



PIMA COUNTY
WASTEWATER MANAGEMENT DEPARTMENT
DEPARTMENT PROCEDURE

Procedure Number: PN0016

Responsible Division: Engineering

Effective Date: December 1, 2006

Date of next review: December 1, 2007

Approved: *Michael Gritzak*
 Michael Gritzak, P.E., Director

**SUBJECT: PCWMD Procedure and Guidance for
 Approval of Field Changes for Public Sewer Projects**

I. Purpose

This procedure and guidance is intended to provide consistency regarding the process for approval of field changes encountered during the construction of public sewers for Pima County Wastewater Management Department (PCWMD). This procedure shall be followed for all entities involved in the inspection and construction of Pima County public sewers.

II. Definitions

Field Change: Any deviation from the record drawings sealed by the Engineer of Record.

De Minimus Field Change: A field change that result from the inaccuracies of the construction methods, or unforeseen field conditions, and are considered to be within acceptable construction tolerances for the specific project. In general, these tolerances are considered to be inconsequential, and are in the 100ths of a foot change for pipe inverts, and 10ths of a foot for horizontal changes. Where pipe slope changes fall below PCWMD minimum slopes, the De Minimus Field Change definition does not apply.

Reportable Field Change: Any field change from the approved record drawings that is not considered a De Minimus field change is a reportable field change.

III. Procedure

A. Inspector Actions

1. The contractor shall notify the assigned project inspector of all field changes.
2. The inspector shall determine if the field change is a De Minimus Field Change or a Reportable Field Change.
3. If the inspector determines that the field change is a De Minimus Field Change, work may continue, and the field change shall be properly red-lined and recorded on the final as-built drawing.
4. If the inspector determines that the field change is a Reportable Field Change, the inspector shall immediately notify PCWMD Field Engineering of the field change.
5. Construction shall not proceed on areas affected by, or upstream of, a Reportable Field Change until an approved set of revised record drawings are provided to the inspector and contractor.

B. PCWMD Engineer Evaluation

1. A field change shall be evaluated by a Civil Engineer from PCWMD Field Engineering.
2. Based on the approval guidance provided in section IV, the civil engineer shall determine if the field change can be approved by PCWMD, or if the change requires the additional approval of Pima County Department of Environmental Quality (PDEQ) prior to continuing with construction.
3. PCWMD Field Engineering may request additional modifications to the design in order to address the field change.

C. PCWMD Approval

1. If the field change can be approved by PCWMD, the Engineer of Record shall generate a revised set of record drawings with the original signatures, showing the clouded change and sealing the change by an annotated delta.
2. The PCWMD Field Engineering Civil Engineer shall approve by signature and date on the mylar cover sheet, or reject the change and any requested revisions, within two (2) business days of receipt.
3. Four (4) copies of the revised record drawings shall be distributed by the Engineer of Record to PCWMD Field Engineering, the Inspector, the contractor, and Development Services Department (DSD).

D. PCWMD/PDEQ Approval

1. If the field change requires approval by both PCWMD and PDEQ, the Engineer of Record shall generate a revised set of record drawings with the original signatures, showing the clouded changes and sealing the changes by an annotated delta.
2. The PCWMD Field Engineering Civil Engineer shall approve the delta revisions, by signature and date on the cover sheet of the revised set of record drawings with the original signature, or reject the change and any requested revisions within two (2) business days of receipt.
3. The PCWMD approved set of revised record drawings and mylar cover sheet shall then be delivered by the Engineer of Record to DSD with the appropriate revision fee.
4. DSD shall approve, by signature and date on the mylar cover sheet, or reject the change and any requested revisions within two (2) business days of receipt. If approved, DSD will generate a revision approval letter.
5. The DSD approved set of revised record drawings with the revision approval letter shall then be delivered by the Engineer of Record to Pima County Department of Environmental Quality (PDEQ).
6. PDEQ shall approve or reject the change and any requested revisions within ten (10) business days of receipt.
7. If approved, PDEQ shall issue a revised Approval to Construct (ATC) to the Engineer of Record.
8. With the revised ATC, the Engineer-of-Record shall deliver four (4) copies of the approved record drawings and revised ATC to DSD. DSD shall stamp and distribute the sets to PCWMD Field Engineering, the Inspector, the contractor, and retain one for file copy.

IV. Approval Guidance Criteria for PCWMD Engineering Review

A. Manholes:

1. Deletion - Deleting or removing manholes requires the approval of PDEQ.
2. Relocation - Moving manholes may be approved by PCWMD under the following scenarios:
 - a. Manhole relocation is not greater than 10 feet, and
 - b. Upstream and downstream manholes are less than 450 feet away, and

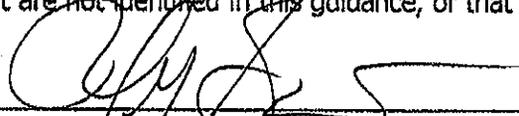
- c. No potential conflicts with water distribution lines are identified for all impacted portions of the sewer manhole and sewer lines (potential conflicts occur when the separation distance of affected sewer lines from water lines is less than 10 feet horizontally OR within 3 feet vertically), and
- d. Connecting pipe slopes do not change, or
- e. Connecting pipe slope decreases and the conveyance capacity is not affected, and the new design slope, subtracting 0.05 ft/100ft, is still above the PCWMD minimum standard, and the total change is less than 0.5 ft/100ft, or
- f. Slope increases and the new design slope is greater than the PCWMD minimum slope and less than 6.0%.

- 3. Addition - Adding manholes may be approved by PCWMD under the following scenarios:
 - a. Pipe slopes entering new manhole do not change, and
 - b. No potential conflicts with water distribution lines are identified (see Relocation criteria).

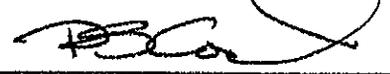
B. Sewer Lines:

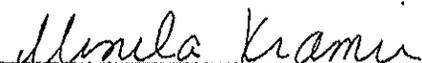
- 1. Material Change - Changes between PVC, VCP, and to DIP. Changing from DIP to PVC may be approved by PCWMD under the following scenarios:
 - a. DIP is not needed as extra protection due to close proximity to a water line, and
 - b. DIP is not needed due to lack of depth of cover, and
 - c. DIP is not needed due to excessive slopes.
- 2. Slope Change - Modifying slopes may be approved by PCWMD under the following scenarios:
 - a. No potential conflicts with water distribution lines are identified for all impacted portions of the sewer, manhole and sewer lines. Potential conflicts occur when the separation distance of affected sewer lines from water lines is less than 10 feet horizontally OR within 3 feet vertically, and
 - b. Pipe slope decreases and the conveyance capacity is not affected, and the new design slope, subtracting 0.05 ft/100ft, is still above the PCWMD minimum standard, and the total change is less than 0.5 ft/100ft, or
 - c. Slope increases and the new design slope is greater than the PCWMD minimum slope and less than 6.0%.

Field changes that are not identified in this guidance, or that cannot be verified, shall require PDEQ approval.

PROPOSED BY  11/20/06
Wastewater Management Department Date

ACCEPTED BY  12/4/06
Development Services Department Date

ACCEPTED BY  12/6/06
Department of Transportation Date

ACCEPTED BY  12-15-06
Department of Environmental Quality Date