

Memorandum

To: PEGGY LIM
PROJECT COORDINATION ENGINEER
DISTRICT 6

Date: May 4, 1999
File: 06-Fre-180
06-025741

From: DEPARTMENT OF TRANSPORTATION
Engineering Service Center
Division of Structures - MS#9
Office of Structure Design
Electrical, Mechanical, Water & Waste Water Branch

Subject: Landscape Irrigation Booster Pump Design

We require complete site data to properly define the scope and set milestone dates for this project. Following is a list of the information that should be included in the site submittal.

1. The flow rate and pressure available from the serving utility expressed as a maximum and minimum in a 24-hour period at the peak of the irrigation season.
2. The maximum and minimum flow rate and pressure required by each circuit in the irrigation system.
3. Irrigation plans and details showing:
 - all points of connection for water and power
 - all irrigation controllers in the system
 - all circuits which may not require the booster pump to run
 - the location of the booster pump concrete pad including contours, nearby permanent facilities above and below the ground surface, and elevations if necessary
 - constraints imposed by local authorities
 - special requirements such as fencing, enclosures, vandal concerns, or restrictions on the time of operation.

Upon receipt of the above information we will size the booster pumps at each location. Booster pumps larger than 5 Horsepower will require three-phase power. District utility personnel will be responsible for contacting the local utility to determine the availability of utilities and will include in their plans any work necessary to extend the utilities to the booster pump pad. All components within 5 feet of the booster pump pad will be shown on Structures' plans.

If you have any questions or comments, please call me at Calnet 8-498-8490.



J. STEPHEN SCHOFF
Senior Mechanical Engineer
+Mechanical Section II

c: JSSandhu – Electrical Section 1
KTCO – EMW&W Control System Specialist

Memorandum

To: DISTRICT LANDSCAPE ARCHITECTS

Date: March 25, 1999

File: 425

From: DEPARTMENT OF TRANSPORTATION
OFFICE OF STATE LANDSCAPE ARCHITECTURE

Subject: Booster Pump Plans

Recently, booster pumps have been elements of irrigation designs without booster pump plans being included with the Plans Specifications and Estimate (PS&E) packages. It is Caltrans policy for all booster pumps to be designed and plans signed by the Mechanical and Electrical Engineers in the Engineering Service Center, Office of Structures Design, Electrical Mechanical Water, and Wastewater (EMW&W) Branch. Office of Office Engineer will return PS&E packages to the district if proper plan sheets and specifications are not included with the submittal.

Dennis Scharosh, Chief of Office of Structures Design, EMW&W Branch should be contacted as soon as the designer knows a booster pump will be required. His phone number is Calnet 498-8337. The Mechanical and Electrical Engineers should be considered members of the Project Development Team on these projects. Booster pump systems can cost anywhere from \$7,500 to \$40,000 and, should therefore, be identified and included in the PSR estimate. Early involvement of the Mechanical and Electrical Engineer could save many hours of irrigation redesign.

To develop the PS&E booster pump design and estimate, the Mechanical and Electrical Engineer will need water pressure and gallon per minute requirements and draft irrigation plans. A typical project will require approximately three months for the preparation of the booster pump PS&E.



GARY W. BUSH, Chief
Office of State Landscape Architecture

c: DScharosh
TCO
DGrinstain
LKoe
SNamba
MFerrara
NYambao

SN/lm/boosterpump

Dick Fuller

Memorandum

To : District Deputy Directors
of Project Development
All Headquarters Project
Development Offices

Date: December 8, 1986

File :

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TRANS. DIV.

From : **DEPARTMENT OF TRANSPORTATION** Division of Construction
Office of Office Engineer

Subject: Preparation of PS&E for Electrical and Mechanical Work on
Landscape Architectural Projects

This memorandum is to further clarify the procedure established by the Division of Project Development, Office of Landscape Architecture, in their memorandum dated October 25, 1985 (copy attached), which pertains to the above subject.

The design and preparation of plans for mechanical work, such as booster pumps, and electrical work of 40 volts and higher, shall be done or supervised by an engineer appropriately licensed for that work, or by an unregistered person who has been "in responsible charge" of such engineering work since January 1, 1985. The final engineering drawings shall be shown on separate plans which shall be signed by the registered engineer, or the unregistered person "in responsible charge".

The electrical and mechanical plans shall show the electrical service connection to the irrigation controllers, and have a note referring to the landscape architectural plan where the corresponding irrigation controllers are shown. Conversely, the landscape architectural plans shall not show the electrical service connection to the irrigation controller; but shall have a note referring to the electrical or mechanical plans where the service connection is shown.

When the district is the responsible unit for the required electrical work on landscape architectural projects, the District Traffic Electrical Section shall provide the plans and appropriate standard special provisions, including Standard Special Provision L20.65, "Electric Service Installation".

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Effective March 2, 1987, all projects involving landscape architectural work submitted to the Office of Office Engineer shall conform to the procedure established in this memorandum in addition to the procedure set forth in the October 25, 1985 memorandum mentioned above.



R. P. WEAVER, Chief
Plans, Specifications &
Estimates Branch
Office of Office Engineer

Concur:



R. L. Donner, Chief
Office of Electrical Systems



E. N. Kress, Chief
Office of Landscape Architecture

Attachment

Memorandum

o : District Directors

Date: October 25, 1985

File :

From : **DEPARTMENT OF TRANSPORTATION** - Division of Project Development
Office of Landscape Architecture

Subject: Procedures and Responsibilities for Preparation of PS&E Work for
Mechanical and Electrical Work on Highway Planting and Roadside
Rest Area Project Plans.

PURPOSE

To comply with Senate Bill No. 2127, L. Greene, (attached) .
establishing signatory requirements for mechanical, electrical
and sanitary engineering work by persons employed by the State.
To address these requirements and to establish procedures for
submittal of work requests to the Office of Structure Design for
Landscape and Roadside Rest related work. Also, to provide
electrical service connection arrangements in a timely manner to
avoid construction delays.

BACKGROUND

Currently, mechanical and electrical work for highway planting
and roadside rest projects have been processed by the
districts, the Headquarters Office of Landscape Architecture,
or the Office of Structure Design; Electrical, Mechanical,
Sanitary (OSD,EMS) Branch.

Senate Bill 2127, L. Greene, has amended Sections 6730, 6735,
and 6763.5 of, and added Section 6730.2 to, the Business and
Professions Code. This legislation now requires that the
practice of mechanical, electrical and sanitary engineering by
persons employed by the State of California, shall be by
persons registered in accordance with the Professional
Engineers Act or a subordinate under the direct supervision of
a person so registered (see exception under Section 6730.2).

As a result of this legislation, Headquarters and District
Landscape Architects will no longer accept the responsibility
for such work shown on Landscape Architectural or Roadside Rest
plans.

PROCEDURE

1) Work Schedules

Prior to starting preliminary design work, the District Landscape Architect shall coordinate the areas of responsibility with the District Electrical Section and the OSD,EMS Branch. Coordination, when roadside rests or booster pumps are involved, should begin during the project report stage. When the landscape plans require electrical work to be designed by the OSD,EMS Branch, the District shall submit a memorandum to the OSD,EMS Branch Chief, outlining the scope of work, PS&E date to the District, and shall include a preliminary data sheet indicating the design conditions and requirements (see attached data sheet).

Requests for PS&E work shall be scheduled to allow adequate lead time to accomplish the necessary engineering and design requirements. Minimum lead times for OSD,EMS Branch work should generally meet the following schedule:

- Controller service connections - two months
- Mechanical elect., i.e., booster pumps and well pumps - three months
- M&E design requiring architectural elements - four months
- Roadside rest work - on an individual basis

2) Areas of Responsibility

All electrical work included on landscape architectural plans and specifications, except voltages below 40 volts, and all mechanical and sanitary engineering work included on landscape architectural plans and specifications shall be under the direction of a person in legal authority or responsible charge of that work.

When landscape architectural plans require electrical/mechanical work or coordination of work with other electrical plans such as with highway construction projects the following guide for areas of responsibility shall be followed:

- a. If pumps are involved, the responsible unit shall be the OSD,EMS Branch.
- b. If no pumps are involved, the responsible unit shall be the District.

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- c. When roadside rest area electrical/mechanical work is the responsibility of OSD,EMS Branch, all electrical work, including ramp and parking area lighting, shall be the responsibility of the OSD,EMS Branch.
- d. When OSD,EMS Branch is the responsible unit, the District shall assist in obtaining the necessary service points.

3) Signatures

The responsible units have signatory responsibility for their work. When plans are prepared by a registered engineer or their subordinate under his/her direction, they shall be signed by the appropriate titled registrant. In addition to their signature, the registrant shall indicate his/her registration number and his/her titled authority. When the responsible person is not registered, as permitted under Section 6730.2 of SB 2127, the signature block shall indicate that the signer has accepted responsibility for the electrical, mechanical or sanitary engineering work shown on the plans.

4) Service Connections

Arrangements for service connections shall be the responsibility of the District. The District shall schedule the arrangement of service connections as outlined in J. T. Kassel's memo, "Instructions for Implementing Early Installation of Utilities (water, electrical, gas, and etc.) for Construction Projects," dated June 27, 1985 (attached).

5) Inspection

All submittals required for work designed by the OSD,EMS Branch shall be forwarded by the Resident Engineer to the OSD,EMS Branch for review and approval.

Prior to acceptance of electrical or mechanical work designed by OSD,EMS Branch, the Resident Engineer shall request a field inspection and a Form H-80-C 53, "Material Inspected and Released on the Job" (copy attached) from the responsible Headquarters function.

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EFFECTIVE DATE

Senate Bill 2127 covering signatory responsibilities was signed into law September 25, 1984 and became effective January 1, 1985.



EDWARD N. KRESS, CHIEF
Office of Landscape Architecture

APPROVED:

O/S

J. R. GORDON, CHIEF
OFFICE OF ARCHITECTURAL AND
LANDSCAPE CONSTRUCTION

O/S

J. E. ROBERTS, CHIEF
OFFICE OF STRUCTURES DESIGN

PO:bg
bcc: POLivares
EKress
JRGordon
JERoberts
VPaul
Landscape File