



# Arizona Department of Transportation

## INTERMODAL TRANSPORTATION DIVISION Construction Group

### CONSTRUCTION BULLETIN 11-06

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**Date:** October 20, 2011

**From:** Julio Alvarado, Assistant State Engineer, Construction

**Subject:** Section 800 -  
Roadside Development

## Roadside Development/Landscape Inspection and Acceptance

### Purpose

The intent of this bulletin is to:

- Review ADOT's Resident Engineer (RE) and Registered Landscape Architect (RLA) responsibilities relative to landscape construction activities.
- Emphasize that a Landscape Pre-Activity meeting shall be conducted prior to the start of related activities.

### Background

ADOT utilizes Registered Landscape Architects to review, inspect and approve elements of work that necessitates their expertise. Arizona Revised Statute 32-142 states that all drawings, plans, specifications and estimates for public works shall be prepared under the direction of, and the construction of such works, shall be executed under the direct supervision of a qualified registrant within the category involved. Landscape Architecture is a professional registration of its own, distinct from Civil Engineering.

The Department utilizes two RLAs in construction:

1. Phoenix Construction RLA – responsible for all landscape construction (Section 800) on projects administered in the Phoenix Construction District.
2. State Construction RLA – part of the Construction Group’s Value & Quality Assurance Section. Responsible for all landscape construction on projects administered outside the Phoenix District.

In both cases the Construction RLA may be supplemented by a consultant RLA when work load dictates. The RE shall consult with the construction RLA to determine whether a consultant should be utilized.

### **Responsibilities**

- The **RE** shall direct all landscape submittals to the responsible **Construction RLA** for review and approval, prior to the Contractor performing the work. If the submittals contain any modifications, the **Construction RLA** shall forward submittals to the design consultant.
- A Supplemental Agreement is required for any modifications to Project Plans, Standard Specifications or Special Provisions. The **RE** shall execute a Supplemental Agreement after obtaining approval from the RLA responsible for the design. In addition, Roadside Development must be contacted for concurrence. (If in doubt, any project plans or special provisions that have been stamped and signed by a RLA may only be changed by a RLA.)
- The **RE** shall schedule Landscape Pre-Activity meetings in conjunction with the **Construction RLA**.
- The **Construction RLA** shall inspect all trees, shrubs and plants prior to delivery to the project.
- The **Construction RLA** will perform periodic inspections as landscape work progresses. The **RE** shall assign personnel to inspect all landscape work daily. Quantlist are required to supplement inspections.
- Prior to final acceptance, the **Construction RLA** shall inspect all landscape work for conformance.
- The **Construction RLA** shall schedule periodic inspections to monitor planting progress and test irrigation during the landscape establishment period.
- The **Construction RLA** will perform stabilization tests and report results to the **RE** and Office of Environmental Services.

### **Pre-Activity Meeting**

A Pre-Activity meeting is required for the various landscape (Section 800) work. The Construction RLA shall be invited (contact at least two weeks prior to the meetings) to all Landscape Pre-Activity meetings. Pre-Activity meeting agendas are attached for the following work:

- Class II Seeding
- Landscaping Establishment
- Irrigation and Planting

The meetings convey what is expected of the landscape contractor. This is a good opportunity for the Construction RLA to review problems/misunderstandings from past projects in order to prevent reoccurrence.

### **ATTACHMENTS:**

- Class II Seeding Pre-Activity Meeting Agenda
- Landscaping Establishment Pre-Activity Meeting Agenda
- Irrigation and Planting Pre-Activity Meeting Agenda

AGENDA  
CLASS II SEEDING  
PRE-ACTIVITY MEETING

TRACS:\_\_\_\_\_ Highway / Location:\_\_\_\_\_ Date:\_\_\_\_\_

**Prior to the meeting** the contractor should have submitted to the Org the following documentation:

- 1) Proposed Seeding Subcontractor.
- 2) The seed supplier's written confirmation of the availability of the specified seed (within 30 days after award of contract).
- 3) All Class II Seeding material Certification of Compliance with testing data (30 days prior to the start of scheduled seeding activities).
- 4) If any specified seed is unavailable, written justification from at least three suppliers or collectors documenting that fact. The substitute seed proposed must be reviewed and approved by Roadside Development.
- 5) Letter of Certification on storage of seed.
- 6) Mulch Adjusted Rates of Application and Batch Mix submitted for ADOT approval.

**At the Pre-Activity meeting:**

- 1) Introduction of participants.
- 2) Review Special Provisions.
- 3) The name of the Seeding Supervisor who shall assure that all activities are completed.
- 4) The name of the ADOT Construction Org Seeding Inspector.
- 5) Discuss schedule.
  - a) Proposed start date.
  - b) Number of proposed mobilizations to complete the seeding (No additional payment for more than four mobilizations).
  - c) All stormwater BMPs in place prior to any seeding
  - d) Estimated acres (Slope adjustment calculations checked by ADOT – see [Seeding Rate/Batch Mix](#) form).
  - e) Acres per load, seed or mulch, shall be marked and recorded on the [Seeding Rate/Batch Mix](#) form by the ADOT Inspector.
  - f) Rocks on the surface larger than 4" diameter within the roadway recovery zone or larger than 6" diameter outside the recovery zone are removed and disposed of (may be used for stormwater rip rap).
  - g) Tillage must be accomplished prior to seeding.
    - Tillage a minimum of 6 inches on all fill slopes with a 3:1 or flatter slope.
    - Tillage to a minimum 12 inch depth on all cut slopes with a 3:1 or flatter slope.
    - Tillage shall be done several times to provide thorough soil cultivation with furrowing no more than 12 inches apart parallel to the slopes.
  - h) The compost, fertilizer and sulfur shall be incorporated into the top 4" of the tilled topsoil on slopes 3:1 or flatter.
  - i) Seed tag testing dates are checked to verify testing was performed within 9 months prior to delivery. Record in Daily Diary.
  - j) Location and areas where different seed mixes are specified.
  - k) Each seed species shall be delivered to the project in separate weight measured bags (Alternatively, weights may be measured at the project site).
  - l) Emphasize that mulch shall be either weed-free wheat straw (within the flatter areas), or hydraulically applied straw on slopes steeper than 3:1.
  - m) Tackifier quantities are to be submitted for ADOT approval for each different slope.
  - n) Water tests or potable water documentation must show the proposed water source is not harmful to the seeded plants.
  - o) Emphasize that shoulder built-up seeding requires a four-step process, as specified under Subsection 805-3.01(B) of the Standard Specifications:
    - a. Till two inches.

AGENDA  
CLASS II SEEDING  
PRE-ACTIVITY MEETING

- b. Place fertilizer or compost.
- c. Place seed.
- d. Place either hydraulically applied straw mulch and tacking agent on milled asphaltic concrete (RAP), or straw mulch / hydraulically applied straw mulch on earthen shoulder built up areas.
- p) Emphasize that mini-benching the steeper slopes shall be performed as detailed.
- q) The 45-day maintenance period requires 90% of the mulch to remain in place until the end of the period and photographs shall be taken on the day of mulch application.
  - No soil should be visible through the straw for acceptance.
  - In the event that less than 90% of the mulch remains in place at the end of the period, the contractor shall reseed and/or apply additional mulch at no cost to ADOT.
- 6) Review of the ADOT Quantlists.
- 7) Discuss governing order of requirements, authority and escalation practices.
- 8) Other.
- 9) Meeting minutes and attendance sheet shall be forwarded to:
  - Contractor's Seeding Supervisor
  - District Environmental Coordinator
  - Ted Littlefield (ADOT Construction Operations) or Kirk Kiser (ADOT Phoenix Construction)
  - Greg Chimel (ADOT Construction Operations) or Lukasz Betlej (ADOT Phoenix Construction)
  - Tao Fang (ADOT Roadside Development)

AGENDA  
LANDSCAPING ESTABLISHMENT  
PRE-ACTIVITY MEETING

TRACS:\_\_\_\_\_ Highway / Location:\_\_\_\_\_ Date:\_\_\_\_\_

***At the Pre-Activity meeting:***

- 1) Introduction of participants.
- 2) Review Special Provisions.
- 3) The name of the Landscaping Supervisor who shall assure that all activities are completed.
- 4) Discuss schedule:
  - a) Inspection of all local and/or collected stock for tags and quality. Review any additions or deletions.
  - b) Maintaining existing plants to avoid damage or replace damaged plants.
  - c) Discuss Irrigation components including; the (atmospheric, pressure or reduced pressure) backflow prevention unit, isolation valves (gate & ball valves), quick coupling valves, controllers, wire, pressure regulators, insulation, and (PVC, steel and copper) pipe.
  - d) Inspections for potential or existing drainage problems.
  - e) On site inspection of nursery grown stock and/or local and collected material.
  - f) Finish grading and erosion repairs methods.
  - g) Use and scheduling of Pre-emergent herbicide applications during the landscaping establishment period.
  - h) Method of care and maintenance of trees and palm trees including transportation, staking, guying and pruning procedures. Discuss hardware.
  - i) Protection of Landscaping Plants including; weed and pest control, weather protection, trash collection and repair of human disturbance/damage.
  - j) Final inspection, to include:
    - retesting of backflow prevention units with results recorded on backflow test form;
    - pre-emergent herbicide applications, documenting results on the [Herbicide and Pesticide Application Log](#);
    - submittal of liquid filled pressure gauge; and
    - submittal of keys & other irrigation components as specified.
  - k) Establishment including:
    - monthly work schedule;
    - 30 day inspections of landscaping items and planted stock and irrigation systems;
    - 21 day requirement to correct monthly inspection deficiencies / non compliance items;
    - and special inspections and the Final establishment inspection.
- 5) Review the ADOT Quantlists.
- 6) Discuss governing order of requirements, authority and escalation practices.
- 7) Other.
- 8) Meeting minutes and attendance sheet shall be forwarded to:
  - Contractor's Landscaping Supervisor
  - District Environmental Coordinator
  - Ted Littlefield (ADOT Construction Operations) or Kirk Kiser (ADOT Phoenix Construction)
  - Greg Chimel (ADOT Construction Operations) or Lukasz Betlej (ADOT Phoenix Construction)
  - Tao Fang (ADOT Roadside Development)

AGENDA  
IRRIGATION & PLANTING  
PRE-ACTIVITY MEETING

TRACS:\_\_\_\_\_ Highway / Location:\_\_\_\_\_ Date:\_\_\_\_\_

**Prior to the meeting the contractor should have submitted to the Org the following documentation:**

- 1) Submittal of proposed Landscaping General Contractor or Subcontractor.
- 2) Written verification that all plant material has been located and reserved. Or verification that collected and/or local stock has been designated.
- 3) Submittal and acceptance of all materials and equipment, transplanting plans and/or temporary irrigation systems.
- 4) Evidence of any unavailable plant type submitted in writing for approval to change species from the Design Landscape Architect and the Construction Landscape Architect.
- 5) Water testing or potable water documentation showing the water is not harmful to the landscaping plants.

**At the Pre-Activity meeting:**

- 1) Introduction of participants.
- 2) Review Special Provisions.
- 3) The name of the Contractor's Landscape Supervisor who shall assure that all activities are completed as specified.
- 4) Discuss schedule.
  - a) Proposed start date.
  - b) Inspect all local and/or collected stock for tags and quality. Review any additions or deletions.
  - c) Explain the plan to maintain existing plants to avoid damage, and the replacement of damaged plants.
  - d) Identify the water source (source and location, or installation).
  - e) All plant locations must be staked for approval prior to irrigation layout and planting pit excavation.
  - f) Irrigation layout must be approved in the field by the RLA prior to installation.
  - g) Test procedures of Backflow Preventers – must be tested prior to use.
  - h) Discuss Irrigation components including: the backflow prevention unit (atmospheric, pressure or reduced pressure), isolation valves (gate & ball valves), quick coupling valves, controllers, wire, pressure regulators, insulation as required, and pipe (PVC, steel or copper).
  - i) Pipe installation of main lines and laterals.
    - How will PVC pipe and other materials be protected from sun and other damage?
    - Detail Pipe testing requirements.
    - Explain measurement for payment.
    - Discuss: Trenching / backfilling: flushing, sand bedding, snaking the pipe & end caps.
  - j) Detail / review Installation of emitters.
  - k) System Pressure Testing: All irrigation systems shall be installed and tested by the contractor with the ADOT inspector recording the results on the [Irrigation System Pressure Test](#) form before the installation of plants and shall continue to be tested throughout the establishment period.
  - l) All planting pits shall be excavated to the dimensions shown on the project plans.
  - m) Planting pits shall be tested for drainage by filling it with water twice.
  - n) Review components and method of mixing Prepared Soil to be used in planting pits, trenches and beds.
    - Include soil conditioner or compost, fertilizer and/or other amendments.
  - o) On site / nursery inspection of nursery grown stock and/or local and collected material.
  - p) Use of the irrigation system to pre-water amended soil in planting pits before planting, planting and backfill procedures.
  - q) Detail Finish grading and erosion repairs.
  - r) Detail Granite placement and pre-emergent herbicide application, documenting results on the [Herbicide and Pesticide Application Log](#).

AGENDA  
IRRIGATION & PLANTING  
PRE-ACTIVITY MEETING

- s) Detail care and maintenance of trees and palm trees during construction, including transportation, staking, guying and pruning procedures and hardware.
  - t) Detail Protection of Landscaping Plants during construction, including; weed and pest control, weather protection, trash, and repair of human disturbance/damage.
  - u) Final inspection.
  - v) As-build Project Plan acceptance.
- 5) Review the ADOT Quantlists.
- 6) Discuss governing order of requirements, authority and escalation practices.
- 7) Other.
- 8) Meeting minutes and attendance sheet shall be forwarded to:
- Contractor's Landscaping Supervisor
  - District Environmental Coordinator
  - Ted Littlefield (ADOT Construction Operations) or Kirk Kiser (ADOT Phoenix Construction)
  - Greg Chimel (ADOT Construction Operations) or Lukasz Betlej (ADOT Phoenix Construction)
  - Tao Fang (ADOT Roadside Development)