

# CONSTRUCTION INSPECTION MANUAL



**Marina Coast Water District**  
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# CONSTRUCTION INSPECTION MANUAL

## Marina Coast Water District

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## **SECTION 1.0**

### **Introduction**

#### **1.1 General**

The purpose of this manual is to standardize as many Marina Coast Water District (MCWD) Construction Inspection procedures as possible. By using this Construction Inspection Manual, the District's Construction and Transfer of Infrastructure Agreement, and the various standards, it will be possible for District and contract personnel to adhere to MCWD policies, coordinate the major procedures, and provide a high level of standardization.

There are distinct differences in the inspection of developer-installed improvements and improvements constructed by the District as a Capital Improvement Project. While Capital Improvement Projects are designed, bid and paid for by MCWD, developer-installed projects are designed and constructed by firms selected by the developer. The developer enters into an agreement with MCWD that establishes the requirements for construction and acceptance of all improvements.

Since the developer is responsible for paying for the design and construction of the required improvements and the developer is responsible for completing the work in advance of their need for the service, the District's main focus is confirming that the project was built in compliance with the approved plans, specification and permits. The District is usually not concerned with how much the work is costing or how much time the Contractor is taking to installing the work.

The District's Construction Inspection Manual is a "how-to" manual providing policies and guidance to field personnel related to the successful inspection of a development project. Field personnel must be knowledgeable in, and follow, the policies and procedures set forth in this manual.

The methods described in this section are guidelines and are not to be interpreted as definitive procedural mandates. The District's Inspector will ultimately determine the application and utilization of these guidelines. The Inspection Manual is not a part of the developer's contract documents and thereby the procedures outlined herein are not binding upon either the Developer or the Contractor. However it is prudent to attempt to implement as many of the procedures and guidelines as possible, within the scope and intent of the contract.

At no time should the Inspection Manual be quoted or used as a resource for direction or interpretation of the Developer's contract documents. The Contract Documents shall govern in any conflict between the contract documents and the Inspection Manual.

## **1.2 Types of Development Projects**

Development projects may be residential, commercial, or other types. They may also be expansions of existing uses. Development projects will vary greatly, from as small as providing a single new service at an existing building to new residential subdivisions with several hundred homes.

MCWD is the water provider and sewer collection agency within the City of Marina and on Former Fort Ord (now referred to as the “Ord Community”). Developers must apply for and pay for water and sewer service, and they must install all improvements necessary to serve their site and facilities. The District shall inspect and accept the improvements prior to authorizing any service.

## **1.3 District Agreement**

Developers shall execute an agreement with the District to install any infrastructure that will be transferred to the District and to receive service. A sample development agreement is included in the Appendix. These agreements are negotiated with major developers due to the complexity of those projects. Smaller projects must adhere to the standard processing and inspection by District staff.

The project plans and specifications shall be part of the District Permit and/or Agreement. The project plans and specifications shall be reviewed and approved by MCWD Staff prior to any construction.

## **1.4 Bonds and Insurance**

The District’s Development Agreement requires the Developer to provide the appropriate surety and insurance for their projects. The surety shall cover the payment and performance for the project. The insurance requirements are as specified by the District Board.

The District staff must ensure that copies of all required agreements, bonds, and insurance are received prior to construction and are included in the project file.

## **1.5 Licenses**

All contractors shall be licensed in their specialty area of construction and contractors shall comply with all State Laws regarding licensing. License information can be found at the Contractors’ State License Board website: [www.cslb.ca.gov](http://www.cslb.ca.gov)

Check any contractors’ license status by visiting the Contractors’ State License Board website. At the Contractors’ State License Board home page, there is a link to “License Status Check.” By entering the contractor’s license number, the website

will provide the various licenses, classes of licenses, workers compensation insurance information, and officers of the company.

Contractors shall present evidence to MCWD Staff of acceptable license number and classifications for all areas of construction. It is important to note that as of January 2001, the placement and removal of traffic control measures shall only be performed by “A” or “C-31” licensed contractors.

## **1.6 District Fees and Charges**

The Developer shall fund all the cost of the Contract Inspection effort. It shall be the District Engineer’s responsibility to ensure that the Developer places an adequate inspection deposit with the District. The District will pay for all project related coordination and inspection out of these monies. The Developer shall be advised of inspection fund balances during the term of their project. District staff shall request an increase in the inspection fund when necessary to stay ahead of project inspection costs and maintain a positive fund balance.

A copy of the District’s rates, fee and charges is included in the appendix.

## **1.7 Abbreviations**

The following abbreviations are used in this manual.

CL .....	Clarification Letter
CM .....	Construction Manager
CR .....	Clarification Response
DC .....	Design Consultant
DSC .....	Differing Site Condition
FD .....	Field Directives
FO .....	Field Order
IIPP .....	Injury and Illness Prevention Program
MCWD .....	Marina Coast Water District
MIS .....	Management Information System
COR .....	Change Order Request
PM .....	Project Manager
RFC .....	Request for Clarification
RFQ .....	Request for Quote
CPM .....	Critical Path Method Schedule

## **SECTION 2.0**

### **Project Organization**

#### **2.1 General**

MCWD recognizes that development projects vary greatly. Requirements, constraints, and schedules vary from project to project and the District needs to react to those needs. This section offers direction for the inspector to facilitate setting up and organizing individual projects. The individual project requirements may vary and those changes need to be documented with the MCWD Plan Check Engineer.

The purpose of this section is to identify the participants in the project organization, to describe the procedures for documenting those individuals, and to define their relationships and responsibilities. The set-up of the project facilities is also covered in this section. The principals in a project organization are:

- MCWD District Engineer
- MCWD Plan Check Engineer
- MCWD Project Engineer
- Contract Construction Manager and Inspector
- Developer
- The Developer's Engineering Consultant
- The Developer's Planning Consultant
- The Developer's Contractor
- Other government agencies, neighboring properties, etc.

The Developer's representatives should be identified during the design and permitting phases. MCWD Staff shall confirm this information in writing upon request. The MCWD Construction Management and Inspection Team typically is structured based upon the project needs and may fluctuate during the life of the contract.

#### **2.2 Control of Work**

The Developer is responsible for all construction activities and for ensuring that the improvements are installed to the satisfaction of MCWD and other permitting agencies.

MCWD will provide the necessary plan review and inspection services to support the Developer's project. However, the Developer is responsible for requesting these services well in advance of need and in conformance with MCWD procedures.



### **2.3 Project Organization**

The District's designated representative should update the Project Organization List when necessary. That may be the District Engineer, other District staff or the Contract Construction Manager. As personnel and/or informational changes occur, the Organization List shall be updated to reflect said changes. Updated copies of the list are to be provided to all members of the MCWD Project Management Team.

### **2.4 Reference Documents (Codes and Standards)**

The District will oversee the work to assure standards are being complied with. In general, the following will be used:

- Marina Coast Water District Standard Drawings and Specifications
- Caltrans Construction Manual
- Caltrans Standards Plans and Specifications

The following reference manuals may also be needed:

- American Society for Testing and Materials (ASTM) Manuals
- American Water Works Association (AWWA)
- Uniform Building Code (UBC)
- National Electrical Code (NEC)
- Uniform Plumbing Code (UPC)

The Construction Manager and Inspector will utilize the following software programs:

- MS Word
- MS Excel
- AutoCAD
- MS Project for scheduling

### **2.5 Contract Documents**

The District Engineer, Plan Check Engineer, Construction Manager, and Inspector shall have complete sets of the contract documents prior to the project's pre-construction meeting.

**PROJECT ORGANIZATION LIST**

*Date prepared / revised*

**DISTRICT**

District Engineer \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

MCWD Plan Check Engineer \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Contract Construction Manager \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Contract Construction Inspector (CI) \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

**DEVELOPER**

Developer's Representative \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Design Consultant \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Contractor's Project Manager \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Testing Consultant \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

## SECTION 3.0

### File System

#### 3.1 General

All communication, both written and verbal, on the project between the District, Developer, Contractor, and the Design Consultant must be routed through the MCWD Construction Manager. The CM is responsible for tracking communication and ensuring the timely response for any outstanding issues.

The Construction Manager shall establish the file system presented in Section 3.2.

Cross filing of project correspondence is encouraged to be employed liberally, but not excessively. Generally, all attachments and enclosures are filed in the cross files. For more detail on filing requirements for specific communication types see the individual sections in this manual.

The CM should ask the District Engineer what, if any, copies of correspondence he/she would like to receive.

#### 3.2. File Index

##### **00 COMMUNICATIONS**

##### **01 LETTERS**

	<u>From</u>	<u>To</u>
001	MCWD	Contract CM Firm
002	MCWD	Developer
003	MCWD	Design Consultant
004	MCWD	Contractor
005	MCWD	Miscellaneous
011	Contract CM Firm	MCWD
012	Contract CM Firm	Developer
013	Contract CM Firm	Design Consultant
014	Contract CM Firm	Contractor
015	Contract CM Firm	Miscellaneous
021	Developer	Contract CM Firm
022	Developer	MCWD
023	Developer	Design Consultant
024	Developer	Contractor

025	Developer	Miscellaneous
031	Design Consultant	MCWD
032	Design Consultant	Contract CM Firm
033	Design Consultant	Developer
034	Design Consultant	Contractor
035	Design Consultant	Miscellaneous
041	Contractor	Contract CM Firm
042	Contractor	MCWD
043	Contractor	Developer
044	Contractor	Design Consultant
045	Contractor	Miscellaneous
051	Miscellaneous	MCWD
052	Miscellaneous	Contract CM Firm
053	Miscellaneous	Developer
054	Miscellaneous	Design Consultant
055	Miscellaneous	Contractor
056	Miscellaneous	Miscellaneous
02	TRANSMITTALS	
	<i>From</i>	<i>To</i>
001	MCWD	Contract CM Firm
002	MCWD	Developer
003	MCWD	Design Consultant
004	MCWD	Contractor
005	MCWD	Miscellaneous
011	Contract CM Firm	MCWD
012	Contract CM Firm	Developer
013	Contract CM Firm	Design Consultant
014	Contract CM Firm	Contractor
015	Contract CM Firm	Miscellaneous
021	Developer	Contract CM Firm
022	Developer	MCWD
023	Developer	Design Consultant
024	Developer	Contractor
025	Developer	Miscellaneous
031	Design Consultant	MCWD
032	Design Consultant	Contract CM Firm
033	Design Consultant	Developer
034	Design Consultant	Contractor

- |     |                         |                   |
|-----|-------------------------|-------------------|
| 035 | Design Consultant       | Miscellaneous     |
| 041 | Contractor              | MCWD              |
| 042 | Contractor              | Contract CM Firm  |
| 043 | Contractor              | Developer         |
| 044 | Contractor              | Design Consultant |
| 045 | Contractor              | Miscellaneous     |
| 051 | Miscellaneous           | MCWD              |
| 052 | Miscellaneous           | Contract CM Firm  |
| 053 | Miscellaneous           | Developer         |
| 054 | Miscellaneous           | Design Consultant |
| 055 | Miscellaneous           | Contractor        |
| 056 | Miscellaneous           | Miscellaneous     |
| 03  | Form Correspondence     |                   |
| 001 | Field Memos             |                   |
| 002 | Notice of Noncompliance |                   |
| 09  | Telephone Conversations |                   |

## 10 MEETINGS

- 11 Preconstruction Meeting
- 12 Weekly Meetings
- 13 Project Management Meetings
- 14 Meeting Conversation Records
- 15 Miscellaneous

## 20 REPORTS & STUDIES

- 21 Inspection
  - 001 Daily
  - 002 Monthly
- 22 Tests
 

001	Soils	006	Manhole
002	Concrete	007	Bacteriological
003	Asphalt	008	Water line pressure
004	Steel	009	Lateral
005	Pipe	010	Sewer line

- 23 Punchlists
- 24 Survey Reports
- 25 Accident Reports
- 26 Government Reports
- 27 Miscellaneous
  - 001 Photo Log (photos filed separately)
  - 002 Video Tape Inspection
  - 003 Weather
  - 004 Newspaper Clippings

**30 REFERENCE DOCUMENTS**

- 31 Utilities
- 32 Contract Plans & Specifications
- 33 Existing Plans & Specifications
  
- 34 Reports & Studies
  - 001 Geotechnical Report

**40 PROCUREMENT**

- 41 Contract
  - 001 Agreement
  - 002 Bonds
  - 003 Insurance Certificates
  
- 42 Permits
- 43 Easements

**50 CLARIFICATIONS AND CHANGES**

- 51 Clarification Letters
- 52 Request for Information
- 53 Issues

**60 SCHEDULE**

- 71 Base Schedules
- 72 Updates & Revisions
- 73 Requests for Extension of Time
- 74 Potential Delays

**80 SUBMITTALS**

- 81 O&M Manuals (Transmittals & Shop Drawings)
- 82 Warranties
- 83 As-Built Drawings
- 84 Equipment List
- 85 Materials
- 86 Certificate of Compliance
- 87 Shop Drawings

**90 POST CONSTRUCTION**

- 91 Certificate of Final Completion
- 92 Record Drawings
- 93 Claims
- 94 Lawsuits

**3.3. Correspondence Management**

The main tool used in managing correspondence is a computer-generated "status list" of all project related correspondence. This status list is used to encourage timely action on the part of the Developer, Contractor, Design Consultant, Construction Manager, the District and others involved with the project. It also provides a checklist of items requiring response so that no issue goes unanswered.

(Example)

**Correspondence Status List**

**Project Name:**

<b>To</b>	<b>From</b>	<b>Date Received</b>	<b>Date Responded</b>	<b>Ball in Court</b>

### **3.4. General Verbal Communication**

The CM and the Inspectors will communicate with the Contractor verbally many times each day. It is important that verbal directions to the Contractor be avoided and that all directions to the Contractor be written. Verbal direction may only be provided:

- a. When a safety violation is observed which could threaten life or property, or
- b. When a potential delay can be averted by directing the Contractor to proceed.

However, in both instances the CM must provide immediate written confirmation of the directive. The confirmation is to be provided the same day that the verbal directive is given and preferably no later than one hour following the directive. The written confirmation is required regardless of whether or not the Contractor requests it.

#### **3.4.1 Lines of Communication**

The following lines of communication are to be generally followed on the project site.

##### **A. General Contractor's Superintendent**

Instructions and directives should be given to the Contractor's designated superintendent. If the superintendent cannot be found, and action is required immediately, direction may be given to the Contractor's foreman in charge of the work. When the superintendent is located, he should immediately be advised of the discussions, and written confirmation should be provided as noted above.

##### **B. Subcontractors**

The CM and Inspectors will not give instructions or direction to subcontractors performing the work. A working relationship should be established between the inspectors and the subcontractors, but specific instruction or directive regarding a subcontractor's work should be given to the Contractor's superintendent.

##### **C. Project Management Team Members**

The CM must advise District staff and other project management team members that they are not to give any oral (or written) directions to the Contractor. To prevent confusion, items should be discussed with the CM. These will then be forwarded to the Contractor, or a meeting will be arranged to discuss a particular issue.

##### **D. District Employees**

The CM must advise the District to instruct its employees, not to give specific direction, or suggest changes to the Contractor. A working relationship should be



established between the District's Inspector and the Contractor. However, to prevent confusion, any concerns or issues that District staff has should be brought to the attention of the Inspector. The Inspector will then be in the position to discuss the issue and seek resolution with the Developer's Representative and/or the Contractor's Superintendent.

A meeting, whether in the project office or at a specific work area, can be arranged with the CM, the Contractor, and the Owner to discuss specific issues or changes.

The CM and Inspector will not give interpretation of the project drawings or specifications. Questions should be referred to the Developer's Design Engineer.

#### E. Inspector(s)

The Inspectors will make notations in their daily inspection reports of any instructions given or received or any verbal notices of claim. Inspectors will report these entries to the CM. If the Contractor gives verbal notice of a claim, the Inspector must advise the Contractor that written notice is required by the contract documents. If no written notice is provided by the Contractor, the CM should issue a letter to the Contractor requesting the Contractor's written position on the matter.

### **3.4.2 Conversation Documentation**

The CM and other on-site personnel will keep record of all project-related conversations in their daily diary. All project management team members, both field and office, should keep records of project-related conversations that include the date, time, person, telephone number, subject, and details.

#### A. Copies of Conversation Memorandums

Off-site project management team members should routinely provide the CM with copies of telephone conversation records regarding document interpretation or other significant issues. On-site personnel should provide copies of telephone records to the CM for immediate review, as the situation dictates.

#### B. C. Follow-Up Letter

Circumstances may require a follow-up letter to confirm issues, directions, or agreements discussed, or a copy of the conversation memorandum may be issued for the other party's confirmation of the conversation's understanding.

#### C. D. Conversations with Contractor

The CM must advise the Contractor that making direct contact with other members of the project management team, without the knowledge and approval of the CM, does not constitute acceptance or approval to perform deficient work.

### **3.5. Transmittals**

A transmittal is a document that is used to transmit documents, samples, drawings, spare parts, O&M manuals, and schedules. Anything that is transmitted between the concerned parties on any given project shall be tracked by a transmittal.

#### **3.5.1 Transmittal Preparation**

The CM shall be aware of and sign all transmittals, but does not necessarily have to prepare the transmittal. The transmittal will allow the CM to document and track the date that items which are not written correspondence, but rather are samples, spare parts, or O&M manuals, etc. were actually sent to the concerned party.

### **3.6. Field Memos**

Field Memos are a written record of project issues that may or may not have been discussed between the CM and the Contractor. Field Memos shall be used as an informal letter in as much as the Owner is not copied regarding the memo. Field Memos memorialize day to day project issues and conversations regarding contract requirements.

#### **3.6.1 Field Memo Preparation**

The CM or any team member designated by the CM prepares Field Memos. All Field Memos shall be signed by the CM prior to being transmitted to the Contractor. Field Memos are assigned an issue number, if the CM believes that the Contractor may be in disagreement with the subject of the memo.

### **3.7. Notice of Non-Compliance**

A Notice of Non-Compliance is a written notification to the Developer and Contractor regarding work that is in progress or is complete but is not in compliance with the contract documents. The Notice shall state the appropriate specification section, drawing, or both, that the subject work is not in compliance with. The Notice shall be forwarded to the Developer and Contractor after the Contractor has been verbally notified of the non-compliant condition and has either not rectified the work or has refused to correct the non-compliant condition.

The CM shall notify the MCWD District Engineer prior to issuing any notices unless the District Engineer has stated otherwise. The CM shall solely be responsible for the issuance of all Notices of Non-Compliance. Other project team members shall bring non-compliant conditions to the attention of the CM, but it shall be the sole discretion of the CM to issue the appropriate notice.

## **SECTION 4.0**

### **Management Reports**

#### **4.1. General**

The Construction Manager and Inspector must prepare periodic (weekly, monthly, etc.) management reports to document the progress of the work for the District's information and the project records.

In addition to written monthly progress reports, the Construction Manager and Inspector are responsible to prepare and review status reports on a daily or weekly basis.

#### **4.2. Monthly Report Requirements**

A monthly report must be prepared by the Construction Manager and transmitted to the District Engineer. This report will serve to keep the MCWD staff and Board informed as to the overall status of the project, schedule, and budget. The monthly report must include the following:

- Work Completed - Provide an overview of work completed during the period.
- Schedule Review - Review status of schedule and anticipated project milestones.
- Inspection Budget Status - Review Inspection costs expended for period and total to date.
- Potential Delays - Review the status of any outstanding and new delays.
- Commentary - Provide an overview of project and items of significance, if any.
- Description of work to be performed by Contractor over the next month.

A sample monthly status report is provided on the next page.

# **Marina Coast Water District**

## **MONTHLY STATUS REPORT**

---

**Project: DEVELOPMENT / SUBDIVISION**

**Period: (Enter Date)**

Developer:

Contractor:

Construction Manager:

Inspector:

District Staff:

---

**Progress This Month:**

## **SECTION 5.0**

### **Meetings**

#### **5.1 General**

Meetings are a key and integral part of the administration of the project. Meetings are useful for the exchange of information, clarification of outstanding issues, and scheduling of the project. The District Engineer has the lead responsibility for all meetings. Specifically the District Engineer:

- Coordinates and schedules all meetings required for the project.
- Notifies all parties involved of the time and location of the meeting.
- Solicits agenda items from all parties involved, prepares an agenda for all meetings, and distributes to all parties involved prior to the meeting.
- Runs all meetings and makes sure that all agenda items are covered and that any additional items not on the agenda are discussed, if appropriate.
- Prepares and distributes minutes.
- Receives any comments in disagreement with the written minutes and makes corrections if necessary.

#### **5.2 Pre-Construction Meeting**

A pre-construction meeting is held prior to the start of all field operations. The purpose of the conference is to review the:

- Scope of work
- Conflicts with other projects
- Permits and other approvals (City, County, FORA, MCWD, etc.)
- Project administrative requirements
- To develop a working relationship with the Developer's Design and Construction Team.

The District Engineer conducts the pre-construction conference. The District Engineer will inform the Developer's representative how many sets of handout to bring such as; Contract Documents, plans, specifications, addenda, etc. to the conference.

The District Engineer will prepare minutes of the meeting and distribute to all attendees. These minutes may be referred to in order to resolve the understanding of the Project Team at any point of the project. As such, the minutes must be complete and cover all topics discussed at the meeting to help mitigate future issues. The meeting minutes should be distributed no later than one week following the meeting.

### **5.2.1 Attendance**

The following individuals typically attend a Pre-Construction Conference:

1. MCWD's District Engineer
2. MCWD's Plan Check Engineer
3. Construction Manager & Inspector
4. Developer's Representative
5. Design Consultant
6. Contractor's Project Manager/Superintendent
7. Major Subcontractors
8. Effected Utilities
9. Others as appropriate (city staff, permitting agencies, etc.)

### **5.2.2 Typical Agenda**

The following agenda is appropriate for a Pre-Construction conference. The Agenda should provide a reference to the applicable specification section. The agenda should be distributed to all attendees except subcontractors and suppliers one week before the conference.

1. Introductions
2. Lines of Communications
3. Key Personnel List with Emergency Telephone Numbers
4. Contractor's Superintendent
5. Project Duration and Schedule
6. Requests for Information (RFI)
7. Working Hours
8. Property Owner Notifications
9. Staging Areas
10. Means and Methods of Construction
11. Access to the Work
12. Contract Documents
13. Insurance, Permits, Fees, and Notices
14. Notification of Conflicts in the Contract Documents
15. Project Cleanliness
16. Subcontractors
17. Tests
18. Labor Provisions/Prevailing Wages
19. Delays
20. Safety
21. Changes in the Work
22. Staking of Alignment
23. Project Meetings

24. Shop Drawings, Product Data and Samples – Submittals
25. Temporary Construction Facilities
26. Material and Equipment
27. Substitutions
28. Warranties
29. Punch List items
30. Record Drawings
31. Final Acceptance
32. Comments and Questions

### **5.3 Periodic Coordination Meetings**

Periodic coordination meetings are one of the key components to the administration of the project. The District Engineer conducts this meeting, prepares, and distributes meeting minutes. The frequency and time of the meetings will be established at the Pre-Construction Conference. It is recommended that meetings be held weekly or monthly depending on the complexity and duration of the project.

The Construction Management Team members are encouraged to take their own minutes for reference or as "memory joggers" or "to-do" lists, even though minutes will be prepared.

### **5.4 Meeting Documentation**

Meeting minutes are a valuable tool in documenting the progression of the project and in resolving issues. However, the minutes must be complete, factual and unbiased to be an asset to the members of the Project Team.

#### **5.4.1 Agenda**

It is suggested that the agenda for meetings be established in the same format as the standard meeting format. If desired, space can be left between agenda items to allow meeting participants to write notes in these areas during the meeting.

It is recommended that the District Engineer solicit agenda items from participants and issue agenda two days before meetings if practical.

#### **5.4.2 Minutes**

Minutes are the historical record of the meeting discussions and resolutions. It is important that all discussions be documented in a concise format. However, the minutes are not to be used in lieu of formal written correspondence; e.g. if a clarification of contract requirements is made at the meeting, a clarification letter must still be issued to document the clarification.



For weekly meetings, every attempt should be made to distribute the previous week's meeting minutes two days before the next meeting. The first order of business at the meeting should be to solicit any comments on the minutes, any comments should be noted in that meeting's minutes and the minutes should be adopted. It is recommended that the minute's page adopting and noting any comments on previous minutes be copied and attached to the minutes being adopted. This will provide a complete history of these minutes and any corrections in one package.

Any status logs distributed at the meeting should be included in the file copy for the minutes and may also be distributed with the minutes to the attendees.

In preparing the agenda, the previous week's minutes or agenda may be used as a base, and the minutes can then be prepared again from either the previous week's minutes or the current week's agenda.

## **SECTION 6.0**

### **Issues**

#### **6.1 General**

During the course of most construction projects, situations will arise that are not made perfectly clear in the construction plans and contract documents. Generally speaking, the faster these situations are resolved, the smaller the potential cost or delays.

In order to resolve these items quickly and effectively, the Construction Manager must understand the issue thoroughly and continually update the status of each issue, as more information becomes available.

It is MCWD's policy to track all issues until they are resolved. It is also our policy to resolve all issues quickly and equitably.

#### **6.2 Issue Management/Claims**

The Construction Manager will track issues and generate reports summarizing all project issues and their status. The CM must create an Issue file any time there is a potential for a claim.

An issue is any item that has the potential for becoming a change, delay, or claim. MCWD uses issues as an internal communication system for tracking those items. Issues are generally:

- Any Field Directive issued for extra or disputed work.
- All Clarification Requests/Responses and Clarification Letters that have the potential to become a change, delay, or claim.
- Any project correspondence, which has the potential to become a change, delay, or claim.

The primary purpose of issue files is to maintain a document track regarding the key issues on the project. This document track is important in the event of subsequent claims and will enable MCWD to readily marshal the facts for reviewing the validity of any claim. The Issue file also enables the Construction Manager to track the current status of issues.

The Issue file can be used to determine what the current status of any particular issue is and what party is responsible for the next document. Issue files are used to project potential cost of pending change orders and track potential changes/claims. The Construction Manager can call an issue closed so that it is removed from the active report. This allows the Construction Manager to track those issues which are currently active and in need of review.

The Issue files should provide:

- Issue number in sequence or occurrence; i.e., issue 1, issue 2, etc.
- Issue description with backup documentation identifying the issue; i.e., RFIs, Field Memos, Photographs, etc.
- Resolution status
- Should an issue become a contract change order, all documentation is transferred from the issue file to a change order file and sequentially numbered.

## **SECTION 7.0**

### **Reports**

#### **7.1 Inspection Documentation**

The intent of this section is to provide the inspector with general information and guidelines for the successful performance of their work. This section shall be reviewed by the MCWD District Engineer and modified to satisfy the requirements of the specific project.

The performance of the field inspector is the most visible aspect of the Construction Management Team. It is imperative that there be consistent and standardized performance levels. The inspector serves as the eyes and ears for the Construction Manager. The primary function of the inspector is to “observe and record” all activities within the project limits. The method of accomplishing this task is subjective but must be structured to produce a dependable degree of execution.

Field documentation is an intricate and imperative part of project documentation that creates a bank of information that can be retrieved and reviewed for conformance or disputes. It is our policy that Field Documentation be done daily to ensure accuracy of reporting past work, in progress or completed work. Also, this information must be primarily explicit and concise without assumptions or being editorial.

The information contained in this section is general in nature. The Construction Manager is responsible for developing project specific requirements that will help in creating a consistent means of documenting the Contractor’s performance, progress, and activities.

#### **7.2 Daily Inspection Reports**

Daily reports are to be kept by all inspectors on a daily basis, as they form approximately 70 to 80% of the Project Information. The Construction Manager will review the inspectors’ daily reports on a daily basis and initial them prior to filing.

The Construction Manager will acquaint all inspectors, both full-time or specialty work inspectors, with daily report preparation procedures prior to the start of construction inspection activities. This will assure that inspection diaries are kept, and that they are recorded in a similar manner.

##### **7.2.1 Daily Report Criteria**

Inspector’s Daily reports shall contain, as a minimum, the following information:

- Date, Project Identification Number, Contractor’s name, Subcontractor(s)’ names and time of inspection.

- Conditions (weather, moisture, soil conditions, etc.). Documentation of any adverse conditions that hampered or delayed the Contractor's operations.
- Hours of work.
- Personnel on site.
- Time periods of equipment being used.
- Idle or inoperable equipment.
- Activities (include details of each activity.) Identify scheduled activities and note the starting date and completion date. Indicate CPM schedule activity number for all activities listed in the daily report.
- Difficulties encountered by inspector or contractor.
- Controversial matters (disputes, questionable items, etc.). Note if items were settled and, if so, how.
- Deficiencies and violations (include construction, safety, labor, etc.). Include how and when deficiencies were resolved. Note deficiencies that require follow-up. For all life threatening or potential injury causing safety violations always indicate the corrective action to be taken, the person told of the deficiency, the proposed time frame for correction, the person scheduled to make the correction and the emergency precaution taken until correction could be made.
- Instructions given and received. Include who the instructions were transmitted to and from whom.
- Description of accidents. A separate accident report is to be filled out and signed by the Contractor.
- Progress information. Report all delays, action taken, and action contemplated. Include schedule activity information.
- Major material and equipment deliveries to the site (include type, quantity, how delivered, and a statement on the condition of all deliveries).
- Tests, location, and results.
- Names of visitors to the site.

### **7.3 Daily Reports**

All Daily Reports require data and information in the following six sections:

1. Project Heading
2. Construction Activities
3. Labor Force
4. Equipment Log
5. Materials Used
6. Visitors Log

Items under the six sections that will be included in Daily Reports will include the following:

- Project Description
- Daily Report Number
- Date and Day of Week
- Sky – Clear, Cloudy, Rain, Etc.
- Temperature – Important when placing concrete or AC
- Precipitation – Used to calculate rain days or construction delays
- Wind – Used for delays or evaluating potential performance problems

#### **7.3.2 Work Activities**

- Starting & Ending Work Time - Use the Military time format versus Civilian format, examples 0700 Hr, 1530 Hr versus 7:00 A.M., 3:30 P.M.
- Work Activities - WHO, WHAT, WHERE, WHEN details of each activity
- Contractor's name
- Details of construction
- Details of any material or construction deficiency
- Details of quality control and quality assurance tests

#### **7.3.3 Field Force**

- Supervisors – Classification of Worker (Laborer, Flagger etc.)
- Foreman – Workers classification (Journeyman, Foremen, etc.)
- Remarks – for general remarks.

#### **7.3.4 Equipment**

- Remarks – identify all pieces of equipment, amount of use that day, and document any idle or inoperable equipment on the project site.

#### **7.3.5 Materials**

- Delivery Time - record the first delivery time for the material
- Material
- Remark - Mix designs can be placed here

**7.3.6 Visitors** - Record whether there were any visitors to the project site.

## **7.4 Testing Reports**

The Construction Manager must review the contract documents in conjunction with District requirements to develop the testing and reporting procedures for the project. Water and sewer facilities shall be tested to confirm that the installation and materials comply with industry standards.

The tests include:

- Trench backfill compaction
- Pipeline pressure
- Bacterial testing (water facilities)
- Pavement and concrete density

Refer to Section 12.0 “Sampling & Testing” of this manual and to the District’s “Procedures Guidelines and Design Requirement Manual” for additional information.

A testing program will include, as a minimum, the following reporting procedures:

### **7.4.1 Test Requests Procedure**

The inspector will schedule all inspection and tests. The inspector should urge the contractor to give as much notice as possible prior to the actual inspection date in accordance with the requirements of the contract. The inspector shall request the testing procedure from the contractor for review and approval to confirm compliance with MCWD Standards.

### **7.4.2 Test Results**

The Construction Manager or designee is responsible for reviewing the results of QC and QA testing daily. A Summary of Tests log shall be kept with each category of material being tested. This log will include date, location, material tested, pipelines stationing, test method, specification section, and remarks (corrective action-retest.)

### **7.4.3 Failing Tests**

The Inspector on his/her diary and in the Summary of Tests Log will document failing

tests indicating deficiencies in the work. The Contractor will be notified by the Inspector of the failure and by the Construction Manager in writing, if necessary. Corrective action and retests shall be documented by the Inspector and reviewed by Construction Manager.

The Construction Manager shall issue a Notice of Non-Compliance to the contractor for all deficiencies that cannot be corrected the same day.

## **7.5 Survey Reports**

The Developer is responsible for locating all nearby survey benchmarks and for establishing vertical and horizontal control.

The Inspector shall receive copies of construction staking cut sheets from the Developer's surveyor. The Inspector shall review them to confirm compliance with project plans. The copies of the cut sheets shall be placed in the project file.

## **7.6 Unacceptable Work**

Work that does not meet the plans and specifications is deemed to be unacceptable work.

### **7.6.1 Identifying Unacceptable Work**

The inspector is responsible for identifying defective work, unacceptable material or unspecified equipment that may be delivered to the site or installed during the project. The inspector shall maintain a log of deficiencies and the repairs.

Any such identified or suspected defective work must be promptly noted in the inspector's report. The deficiency note shall reflect the specific contract provision and type of deficiency. Sufficient information must be included in the daily report to effectively communicate the problem.

### **7.6.2 Notification of Defective Work**

The inspector must immediately report the occurrence of defective work to the Construction Manager. The inspector shall record in the daily report and take photographs. If the deficiency is considered severe, the Construction Manager will issue a Notice of Non-Compliance to the contractor.

Following the issuance of a Notice of Non-Compliance for defective work, the contractor should submit its intended correction procedure to the Construction Manager for review. As soon as the scope of the situation has been defined, the District Engineer will determine the appropriate response.



The District Engineer will formulate a response in consultation with the Design Consultant and/or the Construction Manager.

Defective work issues will be reviewed at all regular Project meetings.

## **SECTION 8.0**

### **Submittals**

#### **8.1 General**

The intent of this section is to provide a structure for administration of the submittal process. Submittals are one of the District's control vehicles for enforcement of District standards.

Shop drawing submittals clarify what the Contractor intends to construct to comply with the construction documents. The Developer, Contractor, and Construction Manager must work together to ensure that what is specified in the construction documents is being supplied, installed, and followed by the Contractor.

#### **8.2 Listing of All Submittals Required**

The Construction Manager will draft a list of required submittals in accordance with the project construction documents. This draft submittal list shall be provided to the Developer as early in the construction phase as possible. It is perfectly acceptable for the Developer's Design Consultant or Contractor to prepare the draft submittal list and submit it to the Construction Manager for review.

The Construction Manager will use the submittal list when reviewing the Contractor's schedule.

#### **8.3 Updating Contract Documents**

The Construction Manager should always maintain a complete set of construction documents that reflect changes made by addenda, subsequent clarifications, and Construction Change Orders. A submittal reviewer must be aware of any changes in order to assess their effect, if any, on the submittal under review.

#### **8.4 Review of Submittal**

The Contractor shall transmit all submittals to the Construction Manager. The Contractor shall review the submittals for completeness; coordination and deviations, making sure deviations are clearly noted on the transmittal cover sheet. Additionally, the Contractor shall include only related items in a submittal package.

Upon receipt of a submittal, the transmittal is immediately date stamped and forwarded to the Construction Manager for review. The Construction Manager reviews for completeness and notes if the Contractor has identified any apparent changes. If the submittal is not complete or changes that have not been identified are apparent, the submittal is returned to the

Contractor for revision. This return transmittal should be logged in as detailed further in this Section.

Each submittal must be reviewed for conformance with the Contract Documents. Any corrections marked upon a submittal should include references to the pertinent Drawing(s) and/or Specification Section(s), as appropriate. A "correction" is required when the contractor has misinterpreted the contract documents or has made an error.

Make sure all materials delivered to the jobsite are accompanied with a Certificate of Compliance (see Caltrans Std Spec 6-1.070.) A certificate of compliance must be accompanied with all materials the day it is received at the jobsite. Otherwise there may be cause for rejection of the material. Following is the form that should be acceptable:

Manufacturer's Letterhead (w/ address and phone number)

**Certificate of Compliance**

I certify the ( \_\_\_\_\_ ) used in the manufacture of ( \_\_\_\_\_ ) for Contract No xxxx conforms to the Constructions Drawings, Contract Documents, Permit and all District Standard Specifications and Special Provisions (and, if applicable, approvals from other agencies.)

Description of Material: \_\_\_\_\_

Quantity: \_\_\_\_\_

Weight: (if applicable) \_\_\_\_\_

Working Drawing: (reference working drawing)

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## SUBMITTAL LOG EXAMPLE

Project Name:

Spec. Section	Spec. Title		Submittal Description	Date Submitted	Date Approved	Comments
1310	Progress Schedule	1.1.1.1	Contractor's certification			
		1.1.1.2	Four copies of schedule			
		1.1.1.3	Preliminary Progress Schedule			
		1.1.1.4	Progress Schedule			
1500	Construction facilities and temp. Controls	1.1.1	Copies of permits and approvals			
1700	Contract Closeout	1.1.1	Quality Control Submittal: Written procedure for Maintaining As-built.			
		1.1.2	Contract closeout submittals			
2105	Traffic Control	1.2.1	Traffic Control plan			
		1.2.3	Encroachment permit			
2160	Excavation Support Systems	1.1.1	Shop Drawings			
2226		1.3	Drawings and Data			
2232	Aggregate Base	1.4	Test results			
			Material Submittals			
2270		1.1.3	Storm water Pollution Prevention Plan			
			Hydroseed Mix Design			
2345		1.3.1	Detail Drawing			
		1.3.2	Quality Control Submittal			
2430			Material Submittals- piping, fittings, manhole grade rings			
			Certificates of Compliance			
2513	Asphaltic Concrete Paving		Mix Design			
			Load Tickets			
2520			Mix Design			
			Load Tickets			
2713			Material Submittals- piping, fittings, valves, restrainers,			
			and valve boxes			
			Certificates of Compliance			

Project Name:

Spec. Section	Spec. Title		Submittal Description	Date Submitted	Date Approved	Comments
2722			Material Submittals			
			Certificate of Compliance-pipe			
2800			Material Submittals			
			Certificates of compliance-vaults, subboxs			
			Conduits			
3200	Concrete Reinforcement		Mill Certifications			
3300	Cast-in-Place Concrete		Mix Designs - 2500pse, 3000 psi etc.			
			Load Tickets			
3380			For Bore and Jack Operations			
3400	Precast Concrete		Material Submittals			
			Shop Drawings			
			Certificates of compliance			
6100			Shop Drawings			
15992	Pipe Leakage Testing	1.1.2	Quality Control			
		1.1.3	Testing Plan			
		1.1.4	Certificate of Calibration			
		1.1.5	Certified Test Report			
16100		1.7.2.1	Lighting fixtures			
		1.7.2.3	Other wiring material			
		1.7.2.4	Wiring cable, high and low voltage			
		1.7.2.5	Low voltage panelboards and breakers,			
			terminal cabinets and transformers			
16110			Material Submittals			
			Certificate of Compliance			
16120	Wires and Cables		Material Submittals			
			Certificate of Compliance			
16130			Material Submittals			
			Certificate of Compliance			

## **SECTION 9.0**

### **Scheduling**

#### **9.1 General**

The intent of this section is to define the Project Schedule, identify the members of the Project Management Team responsible for the schedule and to provide a procedure for consistent administration of the schedule review & analysis process.

To complete any construction project successfully, a schedule of work activities must be used. Schedules may take many forms; however, the most pragmatic and logical scheduling method recommended is the Critical Path Method (CPM) schedule. The CPM is a schedule sequence in which each activity of the schedule is structured upon the predecessor and successor relationships of said activities. Therefore, whenever possible, the CPM scheduling method will be used on projects managed by MCWD.

#### **9.2 Preliminary CPM Schedule**

The preliminary schedule must cover the initial three months of the project. This schedule serves as the project schedule until the Baseline Schedule is completed. The preliminary schedule must be submitted at the Pre-Construction Meeting. The minimum criteria are the schedule's thoroughness, logic, and compatibility with the work sequence included in the contract documents. The preliminary CPM schedule is reviewed according to the following criteria:

- The validity of both critical and preferential logic in the activity sequences. Schedule constraints and milestones are correctly incorporated.
- Review critical path.
- Analysis of the appropriate assignment of duration's for construction activities.
- Review the completeness of the activity list including the shop drawing submittal/approval timing in relation to the work activity requiring the materials.
- Assure that necessary coordination and interfacing with other contractors, Utilities, and/or MCWD operations has been addressed.
- Assure that there is proper allocation of duration for the approval processes as specified in the contract documents.

#### **9.3 Updates to the Schedule**

The updated Schedules must be submitted on a regular basis. The updated schedules are reviewed to determine if they are complete and correct. The Construction Manager must either provide written comments or meet with the Developer and Contractor to review the schedule to assure it meets the completion date and other established requirements.

## **SECTION 10.0**

### **Safety**

#### **10.1 General**

Federal and state laws have established occupational safety and health standards with which all agencies and employers must comply. These laws require an employer to provide a safe place of employment that is reasonably free from danger to life or health.

The *Caltrans Safety Manual* is the basis for the adopted MCWD Injury and Illness Prevention Program. The *Caltrans Safety Manual* lists mandatory safety policies and procedures, provides a centralized reference to operational safety advisories, and standardizes instructions related to reporting employee occupational injuries, and vehicular accidents.

#### **10.2 Responsibility for Safety**

The Contractor has sole and complete responsibility for the safety of all persons and property on the job site during the project. This obligation applies continuously and is not limited to normal working hours. The Contractor must conform his operations to OSHA and other applicable regulations, codes, and ordinances.

The MCWD Construction Manager, however, should inform the Contractor when an unsafe condition is identified on the site. The Construction Manager should be familiar with any special safety requirements of the project, or MCWD and the Contractor's Code of Safe Practice. If the Contractor does not take steps to eliminate the unsafe conditions, the Construction Manager will contact the appropriate regulatory agency.

The Construction Manager shall request a copy of the Contractor's Injury and Illness Prevention Program (IIPP) for the project file and reference. The Developer's Contractor shall ensure:

- That regular safety meetings are conducted. "Tailgate Safety Meetings for Field *Caltrans Safety Manual*, contains specific instructions for tailgate safety meetings.
- That no material or equipment shall be stored where it may interfere with the free and safe passage of public traffic. The Contractor shall remove all equipment, materials and other obstructions from the roadway.
- That no equipment, materials, and other obstructions are placed within 15 feet of any fire hydrants.
- That there are no open fires, smoking or electrical equipment that may generate sparks.

### **10.3 MCWD Staff Duties and Responsibilities**

The following describes the District's responsibilities for safety on construction projects:

*District Engineer* - The District Engineer shall ensure that a training program is maintained to acquaint all MCWD personnel with the basics of construction safety. The District Engineer shall act as technical advisor and coordinate the District's safety program. The District Engineer shall:

- Be familiar with construction procedures, equipment, and construction zone traffic management, and also be able to recognize and anticipate unsafe conditions created by a contractor's operation.
- Visit projects periodically to observe the contractor's operation and any traffic conditions affected by construction activity. The frequency of these visits will depend upon the type and complexity of the work. When requested, the District Engineer must make additional visits.
- Make a written report of each visit, and file a copy of the report with the project records. The purpose of the visit is not to perform a complete safety inspection, but to observe the contractor's overall efforts and answer questions or look at specific areas as requested by the resident engineer.
- Be the district's primary contact with the Division of Construction safety engineer and the local Division of Occupational Safety and Health (Cal/OSHA), except for emergencies involving imminent hazards.
- Be responsible for administering the district's construction safety training program. Structure the training program to meet the district's needs. This mandatory training must take place at a frequency of a minimum of four hours per employee per year and must be included in the district's annual training plan. Safety training will include orientation training to all employees at the time of their first assignment to construction. Employees returning to construction following an absence of five years or more must also receive safety orientation training.
- Be the advisor for the construction safety portion of the Preconstruction conference. If the coordinator does not take part in the discussion, the coordinator must be involved in reviewing the specifications and determining what specific areas of safety will be discussed with the contractor.

*Construction Manager* - The district's construction manager must review construction projects to ensure that the contractor's construction safety program is adequate and that an effective safety program is being performed. The Construction Manager must ensure that the contractor complies with all aspects of the contract. In doing so, the Construction Manager must also do the following:



- Identify an unsafe condition as well as the specific regulation involved, if known. Under no circumstances instruct the contractor verbally or in writing on how to correct a deficiency.
- Document the construction safety activities of the contractor and all other field personnel. Caltrans project personnel.
- Ensure the contractor complies with all safety orders through normal contract administration procedures. The state-enforcing agency for safety regulations is Cal/OSHA.
- Give project safety deliberate attention, both at preconstruction conferences and throughout the duration of the contract. In the project files, document safety discussions at preconstruction conferences and cover at least the following items:
  1. The contractor's accident prevention program required by Cal/OSHA.
  2. The contractor's code of safe practices, also required by Cal/OSHA. This code must be developed for each contract and reviewed by either the resident engineer or the construction safety coordinator.
  3. Various permits that may be required before starting specific work items, such as excavation, trench shoring, falsework, and scaffolding.
  4. Other safety items that may be pertinent to the contract, related to items such as blasting operations, work in confined spaces, personal protective equipment, back-up alarms, rollover protective structures, traffic control, and access to elevated work.
  5. The reporting of disabling or fatal accidents to the resident engineer and Cal/OSHA.
  6. The contractor's safety training program. Develop the code of safe practices for the project and ensure they are followed.

#### **10.4 Managing Safety Hazards**

In carrying out MCWD's responsibilities for ensuring safety compliance as a contract requirement, use the following guidelines:

**Imminent Hazards** - Imminent hazards are dangerous conditions that, if not corrected, would likely result in an accident causing severe or permanently disabling injury, or causing death. When an imminent hazard is found to exist or when the contractor permits repeated occurrences of a hazardous condition, the resident engineer must take the following steps:

- Immediately advise the contractor verbally of the condition and the need for immediate correction.
- Remove all MCWD and contract personnel from the hazardous exposure.
- Order the contractor to remove all personnel not needed to make the corrections.
- If the contractor complies, document the incident in the project's safety report with appropriate references in the resident engineer's daily report.
- If the contractor does not comply, suspend the affected operation. Confirm the suspension order with written notice to the contractor.
- Document the incident and the action taken in the resident engineer's daily report.

Whenever it is necessary to suspend a contractor's operation, notify the District Engineer and Cal/OSHA of the hazardous condition and the actions taken. Safety reports, giving all details leading up to the suspension, must be placed in the contract files.

**Dangerous Conditions** - Dangerous conditions (sometime referred to as serious hazards) are those that do not present an immediate danger to workers, but if not corrected could result in a disabling injury and possibly death, or could develop into an imminent hazard. When a dangerous condition is found to exist, the resident engineer must take the following steps:

- Advise the contractor verbally of the condition and the need for timely correction. If appropriate, set a compliance deadline.
- Remove all MCWD and contract personnel from the hazardous exposure.
- If the contractor does provide timely correction, consider ordering a suspension of the affected operation. Confirm the suspension order with written notice to the contractor.
- Document the incident in the project's safety report with appropriate references in the resident engineer's daily report.

**Minor Conditions** - Minor or nonserious conditions are ones that could result in minor injuries or that may be classified as a minor threat to health. When a nonserious or minor condition is found to exist, the resident engineer must take the following steps:

- Advise the contractor verbally of the condition and the need for correction.
- Document the incident in the project's safety report.
- Protect MCWD and contract personnel from exposure.

If the contractor fails to correct the condition or permits a repeated occurrence, notify the construction safety coordinator.

## **10.5 Accident Reports and Investigations**

Chapter 19, “Special Reporting of Serious Injury, Illness, or Fatality,” of the *Caltrans Safety Manual*, explains the reporting requirements for the serious injury, illness, or fatality of MCWD employees. This chapter also explains the reporting requirements for major property damage or fatal accidents that occur in construction zones. Part 4, “The Investigative Processes,” of Chapter 19, “Special Reporting of Serious Injury, Illness, or Fatality,” of the *Caltrans Safety Manual*, discusses and describes accident committee investigations.

Document accidents with no injuries, but with a high potential for being fatal or disabling. These types of accidents include the following:

- Falsework or guying system failures
- Overtaken cranes
- High-voltage contacts
- Trench excavation or shoring failures
- Gas or fuel line fires or explosions
- Hazardous utilities breaks
- Collisions with structures under construction or with their supporting falsework that cause displacement of a major member.

For all accidents occurring in construction zones, the Construction Inspector should take sufficient photographs or videotapes to document the conditions that existed at the time of the accident, including all signing and traffic control features that may have been in effect at the time of the accident. Depending on the nature and severity of the accident, additional documentation may be required.

## **10.6 Safety Precautions for the Public in Construction Areas**

Many construction activities and areas have a tendency to attract onlookers. Children, especially, are attracted to observe construction operations. Moving construction equipment poses a potential danger to onlookers. Construction managers and field inspectors must be aware of these potential hazards to the general public and work with the contractor to take reasonable precautions to exclude the public from the construction area. Fencing, if practical, and “no trespassing” signs should be provided at all sites that may be potentially dangerous.

## **10.7 Hazardous Waste**

If hazardous waste is encountered on the project, notify the District Engineer immediately. The District Engineer will advise and may coordinate the disposal procedures and may also suggest extra safety measures the construction manager can take to protect the public and workers.

## **10.8 Division of Occupational Safety and Health**

State law requires Cal/OSHA to enforce safety orders and promote safe workplaces and practices. Cal/OSHA achieves this function through three separate agencies, a rule-making function, an enforcement function, and an independent appeals board, described as follows:

- The Occupational Safety and Health Standards Board (standards board) adopts, amends, and repeals the safety orders. Both state and federal law require that these safety orders be no less restrictive than the federal Occupational Safety and Health safety orders.
- Cal/OSHA is responsible for administering the safety orders as adopted by the standards board.
- Citations issued by Cal/OSHA for violations may be appealed to the Occupational Safety and Health Appeals Board for a hearing, and in rare instances, then appealed to a superior court.

To allow Cal/OSHA to accomplish its mission, the Labor Code gives Cal/OSHA the authority to enter and inspect any place of employment to ensure that safe conditions and practices are being observed. If necessary, this right of entry can be enforced by warrant.

Cal/OSHA has the duty to issue citations if unsafe conditions or work practices are documented during an inspection. Civil penalties are proposed consistent with the severity of the violations cited. The amount of the penalty is determined by procedures established in the regulations. Public agencies are not exempt from these penalties.

Violations are classified by severity, as either general or serious. Under specific circumstances, these classifications will be expanded to willful, repeat, or both. Violations result in monetary penalties. Penalties are also mandatory for failing to abate hazards and for making false statements.

## **10.9 Access and Detours**

The Contractor shall make provisions for emergency access to and through the work zone(s) at all times.

It shall be the Developer's responsibility to notify all affected parties, such as, City Staff, Police, Fire Department, other emergency services, school districts, transit agencies, postal service, etc as to any road closure and detours.

The Contractor shall furnish MCWD with a traffic control plan for all traffic detours and road closures. The Contractor's Traffic Control Plan shall be prepared in accordance with Caltrans' "Manual of Traffic Controls for Construction and Maintenance Work Zones."

## **10.10 Notification of Accidents**

The Contractor should immediately notify the Construction Manager, local agencies and affected utility companies of accidents resulting in death, injuries, or damage. The Construction Manager shall notify the MCWD District Engineer as soon as he is aware of an accident. Accidents, which involve MCWD personnel, shall require immediate notification of the MCWD District Engineer.

Incident reports shall be prepared for project related accidents, regardless of the involved parties. Contact the local Utility Company of any damage that occurs to their equipment.

- If a gas line is pierced notify the Fire Department.
- If an accident occurs in an area of traffic, contact the local police department for traffic control assistance.

If significant damage or injury occurs, or if the media is in attendance, pass the incident information up the supervisory chain immediately.

## **SECTION 11.0**

### **Inspection Procedures**

#### **11.1 General**

The Inspector shall use the following outline in performing his field duties.

##### **(a) Review Plans, Specifications and all other Contract Documents**

1. Plan Notes.
2. Standard Plans, Reference Specifications.
3. Traffic Control Requirements.
4. Special Phasing or Sequence.
5. Unusual Methods and Materials.
6. Utility Conditions.
7. Encroachments, Obstructions, Removals.
8. Soil and Boring Data.
9. Shop Drawings and Other Submittals Required
10. Permit Requirements from Other Agencies.

##### **(b) Check Project for Supplemental Information**

1. Utility Notice and Report of Utility Meeting.
2. Correspondence.
3. Progress Schedule.
4. Records and Reports.
5. Grade Sheets

##### **(c) Related Requirements to Site Conditions**

1. Check Adequacy of Survey Staking.
2. Note Adjoining Property "Conditions".
3. Note Vehicular Traffic and Pedestrian.
4. Utility Interferences.
5. Drainage Conditions.
6. Work Space, Storage and "Stock Piling".

##### **(d) Review Project with Construction Manager**

1. Any Apparent Problem Areas?
2. Interpretations of "Gray" Areas.
3. Plan Errors or Omissions.
4. Public Relations.

5. Contractor's Organization.
6. Clarification of Inspection Procedures (unfamiliar and unusual materials and methods).
7. Engineering Liaison.
8. Inspection Supplies and Equipment.
9. Street Maintenance Liaison.

**(e) Review Project with Developer and Contractor**

1. Contractor's Organization.
2. Subcontractors.
3. Important Job Conditions.
4. Construction Safety.
5. Public Safety.
6. Construction Methods and Procedures, Sequence of Construction.

**(f) Exercise Controls During Construction**

1. Coordination and Communication.
2. Construction Inspection Procedures.
3. Sampling and Testing.
4. Safety and Convenience Procedures.

**(g) Maintain Accurate and Complete Records and Reports**

1. Log Job Progress and Status. (Schedule).
2. Report Special Conditions and Events.
3. Log Important Requests, Notifications.
4. Maintain Orderly Filing System.
5. Measure Completed Work to Document Progress.

**Sewer Construction Checklist**

1. Check plan requirements, utilities and other substructures, pipe materials, joints, bedding, and traffic requirements. Are shop drawings required?
2. Are utilities located and marked at the site?
3. Check for compliance with Section of the CAL/OSHA Construction Safety Orders. Has an excavation permit been issued to the contractor by CAL/OSHA and the "competent
4. Construction survey staking complete? Grade sheets on job? Off-set distance sufficient for protection?
5. What do soil borings indicate? Groundwater? Well-points required? Proper provisions for disposal of water? Soil stability for shoring?
6. Are street closures authorized? Interested agencies (police, fire, other) notified? Property Owners?

7. Temporary traffic signs, delineators and barricades in place?
8. Has pipe been inspected at the point of manufacture?
9. Provisions for surface drainage?
10. If joint is made to existing pipe or structure, what provisions are made for preventing debris from entering existing system?

### **Trenching**

1. Check for maximum trench width.
2. Line and grade control satisfactory?
3. Does actual soil condition agree with plans? Is approved shoring method adequate for actual trench condition?
4. Is spoil bank clear of trench? Is it encroaching into required traffic lanes or private property?
5. Check subgrade. Is it firm? Is it granular or will imported bedding material be required?
6. Check trench for evidence of unconsolidated fill.
7. Is temporary support of existing utilities and improvements being provided? In event of damage, are owners promptly notified?
8. Are sufficient ladders being provided?

### **Pipe Laying**

1. All loose soil removed from the trench?
2. Required granular bedding material, thickness and compaction provided? Shaped to cradle the pipe?
3. Excavation provided for projecting bells?
4. Method of transferring line grade and alignment?
5. Pipe handling satisfactory? Not being damaged?
6. Is ground water being controlled adequately (maintained below rock bedding invert until any concrete bedding has set)?
7. Jointing of pipe satisfactory? Gaskets and contact surface of mechanical compression joints lubricated as necessary and required? Maximum joint gap not exceeded? Joint closure to homemark or full depth of socket?
8. Wyes and tee's accurately located and measured? All lots or properties provided for?
9. In-place pipeline checked for line and grade regularly during laying.
10. Is pipeline "shaded" with soil material, (Backfilled to one foot over top of pipe)?
11. Check for maximum lift thickness for mechanical compaction.

### **Manholes and Structures**

1. Is excavation size sufficient for working room? Sloped back or shored?
2. Is grading for bottom or invert slab, completed before reinforcing steel is place (if required)? All loose earth removed, firm and unyielding.
3. Is concrete not less than 24 hours old before pre-cast units are set?



4. Check channels and shelves for dimension, slope and finish.
5. Check pre-cast manhole assembly. Correct slope, size, concentric or eccentric as required? Mortar joints between unit and at bottom.
6. Check frames and covers for compliance. Does cover seat in frame properly without rocking?

### **Miscellaneous and Testing**

1. Are all house connections completed? Depth and location at property line checked?
2. Air pressure testing required? Completed prior to permanent resurfacing?
3. Have sewer wye records been completed and forwarded to the office?
4. Manholes, catch basin and sewer clean and free of debris?
5. Sewer bypasses and plugs removed.
6. Has Contractor advised Inspector of uncompleted work?

## **SECTION 12.0**

### **Sampling and Testing**

#### **12.1 General**

Sampling and testing of construction materials must occur to confirm compliance with the project plans, specifications, contract documents and permits.

The District uses Caltrans and AWWA adopted standards for sampling and testing.

The Developer's field personnel will provide most of the sampling and testing effort, however, the District reserves the right to perform independent sampling and testing to double check the results.

## **SECTION 13.0**

### **Prevailing Wages**

#### **13.1 General**

The District has not determined whether any development project will be considered a “Public Works” project for the purposes of California law, and makes no warranties or representations to any Developer whether their project would be considered a “Public Works” project. The Developer shall agree in writing that if the project is considered a “Public Works” project, the Developer will pay “prevailing wages” under California Labor Code Section 1771.

The Developer shall agree in writing that if the Developer fails to pay such prevailing wages, the Developer will be liable to, among other things, pay any shortfall owed as well as any penalties that might be assessed for failure to comply with the law. If the Developer does not pay prevailing wages, and an action or proceeding of any kind or nature is brought against the District based on such failure, the Developer will defend and indemnify the District in the action or proceeding.

#### **13.2 Prevailing Wage Rates**

The State Prevailing Wage Rates can be found at the California Department of Industrial Relations’ website, <http://www.dir.ca.gov/dirdatabases.html>

Federal funding of any construction will require compliance with the Davis-Bacon Act. These wage rates differ from the State Prevailing Wages. Information on the Davis-Bacon Act can be found at the US Department of Labor’s website: <http://www.dol.gov>

#### **13.3 Review of Certified Payrolls**

During the course of a project, under “prevailing wage” requirements, certified payrolls are checked on a monthly basis. The Construction Manager and the Contractor should agree upon a date when the certified payrolls are due each month. Once the date of submittal is established, the Contractor is to submit the certified payrolls for himself and any and all subcontractors working on the project that month by the due date previously established, or risk withholdings on the following progress payment.

The Construction Manager is to verify on a monthly basis, for “prevailing wage” projects that each Contractor and subcontractor performing work on the project, during the month, has submitted a certified payroll. A “Statement of Compliance” signed by the employer or his agent indicating that payrolls are correct and complete shall accompany the certified payroll and that the wage rates are not less than those required by the contract.

Periodically for “prevailing wage” projects, the Construction Manager should initiate spot checks for wage rates, labor categories, and man-hour totals. Information can be obtained through direct observation and job diaries.

## **SECTION 14.0**

### **Photos**

#### **14.1 Field Photos and Videos - General**

Construction photos and videos are a very useful and important part in the documentation process associated with the successful management/inspection of a construction project. Such photos will be a useful tool to all parties during the course of a project and minimize disputes, help establish the existing conditions in determining the progress, and/or quality of work.

Field photos and videos can also be a useful tool to the MCWD for future projects (especially in determining the location of items that are buried and/or covered up.)

#### **14.2 Pre-construction Photos and Videos**

Pre-construction photos and videos shall be taken to document existing site conditions, areas of special interest, areas of new construction, and possible conflicts in relation to constructability.

#### **14.3 Construction Photos and Videos**

Daily and/or weekly photos shall be taken as needed to track work progress and methods of construction.

##### **14.3.1 Monthly Progress Photos**

Monthly progress photos shall be taken as needed to document and/or assist in monthly pay estimates. These photos should depict material and equipment on site, any work that has been started, completed or remains in progress.

##### **14.3.2 Special Circumstance Photos**

Special circumstance photos shall be taken as needed to document/identify differing site conditions, force account work, potential claims, deficient or rejected work, unusual occurrences, and safety issues.

##### **14.3.3 Documentation Photos**

The entire length of all new sewer lines must be video taped per District Standards.

##### **14.3.4 Project Completion Photos**

Post construction photos are taken to document all completed work.

## SECTION 15.0

### Project Closeout & District Acceptance

#### 15.1 General

The purpose of this section is to provide guidelines and procedures for successfully closing out a construction project and obtaining District acceptance. The following information represents both project and administrative closeout procedures.

The project closeout effort starts at the beginning of the project. If construction management procedures are followed during the life of a project, closeout and acceptance becomes a much less daunting task.

The Construction Manager and Inspector must stay on top of “post-construction” issues such as operations, maintenance, and warranties. Planning for these events is much easier than reacting to closeout requirements a month before final completion.

#### 15.2 Project Closeout Procedures

- A. Check-list: Create a check-list which includes the following:
- As-built drawings
  - O&M Manuals (if applicable)
  - Training (if applicable)
  - Assure any operating and/or Regulatory Agency Permits are obtained and inspections are complied with and completed.
  - Assure extra stock and spare parts have been supplied.
- B. Final Inspection:
- Upon request by the Developer, the Inspector shall walk the project site to observe and note all deficiencies. Final inspection shall begin after installation and testing of all facilities and structures and site improvements is completed.
  - The Inspector shall make sure the District Operations Division staff is involved in the final inspection. The Inspector shall then create a punchlist.
  - The Construction Manager shall distribute the punchlist to the Developer, the Contractor, and the District staff.
  - Inspect work on punchlist.
- C. Start-up: Coordinate move-in, start-up, and assist with training of MCWD’s Personnel.

#### D. Record Drawings:

Record (or “As-Built”) drawings are maintained to document all changes to the original bid documents (plans and/or specifications) stemming from addenda, change orders, clarifications, differing site conditions, errors, and field changes. Properly maintained record drawings are critical to the proper maintenance or future improvements to the facility.

The information for Record Drawings comes from all available sources, including, but not limited to, inspector’s daily diaries, direct observation, and project correspondence.

The Contractor is required to maintain one set of full-size plans and specifications with all changes noted. These documents are submitted to the District Engineer prior to project acceptance.

The Construction Manager is responsible for verifying that project inspectors and the Contractor maintain as-built drawings. The Construction Manager will maintain an independent set of documents with all changes including addenda, change orders, clarifications, differing site conditions, errors, and field changes. This set of documents can be used to verify the accuracy of the Contractor’s record drawings, and they are also valuable for the administration and inspection of the project. The project inspectors are responsible for maintaining a set incorporating all field changes, initialed and dated.

The Construction Manager should review the Contractor’s record drawings to verify that they are being kept up to date. If it is determined that the record drawings are not being properly maintained by the Contractor, the Construction Manager will advise the Contractor in writing of its obligation to provide record drawings. If the Contractor still does not provide proper record drawings, the Construction Manager will advise MCWD.

#### E. Contractor Requirements: Expedite the completion of contractor submittal requirements as follows:

- Completion of punchlist items – not to exceed 30 days
- Final lien waivers from contractor and subcontractors – release from claims (if required)
- Notice of Completion filed at County Recorder
- Guarantees & Warranties



- F. Warranty Requirements: Provide MCWD with a list outlining warranty work responsibilities of each contractor or subcontractor, with name and address of the company and the name and phone number of the contact person. On some projects this may be a part of the O&M manuals.

### **15.3 Partial Acceptance**

On major projects, it may be easier to allow for partial acceptance of the water and sewer improvements. The District will decide the logical and appropriate segments of work that should be accepted. All requirements for final acceptance apply to partial acceptance.

### **15.4 District Acceptance**

The one-year warranty period does not begin until the District's acceptance of the work. Written notice of the acceptance of the work may be provided to the Developer upon completion of any phase of work. The District will decide the appropriate and logical phasing for any major project.

MCWD Staff will schedule the project for acceptance by the District Board upon the Developer's completion of:

- All punch list items
- Delivery of Record Drawings
- Delivery of recorded deeds and easements for infrastructure
- Confirmation of the funding for all project coordination and inspection
- Posting of the necessary warranty bond

The District Board will approve the filing of a "Notice of Completion" at the County Recorder's Office to formalize the District's acceptance of the project.

# Appendix

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## Sample Forms

- Daily Report
- Project Organization List
- Certificate of Compliance
- Notice of Non-Compliance
- Correspondence Tracking Log
- Monthly Report

# PROJECT ORGANIZATION LIST

*Date prepared / revised*

## **DISTRICT**

District Engineer \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

MCWD Plan Check Engineer \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Contract Construction Manager \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Contract Construction Inspector (CI) \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

## **DEVELOPER**

Developer's Representative \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Design Consultant \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Contractor's Project Manager \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Testing Consultant \_\_\_\_\_

Address: \_\_\_\_\_

Phone Numbers (O) \_\_\_\_\_ (H) \_\_\_\_\_

E-mail address: \_\_\_\_\_



Manufacturer's Letterhead (w/ address and phone number)

**Certificate of Compliance**

I certify the (\_\_\_\_\_) used in the manufacture of  
(\_\_\_\_\_) for Contract No xxxx conforms to the  
Constructions Drawings, Contract Documents, Permit and all District  
Standard Specifications and Special Provisions (and, if applicable, approvals  
from other agencies.)

Description of Material: \_\_\_\_\_

Quantity: \_\_\_\_\_

Weight: (if applicable) \_\_\_\_\_

Working Drawing: (reference working drawing)

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

# **Marina Coast Water District**

## **MONTHLY STATUS REPORT**

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**Project: DEVELOPMENT / SUBDIVISION**

**Period: (Enter Date)**

Developer:

Contractor:

Construction Manager:

Inspector:

District Staff:

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**Progress This Month:**