year. ADOT will provide the 2016 schedule to the Developer prior to  
37 the Effective Date. The first training is anticipated to occur in February 2016.

### 38 **420.2.6 Governmental Approvals**

#### 39 **420.2.6.1 NEPA Approval**

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

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| <b>Table 420-2<br/>ADOT-Provided Approvals</b> |                            |   |               |                                       |
|--|----------------------------|---|---------------|---------------------------------------|
| <b>TP Attachment</b>                           | <b>Governmental Entity</b> | <b>ADOT-Provided Approval</b>   | <b>Status</b> | <b>Availability Date</b>              |
| 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;<br>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. Developer shall not landscape  
3 Environmentally Sensitive Avoidance Area.

### 4 **420.3.1.2 Environmentally Sensitive Area Fencing**

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

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

### 19 **420.3.2 Archaeological**

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

### 29 **420.3.3 Cultural Resources**

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

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

40 To comply with the *2015 Section 106 Programmatic Agreement*, ADOT will submit Developer's  
41 Schematic Design and the Initial Design Submittal(s) to consulting parties for a 30 day review  
42 and comment period. ADOT will not provide the consulting parties the Final Design Submittal or  
43 RFC Submittal for review, unless the changes between Initial Design Submittal and Final  
44 Design Submittal or Final Design Submittal and RFC Submittal are significant, as determined by  
45 ADOT in its sole discretion. If such changes are determined significant, ADOT will submit the  
46 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   Developer shall employ a qualified biologist on site during ground disturbing activities in the  
21   area between 24th Street and 51st Avenue. Developer shall have a wildlife rehabilitator on-call  
22   throughout the Term.

23   If Developer includes a detention basin on the south side of the freeway in a location similar to  
24   Station 2490+00 of the Schematic Design, Developer shall provide a 40-foot-wide continuous  
25   area with a 4:1 slope on the GRIC side of the basin and install pipe-rail fencing to allow wildlife  
26   access to the basin (see Section DR 420.3.9.1 of the TPs). The pipe rail fencing is in addition to  
27   the exclusionary fencing that defines access control.

28   Developer shall notify ADOT 20 days prior to initiation of ground disturbing activities in all areas  
29   with suitable habitat for chuckwalla (rocky crevices or as defined by AGFD). ADOT will employ  
30   AGFD to relocate chuckwalla from the area during the 20 day period.

31   Based on Developer’s Plant Inventory and Salvage Operation Plan (see Sections DR 450.2.3  
32   and DR 450.3.3 of the TPs), ADOT will determine in coordination with the GRIC, what plants  
33   from the GRIC Native Plant Ordinance, not identified as being needed for the Project, must be  
34   provided to the GRIC. Developer shall deliver such plants for transplant or use by the GRIC.

35   Developer shall employ a qualified biologist to survey suitable habitat for bats prior to the  
36   initiation of construction and any potentially occupied roosts must be cleared prior to ground  
37   disturbance. Developer shall install one-way exclusionary measures to crevices that could likely  
38   be used by bats, as follows:

- 39       A. If no bats are detected, Developer shall install one-way exclusionary measures to rock  
40       crevices that could likely be used by bats.
- 41       B. If bats are detected, a qualified biologist must determine whether bats are using the rock  
42       crevices as a day roost or a maternity roost.
- 43       C. During the breeding period (May 1 and August 15), if bats are day roosting in the rock  
44       crevices, there is potential that a maternity roost is present. Therefore, Developer shall

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1 not install exclusionary measures and/or no Work shall be conducted in that area until it  
2 is determined by a qualified biologist, that a maternity roost is not present.

3 D. One-way bat exclusionary measures may include attaching plastic sheeting, batting  
4 material or other material such as netting over or inside crevices used by roosting bats.

5 E. Developer shall not remove, harm, or harass bats present in the Project area. Developer  
6 shall allow bats found within the Project area to depart on their own accord before bat  
7 exclusionary measures are applied or Work begins.

### 8 **420.3.7 Waters of the United States**

9 Developer shall make every effort to not:

10 A. Create new drainage ditches or channels that the USACE would consider jurisdictional  
11 or

12 B. Increase waters of the US jurisdictional area.

### 13 **420.3.8 Stormwater**

14 Developer shall:

15 A. Comply with the current Arizona Pollutant Discharge Elimination System (AZPDES)  
16 Municipal Separate Storm Sewer System (MS4) permit;

17 B. Design and install post-construction controls for all newly developed or redeveloped  
18 roads that discharge stormwater runoff in accordance with the ADOT *Post-Construction*  
19 *Best Management Practices Manual for Water Quality*;

20 C. Coordinate with regulated MS4s within the Project regarding existing connections and  
21 comply with the regulated MS4s' requirements; and

22 D. Provide permanent best management practices for the first flush volume (0.5-inches of  
23 rainfall) for impervious areas within the Project ROW.

### 24 **420.3.9 Wildlife Crossings**

#### 25 **420.3.9.1 Fencing**

26 Developer shall include wildlife exclusion barrier or fencing (also called funnel or non-permeable  
27 fencing) that addresses deer and tortoise as described below:

28 A. For deer, the fence must be a minimum of 6.5 feet tall above ground, secured or buried  
29 in ground.

30 B. For tortoise, the fence must be buried 6 to 12 inches deep or anchored to rock and  
31 extend at least 24 inches above ground, and of materials with no openings or small  
32 openings (equal to or less than 1/8 inch), such as mesh or solid walls. Fence must inhibit  
33 climbing; maintain without vegetation directly adjacent to fence or barrier.

34 Developer shall install wildlife exclusion fencing between 17th Avenue and Elliot Road and 500  
35 feet north and south of the Salt River bridge. The fence must exclude wildlife from the rock cuts  
36 through the mountain ridges.

37 Developer shall tie wildlife exclusion fencing into crossing structures (culvert headwalls, bridge  
38 abutments, etc.) or other barriers to movement (noise walls, etc.) such that the minimum height  
39 of the fence or other barrier is 6.5 feet above ground.

40 Developer shall include pipe rail fencing with an opening at the approaches to all multiuse  
41 crossings that allows wildlife, equestrian, and pedestrian passage, but prohibits vehicular  
42 access (see Pipe Rail Examples.zip and page 29 of 2011-01 AGFD Guidelines for Wildlife  
43 Fencing.PDF provided in the RIDs).

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1 Developer shall include escape options for deer, such as slope jumps or solid wall jump outs  
2 (see ADOT Wildlife Escape Measures.PDF and page 19 of 2011-01 AGFD Guidelines for  
3 Wildlife Fencing.PDF provided in the RIDs) on each side of the freeway within 500 feet of  
4 multiuse crossing 1, 2, and 3 (a total of six escape points).

### 5 **420.3.9.2 Structures**

6 Developer shall design new drainage structures (pipes and culverts) for watercourse W5 and  
7 W8 as defined in 2014-06 Juris Waters Tech Addendum and Preliminary JD.PDF provided in  
8 the RIDs to promote crossing by tortoises, amphibians, and reptiles. Developer shall:

- 9 A. Include natural substrate;
- 10 B. Minimize length of culverts, line up successive culverts, and provide tortoise fencing  
11 along edge of ditches between successive culverts that ties into culvert openings;
- 12 C. Not include drop-offs greater than 4 inches such as may be caused by erosion on  
13 downstream side of a concrete-bottom drainage structure or stepped elevation within a  
14 structure;
- 15 D. Not include rip rap blocking access to the structure; rip rap shall be grouted or buried  
16 and maintained so that it does not block tortoises from entering structure; and
- 17 E. Use materials that are not toxic to aquatic life and are not prone to erosion.

18 Developer shall design new drainage structures (pipes and culverts) within the Center Segment  
19 in conformance with items B, C, D, and E above.

20 Developer shall provide multiuse crossing structures for deer and other mammals as described  
21 on page 28 of the Record of Decision (for examples, see pages 19, 20, 24, and 29 of 2008-11  
22 AGFD Guidelines for Bridge Construction or Maintenance to Accommodate Fish and Wildlife  
23 Movement and Passage.PDF and 2011-03 FHWA Wildlife Crossing Structure Handbook.PDF  
24 provided in the RIDs). The multiuse crossing structures must be bridges and have:

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

32 Developer shall place trees at the approach to multiuse crossing 3 on both sides of the freeway  
33 (see graphic 4 in Example Tree Placement for MU Crossing 3.PDF provided in the RIDs).

34 Developer shall install mountings for two trail cameras at each multiuse crossing bridge to  
35 monitor the movement of wildlife and humans (see Example Trail Camera Mounts.PDF in the  
36 RIDs). Developer shall coordinate with ADOT to determine the final position of the camera  
37 mounts based on the bridge's expanse, dimensions, support structures, and topography under  
38 the bridge. The camera mounts must be heavy-duty (1/8 inch steel with weather resistant finish)  
39 with a locking security enclosure. The camera mounts are treated as Non-Maintained Elements.

### 40 **420.4 SUBMITTALS**

41 Table 420-3 reflects a nonexclusive list of Submittals identified in Section DR 420 of TPs and is  
42 not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall determine  
43 and submit all Submittals as required by the Contract Documents, Governmental Approvals,  
44 and Governmental Entities. Unless otherwise indicated, Developer shall submit all Submittals in

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- 1 both electronic format and hardcopy format. At a minimum and unless otherwise specified in the  
 2 Contract Documents, Developer shall submit the following to ADOT in the formats described in  
 3 Section GP 110.10.2.2 of the TPs:

| <b>Table 420-3<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 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             |
| 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               |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                         |                         |                   |  |                          |

4

5

**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**

# CONFORMED – AMENDED AND RESTATED

## 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<br>Standards |        |  |
|--------------------------|--------|--|
| No.                      | Agency | Name   |
| 1                        | ADOT   | Guideline for Accommodating Utilities on Highway Rights-of-Way           |
| 2                        | ADOT   | Encroachment Permit<br>(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; and
- 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. Prior rights determinations are  
36 included in the RIDs. Developer shall coordinate with ADOT and the Utility Company to ensure  
37 all required documents have been provided by the Utility Company, evaluate the information,  
38 provide a recommendation to ADOT and ensure a final prior rights decision is made by ADOT.  
39 Developer shall document all coordination throughout the approval process, including the final  
40 approval disposition.

#### 41 **430.2.4.2       Utility Agreements**

42 Developer is responsible for preparing, negotiating and entering into Utility Agreements with all  
43 Utility Companies affected by Utility Adjustment Work. The Utility Agreement shall define who  
44 will have the responsibility to perform the design and construction of the Utility Adjustment

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1 Work, the time frames under which the Utility Adjustment Work will occur, and compensation  
2 terms, if any, between the parties performing the Utility Adjustment Work. Refer to Sections  
3 5.10.2.2, 5.10.2.3, and 5.10.2.4 of the Agreement for Utility Agreement requirements.

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

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

### 15 **430.2.4.3 Utility Clearance Letters**

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

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

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

43 Developer shall prepare a final Utility Clearance Letter for each Project Segment indicating that  
44 all needed Utility Adjustments have been completed and all Utilities have been mitigated. Within

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1 10 Business Days of the completion of all Utility Adjustments within the applicable Project  
2 Segment, Developer shall submit a final Utility Clearance Letter for each Project Segment to  
3 ADOT for review and comment.

### 4 **430.3 DESIGN REQUIREMENTS**

#### 5 **430.3.1 General Requirements**

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

#### 10 **430.3.2 Utility Identification**

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

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

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

#### 35 **430.3.3 Utility Report**

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

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

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- 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. Utility 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 March 31, 2017.

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, 2018.

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 D. SRP irrigation siphons that currently cross I-10 (Papago Freeway) between 77th Avenue  
2 and 43rd Avenue. ADOT will enter into an agreement to advance the design of these  
3 eight siphons. The design costs will be paid by ADOT via this agreement. The design will  
4 be coordinated with and subject to the approval of the Developer. Developer shall enter  
5 into a Utility Agreement with SRP for the construction of the siphon installations and  
6 associated construction or removal Work.

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

9 No new Utilities are allowed on or within any existing bridges. No utilities are allowed on or  
10 within new bridges. Abandonment of Utilities within the Project ROW must comply with the  
11 requirements in the ADOT *Guideline for Accommodating Utilities on Highway Rights-of-Way*.

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

16 The eight existing SRP Irrigation siphons that currently cross I-10 (Papago Freeway) between  
17 77th Avenue and 43rd Avenue must be replaced.

18 Developer shall coordinate with the Peninsula-Horowitz representative and property owners  
19 within the Peninsula-Horowitz boundary and design up to seven crossings and associated  
20 structures on each end of the crossings as required, to ensure irrigation operations across the  
21 corridor.

### 22 **430.3.5 Utility Service Connections**

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

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

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

### 43 **430.3.6 Utility Plans**

44 Developer shall incorporate all Utility information into the Design Documents. Developer's utility  
45 base CAD file must indicate the quality and reliability of existing Utility information. Vertical

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1 locations of underground Utilities must be shown on all cross sections and details in the Design  
2 Documents.

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

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

### 10 **430.3.7 ADOT Encroachment Permits**

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

### 17 **430.3.8 Utility Encasement**

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

21 Developer shall install all wet Utilities and Project irrigation lines to be owned by ADOT in a  
22 casing pipe when crossing the mainline. The casing pipe must extend beyond the paved  
23 surface, roadside safety devices, or curb, whichever is furthest.

24 Existing Utility crossings that are to remain, electric and telephone conduits, ductbanks, gravity  
25 sewers, gravity irrigation and storm drains crossing beneath the roadways and channels do not  
26 require encasement, provided that the strength of the utility line is capable of withstanding the  
27 load.

### 28 **430.4 SUBMITTALS**

29 Table 430-2 reflects a nonexclusive list of Submittals identified in Section DR 430 of the TPs  
30 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
31 determine and submit all Submittals as required by the Contract Documents, Governmental  
32 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
33 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
34 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
35 formats described in Section GP 110.10.2.2 of the TPs:

| <b>Table 430-2<br/>Nonexclusive Submittals List</b> |                             |                         |                   |                               |                              |
|---|-----------------------------|-------------------------|-------------------|-------------------------------|------------------------------|
| <b>Submittals</b>                                   | <b>Level of<br/>Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal<br/>Schedule</b> | <b>Section<br/>Reference</b> |
|   |                             | <b>Hardcopies</b>       | <b>Electronic</b> |                               |                              |
| Utility Coordination Plan                           | 4                           | 2                       | 1                 | Prior to issuance of<br>NTP 2 | DR<br>430.2.2.1              |

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| <b>Table 430-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| Initial Utility Clearance Letter(s)  | 4                       | 2                       | 1                 | At least 10 Business Days prior to any Construction Work within the Project Segment                                | DR<br>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<br>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               |
| 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |  |                          |

1

2

**End of Section**

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## 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<br>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<br>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 the following activities:

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



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- 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; and
- 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

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

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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 110.10.2.2 of the TPs:

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| <b>Table 436-3<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>                  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |  |                          |

1

2

**End of Section**

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## 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<br>Standards |                   |  |
|--------------------------|-------------------|--|
| No.                      | Agency            | Name   |
| 1                        | ADOT              | Design Exception and Design Variance Process Guide                                     |
| 2                        | U.S. Access Board | Americans with Disabilities Act 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 TP Attachment 440-3. Access for maintenance

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1 purposes will be granted by permit and will not be considered a variance to the access control  
2 requirements.

### 3 **440.3.2 Design Criteria**

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

#### 8 **440.3.2.1 Sight Distance**

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

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

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

#### 18 **440.3.2.2 Superelevation**

19 Mainline axis of rotation must comply with the requirements in Section 202.2 of the ADOT  
20 *Roadway Design Guidelines*. Maximum superelevation rates for roadways are shown in TP  
21 Attachment 440-1. Superelevation transitions must comply with the requirements in Section  
22 202.3 of the ADOT *Roadway Design Guidelines*. Roadway design must not include spiral  
23 curves.

#### 24 **440.3.2.3 Horizontal Alignment**

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

#### 27 **440.3.2.4 Vertical Alignment**

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

#### 32 **440.3.2.5 Mainline Transitions and Tapers**

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

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

#### 39 **440.3.2.6 Cross Section Elements**

40 The standard cross slope for all types of paved surfaces shall be 0.02 ft/ft. The entire width of  
41 each roadway shall have a uniform cross slope. The cross slope of the shoulder must match the

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- 1 cross slope of the adjacent lane, except at ramp gores. The maximum difference in cross slope  
2 between the traveled way and the I-10 Papago HOV lane shall be 4%.
- 3 Mainline and ramp shoulder wedges must be 6:1 or flatter and a minimum of 10 feet from edge  
4 of shoulder to the slope hinge as depicted in Figure 303.1 of the ADOT *Roadway Design*  
5 *Guidelines*.
- 6 Mainline and ramp curbs must comply with the requirements in Section 302.2 of the ADOT  
7 *Roadway Design Guidelines*. Full width crossroad improvements must be curbed.
- 8 Shoulder widths provided in TP Attachment 440-1 must be the minimum continuous usable  
9 width of paved shoulder. Widening to provide minimum shoulder widths at median pier locations  
10 must comply with the requirements in Section 304.2 of the ADOT *Roadway Design Guidelines*.
- 11 Roadside recovery areas must comply with the requirements in Section 303.2 of the ADOT  
12 *Roadway Design Guidelines*. A barn-roof approach shall not be used to eliminate barrier.
- 13 Median slopes must be 6:1 or flatter.
- 14 Side slopes shall comply with Figure 306.4B and Figure 504.4A of the ADOT *Roadway Design*  
15 *Guidelines*. Fill slopes must be 6:1 or flatter for embankment heights up to 8 feet. Fill slopes of  
16 2:1 maximum are permitted in the area east of Ivanhoe Street and west of 27th Avenue.
- 17 Slopes within rock cuts must comply with the geotechnical recommendations in the  
18 Geotechnical Engineering Report(s) and the Contract Documents. Cut slopes steeper than 3:1  
19 must be outside the recovery area width as determined by using the foreslope of the cut as the  
20 appropriate fill slope rate or be barrier protected.
- 21 Developer shall provide a minimum clearance of 12 feet between the drainage channel or ROW  
22 line and the toe of a fill slope. For cut slopes, the clearance from the outer edge of slope  
23 rounding or crown drainage system must be a minimum of 10 feet from the ROW, except as  
24 otherwise provided in Section DR 440.3.2.9 of the TPs.
- 25 **440.3.2.7 Roadside Safety Devices**
- 26 All roadside safety devices must comply with the requirements of the *AASHTO Manual for*  
27 *Assessing Safety 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. Roadway barriers must have a minimum 1 inch cover over reinforcing steel.
- 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. Developer  
40 shall backfill and cap areas between the back of barrier and barriers, walls, abutments, etc. less  
41 than 10 feet in width with concrete.
- 42 Developer shall not place signs and light poles on barriers with the exception of closed median  
43 barriers. Signs and light poles located in the median must comply with the configuration shown

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1 in Figure 305.9 of the ADOT *Roadway Design Guidelines*. The top of the median barrier must  
2 have adequate width to place the pole anchor in lieu of notching the barrier and placing the  
3 anchor at a location below the top of the barrier.

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

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

### 7 **440.3.2.8 Frontage and Collector Distributor Roads**

8 Developer shall design all frontage and collector distributor roads in accordance with Section  
9 309 of the ADOT *Roadway Design Guidelines*.

### 10 **440.3.2.9 Maintenance Access**

11 Developer shall provide 12-foot-wide maintenance access at the toe of fill and cut slopes along  
12 both sides of the Freeway. The maintenance access roads must be traversable by a light-duty  
13 truck with a flat-bed trailer. The maintenance access must be continuous with the exception of  
14 through the South Mountain ridges, across the Laveen Area Conveyance Channel, across the  
15 Salt River, across the Roosevelt Irrigation District Canal, and across the Union Pacific Railroad.  
16 Developer may use frontage and access roads as maintenance roads.

17 Developer shall design maintenance access to channels in accordance with Section DR  
18 445.3.6.4 of the TPs.

### 19 **440.3.2.10 Sidewalk**

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

### 25 **440.3.2.11 ROW Fencing**

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

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

### 30 **440.3.2.12 Temporary Roads**

31 Temporary roadways must comply with the requirements in Section 316 of the ADOT *Roadway*  
32 *Design Guidelines*.

### 33 **440.3.2.13 Traffic Interchanges and Crossroads**

34 Ramp-crossroad intersections must comply with the requirements in Section 403 and  
35 Section 505 of the ADOT *Roadway Design Guidelines* and must meet the desirable criteria.  
36 Median Urban Designs shall not be used. Ramp-crossroad intersections must not be stop  
37 controlled with stop signs.

38 Full width improvements at undeveloped crossroads must extend 300 feet beyond the ramp  
39 radius returns. Crossroad improvements must not encroach on GRIC ROW.

40 Developer shall provide the number of through lanes at all interchanges as shown in TP  
41 Attachment 440-2. Sight distances at ramp-crossroad intersections must comply with the



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1 requirements in Section 408 of the ADOT *Roadway Design Guidelines* and permit for right turns  
2 on red signals.

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

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

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

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

### 13 **440.3.2.14 Pecos Shared-use Path**

14 Developer shall provide a shared-use path from 40th Street to 17th Avenue outside of the  
15 access control. Developer shall pave the shared-use path a minimum of 15 feet in width and in  
16 accordance with Section DR 419.3.3 of the TPs. Shoulder side slopes must not be steeper than  
17 6:1 (H:V). Side slopes beyond shoulder must not be steeper than 3:1. Developer shall design  
18 the shared-use path geometric features and handrail requirements for the shared-use path must  
19 be in accordance with City of Phoenix standards and guidelines.

### 20 **440.3.3 Local Streets and Intersections**

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

#### 24 **440.3.3.1 Bus Stops and Amenities**

25 Developer shall coordinate the location of existing bus stops within the Project limits with the  
26 City of Phoenix Street Transportation Department. Developer shall design, construct, and  
27 relocate bus stops and associated amenities in accordance with the standards and  
28 requirements of City of Phoenix Street Transportation Department. Developer shall be  
29 responsible for the relocation of existing shelters and amenities.

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

#### 33 **440.3.4 ADA Compliance**

34 All pedestrian facilities must comply with the U.S. Access Board *Americans with Disabilities Act*  
35 *Accessibility Guidelines (ADAAG)* or the U.S. Access Board *Proposed Accessibility Guidelines*  
36 *for Pedestrian Facilities in the Public Right-of-Way (PROWAG)* as specified below. Developer  
37 shall evaluate all existing pedestrian facilities within the Project ROW, including the I-10  
38 intersections from 43rd Avenue to 75th Avenue for conformance with ADAAG requirements.  
39 Developer shall prepare an initial ADA Compliance and Feasibility Report that demonstrates  
40 that the Project complies with all applicable ADAAG requirements. Existing pedestrian facilities  
41 that comply with ADAAG requirements may remain in place. Existing pedestrian facilities that do  
42 not comply with ADAAG must be replaced with facilities that comply with PROWAG  
43 requirements. All new pedestrian facilities must comply with PROWAG requirements.

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1 At the same time as Initial Design Submittal for the Design Work, Developer shall submit the  
2 initial ADA Compliance and Feasibility Report to ADOT. Developer shall update the ADA  
3 Compliance and Feasibility Report and prepare a final ADA Compliance and Feasibility Report.  
4 At the same time as Final Design Submittal of the Design Work, Developer shall submit the final  
5 ADA Compliance and Feasibility Report to ADOT.

### 6 **440.3.5 Design Exceptions and Design Variances**

7 The Schematic Design includes design elements that require Design Exceptions for horizontal  
8 stopping sight distance at the I-10 (Papago Freeway)/South Mountain Freeway System traffic  
9 interchange (TI), including the HOV ramp, ramp NE, ramp NW, ramp WS, and ramp ES. FHWA  
10 has reviewed the designs, but has not approved Design Exceptions based on the preliminary  
11 nature of the design and potential for design changes by Developer. Developer shall prepare  
12 Design Exception requests for these design elements based on Developers design.

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

17 For each Request for Design Exception or Request for Design Variance request, Developer  
18 shall prepare all documentation in accordance with the ADOT *Design Exception and Design  
19 Variance Process Guide*. At the same time as Initial Design Submittal for the associated Work,  
20 Developer shall submit any Request(s) for Design Exception(s) or Request(s) for Design  
21 Variance(s) to ADOT for review and approval by ADOT, in ADOT's sole discretion. Developer is  
22 advised that ADOT may withhold approval of any such request(s) at its sole discretion and must  
23 schedule sufficient time for evaluation of all requests. Following review of any Request(s) for  
24 Design Exception(s), ADOT will submit the Request(s) for Design Exception(s) to FHWA for  
25 review and approval. All Design Exceptions must be reviewed by ADOT and reviewed and  
26 approved by FHWA. All Design Variances must be approved by ADOT.

27 Developer shall prepare a Design Exception and Design Variance Report that consolidates all  
28 Design Exceptions and Design Variances, all supporting documentation, and copies of the  
29 ADOT and FHWA approval letters. At the same time as Final Design Submittal for the  
30 associated Work, Developer shall submit the Design Exception and Design Variance Report to  
31 ADOT.

### 32 **440.4 SUBMITTALS**

33 Table 440-2 reflects a nonexclusive list of Submittals identified in Section DR 440 of the TPs  
34 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:

**CONFORMED – AMENDED AND RESTATED**

| <b>Table 440-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 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               |
| 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |  |                          |

1

2

**End of Section**

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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<br>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, Hydraulics*,  
14 to determine all historic and proposed tributary flows to the proposed drainage system.

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

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

22 **445.2.3 Coordination with Other Agencies and Governmental Entities**

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

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

29 **445.2.4 Software**

30 Developer shall use drainage software that is compatible with the software in use by ADOT or  
31 fully transferrable to the software currently in use by ADOT in accordance with Section GP  
32 110.10 of the TPs. Culvert hydraulic software must comply with the requirements of FHWA  
33 *Hydraulic Design Series Number 5*.

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### 1 **445.3 DESIGN REQUIREMENTS**

#### 2 **445.3.1 General**

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

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

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

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

#### 31 **445.3.2 Drainage Master Plan**

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

42 At the same time as Initial Design Submittal of the roadway drainage, roadway design, and/or  
43 bridge hydraulic design, Developer shall submit the Drainage Master Plan to ADOT for review  
44 and comment by ADOT. Prior to submitting a drainage design Submittal that is not consistent

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1 (e.g. Changes in tributary areas, concentration points, basin locations, etc.) with the Drainage  
 2 Master Plan, Developer shall submit an updated Drainage Master Plan to ADOT.

3 **445.3.3 Drainage Report**

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

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

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

18 **445.3.4 Storm Frequency and Design Discharge**

19 **445.3.4.1 Design Frequencies**

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

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

21

| <b>Table 445-3<br/>Design Storm Frequency for Pavement Drainage Systems</b> |                                       |
|---|---------------------------------------|
| <b>Roadway Type and Condition</b>   | <b>Design Storm Frequency (years)</b> |
| <b>Non-Depressed Roadways:</b>  |                                       |
| 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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| <b>Table 445-3<br/>Design Storm Frequency for Pavement Drainage Systems</b>   |                                       |
|---|---------------------------------------|
| <b>Roadway Type and Condition</b>   | <b>Design Storm Frequency (years)</b> |
| Hydraulic grade line no higher than 3 inches below pavement   | See Table 445-2                       |
| <b>Depressed Roadways:</b>  |                                       |
| 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*.

| <b>Table 445-4<br/>Allowable Spread, 10-year Storm Event</b>   |  |
|--|--|
| <b>Roadway</b>   | <b>Spread Criterion</b>  |
| Two-lane roadway and two-way frontage road   | Shoulder, turn lane, or parking lane                           |
| Multilane roadway and one-way frontage road  | 1/2 lane + shoulder, turn lane, or parking lane                |
| <b>Ramp</b>  |  |
| One lane   | Unponded width of 12 feet                                      |
| Two lane   | 1/2 lane + shoulder  |
| One-lane directional ramp  | Less than or equal to 8 feet                                   |
| Two-lane directional ramp  | 1/2 lane + shoulder  |
| At ramp gores  | See Figure 603.2A of the ADOT <i>Roadway Design Guidelines</i> |
| Auxiliary lanes  | 1/2 auxiliary lane + shoulder                                  |
| Note: Refer to roadway cross section and apply appropriate one- or multilane roadway criteria. For one-directional crowned roadways, the 1/2-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 On-site and off-site stormwater from Project ROW must not outfall into the Laveen Area  
5 Conveyance Channel.

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

8 Developer shall jack and bore all drainage facilities under the GRIC irrigation easement at 51st  
9 Avenue.

10 Developer shall verify that the proposed flow to the existing pump station does not exceed the  
11 existing pump station's capacity if the proposed improvements convey flow to an existing pump  
12 station. Developer shall design the changes to the existing pump station to comply with the  
13 design requirements in the ADOT *Highway Drainage Design Manual, Hydraulics* if the capacity  
14 is exceeded at any impacted pump station.

### 15 **445.3.5 Hydrology**

16 Developer shall determine design flows based on the following sources, given in order of  
17 relative importance:

18 A. Existing hydrologic studies: Where highway facilities encroach on established or planned  
19 regulatory floodplains, the flood frequency curve approved by FEMA for the site must be  
20 the primary source of data for use in design. In the absence of a FEMA flood frequency  
21 curve, runoff rates from drainage studies by other Governmental Entities must be  
22 evaluated for use in establishing a design flood frequency curve. Such studies must be  
23 reviewed for appropriateness with regard to the needs of the facility being designed.  
24 There may be instances where two hydrologic values must be used: (1) the FEMA or  
25 other agency value, to evaluate the impacts of the ADOT system on the existing FEMA  
26 floodplain/floodway; and (2) an ADOT value, to size the drainage facilities.

27 B. Rainfall-runoff models: Rainfall-runoff models must be used where stream runoff data  
28 are not available. For drainage areas of 160 acres or less, the rational method may be  
29 used. For drainage areas greater than 160 acres, the USACE computer program HEC-  
30 HMS must be used. Developer shall comply with the approved procedures and  
31 recommended parameter values for the Rational Method and HEC-HMS based on the  
32 local jurisdiction requirements. Developer shall use the Green and Ampt method to  
33 estimate rainfall losses. Developer shall use the S-curve or the Clark unit hydrograph to  
34 calculate the unit hydrograph parameters.

### 35 **445.3.6 Drainage Improvements**

#### 36 **445.3.6.1 Inlets**

37 Developer shall provide stormwater drainage improvements behind proposed retaining walls  
38 and barriers to convey side slope runoff to the wall into the proposed storm drain system and  
39 prevent stormwater from ponding or draining over the walls.

40 Non-standard ADOT inlets must adhere to the standards in Section DR 445.2.1 of the TPs.  
41 Inlets on roadways that allow bicycle travel must be bicycle-safe grates.

42 Developer shall design all off-roadway inlets within the roadway recovery area with 3 inches or  
43 less local depression. Developer shall account for a potential reduction of inflow capacity  
44 attributable to clogging using the capture ratios shown in Table 445-5.



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| <b>Table 445-5<br/>Inlet Capture Ratios</b> |                      |
|---|----------------------|
| <b>Grate Inlets</b>                         | <b>Capture Ratio</b> |
| On grade                                    | 0.50                 |
| Sump  | 0.50                 |
| <b>Curb Inlets</b>                          |                      |
| On grade                                    | 0.80                 |
| Sump  | 0.80                 |
| <b>Combined Curb and Grate</b>              |                      |
| On grade                                    |                      |
| Curb inlet                                  | 0.80                 |
| Grate inlet                                 | 0.50                 |
| Sump  |                      |
| Curb inlet                                  | 0.80                 |
| Grate inlet                                 | 0.50                 |
| <b>Combined Slotted and Grate</b>           |                      |
| 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  
13 445-3 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; and
- 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.

| <b>Table 445-6<br/>Manning's "n"</b> |            |
|--------------------------------------|------------|
| <b>Pipe Type</b>                     | <b>"n"</b> |
| 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.

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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 and comply with the requirements of Section DR 420 of the TPs; and
- 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;

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- 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 110.10.2.2 of the TPs:

| <b>Table 445-7<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                         |                         |                   |  |                          |

14  
15

**End of Section**

## CONFORMED – AMENDED AND RESTATED

### 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 and in accordance with Section GP 110.02.3  
12 of the TPs. The aesthetics and landscaping predesign coordination meeting must include all  
13 personnel involved in the design and construction of the aesthetics and landscaping for the  
14 Project.

###### 15 **450.2.2.2 Task Force Meetings**

16 Developer and ADOT shall establish an aesthetics and landscaping task force, including  
17 representatives of Developer, ADOT, and representatives of Governmental Entities as  
18 determined by ADOT.

19 The purpose of the aesthetics and landscaping task force is to:

- 20 A. Review and refine the Aesthetics and Landscape Master Plan and  
21 B. Review, refine, and approve Developer's Aesthetics and Landscaping Plans,  
22 specifications, and details.

23 The aesthetics and landscaping task force must be established, hold the initial meeting, and  
24 meet at the frequency noted in Section GP 110.02.5 of the TPs.

###### 25 **450.2.2.3 Technical Work Group Meeting**

26 Developer shall conduct aesthetics and landscaping TWG meetings every other week  
27 throughout the Design Work of the aesthetics and landscaping for any Project Segment, unless  
28 otherwise directed by ADOT. ADOT staff will participate in these TWG meetings and be  
29 available for over-the-shoulder plan reviews. Developer may combine design aesthetics and  
30 landscaping TWG meetings with construction aesthetics and landscaping TWG meetings.

##### 31 **450.2.3 Plant Inventory**

32 Developer shall inventory all saguaros, barrel cacti, ocotillos, and all native trees, including blue  
33 palo verde, foothills palo verde, ironwood, and mesquite, with a caliper 4 inches or greater,  
34 measured 6 inches above existing ground, all plants on the GRIC Native Plant Ordinance  
35 between 24th Street and 51st Avenue, and noxious and invasive species within the Project  
36 ROW. Developer shall inventory the plants as parcels become available for Developer's use per  
37 Project Segment. Developer shall inventory the Center Segment no earlier than one year prior  
38 to issuance of NTP 3. Each plant inventoried must be given an identification (ID) number that is  
39 associated with that plant through the salvaging, nursery, and replanting process. Developer  
40 shall prepare a matrix of inventoried plants that includes plant ID number, the species, caliper,  
41 and height of all trees, as well as the height of all saguaros and barrel cacti. The matrix must

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1 also identify whether each plant listed is salvageable or non-salvageable for all inventoried  
2 plants. Developer shall prepare plant inventory exhibits that indicate the location of each  
3 inventoried plant and its associated ID number.

4 Developer shall prepare a Plant Inventory for the Project that includes the following:

- 5 A. Cover page
- 6 B. Table of contents
- 7 C. Discussion
- 8 D. The matrix of inventoried plants
- 9 E. Plant Inventory exhibits

10 Prior to ground disturbing activities, Developer shall submit the Plant Inventory for review and  
11 comment by ADOT. Within 15 Business Days after new parcels become available for  
12 Developer's use, Developer shall prepare and submit updated Plant Inventories to ADOT for  
13 review and comment.

### 14 **450.2.4 Salvage Operation Plan**

15 Developer shall prepare a Salvage Operation Plan that details the processes for plant salvage,  
16 nursery setup and operation, and replanting of salvaged plants. At a minimum, Developer shall  
17 salvage all healthy native trees with a single trunk diameter or combined trunk diameter of at  
18 least 4 inches, measured 6 inches above natural grade at the root location, saguaros, ocotillos,  
19 and barrel cacti. The Salvage Operation Plan must include the following:

- 20 A. Cover page
- 21 B. Table of contents
- 22 C. Timing for salvage operations for optimum success
- 23 D. Anticipated phasing schedule for salvage and replanting of plant materials
- 24 E. Details on how Developer shall accomplish:
  - 25 1. Field pruning
  - 26 2. Side boxing
  - 27 3. Boxing support and bottoming
  - 28 4. Transporting boxed materials to the nursery
  - 29 5. Salvaging and transporting saguaros and cacti
- 30 F. Nursery details, including:
  - 31 1. Anticipated nursery location(s)
  - 32 2. Security measures for nursery site(s)
  - 33 3. Plant irrigation at the nursery(ies)
- 34 G. Methods and details for replanting boxed trees, saguaros, and cacti

35 At the same time as the submittal of the Plant Inventory, Developer shall submit the Salvage  
36 Operation Plan to ADOT for review and comment. Developer shall update the Salvage  
37 Operation Plan as the Plant Inventory is updated. At the same time as the submittal of each  
38 updated Plant Inventory, Developer shall submit the updated Salvage Operation Plan to ADOT  
39 for review and comment.

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### 1 **450.2.5 Noxious and Invasive Species Control Plan**

2 Developer shall prepare a Noxious and Invasive Species Control Plan that describes the  
3 proposed methods and products for minimizing the spread and growth of noxious and invasive  
4 species found during the Plant Inventory, from the beginning of construction through the end of  
5 the Maintenance Period. If noxious and invasive species were not found during the Plant  
6 Inventory, Developer shall state so in the Noxious and Invasive Species Control Plan. A list of  
7 Arizona introduced invasive and noxious plants can be found on the United States Department  
8 of Agriculture website. The Noxious and Invasive Species Control Plan must include the  
9 following:

- 10 A. Cover page
- 11 B. Table of contents
- 12 C. Discussion, including the following:
  - 13 1. Information on the species that are found in the Project ROW
  - 14 2. Proposed chemical or mechanical means to minimize germination of these plants

15 At least 15 Business Days prior to any ground disturbance, Developer shall submit the Noxious  
16 and Invasive Species Control Plan to ADOT for review and comment. Developer shall prepare  
17 an updated Noxious and Invasive Species Control Plan as the Plant Inventory is updated and at  
18 NTP 3. No later than 10 Business Days after the submittal of each updated Plant Inventory,  
19 Developer shall submit the updated Noxious and Invasive Species Control Plan to ADOT for  
20 review and comment.

### 21 **450.2.6 Plating Report (Topsoil)**

22 Developer shall conduct soils sampling throughout the entire Project ROW. Sampling must be  
23 performed in accordance with the Natural Resource Conservation Service requirements and  
24 must include a minimum of 12 samples from each of the soil types found in the Project ROW.  
25 Boring samples must vary in depth from 1 to 6 feet below existing site grade. Developer shall  
26 analyze the samples for the agronomic-based saturated paste determinations of pH, soluble  
27 salts, sodium adsorption ratio, and estimated exchangeable sodium percent. Developer shall  
28 also analyze the samples for organic matter, nitrate, bicarbonate phosphorus, potassium, sulfur,  
29 DTPA soluble zinc, iron, manganese, copper, boron, gypsum requirement, and gravel.

30 From this sampling, Developer shall determine what amendments are needed for optimum plant  
31 growth. Topsoil must comply with the soil characteristics included in Table 450-1.

| Table 450-1<br>Soil Characteristics |             |   |
|-------------------------------------|-------------|---|
| Characteristics                     | Test Method | Requirement<br>(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                                    |



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| <b>Table 450-1<br/>Soil Characteristics</b> |                    |   |
|---|--------------------|---|
| <b>Characteristics</b>                      | <b>Test Method</b> | <b>Requirement<br/>(Average of Six Samples)</b> |
| Gradation:<br>2 inch<br>½ inch<br>No. 40    | ARIZ 201           | % Passing<br>100<br>85–100<br>35–100            |
|   |                    |   |

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

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1           3.    Decomposed granite only areas.

2   At the first Task Force meeting, Developer shall submit the Aesthetics and Landscape Master  
3   Plan to ADOT for review and comment.

### 4   **450.2.8        Visual Analysis**

5   Developer shall prepare a Visual Analysis for each Character Area when the layout of the  
6   freeway mainline is complete for each Character Area and there is a preliminary understanding  
7   of the cut and fill slopes, the height and location of bridges, retaining walls, and similar features,  
8   the extents of the mountain cuts, and the layout of drainage features and crossings. The  
9   purpose of the Visual Analysis is to serve as a guide for developing a landscape and mitigation  
10  design that reduces the visual impacts and improves the visual quality for views from the  
11  freeway and toward the freeway. Each Visual Analysis must include the following:

12       A. Title sheet;

13       B. Table of contents;

14       C. Narrative describing the surroundings of the freeway such as types of residences or  
15       businesses; if elevated ramps are visible and if so from where; where walls are proposed  
16       and how they impact views in and out of the freeway;

17       D. Visual resource inventory that describes the freeway elements that have the most effect  
18       on landscape design and mitigation of visual impacts including roadway slopes, elevated  
19       ramps, and retaining, screening, and noise walls; and

20           1. The inventory must take into account six visual criteria: 1) distance from viewer, 2)  
21           angle of view, 3) duration of view, 4) magnitude, 5) silhouette, and 6) aspect

22           a. Distance parameters are immediate (0 – 300 feet from viewer), foreground (301  
23           – 1,320 feet), middleground (1,320 feet – 3 miles), or background (greater than 3  
24           miles away)

25           b. Magnitude is the size of the element in the landscape

26           c. Angle of view is the location of the element in comparison to the viewer's line of  
27           sight

28           d. Duration of view is the length of time that the element is visible to the viewer

29           e. Silhouette is the visible outline of the element against various backgrounds (not  
30           applicable to slopes)

31           f. Aspect is the degree or angle that the element is sloping toward or away from the  
32           viewer

33           2. The inventory must assign a number to each distinct slope section, ramp, or wall.  
34           Each numbered item must be analyzed assigning a score from 1 to 3 (1 = low, 2 =  
35           medium, 3 = high) for each criterion for each distance from viewer (immediate to  
36           background). Developer shall calculate subtotals and totals for each numbered item.

37           3. Priority levels are as follows:

38           a. High priority are elements that have a prominent position in the landscape, are  
39           highly visible, and may dominate the view

40           b. Medium priority are elements that are clearly visible but do not dominate the view  
41           and may be a transitional area

42           c. Low priority are elements that are visible but not conspicuous and are  
43           subordinate to the surrounding views

44           4. Priority level scoring for each type of element is as follows:

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- 1 a. Slope: low (1-29 points), medium (30-50), and high (51 and higher)  
2 b. Elevated ramp: low (1-29), medium (30-100), and high (101 and higher)  
3 c. Wall: low (1-20), medium (21-40), and high (41 and higher)  
4 d. Scores are derived from:  
5 i. Duration of view  
6 • 0 - 6 seconds Low  
7 • 6 - 10 seconds Medium  
8 • > 10 seconds High  
9 ii. Horizontal angle of view  
10 • >57.5 degrees Low  
11 • 34 -57.5 degrees Medium  
12 • 0 - 33 degrees High  
13 iii. Magnitude  
14 • Embankments  
15 ○ 0 - 30,000 SF Low  
16 ○ 30,000 - 60,000 SF Medium  
17 ○ >60,000 SF High  
18 • Walls  
19 ○ 1 - 4 feet high Low  
20 ○ 5 - 10 feet high Medium  
21 ○ >10 feet high High  
22 • Bridges/ramps  
23 ○ 0 - 100 LF Low  
24 ○ 301 – 1,000 LF Medium  
25 ○ >1,000 LF High  
26 iv. Silhouette (not applicable to slopes)  
27 • Background is land Low  
28 • Background is land/sky Medium  
29 • Background is sky High  
30 v. Aspect  
31 • Slopes away from viewer n/a  
32 • Slopes toward viewer, 3:1 and flatter Low  
33 • Slopes toward viewer, 3:1 to 2:1 Medium  
34 • Slopes toward viewer, > 2:1 High  
35 E. An appendix that includes photographs, plans, renderings, or simulations to clearly  
36 portray the priority levels of the elements.  
37 The Visual Analysis must allow the reader to:  
38 A. Determine elements and conditions that will impact the use and design of the landscape;  
39 B. Locate built and natural elements;

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- 1 C. Locate microclimates based on prevailing wind directions, patterns of sun and shade,
- 2 existing topography, and soil type;
- 3 D. Use the landscape design to reduce perceived scale of roadway and structures;
- 4 E. Identify positive vistas and views; and
- 5 F. Identify unappealing views.

6 After the first pre-design coordination meeting and prior to submitting a planting Initial Design  
7 Submittal, Developer shall submit the Visual Analysis to ADOT for review and comment.

### 8 **450.3 DESIGN REQUIREMENTS**

9 The Project is divided into five Aesthetic Areas and five Character Areas. Each Aesthetic Area  
10 has its own theme, rustication pattern, and landform graphic pattern and is described in the  
11 LAADCR and the revised sheets included in the RIDs (2015-10 LAADCR - Revised Ocotillo  
12 Settlement Sheet.pdf and 2015-10 LAADCR - Revised Cholla-Ocotillo Sheet.pdf). Each  
13 Character Area has its own character theme and planting theme and is described in the  
14 LAADCR.

#### 15 **450.3.1 Aesthetics**

16 Rustication is an aesthetics treatment. Rustication is defined as any change in the pattern or  
17 texture of built structure as compared with a standard smooth finish. Rustication, whether it  
18 protrudes out or is inset into the wall, must comply with the structure requirements in Section  
19 455 of the TPs. The dimensions of rustication relief as shown in Exhibits L2.13 through L2.35 of  
20 the LAADCR and the revised sheets included in the RIDs (2015-10 LAADCR - Revised Ocotillo  
21 Settlement Sheet.pdf and 2015-10 LAADCR - Revised Cholla-Ocotillo Sheet.pdf), are the  
22 minimums allowed.

23 Developer shall provide aesthetic treatment on all pedestrian fencing as shown in Exhibit L2.47  
24 of the LAADCR. All exposed surfaces of built structures must be rusticated, except the  
25 undersides of bridges. Built structures, as defined herein, include bridge barrier walls, barrier  
26 walls on approach slabs, barrier walls on protective pavement systems, bridge abutments,  
27 bridge wing walls, bridge piers, noise walls, retaining walls, lightweight panels, and other similar  
28 site structures. Built structures do not include lined drainage channels, drainage head walls, or  
29 roadside or median barriers.

30 Developer shall paint the exposed structural surfaces specified in Section 610-3.05 of the ADOT  
31 *Standard Specifications for Roadway and Bridge Construction* and paint all light and sign  
32 foundations located on the outside shoulder of the roadway, that are exposed by 2 feet or more,  
33 with the colors as shown in Table 450-2. Developer shall paint concrete with a flat finish,  
34 accents with a gloss finish, masonry with a gloss finish, and metal with a semigloss finish. Paint  
35 must extend to 2 feet below finished grade. Lined drainage channels, drainage head walls, and  
36 roadside and median barriers shall not be painted.

| <b>Table 450-2<br/>Color Palette</b>                      |                                   |
|---|-----------------------------------|
| <b>Location</b>   | <b>Color<sup>1</sup></b>          |
| Entire freeway corridor base field color                  | Frazee No. CL 2847N (Sequestered) |
| Aesthetic Area 1 Ocotillo Settlement Pattern accent color | Frazee No. CLV 1113N (Show)       |
| Aesthetic Area 2 Cholla Ocotillo Pattern accent color     | Frazee No. 6265R (Mayan Brick)    |

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| <b>Table 450-2<br/>Color Palette</b>   |   |
|--|---|
| <b>Location</b>  | <b>Color<sup>1</sup></b>  |
| Aesthetic Area 3 River Bank Pattern accent color   | Frazees No. CL 1837N (Champion)                                 |
| Aesthetic Area 4 Leaf Portal Pattern accent color  | Frazees No. CL 1957N (Low Hedge)                                |
| Aesthetic Area 5 Mountain Urban Link Pattern accent color  | Frazees No. CL 1113N (Show) and Frazees No. CL 2844D (Dialogue) |
| Salt River Bridge accent colors  | Frazees No. 6265R (Mayan Brick)                                 |
| Hohokam bird accent color  | Frazees No. CLV 1113N (Show)                                    |
| Note 1: Developer may apply any paint color brand names or trademarks such as: Sherwin-Williams, Pittsburgh Paints, and Dunn-Edwards other than the Frazees Paint. Developer shall demonstrate equivalent color effects for ADOT’s approval. |   |

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. All  
 5 lightweight noise patterns on bridges must include barrier wall pattern with the noise wall  
 6 pattern.

7 **450.3.1.1.2 Walls**

8 All bridge abutment walls, sound walls, and retaining walls throughout the freeway corridor must  
 9 receive the same horizontal rustication and base field paint color. Simulations of all the  
 10 Aesthetic Areas, including the Salt River Bridge pattern, with the horizontal rustication pattern  
 11 on the bridge abutment and sound walls are shown in Exhibits L2.2, L2.4, L2.6, L2.8, L2.10, and  
 12 L2.12 of the LAADCR.

13 Developer shall paint existing ADOT walls in the new base color between 55th Avenue and 63rd  
 14 Avenue to transition between the existing I-10 theme at 59th Avenue and the new South  
 15 Mountain Freeway theme.

16 **450.3.1.1.3 Landform Graphics**

17 Developer shall provide landform graphics in Aesthetic Areas 1, 3, and 4 that cover 15 percent  
 18 of the total Project landscaped area for each Aesthetic Area, excluding basins, channels, and  
 19 maintenance roads. Developer shall provide landform graphics that cover 35 percent of the total  
 20 Project landscaped area in Aesthetic Area 5, excluding channels and maintenance roads.  
 21 Landform graphics may be either concrete graphics or graphics using decomposed granite. For  
 22 calculating cover, landscaped areas do not include drainage basins or channels, right-of-way in  
 23 wash crossings, maintenance roads, and side slopes between 17th Avenue and 51st Avenue.

24 Landform graphics are intended for sloped areas at interchanges between the mainline and the  
 25 on- and off-ramps. Landform graphics may also be located along sloped mainline sections, but  
 26 single landform graphic area shall not exceed one-half mile in length. Developer shall show  
 27 locations of landform graphics in the Visual Analysis.

28 Developer shall provide landform graphic for each Aesthetic Area that resembles the shapes,  
 29 colors, and dimensions shown in Exhibits L2.39 through L2.44 of the LAADCR.

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### 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. Developer shall provide textured patterns in accordance with the  
17 LAADCR.

#### 18 **450.3.1.2.1 Bridges**

19 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge  
20 abutment walls in Aesthetic Area 1 in accordance with Exhibits L2.14, L2.15, and L2.17 of the  
21 LAADCR. The final designs shall resemble these simulations. The 48th Street bridge does not  
22 need to be painted to match the Aesthetic Area unless the bridge is modified by Developer's  
23 design.

#### 24 **450.3.1.2.2 Walls**

25 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic  
26 Area 1 in accordance with Exhibit L2.16 of the LAADCR. The final designs shall resemble these  
27 simulations.

### 28 **450.3.1.3 Aesthetic Area 2**

29 Aesthetic Area 2 is located between a half mile east of Desert Foothills Parkway to just east of  
30 51st Avenue (north of the GRIC boundary). The aesthetic theme is the Cholla/Ocotillo Pattern,  
31 expressed through forms that are representative of the simple shapes and forms found on  
32 cholla and ocotillo cactus. Exhibit L2.4 of the LAADCR is a simulation of these forms on a  
33 typical sound wall and bridge structure. The final designs shall resemble these simulations.

#### 34 **450.3.1.3.1 Bridges**

35 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge  
36 abutment walls in Aesthetic Area 2 in accordance with Exhibits L2.18, L2.19, and L2.21 of the  
37 LAADCR. The final designs shall resemble these simulations.

#### 38 **450.3.1.3.2 Walls**

39 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic  
40 Area 2 in accordance with Exhibit L2.20 of the LAADCR. The final designs shall resemble these  
41 simulations.

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### 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 Developer shall provide textured patterns in accordance with the LAADCR.

#### 22 **450.3.1.5.1 Bridges**

23 Developer shall provide rustication patterns on all bridge barrier walls, bridge piers, and bridge  
24 abutment walls in Aesthetic Area 4 in accordance with Exhibits L2.26, L2.27, and L2.29 of the  
25 LAADCR. The final designs shall resemble these simulations.

26 The aesthetic treatment for the Elwood Street pedestrian bridge shown in the LAADCR does not  
27 apply to the Project. The aesthetic requirement for Aesthetic Area 4 in the LAADCR applies to  
28 the Elwood Street pedestrian bridge. The City of Phoenix will provide modifications to aesthetics  
29 treatment concepts for the Elwood Street pedestrian bridge to Developer.

#### 30 **450.3.1.5.2 Walls**

31 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic  
32 Area 4 in accordance with Exhibit L2.28 of the LAADCR. The final designs shall resemble these  
33 simulations.

### 34 **450.3.1.6 Aesthetic Area 5**

35 Aesthetic Area 5 is located between Elwood Street alignment and I-10 and along I-10 between  
36 75th and 43rd Avenues. The aesthetic theme is the Mountain Urban Link Pattern, expressed  
37 through interlocking shapes that representationally tie the South Mountain Freeway to the I-10  
38 freeway. Exhibit L2.10 of the LAADCR is a simulation of these forms on a typical sound wall and  
39 bridge structure. The final designs shall resemble these simulations. Developer shall provide  
40 textured patterns in accordance with the LAADCR.

#### 41 **450.3.1.6.1 Bridges**

42 Developer shall provide rustication patterns on all new bridge barrier walls, bridge piers, and  
43 bridge abutment walls in Aesthetic Area 5 in accordance with Exhibits L2.30, L2.31, and L2.33

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1 of the LAADCR. The final designs shall resemble these simulations. Developer shall paint the  
2 existing 59th Avenue bridge with the Aesthetic Area 5 base color. If the 63rd Avenue bridge is  
3 replaced, it shall have the same rustication as the existing structure, and Developer shall paint  
4 bridge with the same Aesthetic Area 5 base color.

### 5 **450.3.1.6.2 Walls**

6 Developer shall provide rustication patterns on all walls, except drainage headwalls, in Aesthetic  
7 Area 5 in accordance with Exhibit L2.32 of the LAADCR. The final designs shall resemble these  
8 simulations.

9 Developer shall include Hohokam bird patterns on either a noise wall or retaining wall on and  
10 visible from eastbound I-10 (Papago Freeway) and in accordance with Scenario 'A' as shown in  
11 the Hohokam Bird Details included in the RIDs.

### 12 **450.3.1.7 River Bridge Aesthetics**

13 The river bridge aesthetics applies only to the bridge crossing the Salt River. The bridge barrier  
14 walls, as shown in Exhibit L2.12 of the LAADCR, have a rustication pattern called the wave  
15 pattern that relates this bridge to other ADOT bridges crossing the Salt River.

#### 16 **450.3.1.7.1 Bridge**

17 Developer shall provide rustication patterns on bridge barrier walls on bridges crossing the Salt  
18 River in accordance with Exhibit L2.12 of the LAADCR. The final designs shall resemble these  
19 simulations.

#### 20 **450.3.1.7.2 Walls**

21 Developer shall provide horizontal rustication on Salt River Bridge abutment walls in accordance  
22 with Exhibits L2.12 and L2.13 of the LAADCR. The final designs shall resemble these  
23 simulations.

### 24 **450.3.2 Landscape**

25 Developer shall select all landscape plant materials from the lists defined TP Attachment 450-1  
26 and/or from the plants salvaged and transplanted from on site. All plants from a Character Areas  
27 list shall be used in the planting design in a manner that provides variety of the species  
28 throughout the Character Area, and makes the best use of the low-water use plants, reserving  
29 the higher water-use plants for select areas. No substitution of species will be allowed.

#### 30 **450.3.2.1 Planting Design**

31 The plant material shall provide an evident sense of uniformity and continuity in pattern,  
32 material, size, color, and intensity throughout the five Character Areas. Landscape shall be  
33 designed to address the following broad objectives:

- 34 A. Use vegetative buffers to screen views both of the roadway and from the roadway;
- 35 B. Use strategic gaps in plantings to frame positive views;
- 36 C. Transplant large saguaros, mature trees, and cacti to visually sensitive or critical  
37 roadway areas;
- 38 D. Use measures to blend retention basins and their landscape treatments into the  
39 surroundings;
- 40 E. Place landscape treatments on the periphery of right-of-way areas, at overpass  
41 locations, and on areas adjacent to residential development;



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- 1 F. Cluster groupings of plant material in informal patterns to break up the linear form of the
- 2 freeway;
- 3 G. Emphasize shade in key pedestrian areas along city crossroads;
- 4 H. Consider ease and efficiency of landscape and irrigation maintenance;
- 5 I. Avoid creating “hidden” areas for transient habitation;
- 6 J. Ensure that maintenance access areas, pull boxes, light poles, sign foundations and
- 7 impact devices are free of vegetation; and
- 8 K. Do not plant in areas of total shade.

9 Trees shall be used in mass plantings and groups, where possible, to provide vertical structure  
10 and relief, vegetative texture accent, and seasonal interest, while breaking up the monotony of  
11 the horizontal plane. Tree plantings shall be used to focus desirable views while screening  
12 undesirable ones.

13 Shrubs and accents shall be used to provide a year round layer of texture and color that shall  
14 serve to articulate the ground plane and provide intermediate vertical relief. Given limited right-  
15 of-way and plant spacing requirements, mass plantings of shrubs shall further delineate  
16 naturalistic or geometric forms as identified by the surrounding landscape configuration.

17 Developer shall lay out plant material as it relates to planting in the recovery zone in accordance  
18 with the ADOT *Roadway Design Guidelines*. Developer shall not place trees or shrubs so as to  
19 conceal the view of any highway sign or signal.

### 20 **450.3.2.1.1 Character Area 1**

21 Character Area 1, referred to as the Ahwatukee Neighborhoods, is located between 48th Street  
22 and a half mile east of Desert Foothills Parkway. It is defined by the proximity of existing  
23 medium-density residential development.

24 The Character Area 1 planting concept blends the landscape of the existing I-10/SR 202  
25 interchange landscape with that of the existing surrounding residential neighborhoods. Plants  
26 used in Character Area 1 must be from the plants listed in TP Attachment 450-1A. Per each  
27 category of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given  
28 for how much each species shall be represented in the final plan. The remaining percentage  
29 shall be at the discretion of the Landscape Architect. The landscape layout design shall create a  
30 transition between existing I-10 at Pecos Road landscape and the new South Mountain  
31 Freeway Character Area 1 landscape.

32 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type  
33 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30  
34 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

35 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5  
36 gallon minimum, 5 accents/cacti per tree.

37 Developer shall plant the portion of Character Area 1 landscape limits between the SRP  
38 easement and 5 feet south of the shared-use path in accordance with the requirements for  
39 Character Area 2.

### 40 **450.3.2.1.2 Character Area 2**

41 Character Area 2, referred to as the Ahwatukee Foothills, is located between a half mile east of  
42 Desert Foothills Parkway to just east of 51st Avenue. It is defined by the proximity of existing  
43 lower-density residential development, increased topography, and large areas of undisturbed  
44 native desert.

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1 The Character Area 2 planting concept is native desert. Salvaged desert trees and cacti and  
2 seeding with native desert shrubs must blend the freeway landscape with the adjacent South  
3 Mountain Park/Preserve (SMPP). All inventoried, salvageable plants must be located within  
4 Character Area 2, and each location must be identified with the plant’s ID number. Plants used  
5 in Character Area 2 must be from the plants listed in TP Attachment 450-1B. Per each category  
6 of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given for how  
7 much each species shall be represented in the final plan. The remaining percentage shall be at  
8 the discretion of the Landscape Architect.

9 Tree density shall be a minimum of 14 trees per acre using all the salvaged trees and  
10 supplementing them as needed with nursery grown trees at a minimum 15 gallon size. The  
11 minimum shrub size must be 1 gallon at a minimum density of 15 per acre. Saguaros must be at  
12 a minimum density of 1 per acre using all the salvaged saguaros and supplementing them as  
13 needed with purchased saguaros at a minimum size of 8-foot spear. Accents/cacti must be at a  
14 minimum density of 2 per acre, using all the salvaged material and supplementing as needed  
15 with nursery grown material at a minimum 1 gallon size. These minimums are in addition to the  
16 seeding.

17 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5  
18 gallon minimum, 5 accents/cacti per tree.

19 **450.3.2.1.3 Character Area 3**

20 Character Area 3, referred to as the Laveen Village, is located between just east of 51st Avenue  
21 and the Salt River. It is defined by agricultural fields, pastures, and low-density residential  
22 development. The portion of Character Area 3 landscape limits between just east of 51st  
23 Avenue (north of the GRIC boundary) to half a mile north of Elliot Road must be planted in  
24 accordance with the requirements for Character Area 2.

25 The Character Area 3 planting concept is agriculturally themed. Plantings must be arranged in  
26 straight lines to mimic the furrows and hedgerows found in the adjacent farm fields. Plants used  
27 in Character Area 3 must be from the plants listed in TP Attachment 450-1C. Per each category  
28 of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given for how  
29 much each species shall be represented in the final plan. The remaining percentage shall be at  
30 the discretion of the Landscape Architect.

31 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type  
32 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30  
33 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

34 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5  
35 gallon minimum, 5 accents/cacti per tree.

36 **450.3.2.1.4 Character Area 4**

37 Character Area 4, referred to as the Estrella Village, is located between the Salt River and I-10.  
38 It is defined by a mix of agricultural fields, pastures, and medium-density residential  
39 development transitioning to industrial and commercial land uses.

40 The Character Area 4 planting concept is to blend with the plant palette for the City of Phoenix’s  
41 Estrella Urban Village and the surrounding residential and industrial developments. Plants used  
42 in Character Area 4 must be from the plants listed in TP Attachment 450-1D. Per each category  
43 of plant (large tree, small tree, large shrub, small shrub, accent), minimum are given for how  
44 much each species shall be represented in the final plan. The remaining percentage shall be at  
45 the discretion of the Landscape Architect.

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1 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type  
2 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30  
3 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

4 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5  
5 gallon minimum, 5 accents/cacti per tree.

### 6 **450.3.2.1.5 Character Area 5**

7 Character Area 5, referred to as the I-10 Traffic Interchange, is located along I-10 between 75th  
8 and 43rd Avenues. It is defined by the existing freeway landscape character as well as the  
9 adjacent residential development to the north and industrial development to the south.

10 The Character Area 5 planting concept blends the new South Mountain Freeway landscape with  
11 that of the existing I-10 landscape. Plants used in Character Area 5 must be from the plants  
12 listed in TP Attachment 450-1E. Per each category of plant (large tree, small tree, large shrub,  
13 small shrub, accent), minimum are given for how much each species shall be represented in the  
14 final plan. The remaining percentage shall be at the discretion of the Landscape Architect. The  
15 landscape layout design shall create a transition between existing I-10 at 59th Avenue  
16 landscape and the new South Mountain Freeway Character Area 1 landscape.

17 The minimum tree size must be 15 gallons at a minimum density of 14 per acre. Desert type  
18 trees shall be multitrunk. The minimum shrub size must be 1 gallon at a minimum density of 30  
19 per acre. The minimum accent size must be 5 gallons at a minimum density of 10 per acre.

20 City crossroad minimums are trees at 15 gallon, 1 per 40 linear feet and accents/cacti at 5  
21 gallon minimum, 5 accents/cacti per tree

### 22 **450.3.2.1.6 Seeding**

23 Seeding shall be used in Character Area 2 as the method of establishing understory plants.  
24 Developer shall seed within the traffic clear zone/recovery areas. The seed mixes below  
25 represent the desired mix of species and density.

26 Developer shall provide low grasses and forbs seed mix in the bottom of all retention basins and  
27 within the traffic clear zone/recovery areas within Character Area 2. Developer shall apply clear  
28 zone seed mix within 20 feet behind guardrails/barrier walls, or within 20 feet of the inlets and  
29 outlets of drainage facilities or to the flow paths of the inlets and outlets of drainage facilities.  
30 Low grass and forb seed mix must be in accordance with TP Attachment 450-2A.

31 Developer shall apply tall background seed mix to revegetate areas beyond the traffic clear  
32 zone/recovery areas and all other unpaved disturbed areas, except maintenance roads, within  
33 Character Area 2. The Tall Background Seed Mix shall not be applied within 20 feet behind  
34 guardrails/barrier walls, or within 20 feet of the inlets and outlets of drainage facilities **or** to the  
35 flow paths of the inlets and outlets of drainage facilities. Tall background seed mix must be in  
36 accordance with TP Attachment 450-2B.

37 Developer shall apply wash seed mix as a landscape ecological restoration buffer next to the  
38 edge of drainage areas along the flow path and beyond the traffic clear zone/recovery areas  
39 within Character Area 2. Seed mix must be in accordance with TP Attachment 450-2C.

### 40 **450.3.3 Irrigation Design**

#### 41 **450.3.3.1 Irrigation Water Use and Conservation Plan**

42 Developer shall analyze and determine the projected water use, for all phases of the project, for  
43 planting in each Character Area identified in the *SR 202 South Mountain Freeway Landscape*  
44 *Architecture & Aesthetics Design Concept Report (LAADCR)*, which is included in the RIDs.

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1 Developer shall perform irrigation calculations for water needs during the construction phase,  
2 the plant establishment period, and the Maintenance Period. The irrigation calculations must  
3 account for estimated monthly water needs.

4 The annual irrigation water use during the Maintenance Period must not exceed amount  
5 specified in the applicable Third-Party Agreement. Developer shall prepare an initial Irrigation  
6 Water Use and Conservation Plan based on the Aesthetics and Landscape Plans. The initial  
7 Irrigation Water Use and Conservation Plan must include the following:

- 8 A. Cover page
- 9 B. Table of contents
- 10 C. Discussion, including the following:
- 11 D. Detailed methodology proposed to determine how much irrigation water will be applied  
12 during the planting, establishment, and maintenance phases of the contract. The Plan  
13 shall include an approved method of measuring soil moisture at the root balls of trees  
14 and shrubs at four locations per controller.
  - 15 1. Description of how the schedule will be developed and how water use will be  
16 monitored
  - 17 2. Plan for conserving irrigation water
  - 18 3. Plan for recording water meter use at regular monthly intervals and delivering the  
19 results for review
  - 20 4. Proposed controller programming schedule
  - 21 5. Description of planting design theory describing how the majority of plants to be used  
22 will be the lowest water users and where and how the higher water using plants will  
23 be located.
- 24 E. Appendices, including the following, at a minimum:
  - 25 1. Calculations.

26 At the same time as Initial Design Submittal of any landscape Submittal, Developer shall submit  
27 the initial Irrigation Water Use and Conservation Plan to ADOT for review and comment.

28 Developer shall prepare the final Irrigation Water Use and Conservation Plan based on the  
29 updated planting and irrigation design. At the same time as Final Design Submittal of any  
30 landscaping Submittal Developer shall submit the final Irrigation Water Use and Conservation  
31 Plan to ADOT for review and comment.

### 32 **450.3.3.2 Irrigation Requirements**

33 Developer shall not provide a permanent irrigation system for Character Area 2. Developer shall  
34 provide an irrigation system trunk main for ADOT's future use only, between just east of 51st  
35 Avenue (north of the GRIC boundary) to half a mile north of Elliot Road that matches the  
36 irrigation system for Character Area. Developer shall design the irrigation system in accordance  
37 with the following criteria:

- 38 A. Minimum design pressure 60 pounds per square inch;
- 39 B. Maximum pipe water velocity 5 feet per second;
- 40 C. Minimum 50 pounds per square inch operating pressure at individual remote control  
41 valve locations;
- 42 D. Minimum 86% distribution uniformity;
- 43 E. Include flow monitoring and flow control;

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- 1 F. Include remote monitoring of controllers through a central control;
- 2 G. Include the ability to operate the irrigation system with hand-held devices;
- 3 H. Include pressure compensating low-flow drip emitter system for all planting;
- 4 I. Trees and shrubs must be valved separately;
- 5 J. All control valves, mainlines, and pressure regulators must be placed a minimum of:
- 6 1. 20 feet behind curb and gutter;
- 7 2. 8 feet behind all barriers when along freeway mainline and ramps; or
- 8 3. Within first 5 feet behind sidewalks.
- 9 K. Irrigation pipes and equipment must comply with all applicable health code
- 10 requirements;
- 11 L. Irrigation systems for Character Areas 1, 3, 4, and 5 must tap into existing City of
- 12 Phoenix water lines;
- 13 M. Irrigation control system shall have the ability to monitor current weather conditions and
- 14 monitor soil moisture conditions at specific representative plant locations throughout the
- 15 project area using advanced soil sensing equipment; and
- 16 N. Irrigation control system shall have the ability to initiate, adjust, or cancel an irrigation
- 17 cycle based on actual real-time soil moisture readings.

**18 450.3.3.3 City Right-of-Way Irrigation**

19 Irrigation systems for landscape within the City of Phoenix right-of-way must be independent  
20 from the freeway irrigation system.

**21 450.3.4 Ground Treatment**

22 All rock mulch and rock riprap used for erosion/sediment control must be fractured/crushed rock  
23 that is angular in shape. Natural river-run materials, including rounded natural river  
24 rocks/cobblestones and pebbles, are not acceptable for erosion/sediment control. Granite mulch  
25 must comply with the gradation requirements listed in Table 450-4. All ground surfaces within  
26 the Project limits not paved with asphalt or concrete or to be seeded must receive 1 ¼ inch  
27 minus granite mulch where erosion is not a governing factor. Ground treatment is not required  
28 on maintenance roads, detention basins, and stormwater channels, unless otherwise specified  
29 in the Contract Documents.

| <b>Table 450-3<br/>Gradation Requirements</b> |                |
|---|----------------|
| <b>Passing Sieve</b>                          | <b>Percent</b> |
| 1 ¼ inch                                      | 100            |
| ¾ inch  | 60-80          |
| ½ inch  | 45-65          |
| No. 40  | 5-20           |
|   |                |

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- 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 450-4<br>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 Developer shall seed mountain cut slopes steeper than 1.5:1 (H:V). Mountain cut slopes steeper  
11 than 1.5:1 (H:V) does not require desert pavement.

### 12 **450.3.5 Aesthetics and Landscape Plans**

13 Developer shall prepare Full Elevations, Colored Renderings, and 3D Animations with  
14 MicroStation software of Aesthetic Architectural rustication for each Aesthetic Area. This  
15 includes roll plots, rendered in color, of the landscape design. Prior to preparing the Aesthetics  
16 and Landscape Plans as described below, Developer shall submit the Full Elevations, Colored  
17 Renderings, and 3D Animations to ADOT for review and comment.

18 Developer shall prepare Aesthetics and Landscape Plans that include the following:

- 19 A. Face sheet;
- 20 B. Standard sheets, if applicable;
- 21 C. Design sheet;
- 22 D. Summary sheet, including the following:
  - 23 1. Legends;
  - 24 2. General notes;
- 25 E. Rustication detail sheets;
- 26 F. Rustication layout sheets;
- 27 G. Landform graphics and inert materials detail sheets;
- 28 H. Landform graphics and inert materials layout sheets;
- 29 I. Planting and inert materials detail sheets;

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- 1 J. Planting and inert materials layout sheets;
- 2 K. Irrigation detail sheets, including the following:
- 3 1. Installation details for each product used;
- 4 2. Trenching;
- 5 3. Emitter layout;
- 6 L. Irrigation layout sheets, including the following:
- 7 1. Plans show layout of piping and placement of valves, controllers, backflow
- 8 preventers, and all other irrigation equipment;
- 9 M. SWPP index sheet; and
- 10 N. SWPP detail sheets, if applicable.

11 Developer shall submit Aesthetics and Landscape Plans to ADOT for review and comment.

**12 450.4 SUBMITTALS**

13 Table 450-6 reflects a nonexclusive list of Submittals identified in Section DR 450 of the TPs  
 14 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
 15 determine and submit all Submittals as required by the Contract Documents, Governmental  
 16 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
 17 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
 18 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
 19 formats described in Section GP 110.10.2.2 of the TPs:

| <b>Table 450-5<br/>Nonexclusive Submittals List</b> |                         |                         |                   |  |                          |
|---|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>                                   | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|   |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| Plant Inventory                                     | 4                       | 2                       | 1                 | Prior to ground disturbing activities  | DR 450.2.3               |
| Updated Plant Inventories                           | 4                       | 2                       | 1                 | 15 Business Days after parcels become available for Developer's use                | DR 450.2.3               |
| 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               |
| 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               |

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| <b>Table 450-5<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| Aesthetics and Landscape Master Plan   | 4                       | 2                       | 1                 | Prior to the first pre-design coordination meeting.   | DR 450.2.7               |
| Visual Analysis  | 4                       | 2                       | 1                 | After the first pre-design coordination 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                         |                         |                   |   |                          |

1

2

**End of Section**



## CONFORMED – AMENDED AND RESTATED

### 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<br>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.

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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; and
- 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.

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### 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<br>Stress Limits for Concrete |  |  |   |                    |  |   |
|---|--|--|---|--------------------|--|---|
|   |  | Before Time-<br>Dependent<br>Losses      | After Losses  |                    |  |   |
|   |  |  | DC +<br>Prestress   | Service<br>Limit I | Service<br>Limit III   | 0.5(DW +<br>DC +<br>Prestress) +<br>(LL + IM) |
| <b>Compression (ksi)</b>                  |  | $0.6f'_{ci}$                             | $0.45f'_c$  | $0.6\phi_w f'_c$   | N/A  | $0.4f'_c$                                     |
| <b>Tension<br/>(ksi)</b>                  | Any region of<br>a prestressed<br>component in<br>which<br>prestressing<br>causes<br>compressive<br>stresses and<br>service load<br>effects cause<br>tensile<br>stresses | N/A                                      | 0 for post-<br>tensioned<br>boxes<br><br>N/A for<br>precast<br>prestressed<br>members | N/A                | $0.0948\sqrt{f'_c}$<br>(For post-<br>tensioned<br>structures<br>built on<br>falsework,<br>this value<br>shall be<br>zero. No<br>tension shall<br>be allowed. | N/A   |
|   | Other Regions  | $0.0948\sqrt{f'_{ci}}$<br>$\leq 0.2$ 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:

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- 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 must have a minimum 1 inch cover over reinforcing  
17 steel to rustication. Bridge barriers where pedestrian traffic is accommodated must be  
18 combination pedestrian-bridge barriers complying with NCHRP Report 350, *Recommended*  
19 *Procedures for the Safety Performance Evaluation of Highway Features* or the AASHTO *Manual*  
20 *for Assessing Safety Hardware (MASH)* and AASHTO *LRFD Bridge Design Specification*  
21 requirements.

22 Bridges, where pedestrian traffic is accommodated on the bridge, over roadways or railroads  
23 must have pedestrian fencing. Fencing on bridges must be 1/2 inch - #13 expanded metal,  
24 flattened smooth with no sharp edges.

25 Bridge railings for system-to-system traffic interchanges must be a 44-inch barrier. Outside  
26 bridge railings for all other bridges must be a 34-inch barrier. Median half barriers for all bridges  
27 must be 44-inches; median full barriers on single bridge deck slabs may be 42-inches. Bridge  
28 barriers must not be slip formed, except 42-inch median full barriers.

### 29 **455.3.2.7 Approach Slabs and Protective Pavement Systems**

30 Developer shall provide a 15-foot minimum length reinforced concrete bridge approach slab at  
31 the ends of each new bridge. The bridge approach slabs must extend the full width of the  
32 roadway. For concrete pavement, Developer shall provide a protective pavement system with  
33 separate joint systems to address bridge movement and pavement movement as to not induce  
34 loads on the bridge.

35 Barriers on approach slabs and protective pavement systems must have a minimum 1 inch  
36 cover over reinforcing steel to rustication.

### 37 **455.3.2.8 Bridge Deck**

38 All structural deck slabs must be concrete. Developer shall minimize the number of deck joints  
39 wherever possible. Aluminum, finger, or sliding plate bridge joints must not be used. The bridge  
40 deck designs must:

- 41 A. Be controlled by Service Limit State I;
- 42 B. Be considered elastic for bridge deck behavior;
- 43 C. Be designed by the working stress method;
- 44 D. Have allowable tensile stress in reinforcing steel,  $f_s$ , be limited to 24 ksi; and

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1 E. Have a minimum clear cover for reinforcing steel in new deck slabs of 2.5-inches for top  
2 reinforcement and 1-inch for the bottom reinforcement for corrosion protection.

3 New bridge deck thicknesses must be designed in 0.5-inch increments with the minimum  
4 thicknesses shown in Table 455-3. Effective span lengths greater than 13 feet is not be allowed.

| Table 455-3<br>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

5 Sidewalks on bridges must be in compliance with ADA standards. The minimum width of  
6 useable sidewalk on bridges must be 6'-0".

### 7 **455.3.3 Pedestrian Bridges**

8 Developer shall design pedestrian bridges in accordance with *AASHTO LRFD Guide*  
9 *Specifications for the Design of Pedestrian Bridges* and City of Phoenix standards and  
10 guidelines. The minimum vertical clearance on the bridge must be 10'-0" and the minimum  
11 horizontal clearance on the bridge must be 10'-0".

### 12 **455.3.4 Retaining Walls and Wingwalls**

13 Developer shall provide 42-inch metal hand rail on top of retaining walls of 48 inches in height or  
14 greater, except when protected by barrier wall against the top of retaining wall.

15 Mechanically stabilized earth (MSE) walls must not be used to support abutment foundations on  
16 the Project.

### 17 **455.3.5 Noise Walls**

18 Developer shall design noise walls at the locations as determined by Developer in accordance  
19 with Section DR 420 of the TPs.

20 Noise walls must be designed in accordance with *AASHTO LRFD Bridge Design Specifications*.  
21 For noise walls supported on retaining walls (i.e., combination walls), strength and serviceability  
22 requirements must apply per *AASHTO LRFD Bridge Design Specifications* for load conditions  
23 that include wind loads.

24 Fire hose access holes must be provided at noise walls at approved locations. Covers must be  
25 placed on each of the fire hose access holes. Developer shall coordinate with the local fire  
26 departments adjacent to the Project to obtain design requirements and approval for locations  
27 and cover type.

28 Noise walls adjacent to landscaped areas where failure due to vehicular collision does not result  
29 in adjacent property damage or debris impact to travel ways; do not require designs to  
30 accommodate collision forces.

31 Noise walls located on bridges and adjacent to traffic hazards must be designed to not allow a  
32 catastrophic failure due to vehicle impact load and must limit the risk of falling debris resulting  
33 from vehicle impact. Noise walls on the bridges must be placed behind bridge barrier.

34 Masonry walls shall be designed to prevent water seepage into the wall system.

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### 1 **455.3.6 Drainage Structures, Sign Structures, Temporary Structures**

2 Developer shall design drainage structures, sign structures, and temporary structures in  
3 accordance with the applicable standards in Table 455-1.

### 4 **455.3.7 Plans and Design Calculations**

#### 5 **455.3.7.1 Plans**

6 Developer shall request structure names and structure numbers for each bridge from ADOT by  
7 the Initial Design Submittal. The following bridges have been assigned structure numbers and  
8 names:

9 A. Str. No. 20024 – UPRR OP

10 B. Str. No. 20025 – SB Frontage Rd UPRR OP

11 C. Str. No. 20026 – NB Frontage Rd UPRR OP

12 Developer shall prepare bridge plans in accordance with the ADOT *Standardized Dictionary of*  
13 *Work Tasks*. Multiple bridge designs must not be combined on the same Plans. Bridge Plans  
14 must be submitted separately for individual bridges. The structure Plans must include the  
15 following:

16 A. General plan, including Plan, elevation, and typical section;

17 B. General notes, including bridge load rating;

18 C. Foundation sheets;

19 D. Abutment details;

20 E. Wing wall details;

21 F. Pier details;

22 G. Slope protection;

23 H. Superstructure sheets;

24 I. Bearings;

25 J. Prestressing details (if applicable);

26 K. Girder layout and elevation;

27 L. Girder details;

28 M. Special details (if applicable); and

29 N. Pile records (if applicable).

#### 30 **455.3.7.2 Design Calculations**

##### 31 **455.3.7.2.1 Structure Calculations**

32 Developer shall prepare a Structure Calculations Report that includes a table of contents, all  
33 structure calculations, references to computer programs in the calculations, and computer  
34 documentation that includes name of program, vendor, version, and release date. The Structure  
35 Calculations Report must be bound and all pages must be numbered. Concurrent with the Final  
36 Design Submittal of a structure Plan, Developer shall submit a Structures Calculations Report(s)  
37 to ADOT.

##### 38 **455.3.7.2.2 Bridge Load Rating**

39 Developer shall load rate all NBI qualified bridges carrying vehicular traffic (20ft in length or  
40 more), including culverts that are defined as bridges and prepare a Load Rating Report(s) in  
41 accordance with the AASHTO *Manual for Bridge Evaluation*. The minimum operating load rating

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1 factor for all new bridges must be 2.0. The minimum length of structures that are required to be  
 2 load rated and the loading requirements must be in accordance with the AASHTO *Manual for*  
 3 *Bridge Evaluation*. At the same time as the Initial Design Submittal of a bridge Plan, Developer  
 4 shall submit an initial Load Rating Report(s) to ADOT for review and comment. At the same time  
 5 as the Final Design Submittal of a bridge Plan, Developer shall submit a final Load Rating  
 6 Report(s) to ADOT for review and comment.

7 **455.4 SUBMITTALS**

8 Table 455-4 reflects a nonexclusive list of Submittals identified in Section DR 455 of the TPs  
 9 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
 10 determine and submit all Submittals as required by the Contract Documents, Governmental  
 11 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
 12 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
 13 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
 14 formats described in Section GP 110.10.2.2 of the TPs:

| <b>Table 455-4<br/>Nonexclusive Submittals List</b>  |                  |                  |            |  |                   |
|--|------------------|------------------|------------|--|-------------------|
| 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          | Concurrent with the Final Design Submittal of a structure Plan                 | 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                  |                  |            |  |                   |

15

16

**End of Section**

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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<br>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 Companies, 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.



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### 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.

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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.

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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 110.10.2.2 of the TPs:

| Table 457-2<br>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**

# CONFORMED – AMENDED AND RESTATED

## 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<br>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

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### 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 construction, 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; and
  - 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.

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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 (mcd/m<sup>2</sup>/lux);
- 4 B. Yellow long line markings: 300 mcd/m<sup>2</sup>/lux; and
- 5 C. White arrows, symbols, legends, short lines: 350 mcd/m<sup>2</sup>/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 (mcd/m<sup>2</sup>/ln) and
- 8 B. Yellow markings: 200 mcd/m<sup>2</sup>/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 Developer shall match existing striping type for all proposed striping that is placed on Non-  
13 Maintained Elements to be owned by ADOT.

### 14 **460.3.3.1 Raised/Reflective Pavement Markers**

15 Reflective raised pavement markers shall be installed on the mainline, ramps, and frontage  
16 roads in accordance with ADOT *Signing and Marking Standard Drawings*.

### 17 **460.3.3.2 Pavement Marking Plans**

18 Developer shall prepare permanent pavement marking plans that show edge and lane line  
19 striping, stop lines, crosswalks, arrows, legends, gore areas, symbols, elongated route markings  
20 and legends, raised pavement markers, object markers, delineation, or other required markings  
21 in accordance with the MUTCD and the *Arizona Supplement to the MUTCD*.

### 22 **460.3.4 Signs**

23 Signing layout must comply with the ADOT *Signing and Marking Standard Drawings* and Good  
24 Industry Practice. Developer shall design all components of the signing system for the Project to  
25 provide a complete and functional system that complies with the following requirements:

- 26 A. During all phases of construction and until such time that the permanent signs are in  
27 place, Developer shall relocate existing signs or provide temporary signs;
- 28 B. Remove and dispose of all conflicting signs and sign structures;
- 29 C. All additional signs and support structures, other than sign bridges, must be new;
- 30 D. In the event Developer proposes to install new signs on existing sign supports,  
31 Developer shall perform structural calculations to verify that the existing sign support can  
32 support the new sign. No later than the Final Design Submittal, Developer shall include  
33 such calculations with the Design Documents; and
- 34 E. Modification or relocation of signs or support structures is not permitted.

35 Developer shall coordinate with Grand Canyon State Logo Signs, a program of ADOT, for the  
36 locations of specific service logo signs at each interchange and exit ramps. Grand Canyon State  
37 Logo Signs is responsible for contracting the fabrication and installation of the specific service  
38 logo signs.

39 The signing system must include HOV violation signs indicating a \$400 minimum fine.

40 All warning signs must use fluorescent yellow sheeting.

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1 All signs to be maintained by ADOT during the Maintenance Period must comply with the ADOT  
2 *Traffic Engineering Policy Guidelines and Procedures* 480 for sign sheeting.

3 Developer shall not locate signs where they will be obstructed by future vegetation growth.  
4 Developer shall minimize placement of non-regulatory signs to obscure rustication patterns.

### 5 **460.3.4.1 Sign Panels**

6 All sign panels must be aluminum. Developer shall not use overlaid sign panels or overlaid  
7 plywood sign panels. All ground mounted sign supports used must be in accordance with the  
8 ADOT *Signing and Marking Standard Drawings*. Developer shall not use U-channel posts for  
9 sign mountings.

### 10 **460.3.4.2 Overhead Sign Structures**

11 Minimum sign clearance for overhead signs must be in accordance with TP Attachment 440-1  
12 over the entire width of the pavement, including shoulders and gutters. The minimum sign  
13 clearance for signs mounted on bridge structures must not be less than the bridge clearance  
14 requirements specified in the Contract Documents. The bottom of signs mounted on bridge  
15 structures must be 6 inches above the soffit of the structure. Developer shall locate overhead  
16 sign structures required in areas other than the mainline and ramps in such a manner as to  
17 provide a minimum of 2 feet of horizontal clearance from the face of vertical curb.

### 18 **460.3.4.3 Signing Plans**

19 Developer shall prepare a Signing Concept Plan showing all existing and proposed guide,  
20 warning, regulatory, marker signs, and DMS and their disposition for the Project. At the same  
21 time as the Initial Design Submittal for signing Plans, Developer shall submit a Signing Concept  
22 Plan to ADOT.

23 Developer shall prepare the following Plans as part of the Design Documents:

- 24 A. Signing Plans and signing summary sheets that include the location of signs, the size of  
25 the sign, the legend of the sign, and the mounting type
- 26 B. Sign format Plan sheets for all signs that are not included in the ADOT *Manual of*  
27 *Approved Signs*. Developer shall develop sign formats using SignCAD and ADOT's  
28 current policy for the formatting of guide signs.
- 29 C. Sign elevation sheets that show the sign position in relation to the travel lanes and the  
30 position of the sign lighting fixtures, if required, in relation to the sign panel for all  
31 overhead signs, spacing between stringers, and the number of stringers used.
- 32 D. Sign mounting details for all overhead signs mounted on bridges, non-standard sign  
33 structures details, and non-standard sign structure foundations details

### 34 **460.3.5 Traffic Signal Systems**

35 Traffic signal layout must comply with the ADOT *Signal and Lighting Standard Drawings*,  
36 MUTCD, and the ADOT *Arizona Supplement to the MUTCD*. Developer shall design all  
37 components necessary to provide a complete and functional traffic signal system that complies  
38 with the following requirements:

- 39 A. Developer shall modify, as appropriate, any existing traffic signals affected by  
40 Developer's design.
- 41 B. Developer shall coordinate with the appropriate Governmental Entities for  
42 interconnection and synchronization of traffic signal networks.
- 43 C. The traffic signal system must:

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- 1 1. Provide traffic movement based on Developer's analysis;
- 2 2. Provide communication between all traffic signals and ADOT traffic operations
- 3 center in accordance with Section DR 466 of the TPs;
- 4 3. Accommodate pedestrians as required by local, state, and federal regulations, and
- 5 the Contract Documents;
- 6 4. Include vehicle detection in accordance with Section DR 460.3.5.1 of the TPs,
- 7 closed circuit television (CCTV) remote monitoring in accordance with Section DR
- 8 466 of the TPs, and communication links for signal coordination;
- 9 5. Provide temporary traffic signals at any location that currently has traffic signals and
- 10 that are removed for construction or locations that are required to facilitate
- 11 maintenance of traffic; and
- 12 6. Provide a traffic signal uninterruptible power supply (UPS) for each traffic signal to
- 13 maintain two full hours of operation of the traffic signals in the event of a power
- 14 outage that complies with the requirements in TP Attachment 460-1.

15 All signal cabinets must be TS2 Type 1 with Econolite Cobalt Controllers. Developer shall  
16 design all signalized intersection approaches with adequate sight distance to allow for right turn  
17 on red in accordance with the MUTCD, ADOT *Arizona Supplement to the MUTCD*, and the  
18 ADOT *Roadway Design Guidelines*.

### 19 **460.3.5.1 Video Detection**

20 Video detection must comply with the following requirements.

#### 21 A. System

- 22 1. Vehicle and bicycle presence detection, vehicle and bicycle counting, pedestrian
- 23 presence detection, traffic data collection, and inverse direction detection
- 24 2. Number of detection zones
- 25 a. 24 vehicle presence zones
- 26 b. 8 bicycle presence regions
- 27 c. 8 pedestrian zones
- 28 d. 8 traffic data zones
- 29 e. 8 inverse direction zones

#### 30 B. Cameras must be forward looking infrared cameras.

- 31 1. Resolution: QVGA (336 x 256)
- 32 2. Frame rate: 30 frames per second
- 33 3. Compression: H.264, MPEG-4, or MJPEG

#### 34 C. Housing

- 35 1. Material: Aluminum

#### 36 D. Communication

- 37 1. Contact closures: 3 for ETH versions, direct or via optional ETH interface (PN 10-
- 38 6075), 24 for BPL versions, 4 outputs via TI x-stream EDGE (PN 10-6055), up to 20
- 39 extra outputs via up to 5 4/Os xp expansion boards
- 40 2. Ethernet: For communication of output state events, configuration & monitoring
- 41 (streaming video)
- 42 3. Input power: 12-42VDC, 12-30VAC



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- 1 4. Current consumption: BPL: < 230 mA @ 24VDC (< 320mA @ 24VDC peak at  
2 startup), ETH: < 130 mA @ 24VDC (< 250mA @ 24VDC peak at startup)
- 3 5. Power consumption: BPL: < 5.5W (< 7.5W peak at startup), ETH: < 3.1W (< 6W  
4 peak at startup)
- 5 E. Environmental
- 6 1. Shock and vibration: NEMA TS2 specs
- 7 2. Materials: All weatherproof (UV-resistant)
- 8 3. Protection grades: Housing = IP68, Connectors = IP67
- 9 4. Temperature range: from -29 degrees to 165 degrees Fahrenheit
- 10 5. FCC: FCC part 15 Class A

### 11 **460.3.6 Lighting**

12 Developer shall design a continuous LED urban roadway lighting system in accordance with the  
13 requirements in the *AASHTO Roadway Lighting Design Guide*, the *ADOT Standard*  
14 *Specifications for Road and Bridge Construction*, and the *ADOT Standard Drawings*. Developer  
15 shall upgrade all lighting to LED on I-10 (Papago Freeway) from 75th Avenue to 43rd Avenue.  
16 The lighting system must provide illumination and uniformity levels on the highway in  
17 accordance with the *AASHTO Roadway Lighting Design Guide*. Developer shall design frontage  
18 road lighting for the Project.

19 LED lighting must have a correlated color temperature of 4000° Kelvin.

20 Where opposing traffic shares a median barrier, roadway lighting is to be on a median lighting  
21 system that lights the freeway from the median edge line to the outside shoulder edge line in  
22 both directions. Service and system interchanges must have supplemental lighting with high  
23 mast poles and other lighting standards to attain lighting levels. On freeway ramps, roadway  
24 lighting must light the ramp between the lane lines from the gore area to within 75 feet of the  
25 crossroad. The required level of maintained horizontal illuminance, measured in foot-candles,  
26 on the roadway must be an average of 0.6 to 0.9 for intermediate areas and 0.6 to 1.1 for  
27 commercial areas, with a 0.2 minimum, with an average to minimum uniformity ratio of 3:1. The  
28 light loss factor used in light level calculations must be 0.8, unless a manufacturer's fixture  
29 recommendation is less than 0.8. Developer shall not use a light loss factor greater than 0.8.

30 Developer shall design and construct an underdeck lighting system for all bridge crossings of  
31 the roadways, the railroad, and the pedestrian path at the Laveen Area Conveyance Channel.  
32 Developer shall provide lighting for pedestrian crossings with a minimum of 1 candela per  
33 square foot.

34 Each LED light fixture shall support installation of an Electronic Control Module (ECM) for  
35 dimming and fixture performance monitoring.

36 Developer shall maintain consistent light levels within the Project ROW when adjacent to  
37 existing residential properties. Developer shall minimize luminaire glare and trespass lighting  
38 into neighboring residences. Developer shall check the light levels at the edge of the Project  
39 ROW every 100 feet along the entire Project limits to verify the light levels and to avoid any  
40 nuisance light outside the roadway prism. The roadway lighting design must keep light levels at  
41 the edge of right-of-way less than 0.20 foot-candles. Developer shall prepare a Photometric  
42 Analysis Strip Map that displays all 0.2 iso-contours. Developer shall reevaluate for avoidance  
43 any 0.2 iso-contour that falls outside of the Project ROW, adjacent to neighboring residences.  
44 As part of the Lighting Design Report, Developer shall submit the Photometric Analysis Strip  
45 Map to ADOT.

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1 Developer shall perform load calculations and voltage drop calculations for each circuit.  
2 Developer shall not use more than a 3 percent voltage drop from the load center cabinet to the  
3 branch circuits to size conductors. The conductors from the load center to the point of service  
4 must be sized using a 1 percent voltage drop. All new lighting load center cabinets must be  
5 metered for a maximum of 480 volts.

6 Developer shall design the freeway lighting circuits in such a manner as to minimize the total  
7 loss of lighting to an area in the event of a circuit failure. At a minimum, the design must include  
8 the following:

- 9 A. Median poles with two or more lights must have a minimum of two circuits within each  
10 pole. Adjacent poles may be on the same circuit(s), but luminaire orientation must be  
11 varied (staggered by  $180^{\circ}\pm$ ) to minimize the effect of all luminaires in a circuit being on  
12 the same side of the barrier wall;
- 13 B. High mast poles of 100 feet, 120 feet, and 150 feet, containing approximately 4, 6 or 8  
14 luminaires respectively, must have a minimum of two circuits within each pole. Within  
15 limitations, two adjacent poles, or two nearby poles in a staggered configuration, must  
16 not be on the same two circuits. Within a quadrant area of a directional interchange, a  
17 minimum of 6 to 8 circuits must be maintained; and
- 18 C. Light poles containing one luminaire each must not have adjacent single poles on the  
19 same circuit unless there are special circumstances.

20 Developer shall limit circuit size based on voltage drop and conductor size. The number of  
21 circuits contained within one load center cabinet, and the location of each cabinet, may be  
22 governed by power company requirements.

23 Light poles must comply with the requirements in the AASHTO *Standard Specifications for*  
24 *Structural Supports for Highway Signs, Luminaires, and Traffic Signals*. All new light poles must  
25 be aluminum, except high mast poles and median barrier mounted type U poles. Developer  
26 shall provide a permanent level maintenance pad for all high mast lighting. Developer shall  
27 provide a maintenance platform where the roadway side slope is greater than 4:1 (H:V).

28 Developer shall provide a pull box at the intersection of each foundation conduit and the  
29 mainline conduit that runs parallel with the freeway. All lighting pull boxes and lids must comply  
30 with ANSI/SCTE 77 requirements with a Tier 22 load requirement and must be tamper-resistant.

31 Developer shall prepare a Lighting Design Report that provides all necessary engineering data  
32 to support the conclusions arrived at by Developer for the roadway lighting design. The Lighting  
33 Design Report must include equipment type, photometric analyses, layout, voltage drop  
34 calculations, load calculations, and conductor sizing information. The Lighting Design Report  
35 must be signed and sealed by a Professional Engineer. At the same time as the Initial Design  
36 Submittal of the roadway lighting system Developer shall submit the Lighting Design Report to  
37 ADOT.

### 38 **460.3.6.1 Power Metering Requirements**

39 Developer shall design lighting power supplies to separately meter the following lighting  
40 systems:

- 41 A. Power supplied for all Non-Maintained Elements to be owned by ADOT, including the  
42 following:
  - 43 1. Mainline lighting;
  - 44 2. Ramp lighting;
  - 45 3. Frontage road lighting;

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- 1           4. Crossroad street lighting; and  
 2           5. Underdeck lighting on all bridge crossings of roadways.  
 3        B. Power supplied for elements within the Maintenance Service Limits, including the  
 4        following:  
 5           1. Mainline lighting;  
 6           2. Ramp lighting;  
 7           3. Frontage road lighting;  
 8           4. Crossroad street lighting; and  
 9           5. Underdeck lighting on all bridge crossings of ADOT roadways and the railroad.  
 10       C. Power supplied for all Non-Maintained Elements to be owned by City of Phoenix  
 11           1. Frontage road lighting;  
 12           2. Street and crossroad lighting (including Durango Connector);  
 13           3. Pedestrian path lighting at Laveen Area Conveyance Channel;  
 14           4. Pedestrian bridge lighting (at Elwood); and  
 15           5. Underdeck lighting on all bridge crossings of City crossroads.

### 16   **460.3.6.2     Lighting Plans**

17   Developer shall prepare lighting system Plans for the Project. The lighting system Plans must  
 18   show all existing and new electrical features, all details, pole schedules, conductor, and lighting  
 19   circuit schedules, distribution schedule for each lighting service, notes, and special provisions.  
 20   The plans must include information regarding conduit used to intercept existing circuits to be  
 21   used for new lighting and for new conduit crossing locations for median lighting. The lighting  
 22   system plans must also include lighting summary sheets giving the location of the lighting poles,  
 23   pull box, and load centers, and the conductor summary.

### 24   **460.4 SUBMITTALS**

25   Table 460-2 reflects a nonexclusive list of Submittals identified in Section DR 460 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:

| <b>Table 460-2<br/>Nonexclusive Submittals List</b> |                             |                         |                   |   |                              |
|---|-----------------------------|-------------------------|-------------------|---|------------------------------|
| <b>Submittals</b>                                   | <b>Level of<br/>Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal<br/>Schedule</b>                       | <b>Section<br/>Reference</b> |
|   |                             | <b>Hardcopies</b>       | <b>Electronic</b> |   |                              |
| Traffic Software                                    | 3                           | 1                       | 1                 | With the Basis of<br>Design Report                  | DR 460.2.2                   |
| Sign Inventory                                      | 5                           | 2                       | 1                 | Prior to construction                               | DR 460.2.3                   |
| Traffic Report(s)                                   | 5                           | 2                       | 1                 | Prior to any highway<br>Initial Design<br>Submittal | DR 460.3.2                   |

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| <b>Table 460-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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               |
| <p>*Levels of Review</p> <ol style="list-style-type: none"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |   |                          |

1  
2

**End of Section**

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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<br>Standards |        |   |
|--------------------------|--------|---|
| No.                      | Agency | Name  |
| 1                        | FHWA   | Manual on Uniform Traffic Control Devices (MUTCD) |
| 2                        | ADOT   | Arizona Supplement to the MUTCD                   |
| 3                        | ADOT   | ENG 07-3 Work Zone Safety and Mobility 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; and
- 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 110.02.6 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 07-3 Work Zone Safety and Mobility Policy*.  
24 The TMP must include the 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 Companies  
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; and
- 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. Acceleration lanes must be designed to comply with the requirements in Section DR 440  
 2 of the TPs;
- 3 D. All temporary auxiliary lanes and extensions for exit ramps must be provided with  
 4 temporary overhead lighting; and
- 5 E. A minimum 2-foot lateral reaction distance must be provided for any temporary barrier  
 6 device, including portable temporary concrete barrier.

### 7 **462.3.1.2 Lanes and Shoulders**

8 The minimum allowable lane widths are 11 feet on the mainline, Pecos Road, and 59th Avenue  
 9 and 10 feet on the crossroads. Developer shall maintain the minimum number of lanes as  
 10 reflected in Table 462-2.

| Table 462-2<br>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                    | Maintain the number of existing 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                        |
|   |  |

11 Differential pavement elevations within the same travel lanes or adjacent travel lanes will not be  
 12 allowed.

13 A nominal two-foot right and left shoulder must be provided during all phases of construction.

### 14 **462.3.1.3 Pedestrian and Bicycle Access**

15 Developer shall maintain and provide access along existing sidewalks, trails, bike lanes, and  
 16 intersections along all streets. Access along crossroads through bridge construction limits must  
 17 be maintained at a minimum on one side at all times. If access cannot be maintained, Developer  
 18 shall prepare a Pedestrian Access Modification/Closure Request that includes plans showing  
 19 the proposed modification/Closure and signs and indicating the applicable ADA path of travel  
 20 and associated ADA requirements. At least 10 Business Days prior to the planned  
 21 modification/Closure, Developer shall submit the Pedestrian Access Modification/Closure  
 22 Request to ADOT and the applicable Governmental Entities for review and comment.

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### 1 **462.3.1.4 Detours**

2 Developer shall prepare Detour Plans for all proposed detours. Detour Plans must include  
3 detour dates and duration, horizontal and vertical clearances, weight restrictions, and all  
4 proposed signs, and must ensure that all detoured vehicle types can negotiate the detoured  
5 path. The Detour Plans must also address disruptions to public services, including the following:

6 A. Emergency responders;

7 B. U.S. Mail and parcel delivery services;

8 C. School buses;

9 D. Public transportation services;

10 E. Refuse collection;

11 F. Normal commercial activities (e.g., materials and products pick-ups and deliveries,  
12 customer access); and

13 G. Safe routes to school plans.

14 At least 15 Business Days prior to implementation of the proposed detour, Developer shall  
15 submit Detour Plans to ADOT and all applicable Governmental Entities.

### 16 **462.3.1.5 Truck Routes**

17 Developer shall submit all truck routes, and any subsequent modifications to truck routes in  
18 effect, to ADOT and the applicable Governmental Entities for review and approval, in their sole  
19 discretion. Developer shall notify ADOT in writing a minimum of 20 Business Days prior of any  
20 proposed reduction of current vertical or horizontal clearance.

### 21 **462.3.1.6 Mail Services**

22 Developer shall temporarily or permanently relocate mail boxes, as required, in such a manner  
23 as to permit uninterrupted mail services. Developer shall comply with all applicable  
24 Governmental Entity requirements for the relocation of mail boxes.

### 25 **462.3.2 Traffic Control Plans**

26 Developer shall prepare Traffic Control Plans that provide for all construction stages and  
27 phasing in accordance with the requirements of the Contract Documents. The Traffic Control  
28 Plans must include any proposed changeable message board legends and proposed messages  
29 on existing DMS. Developer shall coordinate with all appropriate Governmental Entities and  
30 affected parties in the development of the Traffic Control Plans. Developer shall design Traffic  
31 Control Plans without the use of DPS. Prior to work involving traffic, Developer shall submit  
32 Traffic Control Plans to ADOT for approval. Developer shall obtain all permits and approvals  
33 from all applicable Governmental Entities.

### 34 **462.3.3 Lane and Shoulder Closures**

35 At least 10 Business Days in advance of any Lane Closure, except for major Lane Closures and  
36 Lane Closures in cases of Emergency, Developer shall submit a written Lane Closure Request  
37 along with Traffic Control Plans to ADOT for approval in ADOT's good faith discretion. ADOT  
38 will input all Closures into the ADOT Highway Condition Reporting System upon ADOT's  
39 approval of the Lane Closure Request or, if possible, in cases of Emergency. Approval is  
40 subject to availability as set forth in Section 6.5.2.1 of the Agreement. Developer shall  
41 participate in ADOT training prior to obtaining read access to the ADOT highway condition  
42 reporting system. Developer shall notify ADOT immediately as soon as Developer becomes  
43 aware of a delayed or canceled scheduled Lane Closure.



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1 Developer shall coordinate Lane Closure times with adjacent projects that may affect traffic  
 2 during the same period and disclose all adjacent project Closures when requesting Lane  
 3 Closures.

4 Developer shall not close two adjoining corridors in the same direction at the same time.  
 5 Developer shall not close two corridors that would act as alternates to each other at the same  
 6 time.

7 **462.3.3.1 Freeway and Ramps**

8 Unless approved by ADOT in its sole discretion, full or partial Lane Closures must occur only  
 9 during the periods reflected in Table 462-3. Developer shall comply with all permit requirements  
 10 for each applicable Governmental Entity for all cross road closures and restrictions. Unless the  
 11 Closure results from construction emergencies or non-foreseeable events, Developer shall  
 12 submit proposed freeway or ramp Closures occurring outside the noted hours to ADOT for  
 13 approval not less than 10 Business Days prior to the first day of such proposed Closure. Lane  
 14 Closure times include setup and take down of all traffic control devices.

15 A full Closure must not exceed 3 miles. During any partial Closure, Developer shall maintain a  
 16 minimum of two open through lanes, unless approved otherwise by ADOT.

| <b>Table 462-3<br/>Allowable Lane Closure Periods</b> |                                 |
|---|---------------------------------|
| <b>Nighttime Lane Closures</b>                        | <b>Full Weekend Closures</b>    |
| 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                       |                                 |

17 Developer shall not implement a full Closure of mainline lanes in both directions at the same  
 18 time. Developer shall not implement rolling Closures to transfer any equipment or perform any  
 19 Work except at night with ADOT approval a minimum of 10 Business Days in advance of the  
 20 proposed rolling Closure. Developer shall not implement consecutive ramp Closures unless  
 21 both are within an ADOT-approved full Closure.

22 Major Lane Closures are Closures that reduce the number of mainline lanes to less than three  
 23 as determined by ADOT at its sole discretion and that require a major Lane Closure approval  
 24 process. In order to obtain approval for a major Lane Closure, Developer shall prepare Major  
 25 Lane Closure Package(s) that contains the following:

- 26 A. Location and vicinity maps showing the State highway(s), local street network, and other  
 27 adjacent Lane Closures or nearby work that may affect traffic during the same period  
 28 (including special events);

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- 1 B. Dates, times, and locations of the Lane Closure(s);
- 2 C. Description of the Work being performed during the Lane Closure(s);
- 3 D. Description of each Lane Closure and its anticipated effect on traffic;
- 4 E. Amount of expected delay and corresponding queue length for each Lane Closure;
- 5 F. Summary of TMP strategies that Developer shall use to reduce delay and motorist
- 6 inconvenience during the Lane Closure(s);
- 7 G. A copy of the TMP; and
- 8 H. A contingency plan.

9 A minimum of 15 Business Days in advance of the proposed major Lane Closure, Developer  
10 shall submit Major Lane Closure Package(s) to ADOT for approval.

### 11 **462.3.3.2 Crossroads**

12 Acceptable Lane Closures on crossroads must be in accordance with permit requirements from  
13 the applicable Governmental Entity.

### 14 **462.3.3.3 Holiday Restrictions**

15 Lane or freeway Closures are not allowed on holidays or weekends that are adjacent to or  
16 following a holiday. The restricted holidays include New Year's Day, Martin Luther King, Jr. Day,  
17 President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day,  
18 Thanksgiving Day, and Christmas Day. Lane Closures will not be allowed between  
19 November 15 and the weekend following January 1. Developer shall remove all traffic control for  
20 temporary Lane Closures prior to holidays or weekends that adjoin a holiday.

### 21 **462.3.3.4 Special Events Restrictions**

22 Developer shall coordinate Work activities with local special events in the area so that the  
23 special events will not be affected. Special events are events that attract more than  
24 30,000 people per day and may occur during the Term. Lane restrictions may be denied if  
25 severe traffic congestion is expected. Special events may include events that attract fewer  
26 people, but are considered special events by the applicable Governmental Entities due to  
27 economic impact to the community or events that attract dignitaries or politicians. Partial or full  
28 Closures are not permitted where a special event is occurring.

29 Developer is responsible for identifying and verifying the actual dates of all special events and  
30 for planning Work activities around the events. Special events may take place at various  
31 venues, including the following locations:

- 32 A. University of Phoenix Stadium, Glendale;
- 33 B. Phoenix International Raceway, Avondale;
- 34 C. Chase Field, Phoenix;
- 35 D. US Airways Center, Phoenix;
- 36 E. Gila River Arena, Glendale;
- 37 F. Ak-Chin Pavilion, Phoenix; and
- 38 G. Arizona State Fair Grounds.

### 39 **462.3.4 Phasing and Construction Sequence Report(s)**

40 Developer shall prepare a Phasing and Construction Sequence Report for each phase of  
41 construction Work. Each Phasing and Construction Sequence Report must address, at a  
42 minimum, construction activities, construction stage limits, construction sequencing, and traffic

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1 control. At the same time as the Traffic Control Plans, Developer shall submit Phasing and  
2 Construction Sequence Reports to ADOT for approval.

### 3 **462.4 SUBMITTALS**

4 Table 462-4 reflects a nonexclusive list of Submittals identified in Section DR 462 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 110.10.2.2 of the TPs:

| <b>Table 462-4<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| 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             |
| 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> )  |                         |                         |                   |  |                          |

11

**End of Section**

# CONFORMED – AMENDED AND RESTATED

## 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<br>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; and
- 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 construction, 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; and
- 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 Freeway) and I-10 (Papago Freeway)  
25 interchanges to the Traffic Operations Center (TOC). Developer shall inspect all existing ITS  
26 elements and software for adequacy and compatibility with the proposed ITS. The ITS elements  
27 must include 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; and
- 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.

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### 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, including traffic signal CCTV cameras, as part of the  
21 ITS. The CCTV system must be compatible with the existing ITS system. Developer shall  
22 design all CCTV cameras with lowering devices integral to the pole. Developer shall place  
23 CCTV cameras to provide complete coverage of the freeway mainline, traffic interchanges  
24 ramps and gores, system interchange ramps from termini to termini, all interchange ramp  
25 junctions with crossroads, and DMS message verification. Developer shall design CCTV  
26 cameras at all traffic signal intersections to provide complete coverage of the traffic signal  
27 intersection, in addition to the CCTV system providing coverage for the above coverage areas.  
28 Developer shall account for all field conditions that may restrict required visibility and design the  
29 CCTV system accordingly.

### 30 **466.3.3.4 Detection Stations**

31 Developer shall include detection stations in the ITS in accordance with the ADOT *Intelligent*  
32 *Transportation System Design Guide*.

### 33 **466.3.3.5 Ramp Meters**

34 Developer shall prepare Ramp Meter Warrant Analysis for all proposed entrance ramps in  
35 accordance with the ADOT *Ramp Metering Design Guidelines*. Developer shall estimate speeds  
36 based on traffic engineering modeling or the Transportation Research Board *Highway Capacity*  
37 *Manual*. Developer shall base the Ramp Meter Warrant Analysis on year 2035 traffic projections  
38 and such analysis must include the following:

- 39 A. Cover Page;
- 40 B. Table of Contents;
- 41 C. Discussion;
- 42 D. Warrant Analysis; and
- 43 E. Exhibits.

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1 At the same time as the Initial Design Submittal of the ITS, Developer shall submit Ramp Meter  
2 Warrant Analysis to ADOT.

3 If ramp meters are warranted, Developer shall design and provide ramp meters in accordance  
4 with the ADOT *Ramp Metering Design Guidelines*.

### 5 **466.3.3.6 Node Building**

6 Developer shall design one new node building as part of the ITS. Such building must be located  
7 approximately half way between nodes 11 and 16. Developer shall size node building to house  
8 all associated equipment and the buildings must not have an inside dimension less than 8 feet  
9 4.5 inches in height by 19 feet 7.5 inches in length by 10 feet 7.75 inches in width. Developer  
10 shall locate all communication hardware for the proposed ITS elements between I-10 (Maricopa  
11 Freeway) and I-10 (Papago Freeway) in the new node building.

12 Developer shall connect the proposed ITS system to existing node buildings 11 and 16.

### 13 **466.3.3.7 Weigh-In-Motion Systems**

14 Developer shall design two weigh-in-motion stations. The stations must connect to the ITS  
15 located approximately at the following locations:

- 16 A. North or south of the Salt River
- 17 B. Between 51st Avenue and 17th Avenue

### 18 **466.3.4 Specifications**

19 Those elements of the ADOT *Draft Intelligent Transportation Systems Specifications for South*  
20 *Mountain Freeway* included in the RIDs are set forth in or expressly incorporated into the TPs,  
21 are thereby made part of the Contract Documents and are mandatory minimum requirements  
22 for ITS Work. Developer shall prepare ITS specifications using the ADOT *Draft Intelligent*  
23 *Transportation Systems Specifications for South Mountain Freeway* and in accordance with  
24 Section GP 110.10.2.7.2 of the TPs.

### 25 **466.4 SUBMITTALS**

26 Table 466-2 reflects a nonexclusive list of Submittals identified in Section DR 466 of the TPs  
27 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
28 determine and submit all Submittals as required by the Contract Documents, Governmental  
29 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
30 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
31 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
32 formats described in Section GP 110.10.2.2 of the TPs:

| Table 466-2<br>Nonexclusive Submittals List |                  |                  |            |  |                   |
|---|------------------|------------------|------------|--|-------------------|
| Submittals                                  | Level of Review* | Number of Copies |            | Submittal Schedule   | Section Reference |
|   |                  | Hardcopies       | Electronic |  |                   |
| ITS Inventory                               | 5                | 0                | 1          | Prior to construction  | 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        |

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| <b>Table 466-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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               |
| 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |   |                          |

1

2

**End of Section**



# CONFORMED – AMENDED AND RESTATED

## 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<br>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); and
- 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 ROW Acquisition Documents to ADOT for
- 24 approval in ADOT's 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 G. Procedures for establishing hold off zones limiting demolition and other construction  
4 activity as required by 23 CFR 710.313(d). Hold off zone boundaries must establish a  
5 perimeter that is 100 feet distant from the boundary lines of a property to be demolished,  
6 so that demolition may not occur unless and until all single family residential properties  
7 that are both within that perimeter and the Project ROW are vacated.

8 The ROW Activity Plan must establish the specific means by which Developer shall:

9 A. Ensure all ROW Work are properly documented and reported

10 B. Integrate the Project ROW schedule into the Project Baseline Schedule

11 C. Provide sufficient personnel to achieve, in accordance with the Project Baseline  
12 Schedule, the goals and milestones established for Project ROW acquisition, relocation  
13 assistance, Appraisals and Appraisal Review, and clearance/demolition of the  
14 improvements from the Project ROW.

15 Developer shall not contact property owners until ADOT approves the ROW Activity Plan.  
16 Developer shall ensure that the ROW Activity Plan remains valid and updated as appropriate  
17 throughout the Term. Developer shall propose updates to the ROW Activity Plan in the event of  
18 the following:

19 A. The occurrence of any changes to the ROW personnel, approach to the Project ROW  
20 Work, or ROW QC procedures;

21 B. The occurrence of other changes necessitating revision to the ROW Activity Plan; and

22 C. As otherwise directed by ADOT.

23 In accordance with Section 5.3.1 of the Agreement, Developer shall submit the ROW Activity  
24 Plan to ADOT for approval in ADOT's good faith discretion. No later than 10 Business Days  
25 after the occurrence of any change or direction triggering the need for the revisions to the ROW  
26 Activity Plan, Developer shall submit the updated ROW Activity Plan to ADOT for approval in  
27 ADOT's good faith discretion.

### 28 **470.2.5 Parcels within the Schematic ROW**

29 Real property interests that must be acquired to construct the Project as identified in the ROD  
30 are identified in TP Attachment 470-3. TP Attachment 470-3 identifies which parcels ADOT will  
31 acquire and anticipated dates for access. ADOT has no obligation to provide Developer access  
32 for the parcels ahead of the dates set forth in TP Attachment 470-3. Pursuant to applicable Law,  
33 Developer shall acquire Project ROW parcels assigned to Developer as shown on TP  
34 Attachment 470-3 and any Developer-Designated ROW on behalf of the State, but without the  
35 direct participation of ADOT except as otherwise set forth in this Section DR 470.2.5, subject to  
36 ADOT's rights of review, approval, and audit.

### 37 **470.2.6 Temporary Entry**

38 Developer shall obtain all temporary entry necessary to perform the Work in accordance with  
39 the ADOT *Right of Way Procedures Manual*.

### 40 **470.2.7 Utility Property Interests**

41 Developer shall acquire Replacement Utility Property Interests (even though not part of the  
42 Project ROW) required to complete the Project in accordance with the requirements of the  
43 Contract Documents.

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### 1 **470.3 PRE-ACQUISITION ACTIVITIES**

#### 2 **470.3.1 ROW Exhibits and Legal Descriptions**

3 For each Developer-Acquired Parcel, Developer shall prepare a ROW Exhibit. The ROW  
4 Exhibits must include gross Project ROW acquisition area and net Project ROW acquisition area  
5 and notations that reference the *Results of Survey for Project No. 202L MA 000 H5439*, by  
6 Stanley Consultants, included in the RIDs.

7 Developer shall tie Legal Descriptions to existing section corners and/or quarter corners,  
8 identified on the *Results of Survey for Project No. 202L MA 000 H5439*, by Stanley Consultants,  
9 included in the RIDs. Said section corners and quarter corner references must include a  
10 description of the found monument. Developer shall ensure that ADOT parcel numbers are  
11 consistent with these same plans. If Developer identifies parcels necessary for the Project, but  
12 said parcels do not have parcel numbers, then ADOT will assign the parcel number.

13 Developer shall prepare ROW Exhibits and Legal Descriptions for the Project. An Arizona  
14 registered land surveyor must sign and seal ROW Exhibits and Legal Descriptions. Developer  
15 shall perform all Work in the preparation of Project ROW Exhibits and Legal Descriptions in a  
16 manner that complies with the minimum requirements set forth by the Arizona Board of  
17 Technical Survey Registrants. Legal Descriptions must also specify acquisition of underlying fee  
18 of public roadways that may exist by only easement.

19 Developer shall submit ROW Exhibits and Legal Descriptions for review and approval by ADOT  
20 in accordance with Section GP 110.10 of the TPs and Contract Documents. Whenever the  
21 Project ROW is updated, Developer shall prepare and submit ROW Electronic Files that include  
22 all sectional data, Legal Description coordinates and CAD files, survey centerlines, and Project  
23 ROW requirements to ADOT.

24 Developer shall stake the new Project ROW line prior to construction in a manner that complies  
25 with the requirements set forth by the Arizona State Board of Technical Registration and the  
26 requirements of Section CR 410.3 of the TPs.

27 Developer shall monument the new Project ROW line upon completion of construction in a  
28 manner that complies with the requirements set forth in Section CR 410.3 of the TPs.

29 Developer shall acquire fee title to Project ROW except in the following instances:

- 30 A. Temporary Construction Easements (TCEs)
- 31 B. Acquisitions occurring from public, municipal, Governmental, or utility entities where fee  
32 title is not routinely conveyed
- 33 C. Other easements for drainage and drainage slopes

34 Developer shall prepare all Instruments of Conveyance needed for the Project acquisition and  
35 include them in the Acquisition Package. The Instruments of Conveyance must include the  
36 ADOT parcel number, Federal project number, TRACS number, highway name, and section  
37 name.

#### 38 **470.3.2 Title Services**

39 Developer shall perform title services Work in accordance with the relevant requirements of the  
40 ADOT *Right of Way Procedures Manual*. Developer shall:

- 41 A. Select and contract with one or more title companies licensed in the State and provide to  
42 ADOT a 5-year sales history, a preliminary title commitment or preliminary title report,  
43 and, if necessary or appropriate, copies of all underlying documents and a plot of all

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1 easements, including Existing Utility Property Interests, referenced therein for each  
2 parcel (including fee acquisitions and easements) to be acquired by ADOT for the  
3 Project. Each preliminary title commitment or preliminary title report must be dated not  
4 more than 90 days prior to the date of submittal to ADOT of the Acquisition Package or  
5 offer to the property owner for such parcel. Developer shall review each title report to  
6 ensure that it complies with the following required format: clearly indicate which  
7 exclusions and exceptions must be deleted upon acquisition of the subject parcel and  
8 must clearly indicate any required submittals to the title company to clear identified  
9 exclusions and exceptions. Title reports must be in accordance with Good Industry  
10 Practice. Developer shall notify the title company, by letter, which exceptions must be  
11 removed, including easements that (a) are appurtenant to and/or of benefit to the parcel  
12 but not included in the parcel to be acquired, and (b) are a burden on the parcel and not  
13 acceptable to ADOT.

14 B. Review the preliminary title commitment or report to ensure that all current owners of  
15 record title are contacted and that negotiations or condemnation actions are conducted  
16 with all appropriate parties.

17 C. Work with the current owners of record title to each parcel or interest in a parcel or their  
18 designee and all other appropriate parties to clear any title exceptions or exclusions not  
19 acceptable to ADOT.

20 D. Secure a Title Policy that is, a standard owner's policy of title insurance in the amount of  
21 the total acquisition cost, which includes cost of the property, and improvements for each  
22 parcel from a title company acceptable to ADOT for each parcel acquired insuring title.  
23 The title insurance amount must exclude those amounts attributable to severance  
24 damages and cost to cure. All Project ROW must be acquired, and ADOT's title in the  
25 Project ROW must be insured, in fee simple absolute or easement interest, as  
26 appropriate, free and clear of any and all liens and encumbrances. The Title Policy must  
27 show title vested in the "State of Arizona by and through its Department of  
28 Transportation".

### 29 **470.3.3 Introduction to Property Owners for Purposes of ROW Acquisition**

30 Developer shall prepare Letters of Introduction for ADOT's signature introducing Developer to  
31 the property owners. The Letters of Introduction must clearly describe the Project, as well as  
32 ADOT's need for the owner's property, and must include the name and telephone number of a  
33 Developer's representative. Developer shall submit the Letters of Introduction to ADOT for  
34 approval in ADOT's good faith discretion. ADOT will sign the letters on ADOT letterhead. ADOT  
35 will mail the Letters of Introduction to all property owners of Developer-Acquired Parcels and will  
36 provide copies to Developer. Developer cannot contact property owners, for purposes of Project  
37 ROW acquisition, unless and until the following conditions have been met:

38 A. ADOT has issued NTP 1;

39 B. ADOT has approved the ROW Activity Plan; and

40 C. 5 Business Days have passed since the mailing of the Letter of Introduction to the  
41 relevant property owner.

### 42 **470.3.4 Environmental Site Assessment**

43 Unless previously prepared by or on behalf of ADOT, Developer shall cause a Phase I  
44 Environmental Site Assessment Report to be prepared documenting the environmental  
45 condition of each parcel to be acquired by Developer. An environmental professional that  
46 complies with the qualifications set forth in ASTM E-1527-13 *Standard Practice for*  
47 *Environmental Site Assessments: Phase 1 Environmental Site Assessment Process* must

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1 prepare each Phase I Environmental Site Assessment Report that conforms to the American  
2 Society of Testing and Materials (ASTM) E 1527-13 requirements. As part of the Acquisition  
3 Package, Developer shall prepare and submit the Phase I Environmental Site Assessment  
4 Report to ADOT for review and approval by ADOT, in ADOT's sole discretion. Developer shall  
5 complete the Phase I Environmental Site Assessment Report in coordination with the  
6 Appraiser(s), and the Phase I Environmental Site Assessment Report must be available to the  
7 Appraiser(s). If it is determined that a potential environmental risk (recognized environmental  
8 condition, controlled recognized environmental condition, or possibly historical recognized  
9 environmental condition) exists based on the Phase I Environmental Site Assessment Report,  
10 and if not previously prepared by or on behalf of ADOT, then Developer shall cause the  
11 environmental professional to perform a phase II ESA investigation and prepare a Phase II  
12 Environmental Site Assessment Report. Before a payment request is submitted for the  
13 purchase of the parcel or a Condemnation Package is submitted for approval, Developer shall  
14 submit the Phase II Environmental Site Assessment Report to ADOT for approval in ADOT's  
15 good faith discretion. The Phase II Environmental Site Assessment Report must contain  
16 sufficient information about the contaminant severity and distribution to estimate the  
17 approximate cost to remediate the parcel in accordance with applicable Law to achieve the  
18 goals of the Project. If, despite diligent efforts, Developer is unable to access a parcel to perform  
19 a phase II ESA or remedial efforts, Developer may submit a Condemnation Package to ADOT  
20 without the Phase II Environmental Site Assessment Report. However, Developer shall be  
21 responsible for performing and receiving approval from ADOT for all required ESAs after  
22 possession of the property has been obtained through condemnation.

### 23 **470.3.5 Appraisals**

#### 24 **470.3.5.1 Appraisal Services**

25 Developer shall ensure that all Appraisals are prepared in conformance with applicable Law  
26 (including the Uniform Act), and in accordance with professional appraisal methods and USPAP  
27 for all parcels to be acquired, including a breakdown of realty vs. personality. Developer shall:

- 28 A. Select Appraisers that comply with the requirements in Section GP 110.08 of the TPs.
- 29 B. Require Appraisers to attempt to establish personal pre-appraisal contact with each  
30 owner of record title and each occupant, and document all contacts
- 31 C. Require Developer's Appraiser to contact the record title owners or their designated  
32 representatives, in writing, to offer them the opportunity to accompany the Appraiser on  
33 the Appraiser's inspection of the parcel, and to maintain a record of all such contacts and  
34 attempts to contact in the Appraiser's file.
- 35 D. Cause the Appraiser to prepare a complete Appraisal report for each parcel to be  
36 acquired, with the report covering the portion to be acquired, and any damage to the  
37 remainder, and cost to cure, when applicable. A complete before and after Appraisal  
38 must be performed for partial acquisitions. Appraisals must be completed for TCEs and  
39 any other easements needed for the Project. Each Appraisal must also apportion the just  
40 compensation between those with any compensable interest in the property. It must also  
41 include all improvements on the whole property. Developer shall include special  
42 analyses, studies, or reports, as necessary, as a part of each Appraisal, including all  
43 ESA reports. The Appraiser must use the most current edition of USPAP and must  
44 continually monitor these standards to ensure that the Appraisals conform to the most  
45 current requirements of professional appraisal practice and Federal requirements in Title  
46 49 CFR Part 24.

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- 1 E. Obtain copies of all written leases, licenses, and other occupancy agreements, including  
2 outdoor advertising/sign agreements, that are not already included in the title  
3 commitment in order to identify lessees, licenses, and other occupants with potential  
4 compensable interests in each parcel and to determine the value of each such interest.
- 5 F. Enter into Subcontracts with the Appraisers and the Subcontracts must require the  
6 Appraiser to update the Appraisal and to testify as an expert witness or provide expert  
7 witness services required by ADOT in connection with all eminent domain proceedings  
8 through the order to show cause hearing. Further, Subcontracts with all Appraisers must  
9 require the Appraiser to be available for depositions, other discovery, pre-hearings or  
10 pre-trial meetings, and expert witness testimony at trial, as directed by ADOT in  
11 consultation with the Office of the Attorney General though and including all appeals.
- 12 G. Cause the Appraiser to coordinate with the review Appraiser regarding corrections  
13 and/or additional information that may be required for a particular Appraisal.
- 14 H. Instruct the Approved Appraiser, upon notice by ADOT of the order to show cause, to  
15 prepare an Appraisal updated to the date of value for the condemnation suit (the date of  
16 the summons and complaint). No later than 5 Business Days before the order to show  
17 cause hearing date, Developer shall submit Appraisals to ADOT for review and approval  
18 by ADOT, in ADOT's sole discretion. Developer shall also prepare an Appraisal review  
19 of the updated Appraisal when required by ADOT. All updated Appraisals must include a  
20 copy of the Project Right-of-Way Plans, ROW Exhibits, and Legal Descriptions and  
21 current photographs of the property being acquired, clearly showing the area being  
22 acquired, even though the original Appraisal report contained photographs of the subject  
23 and the area of the acquisition. Developer shall discuss specific updating requirements  
24 for any complex Appraisals with ADOT before beginning the assignment.
- 25 I. Upon request by ADOT, Developer shall submit Appraiser's parcel workfile(s) to ADOT.
- 26 J. Enter into Subcontracts with any other experts retained by Developer to consult or  
27 provide opinions regarding the parcel to Developer or the Appraiser upon whom ADOT  
28 based the offer of just compensation, that require the expert to testify as an expert  
29 witness or provide expert witness services required by ADOT in connection with the  
30 eminent domain proceedings through the order to show cause hearing. Further,  
31 Subcontracts with all experts must require the expert to be available for depositions,  
32 other discovery, pre-hearings or pre-trial meetings, and expert witness testimony at trial,  
33 as directed by ADOT in consultation with the Office of the Attorney General up though  
34 and including all appeals.
- 35 K. Ensure that, if other experts retained by Developer have consulted or provided opinions  
36 regarding the parcel to Developer or the Appraiser who prepared the Appraisal upon  
37 which ADOT based the offer of just compensation, then the other expert report must be  
38 completed and forwarded to the Appraiser before the Appraiser completes an Appraisal  
39 or updated Appraisal.

### 40 **470.3.5.2 Appraisal Review**

41 In connection with Appraisal Review, Developer shall:

- 42 A. Select Appraisal Reviewers that satisfy the requirements in Section GP 110.08 of the  
43 TPs.
- 44 B. Cause an Appraisal Reviewer to review all Appraisal reports for each parcel to  
45 determine consistency of methodology, supporting documentation related to the  
46 conclusion reached, and compliance with the requirements set forth in Section DR  
47 470.3.5.1 of the TPs for Appraisal reports. The Appraisal Reviewer must use the most

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- 1 current edition of the standards referenced above and continually monitor these  
2 standards to ensure that the Appraisals conform to the most current requirement of  
3 professional appraisal practice.
- 4 C. Cause the Appraisal Reviewer to determine, after reviewing an Appraisal and in  
5 consultation with ADOT, if additional appraisal reports are required in order to properly  
6 evaluate a parcel.
- 7 D. Cause the Appraisal Reviewer to personally inspect the subject properties and all the  
8 sale properties used in direct comparison for each Appraisal being reviewed.
- 9 E. Upon completion of the review outlined above, cause the Appraisal Reviewer to certify in  
10 writing to ADOT that all required standards have been met. This certification must occur  
11 by signing on page 1 of each *ADOT Form ROW-11.05 (Real Estate Appraisal Report)* or  
12 *ADOT Review Sheet (Real Estate Appraisal Report)* in the block provided.
- 13 F. In accordance with providing a ROW Quality Control Specialist(s) as stated in Section  
14 GP 110.08 of the TPs, ensure that Appraisal consistency and quality for the entire  
15 Project is monitored for Project-wide controls and consistency. Data and mapping must  
16 be maintained and readily available.

17 Developer shall prepare Appraisal Reviews in accordance with the requirements in this Section  
18 DR 470.3.5.2. With each Appraisal, Developer shall submit Appraisal Reviews to ADOT for  
19 review and approval by ADOT, in ADOT's sole discretion.

### 20 **470.3.6 Project ROW Acquisition Package Approval**

21 Developer shall prepare an Acquisition Package for each parcel that includes, at a minimum,  
22 the following:

- 23 A. A cover sheet setting forth the following information for each parcel:
- 24 1. ADOT parcel number
  - 25 2. TRACS/Project number highway designation
  - 26 3. Name of record owner(s)
  - 27 4. Location of parcel
  - 28 5. Extent of acquisition (partial or whole acquisition)
  - 29 6. Type of conveyance (fee, easement, etc.)
- 30 B. A title report, current within 90 days, including copies of all documents identified in the  
31 exceptions listed therein and a plot of all easements identified therein.
- 32 C. Developer's analysis of each preliminary title report or title commitment to determine  
33 potential problems and proposed methods to cure title deficiencies. Developer shall  
34 perform title curative Work. Concurrent with the Acquisition Package at time of payment  
35 request Submittal, Developer shall submit copies of all Curative Documents to ADOT for  
36 approval in ADOT's good faith discretion. Within 48 hours after obtaining knowledge,  
37 Developer shall inform ADOT of bankruptcies or other federal tax liens which could  
38 require condemnation to resolve title requirements. Decision to proceed directly to  
39 condemnation must be made by ADOT.
- 40 D. A copy of the ROW Exhibits and Legal Descriptions.
- 41 E. A copy of the Approved Appraisal with a date of value no more than 180 days prior to  
42 the date of the submittal of the Acquisition Package, together with all supporting  
43 documentation.
- 44 F. A copy of the Appraisal Review.



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- 1 G. The proposed initial offer letter, purchase agreement, Instrument of Conveyance, and  
2 any other documents, prepared on Developer's letterhead or as otherwise directed.  
3 Developer shall use the forms of such documents as set forth in the ADOT *Right of Way*  
4 *Procedure Manual*. Documents referred to in Section DR 470 of the TPs are  
5 standardized by ADOT and Developer shall keep to a minimum modification of  
6 standardized documents. All changes are subject to ADOT's written approval, in ADOT's  
7 sole discretion.
- 8 H. *Summary Statement of Offer to Purchase and Improvement Report*.
- 9 I. *Mortgage 3rd Party Authorization Release*.
- 10 J. Completed unsigned State *W-9 Form*.
- 11 K. Extended occupancy agreement on all fee acquisitions (three originals required), if  
12 applicable.
- 13 L. A copy of the Phase I Environmental Site Assessment Report, Phase II Environmental  
14 Site Assessment Report, as applicable, and all amendments as described in Section DR  
15 470.3.4 of the TPs, and an estimate of the mitigation costs if applicable and available.
- 16 M. A completed and signed real/personal property report detailing the items making up  
17 each parcel classified as real estate, tenant-owned improvements, or personal property.  
18 Developer shall pay particular attention to items that have questionable classifications.
- 19 N. Documentation establishing relocation eligibility and benefits, including replacement  
20 housing calculations, notification of business eligibility, all comparables used in  
21 estimating the replacement housing calculations, and letter to displacee(s) explaining  
22 replacement housing calculations. A relocation agent must prepare and review  
23 calculations and replacement housing benefit package in conformance with the Uniform  
24 Act and all other applicable Laws.
- 25 O. Any other ADOT forms required by the ADOT *Right of Way Procedure Manual*.
- 26 Developer shall submit Acquisition Package(s) to ADOT for review and approval by ADOT, in  
27 ADOT's good-faith discretion to the extent provided in Section 5.5.2 of the Agreement.

### 28 **470.4 ACQUISITION ACTIVITIES**

#### 29 **470.4.1 Project ROW Negotiations**

30 Developer shall conduct all Project ROW negotiations in accordance with the requirements of  
31 applicable Law. In conjunction with such negotiations, Developer shall:

- 32 A. Within 5 Business Days of ADOT's approval of the initial 20 Acquisition Packages,  
33 contact each owner of the properties covered by such Acquisition Packages or such  
34 owners' designated representative, in person where possible, to present the offer and  
35 deliver the approved Appraisal and appropriate brochures. Developer shall provide the  
36 approved Appraisal to the property owner at the time of the initial offer. Developer shall  
37 also maintain a file record of receipt of Appraisal signed by the property owner.  
38 Developer shall also maintain follow-up contacts and secure the necessary  
39 documentation and title curative work upon acceptance of the purchase offer.
- 40 B. At the time of offer, distribute, to all property owners and displacees, ADOT provided  
41 acquisition, relocation and Title VI brochures, as applicable.
- 42 C. Within 5 days after presenting the first written offer, post the notice required by A.R.S.  
43 28-7098(C) for all parcels (whether commercial, residential, or other).
- 44 D. Confirm lessees, licensees, occupants, or other parties with potential compensable  
45 interests, including outdoor advertising sign owners and homeowner's associations, and,

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- 1 if appropriate, after consultation with ADOT, negotiate with such parties for the  
2 acquisition of their compensable interests.
- 3 E. Advise the property owners, lessees, licensees, occupants, and other holders of  
4 compensable interests, as applicable, of the Administrative Settlement Offer process.  
5 Developer shall confer with ADOT on any Administrative Settlement Offer from property  
6 owners, lessees, licensees, occupants, or other holders of any compensable interest, as  
7 applicable, including a detailed recommendation of whether to accept the offer or make  
8 a counter offer. Developer shall submit Administrative Settlement Offer(s) to ADOT for  
9 review and approval by ADOT, in ADOT's sole discretion. ADOT will determine whether  
10 to accept or reject an Administrative Settlement Offer or continue negotiations. Delivery  
11 of the Administrative Settlement Offer and Developer's recommendation to ADOT must  
12 occur within 7 Business Days following Developer's receipt of the Administrative  
13 Settlement Offer request.
- 14 F. Provide a letter with ADOT's response to any Administrative Settlement Offer from the  
15 property owner, lessee, licensee, occupant, or other holder of a compensable interest,  
16 as applicable. Developer shall deliver ADOT's response to the owner's counter offer in  
17 person or by mail (return receipt requested) within 5 Business Days after receipt. If  
18 Developer selects the mailing option, Developer shall make a telephone call to the  
19 property owner to discuss the Administrative Settlement Offer prior to mailing the  
20 response letter.
- 21 G. Provide responses to the verbal or written inquiries of any property owner, lessee,  
22 licensee, occupant, or other holder of a compensable interest, within 5 Business Days  
23 after receipt.
- 24 H. Prepare a negotiator contact report detailing each meeting, conversation, or attempt to  
25 contact property owners (or their appointed representative(s) supported by a written  
26 confirmation of appointment) who have a compensable interest in each parcel, on the  
27 ADOT *Contact Report Form*.
- 28 I. Prepare and deliver to the property owner, lessee, licensee, occupant, or other holder of  
29 any compensable interest, as applicable, the Instruments of Conveyance, and obtain  
30 their execution of the same. All signatures on documents to be recorded must be  
31 notarized in accordance with Arizona Law.
- 32 J. All Administrative Settlement Offers must be approved by ADOT and ADOT reserves the  
33 right to require Developer to continue negotiations.

### 34 **470.4.2 Relocation Assistance**

35 Developer shall perform all activities necessary to relocate displacees in accordance with the  
36 Uniform Act and other applicable Laws. ADOT will determine relocation eligibility for all  
37 displacees.

38 Developer shall obtain and maintain a minimum of one relocation office within the 59th Avenue  
39 segment of the Project. Developer shall not locate the relocation offices in the Project  
40 Collocated Office or field offices. The relocation offices must comply with all applicable building  
41 and fire codes and ADA requirements. Developer shall obtain all facility space, permits,  
42 licenses, and approvals and pay for all utility services for the relocation offices. The relocation  
43 offices must be staffed by qualified relocation personnel during office hours. Office hours must  
44 be posted and the office must, at a minimum, be open during the office hours below:

- 45 A. Monday through Friday: 8:00 am to 5:00 pm  
46 B. Saturday: 9:00 am to 12:00pm

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1 C. Sunday: office may be closed

2 In addition to the office hours listed above, Developer shall make reasonable attempts to be  
3 available to all displacees for relocation services at the convenience of the displacees.

4 With respect to relocation assistance, Developer shall:

5 A. Assist with all relocation appeal requests and be responsible for carrying out decisions  
6 made by ADOT or a court.

7 B. Direct in writing any questions as to the eligibility of a potential displacee to ADOT.

8 C. Locate available comparable functionally equivalent housing and maintain related files.

9 D. Locate available commercial, retail, and industrial sites and maintain related files.

10 E. Prior to submission to displacees, Developer shall compute and submit requests for  
11 Relocation Supplements to ADOT for review and approval by ADOT, in ADOT's sole  
12 discretion.

13 F. Maintain contact report on a relocation advisory assistance – parcel record.

14 G. Attend all closings on replacement properties, if requested by any party involved, and  
15 assure supplemental payments, if any, are properly distributed.

16 H. Notify ADOT immediately if a displacee has not moved after the required vacate date. In  
17 order to provide for eviction of the displacee, Developer shall submit a written Eviction  
18 Recommendation Memorandum in accordance with Section DR 470.4.6 of the TPs.

19 I. Be available for any administrative appeals or court hearings.

20 J. Prepare and submit Relocation Entitlement Claim Form in accordance with Section DR  
21 470.4.4 of the TPs.

22 K. Maintain a complete relocation file, separate from acquisition files, on each displacee  
23 and make it available for inspection by ADOT.

24 L. Be responsible for all relocation activities that occur after deposit or payment of the bond  
25 required by an order for immediate possession, when a parcel referred to the Office of  
26 the Attorney General for eminent domain also has a relocation issue. Developer shall  
27 adjust relocation computations based on the approved Administrative Settlement Offer  
28 or court award.

29 M. Prepare all correspondence to the displacees or their representative(s) on Developer's  
30 letterhead and have Developer's correspondence signed by Developer's relocation  
31 agent.

32 N. Maintain Utility service to occupied properties until relocation is complete.

33 O. Provide adequate access to all occupied parcels until relocation is complete

### 34 **470.4.3 Closing Services**

35 For purposes of closing services, Developer shall:

36 A. Deliver the State warrant to the title company as requested by ADOT.

37 B. Within 48 hours following closing, obtain and deliver to ADOT all original recorded  
38 Instruments of Conveyance.

39 C. Within 30 days following closing, obtain and submit an original issued Title Policy to  
40 ADOT for approval in ADOT's good faith discretion.

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### 1 **470.4.4 Payment of Property Owners and Displacees**

2 Developer shall prepare a Payment Submittal for any item that ADOT is responsible to pay to or  
3 on behalf of property owners, displacees, and title companies. A Payment Submittal must  
4 include:

- 5 A. For the payment of the acquisition cost of a parcel, a completed *Parcel Transmittal*  
6 (*ADOT Right of Way Procedure Manual*, Exhibit 9.03), including all supporting  
7 documentation;
- 8 B. For relocation benefits, a completed Relocation Entitlement Claim Form (*ADOT Right of*  
9 *Way Procedure Manual*, Exhibit 14.20), including all supporting documentation; and
- 10 C. A completed and signed *W-9 Form* for all payees.

11 The State's warrant will be returned to Developer's ROW Acquisition Manager. Upon request of  
12 ADOT, Developer shall deliver to the payee the State warrant. Developer shall submit Payment  
13 Submittal(s) to ADOT for approval in ADOT's good faith discretion.

### 14 **470.4.5 Condemnation Support**

15 If Developer and the property owner cannot negotiate an agreed-upon conveyance by deed  
16 acceptable to ADOT, Developer shall prepare a Condemnation Package that must include two  
17 copies each of the following documents:

- 18 A. A condemnation transmittal
- 19 B. Condemnation briefing statement summarizing the significant issues and conditions that  
20 lead to the file being submitted to condemnation.
- 21 C. All contact reports, including contact logs associated with the negotiations of the  
22 property
- 23 D. A summary statement of offer to purchase and improvement report
- 24 E. ROW Exhibits
- 25 F. Legal Descriptions
- 26 G. Appraisal (not more than 180 days old) upon which the final offer was based
- 27 H. The Appraisal Review sheet
- 28 I. An updated title report (not more than 30 days old)
- 29 J. Proposed ADOT Condemnation Letter (see example in the RIDs)
- 30 K. Documents creating a compensable interest as disclosed by the updated title report
- 31 L. ESAs relating to the parcel (if any)
- 32 M. A copy of the resolution of establishment adopted by the Arizona State Transportation  
33 Board authorizing the acquisition of the parcel
- 34 N. An Exhibit A (the legal description marked as Exhibit A)
- 35 O. An Exhibit B (a ROW Exhibit marked as Exhibit B)
- 36 P. An Exhibit C (a map of the Project marked as Exhibit C but without addresses)
- 37 Q. An Exhibit D (a "Parties Defendant List" marked as Exhibit D, with all parties' physical  
38 addresses for service of process)
- 39 R. Any purchase agreements, releases, property management agreements, lease  
40 agreements
- 41 S. All correspondence related to the parcel

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1 Developer shall submit Condemnation Package(s) to ADOT for approval in ADOT's good faith  
2 discretion. Upon written approval of the Condemnation Package by ADOT, Developer shall  
3 prepare and deliver an ADOT Condemnation Letter on Developer's letterhead, to the property  
4 owners. Developer's ROW Acquisition Manager must sign the ADOT Condemnation Letter.  
5 Developer shall not send an ADOT Condemnation Letter until ADOT provides written approval  
6 of the Condemnation Package.

7 Developer shall be responsible for providing condemnation support services as directed by  
8 ADOT. Such support services include providing all expert witnesses requested by ADOT,  
9 including valuation experts and experts having sufficient knowledge of the design of the Project,  
10 to appear at all condemnation proceedings, including the order to show cause hearing for order  
11 for immediate possession and relocation appeals. (See Section DR 470.3.5.1(F) to (L) of the  
12 TPs.) Developer shall be responsible for preparing all exhibits and photographs associated with  
13 condemnation services and proceedings requested by ADOT through an order to show cause  
14 hearing for order for immediate possession and any relocation appeals. ADOT will coordinate  
15 with the Office of the Attorney General to provide legal counsel to prepare and file the complaint  
16 in condemnation. ADOT will obtain an order for immediate possession within 180 days of  
17 approval of the Condemnation Package. ADOT will provide a copy of the order for immediate  
18 possession to Developer within 5 Business Days after receiving the signed and certified order  
19 for immediate possession from the court.

20 Developer shall not contact the Office of the Attorney General or an Assistant Attorney General  
21 handling a specific parcel that has been filed for eminent domain action or is in the process of  
22 settlement unless authorized to do so by ADOT.

23 Developer shall conduct all applicable eminent domain-condemnation activities in accordance  
24 with the policies and procedures as described in Chapter 4.09 of the ADOT *Right of Way*  
25 *Procedure Manual*.

26 Developer shall require the Approved Appraiser to update the approved Appraisal as set forth in  
27 Section 470.3.5.1(H) of the TPs.

### 28 **470.4.6 Eviction**

29 After an acquisition of a property or entry of an order from immediate possession, Developer  
30 shall use diligent efforts to obtain the cooperation of each parcel owner/tenant in vacating the  
31 property. Developer shall notify ADOT immediately if Developer is unable (or anticipates that it  
32 will be unable), after diligent efforts, to reach agreement with a parcel owner/tenant on vacating  
33 the parcel. Developer shall not have any discussions regarding eviction or evict property  
34 owners/tenants.

35 Developer shall prepare an Eviction Recommendation Memorandum explaining the  
36 circumstances warranting eviction for each parcel with respect to which Developer requests an  
37 eviction. Developer shall submit such an Eviction Recommendation Memorandum for each  
38 parcel with respect to which Developer requests an eviction to ADOT for review and approval by  
39 ADOT, in ADOT's sole discretion. ADOT will determine if eviction proceedings are to  
40 commence.

41 An Eviction Recommendation Memorandum must include the parcel number and address, the  
42 name of the displacee Developer recommends be evicted, a summary of all contacts with the  
43 displacee, including all offers of compensation or relocation benefits (including but not limited to  
44 any replacement housing offer) made to the displacee as well as the displacee's responses  
45 thereto, proof that the displacee has received or was offered a replacement property, and  
46 Developer's schedule regarding the need for the real property occupied by the displacee.

## CONFORMED – AMENDED AND RESTATED

### 1 **470.4.7 Property Management**

2 Developer shall maintain all structures on ADOT's property pending demolition. Developer shall  
3 negotiate an Extended Occupancy Agreement with the occupant of an ADOT property if  
4 Developer intends, or if it is necessary pending relocation, to allow continued occupancy of the  
5 property after close of escrow or after ADOT obtains an order for immediate possession.  
6 Developer shall use a form of Extended Occupancy Agreement provided by ADOT. Developer  
7 shall negotiate the rental rate and submit the proposed Extended Occupancy Agreement to  
8 ADOT for its approval and execution.

### 9 **470.4.8 Clearance/Demolition of Project ROW**

10 Developer is responsible for clearance/demolition of all parcels other than the Retained Parcels.  
11 Developer shall only use asbestos testing, asbestos abatement, and asbestos oversight and  
12 demolition Subcontractors that comply with ADOT's prequalification standards set forth in TP  
13 Attachment 470-1. Prior to executing any Subcontract with any such Subcontractor, Developer  
14 shall submit the Subcontractor Qualifications of such Subcontractor to ADOT for approval.

15 Prior to demolition of any improvements, Developer shall prepare and submit Demolition  
16 Photographs that include photographs of the parcel and all improvements, to ADOT. Developer  
17 shall also take photographs of personal property, real property, and any other disputed items in  
18 a quality suitable for presentation as evidence in court, following acquisition and prior to  
19 demolition and clearance.

20 Developer shall prepare a Hold Off Zone Map of proposed hold off zone boundaries in  
21 compliance with 23 CFR 710.313(d) and in accordance with Section DR 470.2.4 of the TPs and  
22 the procedures for establishing hold off zones in the ROW Activity Plan. Prior to demolition of  
23 any improvements, Developer shall submit a Hold Off Zone Map to ADOT for review and  
24 comment. Developer shall not conduct any demolition or other construction activity inside a hold  
25 off zone before the acquisition procedures are completed for the occupied properties in the hold  
26 off zone.

27 Developer shall:

28 A. Within 10 days after vacancy of the parcel, complete the securing and protection of the  
29 buildings, improvements, and fixtures on the parcel until they are disposed of or  
30 demolished. Developer shall board-up, mow, fumigate, and winterize as required by  
31 applicable Law.

32 B. Secure swimming pools, spas, and all other water features with 6 foot chain link fence  
33 within 24 hours of ADOT's notification to Developer that the parcel is vacated and drain  
34 in accordance with City of Phoenix codes/ordinances. Developer shall demolish and  
35 backfill swimming pools, spas, or any other depression or excavation exceeding 4-feet in  
36 depth within 48 hours of completion of asbestos testing and abatement and receipt of all  
37 necessary permits. If permits are not required to backfill, then Developer shall backfill  
38 within 48 hours of vacate.

39 C. Terminate all Utility service(s) to a parcel after the parcel is vacated. Developer shall  
40 assess all Utilities serving the parcel and make requests for each individual Utility  
41 Company to abandon their services to the Utility main in preparation for demolition.

42 D. Coordinate with the owner and occupants to ensure the clearance of personal property  
43 from the parcel as applicable.

44 E. Provide for any insect and rodent control and initiate extermination as required to protect  
45 adjacent properties and rid the parcel from infestations.

46 F. Dispose of improvements, fixtures, and buildings in accordance with applicable Laws.

## CONFORMED – AMENDED AND RESTATED

- 1 G. Developer shall post a Vacated Parcel Notification in the form included in the RIDs on all  
2 buildings on real property over which ADOT has possession within 48 hours of all  
3 occupants having vacated the parcel. Developer shall post the Vacated Parcel  
4 Notification prominently in the front window or other prominent location of all vacated  
5 parcels
- 6 H. Assess parcels being demolished for any Hazardous Materials, endangered/protected  
7 animals/plants, dry wells, and water wells. If any of such items are discovered,  
8 Developer shall make arrangements to have those items abated and/or abandoned.  
9 Developer shall remove and backfill septic tanks to natural grade.
- 10 I. Pending demolition, secure property to be demolished with temporary fencing or  
11 security, depending on individual circumstances associated with the subject parcel.
- 12 J. Prior to demolition, arrange for asbestos and lead paint testing by a Subcontractor that  
13 complies with State standards.
- 14 K. Obtain an Asbestos Hazard Emergency Response Act (AHERA) *Asbestos Report*. In  
15 accordance with Maricopa Air Quality Asbestos National Emission Standards for  
16 Hazardous Air Pollutants (NESHAP) regulations, Developer shall update all expired  
17 reports with re-inspection. Before demolition of any improvements, Developer shall  
18 submit an AHERA Asbestos Report(s) to ADOT for approval in ADOT's good faith  
19 discretion.
- 20 L. Cause the AHERA certified asbestos abatement Subcontractor to prepare a NESHAP  
21 Notifications. Prior to submitting to Maricopa County Air Quality Department, Developer  
22 shall submit all NESHAP Notifications to ADOT for review and approval.
- 23 M. Ensure that no Project ROW Work begins prior to the 10 day maturity date of the  
24 NESHAP Notification, and the filing of the Maricopa County air quality dust permit, and  
25 after all Utilities being abandoned at the Site.
- 26 N. Inspect during and after asbestos abatement in order to ensure NESHAP, OSHA, and  
27 air quality compliance.
- 28 O. Upon completion of abatement Work, submit all Demolition Closeout Documents to  
29 ADOT for approval. Demolition Closeout Documents are as follows:
- 30 1. A memorandum from Developer reflecting the date when demolition was complete,  
31 the name of the demolition Subcontractor that completed the Work, and a  
32 description of the site being demolished (parcel number, address of parcel, and  
33 name of the business if not a residential parcel);
- 34 2. Documentation, if any, regarding water and dry well registrations and  
35 abandonments;
- 36 3. Copies of all dust permits from Maricopa County Air Quality;
- 37 4. SWPPP NOI and NOT's;
- 38 5. Copies of all required demolition permits;
- 39 6. All completed Waste Transfer Manifests (form of manifest included in the RIDs); and  
40 7. An asbestos project clearance letter (example letter included in the RIDs).
- 41 P. Remove any refrigerants or ammonia from all refrigeration systems per EPA guidelines.  
42 Reference EPA Guidelines: 40 CFR 82.162.
- 43 Q. Comply with the stormwater requirements in accordance with Section 420 of the TPs.
- 44 R. Hold a pre-demolition meeting on the site of demolition Work with Developer, ADOT, and  
45 the demolition Subcontractor's superintendent and/or lead in order to familiarize  
46 everyone with the demolition Work.

## CONFORMED – AMENDED AND RESTATED

- 1 S. Ensure that all necessary documents are present on site during demolition.  
 2 T. Cause the demolition Subcontractor to sign ADOT's demolition authorization form, a  
 3 check list ensuring that all regulatory, environmental, and physical obligations will be met  
 4 by Developer and demolition Subcontractor and any of their subcontractors.  
 5 U. Ensure that any salvaging operations are performed only by the assigned demolition  
 6 Subcontractor. Developer shall not use ADOT property for staging and/or the sale of  
 7 salvaged materials to anyone not within the employ of Developer.

8 ADOT may, but is not obligated to, inspect the demolition site during and upon completion of the  
 9 demolition and to ensure compliance with applicable Law and Governmental Approvals.  
 10 Developer shall resolve all issues during the demolition process, including approval of removal  
 11 of previously unidentified site improvements. Developer shall ensure that the demolition  
 12 Subcontractor secures the site with a ditch, a berm, and/or fencing, and implements a dust  
 13 preventive measure prior to demobilizing from the demolition site. Within 48 hours after  
 14 completion of the demolition, Developer shall submit a written Demolition Completion  
 15 Notification to ADOT.

### 16 470.5 SUBMITTALS

17 Table 470-2 reflects a nonexclusive list of Submittals identified in Section DR 470 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 110.10.2.2 of the TPs:

| Table 470-2<br>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 ROW Acquisition 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 Section 5.3.1 of the Agreement   | DR 470.2.4        |
| 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 Section GP 110.10 of the TPs and Contract Documents  | DR 470.3.1        |



**CONFORMED – AMENDED AND RESTATED**

| <b>Table 470-2<br/>Nonexclusive Submittals List</b> |                         |                         |                   |  |                          |
|---|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>                                   | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>  | <b>Section Reference</b> |
|   |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| Legal Descriptions                                  | 1                       | 1                       | 1                 | In accordance with Section GP 110.10 of the TPs and Contract Documents   | 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<br>470.3.5.1          |
| Appraiser's parcel workfile(s)                      | 5                       | 1                       | 1                 | Upon request by ADOT   | DR<br>470.3.5.1          |
| Appraisal Reviews                                   | 1                       | 1                       | 1                 | With each Appraisal  | DR<br>470.3.5.2          |
| Curative Documents                                  | 2                       | 1                       | 1                 | Concurrent with the Acquisition Package at time of payment request Submittal   | DR 470.3.6               |
| Instruments of Conveyance                           | 2                       | 1                       | 1                 | As part of the Acquisition Package(s)  | DR 470.3.6               |
| Acquisition Package(s)                              | 2                       | 1                       | 1                 | As determined by Developer   | DR 470.3.6               |
| Administrative Settlement Offer(s)                  | 1                       | 1                       | 1                 | As determined by Developer   | DR 470.4.1               |
| Relocation Supplements                              | 1                       | 1                       | 1                 | Prior to submission to displacees  | DR 470.4.2               |
| 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                               | 2                       | 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               |

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| <b>Table 470-2<br/>Nonexclusive Submittals List</b>  |                  |                  |            |  |                   |
|--|------------------|------------------|------------|--|-------------------|
| Submittals   | Level of Review* | Number of Copies |            | Submittal Schedule   | Section Reference |
|  |                  | Hardcopies       | Electronic |  |                   |
| Eviction Recommendation Memorandum   | 1                | 1                | 1          | As requested by Developer                                      | DR 470.4.6        |
| Extended Occupancy Agreement   | 3                | 1                | 1          | Prior to submission to tenants                                 | DR 470.4.7        |
| Subcontractor Qualifications   | 3                | 2                | 1          | Prior to executing any Subcontract with any such Subcontractor | DR 470.4.8        |
| Demolition Photographs   | 5                | 1                | 1          | Prior to demolition of any improvements                        | DR 470.4.8        |
| Hold Off Zone Map  | 4                | 2                | 1          | Prior to demolition of any improvements                        | DR 470.4.8        |
| AHERA Asbestos Report(s)   | 2                | 0                | 1          | Before demolition of any improvements                          | DR 470.4.8        |
| NESHAP Notifications   | 2                | 0                | 1          | Prior to submitting to Maricopa County Air Quality Department  | DR 470.4.8        |
| Demolition Closeout Documents  | 3                | 0                | 1          | Upon completion of abatement work                              | DR 470.4.8        |
| Demolition Completion Notification   | 5                | 1                | 1          | 48 hours after completion of the demolition                    | DR 470.4.8        |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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)**

**CONFORMED – AMENDED AND RESTATED**

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1 **CR 408 THIRD-PARTY AGREEMENTS**

2 Refer to Section DR 408 of the TPs for Third-Party Agreement provisions during the  
3 construction phase.

4

5

**End of Section**

**CONFORMED – AMENDED AND RESTATED**

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<br>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 Project 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 110.10.2.2 of the TPs.

| Table 410-2<br>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<br>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 control testing and integrity testing of all constructed drilled shaft  
8 foundations in accordance with Section GP 110.07 of the TPs. Quality control testing and  
9 integrity testing must include ultrasonic crosshole testing in accordance with ASTM D6760 and  
10 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 Control Report which presents the results of  
20 quality control and integrity testing of drilled shaft foundations. Not less than 10 Business Days  
21 prior to construction of any structure on the associated drilled shaft foundations, Developer shall  
22 submit the Drilled Shaft Quality Control Report to ADOT for review and comment.

### 23 **416.3.2 MSE Walls**

24 Developer shall construct MSE walls in accordance with the FHWA *Geotechnical Engineering*  
25 *Circular No. 11, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced*  
26 *Soil Slopes*.

27 Developer shall determine placement tolerances for MSE wall facing elements that must be  
28 included in Developer's special provisions for MSE walls.

### 29 **416.3.3 Soil Nail Walls**

30 Developer shall construct soil-nail retaining walls in accordance with the FHWA *Geotechnical*  
31 *Engineering Circular No. 7, Soil Nail Walls*.

32 Developer shall identify wall zones based on subsurface geotechnical conditions, with one value  
33 of design pull-out resistance assigned to each wall zone on the plans.

34 Developer shall perform a minimum of two verification load tests on sacrificial verification soil-  
35 nails for each wall zone before starting excavation for the wall zone. Developer's soil-nail load  
36 testing equipment must be calibrated by a qualified testing laboratory which is independent of  
37 Developer's soil-nail installation Subcontractor(s).

38 Developer shall perform proof load tests on sacrificial proof test soil-nails. The number of  
39 sacrificial proof test soil-nails must be a minimum of 10 percent of the total number of production  
40 soil-nails. Developer shall include the locations of proposed proof test nails on the Plans.

41 Developer's special provisions for soil-nail walls must include acceptance criteria for verification  
42 and proof tests. The acceptance criteria must include criteria for (1) maximum allowable creep  
43 movement (creep rate and total creep movement), (2) total measured nail movement at the  
44 maximum test load relative to the theoretical elastic elongation of the test nail un-bonded length,

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1 and (3) pullout failure criteria. Developer shall reject tested nails which do not comply with the  
2 acceptance criteria.

### 3 **416.3.4 Blasting**

#### 4 **416.3.4.1 General**

5 Developer's shall perform blasting operations, including the storage, handling, and use of  
6 explosives and blasting agents, in accordance with the applicable provisions of the ADOT  
7 *Standard Specifications for Road and Bridge Construction*, and all other pertinent Federal,  
8 State, and local regulations. Whenever explosives are used by Developer, they must be of such  
9 character and in such amount as is permitted by the State and local laws and ordinances and all  
10 respective agencies having jurisdiction over explosives, including the City of Phoenix Fire  
11 Department. Developer is responsible for the effects, including damages, of his blasting  
12 operations on adjacent public or private property, including objects, structures, and utilities.

13 Developer shall control ground vibrations and air-blast when blasting may affect objects,  
14 structures, or utilities that may be susceptible to damage from blasting, and shall use properly  
15 designed delay sequences and allowable charge weights per delay.

16 Developer shall prevent or remove deleterious drill hole traces, machine scars, and marks from  
17 machine scaling or other excavation equipment in the final roadway cut faces. Deleterious  
18 conditions is defined to include the following: (1) Individual drill holes whose remaining traces  
19 total more than 3 feet aggregate length; (2) any portion of any roadway cut bearing drill hole  
20 traces whose aggregate length totals more than 25 percent of the total length of controlled blast  
21 holes drilled to form that portion of the cut; (3) machine scars traceable for more than 12 feet  
22 which parallel the natural geologic structure, bedding, or principal fracture direction; (4) machine  
23 scars traceable for more than 6 feet which do not parallel the natural geologic structure, bedding  
24 or principal fracture direction; and (5) machine scars that are approximately parallel and  
25 repetitive (groups of two or more scars).

26 Developer shall scale all slopes for stability, regardless of excavation technique or slope finish  
27 required.

28 Developer shall minimize blast damage behind the trim line. Blast damage is defined to include  
29 the following: widening and loosening of the existing joints, bedding planes, or foliation of the  
30 rock mass to remain; displacement of blocks of intact rock to remain; and creation of new  
31 fractures on the slope to remain.

32 Developer shall prepare a Test Plot Slope Cut Plan that depicts the proposed location of the  
33 proposed cut slope location. No later than 15 Business Days prior to the first test blast,  
34 Developer shall submit the Test Plot Slope Cut Plan to ADOT for review and comment.  
35 Developer shall schedule a meeting with ADOT to review the Test Plot Slope Cut Plan to assure  
36 the finished cut slope is acceptable with ADOT.

#### 37 **416.3.4.2 Protection of Utilities**

38 Developer shall comply with the requirements of the Utility Companies relative to protection of  
39 their individual Utilities from the effects of blasting operations. Developer shall also comply with  
40 the following requirements when blasting operations are within 1,000 feet of transmission line  
41 areas:

- 42 A. Electric detonators must not be used within 500 feet of any transmission line, unless the  
43 safety of their use is demonstrated and documented in the Blasting Plan, including  
44 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 110.10.2.2 of the TPs:

| <b>Table 416-2<br/>Nonexclusive Submittals List</b> |                             |                         |                   |   |                              |
|---|-----------------------------|-------------------------|-------------------|---|------------------------------|
| <b>Submittal</b>                                    | <b>Level of<br/>Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal<br/>Schedule</b>   | <b>Section<br/>Reference</b> |
|   |                             | <b>Hardcopies</b>       | <b>Electronic</b> |   |                              |
| 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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| <b>Table 416-2<br/>Nonexclusive Submittals List</b>  |                  |                  |            |   |                   |
|--|------------------|------------------|------------|---|-------------------|
| Submittal  | Level of Review* | Number of Copies |            | Submittal Schedule  | Section Reference |
|  |                  | Hardcopies       | Electronic |   |                   |
| Drilled Shaft Quality Control 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                  |                  |            |   |                   |

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.

| <b>Table 417-1<br/>Standards</b> |               |  |
|----------------------------------|---------------|--|
| <b>No.</b>                       | <b>Agency</b> | <b>Title</b>   |
| 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 that addresses all environmental effects,
- 8   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.; and
- 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 Material Sources**

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 110.10.2.2 of the TPs:

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| <b>Table 417-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittal</b>   | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>                             | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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**



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### 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 Paving Plans**

##### 9 **419.3.1.1 Asphaltic Concrete Pavement**

10 Developer shall prepare Paving Plans for each Project Segment. Each Paving Plan must  
11 include the following:

- 12 A. A detailed sequence and schedule of AC pavement placement operations, including the  
13 following:
- 14 1. Width of pavement to be placed,
  - 15 2. Proposed equipment,
  - 16 3. Production rates,
  - 17 4. Working hours,
  - 18 5. Asphalt concrete hauling, and
  - 19 6. Placement and compaction methods.
- 20 B. A detailed staking plan for subgrade controls, including offset requirements.
- 21 C. A Traffic Control Plan for pavement construction operations that includes provisions for  
22 the placement and maintenance of barriers required to protect the pavement from traffic.

##### 23 **419.3.1.2 Portland Cement Concrete Pavement**

24 Developer shall prepare Paving Plans for each Project Segment. Each Paving Plan must  
25 include the following:

- 26 A. A detailed sequence and schedule of concrete placement operations, including the  
27 following:
- 28 1. Width of pavement to be placed,
  - 29 2. Proposed equipment,
  - 30 3. Production rates,
  - 31 4. Working hours,
  - 32 5. Concrete hauling,
  - 33 6. Placement methods, and
  - 34 7. Curing, sawing, and sealing methods.
- 35 B. A detailed staking plan for subgrade controls, including offset requirements.
- 36 C. Details of the layout of all longitudinal, transverse, weakened plane, and expansions  
37 joints, including joint sequence, dimensions, and locations of dowels and dowel baskets  
38 shall be in accordance with ADOT *Construction Standard Drawings (C-standards)*.

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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 **419.3.1.3 Paving Plans Submittal**

5 Not less than 20 Business Days prior to paving, Developer shall submit each Paving Plan(s) to  
6 ADOT for review and comment.

### 7 **419.3.2 Pavement Subgrade Materials Requirements**

8 Developer shall ensure and verify that the materials encountered or imported comply with the  
9 effective modulus of subgrade reaction (rigid pavement), resilient modulus (flexible pavement),  
10 or other design subgrade support value as utilized by Developer for the structural section  
11 design.

### 12 **419.3.3 Asphaltic Concrete Pavement**

13 Developer shall evaluate the underlying new asphaltic concrete pavement surface for  
14 smoothness prior to the placement of the surface treatment, when a surface treatment of AR-  
15 ACFC is to be placed on a new asphaltic concrete pavement surface as part of the Project. In  
16 that event, Developer shall evaluate the asphaltic concrete pavement for smoothness for each  
17 0.1 lane-mile increment in accordance with the provisions of *Arizona Test Method 829*.  
18 Developer shall not perform smoothness testing when the ambient air temperature is less than  
19 40 °F, or during rain or other precipitation. Developer shall perform smoothness testing within 10  
20 Business Days of placement of the asphalt concrete pavement final surface course. Developer  
21 shall perform smoothness testing on traffic lanes longer than 0.3 mile.

22 Developer shall repair any segment of asphalt concrete pavement having an international  
23 roughness index (IRI) greater than 43 inches/mile.

24 Upon completion of any corrective actions, Developer shall retest the 0.1 lane-mile increments  
25 containing repaired areas in accordance with the provisions of *Arizona Test Method 829*.

### 26 **419.3.4 Asphalt Rubber-Asphaltic Concrete Friction Course**

27 Developer shall evaluate the asphalt rubber-asphaltic concrete friction course (AR-ACFC)  
28 surface treatment for smoothness for each 0.1 lane-mile increment in accordance with the  
29 provisions of *Arizona Test Method 829*. Developer shall not perform smoothness testing when  
30 the ambient air temperature is less than 40 °F, or during rain or other precipitation. Developer  
31 shall perform smoothness testing within 10 Business Days of placement of the AR-ACFC  
32 surface treatment. Developer shall perform smoothness testing on traffic lanes longer than 0.3  
33 mile.

34 Developer shall repair full lane widths in any segment of AR-ACFC having an international  
35 roughness index (IRI) greater than 50 inches/mile.

36 Upon completion of any necessary corrective actions, Developer shall retest the 0.1 lane-mile  
37 increments containing repaired areas in accordance with the provisions of *Arizona Test*  
38 *Method 829*.

### 39 **419.3.5 Portland Cement Concrete Pavement**

40 If Developer constructs paving widths that are less than the full main roadway width, Developer  
41 shall locate longitudinal construction joints on the lane line or at the edge of the main roadway.  
42 Developer shall not locate longitudinal construction joints in the wheel-paths.

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1 Developer shall evaluate portland cement concrete pavement (PCCP) thickness in accordance  
2 with Section 401-4.04 of the ADOT *Standard Specifications for Road and Bridge Construction*  
3 and the Contract Documents. Developer shall ensure that the PCCP thickness and compressive  
4 strength complies with the material and construction requirements of Developer's pavement  
5 designs and the Contract Documents.

6 All PCCP joints shall be sealed and be compatible with an overlay.

7 Developer shall evaluate PCCP, whether it will be overlaid or not with ACFC or AR-ACFC, for  
8 smoothness in accordance with *Arizona Test Method 801* and Section 401-4.02 of the ADOT  
9 *Standard Specifications for Road and Bridge Construction* and the Contract Documents. The  
10 profile index of the PCCP must be a maximum of 9 inches/mile for every 0.1 lane mile section.

11 Developer shall test the PCCP surface with a 10-foot-long straightedge in accordance with  
12 Section 401-4.02 of the ADOT *Standard Specifications for Road and Bridge Construction* and  
13 the Contract Documents. The pavement surface must not vary in any direction by more than  
14 1/8 inch, except at longitudinal and transverse construction joints. The pavement surface must  
15 not vary by more than 1/4 inch across any longitudinal or transverse construction joint.  
16 Developer must grind high areas or bumps not meeting the required pavement tolerances.

17 Upon completion of any necessary corrective actions, Developer shall retest repaired PCCP  
18 areas to verify that corrections have produced the required improvements.

19 Developer shall longitudinally trowel all PCCP roadway surfaces not overlaid with AR-ACFC in  
20 accordance with Section 401-3.04(F) of the ADOT *Standard Specifications for Road and Bridge*  
21 *Construction* and the Contract Documents.

### 22 **419.3.6 Asphalt Concrete Mix Design**

23 Developer shall specify the mix design parameters for asphalt concrete including unit weight,  
24 asphalt cement percentage, effective voids range in percent, and ratio of the mix design  
25 composite gradation target for the No. 200 US Standard sieve (including mineral admixture) to  
26 the effective asphalt content.

### 27 **419.3.7 Pavement Mix Design**

28 Developer shall prepare Pavement Mix Designs for the Project. Pavement Mix Designs are  
29 considered Shop Drawings and Working Drawings. Not less than 20 Business Days prior to  
30 paving, Developer shall submit Pavement Mix Designs to ADOT for review and comment.

## 31 **419.4 SUBMITTALS**

32 Table 419-1 reflects a nonexclusive list of Submittals identified in Section CR 419 of the TPs  
33 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
34 determine and submit all Submittals as required by the Contract Documents, Governmental  
35 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
36 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
37 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
38 formats described in Section GP 110.10.2.2 of the TPs:

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| <b>Table 419-1<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>                      | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| Paving Plans   | 4                       | 2                       | 1                 | Not less than 20 Business Days prior to paving | CR 419.3.1.3             |
| Pavement Mix Designs   | 4                       | 2                       | 1                 | Not less than 20 Business Days prior to paving | CR 419.3.7               |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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 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<br>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 Reservoirs**

###### 25 **420.3.2.1 General**

26 Developer shall give attention to the effect of Developer's operations upon the landscape, and  
27 shall maintain natural surroundings undamaged.

28 The General Aquifer Protection Permit 1.12 has been established by the Arizona Department of  
29 Environmental Quality (ADEQ) requiring control of wastewater to an impoundment from washing  
30

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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 and submittal of the Notice of Intent (NOI), Developer shall submit a draft  
13 SWPPP to ADOT for approval. When the draft SWPPP is approved by ADOT, ADOT and  
14 Developer shall sign the finalized SWPPP. After finalizing and signing the SWPPP, Developer  
15 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 Laboratory Testing Location Information that includes the laboratory  
36 name, 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 Information 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/smartnoi>. 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 Failure to Comply**

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 Water 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 cease all further disturbances and activities within 300 feet of the feature,  
31 secure the preservation of 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 cease all further disturbances and activities within 300 feet of the  
43 feature, secure the 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 110.10.2.2 of the TPs:

| Table 420-2<br>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, 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 Information     | 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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| <b>Table 420-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |                           |                          |
|--|-------------------------|-------------------------|-------------------|---------------------------|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b> | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |                           |                          |
| *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 During the D&C Period, Developer shall perform all public information Work in compliance with  
4 the requirements of Section CR 425 of the TPs.

#### 5 **425.2 PUBLIC INVOLVEMENT PROGRAM**

6 Developer acknowledges and agrees that the residential and business characteristics of the  
7 Project requires that Developer shall engage in a high degree of personal contact with property  
8 owners and residents, which personal contact Developer shall make possible by a “real time”  
9 public involvement program that must provide rapid responses to Public concerns. Developer  
10 also acknowledges and agrees that an exceptional awareness of the importance of the Project’s  
11 public involvement program and close coordination with ADOT is required of Developer to  
12 ensure that the communications effort in support of the public involvement program is  
13 considered to be effective as the Project advances.

14 Developer shall develop and implement a public involvement program for the Project that  
15 includes extensive community outreach to the general public, Project stakeholders (e.g.,  
16 adjacent neighborhoods, schools, and business owners), and Governmental Entities. Developer  
17 shall design the public involvement program to:

- 18 A. Allow for two-way flow of information and successful implementation of the Project;
- 19 B. Enable identification of community issues early in the Term, so that issues may be  
20 addressed and/or mitigated;
- 21 C. Reduce the probability of Project delays;
- 22 D. Work closely with Project stakeholders to keep them apprised of the Project Schedule  
23 and progress achieved to ensure that their issues and concerns are addressed by the  
24 appropriate staff;
- 25 E. Actively seek and respond to input from the public throughout the D&C Period;
- 26 F. Prevent unnecessary disruptions for motorists and neighboring properties;
- 27 G. Ensure access to and from residences, businesses, park-and-ride lots, and agricultural  
28 fields;
- 29 H. Ensure safe movement of construction equipment, personnel, and materials to and from  
30 work zones, in a manner least disruptive to others;
- 31 I. Minimize noise and dust pollution;
- 32 J. Avoid encroachment on private properties adjacent to the highway corridor;
- 33 K. Maximize effectiveness of traffic control schemes; and
- 34 L. Coordinate with other projects that might occur within the area(s) adjacent to the Project  
35 concurrent with this Project.

36 Developer shall provide task-specific Project information that must contribute to early  
37 identification of community relations and information issues that must be addressed by the  
38 public involvement program, under the direction of ADOT.

39 Developer may, at ADOT’s discretion, accompany ADOT and other designated ADOT  
40 representative(s) to preconstruction briefings to be held with primary stakeholders (e.g.,  
41 neighborhood groups, business owners, property managers, government officials, media, etc.),  
42 as required following issuance of NTP 1. In conjunction with ADOT, Developer shall become  
43 familiar with Project customers and allow these customers to become familiar with Developer,

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1 thus allowing each an opportunity to gain a greater mutual understanding of the challenges to  
2 be faced by each other throughout the D&C Period.

3 Allocation of public involvement program responsibilities between ADOT and Developer are  
4 reflected in Table 425-1. All documents are to be made available to FHWA for information and  
5 review as part of ADOT’s partnership with FHWA.

| <b>Table 425-1<br/>Public Involvement Program Responsibility Matrix</b> |  |   |
|---|--|---|
| <b>Activity</b>   | <b>ADOT</b>  | <b>Developer</b>  |
| 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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| <b>Table 425-1<br/>Public Involvement Program Responsibility Matrix</b> |   |   |
|---|---|---|
| <b>Activity</b>   | <b>ADOT</b>   | <b>Developer</b>  |
| 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; and
- 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; and
- 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 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 **425.2.3.2 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 **425.2.3.3 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 **425.2.3.4 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 **425.2.3.5 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 7 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    **425.2.3.6      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 a Stakeholder Inquiry Form to ADOT for review and  
9           comment to record all community member-initiated inquiries. Developer shall record the  
10          nature of the inquiry and recommend a response. Within 5 Business Days of receipt of  
11          an inquiry from a community member, Developer shall submit Stakeholder Inquiry Forms  
12          to ADOT. At the end of each month, Developer shall provide a monthly report outlining  
13          the number and nature of community member-initiated inquiries and a summary of those  
14          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 110.10.2.2 of the TPs:



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| <b>Table 425-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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 425.2.3.3             |
| Stakeholder Inquiry Form   | 5                       | 2                       | 1                 | Within 5 Business Days of receipt of an inquiry from a community member | CR 425.2.3.6             |
| Construction Operations Survey   | 5                       | 2                       | 1                 | Quarterly   | CR 425.2.3.6             |
| *Levels of Review<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>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 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<br>Standards |        |  |
|--------------------------|--------|--|
| No.                      | Agency | Name   |
| 1                        | ADOT   | Guideline for Accommodating Utilities on Highway Rights-of-Way   |
| 2                        | ADOT   | Encroachment Permit<br>( <a href="http://azdot.gov/business/permits/encroachment-permits">http://azdot.gov/business/permits/encroachment-permits</a> ) |
| 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 that Developer shall conduct the Work.  
28 Include Project Plan sheets detailing the proposed Work, and indicating the peak flow  
29 rates of 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 respective  
3 Utility Company.
- 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 Developer shall identify and protect both the new and existing structures  
8 and utilities.
- 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 Developer shall use to perform the Work. Include in this item  
15 any pumps that Developer shall use to perform the Work and the rated capacity of the  
16 pumps at the anticipated suction head.
- 17 G. List all equipment Developer shall use in the event of an unplanned release and specify  
18 how Developer shall use the equipment. Developer shall specify the locations of standby  
19 pumps in this item. The plan must indicate that all standby equipment that Developer  
20 shall use in the event of an unplanned discharge can be delivered to the Site and put  
21 into service within two hours of identification of any unplanned flow.
- 22 H. List the safety equipment Developer shall use, and describe any unique safety  
23 procedures. Cite the applicable OSHA standards covering the work.
- 24 I. Describe any contingency plans Developer shall implement in the event of unplanned  
25 releases and/or damage to existing facilities. List all personnel and Subcontractors that  
26 are 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 Developer shall protect the public during the Work, and include or  
30 cite any applicable traffic control plans.
- 31 K. Descriptions how Developer shall secure, monitor, and remove temporary plugs or flow  
32 control devices.

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  
37 Company 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 all Utility Adjustments to irrigation facilities required for the Project  
9 within the Peninsula-Horowitz boundary.

10 Developer shall perform well relocation and abandonment Work in accordance with the  
11 requirements of the Arizona Department of Water Resources.

### 12 **430.3.1.1 Inspection**

13 Developer acknowledges and agrees that each Utility Company, through its representative, has  
14 the right to inspect the Construction Work performed on its Utilities by Developer to ensure the  
15 location, alignment, and grade are in accordance with the approved Utility plans and the Utility  
16 Company's requirements. Developer shall provide access to the Site to allow for the Utility  
17 Company's inspection. Developer shall leave the installation exposed for inspection by the  
18 Utility Company or expose the Utility or Utilities for inspection by the Utility Company if the  
19 installation is covered prior to the Utility Company's inspection and approval. Developer shall  
20 contact the respective Utility Company at least 5 Business Days in advance to request an  
21 inspection of installed facilities.

### 22 **430.3.1.2 Approval**

23 Developer shall obtain a written acceptance of the Utility Adjustment Work from the Utility  
24 Company directed to ADOT. If the Utility Company is unwilling to provide a written acceptance,  
25 Developer shall prepare a Utility Work Acceptance Request that describes the Utility Adjustment  
26 Work and the request to the Utility Company to accept the Utility Adjustment Work. Developer  
27 shall submit a copy of the Utility Work Acceptance Request to ADOT as a notification that the  
28 Utility Work has been completed, but the Utility Company is unwilling to provide a written  
29 acceptance. Developer shall schedule a meeting with the Utility Company and ADOT to resolve  
30 the matter. Notwithstanding Developer's submittal of a Utility Work Acceptance Request, if the  
31 Utility Company is not satisfied with the Work, Developer shall remain responsible for the  
32 reconstruction portions or all of the Utility Work.

### 33 **430.3.1.3 Access Responsibilities during Construction**

34 Developer shall take all appropriate measures to make certain that all Utilities remain fully  
35 operational during all phases of Construction Work, including coordinating with Utility  
36 Companies to develop a plan so Utility Companies may access their facilities for maintenance  
37 and repair during Construction Period. Developer shall construct any replacement access roads  
38 prior to disruption of the existing access roads.

### 39 **430.3.1.4 Utility Record Drawings**

40 Developer shall prepare Utility Record Drawings for Utility Adjustments performed by Developer.  
41 Developer shall prepare Utility Record Drawings in the format required by each Utility Company.  
42 The Utility Record Drawings must show the location of, and label as such, all abandoned  
43 Utilities. The Utility Record Drawings must indicate the installation horizontal and vertical control  
44 of all facilities installed, with size and materials noted. Developer shall submit Utility Record  
45 Drawings to the associated Utility Company as required by the Utility Company. Developer shall

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1 request a Letter of Acceptance of the Utility Adjustment Work from the Utility Company after  
2 submittal of the Utility Record Drawings to the Utility Company. Within 10 Business Days of  
3 receipt, Developer shall submit the original Letter of Acceptance of the Utility Adjustment Work  
4 from the Utility Company to ADOT. Developer shall incorporate the Utility Record Drawings into  
5 the Project Record Drawings.

### 6 **430.3.2 Magnetic Detection for Underground Facilities**

7 All new underground utility, drainage facilities, and ITS empty conduits, including service  
8 connections, placed within Project ROW must be magnetically detectable with standard locating  
9 instruments. Developer shall place, construct, and test continuous detectable tracer for all the  
10 underground facilities that lack a continuous and integral metal component capable of detection  
11 by standard locating instruments, in accordance with Section 104.15 of the ADOT *Standard*  
12 *Specifications for Road and Bridge Construction*.

13 Developer shall prepare a Tracer Wire Report that includes all conductivity test results of tracer  
14 wires installed outside of the Maintenance Services Limits. No later than 10 Business Days after  
15 testing, Developer shall submit a Tracer Wire Report to ADOT for review and comment.

### 16 **430.3.3 Utility Adjustment Work by Utility Companies**

17 Developer shall coordinate with Utility Companies to develop a plan so Utility Companies may  
18 access the Site to perform Utility Adjustments. Developer shall inspect all Utility Work performed  
19 by the Utility Companies and/or their contractors and subcontractors within the Site to verify  
20 compliance with the Contract Documents. Developer shall inspect and approve the construction  
21 performed by each Utility Company to verify that the construction complies with the  
22 requirements of the Contract Documents and the approved plans and permits for such  
23 construction. Developer shall request and receive, or alternatively create, Utility Record  
24 Drawings that include horizontal and vertical control with size and materials noted for the Utility  
25 Adjustments performed by the Utility Companies. Developer shall provide a written Developer  
26 construction inspection approval letter to the Utility Company after Utility Record Drawings have  
27 been received from the Utility Company. Developer shall prepare a Utility Adjustment Package  
28 that includes Developer's construction inspection approval and Utility Record Drawings. Within  
29 10 Business Days of receipt of the written Developer construction inspection approval letter  
30 from the Utility Company, Developer shall submit a Utility Adjustment Package to ADOT.  
31 Developer shall immediately notify ADOT in writing regarding any noncompliance.

### 32 **430.3.4 Utility Abandonment**

33 Developer shall perform abandonment of Utilities within the Project ROW in accordance with the  
34 ADOT *Guideline for Accommodating Utilities on Highway Rights-of-Way*.

## 35 **430.4 SUBMITTALS**

36 Table 430-2 reflects a nonexclusive list of Submittals identified in Section CR 430 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 110.10.2.2 of the TPs:

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| <b>Table 430-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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               |
| Utility Work Acceptance Request  | 5                       | 1                       | 1                 | If the Utility Company 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             |
| Tracer Wire Report   | 4                       | 2                       | 1                 | No later than 10 Business Days after testing  | CR 430.3.2               |
| 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"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |   |                          |

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**End of Section**

**CONFORMED – AMENDED AND RESTATED**

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.

| <b>Table 436-1<br/>Existing Railroad Crossing Locations</b> |                           |                    |
|---|---------------------------|--------------------|
| <b>Railroad Crossing Locations</b>                          | <b>USDOT Crossing No.</b> | <b>Railroad MP</b> |
| 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.

| <b>Table 436-2<br/>Standards</b> |               |   |
|----------------------------------|---------------|---|
| <b>No.</b>                       | <b>Agency</b> | <b>Name</b>                                       |
| 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 the following activities:

- 18 A. Obtaining and complying with all applicable construction specifications and requirements  
19 for each Work location that is on or adjacent to UPRR right-of-way.
- 20 B. Complying with the requirements of the UPRR Construction and Maintenance  
21 Agreements.
- 22 C. Arranging for and obtaining all temporary rights-of-entry and access onto railroad  
23 property, and comply with all railroad requirements for access, entry, and safety training  
24 for all personnel involved.

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1 D. Identifying and coordinating with UPRR for railroad flagging operations, and paying for  
2 costs of flagging.

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.

### 3 **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**

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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 110.10.2.2 of the TPs:

| <b>Table 440-1<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |                           |                          |
|--|-------------------------|-------------------------|-------------------|---------------------------|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b> | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |                           |                          |
| 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**

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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 the 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**

**CONFORMED – AMENDED AND RESTATED**

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.

| <b>Table 450-1<br/>Standards</b> |  |   |
|----------------------------------|--|---|
| <b>No.</b>                       | <b>Agency</b>                              | <b>Title</b>                            |
| 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.

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- 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. Developer shall place mockups for each  
15 Aesthetic Area on Site.

### 16 **450.3.1.2 Paint Draw Downs**

17 Developer shall prepare Paint Draw Downs which includes samples of each color to be used. At  
18 a minimum there will be seven colors: the base color, the accent color for each Aesthetic Area,  
19 and the accent color for the Salt River Bridge. At least 40 Business Days prior to painting,  
20 Developer shall submit Paint Draw Downs to ADOT for review and comment.

### 21 **450.3.1.3 Paint Quality**

22 All paint used in the project area shall resist chipping, flaking, fading, staining, and chalking.

### 23 **450.3.2 Landscaping**

24 Developer shall comply with the requirements of the Arizona Native Plant Law and the Arizona  
25 Revised Statutes Section 3-901, et seq. Developer shall provide the Arizona Department of  
26 Agriculture at least 10 Business Days notice prior to any clearing operations. Native plants as  
27 defined by the Statutes shall not be transported from the land or offered for sale without the  
28 written permission of the Commission.

29 Notice shall be sent to:

30 Assistant Director  
31 Division of Compliance  
32 Arizona Department of Agriculture  
33 State Office Building, Room 414  
34 1688 West Adams Street  
35 Phoenix, Arizona 85007

36 Developer shall not dispose debris from construction operation that creates a blemish on the  
37 landscape. Developer shall obtain the appropriate permits in accordance with applicable state  
38 and federal regulations to stockpile material in running or intermittent streams, or other waters of  
39 the U.S.

40 Developer shall install plants in such a manner as to provide optimum growth and health of the  
41 plants. Developer shall plant all plants as specified in the Aesthetics and Landscape Plans by  
42 Maintenance NTP.

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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 are 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<br>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             |

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| <b>Table 450-2<br/>Granite Mulch and Decomposed Granite</b> |                      |                             |
|---|----------------------|-----------------------------|
| <b>Color</b>  | <b>Granite Name</b>  | <b>Supplier</b>             |
|   | 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 must 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 Developer shall install rebar with safety caps and line string 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 The approved artist is responsible for, and must review, the landscape contractor’s layouts and  
15 installation of metal edging, pavers, placement of granite mulch and river rock materials for  
16 conformance to graphic layout and colors specified on landscape design plans.

17 **450.3.3 Landscape Establishment for Non-Maintained Elements**

18 For landscape in the Non-Maintained Elements area, Developer shall maintain and establish the  
19 landscape elements for the landscape establishment period specified in Section 6.12.3 of the  
20 Agreement. The landscaping establishment work shall consist of the care of all salvaged and  
21 installed plant materials as part of the project in accordance with accepted horticultural  
22 practices; supplying and applying all irrigation water; repairing, adjusting or replacing bracing;  
23 repairing public or weather damage to all landscape areas; furnishing and applying sprays, dust  
24 and/or cages to combat vandalism, disease, insects and other pests; noxious weed control,  
25 pruning; and the reconfiguring, maintaining, and operating the temporary drip irrigation system  
26 as specified by the Developer.

27 The landscape establishment activities shall include providing sufficient water to keep the  
28 installed plants in a healthy condition and the reconfiguration, modification maintenance, repair,  
29 replacement and operation of the temporary water distribution system by the Developer to meet

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1 the landscape establishment needs of the Project. The Developer shall be responsible to keep a  
2 log of all landscape establishment activities. The log shall contain a record of the time and date  
3 of field inspections, watering time durations and dates, fertilizer applications, repairs,  
4 replantings, and other operations conducted by Developer. Developer shall provide for approval  
5 the format for recording these activities prior to undertaking the work. Developer has the option  
6 of maintaining a nursery past the salvage and replanting operations completed as part of the  
7 D&C Period for use during the landscape establishment project.

8 The tree ties and stakes shall be removed at the end of the landscaping establishment period or  
9 as directed by ADOT. All trees shall stand erect on their own without stakes when brought to  
10 this site. If the tree cannot stand on its own when nursery stakes are removed, the tree shall be  
11 removed and replaced.

### 12 **450.3.3.1 Plant Protection**

13 Developer shall provide all landscape plants protection which must include, but not be limited to,  
14 eradication or control of insects, mites, fungi, and non-fungus diseases. The application of  
15 appropriate insecticide, miticide and fungicide may only be used with the prior approval of  
16 ADOT. Developer shall not employ insecticides, fungicides and miticides during the Term that  
17 cause the extermination of any landscape plant material, or cause damage to the growth  
18 characteristics such that plants will not be able to recover in a normal manner.

19 No chemical shall stain or cause damage to any portion of the site or improvements including  
20 landscape plant materials. If staining or damage occurs, repairs or replacements shall be made  
21 at Developer's expense to the satisfaction of ADOT. Application of chemicals shall be in such a  
22 manner so as to not cause injury to the personal health of anyone working on the project,  
23 observing, or passing by. Care shall be taken such that no puddles or pools of water which may  
24 contain toxic amounts of chemicals shall remain after completion of operations. Chemicals shall  
25 not be allowed to fall on or migrate to areas other than the work site. All laws and local codes  
26 shall be followed regarding application methods and personnel.

### 27 **450.3.3.2 Establishment Irrigation**

28 During each watering cycle during the landscape establishment period, Developer shall supply  
29 water to a minimum depth of 12 inches to all Saguaros and trees (regardless of species).  
30 Developer shall provide adequate water to each installed plant to maintain optimum health  
31 through the completion of its applicable plant establishment period.

### 32 **450.3.3.3 Establishment Inspections**

33 ADOT will perform visual inspections in the presence of Developer once every 30 days during  
34 the landscaping establishment period, unless ADOT and Developer agree to other  
35 arrangements in writing. Developer shall modify the maintenance practices and water delivery to  
36 the plants to maintain optimum growing conditions as directed by ADOT. Saguaro  
37 measurements identified in Section 806 of the ADOT *Standard Specifications for Road and*  
38 *Bridge Construction* will be conducted every 4 months, as applicable.

39 During the landscape establishment period Developer shall provide the necessary care to keep  
40 all plant material equal in health and vigor under the use of standard horticultural practice to  
41 combat detriments known as; rodents, mammals, pest, disease, bacteria, mites, fungi, nutrient  
42 deficiency, harmful exposure to sunlight, and drought conditions. In addition to inspecting  
43 salvage plant material for damage to its appearance in health and/or vigor resulting from any of  
44 the previously mentioned detriments, ADOT will also inspect the salvage plant material and new  
45 plant material for symptoms that indicate poor health. Poor health symptoms will include items  
46 such as; wrinkled, loose or damaged cambium layers; evidence of transplant 'shock', i.e. leaf



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1 drop and discolored foliage; no observable improvement to the condition of the salvage or new  
2 plant material after it has received adequate irrigation or rain; change in color not consistent with  
3 color changes to identical species existing in the given area; and failure to leaf out when  
4 identical specie of the existing area are consistently found in leaf. The previously mentioned  
5 criteria shall be used by ADOT to determine if both the salvage and new plant material is in  
6 close conformity in health and/or vigor and acceptable for payment or determined unacceptable  
7 for no payment by the ADOT. Developer is required to replace the unacceptable or dead stock  
8 plant materials with the same species, size, appearance and quality as originally planted, as  
9 determined by ADOT. No further payment will be made to Developer for maintenance of any  
10 plant materials determined as unacceptable by ADOT. Local stock shall be the priority for  
11 replacement plants and the use of any collected/open stock requires advance approval.

12 Transporting of any plant materials for the landscape establishment activities shall be in  
13 compliance with all State and local requirements. Developer shall be responsible to obtain all  
14 necessary permits and tags for transporting plant materials on public roadways; no separate  
15 payment will be made to Developer for the permits. Permits and tags shall be made available to  
16 ADOT upon request. Developer shall maintain all non-planted areas within the freeway right-of-  
17 way and project limits, including the freeway median, drainage basins, cross-street medians,  
18 shoulder areas, and all other areas as depicted on the project plans.

### 19 **450.3.3.4 Planted Stock and Seeding Establishment**

20 The tree ties and stakes shall be removed at the end of the landscaping establishment period or  
21 as directed by ADOT. All trees shall stand erect on their own without stakes when brought to  
22 this site. If the tree cannot stand on its own when nursery stakes are removed, the tree shall be  
23 removed and replaced.

24 Developer shall apply approved pre-emergent herbicide according to manufacturer  
25 recommendations on all unpaved or landscaped areas of the right-of-way including the freeway  
26 median, maintenance pathways, areas of decomposed granite, granite mulch, rock mulch, and  
27 ADOT AB as depicted on the project plans, and as directed by ADOT.

28 The application shall first be completed midway through the landscape establishment period  
29 and the second application shall be completed 30 days prior to completion of the landscape  
30 establishment period. Watering shall be completed in accordance with the manufacturer's  
31 recommendations, as included and as related to each application.

32 The pre-emergent herbicide shall be applied in accordance with the recommendations of the  
33 preemergent herbicide manufacturer, as approved by ADOT. The control of weeds shall be  
34 accomplished by the use of herbicides or manual removal. Manual removal of weeds shall be  
35 required in the seeded areas, and in the decomposed granite and granite mulch areas after  
36 herbicides have taken effect.

37 Developer shall maintain the existing seeded areas on the project, including any erosion repair,  
38 reseeding and/or restoration, as directed by ADOT.

### 39 **450.3.3.5 Plant Replacement**

40 During the second half of the landscaping establishment period, Developer shall provide, where  
41 required, plant replacements based on the original size. The plant material replacement shall be  
42 considered as included in the D&C work.

43 All dead or unhealthy plant stock shall be removed and replaced as directed within 21 days from  
44 the date of the inspection and Developer shall notify ADOT in writing when the replacement  
45 work has been completed.

**CONFORMED – AMENDED AND RESTATED**

1 **450.3.3.6 Plant Survivability**

2 The new plants in the Non-Maintained Elements owned by ADOT must have a survivability rate  
 3 of 100% at the end of the plant establishment period. Plants that are salvaged and replanted  
 4 must have a survivability rate of 80% at the end of the plant establishment period.

5 **450.4 SUBMITTALS**

6 Table 450-3 reflects a nonexclusive list of Submittals identified in Section CR 450 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 110.10.2.2 of the TPs:

| <b>Table 450-3<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| Mockups  | 4                       | 21                      | 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                         |                         |                   |   |                          |

13

14

**End of Section**

## CONFORMED – AMENDED AND RESTATED

### 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<br>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<br>Minimum Concrete Strength                                  |             |
|---|-------------|
| Components  | $f'c$ (ksi) |
| Decks (except barriers)   | 4.5         |
| Bridge concrete barriers, approach slabs, and protective pavement systems | 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  
19 Drawings. For MSE walls that are Non-Maintained Elements to be owned by ADOT, not less

## CONFORMED – AMENDED AND RESTATED

1 than 10 Business Days prior to implementation, Developer shall submit MSE Wall Drawings to  
2 ADOT for review and comment. For MSE walls within the Maintenance Service Limits, not less  
3 than 10 Business Days prior to implementation, Developer shall submit MSE Wall Drawings to  
4 ADOT.

5 The following Shop Drawings and Working Drawings, if applicable, must become part of the  
6 Record Drawings structure drawings:

- 7 A. Post-tensioning details;
- 8 B. Expansion joint details;
- 9 C. Proprietary bearing details;
- 10 D. Proprietary retaining wall details;
- 11 E. Proprietary sound barrier wall details;
- 12 F. Precast and stay-in-place deck panels;
- 13 G. Precast girder; and
- 14 H. Other Shop Drawing and Working Drawings for atypical structures as specified in the  
15 special provisions.

### 16 **455.3.3 Falsework and Forms**

17 Developer shall design and construct falsework and forms in accordance with the following:

- 18 A. *AASHTO Guide Specifications for Bridge Temporary Works*
- 19 B. *AASHTO Construction Handbook for Bridge Temporary Works*
- 20 C. *AASHTO LRFD Bridge Construction Specifications*

21 Developer shall prepare Falsework Drawings that includes the design and construction  
22 requirements of the falsework and forms. Falsework Drawings are considered Shop Drawings  
23 and Working Drawings. Not less than 10 Business Days prior to implementation, Developer  
24 shall submit Falsework Drawings to ADOT.

### 25 **455.3.4 Steel Fabrication**

26 Lap splices or mechanical connectors must be used for all reinforcing steel splices and  
27 connections. Developer shall not allow or permit welding of reinforcing steel.

### 28 **455.3.5 Concrete**

29 Developer shall ensure that concrete pours are not conducted over live traffic.

30 Developer shall saw longitudinal grooves on bridge decks, approaches, and concrete pavement  
31 protective systems that are not overlaid with AR-ACFC in accordance with Section 402-5 of the  
32 *ADOT Standard Specifications for Road and Bridge Construction*.

### 33 **455.3.6 Load Rating Report**

34 Developer shall prepare an As-Built Load Rating Report(s) based on as-built condition in  
35 accordance with the *AASHTO Manual for Bridge Evaluation* and shall include both inventory  
36 and operating ratings of the “as-built” structures. At the same time as the Record Drawing  
37 Submittal, Developer shall submit the As-Built Load Rating Report(s) to ADOT for review and  
38 comment.

## 39 **455.4 SUBMITTALS**

40 Table 455-3 reflects a nonexclusive list of Submittals identified in Section CR 455 of the TPs  
41 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall

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1 determine and submit all Submittals as required by the Contract Documents, Governmental  
 2 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
 3 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
 4 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
 5 formats described in Section GP 110.10.2.2 of the TPs:

| <b>Table 455-3<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |  |                          |
|--|-------------------------|-------------------------|-------------------|--|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>                              | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |  |                          |
| MSE Wall Drawings for MSE Walls that are Non-Maintained Elements to be owned by ADOT   | 4                       | 2                       | 1                 | Not less than 10 Business Days prior to implementation | CR 455.3.2               |
| MSE Wall Drawings for MSE Walls within the Maintenance Service Limits  | 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                         |                         |                   |  |                          |

6

7

**End of Section**

**CONFORMED – AMENDED AND RESTATED**

1 **CR 457 BRIDGE HYDRAULICS**

2 *Intentionally left blank*

3

4

**End of Section**

## CONFORMED – AMENDED AND RESTATED

### 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<br>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. Developer shall install  
19 graffiti shields on all new or impacted signs on bridges on I-10 (Papago Freeway) in accordance  
20 with graffiti shield details (graffiti shield details.PDF) included in the RIDs.

21 Developer shall coordinate with Grand Canyon State Logo Signs, a program of ADOT, for the  
22 engineering of integration and locations of specific service logo signs at each interchange in the  
23 ROW and exit ramps. Grand Canyon State Logo Signs is responsible for contracting the  
24 fabrication and installation of the specific service logo signs.

##### 25 **460.3.3 Traffic Signal Systems**

26 Developer shall design and implement any temporary traffic signal timing or any phasing  
27 required for traffic management during construction. Fifteen Business Days prior to  
28 implementing the proposed timing or phasing changes, Developer shall prepare and submit a  
29 written Traffic Signal Modification Request for any proposed timing or phasing changes,  
30 including temporary signal head placement, to ADOT for review and comment. For traffic signal  
31 modifications at intersections controlled by the City of Phoenix, Developer shall, concurrently

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1 with such submission to ADOT, also submit the Traffic Signal Modification Request to the City  
2 for review and comment.

3 Ten Business Days prior to implementing temporary phasing changes, Developer shall prepare  
4 and submit a written Temporary Phasing Controller Programming Request to ADOT for approval.  
5 ADOT will program the controller, no greater than 7 Business Days after receipt of the written  
6 request, after which Developer may implement the temporary phasing.

7 Developer shall deliver permanent traffic signal cabinets to ADOT Traffic Operations, 2104 S.  
8 22nd Avenue, Phoenix, AZ 85009, for assembling and testing by ADOT within 30 Business  
9 Days prior to scheduled traffic signal turn-on date. Upon successful testing, Developer will pick  
10 up the cabinet for installation.

### 11 **460.3.4 Lighting**

12 Developer shall maintain existing lighting levels during construction where existing lighting  
13 exists. All luminaires must be individually fused. Developer shall place the in-line fuse of high  
14 mast light fixtures that are mounted on lowering devices in the fixture housing. Developer shall  
15 place the in-line fuses of all other fixtures in the nearest pull box.

16 Developer shall record Global Positioning System (GPS) positions for each pull box in  
17 accordance with the ADOT *Standard Specifications for Road and Bridge Construction* and the  
18 ADOT *Stored Specifications*. Developer shall prepare a Pull Box Location Report that includes  
19 the GPS positions for all pull boxes. Developer shall submit the Pull Box Location Report to  
20 ADOT for review and comment.

21 Developer shall attach an ADOT-provided maintenance unit device decal 42 inches above the  
22 base plate at 45 degrees in the direction of oncoming traffic on each electrical cabinet and  
23 lighting pole. Developer shall prepare and submit a written Maintenance Unit Device Decal  
24 Request to ADOT. ADOT will make unit device decals available for pickup at ADOT Traffic  
25 Operations, 2104 S. 22nd Avenue, Phoenix, AZ 85009, within 30 days of receipt of the  
26 Maintenance Unit Device Decal Request. Developer shall install all maintenance unit device  
27 decals on all equipment prior to opening to traffic.

28 Developer shall attach a permanent metal tag to the pole above the hand hole stating the  
29 manufacture's name, pole type per the plans, ADOT pole drawing number (if applicable), shaft  
30 length, and gage number. Pictures of sample metal tags are included in the RIDs.

31 Developer shall provide, erect, and maintain all necessary barricades, suitable and sufficient  
32 lights, danger signals, signs and other traffic control devices and shall take all necessary  
33 precautions for the protection of the work and safety of the public. Highways closed to traffic  
34 must be protected by effective barricades, and obstructions must be illuminated during hours of  
35 darkness. Suitable warning lights shall be provided to control and direct traffic properly.

36 Developer shall erect warning signs in advance of any place on the Project where operations  
37 may interfere with the use of the road by traffic, and at all intermediate points where the Work  
38 crosses or coincides with an existing road.

39 All signs, barricades, lights, temporary signals, and other protective devices must conform to the  
40 requirements of the *Manual of Uniform Traffic Control Devices (MUTCD)* and associated  
41 *Arizona Department of Transportation Supplement (ADOT Supplement)*.

### 42 **460.4 SUBMITTALS**

43 Table 460-2 reflects a nonexclusive list of Submittals identified in Section CR 460 of the TPs  
44 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall



**CONFORMED – AMENDED AND RESTATED**

1 determine and submit all Submittals as required by the Contract Documents, Governmental  
 2 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
 3 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
 4 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
 5 formats described in Section GP 110.10.2.1 of the TPs:

| <b>Table 460-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| 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<br>1. Sole discretion or absolute discretion approval ( <u>Section 3.1.3.1 of the Agreement</u> )<br>2. Good faith discretion approval ( <u>Section 3.1.3.2 of the Agreement</u> )<br>3. Reasonableness approval ( <u>Section 3.1.4.2 of the Agreement</u> )<br>4. Review and comment ( <u>Section 3.1.5 of the Agreement</u> )<br>5. Submit/receive and file or comment/no hold point ( <u>Section 3.1.6 of the Agreement</u> ) |                         |                         |                   |   |                          |

6

7

**End of Section**

**CONFORMED – AMENDED AND RESTATED**

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.

| <b>Table 462-1<br/>Standards</b> |               |   |
|----------------------------------|---------------|---|
| <b>No.</b>                       | <b>Agency</b> | <b>Name</b>                                       |
| 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  
26 Closure dates and duration. Developer shall provide advance notification through PCMS for all  
27 Closures and for each direction of traffic that is affected. Advance signing notification must be  
28 provided as noted in Table 462-2.

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| Table 462-2<br>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 where posted speeds are greater than 45 mph; 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**

**CONFORMED – AMENDED AND RESTATED**

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<br>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.

## CONFORMED – AMENDED AND RESTATED

### 1 **466.3.2.4 Count Stations**

2 *Intentionally left blank*

### 3 **466.3.2.5 Ramp Meters**

4 *Intentionally left blank*

### 5 **466.3.2.6 Node Buildings**

6 If Developer plans to enter a node building, Developer shall prepare a Node Building Access  
7 Request that includes the date and time Developer needs access to the node building, node  
8 building number, purpose of the requested access, and a description of the Work to be  
9 performed in the node building. A minimum of 5 Business Days prior to any planned Work within  
10 an existing node building, Developer shall submit a written Node Building Access Request to  
11 ADOT for approval.

### 12 **466.3.2.7 Weigh-In-Motion Systems**

13 Developer shall construct weigh-in-motion system in accordance with ADOT *Standard Drawings*  
14 T.S. 6-3, T.S. 6-4, and T.S. 6-7.

### 15 **466.3.3 Temporary ITS Devices**

16 Developer may use solar powered ITS devices for temporary service until permanent power is  
17 installed. Power supply for temporary ITS devices must be uninterrupted. Developer shall  
18 remove temporary ITS devices prior to Final Acceptance.

### 19 **466.3.4 Testing**

20 Developer shall test the ITS, including the existing ITS elements, for the fully operational ITS for  
21 the Project. Developer shall perform the tests in accordance with manufacturer's requirements  
22 and the testing requirements identified in the ADOT *Draft Intelligent Transportation Systems*  
23 *Specifications for South Mountain Freeway* included in the RIDs. ADOT will conduct subsystem  
24 tests in accordance with the ADOT *Draft Intelligent Transportation Systems Specifications for*  
25 *South Mountain Freeway*. Developer shall prepare ITS Testing Documentation that includes all  
26 test results as identified in this Section CR 466.3.4. Prior to Substantial Completion, Developer  
27 shall submit all ITS Testing Documentation to ADOT for approval.

### 28 **466.3.5 Certificates**

29 Developer shall prepare and obtain ITS Certifications as required by the ADOT *Draft Intelligent*  
30 *Transportation Systems Specifications for South Mountain Freeway* included in the RIDs. Prior  
31 to Final Acceptance, Developer shall submit all ITS Certifications to ADOT.

### 32 **466.3.6 Record Drawings**

33 Developer shall prepare Record Drawings for the ITS in accordance with the Section 747 of the  
34 ADOT *Draft Intelligent Transportation Systems Specifications for South Mountain Freeway*  
35 included in the RIDs and Section GP 110.10.2.8.4 of the TPs.

### 36 **466.3.7 Training**

37 Developer shall arrange for and provide a training course for the equipment components for  
38 equipment that is not currently in use by ADOT. The course must be of adequate duration to  
39 cover the subject matter and must have an instructor competent in the technical aspects of the  
40 equipment installed in the nodes. The training course must provide training to up to 12 ADOT  
41 personnel.

## CONFORMED – AMENDED AND RESTATED

1 Developer shall prepare ITS Training Material that includes a syllabus, training materials, and a  
 2 schedule for the ITS equipment training course. Reference materials must include the course  
 3 outline, material describing the course, and operations and maintenance manuals with any  
 4 additional information needed to adequately describe the subject being taught. Training  
 5 materials must not be copyrighted. Prior to the proposed start of ITS equipment training,  
 6 Developer shall submit the ITS Training Material to ADOT for review and comment. Developer  
 7 shall schedule the training no sooner than 10 Business Days from addressing ADOT comments  
 8 on the ITS Training Material.

### 9 **466.4 SUBMITTALS**

10 Table 466-2 reflects a nonexclusive list of Submittals identified in Section CR 466 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 110.10.2.2 of the TPs.

| Table 466-2<br>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 Substantial Completion   | 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 (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)

17

18

**End of Section**

**CONFORMED – AMENDED AND RESTATED**

1 **CR 470 RIGHT-OF-WAY**

2 *Intentionally left blank*

3

4

**End of Section**

**SECTION D**  
**MAINTENANCE REQUIREMENTS (MR)**



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### 1 **MR 200 REFERENCES**

#### 2 **200.1 GENERAL REQUIREMENTS**

3 Developer shall perform Maintenance Services during the Maintenance Period in accordance  
4 with Section D of the TPs. Developer shall perform any design and construction for  
5 Maintenance Services in accordance with the requirements in the following TPs:

- 6 A. Section A - General Provisions
- 7 B. Section B - Design Requirements
- 8 C. Section C - Construction Requirements

#### 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, parts,  
13 and facilities using standards required at the time of original construction of the Project in  
14 accordance with the General Provisions (GPs), Design Requirements (DRs), and  
15 Construction Requirements (CRs) of the TPs, as the same may be changed by ADOT  
16 pursuant to Section 8.1.2 of the Agreement. When materials, equipment, parts, or  
17 facilities required by those provisions are commercially unavailable, Developer shall  
18 propose that Routine Maintenance Services be performed to a new standard approved  
19 by ADOT. Developer shall comply with the requirements set forth in Section GP  
20 110.01.2.1 of the TPs to obtain ADOT approval of the new standards.
- 21 B. Developer shall use devices and systems to control traffic for temporary traffic control in  
22 accordance with then-current ADOT standards, including ADOT standard specifications,  
23 standard drawings, and ADOT engineering directives, including all then-currently  
24 approved statewide and regional modifications.

### 25 **MR 201 COOPERATION WITH ADOT**

26 Developer shall accommodate ADOT activities in the Maintenance Services Limits and in the  
27 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 **MR 400 MAINTENANCE SERVICES**

#### 38 **400.1 GENERAL REQUIREMENTS**

39 Throughout the Maintenance Period, Developer shall be responsible for and shall perform all  
40 Maintenance Services for the Project except as follows:

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- 1 A. Operating and maintaining ITS (provided that Developer shall perform maintenance of
- 2 certain specific components as described in Section MR 400.2.7 of the TPs);
- 3 B. Traffic management unrelated to the Developer’s maintenance activities;
- 4 C. Traffic signal operations or maintenance of internal traffic signal electronics within the
- 5 signal cabinets;
- 6 D. Arrangements for police services or freeway service patrol for Emergencies;
- 7 E. Incident and Emergency response (provided that Developer shall repair damage to the
- 8 Project from Incidents and Emergencies or from actions to respond to and clear
- 9 Incidents and Emergencies);
- 10 F. Maintenance of improvements to surface streets outside of the Maintenance Service
- 11 Limits; and
- 12 G. Maintenance of the shared-use path and 5 foot landscape area on each side of the path
- 13 from 40th Street to 17th Avenue.

14 Developer shall propose additional requirements for Elements in Developer’s design not  
15 addressed in TP Attachment 500-1 that fit within the existing maintenance reference categories.  
16 Developer shall prepare an updated TP Attachment 500-1 that includes the proposed additions,  
17 proposed Performance Requirements, Inspection intervals and type, temporary and permanent  
18 repair response times, Measurement Records and Targets for the subject Elements. No later  
19 than 90 days prior to Substantial Completion, Developer shall submit the updated TP  
20 Attachment 500-1 to ADOT for approval. ADOT has the right to add additional requirements for  
21 Elements not addressed in TP Attachment 500-1 based on Developer’s design, as more  
22 particularly set forth in Section 17.1.2.2 (d) of the Agreement.

23 The Schematic Design identifies the Maintenance Service Limits assuming no changes or  
24 additions to the Project ROW from that shown in the Schematic ROW. However, the  
25 Maintenance Service Limits must be adjusted to encompass changes or additions to the Project  
26 ROW from that shown for the Schematic ROW. The Maintenance Service Limits do not include  
27 areas that the City of Phoenix agrees to maintain in the Third-Party Agreements. The  
28 Maintenance Service Limits for the Maintenance Period must be as shown on the Final Design  
29 Documents as described in Section GP 110.10.2.7.7 of the TPs and as updated prior to Final  
30 Acceptance.

31 Developer shall establish and maintain an organization that effectively manages all  
32 Maintenance Services in the manner set forth in the approved Maintenance Management Plan  
33 (MMP) and in accordance with the requirements of Section MR 400.2.2.1 of the TPs and the  
34 Contract Documents. Developer shall:

- 35 A. Establish a maintenance organization, including management, coordination, reporting,
- 36 Surveillance, Inspection, design, construction, documentation, quality, traffic
- 37 management, maintenance, and repair functions;
- 38 B. Prepare and update the MMP, including supplementary plans as required in Section MR
- 39 400.2.1 of the TPs as elements of the PMP as set forth in Section GP 110.04 of the TPs;
- 40 C. Provide an annual report on all Maintenance Services that is compatible with ADOT
- 41 maintenance management systems;
- 42 D. Participate in annual review of Maintenance Services jointly with ADOT;
- 43 E. Prepare a Handback Plan and Handback Transition Plan in accordance with Section MR
- 44 501 of the TPs;
- 45 F. Deliver the Project at the end of the Maintenance Period in the condition required by the
- 46 Contract Documents;

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- 1 G. Provide evidence of insurance coverage and bonds for Maintenance Services in  
2 accordance with the Agreement;
- 3 H. Provide and maintain a secure web-accessible database of Elements, Maintenance  
4 Services, asset condition, and other pertinent information;
- 5 I. Conduct periodic Surveillance and Inspections of the Project and Elements within the  
6 Project as set forth in Section MR 400.2.8 of the TPs and in TP Attachment 500-1;
- 7 J. Respond to Notifications from ADOT and other entities regarding Project deficiencies;
- 8 K. Make Emergency repairs, temporary repairs, and permanent repairs to the Project in  
9 accordance with the Contract Documents;
- 10 L. Perform Capital Asset Replacement Work;
- 11 M. Minimize the risk of damage, disturbance, or destruction of third party property during  
12 the performance of Maintenance Services;
- 13 N. Coordinate with ADOT and other parties with statutory duties or functions in relation to  
14 the Project, and permit ADOT and such other parties to perform such duties and  
15 functions;
- 16 O. Perform routine and preventative maintenance of the Project;
- 17 P. Perform Maintenance Services in accordance with the provisions of the MMP and the  
18 Contract Documents;
- 19 Q. Perform periodic sweeping and litter removal;
- 20 R. Provide location information to others in the Project regarding subsurface Elements  
21 through the “Arizona 811” utility locates program;
- 22 S. Maintain a current set of Record Drawings that accurately describes the Project in  
23 accordance with Section GP 110.10.2.8.4 of the TPs;
- 24 T. Participate in joint Surveillance and Inspections with ADOT or other jurisdictions’  
25 personnel as reasonably required by ADOT;
- 26 U. Provide qualified field and supervisory personnel to perform the Surveillance,  
27 Inspections, Routine Maintenance Services, Capital Asset Replacement Work, and all  
28 required related activities; and
- 29 V. Promptly investigate reports or complaints regarding Project maintenance received from  
30 all sources.

31 In carrying out the Maintenance Services, where there is a requirement for design, Developer  
32 shall ensure that the Project is restored either to the original design used for the construction of  
33 the Project or to a different design that is in accordance with the Contract Documents.

34 Developer shall provide all Maintenance Services reporting from issuance of Maintenance NTP  
35 to the next following June 30th and annually (July 1 through June 30) thereafter. All references  
36 in Section D of the TPs to an annual period, or one year or two year period, shall be measured  
37 from and including July 1st.

### 38 **400.1.1 Submittal Review Periods During the Maintenance Period**

39 During the Maintenance Period, Developer shall comply with the Submittal requirements in  
40 Section GP 110.10 of the TPs, unless otherwise specified in the Contract Documents. Category  
41 A review period specified in Table 110-13 in Section GP 110.10.2.6.3 of the TPs is 20 Business  
42 Days during the Maintenance Period, unless otherwise specified in the Contract Documents.

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### 1 **400.2 ADMINISTRATIVE REQUIREMENTS**

#### 2 **400.2.1 Maintenance Management Plan**

3 The Maintenance Management Plan (MMP) is a chapter in the PMP that addresses the  
4 Maintenance Services activities during the Maintenance Period.

5 Developer shall prepare an MMP that addresses or includes the following:

- 6 A. Maintenance organization;
- 7 B. Coordination responsibilities and lines of communication;
- 8 C. Coordination with others and response to Notifications;
- 9 D. Establishment of a Maintenance Information System (MIS);
- 10 E. Required certifications, training, and expertise for different classifications of Work;
- 11 F. Qualifications and availability of personnel;
- 12 G. Staffing plan;
- 13 H. Dedicated Maintenance Services staff, qualifications, requirements, hiring, availability,  
14 personnel policies, adjustments to staff, and adequacy in meeting requirements of  
15 Maintenance Services, including response times and nature of the Maintenance  
16 Services;
- 17 I. Personnel requirements establishing the required certifications and training for the  
18 different classifications of Work;
- 19 J. Dedicated Maintenance Services equipment fleet, adjustments to fleet mix, and  
20 adequacy in meeting requirements of Maintenance Services, including response times  
21 and nature of the Maintenance Services;
- 22 K. Schedule of Routine Maintenance;
- 23 L. Process for preparing and submitting associated Traffic Control Plans (TCPs) in  
24 accordance with Section 8.4 of the Agreement;
- 25 M. Stormwater management (may be within the EMP);
- 26 N. Remediation of Nonconforming Work (may be within the MQMP);
- 27 O. An update of the Irrigation Water Use and Conservation Plan;
- 28 P. Surveillance and Inspections;
- 29 Q. Design and construction standards for Maintenance Services;
- 30 R. Routine, preventative, temporary, and permanent Maintenance Services;
- 31 S. The format and outline of all maintenance reports;
- 32 T. Capital Asset Replacement Work, except for Capital Asset Replacement Work to satisfy  
33 Handback Requirements; and
- 34 U. Maintenance Services during and in response to Incidents and Emergencies as set forth  
35 in Section MR 400.4 of the TPs.

36 Developer shall submit the following plans with the MMP:

- 37 A. Maintenance Safety Management Plan (MSMP) in accordance with Section MR  
38 400.2.1.1 of the TPs;
- 39 B. Maintenance Quality Management Plan (MQMP) in accordance with Section MR  
40 400.2.1.2 of the TPs;
- 41 C. Transportation Management Plan (TMP) in accordance with Section MR 400.2.1.3 of the  
42 TPs;

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1 D. Environmental Management Plan (EMP) in accordance with Section MR 400.2.1.4 of the  
2 TPs; and

3 E. Capital Asset Replacement Work Plan in accordance with Section 8.3.2 of the  
4 Agreement.

5 Developer shall submit the draft MMP, final MMP, and revisions thereto; and each of these is  
6 subject to the submission, review and approval process set forth in Section 8.9 of the  
7 Agreement.

### 8 **400.2.1.1 Maintenance Safety Management Plan**

9 Developer shall conduct all Maintenance Services in a safe manner. Developer shall prepare a  
10 Maintenance Safety Management Plan (MSMP) that specifically addresses safety for  
11 Maintenance Services. The MSMP must be a supplement to the Safety Management Plan  
12 described in Section GP 110.09 of the TPs; and must adopt all of the requirements of the Safety  
13 Management Plan. In addition, the MSMP must address the following topics as they relate to  
14 the Maintenance Services:

- 15 A. Safety of the travelling public; vehicular, bicycle, and pedestrian;
- 16 B. Railroad safety;
- 17 C. Safety during Surveillance and Inspections;
- 18 D. Safety during routine and preventative Maintenance Services;
- 19 E. Safety of Maintenance Services performed during or as a result of Incidents or  
20 Emergencies; and
- 21 F. Safety during Capital Asset Replacement Work.

22 Concurrent with the MMP Submittal, Developer shall submit the MSMP to ADOT for approval in  
23 ADOT's good faith discretion.

### 24 **400.2.1.2 Maintenance Quality Management Plan**

25 Developer shall perform Maintenance Services in accordance with the Maintenance Quality  
26 Management Plan (MQMP). The MQMP is a volume of the Quality Management Plan (QMP)  
27 described in Section GP 110.07 of the TPs.

28 The MQMP must address, in addition to the requirements in Section GP 110.07.2.1.4 of the  
29 TPs, the following topics as they relate to the Maintenance Services:

- 30 A. Administration and document control;
- 31 B. Surveillance and Inspections;
- 32 C. Routine and preventative Maintenance Services;
- 33 D. Maintenance Services performed during or as a result of Incidents or Emergencies; and
- 34 E. Capital Asset Replacement Work.

35 Concurrent with the MMP Submittal, Developer shall submit the MQMP to ADOT for approval in  
36 ADOT's good faith discretion.

### 37 **400.2.1.3 Transportation Management Plan**

38 Developer shall perform Maintenance Services that affect the travelling public in accordance  
39 with the Transportation Management Plan (TMP). The TMP must be as described in Section DR  
40 462.2.3 of the TPs.

41 Developer shall update the TMP to address the following topics as they relate to the  
42 Maintenance Services:

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- 1 A. Surveillance and Inspections;
- 2 B. Routine and preventative Maintenance Services;
- 3 C. Maintenance Services performed during or as a result of Incidents or Emergencies; and
- 4 D. Capital Asset Replacement Work.

5 Developer shall comply with the requirements of Section DR 462 of the TPs, and the then-  
6 current ADOT standard specifications, standard drawings, and ADOT engineering directives,  
7 including all then-currently approved statewide and regional modifications to standards.  
8 Developer shall use the then-current ADOT practice in filing TCPs and notifying the Highway  
9 Condition Reporting System.

10 Concurrent with the MMP Submittal, Developer shall submit the updated TMP to ADOT for  
11 approval in ADOT's good faith discretion.

### 12 **400.2.1.4 Environmental Management Plan**

13 Developer shall summarize remaining environmental commitments delegated to Developer that  
14 require continued action by Developer in an Environmental Management Plan (EMP) update for  
15 the Maintenance Period. The updated EMP must set forth the responsibilities and activities that  
16 remain Developer's responsibility during the Maintenance Period.

17 The updated EMP must address environmental management and compliance related to the  
18 following:

- 19 A. Routine and preventative Maintenance Services;
- 20 B. Maintenance Services performed during or as a result of Incidents or Emergencies;
- 21 C. Capital Asset Replacement Work;
- 22 D. Stormwater compliance efforts as they relate to Maintenance Services in accordance  
23 with Section MR 400.2.1.4.1 of the TPs;
- 24 E. Protection of cultural resources in the Project area as they relate to Maintenance  
25 Services; and
- 26 F. Emissions or other limitations placed on equipment used for Maintenance Services such  
27 as limitations on emissions for mechanical sweeper trucks.

28 Concurrent with the MMP Submittal, Developer shall submit the updated EMP to ADOT for  
29 approval in ADOT's good faith discretion.

### 30 **400.2.1.4.1 Stormwater Reporting**

31 Developer shall create a separate section within the Maintenance Information System (MIS) for  
32 stormwater Elements and report annually to ADOT. The annual reporting period for stormwater  
33 reporting is the 12 calendar months starting July 1. The annual report for each reporting period  
34 is due to ADOT by August 31 following the reporting period. Developer shall report on the:

- 35 A. Number miles of ditch and canals cleaned;
- 36 B. Amount of sediment removed;
- 37 C. Amount of trash collected in accordance with Section MR 400.2.1.4.2 of the TPs;
- 38 D. Number of outfalls Inspected;
- 39 E. Detected, classified, and eliminated illicit discharges; and
- 40 F. Number of post-construction best management practices (BMP) Elements Inspected.

41 Developer shall report on all BMPs as follows:



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- 1 A. Inspection of outfalls for dry weather discharges;
- 2 B. Investigations of illicit discharges;
- 3 C. Number of storm drain cross connections investigated;
- 4 D. Number of illicit discharges investigated;
- 5 E. Responses to complaints;
- 6 F. Number of complaints received;
- 7 G. Number of complaints responded to;
- 8 H. Average response time (in days);
- 9 I. Action taken to eliminate existing dry weather flows;
- 10 J. Number of existing dry weather discharges eliminated;
- 11 K. Action taken to eliminate sources of illicit discharges;
- 12 L. Number of storm drain cross connection eliminated;
- 13 M. Number of illicit discharges eliminated;
- 14 N. Number of dry weather discharges eliminated;
- 15 O. Coordination with local Governmental Entities for complaint response and
- 16 investigation;
- 17 P. Number of illicit discharges reported to other jurisdictions for follow-up;
- 18 Q. Number of highway accident spills responded to;
- 19 R. Number of highway accident spills prioritized (potential for discharge);
- 20 S. Installations of post-construction stormwater control BMPs;
- 21 T. Number of new post-construction stormwater control BMPs installed;
- 22 U. Inspection of storm sewer system;
- 23 V. Number of Inspections performed;
- 24 W. Development of maintenance schedules and priorities;
- 25 X. Performance of repair, maintenance, and cleaning;
- 26 Y. Number of miles of roadways repaired/maintained;
- 27 Z. Number of inlets cleaned;
- 28 AA. Number of drain inlets containing significant materials;
- 29 BB. Requirements for certification/license;
- 30 CC. Number of licensed pesticide applicators;
- 31 DD. Stabilization of roadway slopes; and
- 32 EE. Acres of roadway slopes stabilized.

### 33 **400.2.1.4.2 Trash Reporting**

34 Developer shall create a separate section within the MIS for tracking trash collected for the  
35 Project, and report trash collection to ADOT in the annual report. Developer shall separately  
36 report on the amount of trash collected in stormwater facilities.

### 37 **400.2.2 Maintenance Establishment**

38 Developer shall provide maintenance organization staff, facilities, and equipment to manage  
39 and provide the Maintenance Services.

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### 1 **400.2.2.1 Maintenance Organization**

2 The maintenance organization must provide for the following:

- 3 A. Management;
- 4 B. Administration;
- 5 C. Document control;
- 6 D. Reporting;
- 7 E. Safety;
- 8 F. Quality;
- 9 G. Environmental compliance;
- 10 H. Maintenance of traffic (MOT);
- 11 I. Surveillance and Inspections;
- 12 J. Routine and preventative maintenance practices;
- 13 K. Communications;
- 14 L. Incident response;
- 15 M. Emergency response;
- 16 N. Staffing / personnel;
- 17 O. Equipment; and
- 18 P. Maintenance Services disciplines
  - 19 1. Roadway;
  - 20 2. Drainage;
  - 21 3. Landscaping;
  - 22 4. Structures;
  - 23 5. Lighting and traffic; and
  - 24 6. Pavements.

### 25 **400.2.2.2 Qualifications of Personnel**

26 Developer's maintenance personnel must comply with the requirements in this Section MR  
27 400.2.2.2. The following list of qualifications is not exhaustive. All personnel must be properly  
28 qualified for the duties they are performing and must be adequately supervised.

- 29 A. The Maintenance Manager must comply with the requirements of Section GP  
30 110.08.2.10 of the TPs.
- 31 B. The Deputy Maintenance Manager must comply with the requirements in Section GP  
32 110.08.3.26 of the TPs.
- 33 C. Bridge inspectors must have the qualifications stated in *29 CFR Part 650.309 National*  
34 *Bridge Inspection Standards* for types of bridges and inspections that they perform.
- 35 D. Maintenance workers working on traffic, lighting, and other electrical systems must have  
36 the relevant International Municipal Signal Association and/or American Traffic Safety  
37 Services Association certifications.
- 38 E. Elements may require Specialty Inspectors. Developer shall comply with current FHWA  
39 and ADOT guidance, and Good Industry Practice, in furnishing Specialty Inspectors for  
40 such Elements.
- 41 F. The maintenance Subcontractor performing the landscape Work must hold a valid CR-  
42 21 license or an A-1 (General Engineering) license. The individual supervising the

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1 landscaping maintenance must be an Arizona Certified Landscaping Professional  
2 (ACLP).

### 3 **400.2.2.3 Maintenance Facilities**

4 Developer shall provide maintenance support facilities for the Project. See Section 5.13 of the  
5 Agreement for information regarding the use of ADOT property for the maintenance offices and  
6 yards. Portions of ADOT property in the Project area may be made available to Developer to  
7 establish one or more equipment storage yards, laydown areas, maintenance shops, or office  
8 facilities. Any such use must be in accordance with Section 5.13 of the Agreement.

#### 9 **400.2.2.3.1 Maintenance Office**

10 Developer shall provide office space within a 10-mile distance of the Project to house  
11 Developer's management and data storage functions. Developer shall provide secure, (off-site)  
12 back-up for the MIS. Developer shall provide staff performing management, coordination,  
13 communications, information management systems, and document control duties. Front-office  
14 function (i.e. public accommodation at the office) is not required.

#### 15 **400.2.2.3.2 Maintenance Yard**

16 Developer shall provide a maintenance yard(s) within a 10-mile distance of the Project for  
17 equipment, supplies, materials, staff parking, and other staff facilities.

### 18 **400.2.3 Coordination Responsibilities**

19 Developer shall process communications and Notifications from ADOT concerning Defects or  
20 other deficiencies. Developer shall respond to these communications with:

- 21 A. Acknowledgement of receipt of communications;
- 22 B. Planned response, including in accordance with TP Attachment 500-1 to the extent  
23 applicable;
- 24 C. Report of progress of response;
- 25 D. Final quality documentation of any Maintenance Services; and
- 26 E. Final disposition and closeout of Incidents and Emergencies to the extent that  
27 Developer's forces are involved in resolving or rectifying conditions on the Project.

28 Developer shall provide 24-hour emergency contact information for the responsible in-charge  
29 individual and alternate(s).

### 30 **400.2.4 Maintenance Information System**

#### 31 **400.2.4.1 Content**

32 Developer shall develop a Maintenance Information System (MIS) database that includes 1)  
33 data and reporting of Maintenance Services and Project condition, and 2) storing documents  
34 related to Maintenance Services. The MIS must be a secure, searchable, web accessible  
35 electronic database that includes:

- 36 A. The maintenance requirements in TP Attachment 500-1;
- 37 B. An inventory of Elements;
- 38 C. Project conditions for which response is required in accordance with TP Attachment  
39 500-1;
- 40 D. Required and achieved response times;
- 41 E. Prioritization and delivery of Notifications;

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- 1 F. All Incidents and Emergencies with respect to which Developer receives notice or of
- 2 which Developer otherwise becomes aware, including routing, timelines, responsibilities,
- 3 and final disposition;
- 4 G. Noncompliance Points reporting requirements;
- 5 H. All elements identified in ADOT’s feature inventory system. Available information
- 6 regarding ADOT’s feature inventory system is included in the RIDs; and
- 7 I. Other pertinent characteristics.

8 The MIS is supplementary to and must be compatible with the Electronic Document  
9 Management System (EDMS) described in Section GP 110.04.2 of the TPs. Developer shall  
10 coordinate with ADOT on information technology requirements regarding ADOTs maintenance  
11 management and inventory systems. Developer is cautioned that the architecture, reporting  
12 categories, and technical systems requirements of ADOT’s maintenance management system  
13 may change from time to time. Developer shall accommodate any such changes. The MIS must  
14 be compatible with the ADOT maintenance management system at the database level by  
15 periodic batch or data transfer.

16 Developer shall maintain a user log of the MIS. Developer shall manage access to the MIS  
17 database to allow ADOT personnel, and other third parties that ADOT may reasonably request,  
18 to access the database in real-time on a read-only basis. Developer shall provide a link and web  
19 interface through ADOT’s website for public input to address Project conditions; and Developer  
20 shall also publically post Project status information.

### 21 **400.2.4.2 MIS Architecture**

22 Developer shall prepare an MIS Architecture that includes the following:

- 23 A. MIS processes and rules;
- 24 B. MIS structure in a work breakdown structure (WBS);
- 25 C. Proposed hardware and software technical data;
- 26 D. Flow charts of the work-flows for the Notifications and work orders; and
- 27 E. Other required processes.

28 Concurrent with the MMP Submittal, Developer shall submit the MIS Architecture to ADOT for  
29 approval. During the Maintenance Period, Developer may propose changes to the MIS  
30 Architecture and prepare an updated MIS Architecture. No later than 20 Business Days prior to  
31 implementing the update to the MIS, Developer shall submit the updated MIS Architecture to  
32 ADOT for approval.

### 33 **400.2.4.3 Timeliness for MIS Reporting**

34 Developer shall enter data and other information on Maintenance Service activities and asset  
35 conditions into the MIS in real time upon discovery, including Noncompliance Events in  
36 accordance with Section 17.2.1.1 of the Agreement. Developer shall regularly update such MIS  
37 data and other information as required to maintain current information in the MIS.

38 Developer shall place other documents related to Maintenance Services in the MIS within 5  
39 days of origination and shall complete QC of such documents within 10 days of origination of  
40 data.

### 41 **400.2.5 Irrigation Water Use**

42 Developer shall comply with the irrigation water use requirements and limitations in the  
43 applicable Third-Party Agreements and Section 2.2.3.2 of the Agreement.

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### 1    **400.2.6            Underground Facilities**

2    Developer shall become a member of the location organization administered by the Arizona  
3    Corporations Commission designated the “Arizona 811” program and shall respond to call-outs  
4    for information through this system during the Maintenance Period, within the response times  
5    required by the Arizona 811 program and applicable Law.

### 6    **400.2.7            Intelligent Transportation Systems**

7    Maintenance Services does not include the obligation to maintain or repair the ITS, except that  
8    Developer shall be responsible to repair or replace damage from an Incident or other event  
9    impacting conduit (but not fiber) located in or on any structure within the Maintenance Service  
10   Limits.

11   ADOT will provide access to Developer to view video from ITS cameras located within the  
12   Maintenance Services Limits, but not video from any other ITS cameras. In order for Developer  
13   to view such video, Developer shall construct a No. 9 pull box in the ITS backbone  
14   communication network and construct all necessary ITS components to and in Developer’s  
15   maintenance facility. Developer shall prepare an ITS Connection Request that includes the  
16   address, date, and list of hardware for which Developer requests ADOT to provide connectivity  
17   to the ADOT ITS. No later than 20 Business Days prior to Developer’s access to view ITS  
18   cameras, Developer shall submit the ITS Connection Request to ADOT. Developer shall not  
19   record any images or videos from the ITS cameras.

### 20   **400.2.8            Signal Cabinets**

21   Maintenance Services do not include the obligation to maintain the internal traffic signal  
22   electronics within the signal cabinets for the Project. In the event of damage to a signal cabinet,  
23   Developer shall repair or replace damage from an Incident or other event impacting the signal  
24   cabinet (but not any concurrent damage to internal traffic signal electronics). ADOT will provide  
25   to Developer, upon request, a replacement signal cabinet. Refer to Section 11.3 of the  
26   Agreement regarding Developer’s obligation to pay or reimburse ADOT for the cost of the  
27   replacement signal cabinet.

### 28   **400.2.9            Closures**

29   During the Maintenance Period, Developer shall comply with the Closure requirements specified  
30   in Section DR 462.3.3 of the TPs, except as specified in this Section MR 400.2.9 of the TPs.  
31   During the Maintenance Period, shoulder Closures are permitted on weekdays as approved by  
32   ADOT. Weekday shoulder Closures must be scheduled after 9:00 am and be opened by 3:00  
33   pm. During the Maintenance Period, not more than the maximum number of weekends of full  
34   freeway Closures per direction set forth in Table 400-1 are permitted for Capital Asset  
35   Replacement Work to replace AR-ACFC or other pavement as specified in Section MR  
36   400.6.1.3 of the TPs. No other full freeway Closures per direction are permitted during the  
37   Maintenance Period. Unless approved otherwise by ADOT in its sole discretion, the number of  
38   full freeway Closures are reflected in Table 400-1.

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| Table 400-1<br>Maintenance Period Full Freeway Closures |   |
|---|---|
| Capital Asset Replacement Area Length<br>(Miles)        | Weekend Full Freeway Closures per Direction<br>(Maximum Number) |
| Up to 3   | 1   |
| More than 3, up to 6                                    | 2   |
| More than 6, up to 9                                    | 3   |
| More than 9   | 4   |
|   |   |

### 1 **400.3 SURVEILLANCE, INSPECTIONS, AND REPORTING**

#### 2 **400.3.1 Surveillance**

3 Developer shall conduct Surveillance for all Elements listed in TP Attachment 500-1. Developer  
4 shall perform Surveillance of the entire Project weekly, using adequate personnel to note  
5 deficiencies in complying with the Performance Requirements that are visually apparent.  
6 Developer shall develop a checklist for this Surveillance activity and include it in the MMP. For  
7 each Surveillance, Developer shall contemporaneously record an entry into the MIS, which  
8 entry must include the results of the Surveillance and any corresponding actions required of  
9 Developer.

#### 10 **400.3.2 Inspections by Developer**

11 Developer shall carry out Inspections as indicated in this Section MR 400.3.2 and in TP  
12 Attachment 500-1. Inspections, by Element, at annual frequency must be spaced at least 11  
13 months apart. Inspections, by Element, at two year frequency must be spaced at least 22  
14 months apart. Developer shall deliver to ADOT not less than 7 days' prior notice of any  
15 Inspection and Specialty Inspection except Inspections described in clause A below. For each  
16 Inspection, Developer shall contemporaneously record an entry into the MIS, which entry must  
17 include the results of the Inspection and any corresponding actions required of Developer.

18 A. If a Defect or other deficiency is found through Surveillance or identified by notice from  
19 ADOT, Developer shall enter the information into the MIS and shall schedule a prompt  
20 Inspection of the applicable Element consistent with the applicable repair response time  
21 set forth in TP Attachment 500-1.

22 B. Developer shall conduct an Inspection of all Capital Asset Replacement Areas for AR-  
23 ACFC condition and for other pavement condition once every two years, until the AR-  
24 ACFC or other pavement in a Capital Asset Replacement Area receives a condition  
25 rating of "acceptable", and thereafter once every year for each Capital Asset  
26 Replacement Area rated "acceptable" until the AR-ACFC or other pavement therein is  
27 replaced.

28 C. Developer shall conduct Inspections and perform repairs of the pavement Elements  
29 when the Capital Asset Replacement Work is being performed for the AR-ACFC surface  
30 and in accordance with Section MR 400.6.1.3 of the TPs.

31 D. Developer shall conduct an annual Inspection of all Project signs for retro-reflectivity.

32 E. Developer shall conduct an Inspection of Project striping once every two years for  
33 reflectivity and condition to determine need for Capital Asset Replacement Work.

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- 1 F. Developer shall conduct an Inspection of Project bridge deck joint seals, Project  
2 luminaires, signal heads and signal lenses, and Project irrigation heads once every five  
3 years to determine need for Capital Asset Replacement Work
- 4 G. Developer shall conduct Inspections pertaining to Incidents and Emergencies as set  
5 forth in Section MR 400.4 of the TPs.

### 6 **400.3.3 Surveillance and Inspections by ADOT**

7 ADOT and third parties may conduct Surveillance and inspections of the Project or Elements.  
8 ADOT will make reasonable efforts to communicate and coordinate with Developer concerning  
9 ADOT and third party inspections. Developer shall accommodate any such activities, including  
10 ADOT requests to uncover Work, in accordance with terms of the Agreement.

11 ADOT will perform the FHWA required bridge inspections and will share the bridge inspection  
12 reports with Developer. ADOT inspections of bridges will serve to discharge the regulatory  
13 requirements for bridge inspections; however, Developer shall still be responsible for  
14 undertaking Surveillance and Inspections of bridges.

### 15 **400.3.4 Reporting**

- 16 A. Monthly Maintenance Services Report – Developer shall prepare a Monthly Maintenance  
17 Services Report of the previous month’s Maintenance Services. It shall include a  
18 description of the particulars of all Incidents and Emergencies, nature of the repairs,  
19 need for follow up with permanent repairs, and lessons learned from the Incident or  
20 Emergency. On or prior the 15th of each month during the Maintenance Period,  
21 Developer shall submit a Monthly Maintenance Services Report of the previous month’s  
22 Maintenance Services to ADOT through the MIS.
- 23 B. Annual Maintenance Services Report – Developer shall prepare an Annual Maintenance  
24 Services Report that includes an electronic tabular summary of all Maintenance Services  
25 carried out in the previous year that is formatted to conform to the requirements of  
26 ADOT’s then-current maintenance management system. The report must also include a  
27 signage retroreflectivity report documenting the results of the related Inspections. The  
28 report must address planned activities for the forthcoming year. The report must include  
29 the amount of trash collected for the Project. A section of the annual report must address  
30 stormwater reporting in accordance with Section MR 400.2.1.4.1 of the TPs. On or prior  
31 to the last Business Day of the first month following each year during the Maintenance  
32 Period, Developer shall submit an Annual Maintenance Services Report of the previous  
33 year’s Maintenance Services to ADOT through the MIS.
- 34 C. Annual Maintenance Services meeting – Developer shall participate in an annual  
35 Maintenance Services meeting with ADOT to be mutually scheduled in the last quarter of  
36 every year during the Maintenance Period. Developer shall prepare and provide an  
37 agenda for this meeting. The meeting must address a) for the current year, the results,  
38 safety, MOT/TCP issues, management, Incidents and Emergencies for which  
39 Maintenance Services were required, and b) for the forthcoming year, process  
40 improvement, Capital Asset Replacement Work as required by Section 8.3.2 of the  
41 Agreement, changes to the MMP, including updates every 2 years to the Capital Asset  
42 Replacement Work Plan, and planned activities.
- 43 D. Planned Maintenance Services Schedule - Developer shall prepare a Planned  
44 Maintenance Services Schedule that includes revisions to the planned activities in the  
45 annual meeting. Within 15 days of the annual meeting, Developer shall submit the  
46 Planned Maintenance Services Schedule to ADOT for review and comment.

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- 1 E. Updates to MMP and supplementary plans – Developer shall update the MMP, MSMP,  
2 MQMP, TMP, and EMP at least annually and as may be more frequently required during  
3 the Maintenance Period. At least 30 days prior to the annual maintenance meeting,  
4 Developer shall submit draft updates of such plans to ADOT for approval in ADOT's  
5 good faith discretion. Developer shall prepare updated MMP, MSMP, MQMP, TMP, and  
6 EMP that address and resolve ADOT's comments. Within 15 days after the annual  
7 meeting, Developer shall submit final updated plans to ADOT for approval in ADOT's  
8 good faith discretion.
- 9 F. Updates to the Handback Plan and Capital Asset Replacement Work Plan – Developer  
10 shall update the Handback Plan and Capital Asset Replacement Work Plan in  
11 accordance with Sections 8.11.3 and 8.3.2 of the Agreement.
- 12 G. Remaining Useful Life Report and updates thereto – Developer shall submit the  
13 Remaining Useful Life Report and updates thereto to ADOT in accordance with Section  
14 8.11.5 of the Agreement.

### 15 **400.4 INCIDENTS AND EMERGENCIES**

16 When Developer receives Notification or otherwise becomes aware of an Incident or  
17 Emergency, Developer shall mobilize an Inspection team within 1 hour to provide an Inspection  
18 of the Element in question or affected Project area. Developer shall mobilize needed resources  
19 to begin effecting repairs of damage to the Project caused by the Incident or Emergency or third  
20 party response thereto within 2 hours of Notification.

### 21 **400.5 ROUTINE PREVENTATIVE MAINTENANCE**

22 Routine preventative maintenance, which is part of Routine Maintenance, consists of periodic  
23 system checks, minor refurbishments, cleaning, and repairs that prevent unexpected downtime  
24 and improve reliability of Elements. Developer shall prepare checklists for the Elements and  
25 undertake routine preventative maintenance in accordance with the schedule set forth in the  
26 MMP. Developer shall perform routine preventative maintenance on all Elements. The routine  
27 preventative maintenance must address at least the Elements shown in TP Attachment 500-1.

### 28 **400.6 CAPITAL ASSET REPLACEMENT WORK**

29 This Section MR 400.6 addresses Capital Asset Replacement Work other than in connection  
30 with satisfying the Handback Requirements. For Capital Asset Replacement Work in connection  
31 with satisfying the Handback Requirements, refer to Section MR 501 of the TPs.

32 Developer shall plan and execute such Capital Asset Replacement Work in accordance with this  
33 Section MR 400.6 and Section 8.3 of the Agreement. The following Elements are subject to  
34 Capital Asset Replacement Work requirements:

- 35 A. Roadway pavement  
36 B. Signage  
37 C. Striping  
38 D. Bridge deck joint seals  
39 E. Lighting and signals  
40 F. Irrigation

41 Developer shall provide all documentation, information, plans, and analysis to ADOT, as  
42 required, for ADOT to obtain FHWA approval of federal-aid funding for the Capital Asset  
43 Replacement Work.



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### 1 **400.6.1 Roadway Pavement**

#### 2 **400.6.1.1 Capital Asset Replacement Areas**

3 Developer shall designate the Capital Asset Replacement Areas by written notice to ADOT  
4 delivered not later than the Substantial Completion Date. Such designation is subject to ADOT  
5 review to verify that the designation complies with the definition of Capital Asset Replacement  
6 Area. The Capital Asset Replacement Areas must be the same for AR-ACFC and other  
7 pavements as specified in Section MR 400.6.1.2 and MR 400.6.1.3 of the TPs. Once the Capital  
8 Asset Replacement Areas are designated and verified, such designations are fixed for the  
9 duration of the Maintenance Period.

#### 10 **400.6.1.2 Asphalt Rubber - Asphaltic Concrete Friction Course**

11 An AR-ACFC is being used to provide a smooth, durable, quiet, and safe riding surface. The  
12 following criteria have been established specifically for the AR-ACFC surface to ensure that  
13 acceptable noise reduction, durability, and smoothness benefits are experienced during the  
14 Maintenance Period.

15 One of the primary defects that occur in AR-ACFC pavements, as they age, is the separation  
16 and displacement of the aggregate material. Developer shall use the following system to identify  
17 the point at which the separation and loss of material results in a pavement that no longer  
18 provides an acceptable AR-ACFC riding surface.

19 Developer shall perform and complete Capital Asset Replacement Work replacing the AR-  
20 ACFC with a new AR-ACFC surface throughout a Capital Asset Replacement Area no later than  
21 the first to occur of:

- 22 A. 12 months after the AR-ACFC in the Capital Asset Replacement Area receives an  
23 unacceptable rating; or
- 24 B. The end of year 15 of the Maintenance Period and, subject to Section 8.11.4 of the  
25 Agreement, again at the end of the Maintenance Period (in each case regardless of the  
26 then AR-ACFC rating).

#### 27 **400.6.1.2.1 Adjectival Rating System**

28 To rate the AR-ACFC in each Capital Asset Replacement Area, Developer shall perform an  
29 Inspection at 10 mainline locations per mile (excluding shoulders and bridges that are grooved  
30 and not overlaid) selected at random throughout the Capital Asset Replacement Area across all  
31 lanes in each direction. Each location must have a circular dimension with a 3 foot diameter.  
32 Developer shall randomly select locations in accordance with ASTM D 3665 *Random Sampling*  
33 *of Construction Materials*.

34 Developer shall use the adjectival rating system shown in Table 400-2 to determine the AR-  
35 ACFC rating for each randomly selected location.

| Table 400-2<br>AR-ACFC Adjectival Rating System |           |  |
|---|-----------|--|
| Rating  | Condition | Description  |
| A   | Excellent | AR-ACFC is fully functional and is in like new condition, with no loss of surface aggregate accumulating outside of the travel lanes. There are no visual signs of raveling and aggregate is completely coated with binder. Normal wheel path binder loss on the surface aggregate only. |

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| Table 400-2<br>AR-ACFC Adjectival Rating System |              |  |
|---|--------------|--|
| Rating  | Condition    | Description  |
| B   | Good         | AR-ACFC is fully functional and is in good condition, with minimal loss of surface aggregate accumulating outside of the travel lanes. Raveling size is no larger than individual aggregate loss.  |
| C   | Acceptable   | AR-ACFC is functional and is in average condition, with moderate loss of surface aggregate accumulating outside of the travel lanes. The surface coat has worn off and the aggregate is exposed and starts showing color distinctions in underlying aggregate. Raveling size is larger than individual aggregate loss.   |
| D   | Unacceptable | AR-ACFC is marginally functional and is in a degraded condition, with material loss of surface aggregate accumulating outside of the travel lanes. Raveling size has increased to areas larger than 2-3 aggregate in size. Color distinctions in underlying aggregate are readily visible.<br><br>Additional indicator for rigid pavement (excluding shoulders): during the period from May 1st to October 1st, the reflective cracks due to the transverse weakened plane joints are not kneading back together due to the tire interface with the friction course. |

1 Developer shall use TP Attachment 500-4, illustrating excellent, good, acceptable, and  
2 unacceptable conditions, for purposes of applying the adjectival rating system.

3 The AR-ACFC in a Capital Asset Replacement Area must receive an overall rating of  
4 acceptable if 20% or more, but no more than 30%, of the Inspections rate an unacceptable  
5 condition.

6 The AR-ACFC in a Capital Asset Replacement Area must receive an overall rating of  
7 unacceptable if more than 30% of the Inspections rate an unacceptable condition.

8 **400.6.1.2.2 Actions Resulting from Adjectival Rating**

9 If the overall adjectival rating for a Capital Asset Replacement Area is above unacceptable, then  
10 such rating does not trigger a requirement for Capital Asset Replacement Work in such Capital  
11 Asset Replacement Area; provided, however that Developer shall revise the Capital Asset  
12 Replacement Work Plan as necessary to take into account the condition of the AR-ACFC, as  
13 set forth in Section 8.3.2 of the Agreement.

14 If the overall adjectival rating is unacceptable for a Capital Asset Replacement Area, Developer  
15 shall perform Capital Asset Replacement Work to replace the AR-ACFC with a new AR-ACFC  
16 surface throughout such Capital Asset Replacement Area in both directions, including  
17 shoulders, in accordance with the ADOT-approved revised Capital Asset Replacement Work  
18 Plan and within the time period set forth in Section MR 400.6.1.2 of the TPs.

19 **400.6.1.3 Other Pavement**

20 For asphalt mainline pavements requiring placement of additional layers during the  
21 Maintenance Period or requiring milling and replacement of top layers to comply with  
22 Performance Requirements, Developer shall comply with the following requirements:

23 A. As part of the Capital Asset Replacement Work Plan, Developer shall establish and  
24 prepare an inspection regime and Capital Asset Replacement Work triggers that address  
25 the placement, or the milling and replacement, of layers in the pavement section

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- 1 throughout the Maintenance Period. The triggers must consider preservation of the  
2 structural capacity of all layers in the pavement structural section.;
- 3 B. Developer shall perform Inspections and report status of Capital Asset Replacement  
4 Work triggers at a minimum frequency of once per year, commencing 8 years after  
5 Substantial Completion;
- 6 C. Developer shall perform and complete Capital Asset Replacement Work with new  
7 asphalt pavement layers throughout a Capital Asset Replacement Area within 12 months  
8 after triggers are met;
- 9 D. When replacement of pavement mainline layers involves milling of existing layers and  
10 replacement thereof, Developer is not required to mill and replace shoulder structural  
11 section layers unless the Capital Asset Replacement Work triggers apply specifically to  
12 the shoulder pavement. This provision does not apply to AR-ACFC; and
- 13 E. Developer shall perform and complete Capital Asset Replacement Work for AR-ACFC  
14 within 3 months of completing new asphalt pavement layers or milling and replacement  
15 of top layers.

### 16 **400.6.1.4 Crossroad PCCP**

17 Subject to Section MR 400.6.1.2 of the TPs, Developer shall complete Capital Asset  
18 Replacement Work for grinding and sealing of all Project crossroad PCCP and frontage road  
19 PCCP prior to the end of year 18 of the Maintenance Period.

### 20 **400.6.2 Signage**

21 Developer shall initiate and complete Capital Asset Replacement Work for all Project signage  
22 when 35 percent or more of the Project signage square footage exhibits retroreflectivity levels  
23 less than the applicable minimum retroreflectivity levels as set forth in Table 2A-3 of the FHWA  
24 MUTCD.

### 25 **400.6.3 Striping**

26 Subject to Section MR 400.6.1.2 of the TPs, Developer shall complete Capital Asset  
27 Replacement Work for restriping of all Project striping prior to the end of years 3, 7, 10, 13, 17,  
28 23, and 27 of the Maintenance Period.

### 29 **400.6.4 Bridge Deck Joint Seals**

30 Subject to Section MR 400.6.1.2 of the TPs, Developer shall complete Capital Asset  
31 Replacement Work for the replacement of all Project bridge deck joint seals prior to the end of  
32 years 10 and 20 of the Maintenance Period.

### 33 **400.6.5 Lighting and Signals**

34 Subject to Section MR 400.6.1.2 of the TPs, Developer shall complete Capital Asset  
35 Replacement Work for the replacement of all Project luminaires, signal heads, and signal lenses  
36 prior to the end of year 15 of the Maintenance Period.

### 37 **400.6.6 Irrigation**

38 Subject to Section MR 400.6.1.2 of the TPs, Developer shall complete Capital Asset  
39 Replacement Work for the replacement of all Project irrigation heads prior to the end of year 20  
40 of the Maintenance Period.

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### 1 **400.6.7 Adjustment of Certain Deadlines**

2 Developer may adjust the timing of Capital Asset Replacement Work for crossroad PCCP,  
3 Project striping, Project bridge deck joint seals, Project luminaires, signal heads and signal  
4 lenses, and Project irrigation heads, based on results of Inspections, subject to ADOT's prior  
5 written approval.

### 6 **400.7 CONTROL OF MAINTENANCE SERVICES**

7 Developer shall comply with the following:

- 8 A. Report status of Maintenance Services in the MIS.
- 9 B. Provide Notification of routine or preventative Maintenance Services through the MIS  
10 system and in accordance with other ADOT practices.
- 11 C. For Maintenance Services during or as a result of Incidents or Emergencies, follow the  
12 communication protocols set forth in the MMP.
- 13 D. Nonconforming Work requires noncompliance reporting, corrective action, and the  
14 remedial work protocol as set forth in the MQMP.
- 15 E. Final disposition of Maintenance Services will require a suitable record entry in the MIS  
16 that the work has been successfully completed (including closure of any related  
17 Nonconforming Work process).
- 18 F. At least annually, record changes to the Project on a set of record drawings accurately  
19 describing the Project in accordance with Section GP 110 of the TPs.

### 20 **400.8 SUBMITTALS**

21 Table 400-3 reflects a nonexclusive list of Submittals identified in Section MR 400 of the TPs  
22 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
23 determine and submit all Submittals as required by the Contract Documents, Governmental  
24 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
25 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
26 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
27 formats described in Section GP 110.10.2.2 of the TPs:

| <b>Table 400-3<br/>Nonexclusive Submittals List</b> |                         |                         |                   |   |                          |
|---|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>                                   | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>                             | <b>Section Reference</b> |
|   |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| Updated TP Attachment 500-1                         | 3                       | 2                       | 1                 | No later than 90 days prior to Substantial Completion | MR 400.1                 |
| Draft MMP   | 2                       | 2                       | 1                 | See Section 8.9 of the Agreement                      | MR 400.2.1               |
| Final MMP   | 2                       | 2                       | 1                 | See Section 8.9 of the Agreement                      | MR 400.2.1               |
| MSMP  | 2                       | 2                       | 1                 | Concurrent with the MMP Submittal                     | MR 400.2.1.1             |
| MQMP  | 2                       | 2                       | 1                 | Concurrent with the MMP Submittal                     | MR 400.2.1.2             |
| Updated TMP   | 2                       | 0                       | 1                 | Concurrent with the MMP Submittal                     | MR 400.2.1.3             |
| Updated EMP   | 2                       | 2                       | 1                 | Concurrent with the MMP Submittal                     | MR 400.2.1.4             |

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| <b>Table 400-3<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |   |                          |
|--|-------------------------|-------------------------|-------------------|---|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b>   | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |   |                          |
| MIS Architecture   | 3                       | 2                       | 1                 | Concurrent with the MMP Submittal   | MR 400.2.4.2             |
| Updated MIS Architecture   | 3                       | 2                       | 1                 | No later than 20 Business Days prior to implementing the update to the MIS                                | MR 400.2.4.2             |
| ITS Connection Request   | 5                       | 2                       | 1                 | No later than 20 Business Days prior to Developer’s access to view ITS cameras                            | MR 400.2.7               |
| Monthly Maintenance Services Report  | 5                       | 0                       | 1                 | On or prior the 15th of each month during the Maintenance Period  | MR 400.3.4               |
| Annual Maintenance Services Report   | 5                       | 0                       | 1                 | On or prior to the last Business Day of the first month following each year during the Maintenance Period | MR 400.3.4               |
| Planned Maintenance Services Schedule  | 4                       | 2                       | 1                 | Within 15 days after annual maintenance meeting   | MR 400.3.4               |
| Updated MMP, MSMP, MQMP, TMP, and EMP  | 2                       | 2                       | 1                 | Within 15 days after the annual meeting   | MR 400.3.4               |
| <p>*Levels of Review</p> <ol style="list-style-type: none"> <li>1. Sole discretion or absolute discretion approval (<u>Section 3.1.3.1 of the Agreement</u>)</li> <li>2. Good faith discretion approval (<u>Section 3.1.3.2 of the Agreement</u>)</li> <li>3. Reasonableness approval (<u>Section 3.1.4.2 of the Agreement</u>)</li> <li>4. Review and comment (<u>Section 3.1.5 of the Agreement</u>)</li> <li>5. Submit/receive and file or comment/no hold point (<u>Section 3.1.6 of the Agreement</u>)</li> </ol> |                         |                         |                   |   |                          |

1

2

**End of Section**

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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**

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### 1 **MR 501 HANDBACK REQUIREMENTS**

#### 2 **501.1 GENERAL REQUIREMENTS**

3 Developer shall implement the approved Handback Plan and perform all Capital Asset  
4 Replacement Work and other Maintenance Services required to deliver the Project to ADOT at  
5 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 achieving the applicable Remaining Useful Lives as set forth in Table 501-1 in Section  
8 MR 501.3 of the TPs.

#### 9 **501.2 ADMINISTRATIVE REQUIREMENTS**

##### 10 **501.2.1 Handback Plan**

11 Developer shall prepare a Handback Plan that contains the methodologies and activities to be  
12 undertaken or employed to comply with the Handback Requirements at the end of the  
13 Maintenance Period.

14 The Handback Plan must include:

- 15 A. A detailed description, by Element, of all planned Capital Asset Replacement Work and  
16 other Maintenance Services to restore each Element to its required Remaining Useful  
17 Life at the end of the Maintenance Period;
- 18 B. A comparison of the Remaining Useful Life of each Element to the required Remaining  
19 Useful Life at the end of the Maintenance Period as set forth Section MR 501.3 of the  
20 TPs;
- 21 C. A resource and cost-loaded schedule for carrying out such Capital Asset Replacement  
22 Work; and
- 23 D. An updated Capital Asset Replacement Work Schedule for carrying out such Capital  
24 Asset Replacement Work, as more particularly provided in Section 8.3.2 of the  
25 Agreement, and a schedule for carrying out such Routine Maintenance, with substantial  
26 completion targeted to be no later than 6 months prior to the end of the Maintenance  
27 Period and completion of punchlist items by the end of the Maintenance Period.

28 Not later than 66 months before the end of the Maintenance Period, Developer shall submit a  
29 draft Handback Plan to ADOT for approval in ADOT's good faith discretion. ADOT will review  
30 and provide comments to the draft Handback Plan within 30 days after receipt. No later than 10  
31 days after Developer receives ADOT's comments, Developer and ADOT will convene a review  
32 meeting to resolve ADOT's comments. Developer shall resolve all comments and, in  
33 accordance with Section 8.11.3 of the Agreement shall submit the final Handback Plan to ADOT  
34 for approval in ADOT's good faith discretion.

##### 35 **501.2.2 Handback Transition Plan**

36 Developer shall prepare a draft Handback Transition Plan that includes, in addition to the  
37 requirements described in Section 24.13 of the Agreement, the following:

- 38 A. Current status and remaining schedule of Work to comply with the Handback  
39 Requirements, and expected status of the Elements at the end of the Maintenance  
40 Period;
- 41 B. Remaining Useful Lives;
- 42 C. Current MIS Architecture;
- 43 D. MIS training protocols for ADOT personnel;

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- 1 E. Inventory, location, and condition of any spares and materials on hand, and method of
- 2 delivering these items to the ADOT maintenance yard;
- 3 F. Relinquishing any portions of the right-of-way and other ADOT property, used by
- 4 Developer during the Maintenance Period in accordance with land use agreement(s);
- 5 G. Punchlist protocol to begin end of Term acceptance procedures with ADOT;
- 6 H. Transition protocols for stormwater management and for “Arizona 811” locates
- 7 responsibilities;
- 8 I. Document turnover for maintenance records; and
- 9 J. Final walk-through and acceptance.

10 In accordance with Sections 24.13.1 and 24.13.2 of the Agreement, Developer shall submit a  
 11 draft Handback Transition Plan to ADOT for approval in ADOT’s good faith discretion.

12 In accordance with Sections 24.13.1 and 24.13.2 of the Agreement, Developer shall submit a  
 13 final Handback Transition Plan to ADOT for approval in ADOT’s good faith discretion. Developer  
 14 shall implement the final Handback Transition Plan in accordance with Section 24.13.4 of the  
 15 Agreement.

### 16 **501.3 REMAINING USEFUL LIFE AT END OF MAINTENANCE PERIOD**

#### 17 **501.3.1 Remaining Useful Life Requirements**

18 Each type of Element listed in Table 501-1 must have an average Remaining Useful Life at the  
 19 end of the Maintenance Period as required in these provisions; provided, however that, for  
 20 Elements in Ref. items 5.1, 5.2, and 5.3 listed in Table 501-1, each individual Element must  
 21 have a Remaining Useful Life at the end of the Maintenance Period as required in these  
 22 provisions.

| <b>Table 501-1<br/>Remaining Useful Life at End of Maintenance Period</b> |  |   |   |
|---|--|---|---|
| <b>Ref.</b>   | <b>Element</b>                                       | <b>Remaining Useful Life/<br/>Other Performance<br/>Requirement</b> | <b>Components/Additional Terms</b>  |
| 1.6   | Landscaped areas<br>(Character Areas 1,<br>3, and 4) | 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<br>(Character Area 2)               | 50% plant establishment   | All landscaped areas are maintained   |
| 2   | Pavement   | 10 years  | Pavement structural section for all mainline lanes, frontage roads, ramps, and crossroads   |
| MR<br>400.6.1.2   | AR-ACFC  | 10 years  |   |
| 3.1   | ADA ramps and<br>sidewalks                           | 10 years  |   |
| 3.2   | Curb and gutter                                      | 10 years  |   |
| 4.1   | Safety barriers                                      | 20 years  | All components except sand barrel arrays, which are 10 years.   |



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| <b>Table 501-1<br/>Remaining Useful Life at End of Maintenance Period</b> |                                  |   |  |
|---|----------------------------------|---|--|
| <b>Ref.</b>   | <b>Element</b>                   | <b>Remaining Useful Life/<br/>Other Performance<br/>Requirement</b> | <b>Components/Additional Terms</b>     |
| 4.2   | Fence/gates and noise walls      | 10 years  | Fence/gates                            |
|   |                                  | 40 years  | Noise walls                            |
| 4.3   | Signage, delineators, and posts  | 10 years  |  |
| 4.4   | Lighting                         | 10 years  | Luminaires                             |
| 4.5   | Pavement marking                 | 3 years   |  |
| 4.6   | Traffic signals                  | 10 years  | All components except UPS batteries    |
| 5.1   | Bridges                          | 40 years  | All components except expansion joints |
|   | Bridge expansion joints          | 20 years  |  |
| 5.2   | Retaining walls                  | 40 years  |  |
| 5.3   | Structures for sign supports     | 20 years  |  |
|   | Structures for lighting supports | 10 years  |  |
| 6.3   | Drainage systems                 | 10 years  | Exposed                                |
|   |                                  | 20 years  | Buried                                 |

Note: "Ref." refers to the reference number in TP Attachment 500-1, unless otherwise noted.

1 Developer shall determine remaining Useful Life of pavement, Ref. 2 in Table 501-1, using  
2 traffic forecasts approved by ADOT for the 10 years subsequent to the Maintenance Period.

3 **501.3.2 Exceptions**

4 Developer may elect to deliver one or more of the following Elements without achieving the  
5 respective required Remaining Useful Lives, provided that Developer elects to use an exception  
6 by paying an in-lieu fee as set forth in Section 8.11.4 of the Agreement:

- 7 A. Pavement– Ref. 2 in Table 501-1 above;
- 8 B. AR-ACFC – Ref. MR 400.6.1.2 in Table 501-1 above;
- 9 C. Signage – Ref. 4.3 in Table 501-1 above; and
- 10 D. Pavement markings – Ref. 4.6 in Table 501-1 above.

11 After taking into consideration the Remaining Useful Life Report and other facts and information  
12 ADOT deems relevant, ADOT will determine the Remaining Useful Life for each excepted  
13 Element and will reassess the Remaining Useful Life for these Elements annually for the  
14 remaining Maintenance Period. ADOT will use the Remaining Useful Life determination for  
15 these Elements to determine the in-lieu fee in accordance with Section 8.11.4 of the Agreement.

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### 1 501.4 FINAL PUNCHLIST

2 Developer shall substantially complete all improvements required by the approved Handback  
3 Plan no later than 6 months prior to the end of the Maintenance Period. Developer shall not  
4 commence Capital Asset Replacement Work under the Handback Plan earlier than 48 months  
5 prior to the end of the Maintenance Period.

6 Approximately 6 months prior to the end of the Maintenance Period, ADOT will use the latest  
7 determination of Remaining Useful Lives to assist in preparing the final punchlist. Developer  
8 shall use the latest determination of Remaining Useful Lives to schedule and perform  
9 Maintenance Services to ensure that the Project satisfies all the Handback Requirements at the  
10 end of the Maintenance Period, and in order to establish a punchlist of deficiencies that must be  
11 rectified prior to the end of the Maintenance Period. Developer shall complete all punchlist items  
12 by the end of the Maintenance Period.

13 By the end of the Maintenance Period, Developer shall complete any remaining Capital Asset  
14 Replacement Work and other Maintenance Services identified in the final punchlist to ADOT's  
15 approval in ADOT's good faith discretion. ADOT may, but is not obligated to, allow minor call  
16 outs or final resolution of ongoing minor issues to continue for up to 90 days after the end of the  
17 Maintenance Period.

### 18 501.5 SUBMITTALS

19 Table 501-2 reflects a nonexclusive list of Submittals identified in Section MR 501 of the TPs  
20 and is not intended to be an all-inclusive or exhaustive listing of Submittals. Developer shall  
21 determine and submit all Submittals as required by the Contract Documents, Governmental  
22 Approvals, and Governmental Entities. Unless otherwise indicated, Developer shall submit all  
23 Submittals in both electronic format and hardcopy format. At a minimum and unless otherwise  
24 specified in the Contract Documents, Developer shall submit the following to ADOT in the  
25 formats described in Section GP 110.10.2.2 of the TPs:

| Table 501-2<br>Nonexclusive Submittals List |                  |                  |            |   |  |
|---|------------------|------------------|------------|---|--|
| Submittals                                  | Level of Review* | Number of Copies |            | Submittal Schedule  | Section Reference                              |
|   |                  | Hardcopies       | Electronic |   |  |
| Draft Handback Plan                         | 2                | 2                | 1          | Not later than 66 months before the end of the Maintenance Period | MR 501.2.1 and Section 8.11.3 of the Agreement |
| Final Handback Plan                         | 2                | 2                | 1          | In accordance with Section 8.11.3 of the Agreement                | MR 501.2.1 and Section 8.11.3 of the Agreement |
| Draft Handback Transition Plan              | 2                | 1                | 1          | In accordance with Sections 24.13.1 and 24.13.2 of the Agreement  | MR 501.2.2 and Section 24.13 of the Agreement  |
| Final Handback Transition Plan              | 2                | 1                | 1          | In accordance with Sections 24.13.1 and 24.13.2 of the Agreement  | MR 501.2.2 and Section 24.13 of the Agreement  |

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| <b>Table 501-2<br/>Nonexclusive Submittals List</b>  |                         |                         |                   |                           |                          |
|--|-------------------------|-------------------------|-------------------|---------------------------|--------------------------|
| <b>Submittals</b>  | <b>Level of Review*</b> | <b>Number of Copies</b> |                   | <b>Submittal Schedule</b> | <b>Section Reference</b> |
|  |                         | <b>Hardcopies</b>       | <b>Electronic</b> |                           |                          |
| *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**