Metropolitan Transportation Authority

MTA Construction:

GENERIC

RESIDENT ENGINEER (RE) MANUAL

CM111.1

Metropolitan Transportation Authority

GENERIC

RESIDENT ENGINEER (RE) MANUAL

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GENERIC RE MANUAL ROUTING FOR APPROVAL

1. VARDANIAN 4/5/00
2. FUKS THL 4/13/00 5/2/00
3. STARK 5/2/00

RETURN TO CURZON WHEN COMPLETE

X-23831 99-17

POLICY & PROCEDURE APPROVAL SIGN-OFF
AND DATA SHEET

PCN# CM111-PCN-3.00
RFI/C:

POLICY/PROCEDURE: CM111 / MTA RESIDENT ENGINEER'S MANUAL

RESPONSIBILITY: MTA DEO CONSTRUCTION

CHANGE TITLE: GENERIC RE MANUAL CM111.01 REV.0 INITIAL ISSUE

RECOMMENDATION AND APPROVAL SIGNATURES: (R = Recommend A= Approve)

R SUBMITTED BY:	D. Curzon	DATE: 4-5-00
R COORDINATOR:	A. Vardanian, Construction Manager A Vardanian	DATE: 4/5/00
R LEGAL (if required)	N/A	DATE:
R CONTRACTS (if required)	L. Kelsey, 99-9 N/A	DATE:
R CHANGE CONTROL:	D. Curzon, Doc. Control Mgr., 99-17	DATE: 4-5-00
A OWNER:	H. Fuks, DEO, Constr. 4/12/00	DATE: 5/2/00
A EXECUTIVE OFFICER:	C. Stark, EO, Construction	DATE: 5/2/00

HOW MUCH?: COST TIME **OTHER IMPACTS:**

ROM COST:

SCHEDULE ISSUES?:	N	COST RECOVERY POTENTIAL	
DESIGN ISSUES?:	N	DOCUMENT REVISIONS REQUIRED?:	N
SAFETY ISSUES?:	N	OTHER PROJECTS/CONTRACTS?:	Y
THIRD PARTY?:	N		

FINDING OF FACT

☐ WHO?: (Initiated)	D. Curzon, Document Control Manager
☐ WHAT?	Produce a version of the RE Manual that can be applied to different types of construction, other than major rail projects. Initial draft based on mark-ups received by procedure owners.
☐ Drawings:	None
☐ Specifications:	None
☐ Other Documents:	None
☐ WHEN?:	Manual will be affective upon final approval by the EO, Construction.
☐ WHY?:	The current RE Manual was developed for major rail projects and includes specific requirements appropriate only for major rail projects and major CM consultants. Engineering and construction management may be performed by MTA staff or consultants. Thus it has been agreed that a separate version of the RE Manual needs to be produced for use by REs.

POLICY & PROCEDURE APPROVAL SIGN-OFF
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DOCUMENTS AFFECTED (Listing):

Procedure #	Revision	Title

CHRONOLOGY OF EVENTS:

Date	Reference	Events (Actions, Notifications, Meetings, Correspondence, etc.)
08/26/99	MEETING	Meeting held to discuss the need for a Generic RE Manual to support construction projects other than the major rail construction projects.
08/26/99	MEMO	Memo issued to procedure owners requesting review and edit of RE Manual procedures for the Generic RE Manual
11/22/99	CTE	Mark-ups received from owners incorporated, draft procedures prepared and CTE issued
03/23/00	MEETING	Meeting was held to address any final comments or concerns. Attendees included Curzon, Miklic, Sbraggia, Sandberg, Brankiewicz, Lee, Smith, Vardanian, Fu, and Morton. Minor editoral comments were received at meeting by Miklic and Morton. Fu e-mailed additional comments later that same day. All comments have been satisfactorily incorporated.

###END### PCN: R92-CM111-3.00

DISTRIBUTION LIST

GENERIC RESIDENT ENGINEER (RE) MANUAL

R92 - CM111.01 - 03/27/00 REV 0.00

05/05/00

CONTROL #	NAME	MAIL STOP	TYPE/NUMBER
MTA			
MTA Construction: 22			
2249	CHRISTIANSEN, JEFF, DEO, Program Mgmt	99-17-1	N
2010	HUBAUD, LOU, Dir System Safety	99-10	N
2290	PEREZ, MARK, DIR Program Control	99-16-2	N
2311	AGRAWAL, SUDHIR, Supv. Eng - Mechanical	99-18-11	1
2183	BARANKIEWICZ, STAN, Environmental Svcs. Mgr	99-18-7	1
2574	BROWN, NICK, Director, Systems Engineering	99-18-9	1
2284	COMPTON, DAVID, Construction Manager	99-16-5-34	1
2672	CURZON, DIANNE, Mgr. Document Control	99-17-1	1
2712	DOSCHER, FRANK, Construction Manager	99-16-5	1
2797	FU, WARREN, Director, Facilities Engineering	99-18-10	1
2396	FUKS, HENRY, DEO, Construction	99-16-2	1
2268	LEE, THOMAS, Construction Manager	99-16-5	1
2026	MOORE, WILLIAM, Dir., Quality Management	99-17-10	1
2471	PLAN ROOM, 15th FLR.,	99-15	1
2800	REY, RODOLFO, Supv. Engineer, Electrical	99-18-10	1
2310	RMC, Records Mgmt. Supv.	RMC	1
2078	SANDBERG, JOEL, DEO, Engineering	99-18-8	1
2320	SCHMUTZLER, SUZANNE, Const Contract Admin	99-17-2	1
2556	SMITH, FRED, Construction Manager	99-16-3	1
2256	SOWELL, JIM, Envirnmntl Compliance MGR	99-18-7	1
2302	VARDANIAN, AL, Construction Manager	99-18-7	1
2798	WANG, ANDI, Facilities Engineering	99-18-10	1
MTA Operations: 1			
2015	MTA LIBRARY/ DOROTHY GRAY	99-15-1	1
MTA Safety & Security: 3			
2787	LENNON, PAUL, Managing Director	99-10-1	1
2684	MIKLIC, DAVID, Construction Safety	99-10-1	1
2691	SBRAGIA, RALPH, Safety Admin	99-10-1	1

TOTAL RECIPIENTS: 26 HARD COPIES: 23
NOTICE ONLY: 3

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY
CONSTRUCTION DIVISION

GENERIC
RESIDENT ENGINEER MANUAL

March 27, 2000

This manual provides guidelines to assist the Resident Engineer (RE) in the execution of the work. However, if the requirements in this manual conflict with the requirements and obligations in the MTA contract or MTA policies and procedures, the contract and the MTA policies and procedures shall govern, respectively.

The RE shall notify the MTA of all errors, inconsistencies and omissions that it discovers in this manual. The MTA is entitled to make any corrections and interpretations as it may deem necessary for the fulfillment of the intent of the contract.

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SECTION 1.0
INTRODUCTION

SECTION 1.01
INTRODUCTION

1.0 PURPOSE

The Resident Engineer Manual establishes uniform procedures and policies to be implemented by the Resident Engineer (RE) for management of Metropolitan Transportation Authority (MTA) systems and facilities construction projects. This introduction provides a summary of typical RE and Construction Management (CM) functions, interfaces and activities. The Generic RE Manual is applicable for MTA Capital Improvement Program (CIP) projects managed by the Construction Division and its consultants.

2.0 GENERAL

The primary role of the Resident Engineer function is to ensure construction of quality facilities/systems and to provide quality management of the construction on behalf of the MTA.

To meet the requirements for project control, project reporting and quality of construction the RE will have support resources for the services of engineering, architect, environmental services/compliance safety overview, scheduling, estimating, cost engineering, contract administration, quality control/inspector and document control. It is understood that when the Resident Engineer Procedures refer to RE responsibilities, these responsibilities extend to support staff assigned to perform the tasks. For smaller projects, the RE may perform some or all of the support tasks (i.e. inspection, office engineer).

3.0 ORGANIZATION

3.1 MTA CONSTRUCTION DIVISION

The MTA Construction Division is responsible for the design, construction, and start-up of MTA systems and facilities project in accordance with approved policies and procedures.

3.2 THIRD PARTIES

Other public agencies or private parties may be involved or affected by MTA construction. Third party involvement will be addressed in the Project Implementation Plan.

3.3 PROJECT TEAM

A core MTA Project Management staff is dedicated to each project to ensure that project management goals and objectives are met utilizing resources assigned from the various functional MTA departments and consultants.

4.0 RESIDENT ENGINEER

The RE's primary task is to ensure the construction of a quality facility/systems on time and within budget.

The RE is the primary point of contact with the contractor on the assigned contract after the Notice-to-Proceed has been issued. The RE is responsible for managing, administering, organizing, and coordinating the assigned contract in order to achieve completion of the contract in conformance with plans, specifications, and approved budget and schedule. As a representative of the MTA, the RE acts within his/her authority and in accordance with policies and procedures outlined in this manual, and any other applicable administrative instructions.

During preconstruction activities, the RE reviews the design for constructability and interfaces between

dependent contracts, as well as contractual language and specifications, construction schedule compatibility, special construction-related contractor requirements, claims avoidance assessments, and value engineering studies.

Well in advance of construction, the RE studies the plans and specifications and becomes thoroughly familiar with them. Any necessary clarification is sought from those responsible for the design as quickly as is feasible in order to avoid costly delays and claims later on.

The contractor is asked to discuss in detail the methods of construction he/she intends to use in each operation to reduce costs and expedite the project. The RE is interested in quality construction as well as in expediting the project, and every attempt is made to find the construction procedure that will attain both.

The RE is receptive to alternative methods that may be submitted by the contractor. Any suggested change to the design documents shall be processed in accordance with change control procedures.

All problems are diligently pursued until a solution is clearly indicated. This will serve the interests of all persons concerned. Also, the RE should keep abreast of the contractor's problems. A simple question about the plan for some operation, asked well in advance, will alert the contractor's forces to any special needs. The RE should pay special attention to the contractor's schedule and meet weekly with the contractor to address progress.

If it will not affect the quality of the project, the RE may discuss ideas that will aid the contractor. This will have the two-fold effect of expediting the contract and helping to place the RE and contractor on a partnership basis. However, the RE must not consider the contractor's problems as his/her own. He/she must not try to run the job or tell the workmen what to do. A good approach may be, "Have you thought about..." or "Did you read in...about..." Care must be taken when ideas are offered that the contractor does not characterize these ideas as orders or directions which may relieve the contractor's liability for the decision.

The relationship of the RE and the contractor is as important to the quality of the project as any other single factor. When a poor relationship exists, personnel on the project tend to favor one viewpoint and loyalties are divided. The result is a breakdown in communications throughout the project. The RE can do a great deal to improve this relationship by an appraisal of his/her methods in dealing with the contractor. The RE should readily acknowledge his/her errors and accept full responsibility of the actions of subordinates.

The RE should be as quick to praise competent workmanship as to criticize incompetent work. He/she should at all times be candid, but diplomatic, about the contractor's performance. The RE always observe the rules of professional conduct, good taste, and common courtesy. These may not seem to be compatible with the atmosphere about a construction project, but such is a false notion. The RE must always act in a professional manner if his/her instructions are to be respected.

Progress on the work is regularly checked against the contractor's schedule and the required completion dates. It is quite proper, and contractually required, to ask what the plan is to get a delayed portion of work back in step. A plan to complete all parts of the work on time is essential.

The RE shall not accept gratuities or gifts from the contractor as defined in the MTA Ethics Policy. Although such gratuities or gifts may seem harmless, their propriety may be questioned at some future date.

4.1 During the project construction phase, the functions of the RE may include some or all of the following

(but not limited to):

- Protect the MTA's legal interests.
- Project administration.
- Enforce the contractually-imposed requirements and obligations.
- Monitor and report project progress through completion in accordance with the contract documents, good construction, sound safety practices, and approved schedule and budget.
- Ensure proper documentation, coordination and negotiation of Requests for Information (RFI) and Change (RFC), changes notices/orders, claims, and backcharges in a timely manner.
- Monitor the progress of the work, determine the value and quantity of work performed and materials which are to be paid for under the contract when approving monthly progress payments, process progress payments in a timely manner, and ensure progress payment files contain sufficient backup to support payment.
- Coordinate performance of required field quality control surveillance and inspections to ensure constructed and procured items comply with plans and specifications.
- Coordinate and interface with the MTA Facility/System User, Environmental, Quality Management and Safety Departments.
- Initiate the project Emergency Response Plan, as needed.
- Coordinate with MTA third party administrator and agencies, California Department of Transportation, public utilities, MTA consultants and others.
- Manage contractor submittals, ensure that contract deliverables are properly documented and promptly processed, coordinate and track review of submittals within the time frame specified in the contract documents or earlier.
- Issue contract Nonconformance Reports (NCRs), review and accept contractor's corrective action.
- Maintain contractor deficiency lists.
- Implement claims mitigation and work towards claims resolution.
- Monitor and report contractor compliance with federal, state, and jurisdictional local government requirements via contractor submittals.
- Coordinate movement of MTA-supplied equipment and material to jobsites.
- Recommend construction techniques and exchange ideas with the contractor to expedite the project.
- Monitor contract compliance with environmental requirements.
- Review contractor's proposed work schedule and hours of operation.
- Manage the performance of operational and startup tests and runs of equipment, including tests to

verify the compatibility of related systems.

- Receive, control and transfer spare parts to operations and maintenance.
- Work with the contractor and the MTA Public Affairs Department to minimize adverse impacts of construction operations on the public.
- Stop the work if serious or life threatening conditions exist that require immediate corrective action, until such time as the condition is corrected.
- Issue a suspension of work order in any situation when on-going work is not in compliance with contract requirements.
- Normal day-to-day contact and correspondence with the contractor shall be through the RE except for the following specific contract actions which are conducted directly between the MTA and the contractor:

  - Notification of Award
  - Notice-to-Proceed (NTP) with Contract
  - Monthly Progress Payments (payment requests are processed through the RE)
  - Rendering of Final Decision in Contract Disputes
  - Final Acceptance of the Work
  - Submission of DBE Reports
  - Bonding and Insurance Issues
  - Escrow Agreement

  The RE maintains copies of the above items except DBE reports and the Escrow Agreement in the Project files.

SECTION 1.02
PREPARATION AND CONTROL OF PROCEDURES AND FORMS

1.0 PURPOSE

This procedure addresses the process for preparing, reviewing, and approving changes, and/or project specific deviations to the Generic RE Manual.

2.0 GENERAL

Modifications to the RE Manual fall into two classes:

1. Revisions to the Generic RE Manual.
2. Project specific deviations from the Generic RE Manual

3.0 DEFINITIONS

Refer to MTA procedure CF7, Change Control: Policies and Procedures

4.0 RESPONSIBILITIES

4.1 REQUESTER

New Generic RE procedures or revisions to existing Generic RE procedures may be requested by any MTA staff or project participant. Similarly, any user may request the revision or deletion of a form. The requester submits a request for change, in the form of a memo or e-mail to Document Control.

The requester ensures that the technical information in the draft is correct and current. The requester is responsible for coordinating the procedure revision with the appropriate functional manager(s) prior to submitting the proposed revision to Document Control for processing.

4.2 DOCUMENT CONTROL

Document Control is responsible for ensuring that the draft meets the following standards:

- Proper RE Manual format for the following:
  - Definitions
  - Abbreviations
  - References
  - Grammar
  - Spelling
- Latest version of referenced forms
- Correct document and revision identification
- Change request is logged and tracked

4.3 MANAGER, DOCUMENT CONTROL

The Manager, Document Control reviews and signs the Change Approval Sign-off Form, verifying editorial accuracy, format, and proper preparation of the change documentation.

4.4 DOCUMENT OWNER

Each RE Manual section is assigned a Document Owner. The Document Owner is responsible for ensuring that any proposed change or deviation to a procedure is in compliance with contract

requirements and current Construction Division procedures. When a procedure affects multiple departments, the appropriate managers will review and approve the procedure.

4.5 EXECUTIVE OFFICER, CONSTRUCTION DIVISION

The DEO Construction, and EO, Construction are responsible for final approval sign-off on the Generic RE Manual revisions or deviation approvals.

5.0 PROCEDURE

5.1 Change to Generic RE Manual Procedure

The Generic RE Manual is subject to change control procedure CF7 Change Control: Policies and Procedures. A summary of steps required to revise the manual are:

- REQUEST FOR CHANGE: Any project participant may submit a request for change to a procedure to Document Control via a memo or e-mail. The request for change should include, at a minimum:
  - A general description of the requested change
  - A mark-up of the existing manual section, if appropriate
  - Electronic copy of the proposed new procedure or revision, if appropriate
  - Justification and reason for the change, including cost benefit, if appropriate
  - Identification of the urgency and priority of the change (e.g., needs immediate incorporation or can wait until the next scheduled Generic RE Manual revision)
- CHANGE PROCESSED: If the document owner agrees with the proposed change, the mark-up will be circulated for review by functional managers, project managers, and consultants as appropriate. Following review and incorporation of accepted comments, the document will be submitted for final approval by the DEO, Construction and the EO, Construction.
- RE MANUAL REVISION RELEASED: Following final approval, the revision will be distributed to the controlled copy distribution list for the Generic RE Manual.

5.2 PROJECT SPECIFIC DEVIATIONS AND EXCEPTIONS

It may be necessary to deviate from the baseline requirements for a specific contract or project. In such cases, the RE may request to deviate from the baseline. Refer to CF7 for procedures and forms for revising procedures.

6.0 REFERENCE

MTA Plans and Procedures

CF7 Change Control: Policies and Procedures

7.0 EXHIBITS

None

SECTION 2.0
PRECONSTRUCTION

SECTION 2.01
CONSTRUCTIBILITY REVIEW

1.0 PURPOSE

This document establishes procedures for conducting constructibility reviews when determined appropriate by the Engineering Project Leader and/or Design Team (see ENG01).

2.0 GENERAL

2.1 CONSTRUCTION OVERVIEW

RE will provide construction overview from the earliest stages of conceptual planning through final bid document preparation. The concept evaluations will provide a basic construction concept review for the project alignment, considering methods of construction, cost effectiveness, contractual interface, and packaging. Cost and schedule reviews will be an integral part of this process as options and alternative studies.

2.2 FOLLOW-ON REVIEWS

RE will perform follow-on reviews of all construction packages. The reviews will include analysis of construction staging, contract packaging, scope of work, interface definition, specification clarity, internal consistency, and the package completeness, including review of the general conditions, special conditions, and technical specifications. The composition of a constructibility task force is shown in paragraphs 4.2 and 4.3.

Reviews will evaluate the viability of required construction techniques; assess alternative designs, methods, and equipment; evaluate adequacy and appropriateness of materials and products specified; and assess definition of easements and adequacy of contractor storage and staging areas. Follow-on reviews will be performed utilizing a checklist that has incorporated the lessons learned from previous projects and those from other agencies. The results of the reviews will be provided to MTA Engineering Project Leader as part of the design review process. Follow-on review meetings may be required where the resolution of comments will be discussed with the designer and incorporated, as appropriate, into the contract documents.

2.3 REVIEW OF GENERAL AND SPECIAL CONDITIONS

General Conditions normally remain the same from contract to contract within a given contract type and should be reviewed accordingly. RE will conduct a review of the general and special conditions for each contract to ensure that they provide specific coverage and consistency with the work scope and tasks for each contract. RE will conduct a review of the general and special conditions and provisions relating to time of completion, milestone dates, liquidated damages, administration of changes and claims, temporary facilities and utilities, permits, and specialty items relating to historical landmarks, artwork, etc. RE will provide input to the development of the time of completion, milestone dates and liquidated damages cost data.

2.4 CONSTRUCTION SCHEDULE DEVELOPMENT

Schedule development will include the basic construction concept review to facilitate initial planning development and to ensure that the schedule encompasses the elements necessary for project coordination and interfacing.

RE will maintain a proposed project construction schedule, including the evaluation of production rates, sequence of construction, compatibility between the contract and actions necessary by third parties, interfaces with subsequent facility and systemwide contracts. The milestone dates will be provided based

on viability, effectiveness, and interface with systemwide applicable contract schedules.

3.0 DEFINITIONS

Constructibility Review: An evaluation of a project, intended to ensure the optimum use of construction knowledge and experience in planning, design, procurement, and field operations to achieve safety, quality, and overall project objectives. This evaluation includes, but is not limited to, economics, availability of materials, site restrictions, local conditions, and lessons learned that may affect the construction process. Effective and timely integration of construction input by this process during the planning and design phases significantly improves attainment of overall project objectives, including cost effectiveness and timely completion. The evaluation will also include an analysis of improvements incorporated as a result of lessons learned during the construction of previous MTA projects.

4.0 RESPONSIBILITIES

4.1 Constructibility reviews will be the responsibility of a task force.

4.2 Primary task force members will include the following:

- Chairperson (Engineering Project Leader)
- Resident engineer (rotated to current or new future resident engineers as they become available)
- Estimator
- Facility/system representative, where applicable

4.3 Other task force staff will include the following, as appropriate:

- Construction
- Contract administrator
- Engineering
- Environmental
- Public Affairs
- Quality Control
- Safety
- Schedule/Cost
- Third Party Administration

5.0 PROCEDURE

5.1 The task force schedule will include contract document review at all phases of design, lessons learned, incorporation, and follow-up of pre-construction activities.

5.2 Comments generated during the review process will be recorded on the Constructibility Review Comments form (Exhibit 7-1).

5.3 Comments will be reviewed by the task force Chairperson, who will consolidate the comments as needed and prepare a Constructibility Review Checklist (Exhibit 7-2).

5.4 The task force Chairperson will establish a process to conduct an on-going review to ensure that a continuing dedicated follow-up is provided on subsequent reviews. A preconstruction forum will be implemented as part of this activity.

5.5 The task force will be utilized to develop and coordinate other pre-construction activities that may be

required to support efficient startup of construction.

5.6 The Chairperson of the task force will maintain the constructibility schedule. The Chairperson will also collect the review comments and return them to the designer.

6.0 REFERENCES

MTA POLICY AND PROCEDURES
MTA Constructibility Review Procedure

7.0 EXHIBITS

The following exhibits are included in this procedure.

Exhibit	Title
7.1	Constructibility Review Comments (Sample)
7.2	Constructibility Review Checklists

Exhibit 7.1

CONSTRUCTIBILITY REVIEW COMMENTS (Sample)

Name:	Contract No.:	Date:
Discipline/Department:	Submittal for Phase:	Sheet of

Ref. No	Page No.	Drawing No./ Spec Section	Comments	Response	Action

1 = Will comply, 2 = Discuss/Clarification required, 3 = Not applicable because ... D = Response action completed (done)

Exhibit 7.2

CONSTRUCTIBILITY REVIEW CHECKLIST - SYSTEMS/FACILITIES

Contract:	Review Date:
Stage/Discipline:	Reviewer's Name:

	Factor	Review Response		Comments
1.	Is contractors responsibility for work at other contract interfaces, especially over lapping interfaces, clearly defined? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
2.	For follow-on contracts, is it clear that the contractor must survey tie to existing construction and not conduct his own survey without regard to As-Built? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
3.	Has detailed layout, space planning and continuity been adequately covered for all conduits and other embeds. Can allocated conduits physically fit within the designated locations without affecting concrete strength and adjacent facilities. Can conduits be traced in their run within contract limits and to interfacing contracts. Is there a complete conduit and wire pulling schedule in the contract drawings? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
4.	Are utility lines and corresponding supports clearly designated with location plans and details? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
5.	For a contract with multiple contract interfaces, is the term "cooperation" clearly defined in sufficient detail to satisfy all the needs of the interfacing contract? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
6.	Have specific right of ways been defined to accommodate lay-down needs, materials, stockpiling, access, circulation etc. and the availability of real estate been confirmed. • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
7.	At interfaces with adjacent buildings, have house lines, foundations, vaults, etc., been clearly designated to permit the contractor to proceed without encountering "differing site conditions"? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____

	Factor	Review Response		Comments
8.	"Cost Reduction Incentive" provisions have been beneficial. Are they utilized in this contract as advantageously as possible. • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
9.	Are the "measurement" provisions clearly defined in the contract? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
10.	Are existing conditions such as utility lines, foundations, substructures, pavements, etc., shown in sufficient detail? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
11.	Are there any geological conditions such as organic layers, dewatering, hard rock, etc. which have not been defined in the documents? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
12.	Is the overall interface between adjacent contracts construction clearly defined and delineated on the drawings? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
13.	Are codes and specifications current and compatible with this specific contract? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
14.	Are the materials and equipment specified available and/or being manufactured? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
15.	Are the dimensions of the rooms and allocated spaces that are receiving equipment and systems compatible with the size of the equipment. Is there sufficient area for access and delivery for installation? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
16.	Is the stationing along the trackway compatible with the stationing on the adjacent structures? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____

Factor	Review Response		Comments
17. Have clearances and tolerances been checked to ascertain whether they have been set as generously as possible?			
• At facility interface	Yes	No	_____
• At system interface	Yes	No	_____
• At utility interface	Yes	No	_____
18. Are the drainage system requirements clearly defined and adequate for this particular contract?			
• At facility interface	Yes	No	_____
• At system interface	Yes	No	_____
• At utility interface	Yes	No	_____
19. Are the requirements for the excavation support system clearly defined, including the need to dewater prior to excavation?			
• At facility interface	Yes	No	_____
• At system interface	Yes	No	_____
• At utility interface	Yes	No	_____
20. For contracts where surface street work is to occur, is a specific Worksite Traffic Control Plan presented?			
• At facility interface	Yes	No	_____
• At system interface	Yes	No	_____
• At utility interface	Yes	No	_____
21. For concrete placement, can the reinforcement shown be placed and the concrete adequately vibrated?			
• At facility interface	Yes	No	_____
• At system interface	Yes	No	_____
• At utility interface	Yes	No	_____

Exhibit 7.2 (Continued)

ADEQUACY OF DRAWINGS

	Factor	Review Response		Comments
1.	Are reference drawings included, but kept separate from contract drawings?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
2.	Is the type and extent of waterproofing adequately described?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
3.	Are there contradictions when the same information is shown more than once?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
4.	Do the drawings indicate the disposition of every utility?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
5.	Are limits of "variable" dimensions given (maximum and minimum)?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
6.	Do drawings appear to be complete or are many details left for resolution in the field (incompleteness can present potential problems)?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
7.	Are drawings overcrowded and hard to read?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
8.	Do plans clearly indicate what is *IN* and what is *NOT IN* the contract?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
9.	Does design take into account future utility or equipment installation by others?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	
10.	Are cross-referenced drawings compatible with each other?			
	• At facility interface	Yes	No	
	• At system interface	Yes	No	
	• At utility interface	Yes	No	

Factor	Review Response		Comments
11. Are shear keys shown, where required? Is the sequence of concrete pour shown for forming the key correctly? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
12. If the support system is complicated, such as a slurry wall, has it been adequately detailed by the designer? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
13. Has the finish schedule been examined for contradictions? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
14. Are contract limits clearly shown? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
15. Are there value engineering alternatives that would substantially reduce construction cost for the project? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____
16. Are provisions for future station entrances addressed by the project station contract drawings, including all pertinent sub-outs and interface requirements? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
17. Are masonry and concrete openings indicated and dimensioned on structural drawings and coordinated with architectural and HVAC drawings? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
18. Are all embedments, block outs dimensioned located and coordinated? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
19. Are systemwide contractual interfaces addressed, referenced and detailed on the drawings. • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
20. Are soils/geotechnical conditions adequately and accurately identified?	Yes	No	_____

Exhibit 7.2 (Continued)

SPECIFICATIONS

	Factor	Review Response		Comments
1.	Are specifications written in clear, easy-to-understand language? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
2.	Are the specifications clear regarding methods of measurement and payment? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
3.	Are specifications clear regarding noise limitations, dust control, muck removal, work hours, etc.? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
4.	Are specifications clear regarding optional items? Is a bid required for all such items? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
5.	Are unit prices required for unknown or variable quantities? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
6.	Are specifications consistent with traffic maintenance scheme shown on plans? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
7.	Do specifications clearly define what is and is not included under "miscellaneous metals"? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
8.	Do specifications clearly define terms for "value engineering" proposals? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
9.	Do notes on drawings repeat or conflict with specifications? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____
10.	Is there a separate payment item for each structure to be underpinned? • At facility interface • At system interface • At utility interface	 Yes Yes Yes	 No No No	 _____ _____ _____

Factor	Review Response		Comments
11. Is there a separate payment item for each structure to be otherwise supported?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
12. Is the work to be performed clearly defined?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
13. Are there conflicts between specifications and the drawings?			
• At facility interface			
• At system interface	Yes	No	
• At utility interface	Yes	No	
	Yes	No	
14. Is the requirement for material and equipment finish clearly defined?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
15. Is the type of material to be provided clearly defined in easy-to-understand language?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
16. Are all payment items correct and coordinated with the contract drawings?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
17. Are all payment items indicated in the schedule of quantities?			
• At facility interface			
• At system interface	Yes	No	
• At utility interface	Yes	No	
	Yes	No	
18. Are contract interface (work by others) clearly and completely defined in the Summary of Work?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
19. Are all required interface sections provided (MTA-furnished items to be installed by station contracts)?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
20. Are all items indicated on the contract drawings covered by pertinent specification and payment clauses?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	
21. Are all specified items properly covered by submittals and testing clauses?			
• At facility interface	Yes	No	
• At system interface	Yes	No	
• At utility interface	Yes	No	

SECTION 2.02
NOT USED

SECTION 3.0
NOT USED

SECTION 4.0
CONSTRUCTION OPERATIONS

SECTION 4.01
SAFETY

1.0 PURPOSE

1.1 This procedure provides the Resident Engineer (RE) a guideline to use in monitoring, enforcing and reporting contractor construction safety activities and in coordinating activities with the MTA Construction Safety. Safety is of primary importance and has priority over competing interest that may exist at the project work site.

1.2 The RE monitors contractor safety compliance with applicable federal, state, local and MTA safety and security requirements. The contract establishes the MTA as being the final authority for interpretation of Cal-OSHA, Fed-OSHA, and MTA contract safety documents. The MTA will monitor the contractor's project construction safety program for consistent applications with MTA safety requirements. Each contractor is to be held accountable for the safe performance of their work and the work of each of their subcontractors, regardless of tier.

2.0 GENERAL

2.1 The MTA Construction Safety and RE will monitor the contractor's timely application of safety and incident prevention procedures for construction activities, for all persons on the project, including subcontractors, visitors, and suppliers of materials and equipment.

2.2 Ultimate responsibility for safety lies with each contractor's management. Overall responsibility for safety on the project cannot be delegated to a lower function. Incidents and injuries are indicators of the contractor management's failure to control the construction process. The contractor utilizes the Construction Safety Survey (CIP/CS50) form to report and document the daily safety activities of the contractor at the construction site.

2.3 The RE shall be familiar with and knowledgeable of applicable safety requirements defined in contract documents, MTA procedures, and various codes, standards and regulations (see paragraphs 6.0 and 6.1 below). The RE shall not allow verbal or written deviations of MTA safety requirements, Cal-OSHA, Fed-OSHA, or relevant local standards without an approved written variance from the appropriate agency or authority having jurisdiction, and subsequent MTA change notice approvals.

3.0 DEFINITIONS

3.1 *CIP/CS50 Form*: The Construction Safety Survey form used to report and document the daily safety activities of the contractor at the construction site.

4.0 RESPONSIBILITIES

The RE is primarily responsible for monitoring and enforcing the performance of the contractor's safety programs. The contractor is responsible for complying with federal, state, local and MTA safety and health rules and regulations applicable to the project work performed by the contractor and subcontractors regardless of tier, as required by the contract. The MTA Office of System Safety and Security is responsible for reviewing preliminary and final designs for safety compliance, review and auditing construction sites and contractor activities, initiating corrective actions for hazards noted and providing safety training as required by contractor. Exhibit 7.1 provides a summary of safety responsibilities.

5.0 PROCEDURE

5.1 The RE submits to the MTA Office of System Safety and Security for acceptance, the following, as required by contract: the contractor-prepared Project Site Specific Safety and Health Program and contractor's candidates, resumes and certifications, for the position of safety representative.

The RE cooperates fully with the MTA Safety to ensure project and contractor's compliance with the MTA approved, Project Site Specific Safety Program, MTA safety requirements, federal, state, and local standards, rules, laws, written safety and health programs, and MTA contract documents. Where a conflict is found between rules or standards, the more strict rule will be applied to the situation.

6.0 REFERENCES

1. MTA Contract Documents
2. Construction Safety and Health Manual (CSHM)
3. OSHA Safety and Health Standards 29CFR 1910 General Industry
4. OSHA Safety and Health Standards 29CFR 1926 Construction Industry
5. California Code of Regulations (CCR) Title 8 -- Tunnel Safety Orders
6. CCR Title 8 -- General Industry Safety Orders
7. CCR Title 8 -- Construction Safety Orders
8. CCR Title 8 -- Electrical Safety Orders
9. CCR Title 8 -- all other subchapters

6.1 PROCEDURES

The following procedures are referred to in this procedure or directly relate to its purpos

Procedure	Title
GREP 4.17	Suspension of Work Notice
GREP 4.19	Removal of Contractor Personnel for Safety Related Causes
CS03	Site Safety Audit
CS04	Safety Notification Procedures
CS05	Administration Audit
CS06	Construction Safety Lessons Learned Program

6.2 OTHER REFERENCES

In addition to the documents listed in subsection 6.0 and 6.1, each RE's office shall have the following references readily available:

- MTA Construction Safety and Health Manual (CSHM)
- Cal/OSHA Title 8
- Federal OSHA 1910 and 1926
- MTA Emergency Callout Procedures

7.0 EXHIBITS

7.1 Safety Responsibilities

EXHIBIT 7.1

Safety Responsibilities

Responsibility	RE	SENG	INS	CSR	CSM
1. Conducts weekly safety meetings with contractor's project manager, superintendent, and safety engineer to address issues raised on CIP/CS50s; determines resolution and timing for correcting safety observations	●				
2. Reviews upcoming operations and planned safety measures to minimize risk	●	●	●	●	●
3. Provides technical support to RE by monitoring contractor's safety program in effort to eliminate unsafe conditions and/or unsafe employee practices, investigates accidents and makes recommendations to prevent recurrence		●	●	●	
4. Reviews and maintains knowledge of applicable Cal/OSHA, federal, and project requirements	●	●	●	●	●
5. Reviews Contractor Injury and Illness Prevention Program to determine compliance with the above referenced sources and makes recommendations for any deficiencies	●	●		●	●
6. Monitors contractor's safety program, conducting periodic site inspections makes verbal and written recommendations concerning health and/or safety deficiencies	●	●	●	●	
7. Issues CIP/CS50 for safety activities				●	
8. Maintains an accurate daily log (bound notebook) of safety activities	●	●	●		
9. Reviews contractor paperwork to ensure compliance with applicable regulations (e.g., daily inspection reports, annual crane inspection reports)		●		●	
10. Reviews contractor's training records and programs, making recommendations to eliminate inadequacies and review that training is current, where required		●		●	
11. Attends contractor's weekly toolbox meetings and assists contractor's safety representative with toolbox meeting topics and/or training	●	●	●	●	●
12. Attends project progress meetings; reviews work schedules and identifies potential safety hazards; plans to avoid hazards	●	●	●	●	●
13. Follows up on incident investigations with appropriate training and or adjusted work practice recommendations to prevent recurrence				●	●
14. Reviews incident investigation reports	●	●		●	●
15. Monitors injury and incident reporting records for compliance with Cal/OSHA and federal OSHA requirements		●		●	
16. Makes periodic site safety walk inspections	●	●	●	●	●
17. Participates in joint scheduled safety audits	●	●	●	●	●
18. Monitors safety practices of the contractor and reports unsafe working conditions, unsafe employee work practices, or consistently poor housekeeping conditions to the contractor's project manager, safety representative, or general superintendent for their immediate corrective action	●	●	●		
19. Supports MTA Safety Staff as required to enforce MTA safety requirements and the contractors project safety program.	●	●	●	●	●

RE = Resident Engineer SENG = MTA Safety Engineer INS = Inspector CSR = Construction Safety Representative CSM = Contractor Senior Management

SECTION 4.02
FIELD QUALITY CONTROL SURVEILLANCE

1.0 PURPOSE

To define the Resident Engineer's (RE's) responsibilities for quality activities consistent with MTA Policies and Procedures.

2.0 GENERAL

This procedure applies to the person(s) responsible for the management of construction activities for MTA facilities and systems. This will primarily be the RE but may be delegated to a Project Quality Manager (PQM) Project Engineer/Manager, or Superintendent. On small projects, the RE may perform inspection tasks or an inspector (consultant or MTA) may be assigned. For purposes of this procedure, the person responsible for the management of construction activities will be referred to as the RE.

3.0 DEFINITIONS

3.1 *Conformance:* An affirmative indication or judgment that the condition of an item meets the requirements of relevant specifications, contract, and/or regulations; also, the state of meeting the requirements.

3.2 *Nonconformance:* A deficiency in characteristic, documentation, or procedure, that affects form, fit, or function and renders the quality of an item unacceptable or indeterminate in regard to meeting all relevant project requirements. Examples of nonconformance include physical defects, test failures, incorrect or inadequate documentation, or deviation from prescribed processing, inspections, or test procedures.

3.3 *Nonconformance Report:* A form used to identify a non-conforming condition and document a proposed corrective action disposition for consideration by the appropriate organization(s), i.e., RE, Engineer, Quality Assurance, Quality Control, Safety, etc.

3.4 *Surveillance:* Monitoring or observing a specific activity or event to determine if it is accomplished in accordance with specified requirements (i.e., contract, specification, project procedure, inspection instruction, test procedure, etc.). Surveillance may be scheduled events or conducted at random.

4.0 RESPONSIBILITIES

4.1 The RE is responsible for:

- Assigning appropriately qualified inspection staff to perform inspections and monitor all phases of the work.
- Identifying the necessity for securing the services of specially trained inspection staff or laboratory services as required.
- Promptly responding to nonconforming items with remedial action to resolve the identified concern and corrective action to prevent recurrence.
- Assuring the contractor responds to MTA audit and/or identified issues with remedial action to resolve the identified concern and action to prevent recurrence.
- Maintaining quality records in a manner consistent with MTA Policies and Procedures.
- Assuring the issuance of daily inspection reports and/or review said reports for items of concern. Assuring that identified issues are resolved in a timely and appropriate manner.
- Tracking and assuring appropriate review of quality related submittals.
- Confering with inspectors and processing the issuance/resolution of Nonconformance Reports

4.2 The MTA Quality Representative is responsible for verification and assurance of product quality through

inspection and/or monitoring activities.

4.3 The Contractor is responsible for performing the work in accordance with the contract documents and contract reference requirements.

5.0 PROCEDURE

5.1 QUALITY CONTROL SURVEILLANCE OPERATIONS

The RE shall implement a system of quality surveillance operations through all contract phases and establish the frequency and areas of inspection/surveillance. This system of inspection/surveillance operations, as a minimum, shall consist of the following:

- Determine the day-to-day assignments of the field inspectors and determine priorities for those assignments.
- Assure that the inspection is performed utilizing the applicable inspection procedures, forms and checklists as established in the Construction Division Inspection Instructions, the Resident Engineer Manual, and the Quality Program Manual, as required.
- Assure that the inspection is performed utilizing the correct approved drawings and specifications.
- Review the Daily Inspection Reports for accuracy, completeness, lessons learned and corrective actions.
- Assure that the Action Item Log is being properly maintained and that Action Items are being properly addressed and closed out in a reasonable time.
- Assure that noncompliant issues and Action Items that cannot be closed out in a reasonable time are properly documented on a Nonconformance Report (NCR) and that all NCRs are properly tracked to their successful resolution.
- Either perform or schedule/assign personnel to monitor and/or witness testing conducted by the contractor as required by the contract specifications and as identified in project planning documents.
- Schedule independent testing agencies to conduct verification tests and inspections when required to assess contract compliance.
- Assure that all documentation resulting from inspections, test witnessing or general quality surveillance are maintained in the project files as quality records.

5.2 DOCUMENTATION OF NONCOMPLIANT ISSUES

Identification of conditions adverse to quality can be accomplished by anyone involved with the Project by bringing the adverse conditions to the attention of any MTA management personnel. That person shall initiate the appropriate documentation and corrective action sequence.

5.2.1 ACTION ITEM (AI) LOG

5.2.1.1 Identification of Action Items may occur as a result of an entry on the Daily Inspection Report (DIR), Exhibit 7.1. In accordance with the Construction Division Inspection Instructions (CDII 1.2), each inspector completes a DIR to document all of the activities that the inspector was involved in that day.

Any materials, activities or work that the inspector suspects and/or confirms as deficient or requires further action is identified on the DIR as an Action Item by placing an "A" in the right hand column adjacent to the appropriate entry.

5.2.1.2 Once an action item has been identified on the DIR, the RE shall assign an Action Item Log Number to the item. Details of the item shall be entered in the Action Item Log (Exhibit 7.2) along with the initials of the reporting inspector, the date of the report, the action to be taken and the current status of the action.

5.2.1.3 The RE shall enter the assigned Action Item Log Number in the Action Item Summary box on the original DIR and verify that all action items identified in that DIR have been assigned an AI Log number.

5.2.1.4 Every Action Item shall be assigned to a particular individual whose responsibility it will be to ensure that the assigned action is carried out to resolution.

5.2.1.5 Weekly, or more often if required, a summary report of the Action Item Log shall be circulated for review to the inspectors for comment and updating of the action status.

5.2.1.6 As each item is re-inspected and resolved, it shall be identified on the close-out DIR (i.e. corresponding inspection report for the resolution) by referencing the Action Item Log Number and entering a crossed-out circled "A". The DIR reviewer shall include information concerning the closed-out action item (i.e., what was done to close the item out) in the Action Item Summary box at the top of the DIR.

5.2.1.7 The resolution description shall be entered in the "Action Item Log by" with the initials of the inspector for the close-out DIR and date the resolution was reported.

5.2.1.8 The master file for the Action Item Log shall maintain all action items including both open and resolved action items so that a history of the action items can be printed as desired. Action items that have been resolved can be dropped from the weekly review summary report after two weeks of resolution.

5.2.1.9 A quality concern can be identified by anyone associated with a project. The quality concern shall be brought to the attention of the RE who will evaluate the concern, take appropriate action, enter the item on the Action Item Log, and follow the same sequence of events as indicated above (assign a number and person to investigate and/or resolve).

5.2.2 NONCONFORMANCE REPORT (NCR)

Refer to the Nonconformance Report Flowchart (Exhibit 7.3) for a description of the Nonconformance Report process.

5.2.2.1

An NCR, (Exhibit 7.4), and its continuation page, (Exhibit 7.5), shall be used when deficiency or indeterminate condition is identified that requires repair replacement, use-as-is disposition, or involves extensive rework that requires close review or lengthy process. The NCR form shall be completed by the inspector in accordance with the Nonconformance Report Instructions, (Exhibit 7.4).

5.2.2.2

An NCR can be initiated by any project team member when they find a condition that is in non-compliance with contract requirements. The condition shall be brought to the attention of the inspector.

5.2.2.3

The inspector shall maintain a Nonconformance Report Log, kept current at all times.

5.2.2.4

The inspector shall assign a unique control number to each NCR issued. The control number shall consist of the contract number and a sequence number (i.e., C0321-021). The sequential NCR number is continuous throughout the contract.

5.2.2.5

The inspector shall determine if a Status Tag is required. If it is required, the inspector shall issue and log the appropriate tag (refer to CDH 1.4).

5.2.2.6

The inspector reviews the NCR for accuracy and completeness, validating the NCR. If the NCR is determined to be invalid, incorrect or incomplete, the inspector shall consult with the initiator of the NCR and resolve the areas of concern prior to further processing of the NCR.

5.2.2.7

When acceptable and complete, the RE issues the NCR to the contractor and/or the responsible organization/individual. As a minimum the NCR shall be distributed to the following:

- Contractor
- RE
- MTA Quality Assurance Manager

5.2.2.8

The contractor/responsible organization investigates and enters the root cause of the nonconformance, the proposed corrective action on the NCR form.

5.2.2.9

The RE shall initiate and coordinate required meetings, reviews, etc., with the contractor, engineer, or other organizations (as required) to resolve the NCR. When the inspector concurs with the root cause statement, proposed corrective action, and the action to prevent recurrence, the inspector signs and dates the NCR, and designates a disposition status (reject, rework, repair or use-as-is).

5.2.2.10

When the disposition status is repair or use-as-is, the Engineer shall approve the disposition on the NCR form, indicating concurrence with the disposition.

5.2.2.11

The inspector reviews the NCR disposition to verify that all non-conforming conditions identified have been addressed. The inspector signs and dates the NCR form, enters the status in the Nonconformance Report Log, and returns a copy of the NCR to the contractor/responsible organization for implementation.

5.2.2.12

The inspector conducts appropriate inspections to verify that corrective actions have been completed in accordance with the NCR instructions. The method of verification and the results of the verification are documented. When all actions are accepted, the inspector completes the NCR.

5.2.2.13

The inspector updates the Nonconformance Report Log and distributes copies of the completed (closed) NCR to the following individuals, placing the original in the RE contract documentation files:

- Contractor/responsible organization

- RE
- MTA Project Quality Manager

5.2.2.14

The Project Quality Manager shall review all NCRs to verify completeness and acceptability of NCR dispositions and closure.

6.0 REFERENCES

The following documents are referred to in this procedure and are available under separate publication:

- Construction Division Inspection Instruction (CDII) Manual
- Quality Management Policies and Procedures Manual

7.0 EXHIBITS

Exhibit	Title
7.1	Daily Inspection Report (4 pages)
7.2	Action Item Log
7.3	Nonconformance Report Flowchart
7.4	Nonconformance Report
7.5	Nonconformance Report Continuation Page
7.6	Nonconformance Report Log

Exhibit 7.1

DAILY INSPECTION REPORT

Page ____ of ____

Contract No:	Date:
Contractor/Subcontractor:	Contract Day No:
Shift In: Shift Out:	
Weather: Sky: Wind: Precip.:	Temperature: High: Low:

LIST OF ON-SITE WORK ACTIVITIES BEING INSPECTED BY THE CM
AS REQUIRED BY THE CONTRACTOR

Contract Specification No.	1. Type and Location of Work Being Performed 2. Drawings and Submittals Used for Inspection 3. Acceptance Status with NCRs Identified 4. Possible Lessons Learned (Mark "LL")	A C C	R E J	Quantity of Work Completed & Pay/Bid Item No.

Inspector's Name: _____ (Print Name)

Signature: _____

Lead Inspector: _____ (Signature and Date)

Resident Engineer: _____ (Signature and Date)

Exhibit 7.1 (Continued)

DAILY INSPECTION REPORT (CONTINUATION SHEET)

Page ___ of ___

Contractor:	Contract No:	Date:

Contract Specification No.	1. Type and Location of Work Being Performed 2. Drawings and Submittals Used for Inspection 3. Acceptance Status with NCRs Identified 4. Possible Lessons Learned (Mark "LL")	A C C	R E J	Quantity of Work Completed & Pay/Bid Item No.

Inspector's Name: _____ (Print Name)

Signature: _____

Exhibit 7.1 (Continued)

DAILY INSPECTION REPORT (CONTINUATION SHEET)

Page ____ of ____

Contract No:		Date:	
Contractor/Subcontractor:		Contract Day No:	

Sketches:

Remarks:
To include completions, revisions, reasons for delays, idle equipment, special instructions to inspectors, utility work, instructions to Contractors, accidents, and Contractor requests.

In compliance with Specification Section:		Yes:		No:	

Inspector's Name: _____ (Print Name)

Signature: _____

Time In:	Time Out:	Hours:

Exhibit 7.1 (Continued)

DAILY INSPECTION REPORT (CONTINUATION SHEET)

Page ____ of ____

Contractor:	Contract No:	Date:

Kind of Labor and Equipment, List Idle Equipment Separately and give Reasons	1		2		3		4		5		Totals for Labor and Equipment	
	No	Hrs	No	Hrs	No	Hrs	No	Hrs	No	Hrs	No	Hrs

Materials: Note Whether Received or Used						

Inspector's Name: _____ (Print Name)

Signature: _____

Exhibit 7.2

ACTION ITEM LOG

Action Item No.	Date Id'd	DIR by	Description	Action Req'd by	Action/ Resolution	Date Resolved	Status

Exhibit 7.3

NONCONFORMANCE REPORT FLOWCHART

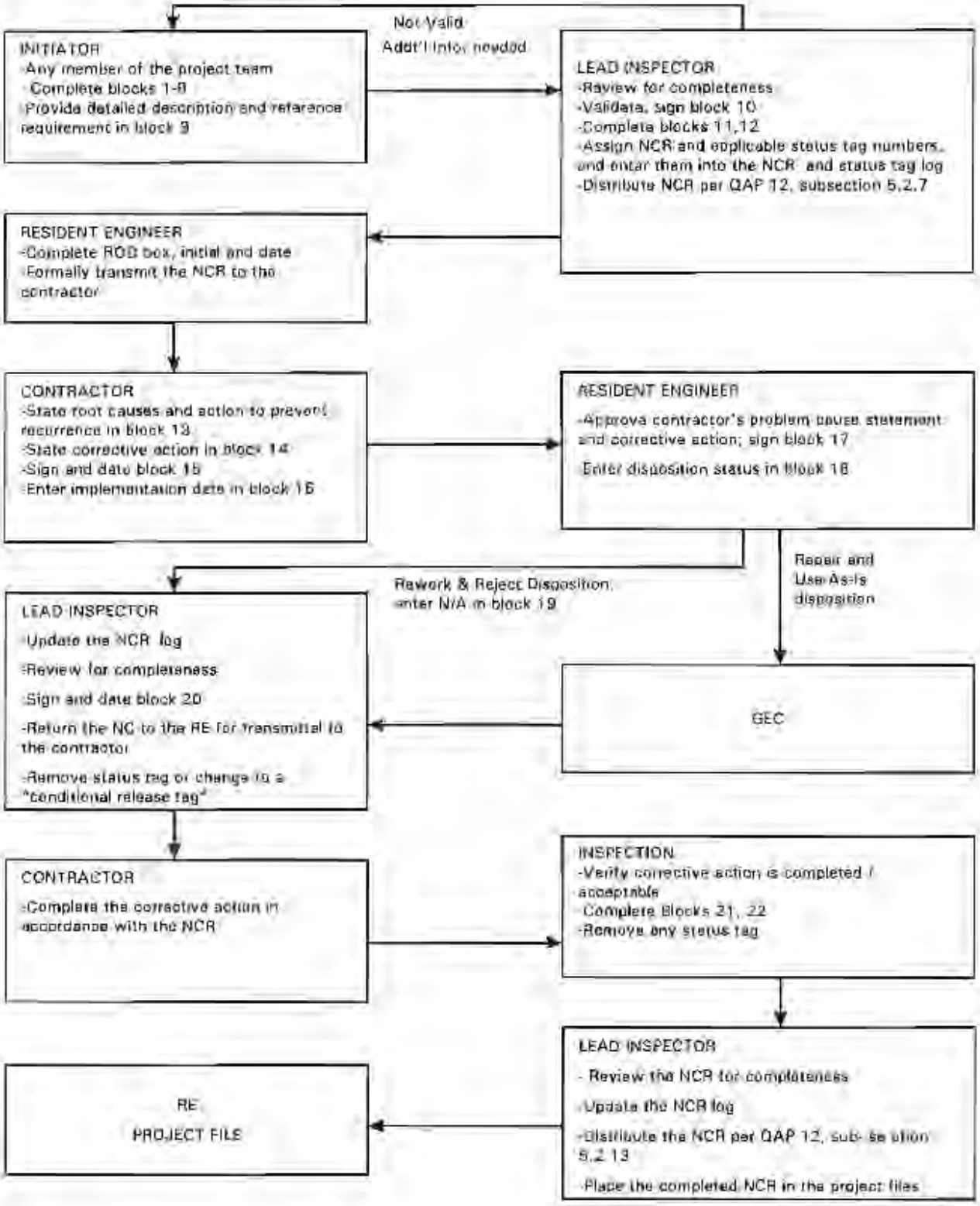

Exhibit 7.4

May Affect ROD		
☐ Yes	☐ No	☐ NA
Initials	Date	

NONCONFORMANCE REPORT Page of

1. Line Contract No.: Yr: NCR No.:	2. Contract Name:	3. Date:
4. Location	5. NCR Type:	6. Contractor/Supplier:
7. Specification Section/Drawing No.:	8. Originator: Phone No.:	Hold Tag No.
9. Contract requirement and nonconformance description:		
10. Lead Inspector: Date:	11. Reply requested from:	12. Reply due date:
13. Root cause of the problem and action(s) to prevent recurrence (completed by the contractor):		
14. Corrective action(s) (completed by the contractor):		
15. Prepared By: Date:	16. Implementation Date:	17. RE Approval: Date:
18. Disposition status: ☐ Reject ☐ Rework ☐ Repair ☐ Use-As-Is		
19. Engineer approval (Repair and Use-As-Is): Print Name: Signature: Date:		20. Lead Inspector: Date:
21. Verification that nonconforming condition has been corrected:		
22. Inspection: Print Name Signature Date		

Exhibit 7.4 (Continued)

NONCONFORMANCE REPORT INSTRUCTIONS
(Print legibly or type)

Blocks 1 through 9 are completed by the originator:

1. Enter project name, contract number, last two digits of the year, and NCR sequence number.
2. Enter contract name, example: Wilshire/Western Station.
3. Enter the date the NCR is prepared.
4. Enter location of incident, material, hardware, etc.; use station or column line.
5. Enter what the problem relates to: mechanical, concrete, supports, systems, test, etc.
6. State the contractor or supplier's complete name.
7. Enter the applicable specification section number, paragraph, or drawing number.
8. Enter the originator's signature, work phone number, and hold tag number (if tag is used).
9. Describe in detail the requirement (i.e., specification section paragraph, drawing, etc.) and the nonconforming condition as others can clearly understand the deficiency.

Blocks 10 through 12 are completed by the lead inspector/resident engineer.

10. Lead inspector's signature validates the nonconformance and verifies complete, legible, and accurate description.
11. The RE enters the name and title of the person responsible for investigating and providing root cause and corrective action(s).
12. The RE enters the date the reply is due back to the originator and completes the May Affect ROD box.
Distribute the NCR in accordance with subsection 5.5.

Blocks 13 through 16 are completed by the organization responsible for correcting the problem.

13. Person identified in Block 11 is responsible for investigating and describing the root cause of the nonconformance and providing action to prevent recurrence.
14. Describe the actions and responsibilities for correcting the nonconformance.
15. Signature of the individual responsible for preparing the disposition and corrective action.
16. Enter the date the corrective action will be implemented.

Blocks 17 and 18 are completed by the resident engineer.

17. RE signature and date indicates approval of the identification of the problem cause and corrective actions.
18. Enter the appropriate disposition status: reject, rework, repair or use-as-is.

Block 19 is completed by the Engineer (GEC).

19. Engineering approval required for repair or use-as-is dispositions; print name, signature, and date.

Block 20 is completed by the lead inspector:

20. Review the NCR for completeness and accuracy.

Blocks 21 and 22 are completed by the inspector:

21. Verify that the work is complete and acceptable. Describe inspections and results, location, serial number, etc., as appropriate.
22. Print name, signature and date indicating acceptance.

When the NCR is closed/completed, distribute the NCR according to subsection 5.12.

Exhibit 7.5

NONCONFORMANCE REPORT
(CONTINUATION PAGE)

Page of

1. Contract No:	2. Location:	3. Date:	4. NCR No:

Exhibit 7.6

Page ___ of ___

NONCONFORMANCE REPORT LOG

Contract Name:

Contract Number

NCR No.	Description	Originator	Spec. Sect.	Resp. Org.	Date Issued	Date Due	Date Rec'd.	Date Closed

SECTION 4.03
UTILITIES EXCAVATION

1.0 PURPOSE

The purpose of this procedure is to prevent damage to underground utility facilities. This is extremely important in order to:

- Ensure uninterrupted utility service
- Safeguard against injury to construction excavation personnel and the public
- Mitigate risks that cause inexpected cost and schedule impacts
- Maintain operations of MTA facilities and systems

2.0 GENERAL

All excavation for a project, regardless of location, shall be performed in accordance with the requirements of California Government Code, Assembly Bill No. 73, including any subsequent revisions to the bill.

3.0 DEFINITIONS

3.1 *Sections 4215 and 4216 of the California Government Code*: California Government Building Codes related to subsurface installations.

3.2 *California Assembly Bill No. 73 (January 1990)*: An act to amend Sections 4216 and 4217 of the Government Code in relation to subsurface installations.

3.3 *Underground Service Alert (USA) of Southern California:* The regional notification center, an organization of operators of subsurface installations established in accordance with requirements of Sections 4216 and 4217 of the California Government Code. USA of Southern California provides coordinated notification to organizations performing excavation or other work close to existing subsurface installations in order to protect those installations from damage and to facilitate relocation, removal, or repair.

3.4 *Ticket Number:* An inquiry identification number issued by USA of Southern California to the excavating contractor after the contractor contacts USA of Southern California pursuant to subdivision (e) Section 4216 of the California Government Code

3.5 *Excavation:* (from Assembly Bill No. 73) Any operation in which earth, rock, or other material in the ground is moved, removed, or otherwise displaced by means of tools, equipment, or explosives in any of the following ways: grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping, cable or pipe plowing and driving, or any other way.

3.6 *Approximate Location:* (from Assembly Bill No. 73) A strip of land not more than 24 inches on either side of the exterior surface of the subsurface installation. *Approximate location* does not mean depth.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The resident engineer (RE) verifies that the contractor provides instruction and training to employees who will excavate. The RE also does the following:

- Verifies that the contractor has obtained current ticket number prior to excavation. This should be available from the contractor foreman.

- Verifies, on a random basis, that underground utilities/structures are marked and remarked when required.

- Activates contractor work stoppage if variance from California Government Code is observed.

- Verifies that contractor contacts USA of Southern California, or utility operators directly, when questions occur.

- Verifies that contractor personnel are aware of, and perform work in accordance with, Assembly Bill No. 73 and Section 4216 of the Government Code relating to subsurface installations.

  The contractor is required to assure that all contractor employees and subcontractors responsible for excavation know the requirements of Assembly Bill No. 73 and Section 4216 of the Government Code. The contractor is responsible for producing affidavits (including a copy of Assembly Bill No. 73) to this effect signed by the contractor's employees and subcontractors.

- Verifies that utilities not covered by USA of Southern California (refer to subsection 3.3) are excavated in the same manner as those utilities covered by USA of Southern California. These utilities include sanitary sewer and storm drainage.

- The RE will coordinate individual excavation permits through Third Party Administration if the special permit process has not resulted in a permit in the following circumstances:

  - In the early stages of the project
  - For work outside the area covered by the special permit process

  If damage occurs, the RE immediately notifies the Third Party Administrator, the utility owner, the DEO, Construction, the Public Affairs Officer, and MTA Safety, so that the proper community relations procedures can be initiated to determine if the community is affected and if impact requires mitigation. The RE also notifies MTA insurance managers of the incident and prepares and distributes an incident report.

- The RE verifies that required inspections are performed by RE inspection staff.

- The RE's inspection staff shall perform utility inspections in accordance with CDH 2.5, Utilities and Street and Sidewalk Excavations.

- Notifies MTA Environmental upon discovery of suspected soil contamination or asbestos pipe. Ensures contractor stops work in the affected area. Informs contractor to resume work once contaminated hazard is mitigated.

4.2 CONTRACTOR

The contractor shall assure that all parties responsible for excavation are aware of and follow the requirements of the Assembly Bill No. 73. The contractor also has the following responsibilities:

- Contractor is responsible for notifying USA of Southern California at least two working days before the start of work for locating services, maintaining current ticket numbers, and providing the ticket number to the RE.

- Contractor shall notify affected utility operators not required to be members of USA of Southern California, before starting Work on their affected facilities.
- Contractor marks all excavation locations with white paint so that the relevant utility operators can mark underground utility locations.
- Contractor exposes marked utilities by hand excavation.
- Contractor maintains strict adherence to Assembly Bill No. 73.
- Contractor shall notify affected utility owner and the RE of utilities that are not indicated on the drawings or marked in the field.
- The contractor shall utilize a superintendent for this Work having not less than one year of experience in responsible charge of similar operations within the 24 month period preceding start of construction.
- Stop work in an area suspected of contamination or asbestos pipe. Notify RE of condition. Resume work once clearance obtained from RE.

4.3 UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

USA of Southern California is responsible for notifying affected utility operators of proposed excavation and issuing the ticket number to the contractor.

4.4 UTILITY OPERATORS (AGENCY, COMPANY, ETC.)

Utility operator provide locator services as requested and mark centerline locations of underground utilities (tolerances are predetermined by Assembly Bill 73). Utility operators also:

- Inspect structural integrity of their utility substructures during the excavation and supporting process
- Provide crew and coordinate repair if damage occurs.
- Work with contractor to minimize utility damages.
- Make inspection of worksites as required.

5.0 PROCEDURE

5.1 To verify that contractor employees and subcontractors are trained in and familiar with Assembly Bill No. 73, the RE sends letters to the contractor (refer to Exhibits 7.1 and 7.2). The contractor returns the signed letters.

5.2 The contractor shall mark the excavation area in white paint.

5.3 At least three (AB 73 states two days, Contract documents state three days) working days prior to commencing excavation, the contractor shall contact USA of Southern California to have utilities within the area of work marked.

- USA of Southern California will issue a ticket number. This ticket number is good for 14 calendar days. If the work has not been completed after 14 days, the contractor must re-notify USA of Southern California and have the underground utilities remarked. This should be done prior to the expiration of the ticket. No excavation shall be done without a valid ticket.

- USA of Southern California will notify subscriber utility operators of proposed excavation. Utility operators will mark centerline locations of underground utilities and indicate the tolerance for excavation work. Generally, accuracy of these locations is ± 2 feet horizontally. Vertical location is not given.

- USA of Southern California will notify utility operators to repaint utility two working days after re-notification, if necessary.

5.4 The contractor and RE review specifications and drawings for utility facilities that may not be members of a USA group, and these utility operators must be contacted directly by the contractor or the RE.

5.5 All calls to USA or utility operators shall be entered on the Underground Service Alert Log (Exhibit 7.3) and retained by the contractor.

5.6 The contractor shall visually check the area for signs indicating the possibility of recent underground relocation work by an outside entity.

5.7 The contractor shall take all necessary steps to protect utilities from damage, including performing hand excavation as required by Assembly Bill No. 73. Within 24 inches of either side of the utility, only hand excavation is permitted. Powered equipment shall not be used in this utility zone without authorization of the applicable utility representative, who shall be onsite witnessing the operation.

5.8 The RE verifies that inspection is performed by the facility inspectors using the applicable Construction Division Inspection Instruction (CDII):

- CDII 2.2, Excavation and Support Systems, for work-related excavation and backfill

- CDII 2.5, Utilities and Street and Sidewalk Excavationss, for installation and support of utilities

- CDII 16.7, Corrosion Protection for Buried Pipe, for utility corrosion control and cathodic protection

5.9 The RE verifies that after the utility representatives inspect their underground utilities, the representative provides written confirmation of acceptance prior to the utility being covered/backfilled. The written confirmation may be on the Facility Owner, Inspection Acceptance Record (Exhibit 7.4).

5.10 After the utility is backfilled, but prior to final surface restoration (street or sidewalk paving), the RE requests testing of utility cathodic protection, if applicable, by completing the Request for Test of Corrosion Cathodic Protection (Exhibit 7.5). All utilities perform their own cathodic protection (gas, water, power and telephone).

6.0 REFERENCES

The following documents are referred to in this procedure and are available under separate publication:

Document	Title
CDII 2.2	Excavation and Support Systems

CDH 2.5	Utilities and Street and Sidewalk Excavations
CDH 16.7	Corrosion Protection for Buried Pipe
GREP 4.11	Physical and Fiscal Closeout

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Form Letter to General Contractor (Example)
7.2	Form Letter to Foremen (Example)
7.3	Underground Service Alert Log (Sample)
7.4	Facility Owner, Inspection Acceptance Record
7.5	Request for Test of Corrosion Cathodic Protection

Exhibit 7.1

Form Letter to General Contractor
(EXAMPLE)

Subject: Protection of Utilities for MTA Construction Projects

During construction, many instances of utility damage have occurred as a direct result of ignoring the procedures for location and excavation that are required by law. Unnecessary costs have been experienced by all involved.

Your cooperation is required to ensure that utilities are properly protected during construction of the [*specify affected facility/location*]. To achieve this goal, it is essential that crews performing excavations are fully aware of the procedures prescribed in Assembly Bill No. 73. Therefore, we request that all foremen associated with any type of excavation be provided with a letter (attached) defining these requirements and that a record be maintained of foremen so informed.

Additionally, this subject is to be thoroughly addressed at the earliest possible project "Toolbox Safety Meeting".

Your full cooperation in this matter will be mutually beneficial and contribute to a successful MTA construction project.

Resident Engineer

Attachments:

Exhibit 7.2 (Continued)

Form Letter to Foremen
(EXAMPLE)

To: Project Foremen

Subject: Requirements and Procedures for Protection of Utilities

Protection of utilities is of paramount importance on this project and it is absolutely necessary that each foreman be thoroughly familiar with the pertinent requirements regarding this protection. Furthermore, each foreman is accountable for ensuring his crew understands and implements those requirements.

Preventing damage to utilities during excavation (grading, trenching, digging, drilling, auguring, pile driving, etc.) is a primary concern. This work is covered under State Laws, California Government Code Sections 4216 and 4217, and Assembly Bill No. 73 (attached), which pertains to subsurface installations and incorporate rigorous requirements and penalties, including fines up to $50,000, against anyone who knowingly and willfully violates the requirements of these laws.

The laws include these requirements:

1) Notify the Regional Notification Center Underground Service Alert (USA) of Southern California 3 (AB 73 states 2 days, contract documents state 3 days) working days prior to excavation and obtain a record of notification (i.e., the USA ticket number).

2) Excavation (broad definition) must be accomplished only by hand digging within two (2) feet of the outside limits of the utility as indicated by the locator.

USA's current operating procedure stipulates that the ticket number to excavate is valid only for a 14 calendar day period, unless renewed. It is the Foreman's responsibility to verify the validity of the ticket. The Foreman must have a copy of the ticket number at the excavation site at all times. Any variance to the above must immediately be reported to your supervisor. No excavation work is to be done without a valid ticket.

If you have any questions concerning the above pertinent law, please discuss this matter with your supervisor. After you have satisfied your understanding, please sign below and provide a copy to your supervisor.

Very truly yours,

Project Manager

Attachment: As Noted

I understand the above requirements, including California Government Code Sections 4216 and 4217, and Assembly Bill No. 73.

Name _____ Signature _____ Date _____

Exhibit 7.3

Underground Service Alert Log (Sample)

Contract No:		Contractor or Subcontractor:		
Date of Dig	Time of Dig	Location of Dig	Ticket Number	Service/Firm and Individual Contacted and Disposition

Exhibit 7.4

Facility Owner, Inspection Acceptance Record

Contract: _____ Facility Owner: _____

Contract No.:

	Description of Work Accepted	Inspector Full Name Inspector Signature
Specification Section:		_____
Drawing No.:		
Sheet No.:		
	Sta.:	Date:
Specification Section:		_____
Drawing No.:		
Sheet No.:		
	Sta.:	Date:
Specification Section:		_____
Drawing No.:		
Sheet No.:		
	Sta.:	Date:

Exhibit 7.5

Request for Test of Corrosion Cathodic Protection

Contract No:	Contractor:	Date:	Page of
Location:	Pipe System & Description:		

Complete the following information to request testing of the cathodic protection system by the GEC subconsultant.

List the applicable contract drawings: _____

Identify the submittal number of the contractor's shop drawing: _____

Briefly describe the section of the pipe system that requires testing: _____

Were the electrical connections and wiring inspected by an electrical inspector? _____

Attach completed copies of Cathodic Protection Inspection Checklist for the area to be tested.

Did the contractor verify the installation (continuity of bonding and isolation at required location) prior to backfilling the system? _____

All corrosion protection system installations have been inspected by QC and are complete and ready for testing.

_____
Resident Engineer's Signature and Date

Forward completed form to the Test and Startup Manager for scheduling of testing.

SECTION 4.04
NOT USED

SECTION 4.05
CONTACTS

1.0 PURPOSE

The purpose of this procedure is to provide guidance to the Resident Engineer (RE) and staff when dealing with the MTA, contractors, and public contacts.

2.0 GENERAL

The RE's conduct will be professional, ethical, and business-like during any and all contact with representatives of the MTA, the contractor, the public and any other parties concerned with the project.

3.0 RESPONSIBILITIES

The RE is responsible for ensuring that the RE staff follows this procedure.

4.0 DEFINITIONS

None

5.0 PROCEDURE

5.1 CORRESPONDENCE WITH CONTRACTOR

Normal contact and the day-to-day flow of correspondence with the contractor will be handled by the RE, except for the activities which are conducted directly between the MTA and the contractor.

5.2 CONTACT WITH CONTRACTOR

The RE is the primary contact with authorized representatives of the contractor. Contact with subcontractors or vendors should be made only through the contractor or in the contractor's presence.

With the exception noted in GREP 1.01, all correspondence to the contractor shall be signed by the RE.

5.3 CONTACT WITH OTHER CONTRACTORS

Contractors who are under the authority of other REs should not be contacted directly, unless contact is authorized by the RE in charge. The normal chain of command will be respected at all times.

5.4 CONTACT WITH CONTRACTORS OR SUPPLIERS PRIOR TO AWARD

All contact with contractors or suppliers prior to award shall be conducted by the MTA.

5.5 CONTACT WITH MTA AND OTHER LOCAL AGENCIES

5.5.1 The RE will maintain an effective working relationship with the following representatives:

- Chief Estimator
- Contract Administrator
- Contractor Safety Superintendent
- Labor Compliance Analyst
- Public Affairs Manager/Representative
- Quality Manager

- Third Party Administrator

5.5.2 The MTA, federal, state, local governments, through their respective authorized representatives will, at all times, have full access to the work being performed by or under the responsibility of the RE, subject to applicable safety regulations and advance notice.

5.5.3 Any request or directive by MTA representatives that may adversely affect the contractor's cost or performance or in any way be construed as a change in project scope and/or work not included in the project budget will be reported to the RE.

5.6 CONTACT WITH UTILITIES AND AGENCIES

5.6.1 In coordination with the Third Party Administrator, the RE will maintain effective working relationships with public or private utility or service companies and governmental agencies that are affected or otherwise involved with the project (refer to GREP 4.3).

5.6.2 Copies of MTA project-related and master agreements with railroads, utility or service companies and governmental agencies will be provided to the RE. For design, the RE shall review and monitor the construction work to ensure compliance with the terms, conditions, and covenants.

5.6.3 The RE will immediately notify MTA Environmental when representatives of Department of Toxic Substances Control, Regional Water Quality Board, South Coast Air Quality Management District, or Environmental Protection Agency arrive at the site or establish communication with the RE.

5.7 CONTACT WITH THE PUBLIC

5.7.1 The RE will provide information as needed to the Public Affairs representative on the scope of construction activities including scheduling information, work to be performed, type of equipment and means to perform the work, special safety considerations, and major events that will affect communities, individuals, or businesses.

5.7.2 In response to project-related questions, media requests, press releases or presentations, the RE will refer the inquirer to the Public Affairs representative.

5.8 VISITORS

All visitors shall be required to sign a Visitor's Release and Hold Harmless Agreement (Exhibit 7.2) before entering any hard hat area. Exceptions are noted in the Special Provisions Section of the contract.

All visits to MTA facilities/systems shall be approved by the MTA Public Affairs. All pertinent safety requirements shall apply.

5.9 COMPLAINTS

5.9.1 In consultation with Public Affairs, the RE shall give proper attention to complaints made by the public and minimize, mitigate or eliminate the problem, if feasible, in a timely manner. The RE will maintain an effective working relationship with Public Affairs and the representative shall be included in all pertinent meetings, including initial construction meetings, standing RE coordination/progress meetings, readiness review meetings and scheduling meetings. In the event of a work site emergency with public impact, Public Affairs shall be immediately informed of, and included in, all activities related to mitigation and resolution of the situation.

5.9.2 The circumstances surrounding the complaint and the nature of the complaint should be reported on a Complaint Form (Exhibit 7.3).

5.10 CONTACT WITH OPPOSING LEGAL COUNSEL

The RE and the RE's staff shall adhere to the following procedure when they receive requests for information:

Under no circumstances shall information (e.g., verbal, written, copies of documents) be given directly to opposing counsel. All information requests shall be directed to the MTA-appointed counsel. Information shall not be released without direction from the MTA or its appointed Counsel.

5.11 SUBMISSION TO DEO, CONSTRUCTION FOR RESOLUTION

In the event that any issue arising from the aforementioned contacts cannot be settled amicably and satisfactorily, the matter will be submitted to the DEO, Construction for resolution.

6.0 REFERENCES

None.

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Visitor's Register Log
7.2	Release and Hold-Harmless Agreement
7.3	Complaint Form

Exhibit 7-1

VISITOR'S REGISTER LOG

Contract No.:

VISITOR'S NAME (PLEASE PRINT)	SIGNATURE	AFFILIATION	PERSON TO SEE	TIME IN	TIME OUT

Exhibit 7.2

VISITOR'S RELEASE AND HOLD-HARMLESS AGREEMENT

In consideration of the Metropolitan Transportation Authority, granting me permission to visit the construction site, I hereby waive, release, and hold harmless the Metropolitan Transportation Authority, its employees, agents, consultants, and contractors from any and all injury or losses to person or property arising by the privilege of this exercise of visitation.

Contract No:

Name	Date	Time In	Time Out	Representing	Signature

Exhibit 7.3

COMPLAINT FORM

Property/Incident Address:	Contract No.:		Date:
Owner:	Tenant:	Staff:	Other:
Public Affairs Rep. Assigned:	Report Date:	Report Time:	Incident Time:
Callers Name and Address:		Callers Phone Number:	
URGENT Previous Call? Yes: ☐ No: ☐ Staff: _____ Date: _____			
Description of Problem/Incident/Damages:			
Action Taken:			
Contractor Responsible:	Complaint Form Completed By:		

SECTION 4.06
SCHEDULING

- Upon initial submittal of the contractor schedule, meetings will be held, as required, to review the submittal for conformance with contract requirements.

- Periodic status meetings with the contractor will be held, with date(s), time, and location to be specified by the RE. The meetings are for joint review and agreement on job progress and subsequent submittal of an updated actual progress schedule. Minutes of the meeting shall identify when and how open action items have been closed.

- At the discretion of the RE, additional meetings to review schedule impacts and workaround plans, may be called.

6.0 REFERENCES

None

7.0 EXHIBITS

None

SECTION 4.07
MEETINGS

1.0 PURPOSE

The purpose of this procedure is to describe and provide a format for conducting meetings between the Resident Engineer (RE) and the contractor, and between the RE and other Metropolitan Transportation Authority (MTA) departments.

2.0 GENERAL

Meetings include: Pre-construction Meeting, Initial Construction Meeting, Initial Safety and Quality Program Meeting, Initial Utilities Coordination Meeting, Construction Progress Meetings, Readiness Review Meetings, special meetings deemed necessary by the MTA, and conferences with government agencies or other parties. For smaller projects, initial meetings may be combined into a single meeting.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

The responsibilities of the MTA, RE, and contractors for the various meetings are presented in the Procedures section of this GREP.

5.0 PROCEDURE

5.1 PRECONSTRUCTION MEETING

The Preconstruction Meeting is scheduled by the MTA after receipt of the required signed contract documents and prior to issuing the Notice to Proceed. The MTA Contract Administrator shall conduct the meeting. This meeting is to review the scope of work with the MTA and discuss project responsibilities with their counterparts in the contractor organization.

5.2 INITIAL CONSTRUCTION MEETING

The Initial Construction Meeting will be scheduled by the RE in accordance with contract requirements. The RE will chair this meeting. The RE will distribute a notice of this meeting, with an agenda of the subjects to be addressed, including Safety, Quality Assurance, Public Affairs issues, Contract Closeout, not less than four working days before this meeting.

5.2.1 MTA RESPONSIBILITIES

The MTA will perform the following:

- Distribute a notice for the Initial Construction Meeting, with an agenda of the subjects to be addressed, not less than four working days before the meeting.
- Explain the responsibilities and authorities of the contractor, MTA, the Engineer, the Construction Manager, and the RE.
- Discuss Equal Employment Opportunity (EEO) and affirmative action requirements together with Public Affairs functions.

- Discuss requirements of labor provisions stipulated by U.S. Department of Transportation (DOT).

5.2.2. RE RESPONSIBILITIES

- Explain and discuss laws, codes, traffic regulations, permit requirements, and regulations of public agencies.
- Discuss procedures for processing Change Notices, Change Orders, shop and working drawings, product data and samples, and other required submittals and contract deliverables.
- Establish monthly estimate cutoff date.
- Discuss progress and final payments.
- Discuss Public Affairs procedures and goals.
- Discuss contractor's responsibilities regarding historical, scientific, and archaeological discoveries.

5.2.3. CONTRACTOR RESPONSIBILITIES

The contractor will perform the following:

- Designate project manager/superintendent, safety representative, EEO officer, subcontractor representatives, and community relations representatives.
- Introduce the contractor's key representatives and briefly describe their responsibilities.
- Distribute and discuss a list of major subcontractors (including the responsibilities of each), sequence of critical work, and tentative schedule of construction.
- Discuss use and location of contractor and subcontractor offices, storage areas, construction areas, and temporary easements obtained and required.
- Define housekeeping procedures.
- Discuss principal construction methods.
- Describe construction sequencing of entire contract; general worksite layout; erosion and sedimentation control plans; haul routes; noise, air, and water pollution control; temporary street closing; and street restoration.
- Discuss coordination and notification procedures for utility work.
- Discuss deliveries and priorities of major equipment.
- Discuss cost breakdown of lump sum items.
- Discuss proposed construction progress schedule.

5.3 INITIAL SAFETY AND QUALITY PROGRAM MEETING

The Initial Safety and Quality Program Meeting is scheduled by the RE after the initial construction

meeting. The RE will chair this meeting.

5.3.1 MTA/RE RESPONSIBILITIES

The MTA/RE and its representatives will perform the following:

- Discuss contractor safety and health plan submittal and introduce MTA and the construction safety and security representatives.
- Discuss quality control, inspection, and coordination of work with the MTA's system as a whole, and introduce the MTA and quality assurance/quality control representatives.

5.3.2 CONTRACTOR RESPONSIBILITIES

Contractor shall define arrangements for safety, first aid, emergency actions, security, and full-time safety representative.

5.4 CONSTRUCTION PROGRESS MEETINGS

The Construction Progress Meetings will be scheduled bi-weekly or more often if required, and chaired by the RE. Progress of the work shall be reviewed and work-related problems will be addressed.

5.4.1 CONTRACTOR RESPONSIBILITIES

The contractor shall perform the following:

- Distribute advanced notices and agenda of these meetings to the RE, to subcontractors engaged in the construction, and to all those expected to be engaged in the work before the next scheduled meeting.
- The contractor's project manager/superintendent, safety representative, EEO officer, subcontractor representatives, and community relations representatives will attend as necessary for the work.

5.4.2 AGENDA FOR CONSTRUCTION PROGRESS MEETINGS

The RE will provide the agenda for Construction Progress Meetings which will include:

- Introduction of new attendees and their areas of responsibility.
- Review minutes of previous meetings, amend if necessary, and accept.
- Analyze work accomplished since previous meeting, offsite fabrication problems, product delivery problems, actual and potential schedule slips, problems arising from proposed changes, and other factors that might affect work progress.
- Discussion of work sequence on the critical path and general schedule accomplishments using the approved progress schedule.
- Discussion of observations, problems, work quality control program, and employee work standards.
- Discussion of coordination of utility work, including actual and anticipated problems and delays.

- Discussion of changed conditions, time extensions, and other relevant subjects.
- Discussion of corrective measures to maintain construction schedule, when necessary.
- Discussion of upcoming month's work based upon a three-week look ahead schedule prepared by the contractor.
- Review of safety inspection and ongoing injury and illness prevention programs, and project incident rates.
- Discussion of public affairs and EEO issues.

5.4.3 RESOLUTION OF ISSUES

Each inquiry, request for information/change, or request for solutions of problems presented during such meetings will be answered, when possible, during the meeting; those not answered during the meeting will be resolved; the resolution will be documented and delivered in person or mailed to the person requesting the information within seven days of the meeting. Answers provided orally at the meetings will be recorded in the meeting minutes.

5.5 OTHER CONFERENCES/MEETINGS

The RE may be responsible for attending or conducting various other meetings and conferences, including, but not limited to, the following:

- Attend pre-bid conferences and conduct site tours (if required).
- Conduct periodic project status report meetings with the MTA.
- Conduct conferences with officials of the MTA, government agencies or other persons.
- Conduct job coordination meetings.
- Conduct safety meetings.
- Attend periodic utility coordination meetings as necessary.
- Safety tool box meetings - These meetings must be monitored.
- Readiness Review meetings – These meetings with the contractor must be held prior to the start of any new work for which a construction work plan was required.

5.6 MEETING MINUTES

Minutes of the above meetings will be the responsibility of the RE (refer to Exhibit 7.1). They will be prepared as soon as possible following the meeting and distributed to all attendees and Document Control. Meeting minutes shall carry over action items from the previous meeting until the action item is closed out. When the action item is closed out, this shall also be noted in the meeting minutes. Meeting minutes shall be distributed prior to the next scheduled meeting.

6.0 REFERENCES

None

7.0 EXHIBITS

The following exhibit is included in this procedure:

Exhibit	Title
7.1	Meeting Minutes (Sample)

Exhibit 7.1

MEETING MINUTES (SAMPLE)

Subject:	Contract No.:
Date/Time/Place:	
Originated by:	Recorded by:
Attendees:	Copies to:
Introduction:	
Review of Minutes of Previous Meeting:	

RESPONSIBLE ORG.	ACTION ITEM NO.	COMMENT
RESPONSIBLE ORG.	ACTION ITEM NO.	COMMENT

SECTION 4.08
CONSTRUCTION PHOTOGRAPHS

1.0 PURPOSE

This procedure provides guidelines for providing a photographic history of the project construction.

2.0 GENERAL

This procedure provides guidelines for progress photos that the Resident Engineer (RE) will need to photographically document construction activities as related to problem areas, claims, progress and closeout. The importance of good project photographs cannot be overstated. The lack of a photograph can be very costly when needed photos are not available.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

The RE is responsible for maintaining control of project photographic activities, including directing "routine" RE progress photographic activities.

5.0 PROCEDURE

5.1 Progress photographs will be taken on a regular basis as required for compiling a complete set of jobsite photographs. Photographs should be taken at least twice a week, more often when necessary.

5.2 The RE will select the number and the location of views to be taken. Where practical, at least one progress overview photograph should be taken from the same location each month.

5.3 Progress photographs will be taken with 35mm color film, and the negatives and prints will be identified and stored in the project file.

5.4 Progress photographs will be mounted on a Resident Engineer Progress Photo Card (Exhibit 7.1) and include the following information.

- Notations identifying the photographs with location, time, date, and other information as appropriate.
- Number photographs consecutively.

5.5 RE progress photographs are to be included in the project file to substantiate the contents and clarity of field reports.

5.6 Numerous conditions and activities can be documented by RE progress photographs. The following is a list of recommended photographic subjects.

Photographs of problem conditions:

- Nonconformance conditions
- Unusual ground or water conditions
- Cave-ins, pavement settlement, etc.
- Private property or utility damage
- Damage by or to equipment
- Severe weather conditions and storm damage

- Potentially hazardous conditions
- Unusual construction techniques
- Areas or activities where claims and/or changes are occurring or anticipated
- Contract modification work
- Conditions at time of start of delay due to strikes, etc.
- Undisturbed scene of personal injury accident
- Private property conditions which may be the source of a complaint or alleged complaint to Public Affairs

Photographs of items or installations:

- Immediate site conditions before start
- Startup activities
- Traffic barricades, signs, etc., used by contractor and changes in those installations
- Significant construction items
- Typical and special construction equipment
- Material and equipment delivery (and condition) verification
- Material stockpile (condition and location)
- Material and equipment loading areas
- Completed punch list items

Photographs of ongoing construction:

- Work progress
- Typical items (e.g., materials, equipment) referring to ongoing reports
- Testing and inspection activity, tools, and equipment
- Reference photographs for record drawings (typical installation conditions)
- Photographs of completed underground structure before burial

6.0 REFERENCES

None

7.0 EXHIBITS

The following exhibit is included in this procedure:

Exhibit	Title
7.1	Resident Engineer Progress Photo Card

Exhibit 7.1

RESIDENT ENGINEER PROGRESS PHOTO CARD

(Use 3.5" x 5" Prints)

Neg No:	Roll No:
Picture No.:	
Contract No:	Date:
	Taken By:
Location (including compass direction of photograph):	
Comments:	

SECTION 4.09
AS-BUILTS

1.0 PURPOSE

This procedure defines Resident Engineer (RE) responsibility and processes for monitoring of contractor preparation and submittal of as-built Contract Drawings, Contract Specifications, and contractor shop drawings; and for maintenance of current drawings and specifications used by the RE and inspectors.

2.0 GENERAL

2.1 As-Built Contract Documents: RE shall ensure that the Contractor maintains, at the contractor's construction site office, a complete set of conformed contract documents updated continuously as the record set of contract documents showing all as-built conditions. Any changes to the data shown on conformed contract drawings and construction specifications will be legibly noted, marked, or sketched by redlining a "record copy" of the document as defined in Contract Specifications.

2.2 As-Built Shop Drawings: Although related, the as-built shop drawings are independent of the contract documents. The contractor is required to prepare and submit as-built shop drawings, showing the final installed conditions and cross-referenced to the related contract drawing(s). These are supplemental to the as-built contract drawings and specifications covered in this procedure.

3.0 DEFINITIONS

3.1 *Construction Documents:* There are several types of construction documents; this procedure deals only with the technical aspect of the contract, including the drawings and specifications of the original contract, contractor shop drawings, and any modification made by Change Notice, Change Order, or other technical direction issued to the contractor via response to a Request-for-Information, Submittal acceptance request, or other form of direction.

3.1.1 *Drawings:* Sometimes referred to as Contract Drawings or Design Drawings; the complete set of drawings showing all construction work required in the original contract. See also Shop Drawings and Working Drawings.

3.1.2 *Specifications:* Sometimes referred to as Contract Specifications or construction specifications; the complete set of which is written for the specific construction or procurement contract scope of work.

3.1.3 *Change Orders:* Negotiated and authorized changes to the technical work required, including any revised or new drawings and specifications. These changes are to be included in the as-built drawings and specifications.

3.1.4 *Current Status Documents:* A set of full size reproducible drawings and a copy of the specifications marked and maintained by the contractor to show current as-built status of construction in progress and current design status.

3.1.5 *Conformed Contract Documents:* The current set of contract documents conformed to include all revisions and modifications to the documents issued under cover of Change Notice, Change Order, or other written direction to the Contractor. Will also include interim modifications such as mark-up, sketches, contractor as-built submittals, or other written technical direction.

3.1.6 *Shop Drawings:* Contractor provided drawings for facilities and contractor-furnished equipment installation, showing details of how the contractor plans to execute the design as shown in the Contract Specifications and Drawings. On acceptance, shop drawings become part of the permanent contract record, and may be included in as-built submittals and Project Record Documents.

3.1.7 *Working Drawings:* Contractor provided drawings for temporary work performed by the contractor in order to execute the design as required by the Contract Specifications and Drawings.

3.2 *Submittals:* There are several items covered under this generally used term. Specific submittal requirements are contained in the technical specifications. Many shop drawings are for facilities and equipment installation, showing details of how the contractor plans to execute the design as shown in the Contract Drawings.

Other Contractor Submittals include, but are not limited, to:

- Master Submittal Schedule
- Schedule updates
- Shop and Working Drawings
- Manufacturers' standard schematic and wiring drawings
- Manufacturers' calculations
- Manufacturers' standard data
- Manufacturers' printed installation, erection, application and placing instructions
- Inspection reports, test reports and product certificates of compliance, mill certificates
- Samples and mockups
- Concrete and grout mix designs
- Operations and maintenance data and manuals (refer to Specification Section for requirements)
- Warranties and Guarantees (may be included in operation and maintenance manuals)

3.3 *As-Built Documents:* For the purpose of this procedure, as-built documents include three elements:

Marked Contract Drawings: A set of drawings of the facility that are a combination of the most current contract drawing revisions, plus any Request for Information (RFI) changes, Nonconformance Report changes, and Change Order drawings, which have been continuously marked by the contractor to show any as-built conditions differing from the plan necessitated by field adjustments or other purposes.

Marked Contract Specifications: A set of the most current Contract Specification revisions, plus any specifications or specification changes added by RFI changes, Nonconformance Report changes, and Change Orders, which have been continuously marked by the contractor to show any as-built conditions differing from the plan necessitated by field adjustments.

Marked Shop Drawing submittals: Permanent facility item shop drawings, as noted in paragraph 3.2, that have been marked by the contractor to show deviations from approved shop drawings where necessitated by field adjustments or other purposes.

As-Built Schedules: Drawing, Contract Revision, and As-built listings maintained by the Contractor in compliance with Specification.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The RE ensures that an accurate set of as-built contract drawings and specifications depicting as-built conditions are prepared and maintained by the contractor and provided in accordance with Specifications. The RE is responsible for notifying the contractor of non-compliance and for recommending withholding

of payment for non-compliance as allowed under the contract.

4.2 CONTRACTOR

The contractor, including the contractor's subcontractors, prepares, maintains, and submits appropriately marked contract drawings, specifications, and shop drawings to the RE for acceptance in accordance with contract specification requirements. The contractor is responsible for providing a specific listing of as-built contract documents to be submitted as specified in the contract.

4.3 ENGINEER

The Engineer or designee will incorporate all previously unincorporated as-built notations into the final Project Record Documents following contract close-out, including incorporation of as-built contractor shop drawings into the Project Record Document set and indices.

5.0 PROCEDURE

The following steps define the methods to be used in receipt, acceptance, and transmittal of contractor-prepared as-built Contract Drawings and Contract Specifications (Contract Record Documents).

5.1 As-Built Maintenance: The contractor shall keep the Contract Record Documents at the site and shall continually update them during construction. As construction work is accomplished (work that is different from or in addition to that which the contract drawing shows), the contractor will mark the as-built conditions on the Contract Drawings.

5.1.1 Superseded As-Built Documents: When a new revision of a document is received, the contractor stamps the superseded document "SUPERSEDED", and keeps the document in the "Current Status Set" of contract record documents for future reference of previous mark-ups and for use of production of as-built drawings. The contractor need not transfer the data recorded on superseded drawings onto the new revision. However, prior to submittal to the RE, the final as-built drawing will be marked by the contractor to incorporate any and all missing information from all superseded revisions of the drawing.

5.1.2 Use of Shop Drawings in Lieu of Contract Drawings: Should as-built detail shown on a shop drawing supersede or provide better information than can be shown on a contract drawing, the as-built shop drawing may be maintained in lieu of the contract drawing. In such cases, the contractor will provide appropriate shop drawing number cross references on the "as-built" contract drawing and visa-versa, and will provide both the contract drawing and a revisable reproducible of the associated shop drawing(s) as the as-built submittal.

5.2 Changes to Underground or Covered Work: Contract drawing markings shall show all changes, including elevations, layouts, joints and dimensional location for underground or otherwise covered structures, conduits, switchboards, switchgear, utilities, boxes, duct work, piping, valves, and other mechanical and electrical equipment, etc., as noted in the Contract Specifications.

5.3 Shop Drawings. Shop drawing originals shall be revised by the contractor to show as-built conditions and submitted in accordance with Specifications. When an RFI or other document modifies an accepted Contractor Shop Drawing, the contractor will mark-up the drawing to reflect the changes pending formal revision and resubmittal. Shop drawings will include cross-references to the contract drawing or drawings to which they are related. As-built shop drawings may be maintained in lieu of as-built contact drawings when the detail shown on the shop drawing is superior to that provided in the contract drawing. When required by contract, the RE will request the contractor to provide electronic copies of as-built

shop drawings.

5.4 RE Review: The RE shall review monthly with the payment request, the contractor's maintenance of as-built documents to determine that as-built data is being recorded properly and accurately and in accordance with all contract requirements. The RE or designee should conduct a review of the Contract Record Drawings prior to submittal of the contractor monthly progress payments to ensure that the contractor is meeting all of the specified obligations. If the Contract Record Drawings are not current in the judgment of the RE, the Contractor should be advised of the required corrections or additions.

5.5 Payment Witholding: Should the contractor fail to maintain or submit as-built documents as required by the contract, the RE will recommend to the MTA Contract Administrator that approval of all or part of the monthly progress payments may be withheld until the as-built documents are made current by the contractor.

5.6 As-Built Submittal: After completion of construction/installation milestones defined in the contract, the RE will receive a full size copy of the as-built contract and shop drawings associated with the milestone been marked with the as-built conditions. The RE will verify that the information included is complete, and that the Contractor Submittal Form attests that the documents are true and complete. The As-Built submittal will be entered into the CCS® submittal record. The logged submittal record will contain a complete listing of drawings and documents provided.

5.7 As-Built Submittal Log: The RE shall verify that the contractor is maintaining and submitting all logs in accordance with the specifications.

5.8 RE Copy of As-Built Documents: The RE shall maintain a master set of prints of contractor submitted as-built documents for use by inspectors. The prints shall be kept current by writing the information relative to changes near the affected areas of the appropriate sheets. The information is to include the change number. When the RE receives revised drawings, the RE should immediately check to see if the marked changes have been incorporated into the revised drawing. If the changes have not been incorporated, the change notice or RFI information must be transferred onto the revised drawing.

5.9 Government Agency and Utility Review: The RE will coordinate with the Third Party Administrator for government agency and utility review of the contractor as-built submittal, prior to forwarding the as-built documents to the Engineer for acceptance and incorporation into master record documents.

5.10 Incorporation of As-Built Notations into Document Revisions: On notice that a formal document revision is being processed by the Engineer, the RE will ensure that a copy of the current contractor's as-built records are provided to the Engineer for all specification sections and drawings affected by the pending change. The Engineer will incorporate all contractor as-built notations into the master record document concurrent with incorporation of the new revision. Contractor as-built notations will be incorporated under a separate revision number, and separate revision line from the design change.

6.0 REFERENCES

The following documents are referred to in, or are related to this procedure and are available under seperate publication:

MTA PROCEDURES	TITLE
GREP6.10	Document Control
GREP6.01	Submittals
GREP6.05	Changes

CF3E	Document Control: Formatting and Identification Standards for CIP Projects
CF4	Document Control: Contractor Submittals Tracking
CF5	Document Control: As-Builts Documents Processing
CF14	Change Control: CIP Construction Contracts
CM14	As-Built Document Requirements
CM16	Contractor Submittals

7.0 EXHIBITS

None

SECTION 4.10
NOT USED

SECTION 4.11
PHYSICAL AND FISCAL CLOSEOUT

1.0 PURPOSE

This procedure establishes the process and documentation necessary for completing the physical and fiscal closeout of construction contracts.

2.0 GENERAL

2.1 The document closeout procedure is addressed in GREP 4.12. Dates in this procedure are relative to the contract completion date carried on the most current approved schedule. As schedule revisions are approved, these dates will be revised by RE. Physical closeout should occur after beneficial occupancy, when applicable.

2.2 Prudent contract administration executed from bid formation through contract closeout will minimize most confusion and allow an orderly closeout. It is paramount that the Contract Administrator work in concert with the Resident Engineer during the entire course of the contract. The application of this effort will yield clear comprehension of the status of the contract in the general areas of:

2.2.1 Correspondence: Correspondence relating to MTA performance must be closed-out to memorialize the MTA's position for the record, thus allowing any future research of the contract files to be done with confidence and efficiency.

2.2.2 Progress Payment Status: As above, the progress payment history has been maintained with an accuracy throughout the course of the project such that a review of it at closeout will yield an instant status of monies paid and retention held, along with any liquidated damages withheld. The progress payment status will be analyzed in conjunction with the change order and claims log which is discussed below.

2.2.3 Change Order and Claims Logs: This is maintained as part of a component of the overall fiscal "system". The change order/claims log will yield the status of the open changes and agreed to changes as well as those in a claim status.

2.3 The RE will minimize the degree of outstanding matters. For those matters remaining incomplete, the obvious action of negotiation must be set in motion, resolving all disputes prior to retention release and/or final payment. Outstanding matters must be resolved and completed prior to document closeout.

3.0 DEFINITIONS

3.1 *Beneficial occupancy:* When the MTA takes possession of a portion of the work for its use and/or occupancy on other than a temporary or emergency basis.

3.2 *Close-out team:* A team consisting of the RE and members of his/her staff, the MTA, and others that may be designated by the MTA. The exact makeup and representation on the team will be established prior to the prefinal inspection through coordination with the MTA by the RE.

3.3 *Punch list:* A tabulation indicating items to be furnished, including documentation or work to be performed by the contractor or subcontractor, in order to complete the work as specified in the contract documents (refer to Exhibit 7.1).

A preliminary punch list for both physical and document deficiencies is prepared. This punch list covers both work not completed and work completed with deficiencies or non-conformances. This form contains the minimum information required for a punch list. It may be expanded as necessary to meet specific contract requirements.

3.4 *Initial inspection:* An inspection conducted by the RE using contract specifications and drawings to identify the work completed, including documentation. The initial inspection is performed prior to scheduled completion of the contract and is completed with or without contractor participation. A punch list and an action item responsibility list are the end product of this inspection.

3.5 *Prefinal inspection:* A complete review by the closeout team with the contractor to examine, observe, and measure the conformance of materials, supplies, components, parts, appurtenances, systems, processes, and structures to the contract documents. Contractor submittals and other documents are reviewed at this stage. A revised punch list and an action items responsibility list are the end products of this review. A General List of Contract Submittals and Documentation is shown in Exhibit 7.2. A sample Closeout Sequence Checklist is shown in Exhibit 7.3. These samples may be modified by the RE to meet the specific needs of the contract being reviewed.

3.6 *Partial final inspection:* A formal review by the closeout team and the contractor to allow acceptance of a portion of the work for use and possession, or for partial acceptance to meet milestone completion date (s). Partial beneficial occupancy may occur at this time.

3.7 *Substantial completion review/inspection:* A review of contract status when the contractor requests recognition of substantial completion per the terms of the specific contract. A sample closeout checklist for use at this stage is shown in Exhibit 7.4. This list will be modified by the RE as necessary to meet the specific needs of the contract being reviewed.

3.8 *Substantial completion:* When the work, or a designated portion of the work, is sufficiently complete that the MTA may occupy it or cause others to occupy it for the use for which it was intended. Substantial completion may be granted prior to the contract completion date.

3.9 *Notice of Completion:* Submitted by the contractor when it believes the work has been completed. Contains specific information relating to the completion of the punch list and any change orders.

3.10 *Final acceptance inspection:* The MTA's last review of the project, conducted by the closeout team, to examine, observe, and ensure that the conformance of materials, supplies, components, parts, appurtenances, systems, processes, and structures to the contract documents and the completion of all punch list items.

3.11 *Final acceptance testing:* MTA/RE witness to a demonstration of an item's capability to meet contractual requirements by subjecting it to normal or extreme operating conditions. This testing may occur at any time before the contract completion, but contract completion cannot be granted without it.

3.12 *Final completion:* Acceptance by the MTA of the contract work as completed in full, evidenced by a Notice of Final Acceptance.

3.13 *Certificate for Final Acceptance (Exhibit 7.6):* Recommendation by the RE to the MTA that Notice of Final Acceptance be issued to the contractor when all contract deliverables are determined to be complete. The actual Notice of Final Acceptance will be provided by the MTA.

3.14 *Contract closeout book:* Compilation of documents that validates the completion status of the contract (refer to Exhibit 7.5).

4.0 RESPONSIBILITIES

The RE modifies these procedures as necessary for specific contracts and monitors progress of the

closeout process, and secures the approval of the MTA DEO Construction.

The RE performs or assists in the actions required for contract closeout. The RE is the focal point for all contacts with the contractor, ensuring deficiencies are corrected and that completion/acceptance documents are prepared. The RE also recommends to the MTA final acceptance of physical work and final payment to the contractor and prepares the contract closeout book.

Safety certification documentation shall be processed in accordance with GREP 4.13. All safety certifications not completed shall be included on the Punch List (Exhibit 7.1). Responsibility for determining the level of documentation required to satisfy a Safety Certification line item rests with the MTA's Safety Certification Manager.

5.0 PROCEDURE

5.1 MONITORING WORK

Work is monitored throughout construction by the RE. An initial closeout punch list is prepared by the RE prior to contract completion. The closeout team reviews the project punch list status and establishes contract-specific closeout objectives, schedule, and responsibilities.

5.2 PROGRESS MEETINGS

As part of the progress meetings, progress in the closeout schedule will be tracked.

5.3 INITIAL INSPECTION

5.3.1 A full review is made of submittal status to ensure availability of operation and maintenance manuals, Contract Record Drawing Sets, training plans, warranties, and all other information needed to complete the safety certification.

5.3.2 The closeout team develops a preliminary punch list (refer to Exhibit 7.1) incorporating all physical and document deficiencies.

5.4 PREFINAL INSPECTION

Prior to contract completion, the closeout review team modifies previously prepared checklists as necessary and, with contractor participation, conducts the prefinal inspection. A Closeout Checklist and Status (Exhibit 7.4), identifying physical work and documentation deficiencies, is generated by the review team and agreed to by the participants and contractor. The punch list also identifies outstanding Change Orders and claims status, also specifying whether they must be closed out prior to recommending final acceptance.

5.5 PARTIAL FINAL INSPECTIONS

5.5.1 It may be necessary from time to time to use, or for other contractors or the MTA/Operations to use, portions of substantially completed work. In such cases, the closeout team will conduct a specific use and possession partial final inspection, with contractor and, if appropriate, follow-on contractor or MTA/Operations user participation. The results of the partial final inspection may be used to allow beneficial occupancy or to support a progress payment to the contractor for the portion of work accepted and relieve the contractor of responsibility.

5.5.2 Photographs will be used to document the condition of the completed portions of the contract that the

contractor has turned over under substantial completion. A punch list of any deficiencies, including outstanding Change Orders or claims, will also be made a part of the formal documentation used to accept the substantially completed work.

5.5.3 The partial final inspection should document who has responsibility for security, safety, inspection, operations, utilities, maintenance, and access control for the portion of work that has been substantially completed.

5.6 FINAL INSPECTION/COMPLETION

5.6.1 When the contractor believes the work or any portion of the work has been completed, it may submit, via a letter to the RE of the affected contract, a Notice of Completion. The RE evaluates and determines whether to accept or reject the contractor's Notice of Completion. If the RE rejects it, the RE states why and requests the contractor to correct the deficiencies leading to rejection. If the RE accepts the Notice of Completion, the RE schedules the final inspection by the review team and, if appropriate, MTA/Operations participation.

5.6.2 Deficiencies noted during the final inspection are listed in a revised punch list, and corrected and verified as stated in paragraph 5.6.1.

5.6.3 As part of the final inspection, any work identified as required but not in the contract or work in the contract that will not be accomplished by the contractor for whatever reason will be managed as follows:

- Work required but not in contract will be referred to the MTA for disposition (i.e., use as is, initiate a change order, or have it accomplished by another contractor).
- Work required by contract that is not completed will be referred to the MTA as a deductive change or a backcharge credit (refer to GREP 6.3).

5.6.4 Based on corrective action taken, the contractor modifies its Notice of Completion and resubmits it to the RE. The RE reviews and accepts or rejects the revised Notice of Completion.

5.6.5 The RE begins preparation of a contract closeout book to document the completeness of the contract.

5.6.6 When final inspection deficiencies have been corrected, the RE completes the contract closeout book, including a recommendation that the MTA issue a Certificate for Final Acceptance to the contractor. If the MTA does not accept the RE recommendation, the RE takes the necessary action to resolve concerns. This process continues until final acceptance by the MTA and the physical and document requirements are achieved (refer to Exhibit 7.6).

5.6.7 A Closeout Book Document Completeness Checklist (Exhibit 7.5), is checked and signed off by the reviewers at the RE office to ensure that the closeout book is complete. The routing process for the contract closeout package is listed on the form. A copy of the completed closeout book is submitted to Document Control for retention.

6.0 REFERENCES

None

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Punch List (Sample)
7.2	General List of Contract Submittals and Documentation (Sample)
7.3	Closeout Sequence Checklist (Sample)
7.4	Closeout Checklist and Status
7.5	Closeout Book Document Completeness Checklist
7.6	Certificate for Final Acceptance (Sample)

Exhibit 7.1

PUNCH LIST (SAMPLE)

CONTRACTOR:	CONTRACT NO.:	DATE:	PAGE:

ITEM NO.	DESCRIPTION	LOCATION	SPEC. SECT.	SCHEDULED COMPLETION DATE	ACTUAL COMPLETION DATE	REMARKS

Exhibit 7.2

GENERAL LIST OF CONTRACT SUBMITTALS AND DOCUMENTATION
(SAMPLE)

Progress Records
- Resident Engineer's Diary
- Daily Inspection Reports
- Resident Engineer's Monthly Progress Reports
- Contractor's Monthly Progress Reports
- Telephone Logs
- Correspondence Logs
- Photos and Photo Log
- Videotapes
- Submittal Register
- Drawing Logs
- Meeting Attendance Records
- Progress Meeting Minutes
- Design Review Comments and Meeting Minutes
- Progress Schedule/Updates

Quality Assurance
- Inspection and Test Plan
- Non-Conformance Reports
- Certificates of Compliance
- Material Receiving Reports and Certifications
- Equipment Calibration Records
- Test Procedures
- Test Reports
- Quality Verification Reports
- Daily Shotcrete Reports
- Concrete Placement Checkoff and Clearance Forms
- Shop Inspection Reports
- Concrete Samples
- Field Concrete Sample Data Sheets
- Certified Copies of Mill Reports
- Ready-Mix Delivery Tickets
- Batch Tickets
- Welding Procedures
- Welder Certifications
- NDE and Welding Data Approvals
- Receiving Records of MTA Furnished Equipment

Exhibit 7.2 (Contd.)

GENERAL LIST OF CONTRACT SUBMITTALS AND DOCUMENTATION
(SAMPLE) (CONTD)

Safety Certification
- Safety Certification Specification Conformance Check List
- Safety Certification Specification Conformance Certificate

Insurance
- Pre-Construction Survey
- Post-Construction Survey
- Employer's Reports of Occupational Injury
- Workers' Compensation Logs
- General Liability Logs
- Contractor's Reports of Work, Injury, Illness
- Accident Claims
- Supervisors' Accident Investigation Reports
- Site Visitor Register
- Release and Hold Harmless Agreements
- Weekly Toolbox Safety Meeting Records
- Weekly Shaft Inspection Report
- OSHA Inspection Check Lists
- Equipment Inspection Reports
- Wire Rope Inspecting Records
- Log of Daily Crane Safety Inspections

Contract Administration
- Bid Forms and Related Documents
- Addenda
- Results of Pre-Award Survey
- Notice of Contract Award
- Notice to Proceed
- Conformed Contract Documents
- Request for Information (from contractors)
- Design Inquiry (to the GEC)
- Request for Change (From contractor)
- Change Notices
- Change Orders
- Notice of Potential Claims
- Claims
- Contracting Officer's Decisions
- Potential Claims Log
- Litigation Documents
- Board of Director Reports

Exhibit 7.2 (Contd.)

GENERAL LIST OF CONTRACT SUBMITTALS AND DOCUMENTATION
(SAMPLE) (CONTD)

Contract Administration (continued)
- Affirmative Action Plans
- Subcontractor DBE/WBE Certifications
- Contract Compliance Records
- FTA Quarterly Reports on DBE participation
- Results of IG Audits
- Partial Acceptance Records
- Conditional Acceptance Records
- Certificate of Substantial Completion
- Notice of Completion
- Utility Releases
- Closeout Change Order
- Contractor Release
- Notice of Acceptance

Payments
- Force Account Records
- Overtime Reports
- Prepaid Material Logs
- Pay Quantity Records
- Contract Payment Estimates
- Invoice Approval Forms
- Certified Payroll Records
- Partial Payment Records
- Final Certificates and Voucher for Payment
- Final Labor Summary
- Subcontractor Payment Certificates

Permits and Agreements
- R-O-W Agreements
- Building Permits
- Occupancy Permits
- Elevator and Escalator Certificates
- Storm Drain and Sanitary Sewer Connection Permits
- Utility Agreements
- Railroad Agreements

Exhibit 7.2 (Contd.)

GENERAL LIST OF CONTRACT SUBMITTALS AND DOCUMENTATION
(SAMPLE) (CONTD)

Operations And Maintenance Deliverables
- Warranty/Guarantee Records
- Equipment History Record Books
- Operating Instructions
- Equipment Brochures
- Maintenance Manuals
- Records of Operator Training
- Records of Mechanic Training
- Spare Parts
- Bills of Materials
- Special Tools
- Locks and Keys
- Spare Finish Materials

Records and Data
- CDRL Items (systems contracts)
- Shop and Erection Drawings
- Working Drawings and As-Builts
- As-Built Shop Drawings
- As-Built Specifications
- As-Built Contract Drawings
- Interface Data Sheets
- Test Specimens
- Samples
- Mockups
- Geotechnical Information
- Soil Test and Compaction Reports
- Pile Driving Logs and Reports

Boring Logs and Core Samples

Exhibit 7.3

CLOSEOUT SEQUENCE CHECKLIST (SAMPLE)

Required Action	Status
Preparation Phase:	
1. Participation in initial inspection.	
2. Recommendation that closeout process begin and closeout review team be activated.	
3. Set up pre-closeout meeting with closeout review team members.	
4. Conduct and document pre-closeout meeting	
5. Prepare closeout action plan and identify responsible individuals for required actions and scheduled completion date	
Physical Inspection Phase:	
6. Conduct utility inspections	
7. Conduct city inspection	
8. Obtain utility/city acceptances	
9. Schedule pre-final inspection	
10. Document pre-final inspection punch list and monitor closeout of items	
11. Recommend acceptance/rejection of notice of final completion	
12. Schedule final inspection	
13. Notify all parties and coordinate closeout team preparations	
14. Submit notice of completion	

Exhibit 7.3 (Contd.)

CLOSEOUT SEQUENCE CHECKLIST (SAMPLE) (CONTD)

Required Action	Status
15. Conduct final inspection	
16. Prepare final punch list	
17. Closeout final punch list	
18. Complete report recommending final acceptance	
19. Obtain MTA concurrence to accept responsibility of maintenance operations	
20. Prepare recommendations for issuance of final completion certificate	
21 Forward recommendation of completion to MTA	
Final Acceptance Phase:	
22. Issue Safety certification statement	
23. Prepare letter transferring ownership, maintenance and operation responsibility to MTA\Operations	
24. Lessons learned exit interview	

Exhibit 7.4

CLOSEOUT CHECKLIST AND STATUS

	Checklist	Status/Remarks	Initial/Date
1.0	ADMINISTRATIVE		
1.1	Preface		
	a. Draft Board Report		
	b. Summary Letter		
	c. Closeout Checklist		
1.2	Final Acceptance Certificate		
1.3	Final Status Report (including AFE status, Change Orders, contract adjustments, and schedule)		
1.4	Notice of Completion (MTA)		
1.5	Engineering Signoff (General Contractor))		
1.6	Signoff From Local Agencies (3rd Party)		
1.7	Labor Compliance, Final Certification		
1.8	DBE Compliance Report		
2.0	FINANCIAL		
2.1	Final Payment Request		
2.2	Audit Exceptions Verified		
2.3	Liquidated Damages Assessment Reviewed		
2.4	Retention and Adjustments Verified		
2.5	Contractor Affidavit of All Bills Paid and Indemnity		
2.6	Subcontractor Lien Releases		
2.7	Release of Claims by Contractor (Final)		

Exhibit 7.4 (Contd.)

CLOSEOUT CHECKLIST AND STATUS

	Checklist	Status/Remarks	Initial/Date
3.8	Changes		
	a. Change Notices		
	b. Change Orders, Change Action Status Log		
	c. Final Change Order		
	d. Claims		
	e. Backcharges		
3.0	TECHNICAL		
3.1	Contractor's Notice of Completion		
3.2	Punch List Resolved		
3.3	Safety Certification Complete		
3.4	Special Warranties and O&M Manuals Received		
3.5	As-Built Schedule Complete		
3.6	As-Built Drawings Complete		
3.7	Lessons learned		

Exhibit 7.5

CLOSEOUT BOOK DOCUMENT COMPLETENESS CHECKLIST

Contract No: _____ Contractor: _____ Contract Title: _____

INCLUDE ORIGINAL DOCUMENTS WHENEVER POSSIBLE

Sec. No.	Required Closeout Book Documents	In Package Yes	In Package No	Comments
1.0	**ADMINISTRATIVE**			
1.1a	Draft Board Report			Draft copy with diskette in WordPerfect
1.1b	Summary Letter (on letterhead)			Must be signed and dated by CM
1.1c	Closeout Checklist			Signed by RE
1.2	Final Acceptance Letter (letterhead) Final Acceptance Certificate			Letter signed by CM and dated. Certificate signed by RE, area manager., and CM
1.3	Final Status Report (including AFE Status, Change Orders, Contract Adjustments and Schedules)			All information current
1.4	Notice of Completion (MTA)			Final for MTA signature
1.5	Engineering Signoff (GC)			From GEC
1.6	Signoff From Local Agencies (3rd Party)			Required for all applicable agencies
1.7	Labor Compliance Report			Information obtained from MTA
1.8	DBE Compliance Report			Information obtained from MTA
1.9	Third Party Claims Insurance Report			Information obtained from OCIP Admin
1.10	Contract File			Action by Document Control
2.0 2.1	**FINANCIAL** Final Payment Request			If final pay request is in process, include most recent
2.2	Audit Exceptions Verified			Include report, if any
2.3	Liquidated Damages Assessment Review			
2.4	Retention and Adjustments Verifies			Information obtained from MTA
2.5	Contractor Affidavit of All Bills Paid and Indemnity			Must be notarized
2.6	Subcontractor Lien Releases			Unconditional releases only
2.7	Release of Claims by Contractor (Final)			On contractor's letterhead
2.8 2.8a	**Changes** Change Orders			Copy of final CO form only (do not include support documents)
2.8b	Change Orders, Change Action Status Log			Change Action Status Log report printed from CCS system
2.8c	Final Change Order			Copy of final CO form only (do not include support documents)
2.8d	**Claims**			Copy of claims log showing resolutions
2.9	Backcharges			Include report
3.0 3.1	**TECHNICAL** Contractor's Notice of Completion			
3.2	Punch List Resolved			Include final punchlist signed off
3.3	Safety Certification Complete			Include original document
3.4	Special Warranties and O&M Manuals Received			
3.5	As-Built Schedule Complete			
3.6	As-Built Drawings/Specs Complete			
3.7	Certificate for Beneficial Occupancy			Include original document

Reviewer (RE Office):	Date:	Signature:
Reviewer (AREA Office)	Date	Signature

INITIAL

_____ 1. **RE** transmit closeout book with one copy to the area manager for review and signature

_____ 2. **Area manager** sign the Final Acceptance Certificate (Sec. 1.2), and transmit closeout book with one copy to Construction Manager for review and signature

_____ 3. **CM** review and sign Summary Letter (Sec 1.1a), Acceptance Letter (Sec. 1.2), and Acceptance Certificate (Sec. 1.2). Then transmit closeout book with one copy to Document Control.

_____ 4. **Document Control**

a. Date letters (Sec. 1.1a and Sec. 1.2) from CM and make distribution

b. Copy dated and signed pages (Section 1.1a and 1.2) and insert into copy of closeout book

c. Transmit original closeout book to manager of contracts at MTA for the appropriate segment

Exhibit 7.6

CERTIFICATE FOR FINAL ACCEPTANCE (SAMPLE)

CONTRACT NO: _____ _____ DATE: _____

CONTRACTOR: _____

The contractor requested final acceptance of the work on _____ _____ _____ per the attached letter.

Maintenance responsibility will be assumed by _____

A final inspection was held on _____

by representatives of the MTA Construction Division and the _____

_____

The work was found to be complete and acceptance is recommended. Necessary concurrence from other agencies are attached hereto.

Acceptance recommended by:	
RESIDENT ENGINEER	DATE

Accepted by:	
ENGINEERING PROJECT LEADER	DATE

Accepted by:	
DEPUTY EXECUTIVE OFFICER, CONSTRUCTION	DATE
DEPUTY EXECUTIVE OFFICER, OF OPERATIONS/FACILITY MAINTENANCE	DATE
DEPUTY EXECUTIVE OFFICER, ENGINEERING	DATE

SECTION 4.12
DOCUMENT CLOSEOUT

1.0 PURPOSE

This procedure describes the process for transferring project files to the MTA Records Management Center (RMC) when the contract is complete.

2.0 GENERAL

Unless otherwise specified by contract, all correspondence and documents received or generated to support MTA construction/engineering projects are the property of the MTA, including documents submitted by the contractor. After a contract is physically completed, the resident engineer (RE) has performed the necessary physical and fiscal closeout processes, and the MTA has accepted substantial completion of the contract, the contract files will be turned over to Document Control for transfer to the RMC for long-term retention, and for use by MTA Operations and Maintenance. Electronic indexes referred to in this procedure include the Contract Change System (CCS) for Change Orders, Change Notices, Requests for Information, Requests for Change, submittals, claims, and Records Management System (RMS).

The RE may designate Document Control to maintain the project files during construction. In which case, Document Control will have responsibility for completeness and accuracy of files as well as proper indexing and identification.

3.0 DEFINITIONS

3.1 *Records Management System (RMS):* The automated MTA correspondence and document indexing system.

3.2 *Sequence Files:* Correspondence and documents filed in sequence number order. See GREP 3.4, Document Control, for further definition.

3.3 *Case Files:* Files segregated by document type such as Change Orders and submittals. Such files are segregated to provide efficient retrieval for use by MTA Construction and/or Operations and Maintenance.

3.4 *Contract Control System (CCS):* The MTA automated contract change and submittal tracking system. CCS is used to track and index RFIs, RFCs, Change Notice, Change Orders, Claims, and Contractor Submittals. The RMS index is also maintained in CCS.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The RE is responsible for ensuring that contract records and files are closed out and transferred in a timely manner. The RE is responsible for ongoing verification of file quality and completeness. The specific closeout activities described below should begin prior to physical contract completion.

4.2 DOCUMENT CONTROL

Document Control is responsible for coordinating the activities described in this procedure with the RE. Document Control is responsible for processing Operations and Maintenance related submittals including as-built contract documents, and as-built shop drawings, permits and warranties, and operations and maintenance manuals. Refer to GREP 4.16 Operations and Maintenance Submittal Processing.

4.3 RECORDS MANAGEMENT CENTER (RMC)

The RMC has overall responsibility for long term storage, protection, and retrieval of contract files and documents following closeout. The RMC is responsible for accepting closeout records and for coordinating transfer to long term storage. The RMC is responsible for determining document retention requirements, and for approving any requests to destroy or discard duplicate documents.

5.0 PROCEDURE

To ensure complete files are transferred to the MTA at closeout (e.g., file verification at contract closeout), an on-going verification of files should be performed by the RE throughout the duration of the contract. Maintenance of document files may also be periodically audited by Quality Managment and/or Document Control staff throughout the life of the contract.

5.1 VERIFICATION OF FILE COMPLETENESS

5.1.1 ELECTRONIC LOG AND SEQUENCE FILE REVIEW

The RE will review the associated electronic indexes and logs against files to ensure that all sequence numbers are listed and properly identified, making corrections or additions as necessary. If a sequence number has been canceled, the sequence number will be input to the index and the word "canceled" inserted in the description field. In addition to the review of RMS document indexes, the RE will review case files against logs maintain in CCS (RFI, RFC, Change Notices, Change Orders, Submittals, Claims) to ensure that both files and logs are complete. Any unused sequence numbers in CCS will be added and identified as a "not used" record. The RE will verify that all required submittals have been received and accepted before turning records over to Document Control for transfer to the RMC. A target sheet will be inserted in the file indicating the canceled sequence number. If a document is missing from the file, the RE will make every effort to locate the document.

5.1.2 GENERAL FILE ORGANIZATION

All physical document files will be organized and turned over in accordance with GREP 6.10, Document Control and CF12, File Coding System.

5.1.3 CASE FILE ORGANIZATION

Contract Change Files: Change files will be organized sequentially by Change Order number. Supporting documentation for Change Notices, Requests for Change/Information, and claims shall be filed with the corresponding Change Order, in the order required by MTA Policy CF14, Change Control: Construction/Procurement Contracts for CIP Projects. Change Notices, Requests for Change/ Information, and Claims which have been canceled, withdrawn, or not incorporated into a Change Order file for any reason (i.e., unresolved claim) shall be organized by the sequential number under their appropriate subject code.

5.2 BOX PREPARATION

5.2.1 BOXING AND IDENTIFICATION

When verification is complete, all field records will be boxed, indexed (using the Records Index and Storage Request, refer to GREP 6.10) by the RE in accordance with the Document Control records storage procedure (refer to GREP 6.10). The records will be boxed and indexed so that they are securely enclosed and identified for storage. Document Control will coordinate with the RE to ensure that boxes are properly indexed. The type and size of record storage boxes will be in accordance with MTA requirements. Case files will be segregated into separate boxes.

5.2.2 In addition to the sequence files, the RE shall box, index, and label all remaining project-related files. These include, but are not limited to, subject files, photographs, RE and inspector diaries, delivery tickets, concrete pour cards, inspection records, test reports, analyses, estimates, schedules, survey and geotechnical material, and radio and audio tapes. If these records are maintained by other departments, the RE shall notify these departments that the contract is complete and that all records shall be transferred to the RE for closeout preparation.

5.3 TRANSFER OF DOCUMENTS

Prior to transfer to the RMC, Document Control staff will review the box indexes and file boxes prepared by the RE for completeness and request any corrections to the files, as necessary.

Copies of Records Index and Storage Requests will be sent to the MTA Contract Administrator and MTA Document Control Manager. Operations and Maintenance Submittals (as-builts, approved shop drawings, approved operations and maintenance manuals, warranties, etc.) are retained for MTA Operations. All other records will be delivered to the RMC or to a storage location specified by the RMC.

6.0 REFERENCES

The following documents are available under separate publication:

Document	Title
GREP 6.10	Document Control
CF6	Contract Closeout and Transfer of Records
CF12	File Coding System
CF14	Change Control: Construction/Procurement Contracts for CIP Projects

7.0 EXHIBITS

None

SECTION 4.13
SAFETY CERTIFICATION

1.0 PURPOSE

This procedure describes the process used to verify safety-readiness of new construction and retrofit projects.

2.0 GENERAL

The RE supports the MTA Safety Certification Program. The process described verifies conformance to safety-related requirements via design reviews, construction inspections, submittal reviews, testing, and other processes deemed appropriate.

3.0 DEFINITIONS

Safety Certification Conformance Checklist: A compilation of safety-related items extracted from contract documents. A separate checklist will be prepared, reviewed, and approved for each certifiable system and facilities contract. Each line item will require some form of documented approval (e.g., approved submittal, inspection report, photograph, or other means acceptable to the Safety Certification Manager) to be considered verified.

Each document will include the appropriate approval stamp as evidence of review acceptance by the engineer. If the document is a submittal, only the submittal cover page, the engineer acceptance stamp and the specific representative page(s) of the submittal that provides evidence of compliance need be provided. The balance of the pages for the submittal are not required. Items that are multiple submittals (such as test reports for rebar steel) should have a representative sample provided, but not necessarily every submittal.

4.0 RESPONSIBILITIES

The MTA responsible department for each project will coordinate with the Safety Certification Manager on determining if a project is subject to safety certification. It will then be determined if and to what extent the project will be subject to safety certification. The RE has overall responsibility for verifying safety certification requirements, and if applicable, for verifying compliance with Certification Checklist items. The RE may utilize the assistance of others as appropriate.

The RE is responsible for seeing that the checklist is completed prior to contract closeout.

5.0 PROCEDURE

5.1 SAFETY CERTIFICATION MANAGER

The responsible MTA Department shall coordinate with the MTA Safety Certification Manager to identify applicable requirements if any.

The MTA Safety Certification Manager provides the Certification Checklist (if applicable) to the RE for each certifiable contract, if required for a project. Engineering prepares the safety certification checklist upon request of the Safety Certification Manager via the appropriate Engineering Project Leader.

5.2 RESIDENT ENGINEER

The RE implements the following:

5.2.1 Establishing and maintaining a separate file for safety certification documents. This separate file shall contain copies, not the original documents. The file structure shall be consistent with the item numbers on the Certification Checklist. The file shall contain the safety certification checklist verification book, (if applicable)

5.2.2 Identifying safety certification items in the computerized Submittal Module of the Contract Control System (CCS) by adding the letters "SFC" in the category block of the computer input screen (refer to Exhibit-7-1 for an example of the resulting computer output).

5.2.3 Monitoring safety certification submittals and project documents (e.g., daily inspection reports and test reports) regarding receipt, review (documented with transmittal letters), approval, and follow up, as required.

5.2.4 Placing the contract safety certification documents in a binder(s) indexed by the Certification Checklist item number. This Safety Certification Book shall contain the appropriate documentation that verifies each requirement, and a copy of the checklist.

5.2.5 Verifying each item on the Certification Checklist by completing, signing, and dating the Safety Item Verification (Exhibit 7-2), for each checklist item and placing the completed forms in the Contract Safety Certification Book.

5.2.6 Preparing and signing a Safety Certification Conformance Checklist Certificate (Exhibit 7.3) for the contract upon completion of the verification, and placing the document in the Contract Safety Certification Book.

5.2.7 Submitting the Contract Safety Certification Book(s) to the MTA Safety Certification Manager for review and acceptance. Open items requiring follow up action shall be listed and tracked on the contract closeout punchlist. Safety certifications must be accepted by the Safety Certification Manager before the contract can be closed.

5.3 ENGINEERING

Engineering prepares a safety certification checklist as requested by the Safety Certification Manager via the appropriate Engineering Project Leader.

5.4 CONTRACTOR

The contractor interfaces with the RE's office and others, as necessary, to comply with the specifications.

6.1 DOCUMENTATION

The RE shall file the safety certification book with the project file.

6.0 REFERENCES

None

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Sample Submittal Status Log: Safety Certification Items
7.2	Safety Item Verification
7.3	Safety Certification Conformance Checklist Certificate

THIS REPORT LISTS: ALL SCHEDULED
SUBMITTALS IDENTIFIED AS SAFETY CERTIFICATION ITEMS

METRO SYSTEM
R81 - Metro Red Line Seg-3

SUBMITTAL STATUS LOG: SAFETY CERTIFICATION ITEMS

DUE DATE RANGE: ALL - ALL
DATA SCOPE: R818646

DATA AS OF: 06/03/94

CONTRACT: 8646 / TRANSIT AUTOMATIC CONTROLS SCADA (TRACS)

CONTRACTOR: AXYAL CORPORATION

SUB # / CORE # / TYPE	SUBMITTAL TITLE	DUE IN	RECEIVED / CRE #	RETURNED / REC #	SUB/VENDOR / REVIEW RESPONSIBILITY	DISPOSITION / BALL IN COURT	AGE
10-10.11.8-2.00 62 00016 /TST/SFC	EMI MITIGATION TEST PLAN 1. FOUR (4) WEEKS BEFORE INTEGRATION TEST/1 TIME/APPROVAL REQUIRED, 5-2A, 2B*, 3*, (*RTU'S ONLY).	12/31/85			EMC	CONTRACTOR	***
10-10.11.8-3.00 63 00016 /TST/SFC	EMI MITIGATION TEST PLAN 1. FOUR (4) WEEKS BEFORE INTEGRATION TEST/1 TIME/APPROVAL REQUIRED, 5-2A, 2B*, 3*, (*RTU'S ONLY).	12/31/86			EMC	CONTRACTOR	***
10-10.14-2.00 62 00018 /OTH/SFC	MAINTAINABILITY PLAN 1. FOUR (4) WEEKS AFTER LOCAL FIELD ACCEPTANCE TEST/1 TIME/APPROVAL REQUIRED, 5-2A, 2B, 3.	12/31/85			EMC	CONTRACTOR	***
10-10.14-3.00 63 00018 /OTH/SFC	MAINTAINABILITY PLAN 1. FOUR (4) WEEKS AFTER LOCAL FIELD ACCEPTANCE TEST/1 TIME/APPROVAL REQUIRED, 5-2A, 2B, 3.	12/31/85			EMC	CONTRACTOR	***
10-10.3-2.00 62 00010 /TST/SFC	TEST PLAN 1. 260 DAYS/1 TIME/APPROVAL REQUIRED, 5-2A, 2B.	12/31/85			EMC	CONTRACTOR	***
10-10.3-3.00 63 00010 /TST/SFC	TEST PLAN 1. 260 DAYS/1 TIME/APPROVAL REQUIRED, 5-2A, 2B, 3.	12/31/[illegible]			EMC	CONTRACTOR	***
10-10.4-2.00 62 00012 /PRC/SFC	TEST PROCEDURES 1. 6 WEEKS BEFORE EACH TEST DATE/APPROVAL REQUIRED, 5-2A, 2B, 3.	[illegible]2/31/85			EMC	CONTRACTOR	***
10-10.4-3.00 63 00012 /PRC/SFC	TEST PROCEDURES 1. 6 WEEKS BEFORE EACH TEST DATE/APPROVAL REQUIRED, 5-2A, 2B, 3.	12/31/86			EMC	CONTRACTOR	***
10-10.6.3-2.00 62 00013 /OTH/SFC	FINAL REPORTS 1. TWO WEEKS FOLLOWING EACH TEST GROUP/APPROVAL REQUIRED, 5-2A, 2B, 3.	12/31/86			EMC	CONTRACTOR	***
10-10.6.3-3.00 63 00013 /OTH/SFC	FINAL REPORTS 1. TWO WEEKS FOLLOWING EACH TEST GROUP/APPROVAL REQUIRED, 5-2A, 2B, 3.	12/31/86			EMC	CONTRACTOR	***

LEGEND: (√) – COMPLETE; (!) – OVERDUE FROM CONTRACTOR; (#) – IN PROCESS; ( ) – RESPONSE REQUIRED; (+) RESPONSE RECEIVED

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JIM STUBBLEFIELD
MASTER SCHEDULE 06/03/94 09:28:34

Sample

Exhibit 7.2

SAFETY ITEM VERIFICATION

CHECKLIST ITEM NO.:	CONTRACT NO.:
REQUIREMENT:	
DOCUMENT REFERENCES	
The documentation identified and included herein is evidence that the requirement has been completed.	
RESIDENT ENGINEER SIGNATURE:	DATE:

Exhibit 7.3

SAFETY CERTIFICATION CONFORMANCE CHECKLIST CERTIFICATE

SAFETY CERTIFICATION PROGRAM

Completion of this Certificate indicates that the certificate element indicated below complies with all applicable specification safety requirements and is judged safe for public use/revenue service.

Certifiable Element:

Exceptions Noted:

As Applicable:

Print Name:

Resident Engineer

Signature:

Resident Engineer/Date

SECTION 4.14
NOT USED

SECTION 4.15
READINESS REVIEW

1.0 PURPOSE

1.1 The purpose of this procedure is to provide the Resident Engineer (RE) with guidelines for conducting Readiness Reviews. Readiness Reviews will evaluate the preparedness for accomplishing designated construction operations or activities.

1.2 The Readiness Review will address all construction operations or activities as determined by the RE. Readiness Reviews are not needed for every work activity, but any work activity may be scheduled for a Readiness Review at the RE's discretion.

2.0 GENERAL

2.1 Depending on scope of work, participants in the Readiness Review meeting may include:

- Resident Engineer
- Inspector(s)
- Quality Manager
- Contractor representative(s)
- Engineer
- Safety representative
- Public Affairs representative
- Third Party Administration representative
- Environmental Compliance/Services
- Other Support personnel as determined by the RE

2.2 The RE is responsible for scheduling the meeting, conducting the meeting, maintaining and issuing meeting minutes, and notifying the contractor to commence work. The notification to commence work may be either in the meeting notes or in a letter to the contractor.

2.3 The RE is responsible for reviewing contract requirements and preparing a Readiness Review checklist in accordance with established CM Readiness Review procedures. The checklist shall be issued for review by the attendees prior to the meeting.

2.4 The Readiness Review meeting shall be conducted prior to the start of the work. All checklist items must be satisfactorily completed or action(s) agreed to by the RE before authorization to start work is granted by the RE. Exceptions or omissions of requirements discovered during the Readiness Review meeting will be noted in the meeting minutes. Dates will be assigned for the completion of action items. The RE will be responsible to ensure that the Contractor resolves open issues noted in the meeting minutes.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

4.1 Resident Engineer: Shall be responsible for issuing the meeting notice, preparing the agenda, chairing the meeting, preparing meeting minutes, identifying action items, closeout of action items and maintaining a project file of Readiness Reviews. The RE shall be responsible for issuing the notice to proceed to the contractor.

4.2 Meeting Participant: Shall assist the RE in reviewing the Readiness Review checklist and making any

recommendations to the meeting. Shall review the checklist in the meeting and advise and assist the RE in determining if the submitted documents meet the checklist requirements.

4.3 Contractor: Shall supply the necessary personnel with the authority to act on their behalf. Supply the latest version of the design documents for review and identify any relevant issues/topics for the meeting agenda.

5.0 PROCEDURE

5.1 CHECKLIST

5.1.1 The RE prepares a checklist of contract required items, i.e., shop and working drawings, QC instructions, supplier samples, catalog cuts, material certifications, and any issues to be reviewed and/or discussed at the Readiness Review Meeting.

5.1.2 The RE shall send a copy of the Readiness Review checklist to the proposed attendee for their comments prior to the issue of the Readiness Review meeting notice. The attendees would review the list and suggest any additions or deletions.

5.1.3 The Readiness Review Checklist shall be distributed with the meeting notice and the agenda.

5.2 MEETING AGENDA

The RE prepares the meeting agenda utilizing Contractor's input.

5.3 MEETING NOTICE

5.3.1 The RE reviews the latest issue of the contract and determines which items apply to the subject work effort. A checklist of applicable items is then prepared.

5.3.2 The RE uses the Readiness Review checklist as a guide during the meeting.

5.3.3 The RE distributes the meeting notice, with the checklist and agenda, to all attendees.

5.4 READINESS REVIEW MEETING

5.4.1 The RE conducts the meeting according to the agenda and distributes the meeting minutes.

5.4.2 The RE assigns action items as appropriate. All action items must be resolved to the RE's satisfaction prior to start of the work.

5.4.3 The RE tracks all of the action items and verify closeout prior to start of work associated with the action items.

5.5 ACCEPTANCE CRITERIA

5.5.1 Design Documents/Specifications: The latest revision of the documents per the contract has been received by the contractor/manufacturer.

5.5.2 Contractor/Manufacturer Submittals: Required submittals have been received, reviewed and approved by the RE.

5.5.3 Contractor/Manufacturer Procedures: Required procedures have been received, reviewed and approved by the appropriate party.

5.6 RECOMMENDED READINESS REVIEW MEETING SUBJECTS

- Traffic Maintenance: Haul route plans, traffic control plans, etc.
- Permits: Review and assure appropriate permits are obtained before related work starts.
- Design Drawing: A list of appropriate design drawings and revision identification.
- Design Specifications: Appropriate specification(s) and revision identification.
- Contract Submittals: Required submittals based on the latest revision of the contract.
- Contractor Construction Work Plan (CWP): The appropriate CWPs shall be listed and verified to be ready for implementation. Each CWP will list the operations to be performed in a step-by-step manner, and inspection points (including CM witness points) with appropriate reference to installation and inspection procedures.
- Manufacturer Quality Control (QCP): The appropriate QCPs shall be listed and in-place.
- Manufacturer Recommendations: Any appropriate manufacturer recommendations as they apply to the scope of work shall be listed in the Readiness Review checklist.
- Hazard Analysis: The hazard associated with the construction operation or activity shall be identified and measures to be implemented to reduce/eliminate these hazards shall be agreed upon.
- Health and Safety: Any appropriate health and safety procedures need to be reviewed with the contractor/manufacturer.
- Start-Up: Preparation for systems integration testing.

6.0 REFERENCES

Construction Division Inspection Instruction (CDII) Manual

7.0 EXHIBITS

None

SECTION 4.16
O & M SUBMITTAL PROCESSING

1.0 PURPOSE

This procedure provides guidelines for the processing of operations and maintenance (O&M) submittals for both facilities and systems contracts. Although generally processed as a contractor submittal in accordance with GREP 6.1, O&M submittals require additional special handling as a deliverable to MTA Operations and/or Maintenance.

2.0 GENERAL

The O&M manual format and content for the facilities contracts are described in O&M Specification Section. The O&M Manual may include warranties; spare parts and replacement materials; listings as-built shop drawings; product data, and samples. O&M submittal requirements for the systems contracts are detailed in various technical provisions of those contracts. Once received by the contractor, they are sent to the Engineer and the appropriate MTA Operations and/or Maintenance department for acceptance.

3.0 DEFINITIONS

O&M Submittal: Any accepted contractor submittal that includes information required to be provided or made available to Operations and/or Maintenance. O&M Submittals may include, but are not limited to, O&M Manuals, Narratives, As-Builts, PRDs, Product Data, Warranties, and Parts Lists.

4.0 RESPONSIBILITIES

4.1 Contractor: The contractor is responsible for submitting all manufacturer operations and maintenance documents in accordance with the agreed submittal schedule. The Contractor is responsible for identifying any and all warranties contained in such manuals in submittal documentation, and for providing any updates to manuals received following initial submittal and acceptance.

4.2 Resident Engineer: The RE is responsible for implementing this procedure and coordinating O&M Submittal processing.

4.3 Document Control: Document Control is responsible for storage, protection, and maintenance of O&M submittals and coordinating the transmission of O&M documents to Operations and/or Maintenance.

5.0 PROCEDURE

5.1 ACCEPTANCE AND DISPOSITION PROCESS - O&M MANUALS

5.1.1 The RE submits the proposed O&M manual format to the Engineer and Operations and/or Maintenance for review.

5.1.2 The Engineer and Operations/Maintenance return the reviewed manual format to the RE for transmittal to the contractor, who revises the format and/or content per the review comments.

5.1.3 The contractor will then submit a complete manual to the RE for review and acceptance.

5.1.4 The RE will review the manual for compliance with submittal and format requirements. The RE will also review the manual to ensure that all warranties and as-built drawings contained in the manual are identified.

5.1.5 The Engineer and Operation and/or Maintenance will review and return comments within the specified review time frame.

5.1.6 Upon receipt of the reviewed manual from reviewers, the RE will retain a copy of the review comments and return the reviewed manual to the contractor for correction, if required.

5.1.7 The contractor will then submit copies to the RE of the corrected manual in accordance with contract requirements.

5.1.8 The RE reviews the manual to ensure that the review comments have been properly incorporated. Manuals without full corrections will be returned to the contractor for appropriate action. The contractor will be notified of manual acceptance via transmittal.

5.1.9 The RE will forward all copies except one to Document Control. One copy will be retained by the RE for the project file.

5.1.10 The RE will notify the Contractor of the change in address for forwarding any subsequent updates to the manuals received from the manufacturer or other originator.

5.2 SYSTEMS APPROVAL AND DISPOSITION PROCESS - O&M MANUALS

Document Control will coordinate with the RE throughout the contract to identify, distribute, and maintain accepted O&M submittals.

6.0 REFERENCES

GREP 6.01	Submittals
GREP 4.12	Document Closeout
CF4	Document Control: Contractor Submittals Processing

7.0 EXHIBITS

None

SECTION 4.17
SUSPENSION OF WORK NOTICE

1.0 PURPOSE

This procedure describes the purpose of a Suspension of Work Notice (Exhibit 7.1) and steps to be used for completion.

2.0 GENERAL

The RE, or MTA through its designated representatives may order a work stoppage until the unsafe or deficient conditions are corrected. The following are some examples warranting a Suspension of Work Notice:

- Life threatening or unsafe conditions to workers.
- Danger to the General Public.
- Clearance from a utility company or government agency to proceed is required and has not been secured.
- Work performed is not in accordance with the contract documents.
- Failure to abate a quality or safety deficiency.

The RE and the MTA shall have the authority to issue a Suspension of Work Notice (Exhibit 7.1), to any contractor and/or subcontractor who fails or refuses to take prompt corrective action when given notice of noncompliance with any of the applicable requirements, or informed of a deficient condition, or unsafe practice.

This procedure does not preclude any worker from refusing to work due to unsafe conditions or practices. Each worker on the project has the responsibility to look for unsafe practices and conditions, and has the authority to stop an operation that is an imminent danger to either themselves or to others.

3.0 DEFINITIONS

Refer to Resident Engineer Procedure GREP 4.1 for general definitions.

4.0 RESPONSIBILITIES

4.1 SAFETY ISSUES

The following are authorized to issue a Suspension of Work Notice for life threatening, and repeated non-compliance with applicable laws or regulations that require immediate corrective action. Issuance of the Suspension of Work Notice shall be coordinated with the RE and the contract administrator. Work shall be shut down until the condition is corrected.

- Resident Engineer (RE)
- Quality Manager(s)
- Quality Control Inspectors
- System Safety and Security Staff
- Construction Division Management

4.2 QUALITY ISSUES

The following personnel are authorized to issue a Suspension of Work Notice for work activities that are not being performed in accordance with the contract documents.

- Resident Engineer (RE)
- Quality Manager(s)/Director
- Quality Control Inspectors
- Construction Division Management

When a Suspension of Work Notice is issued for a quality matter, the deficient condition shall be documented on a nonconformance report, in accordance with the MTA Quality Management Procedures.

4.3 ENVIRONMENTAL ISSUES

The following are authorized to issue a Suspension of Work Notice for life threatening, and repeated non-compliance with applicable Environmental laws or regulations that require immediate corrective action.

- Resident Engineer (RE)
- Quality Manager(s)
- Quality Control Inspectors
- Construction Division Management
- Environmental Staff

5.0 PROCEDURE

When a Suspension of Work Notice (Exhibit 7.1) is issued, the following procedures shall be followed.

5.1 COORDINATING SUSPENSION OF WORK NOTICE

The Suspension of Work Notice shall be issued by an authorized MTA Representative and shall be coordinated with the appropriate RE, and MTA Safety, Quality, or Construction Management. The RE shall notify the contractor of a suspension of work action.

5.2 COMPLETING THE SUSPENSION OF WORK NOTICE

5.2.1 ASSIGNING CONTROL NUMBERS

The RE shall assign a unique control number to each Suspension of Work Notice. The control number shall consist of the contract number, last two digits of the current year, and sequence number (e.g., B251-94-01).

5.2.2 MAINTAINING SUSPENSION OF WORK NOTICE LOG

The RE's office for each contract shall maintain a Suspension of Work Notice Log (Exhibit 7.2).

5.2.3 DETERMINING APPLICABLE REFERENCE

Determine the applicable section/paragraph, etc., of the contract that relates to the Suspension of Work. For safety or quality deficiencies list the appropriate standard or requirement. The following are examples for safety: California Occupational Health and Safety (Cal/OSHA) standard (Title 8); Occupational Safety and Health Administration (OSHA) standard (29 CFR 1910); or Construction Safety and Health Manual. Enter information in Section 4 of the Suspension of Work Notice. It is recommended that a photocopy of the applicable reference be attached to the Suspension of Work Notice.

5.2.4 SELECTING SUSPENSION OF WORK CATEGORY

Check the appropriate box to indicate which category of deficient or unsafe condition the Suspension of Work Notice is addressing.

5.2.5 AFFECTED WORK

Specifically identify on the Suspension of Work Notice the work area where the suspension applies.

5.2.6 REMARKS

Clearly identify the hazard or exposure to employees or the general public (or why work is not in accordance with the contract documents) on the Suspension of Work Notice. Note any recent conversations with the contractor relative to the situation, including the names of contractor's representatives.

5.2.7 ISSUED BY

Complete the "issued by" portion of the Suspension of Work Notice form (Exhibit 7.1)

5.3 DISTRIBUTION

Distribute copies immediately to the following personnel:

- Resident Engineer
- Executive Officer of Construction
- Deputy Executive Officer, Construction
- Director, Quality Management
- Managing Director, Office of System Safety and Security
- Contract Administrator

The RE shall deliver copies of the Suspension of Work Notice to the contractor, and shall follow up with written directions to the contractor towards correcting the deficiency and preventing future reoccurrence. A Suspension of Work Notice involving subcontractors shall be issued to the contractor.

5.4 AUTHORIZING RESUMPTION OF WORK

When all corrective actions are completed by the contractor, the RE with concurrence from the initiator of the Suspension of Work Notice shall authorize resumption of work by signing and dating the Suspension of Work Notice and forwarding copies to the contractor and those who received original copies in accordance with subsection 5.3.

5.5 FAILURE TO COMPLY WITH SUSPENSION OF WORK NOTICE

If the contractor is issued a Suspension of Work Notice and contractor personnel work in spite of that notice, the responsible contractor management personnel shall be subject to disciplinary actions in accordance with MTA contract documents, including days off work or termination from the project for the duration of the contract. Additionally, contractors and/or subcontractors that choose not to comply with the Suspension of Work Notice are considered to be in violation of contract requirements and may be subject to withholding of future payments pending acceptable MTA resolution. Removal of personnel shall be in accordance with the General Conditions of the contract, and procedures outlined in GREP 4.19, Removal Of Contractor Personnel for Safety Related Causes.

6.0 REFERENCES

The following documents are referred to in this procedure and are available under separate publication:

6.1 CM DOCUMENTS

Document	Title
GREP 4.01	Safety

6.2 OTHER DOCUMENTS

1. MTA Contract Documents
2. Construction Safety and Health Manual (CSHM)
3. OSHA Safety and Health Standards 29CFR 1910 General Industry
4. OSHA Safety and Health Standards 29CFR 1926 Construction Industry
5. California Code of Regulations (CCR) Title 8 -- Tunnel Safety Orders
6. CCR Title 8 -- General Industry Safety Orders
7. CCR Title 8 -- Construction Safety Orders
8. CCR Title 8 -- Electrical Safety Orders
9. CCR Title 8 -- all other subchapters
10. MTA Quality Program Manual

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Suspension of Work Notice
7.2	Suspension of Work Notice Log

Exhibit 7.1

SUSPENSION OF WORK NOTICE

1. Contract # _____
2. Issue # _____
3. File:

4 Pursuant to Section _____ of the contract, the contractor is hereby directed to immediately suspend work on the below described work until further notice due to the following checked items.

- ☐ 1. Life threatening or unsafe conditions.
- ☐ 2. Danger to the General Public.
- ☐ 3. Clearance from utility company to proceed is required and has not been secured.
- ☐ 4. Work performed is not in accord with the Contract Documents.
- ☐ 5. Contractor is not in compliance with applicable laws or regulations.

5. Affected Work:

6. Remarks:

7. Issued by: _____ Date: _____

_____ Time: _____

Signature

_____

Title

8. Resolution (that allows work to commence):

9. Commencement of work approved:

_____ _____

Date Signature

_____

Title

Distribution: White - Contractor Pink - RE

Exhibit 7.1 (Continued)

SUSPENSION OF WORK NOTICE INSTRUCTIONS

Section of Form	Instruction:
1.	Insert applicable contract number (e.g., B229, C0310, etc.).
2.	Insert number assigned by the lead inspector.
3.	Insert applicable job file number.
4.	Insert applicable section of the contract, safety manual, or OSHA standard for which the contractor is in noncompliance. Check the appropriate item (1 through 5) applicable to the suspension of work. More than one item may apply.
5.	State the affected area of work (e.g., pile operation at Station 529+50, sand blasting operation in the AL tunnel between Station 102+69 and 118+22, etc.)
6.	Specific reason for stopping work (e.g., Dig Alert has not marked utilities prior to starting pile operation, Employees do not have appropriate respiratory protection, and the ventilation system is inoperative, etc.)
7.	Print and sign your name. Add the time and date when you signed. Include your title (e.g., senior inspector, safety engineer, etc.)
8.	Describe the resolution that allows work to commence.
9.	Only after the contractor has corrected the unsafe condition/act or has agreed to correct the work performed not in conformance with the contract documents shall the approval to commence work be completed. Only the person who issues the Suspension of Work Notice or his/her superior has the authority to complete this section.

Distribution for the completed Suspension of Work Notice is shown at the bottom of the form. In addition, also distribute the completed Suspension of Work Notice to the area manager; CM; Manager, Safety and Security (if the suspension is for an unsafe condition[s] or act[s]); and the appropriate functional manager.

Distribution for the completed Suspension of Work Notice is shown in subsection 5.3 of GREP 4.17.

Exhibit 7.2

SUSPENSION OF WORK NOTICE LOG

Contract Number:

Contractor Name: _____ _____

No.	Description	Originator	Spec. Section	Date Issued	Date Corrected	Date Work Authorized to Commence

SECTION 4.16
NOT USED

1.0 PURPOSE

This procedure describes the steps required for removing a contractor employee from the project for safety related causes. Refer to General Conditions for removal of contractor personnel for other causes.

2.0 GENERAL

The MTA or the RE may direct the contractor to remove any employee from the work site who is determined by the MTA or the RE to be intemperate, incompetent, a threat to the safety of persons or the work, or who fails to perform the work in an acceptable safe manner.

Project work shall be in compliance with contract documents, FED/OSHA, CAL/OSHA, and local safety & health requirements in addition to those incorporated by reference.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

The contractor is responsible for maintaining a safe work environment. The following duties are assigned as part of the daily management of the project safety program:

- Monitor the safe work practices of the contractor.
- Require timely application of safety and incident prevention programs to project work site activities, and for all persons on the project.
- Notify the RE of contractors or individuals who continually and/or deliberately violate safety regulations, and initiate action to remove offenders from the project, as required.
- Order a suspension of work in case of potential life-threatening, or serious safety hazards requiring immediate corrective action.
- Order a suspension of work when work performed is not in compliance with the safety aspects of the contract documents.

4.1 MANAGING DIRECTOR, SYSTEM SAFETY AND SECURITY

The Managing Director, System Safety and Security is responsible for monitoring the administration of the project safety, health, and environmental programs, development of the project safety plan; health and safety of construction activities; and compliance with safety requirements. The MTA Managing Director of System Safety and Security, or designee shall review contractor project safety programs, and qualifications of contractor safety representatives, which must be approved prior to the commencement of work. The MTA Construction Safety staff provides technical assistance to the MTA Construction Division, CM and RE's staff, contractor, and subcontractor personnel.

4.2 RESIDENT ENGINEER

The RE will oversee and enforce the contractor's timely application of safe work procedures, and incident prevention procedures for all construction activities, and all persons on the project. The RE shall report unsafe working conditions to the Contractor.

5.0 PROCEDURE

5.1 The contract documents require the contractor to perform work in accordance with numerous specifications, including those cited in Section 2.0 of this procedure.

5.2 An employee may be removed from the project for incompetence or disorderly, improper, or unsafe conduct or work practices. The infractions may include, but are not limited to, the following:

- Refusing to comply with a safety regulation after being advised by the CM or MTA staff (e.g., failure to tie off with lanyard and appropriate safety harness)
- Repeated serious safety violations (e.g., failure to follow project fall protection policy)
- Reckless disregard for the safety of another worker or himself/herself (e.g., removing a floor cover and failing to install protective guard rails or barricade)
- Creating a condition that results in an incident causing injury to another person or himself/herself (e.g., failure to secure a ladder that contributed to someone falling off the ladder)
- Failure to comply with a safety related Suspension of Work Notice
- Giving a false name to the MTA or RE staff
- Knowing and/or willful violation of a serious safety standard
- Under the influence of any alcoholic beverage or controlled or illegal drug
- Possession of an alcoholic beverage or controlled or illegal drug
- Failure to comply with lockout/tagout procedures
- Willful destruction of project property
- Theft of project property
- Repeated nonattendance at contractually required safety meetings
- Possession of a firearm
- Repeated noncompliance with Work Area Traffic Control Handbook (WATCH) and City of Los Angeles Department of Transportation requirements
- Fighting (determine who was the aggressor; if the aggressor cannot be determined, both parties are considered to be the aggressor)
- Verbally threatening MTA or RE staff
- Proceeding with work not approved after being advised that work is not in compliance with safety aspects of the contract specifications
- Knowing and/or willful, serious violation of a safety standard

5.1 Safety infractions may be reported to the RE by his/her staff, MTA Safety staff, interested third parties or members of the public. The RE shall investigate circumstances of safety infractions that may be serious enough to prompt removal of contractor personnel. The RE, with assistance from MTA Safety staff and information from the contractor, shall review the incident details and conclude the reasonable account of the infraction. In determining if personnel removal is necessary, consideration shall be given to the contractor's disciplinary or rehabilitative remedies following the incident. If the RE is satisfied that the contractor employee does not present an unacceptable risk to repeat behavior, representing a hazard to himself or others, removal from the project may not be required. Recommendations of MTA Safety staff, calling for removal of contractor personnel, shall be followed unless there are documented, compelling reasons not to do so. If the RE does not consider the contractor's response sufficient to assure against recurrence or if the RE considers the documented violation so egregious that it would not be appropriate to allow the offending employee's continued participation on the project, the RE would then prepare a letter (Exhibit 7.1) to direct the contractor to remove the employee.

6.0 REFERENCES

The following documents are referred to in this procedure and are available under separate publication.

6.1 CM DOCUMENTS

Document	Title
GREP 4.01	Safety
GREP 4.17	Suspension of Work Notice

6.2 OTHER DOCUMENTS

1. MTA Contract
2. Construction Safety and Health Manual, contract documents
3. OSHA Safety and Health Standards 29CFR 1910 General Industry
4. OSHA Safety and Health Standards 29CFR 1926 Construction Industry
5. California Code of Regulations (CCR) Title 8 -- Tunnel Safety Orders
6. CCR Title 8 -- Construction Safety Orders
7. CCR Title 8 -- General Industry Safety Orders
8. CCR Title 8 -- Electrical Safety Orders
9. CCR Title 8 -- all applicable subchapters
10. Work Area Traffic Control Handbook

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Example of a Removal Letter

Exhibit 7.1

(EXAMPLE)

June 20, 1999

ABC Contractor
1212 South Street
Anytown, US 00100

SUBJECT: Removal of ABC Contractor employee

Gentlemen:

Per Section 1010 of the Summary of the Work, you are instructed to remove Mr. John Doe, an ABC Contractor employee, from the project immediately. Mr. Doe's attitude and action has created a hostile and unsafe work environment for city employees and ABC Contractor employees alike. He has verbally and physically assaulted city inspectors, engineers, and managers. His actions toward city employees are totally unacceptable and will no longer be tolerated.

Sincerely,

Ed Smith
Resident Engineer

SECTION 4.19
REMOVAL OF CONTRACTOR PERSONNEL FOR SAFETY RELATED CAUSES

SECTION 4.20
NOT USED

SECTION 4.21
VERIFICATION TESTING

1.0 PURPOSE

This procedure defines the Resident Engineer's (RE's) responsibility and processes for conducting verification testing of facilities contractors' material test programs.

2.0 GENERAL

2.1 Verification tests of the contractors' test activities are conducted by the RE to verify the effectiveness and accuracy of the contractor's test program and test results. The verification tests are performed by a qualified laboratory other than the laboratory used by the jobsite contractor.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

The RE is responsible for implementing and maintaining a program for verification testing to ensure the accuracy and effectiveness of the contractor test activities.

5.0 PROCEDURES

5.1 RESIDENT ENGINEER

The RE develops a plan and schedule for random material verification testing. As a minimum, the RE's plan and schedule shall include the following.

5.1.1 CONCRETE

At the start of structural concrete placement, the RE conducts compressive strength tests once each week for four weeks, and then once each month thereafter dependant upon the duration of concrete placement. No test is required if production is less than 50 cubic yards per placement.

5.1.2 WELDING

The RE selects a sample of two welds from the nondestructive examination (NDE) contractor's first 10 completed and accepted welds for both magnetic particle test (MT) and ultrasonic test (UT) methods and re-tests them in accordance with the applicable specification section. Thereafter and on a monthly basis, the RE selects for MT and UT verification testing, a sample on a monthly basis to include as a minimum 10% of welds tested and accepted by the contractor's test laboratory.

5.1.3 BACKFILL

At the start of backfill operations, the RE conducts one in-situ compaction test for every 10 performed by the contractor. The RE performs two tests per month thereafter, as backfill operations continue. Testing shall apply only when backfill activity is greater than 500 cubic yards per month.

5.1.4 OTHER TESTS

The following are examples of tests that the RE may conduct to verify that contractors' materials and testing are in accordance with the specification requirements. The RE establishes the frequency of verification tests based on the construction phase and previous performance history. Frequency may

increase or decrease depending on the activity, results of previous verification testing and size of the construction project. Frequency of testing is at the discretion of the RE; however, testing must be sufficient to demonstrate effectiveness and accuracy of the contractor's test program:

- Aggregate
  Material gradation and compaction
- Viscosity Grade and Asphalt Paving
  Compaction in accordance with the requirements specified in California Test 304
- Backfill
- Density of soils
- Mechanical analysis (gradation)
- Contract Specifications require testing of each 1,000 cubic yards for the following:
  Plasticity Index (PI)
  Liquid Limit (LL)
  Plastic Limit (PL)
- High Density Polyethylene (HDPE) [virgin material as delivered to the jobsite or storage facility]
  Tensile strength, per specification requirement
- Static Coefficient of Friction for Surfaces
- Steel: type/grade verification
- Wood products

5.1.5 TEST STANDARDS

The following shall apply to RE-conducted verification tests:

- The services of an independent testing laboratory approved by the Quality Control Manager are used to perform the verification testing.
- All RE-conducted verification tests shall be conducted in accordance with specification requirements. This is to ensure the accuracy of the contractor's test operations.
- RE verification test results are subject to the same level of review as the contractors' test results.
- All tests shall be documented on a log (refer to Exhibit 7.1 for an example) or equivalent (e.g., maintained on a computer).
- Items that fail to meet contract or specification requirements or are significantly different than the contractors' test results shall be documented and processed on a Nonconformance Report (see GREP 4.02, Field Quality Control Surveillance).
- Completed test reports and test log shall be maintained as RE project records.

6.0 REFERENCES

None

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Resident Engineer Verification Test Log for Contract ___ (Sample)

Exhibit 7.1

RESIDENT ENGINEER VERIFICATION TEST LOG FOR CONTRACT_____
(Sample)

DATE	TEST SUBJECT	SPEC. SECTION/ PARA.	CALL NUMBER	REPORT NUMBER	ACCEPT/REJECT	COMMENTS
					☐ ☐	
					☐ ☐	
					☐ ☐	
					☐ ☐	
					☐ ☐	
					☐ ☐	
					☐ ☐	
					☐ ☐	
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					☐ ☐	
					☐ ☐	
					☐ ☐	

SECTION 4.22
CONSTRUCTION WORK PLANS

1.0 PURPOSE

This procedure provides guidance to the Resident Engineer (RE) in evaluating Construction Work Plans (CWPs).

2.0 GENERAL

Contract Specifications may require the contractor to submit CWPs for work to be performed.

Properly developed and used, CWPs are a useful tool for both the contractor and the RE. Preparing CWPs for upcoming construction activities helps the contractor better plan its work. By alerting the RE and Quality Control inspectors to upcoming contractor activities, the CWPs enhance the RE's ability to perform its construction management duties by promoting better planning, communication, and understanding.

There are two different types of CWPs to be submitted by the contractor. These can be paraphrased as:

- Quality system work plans (e.g., calibration, special processes)
- Work activity work plans

3.0 DEFINITIONS

3.1 *Construction Work Plans:* detailed descriptions of a specific activity, including, as a minimum, the sequence of events, construction methods, responsibilities, and methods for verifying that work meets contract document requirements.

3.2 *Work activity work plans:* CWPs that describe a particular phase of work.

3.3 *Quality system work plans:* CWPs that address individual quality system processes.

4.0 RESPONSIBILITIES

4.1 QUALITY

Quality Management is responsible for reviewing quality system work plans. Quality system work plans include:

- Control of Materials, Equipment, Parts, Components and Services
- Control of Measuring and Testing Equipment
- Control of Special Processes
- Document Control
- Processing of Nonconformances
- Records
- Supplier Control
- Test Control

4.2 RESIDENT ENGINEER

4.2.1 IDENTIFYING WORK ACTIVITY PLANS

Work activity CWPs shall be agreed on by the contractor and RE. The contractor shall prepare the CWPs and submit them to the RE for acceptance. When requested by the RE, assistance will be provided to the

RE for these submittal reviews from other staff support (i.e., Third Party Administration, Quality Control, Environmental, etc.).

4.2.3 WORK ACTIVITY PLAN CONTENT

CWP content and format, as shown in the Sample Construction Work Plan (Exhibit 7.1), shall be communicated to the contractor by the RE. Not all work activities will be applicable to all contracts, and some activities may be more critical to some contracts than to others. Also, some contracts will have some unique activities that are specific to that jobsite. In that case, the RE may identify additional activities requiring a CWP.

4.2.3 WORK ACTIVITY PLAN ACCEPTANCE

CWPs shall be accepted by the RE. The RE shall ensure that the contractor provides adequate details to communicate the upcoming work activity. The RE is responsible for ensuring that applicable work activities requiring CWPs are identified by the contractor and agreed to by the RE. CWPs shall be retained as contract records. The RE informs Public Affairs of any CWP element that may impact the public.

5.0 PROCEDURE

5.1 CONTRACTOR

The contractor shall submit a CWP to the RE for acceptance prior to the commencement of each phase of work. The contractor may not begin activities covered by a CWP until the applicable plan is accepted by the RE.

5.2 RE

The RE must accept the contractor's CWP before each phase of work may begin.

6.0 REFERENCES

None

7.0 EXHIBITS

7.1 Construction Work Plan (Sample)

Exhibit 7.1

CONSTRUCTION WORK PLAN (SAMPLE)

	*CWP No: _____
Contractor: _____	Revision: _____
Contract No.: _____	Date: _____

1. Briefly describe the scope of work and applicable contract specification section:

2. Is a hazard analysis required for this activity?	☐ Yes	☐ No
3. Does work activity include any actions defined as a "Special Event" (may expose the general public to a high degree of danger, inconvenience, or risk)?	☐ Yes	☐ No

4. List of required submittals to complete the work activity:

5. The following are responsible for supervision and implementation of the work, including that the quality of the work meets the contract document requirements.

Name: _____	Position: _____	Organization: _____
Name: _____	Position: _____	Organization: _____
Name: _____	Position: _____	Organization: _____

6. Progress rate expected:

Start Date: Extended hours required? ☐ Yes ☐ No Total extended hours:

7. Prerequisite activities and related safety issues:

Exhibit 7.1

CONSTRUCTION WORK PLAN (SAMPLE)

CWP No.: _____

Contractor: _____ Revision: _____

Contract No.: _____ Date: _____

8. Brief overview on the sequences of events and construction methods to be implemented to define how the work is to be performed:

9. Identify special processes to be used.

10. Identify inspection and tests required to be performed by the contractor or the contractor's test lab and identify the testing equipment required to be used.

11. The following items/activities have been identified by the RE as inspection hold points:

(Leave this area blank. The RE shall identify any required inspection hold points during review of this submittal.)

*The CWP number should consist of a two-part hyphenated number. The first part represents the contract division number, the second a sequential number for that division (the first electrical CWP would be numbered 16-01).

SECTION 4.23
MATERIALS

1.0 PURPOSE

This procedure describes the Resident Engineer's (RE's) role in managing materials.

2.0 GENERAL

Authority-furnished materials (AFM) for construction contractors to support construction programs are procured in accordance with MTA Procurement Procedures. In the post-award period, procurement contracts are administered by the Construction Materials Manager (CMM).

Operating spares are procured via the construction, design/build, supply-and-install, or procurement contract for the facility or system component for which they will be needed. The RE coordinates with the CMM to effect timely delivery of spares to Opeations, with the proper identification records to facilitate stocking and reordering.

3.0 DEFINITIONS

3.1 *Authority-furnished materials (AFM):* any construction materials, equipment, or components purchased and allocated to a project by the MTA for issue to construction and installation contractors.

3.2 *Excess materials:* unused AFM remaining in inventory after project completion. This material is then released from project allocation to be made available for other projects.

3.3 *Materials made obsolete to a contract by Change Order (MOCO):* contracted items rendered obsolete to a contract by a Change Order reducing the scope of work or altering design and requiring reimbursement to the contractor for the original procurement. The materials are then the property of the MTA.

3.4 *Materials stored for installation by follow-on contractor:* Any materials that for technical, security, or other reasons the RE rules should not be installed or left on the job site at termination of contractor's work. Such materials will be inventoried and stored temporarily by the CMM for later issue to the follow-on contractor.

3.5 *Operating spares and consumables:* parts and materials called out as deliverable by a construction, supply-and-install, or procurement contract for use in systems and facilities maintenance.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The RE administers construction, design/build, supply-and-install, and procurement contracts in the post-award period to accomplish the timely and orderly delivery of AFM and operating spares and consumables.

4.2 MTA CONSTRUCTION MATERIALS MANAGER

The CMM advises project management and engineering on planning future procurement quantities, scheduling, and delivery points; the CMM manages the day-to-day work of the Materials Handling Subcontractor (MHS); establishes and maintains storage facilities; receives, records, inventories, and issues for installation AFM; and coordinates the timely deliveries of spares and consumables to Operations.

4.3 MATERIALS HANDLING SUBCONTRACTOR

The MHS supplies personnel and equipment on an as-needed basis for receiving and issuing AFM, as well as maintaining indoor and outdoor storage facilities and field office administration of perpetual inventory records and reports.

5.0 PROCEDURES

5.1 CONTRACT LANGUAGE

The CMM shall review all contracts at the pre-final stage to advise the MTA on the appropriate language pertaining to the handling of AFM and operating spare parts.

5.2 STORAGE SPACE

The CMM shall maintain lists of three categories of storage space:

- Areas in current use, showing square footage, cost, owner, and agreement expiration date.
- Future storage needs, drawn from contracts in preparation and from project planning.
- Prospective storage areas under consideration, proposed by MTA Real Estate Department or commercial owners and brokers.

The optimal use of storage properties owned or managed by the MTA Real Estate Department shall be a prime objective of the CMM. All arrangements for acquiring or leasing storage property shall be made through the MTA Real Estate Department.

5.3 PERPETUAL INVENTORY

The CMM shall maintain perpetual inventory of all AFM. Inventory records shall include:

- Item description
- Number
- Cost
- Storage location
- Any movement of materials

Physical inventory shall be taken quarterly. For any discrepancy between a physical count and the quantity in perpetual inventory, an explanation shall be supplied to the Deputy Executive Officer, Construction. An adjustment to inventory balance shall be made only with the written approval of the Deputy Executive Officer, Construction.

5.4 MATERIAL WITHDRAWALS AND RETURNS

The RE:

- Instructs construction contractors on the procedure for withdrawing AFM
- Provides construction contractors with the appropriate materials management forms (refer to Exhibits 7.1 through 7.5)

- Authorizes the withdrawal of materials and equipment (refer to Exhibit 7.1)
- Documents and certifies installation in the work of all AFM withdrawn or the return to the CMM of any excess AFM not installed (refer to Exhibit 7.2)
- Approves all withdrawals and returns by a contractor

The CMM shall ensure that these operations are properly scheduled and controlled and that quantities issued and returned are rigorously verified by the MHS.

5.5 DIRECT DELIVERY TO INSTALLATION CONTRACTOR

Where feasible and cost-effective, MTA procurement contracts may specify delivery by the supplying contractor directly to the installing contractor. In such cases, the CMM shall receive the delivery at the location designated by the installing contractor: verify the delivery documents and the condition of the materials: and, upon concurrence by the installing contractor, immediately issue the material to the installing contractor.

The RE shall then be responsible for approving and overseeing the installing contractor's plans for storage, security, inventory control, and proof of incorporation of the material into the work.

The RE delivers audible records (packing list, bill of lading) to complete the procurement cycle. These records shall be on file with the CMM. Refer to Exhibit 7.4, Contractor's Packing List.

5.6 CONTRACTUAL SPARES AND CONSUMABLES

5.6.1 ESTABLISHMENT OF FINALIZED LISTING

Under the direction of the RE, the definitive list of spares and consumable to be procured shall be established by consultation between MTA Operations and Maintenance, the RE, MTA Engineering, the GEC, and the CMM. Procurement shall then be effected via the pertinent construction, supply and install, or procurement contract.

5.6.2 SPARES STORAGE SPACE

Upon finalization of the spares and consumables contractual requirement, the CMM shall provide the Operations with the definitive list and estimate of delivery dates and required storage space approved by the RE. If requested to do so, the CMM shall coordinate with Operations in obtaining and allocating storage space for spare parts and consumables.

5.6.3 SPARE PARTS DELIVERY

The CMM shall provide the RE with the Contractor's Packing List (refer to Exhibit 7.4) required by Operations. The contractor shall submit the completed packing list, or its own packing list containing the same information, to the RE. The RE shall certify that the list satisfies the contract. The CMM shall then assist the contractor in scheduling its delivery to Operations. The RE shall use the packing list receipts by Operations for contract closeout.

5.7 TEMPORARY STORAGE FOR FOLLOW-ON INSTALLATION

The CMM, upon receipt of an Authorization of Temporary Storage (Exhibit 7.5), shall provide suitable storage space, receive the materials, and issue them to the follow-on contractor.

5.8 MOCO

The CMM shall minimize accumulation of MOCO by assisting the RE at the time of the Change Order to develop solutions other than MTA acquisition and by recommending items for salvage sale.

5.8.1 NEGOTIATIONS WITH CONTRACTOR

The CMM shall participate in all Change Order negotiations with the contractor, which may lead to acquisition of materials by MTA; evaluate any request for reimbursement; and advise the RE of the most cost-effective resolution (e.g., restocking, scrapping, purchase by MTA). If the final resolution requires MTA to purchase the obsolete material, the CMM shall assist the RE in negotiating the terms of delivery.

The RE shall complete the Authorization to Receive and Store MOCO form (Exhibit 7.3), authorizing receipt and storage. The CMM shall then designate the point of delivery and assist the RE in negotiating a schedule with the contractor.

5.8.2 DISPOSAL OF OBSOLETE MATERIALS

The CMM shall prepare an inventory listing of obsolete materials and circulate it to all possible users such as:

- Engineering
- Project Managers
- REs
- Facilities Maintenance

Recipients of this list shall be asked to indicate any item they want kept in inventory for future use (refer to Exhibit 7.3).

All obsolete materials not reserved for future use shall be reported to the MTA Materials Manager at MTA Procurement. The materials will be sold at public auction, proceeds going to the project that made the original procurement and to the Federal Transit Administration (FTA), if applicable, as required by regulations.

5.9 WARRANTY MATERIALS

The RE originates a record of warranty start dates for all equipment. This record will include beneficial occupancy dates, length of warranty, warranty start and stop dates, serial numbers and other pertinent dates necessary to identify each item. The report shall be provided to the MTA starting with beneficial occupancy or contract completion (whichever occurs first) and ending at the turnover of the facility/system from the contractor to the MTA. The RE is responsible for originating, processing and closing of warranty claims for defective equipment until Contract completion. A report shall be maintained for each contract showing the status of warranty claims.

6.0 REFERENCES

None

7.0 EXHIBITS

Exhibit	Title
7.1	Material Withdrawal
7.2	Material Return
7.3	Authorization to Receive and Store MOCO
7.4	Contractor's Packing List
7.5	Authorization of Temporary Storage for Follow-on Installation

Exhibit 7.1

No: _____

MATERIAL WITHDRAWAL

Date _____ Sheet _____ of _____

Contractor _____ Contract No: _____

Stored Location _____ Installed Location _____

Quantity		Partial Withdrawal by Truckload			
Unit	Description	Date	Qty.	Received	Issued

The contractor affirms that it has inspected the above material and found it acceptable.

Requested by _____ _____
Contractor Date

Authorized by _____ _____
Resident Engineer Date

Received by _____ _____
Contractor's Representative Date

Issued by _____ _____
Date

Exhibit 7.2

No. _____

MATERIAL RETURN

Date _____ Sheet _____ of _____

Contractor _____ Contract No. _____

Location returned from _____

Quantity	Description

Reason for return

Stored location _____

Returned by _____
Contractor's Rep.

Return authorized by _____ _____
Resident Engineer Date

Received by _____

Exhibit 7.3

AUTHORIZATION TO RECEIVE AND STORE MOCO*

To: MTA Construction Materials Manager Date:

The _____
(description)

detailed on the attached packing list have/has become obsolete to:

LACMTA Contract No. _____ Contract Title _____

Contractor _____ Contact Person _____

Because of revision to the scope of work or to the specifications, as directed by:

Change Notice No. _____ Dated _____

Change Order No. _____ Dated _____

By the terms of this Change Order, this material is now LACMTA property and is a deliverable under the referenced contract. The attached packing list shows all the items to be delivered per the referenced Change Order.

Total cost to the LACMTA of this material is _____

The individual cost of each item is shown on the packing list.

The terms of delivery are:

Please designate storage space for these materials, coordinate delivery and receipt with the contractor, and add all items to the MOCO report for possible use elsewhere in Metro system construction.

Delivered by _____ _____
Date

Received by _____ _____
Date

Stored location _____

_____ _____
Resident Engineer Date

_____ _____
Date

_____ _____
DEO, Construction Date

*Materials made obsolete to a contract by Change Order

Exhibit 7.4

Form # GREP 4.23-04

Metropolitan Transportation Authority

Contractor's Packing List

No. _____ Date _____ Sheet _____ of _____

For contract deliverables to the MTA ☐ Manuals ☐ Spare Parts ☐ Materials made Obsolete by CO ☐ Other _____

Prime Contractor _____ MTA Contract No. _____

This packing list was made by:

Company _____

Address _____

City _____

Telephone _____

The material listed here fulfills the contract specifications and quantities and has been inspected by the Resident Engineer.

_____ Date _____ Resident Engineer _____ Date

Contractor

Deliver as instructed by the Materials Manager. A 48-hour notice is required.

Contract Item No., Section Reference, or C/O No.	Quantity Required by Contract	Quantity This Packing List	Unit (lbs., ft., each)		Price

Form

Exhibit 7.5

AUTHORIZATION OF TEMPORARY STORAGE FOR FOLLOW-ON INSTALLATION

To: MTA Construction Materials Manager Date:

The _____

(description)

detailed on the attached packing list is part of:

LACMTA Contract No. _____ Contract Title _____

Contractor _____ Contact Person _____

To be installed by:

Contract No. _____ Contract Title _____

Contractor _____ Contact _____

On Approximately _____ Contact Tel. _____

Upon receipt of this material by you in good order, it becomes the property of the LACMTA.

A material withdrawal approved by the resident engineer of

Contract No. _____

will be your authorization to issue this material to the follow-on contractor.

Delivered by _____ _____

Date

Received by _____ _____

Date

Stored location

_____ _____

Resident Engineer Date

_____ _____

Date

DEO, Construction Date

SECTION 4.24
INTERFACE WITH RAIL OPERATING SYSTEMS

1.0 PURPOSE

This procedure describes the Resident Engineer's (RE's) role in interfacing with rail operating systems.

2.0 GENERAL

The Resident Engineer and the Construction staff have the responsibility to ensure that the Contractor is responsive to the needs of the operating system on which work is to be performed. Work on an operating rail system can only be performed with the express permission of the Rail Operation Center (ROC). Work Permits are issued on a weekly basis for specific work activities by the Rail Allocation Section at the ROC. Work Permits spell out the nature of the work to be performed and must be activated each day prior to beginning work.

The scheduling of construction work activities on an operating system is critical since work allocations are finalized during the week prior to the work actually taking place. This allows Rail Operations to allocate resources to support construction operations and to eliminate or greatly minimize conflicts in specific work areas.

3.0 DEFINITIONS

3.1 Rail Operations Center (ROC): The centralized control center for all rail operations. This building is located on Imperial Highway at Wilmington, adjacent to the Imperial Blue Line and Green Line stations.

3.2 Rail Allocation Section: The group within the ROC that allocates work areas within the rail right of way.

3.3 Work Permit: Written authorization to work in a specifically designated location within the rail right of way.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The RE has the responsibility for ensuring that the Contractor schedules the construction work sufficiently in advance to request track allocations in a timely manner. The requests for track allocation must be received by the Rail Allocation Section at the ROC prior to the Track Allocation Meeting, the week prior to performing the requested work. The Track Allocation Section assembles the various work requests and assigns the track allocations based on system priorities and the availability of Operations personnel to support the various activities. Work Permits are then issued specifically identifying the work and the area involved. The Work Permits must be activated on a daily basis by calling the Control Desk at ROC. Work Permits must be carried by each individual in the work party at all times.

The RE must also ensure that the Contractor sends each and every employee to a Rail Safety Training Course prior to engaging in any work activities on any rail system. The Rail Safety Training Course is given and administered by Rail Operations. Identification badges are issued to each individual that completes the course and the badges must be displayed at all times at the worksite.

4.2 CONSTRUCTION STAFF

All Construction Staff engaged in field activities must attend the Rail Safety Training Course administered by Rail Operations.

5.0 PROCEDURES

Construction interface with a rail operating system presents a unique challenge from the stand point of accomplishing physical work. Every task must be closely coordinated with the requirements of the operating system and this is accomplished through the ROC and the Work Permit process.

5.1 REQUESTS FOR TRACK ALLOCATION

Track Allocation Requests must be submitted to the particular operating system Control Desk on Tuesday prior to the week for which track allocation is requested. The requests are compiled by the Control Desk for the Track Allocation Meeting.

5.2 TRACK ALLOCATION MEETING

The Track Allocation Meetings are held Thursday mornings at the ROC located at 2000 E. Imperial Highway, Compton, CA. 90059. The purpose of the meetings is to address conflicting requests for track allocation, determine priority for access to the operating system and confirm the availability of support from Rail Operations, Facility Maintenance or Traction Power.

Every contractor requesting track allocation should be represented at the Track Allocation Meeting in order to provide any clarifications regarding work activity and to understand any particular restrictions placed on work activity. Work Permits are then issued and faxed to the contractors the following day.

5.3 WORK PERMITS

The Work Permit is the Contractor's authorization to physically perform work on a rail operating system. The permit clearly defines the scope of work and the location involved. Each permit contains specific instructions for activating the permit and phone numbers for the operating system.

An executed Work Permit must be carried by every individual at a work location. A Work Permit for one location is not transferable by an individual to another location.

5.4 RAIL SAFETY TRAINING

Rail Operations conducts Rail Safety Training for each operating system. All employees working on a rail operating system must receive safety training for that system. Rail Operations will issue a Safety Badge for that system upon completing the training. The badge must be displayed at all times when working under a Work Permit.

6.0 REFERENCES

None

7.0 EXHIBITS

None

SECTION 5.0
TECHNICAL SUPPORT SERVICES

SECTION 5.01
PERMITTING SERVICES

1.0 PURPOSE

This procedure establishes the process and documentation necessary for providing as-required permit coordination during project construction.

2.0 GENERAL

The RE gives construction schedule information to the Third Party Administrator to schedule permit coordination activities. Responsibilities include permit processing, collecting required data and drawings, providing calculations, and preparing test reports. The RE will be informed of any schedule interface difficulties. This procedure covers only the permits obtained by the MTA. Contractors are required to secure their own permits, as stated in the contract specifications.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

4.1 The RE oversees the various permit coordination activities to ensure that permits are obtained in a timely manner, allowing the construction activities related to these permits to continue without delay. Refer to Exhibit 7.1 for list of some typical permits required for construction.

4.2 The RE provides construction schedule information to the Third Party Administrator for scheduling permit coordination activities.

4.2 Engineering staff are responsible for supporting the RE and Third Party Administrator:

- Obtaining or generating information required for the permit application
- Submitting the application to the appropriate agency
- Responding to any questions the permitting agency may have
- Providing copies of the resulting permits to Document Control

All information submitted with an application for permit (i.e., drawings, calculations, data sheets, profiles, etc.) shall be signed and approved by an engineer who is registered in the State of California.

4.3 The Third Party Administrator supports the RE by providing permit information and coordination, including:

- Tracking the contractor's application process to secure required permits where needed.
- Collecting or generating the required data, drawings, and calculations
- Preparing test reports, if required
- Interfacing with Public Affairs to ensure coordination with affected communities.

4.4 The RE shall assist and coordinate with Environmental staff for the procurement of Environmental permits that the MTA obtains to support the work. If the contractor is responsible for obtaining an environmental permit, the RE is primarily responsible to ensure that the contractor obtained the permit required prior to commencing work in the affected work area.

5.0 PROCEDURE

None

6.0 REFERENCES

None

7.0 EXHIBITS

Exhibit	Title
7.1	Typical Permits Required for Construction

Exhibit 7.1

TYPICAL PERMITS REQUIRED FOR CONSTRUCTION

General Construction

Permit	Issuing Agency
Encroachment	CalTrans/County Department of Public Works
Lane Closure	Los Angeles Department of Transportation
Road and Street Closures	Street Use Rail Transit Construction Traffic Mgmt. Committee (SURTC) and Los Angeles Bureau of Engr. (LABOE)
Storm Drain Connection	Department of Public Works
Sanitary Sewer Connection	Department of Public Works
Industrial Waste Permit	Department of Public Works
Sewer Facilities Charges	Department of Public Works
Dewatering Well Instrumentation Well Installation or Abandonment	Department of Health Services
Haul Route	Los Angeles Department of Transportation
Excavation	Department of Public Works
Grading	Department of Building and Safety
Plumbing	Department of Building and Safety
Signage	Department of Building and Safety
Structural	Department of Building and Safety
Electrical	Department of Building and Safety
Street Trees	Department of Public Works
Street use	Department of Public Works
Temporary Right of Way	Department of Public Works
A or B Permits for Construction	Department of Public Works
Right of Way Vacation	Department of Public Works
Work in, under or over River Channel	Department of Public Works/U.S. Army Corps of Engineers

Environmental

Permit	Issuing Agency
Monitoring Well Installation or Abandonment	Department of Health Services
Waste Water Discharge (NPDES)	Regional Water Quality Control Board
Waste Discharge Requirements (for contaminated soils disposal)	Regional Water Quality Control Board
Notice of Intent - General Permit to Discharge Storm Water Associated with Construction Activity	Regional Water Quality Control Board
Rule 1166 Volatile Organic Emissions from Decontamination of Soil	South Coast Air Quality Management District
Rule 1403 Asbestos Emissions from Demolition/Renovation Activities	South Coast Air Quality Management District
Rule 201 Permit to Construct (air contaminant emitters)	South Coast Air Quality Management District
Rule 203 Permit to Operate (air contaminant emitters)	South Coast Air Quality Management District
Underground Storage Tank Removal	Fire Department
Variance to City Noise Ordinance	Police Commission
Underground Classification - Potentially Gassy	Cal/OSHA

SECTION 5.02
NOT USED

SECTION 5.03
NOT USED

SECTION 5.04
ENVIRONMENTAL COMPLIANCE

1.0 PURPOSE

This procedure ensures compliance of construction activities with the applicable federal, state, city, and county laws or statutes and with contract specifications for the projects that deal with environmental compliance in the management of contaminated/hazardous waste or material generated or stored during construction.

2.0 GENERAL

Field construction activities may generate hazardous wastes or materials that must be controlled, mitigated, minimized, and monitored for compliance with contract specifications, permits, and regulatory requirements. Environmental monitoring will aid in avoiding incidents that might cause delay; documentation will be required of all hazardous material and environmental compliance activities.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

The Resident Engineer (RE) will act as the first line of communications for field-related environmental issues. The RE responsibilities include assisting the MTA's Environmental Services Department and Environmental Compliance Department in regulatory compliance, including but not limited to environmental related permitting.

The MTA has secured the services of environmental engineering consultants and a waste handling contractor to provide environmental services (collectively referred to as "EC"). The RE is responsible for monitoring work progress, scheduling of contractors, and general performance of the ECs that are working on the construction site. The RE shall monitor all construction activities and reports on the status of environmental issues to the MTA's Environmental Services and Compliance Departments.

5.0 PROCEDURE

5.1 CONTRACTOR MONITORING

The RE shall require the contractor to perform noise, vibration, and water and air quality monitoring during construction to ensure contractor compliance with contractual, regulatory, and safety requirements. Records of the monitoring results are maintained in the contractor's office with a copy provided to the RE's office. At the RE's request, and/or if deemed necessary by the MTA, the EC will monitor for noise, vibration, and water and air quality to verify results of contractor's monitoring efforts.

Soil monitoring will be performed by the EC. In addition and if required, groundwater will be monitored for contaminants by the EC; however, it is the contractor's responsibility to monitor the volume of groundwater extracted and discharged on a daily basis. Any wastes deemed "contractor-generated hazardous waste" are the sole responsibility of the contractor. Sampling, characterization, transportation, and disposal of any contractor-generated hazardous waste must be performed at the contractor's expense.

5.2 PRE-CONSTRUCTION

During the pre-construction phase of the project the EC will provide assistance to the MTA in developing plans for responding to environmental concerns and ensuring compliance with environmental regulations and contract specifications.

5.3 COORDINATION DURING PROJECT

During the course of the project, the RE shall involve the MTA Environmental departments to ensure that the contractor complies with environmental and hazardous waste regulations and contract specifications. Upon request, the RE will be provided copies of any environmental reports or correspondence that may be generated between the EC and the MTA. The RE shall immediately report the discovery of contamination or hazardous material not specially identified in the contract documents, and notify Public Affairs to determine and support any impacts to the communities.

5.4 ENVIRONMENTAL CONSULTANT TECHNICAL ASSISTANCE

At the request of the RE, the EC shall provide technical assistance for contractor's compliance with environmental requirements, or environmental services.

5.4.1 CONTRACTOR COMPLIANCE

The RE will inspect contractor's actions to ensure compliance with any environmental plans developed by the contractor or MTA directives concerning environmental compliance. The RE may request technical assistance to determine contractor compliance.

Technical assistance provided to the RE by the EC may include contractor's compliance with:

- Environmental/pollution controls
- Contaminated soils management
- Hazardous waste-related sections of the contractor's Contract Specifications
- Regulatory agencies

This assistance may include:

- Review of environmental submittals
- Compliance monitoring of air, water, and noise to determine contractor's compliance with acceptable levels, as dictated by the Contract Specifications and regulatory agencies
- Coordination for disposal of contaminated/hazardous soils and wastes
- Construction-related environmental emergencies
- Environmental and hazardous waste compliance

Any deficiencies found by the RE will be reported to MTA Environmental. The RE, subject to his/her discretion, shall issue a stop work notice or non conformance report to the contractor for contractor's non compliant actions.

5.4.2 ENVIRONMENTAL SERVICES

At the request of the RE, the MTA through the EC will respond to construction-related environmental compliance and hazardous waste management requirements, including:

- Field evaluation
- Sampling
- Coordination for sample analyses
- Waste characterization
- Determination of waste mitigation measures
- Environmental permitting and compliance (refer to GREP 5.01)

- Disposal of contaminated/hazardous soils

5.5 DIFFERING SITE CONDITIONS

Unless specifically identified in the bidding documents as part of the scope of work, the discovery of certain hazardous materials or contaminants may be treated as differing site conditions. Typical types of hazardous materials include:

- Federal Resource Conservation and Recovery Act (RCRA) hazardous wastes
- Underground storage tanks (USTs)
- Oil well casings
- Asbestos

The actions that mitigate these conditions are covered in GREP 6.04, Differing Site Conditions.

5.6 SUBMITTAL OF BUSINESS PLAN

Each contractor that anticipates the need to store hazardous material (i.e., construction materials) at the construction site is required by State law to submit a business plan to the appropriate City/County Fire Department. This plan shall contain Material Safety and Data Sheets (MSDS) for the hazardous materials and a site map that clearly shows the office location and the storage location for the hazardous material. The plan is required if hazardous materials are to be stored on-site in quantities that equal or exceed the following amounts:

- 100 cubic feet of gas
- 250 pounds of solid materials
- 500 gallons of liquid

5.6.1 THE MOST COMMON MATERIALS SUBJECT TO THE BUSINESS PLAN ARE:

- oxygen
- lime
- solvents
- gasoline
- acetylene
- epoxy
- butane
- lubricants
- cement
- paint
- diesel
- kerosene

5.6.2 Upon submittal to the Fire Department, a copy of the contractor's business plan shall be provided by the RE to Environmental Services, Safety and Security Manager, and the EC.

5.7 COORDINATION OF HAZARDOUS WASTE CONTRACTORS

The coordination of services provided by specialty hazardous waste contractors for mitigation of hazardous waste will be conducted by the MTA Environmental departments at the request of the RE.

5.8 DOCUMENTATION

The MTA Environmental departments will satisfy regulatory requirements for reports, permitting, and documentation of hazardous material and/or waste management practices. Upon request, copies of documents generated pursuant to regulatory agency requirements will be provided to the RE.

5.9 MONITORING REGULATORY COMPLIANCE

The MTA will monitor the EC for environmental regulatory compliance and provide the RE with the results of the monitoring efforts, if so requested.

5.10 REVIEW OF SAFETY AND HEALTH PLANS

The RE will utilize the MTA Environmental departments and the Safety and Security Manager to review site-specific safety and health plans prepared by the contractor.

Any health and safety plans, including illness and injury prevention plans, business plans, and emergency response plans, as required by safety specifications, will be reviewed by the Safety Department.

6.0 REFERENCES

The following documents are referred to in this inspection instruction and are available under separate publication:

Document	Title
GREP 5.01	Permitting Services
GREP 6.04	Differing Site Conditions

7.0 EXHIBITS

None

SECTION 5.05
HISTORICAL, SCIENTIFIC AND ARCHAEOLOGICAL DISCOVERIES

1.0 PURPOSE

To guide the Resident Engineer (RE) in implementing existing regulations and requirements protecting historical resources and artifacts encountered during construction.

2.0 GENERAL

2.1 The contractor is required to report any historical or scientific specimens encountered to the RE. Examples of these types of specimens are:

- Fossils
- Animal or human bones, or shells.
- Structure remains (e.g., bricks, timbers, clay structures, etc.)
- Ceramics, bottles, etc.
- Prehistoric artifacts (e.g., stone bowls, arrowheads, etc.)

2.2 No personnel on the construction site are allowed to remove anything of possible historical, scientific, or archaeological value. This is an offense punishable by discharge, fine and/or imprisonment.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITY

The procedure for archaeological and paleontological coordination is contained in the relevant contract Specification Section.

4.1 RESIDENT ENGINEER

The RE is responsible for:

- Informing staff of the laws pertaining to findings
- Informing staff that construction site personnel are not allowed to remove anything of possible historical, scientific, or archaeological value
- Informing staff of the procedures that prevent destruction of historical or scientific specimens
- Notifying the Archaeological Consultant of the Initial Construction Meeting
- Notifying the Archaeological Consultant before surface disturbances (e.g., utility relocation, structure demolitions, street decking) begin, and prior to subsequent work schedule changes, additions, or modifications.
- Maintaining close surveillance of excavation work in anticipation of encountering artifacts
- Notifying the Archaeological Consultant promptly when cultural resources are encountered in the absence of a monitor.
- Instructing his or her staff, contractors, and subcontractors to leave in place, undisturbed, any cultural resources observed, and not to pick up or remove such material.
- Arrange to have representatives of the Project Archaeologist meet with work crews of Contractor at periodic "tail gate" meetings throughout the project.
- Interfacing with Public Affairs, as required, to coordinate public and media support

4.2 CONTRACTOR

The contractor's contract document specifies the contractor's responsibilities with respect to findings;

however, the MTA or the RE should reiterate these responsibilities at the Initial Construction Meeting (refer to GREP4.07, Meetings). The contractor and all subcontractors should be instructed to fully cooperate with MTA's Archaeological Consultant's monitors and supervisors and to be alert to the discovery and protection of such findings.

5.0 PROCEDURE

If a historical, scientific, or archaeological find of cultural resources is made, the RE will immediately notify the DEO, Construction and the MTA's Archaeological Consultant and direct the Contractor to suspend work in the vicinity of the find. Work may continue on other portions of the job where cultural materials have not been uncovered.

The MTA's Archaeological Consultant will immediately dispatch a monitor or supervisor to the scene to investigate the finding. After consultation with the MTA and at the MTA's discretion, an identification and evaluation will be made regarding the method of removal and final disposition. Once the extent of the find is determined, a plan of approach will be presented by the Archaeological Consultant. Cost and schedule impact to the construction work will be evaluated by the RE and the contractor.

6.0 REFERENCES

6.1 MTA's Archaeological Consultants contacts will be provided at the Initial Construction Meeting. Should a caller be unable to reach the MTA's archaeological consultants, the caller should call the Manager of Environmental Compliance.

6.2 Contract Document; General Conditions; Historical, Scientific and Archaeological Discoveries. Use Baseline Technical Specification 01170.

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Enactments Affording Protection to Archaeological and Paleontological Resources

Exhibit 7.1

ENACTMENTS AFFORDING PROTECTION
TO ARCHAEOLOGICAL AND PALEONTOLOGICAL RESOURCES

Title	Section	Description
Federal		
The Antiquities Act of 1906	P.L. 34-209	Forbids the excavation, removal, or vandalism of archaeological sites on federal lands without a permit issued by the responsible agency.
State		
California Public Resources Code	5097.5, 1965	Forbids the unauthorized disturbance of archaeological or paleontological resources on public lands. Violation is a misdemeanor.
California Penal Code, Title 14	622.5	Extends the protection of archaeological and historic sites to private, as well as public, lands.
California Health and Safety Code	8100	Forbids any person to damage or remove human remains from the place of interment without the authority of law. Violation is a felony

SECTION 5.06
FACILITIES AND SYSTEMS TESTING

1.0 PURPOSE

This document specifies the requirements that the contractor, Resident Engineer (RE), Quality Control, and the Engineering Project Leader (EPL) must satisfy to furnish approved test procedures and perform testing of facilities equipment and systems.

2.0 GENERAL

The contractor shall submit an overall test plan and schedule before submittal of any test procedures. Test folders, containing the necessary documentation will be prepared for all equipment to be tested. The EPL will review all contractor test procedures, make comments, if appropriate, in coordination with the RE. The RE will schedule the testing when equipment is ready for testing. The RE will also resolve testing problems and coordinate retesting.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The RE is responsible for communicating with the contractor concerning technical matters and for ensuring that the contractor provides the required test plan, procedures, schedule, and performs the required tests. The RE receives and processes for acceptance all contractually required submittals from the contractor including design documentation, schedules, progress reports, test plans, procedures, and reports.

4.2 CONTRACTOR

The contractor is responsible for submitting test procedures for all installed equipment and systems, for conducting required inspections and tests to ensure compliance with contract requirements, for providing personnel and test equipment to conduct the tests, for maintaining calibration records for all test equipment, and for correcting problems that are caused by faulty construction.

5.0 PROCEDURE

5.1 SUBMITTALS

The RE receives test procedures from the contractor and routes to the EPL for review.

- If the procedure is not acceptable, it is rejected and returned with comments to the contractor.
- The contractor revises the test procedure and resubmits it to the RE.
- The submittal process is repeated until final acceptance is obtained.

5.2 TESTING

The following requirements must be met before tests are performed.

- The contractor notifies the RE of equipment that is ready to be tested.
- The RE notifies the EPL, who will verify that the required submittals for testing have been submitted and approved, that equipment is ready for testing.

- The EPL shall prepare the test package for equipment to be tested and shall ensure that all mandatory pretest requirements have been completed and documented. The test package shall consist of:

  Vendor data
  Inspection records/checklist
  Maintenance records
  Contract instrument calibration/settings
  Approved test procedure
  Latest revised drawings or as builts
  Test instrumentation certifications/calibrations

- The RE schedules the test date(s). Personnel desiring notification will inform the RE that they are to be notified.

- Test is performed in accordance with approved test procedures.

- If the test fails:

  1) If it is a construction or system problem, the contractor corrects the problem and notifies the RE when the equipment is ready for retesting.
  2) Depending on the circumstances of the failed test, the test may resume using existing test documents or may be retested, the documentation revised accordingly to reflect the extent of retesting.
  3) Each red-lined test procedure change must be approved by the EPL or RE. This means that each red-lined change must be signed and dated.

- If the test passes:

  1) The signoff sheet is completed.
  2) The test folder and maintenance records are held by the RE and turned over to MTA Operations when MTA takes custody of the equipment.

5.3 NONCONFORMING CONDITIONS

The RE will verify that the documentation for any nonconforming condition associated with the testing is included in the test folder. Nonconforming conditions shall be processed in accordance with MTA procedures.

5.4 RECORDS

The test folders shall be held by the RE until turnover to MTA Operations, in accordance with GREP 4.12. One copy of the contractor submitted operations and maintenance manuals for the equipment will be included with the test folder.

5.5 TEST CONTROL REQUIREMENTS

- The RE may delete any requirement that is not appropriate for a particular project.
- Review field, test plan, procedures, and schedules.
- Test summary reports shall be approved before the next level of testing starts.
- Final test reports for each level of test includes:
  1) Name of test and test procedure reference

2) Identification of equipment under test, including nomenclature, part number, and serial number of each lowest level replacement unit.
3) Test equipment calibration is identified (within current calibration) and documented
4) Test and support equipment nomenclature, part number, and serial number are documented.
5) Test equipment environment is described: approximate temperature, humidity, dust conditions, and other pertinent test environment factors.
6) Location of tests
7) Test input data and results are documented for each test parameter.
8) Identification of points and functions measured, monitored, or checked; results at each point with pass or fail statement
9) Description and explanation of test failures or deviations from expected results
10) Date of test
11) Signature of person conducting test
12) Signature indicating contractor's approval, other than the test operator, should include contractor's quality control manager and project manager.

- Next level test reports shall reference the previous test by name and report identification.
- Ensure that test plan(s) and procedure(s) are approved by contractor and the RE.
- Test procedure revision is current and referenced on the test data sheets (if used).
- If dry-run tests are performed, participate and provide guidance for requirements. Ensure that dry-run data is not used as final data.
- Participate in pretest meetings.
- Each red-lined test procedure change must be approved by the contractor, the Engineer, and the RE. This means that each red-lined change must be signed and dated by the contractor, the Engineer, and RE.
- Check calibration of test equipment before the test starts.
- Verify that test equipment, cables, connectors, and interface devices are in place and in accordance with the procedure.
- Parameters of specific tests are specified in the test procedure/test data report.
- Tests are conducted in order specified.
- Go/No-Go results are individually accepted by the test conductor's signature/initials.
- Equipment/items replaced during the test must be documented and approved by the contractor, Engineer, and the RE before the test continues.
- Test failures shall be documented on a Nonconformance Report (refer to GREP 4.02).
- Test reports shall be signed by the test technicians conducting the test, the contractor's authorized management representative, and the RE.
- Ensure that the test report original document, with approval signature, is controlled and secure.
- Ensure that test reports are maintained in a logical and controlled manner for presentation to the MTA.

6.0 REFERENCES

None

7.0 EXHIBITS

None

SECTION 6.0
ADMINISTRATION

SECTION 6.01
SUBMITTALS

1.0 PURPOSE

This procedure provides guidelines for establishing submittal schedules and for processing contractor submittals and describes the processing of submittals from original receipt by the Resident Engineer (RE) until the submittal is reviewed, dispositioned, and returned to the contractor, via the RE.

2.0 GENERAL

2.1 This procedure outlines the process, control, coordination of review, and retention of contractor submittals. The review must be performed in a timely manner in order to comply with contract documents and deliverable requirements schedules.

2.2 Typical submittal review and acceptance requirements include, but are not limited to:

- Master Submittal Schedule (CM, MTA)
- Schedules (CM, MTA)
- As-Built Document Submittal Schedule (CM, ENG, MTA)
- Contractor's QA/QC programs and procedures (CM, MTA)
- Contractor's construction work plans (CM)
- Geotechnical instrumentation and monitoring (CM)
- Safety, health and security programs and procedures (MTA)
- Traffic control (transmitted to City of Los Angeles Department of Transportation [LADOT] for review and acceptance)
- Welding procedures (ENG)
- Welder qualifications (CM)
- Permits (CM, MTA)
- Environmental, hazardous waste, and pollution control plans and procedures (MTA)
- As Built Documents (CM, ENG, MTA)
- Operations and Maintenance Manuals (CM, ENG, MTA)
- Government Agency and Utility Company Submittals (CM, ENG, MTA)

Additional specific review requirements are identified in the submittal list included in contract specification section, where provided. Note: Engineering (ENG) and Construction Management (CM) services may be assigned to MTA staff and/or consultant.

3.0 DEFINITIONS

3.1 *Master list of submittals:* a list of all submittals that the contractor is required, by Contract Specifications and Contract Drawings, to submit to the RE for review and acceptance.

3.2 *Urgency of response:* This is an indicator on the Submittal Transmittal to the reviewers.

3.3 *As-Built Document Schedule:* The list of as-built documents that the contractor is to submit.

4.0 RESPONSIBILITIES

4.1 CONTRACTOR

The contractor is responsible for furnishing a Master List of Submittals as required by the contract specifications and Contract Drawings, with corresponding submittal dates (based on the detailed contract schedule) that allow adequate time for review.

4.2 RESIDENT ENGINEER

The RE is responsible for receiving the submittal and determining the proper course of action. The RE is responsible for tracking the review and acceptance process of the submittals and ensuring completion of review within the time frame specified in contract documents.

The RE is responsible for tracking all submittal items and subsequent notification to the contractor of any submittal deficiencies, including overdue submittals and resubmittals.

The RE is responsible for ensuring that all submittals are properly filed, and that the latest accepted version of contractor supplied drawings and other documents are logged and being used by inspectors.

5.0 PROCEDURE

5.1 DEVELOP SUBMITTAL SCHEDULE

The RE provides the contractor with a submittal schedule spreadsheet in a format compatible with the CCS Submittal Tracking system. Minimum schedule requirements are: Submittal number, submittal title, due date, and schedule activity code. The spreadsheet can be created using the CCS export function. The contractor may submit either electronic and/or hard copy versions of the schedule. On acceptance, the RE will coordinate with MTA Document Control staff to have the accepted Master List and schedule loaded into CCS.

5.2 SUBMITTAL NUMBER ASSIGNMENT

The submittal number will consist of project number, contract number, specification section number, paragraph number, sequence number (beginning with 1.00 for each separate submittal required under the paragraph),. The decimal extension of the sequence number is used to identify revisions or resubmittals. Systems contracts may assign submittal numbers by Contract Documents Requirements List (CDRL) number, in place of specification section and paragraph.

If a submittal is revised and resubmitted for review, the contractor indicates this revision by incrementing the revision number of the submittal document. The RE will assign the same sequential submittal number and increment the revision number by .01. The use of the word "all" to replace specific paragraph identification is not acceptable.

	Proj+Cont+Spec+Para+Seq Rev
Original Submittal Example:	R23-C0669-5.1-1.3.b-1.00 (1st submittal required)
	R23-C0669-5.1-1.3.b-2.00 (2nd submittal required)

If a submittal is revised and resubmitted for review, the contractor indicates this revision by incrementing the revision number of the submittal document. The RE will assign the same sequential submittal number and increment the revision number by .01.

	Proj+Cont+Spec+Para+Seq Rev
Re-submittal Example:	R23-C0669-5.1-1.3.b-1.01 (1st re-submittal required)
	R23-C0669-5.1-1.3.b-1.02 (2nd re-submittal required)

5.3 CONTRACTOR SUBMISSION

The contractor produces submittals according to the contract documents and accepted schedule and

forwards to the RE with the contractor's letter of transmittal.

5.4 RE ACCEPTANCE

After receipt of the submittal, the RE scans the submittal to ascertain that the information required to support the submittal is provided in accordance with the appropriate Specification Section. If the proper information is not included, or is not adequately identified, the RE returns the entire submittal to the contractor. When the RE is satisfied that the submittal has provided the information required, the RE determines the routing and review requirements of the submittal. Submittal receipt is entered into the Submittals module of the Contract Control System (CCS). The RE uses this module to track, generate forms, and report activities related to contractor submittals.

In order to maintain the submittal review schedule, the RE may also return submittals provided by the Contractor significantly earlier than their agreed on due date, and request that they be resubmitted closer to their agreed on due date.

5.5 SUBMITTAL REVIEW

If it is determined that the submittal is of an engineering or technical nature requiring Engineering, MTA, or other party review, it is transmitted to the Engineer and other designated reviewers. Following the engineering review, the submittal is returned to the RE for subsequent transmittal to the contractor.

When the RE disputes the disposition of a submittal by the Engineer, the RE contacts the Engineer to resolve the dispute within the allotted review time. This resolution process should be initiated as soon as possible. The RE documents the resolution.

5.6 ACCEPTANCE DISPOSITION MARKING

When a submittal review is complete, the RE affixes a review stamp (Exhibit 7.1), signs the stamp, marks the disposition code based on reviewer's recommendation, logs the disposition into CCS, and returns the submittal to the contractor with comments.

Typical Disposition Codes are as follows, check contract requirements for specific application:

ACC = Accepted. (Submittal package accepted in entirety, no changes or resubmittals required.

AN = Accepted As Noted – No Resubmittal Required. Appears to conform to respective requirements of the Contract Documents. Reviewer's corrections shall be incorporated the As-Built Documents.

ADS = Accepted Design/Schedule Submittal as Noted. Incorporate comments in next design/schedule submittal.

REJ = Rejected, Revise and Resubmit. (Submittal package is rejected in entirety or in part. Specific documents or drawings rejected are identified. The contractor is to resubmit by the due date indicated prior to work)

FRO = For Record Only. The submittal package is accepted for record purposes only.

On issuance of a "Rejected" submittal response to the contractor, the RE will immediately log the required resubmittal into CCS and assign an appropriate due date. The exception is submittals that are rejected because they are no longer required.

5.7 RESPONSE TIME REQUIREMENTS

Each construction contract specification states a response time requirement for contractor submittals. The RE is responsible for responding to the contractor in the shortest time possible, but no longer than the contractual requirement, in order to limit vulnerability for potential contractor claims and to avoid operations and schedule conflicts. The due date indicated to reviewers on the transmittal and CCS should allow for processing time required by the RE after review (to transmit the submittal to the contractor.) Review and acceptance actions are to be complete and comprehensive within the specified period. In some instances this may not be possible, and a partial or "review status" response is issued to the contractor so that concerned parties are aware of the circumstances. This is followed as soon as possible with a complete, formal response.

If the RE projects that the review period will take longer than the contract requirement, the RE contacts the contractor by telephone for the purpose of explaining the possible delay. The RE sends a confirming letter immediately following the call.

5.8 ON SITE REVIEW

The Engineer will visit the jobsite as required, to observe a condition in question or to discuss the subject with the RE, the contractor, or others, as necessary.

5.9 REVIEW STATUS TRACKING

All known submittals will be logged in CCS prior to their due date. Throughout the contractor submittal review process the RE monitors and tracks the status of all submittals utilizing the CCS.

5.10 EQUIPMENT AND MATERIAL LISTS

Construction contract specifications may require the contractor to complete a list of all long-lead and/or schedule-critical material and equipment items, the name of each supplier, and the required and promised delivery dates for each item. The list is received and processed by the RE as a submittal.

5.11 SUBMITTAL RECORD FILING

The RE retains copies of all submittal documents, related documentation, comments, and revisions, filed in submittal number order. The RE is responsible for ensuring that an accurate file is available for ready retrieval. To ensure retrievability, a sign out system is maintained by the RE for documents removed from files.

5.12 SUBMITTAL DISPOSITION CHANGES

A submittal that was assigned a disposition code of "Rejected, Revise and Resubmit," may be resolved and upgraded to an "Accepted" code, without the contractor actually resubmitting the submittal. In this case, the RE will first obtain written notification from the Engineer, specifically accepting the Contractors written response. The RE will log a revision in CCS for the submittal number and upgrade the review code. The RE will affix a new review stamp to the submittal, cross out the old stamp, and sign the new stamp, marking the "Accepted" code. A transmittal, including justification for the change, will be sent to the contractor.

5.13 RESUBMITTALS

Required resubmittals will be logged in CCS as soon as identified. Where parts of a submittal were accepted and parts rejected (e.g., specific drawings), only rejected items need be resubmitted. Resubmittals will be process in the same manner as original submittals.

5.14 SUBMITTAL SCHEDULE REVIEW

The RE periodically reviews the status of submittals and advises the contractor of submittals due that may impact the schedule. Status listings of submittals required for specific contract activities will be included as part of "readiness" reviews. The submittal schedule will be reviewed and adjusted periodically.

6.0 REFERENCES

Document	Title
CF4	Contractor Submittals Tracking
CF5	As-Built Documents Processing
CM14	As-Built Document Requirements

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Review Stamp

Exhibit 7.1

REVIEW STAMP

Reviewed for General Compliance with the Contract Documents	
ACCEPTED	☐
ACCEPTED AS NOTED - NO RESUBMITTAL REQUIRED	☐
ACCEPTED DESIGN/ SCHEDULE SUBMITTAL AS NOTED	☐
REJECTED, REVISE AND RESUBMIT	☐
FOR RECORD ONLY	☐
Resident Engineer:	Date:

SECTION 6.02
PROGRESS PAYMENTS

1.0 PURPOSE

This procedure establishes the process and documentation for ensuring that progress payments are made in a timely manner utilizing acceptable cost control practices. The records that the resident engineer (RE) maintains must be accurate and comprehensive in order to provide an audit trail at all times throughout the duration of the contract.

2.0 GENERAL

2.1 Each contractor is also required to submit a detailed Schedule of Values (Exhibit 7.1) after the Notice to Proceed as specified in the contract. The Schedule of Values will be in sufficient form and detail to provide a reasonable assessment of how lump sum items will be statused over the life of the contract. (Some procurement contracts contain a Schedule of Payments in the actual contract documents; in these cases, no Schedule of Values is required.) Schedule of Values submittals must be in place prior to the processing of any payments to the contractor.

2.2 As a part of the monthly schedule updates, the RE assures that the Skeleton Forms statusing represents work that has actually been accomplished to date. This status is reviewed with the RE one week prior to the cut off for the monthly payment cycle.

2.3 The contractor may submit as specified in the contract, a list of materials (Schedule of Material Allowances) for which it will seek to receive progress payment prior to installation. Advance payment for materials is intended to be used for major items only. Prior to inclusion of such materials into any progress payment, the RE ensures that all the requirements set forth in the Contract Documents, General Conditions, and Section on Progress Payments have been met.

3.0 DEFINITIONS

3.1 *Contract Skeleton Form* (Exhibit 7.2): This form is generated by the contractor to facilitate manual statusing of progress amounts. The RE reviews and approves those amounts. The form lists all contract pay items and pay item numbers, indicates whether payment is made on a unit price or lump sum basis, shows estimated quantities for each unit price item, and shows total price for each pay item. The contractor indicates the monthly quantity changes for the unit price pay items and a stipulated amount for lump sum pay items, which are listed according to the previously approved Schedule of Values. The contractor submits the Contract Skeleton Form to the RE on the last day of the approved work period. The RE and the contractor agree to the quantities and amounts indicated on the Skeleton Form for the period.

3.2 *Contract Payment Estimate* (Exhibit 7.3): Provides the basis for contractor progress payments and is based on data provided by the Contract Skeleton Form (Exhibit 7.2) and shows for each pay item, on both a current and cumulative basis, quantities installed, estimated costs, and percent completed.

3.3 *Schedule of Values* (Exhibit 7.1): A breakdown of selected lump sum pay items into work categories for the purpose of facilitating the making of accurate assessments of contractor's progress.

3.4 *Pay Book or Quantity Record:* The Pay Quantities Records ledger of individual pay items.

3.5 *Schedule of On-Site Material Allocations:* A detailed cost breakdown for materials temporarily stored prior to installation and for which the contractor seeks partial payment.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The RE has primary responsibility for implementing pay estimate procedures, verifying the accuracy of the pay estimates submitted by the contractor at the end of each monthly work period, and forwarding the approved contract payment estimate to Accounting for processing.

5.0 PROCEDURE

5.1 RECORDS MAINTAINED

The Resident Engineer maintains monthly records, which provide backup for all payments, including sub-items for each task identification code in the approved schedule baseline and/or lump sums, as contained in the approved Schedule of Values. These records include all necessary data to support the respective quantities installed that month. Pay records are subject to audit and must be maintained in a neat, orderly manner and kept up-to-date.

5.2 MEASURING AND DOCUMENTING PAY QUANTITIES

The various methods for measuring and documenting pay quantities on both a unit price and lump sum basis are described in Subsections 5.3 and 5.4.

5.3 UNIT PRICE ITEMS

5.3.1 MAINTAINING TABULATIONS

For contracts that have a Schedule of Values as a requirement, quantities shall be verified in accordance with the Schedule of Values. Quantities are shown, when possible. Other information to be recorded includes the pay item number, pay quantity and description, unit of measurement, unit price, and quantity installed.

5.3.2 THEORETICAL COMPUTATION

Actual pay quantities shall be mathematically computed, measured, and counted. Calculations are based on accurate dimensions determined from the Contract Drawings (e.g., Measurement and Payments Limit Drawings). The computations must be prepared in a conventional manner. Reference should be made to applicable drawings. Sketches may be attached to supplement the calculations. All final calculations must be independently checked before comparing with the contractor's calculations. Wherever possible, final quantities shall be computed before work commences on the item, or as soon thereafter as possible, thereby enabling realistic progress payments and preventing overpayment.

5.3.3 TOTAL QUANTITY TAKEOFFS

Total quantity takeoffs are to be made for major unit price items, including excavation, concrete, rebar, and backfill. In order to establish a common basis for use throughout the execution of the contract, the RE will coordinate these findings with quantities estimated by the contractor. Measurement of principal quantities will be performed as follows:

- Concrete measurement is made to neat line outside dimensions, as shown on lift drawings. Progress on concrete placement shall be by lift number and take-off quantities. While not required for pay estimates, it is recommended that daily progress be depicted by colored areas on a schematic diagram or layout of concrete placement areas. The same visual approach would be used to show progress where numerous utility systems overlap.

- Rebar quantities are computed from cutting and bending sheets prepared by metal fabricators. The RE ensures that standees, chairs, and other rebar not specifically required by contract document are not included in chargeable quantities.

- Except as may be specifically called out on the Contract Drawings, excavation and backfill is calculated based on the external dimensions of concrete placement as indicated on lift drawings.

5.3.4 FIELD MEASUREMENTS AND VERIFICATION

Numerous items are required to be measured in place. Frequently, the measurement of such items must be made while they are being installed or while accessible. To prevent future disagreement, it is recommended that measurement of any unit price item (e.g., piping, valves, conduit, waterstop, and miscellaneous metal) be made jointly and in mutual agreement between the RE and the contractor.

5.3.5 COPY OF CONTRACTOR MEASUREMENTS

The RE or members of the RE staff may not always be available when the above measurement is being performed. For this reason, the RE will require the contractor to provide a copy of all measurements taken by the contractor.

5.3.6 OTHER MEASUREMENTS AND CERTIFICATIONS

Certain pay item quantities will be derived from certified shipping weights, bar lists, scale weights, cut sheets, meter readings, and mill test reports, as specified in the Contract Documents. This data must be checked and compiled to determine progress payments and final quantities for the respective items.

5.4 LUMP SUM PAY QUANTITIES

5.4.1 SUPPORTING DATA

Progress payments made against lump sum items require supporting data for justification of reasonable partial payment. The RE shall use the information recorded in the Daily Inspection Reports (DIRs) as a primary source in determining the percentage of completion within the pay period.

5.4.2 SCHEDULE OF VALUES

A well prepared and maintained Schedule of Values will provide an initial basis for agreement between contractor and RE. The contractor will submit a Schedule of Values to the RE shortly after award of contract. The RE will review the Schedule of Values and will either approve it or reject it within 30 days from date of receipt. The RE will ensure that the level of detail is sufficient to readily assess the cost percentage completion of each bid item.

5.4.3 ENGINEER'S ESTIMATE

The RE will be supplied with a copy of the Engineer's Estimate, showing all cost components used to derive lump sum pricing. This estimate provides a reference for quantities and values anticipated.

5.4.4 GENERAL REQUIREMENTS OF THE TECHNICAL PROVISIONS

Payment of the contract lump sum price for General Requirements of the Technical Provisions (except mobilization) will be made according to contract specifications.

5.5 PAYMENTS FOR CHANGES/WORK AUTHORIZATION CHANGE NOTICES

Payments for change order work can only be made when supported by a signed Change Order (CO) or Work Authorization Change Notice (WACN). COs/WACNs that are executed prior to the end of the payment period may be loaded into the Payment Estimate. For contracts that are "pay-off-the-schedule", executed COs/WACNs must also be incorporated into the automated scheduling system baseline in order for payment to be made.

6.0 REFERENCES

None

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	Schedule of Values (sample)
7.2	Contract Skeleton Form (sample)
7.3	Contract Payment Estimate (sample)

Exhibit 7.1

SCHEDULE OF VALUES (SAMPLE)

C0999 - Easy Street Restoration
Willing Contractor
11/18/99

Payment Item	Description	Activity Breakdown	Amount
1	General Requirements	1. First three monthly payments	312,500.00
		2. 30 monthly payments of $23,596	707,880.00
		3. One month at $23,620	23,620.00
		Total Item 1	$1,045,000.00
2	Quality Control Requirements	1. Engineering and submittals	63450.00
		2. Set up testing facilities	63,450.00
		3. First 24 months @ $9,870/mo.	23,6880.00
		4. Remaining 10 months @ $5,922/mo.	59,220.00
		Total Item 2	$423,000.00
3	Shrub and Tree Protection	1. Engineering and submittals	2,700.00
		2. Shrub and tree protection	10,700.00
		1. Monthly maintenance - 34 mos. @ $400/mo.	13,600.00
		Total Item 3	$27,000.00
4	Field Office	1 Engineering and submittals	1,560.00
		2 Installation	29,640.00
		Total Item 4	$31,200.00
5	Demolition	1. Engineering and submittals	70,800.00
		2. Easy St. breakup	165,200.00
		3. Easy St material disposal	94,200.00
		4. Pond area breakup	94,200.00
		5. Pond area disposal	47,200.00
		Total Item 5	$472,000.00

Exhibit 7.2

CONTRACT SKELETON FORM (SAMPLE)

MTA CONSTRUCTION DIVISION

CONTRACT SKELETON FORM

Contract:
Contractor:
Description:

Pay Estimate: #
Period Ending:
Contract Value:

Item No	Item Description	Total Contract Value	Previous Earnings		Earnings This Period		CONTRACT TO DATE	
			% Compl.	Dollars	% Compl.	Dollars	Completed Quantity	Earned Value
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

CONTRACT PAYMENT ESTIMATE (SAMPLE)

Exhibit 7.3

Contract:
Contractor:
Description:

Pay Estimate:
Period Ending:

Contract Award Value	$0.00
Unit Price Adjustments	$0.00
Approved Change Orders	$0.00
Work Authorization CN's	$0.00
AMOUNT AVAILABLE FOR PAYMENT	$0.00
Less: Earnings to Date	$0.00
CONTRACT BALANCE TO EARN	$0.00
Add: Retention to Date	$0.00
CONTRACT BALANCE TO PAY	$0.00

	PREVIOUS	CURRENT	TO DATE
EARNINGS	$0.00	$0.00	$0.00
RETENTION			
Contract	$0.00	$0.00	$0.00
Other	$0.00	$0.00	$0.00
Release	$0.00	$0.00	$0.00
Liq. Damages	$0.00	$0.00	$0.00
PAYMENT	$0.00	$0.00	$0.00

I HEREBY CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THIS ESTIMATE REPRESENTS A CORRECT AND JUST STATEMENT OF THE WORK PERFORMED. FURTHERMORE, I CERTIFY THAT THE WORK COMPLETED TO DATE, UNDER THIS CONTRACT, IS IN FULL ACCORDANCE WITH THE TERMS OF THE CONTRACT DOCUMENTS. PLEASE ACCEPT THIS AS A DULY EXECUTED AFFIDAVIT THAT ALL SUBCONTRACTORS AND/OR SUPPLIERS WHO HAVE PERFORMED ANY WORK ON THE PROJECT TO DATE HAVE BEEN PAID THEIR PROPORTIONATE SHARE OF ALL PREVIOUS PAYMENTS FROM THE MTA. I CERTIFY UNDER PENALTY OF PERJURY, UNDER THE LAWS OF THE STATE OF CALIFORNIA, THAT THE FOREGOING IS TRUE AND CORRECT.

SIGNATURE _____ TITLE _____ DATE _____

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS ESTIMATE REPRESENTS A TRUE AND CORRECT STATEMENT OF THE WORK PERFORMED, AND IS IN CONFORMITY WITH THE TERMS OF THE CONTRACT DOCUMENTS.

RESIDENT ENGINEER _____ DATE _____ CONTRACT ADMINISTRATOR _____ DATE _____ DEO, CONSTRUCTION _____ DATE _____

SECTION 6.03
BACKCHARGES

1.0 PURPOSE

This procedure provides the Resident Engineer (RE) with a method to document and recover costs incurred in correcting deficient, defective, omitted or nonconforming work that is not covered under warranty.

2.0 GENERAL

2.1 In order to recover costs for remedial work under the backcharge procedure, the Responsible RE must be notified by the Identifying RE of the nonconformance in sufficient time to allow the Responsible Contractor to respond by correcting the nonconformance or accepting the backcharge. If the work is done by other contractors without notification and consent by the Responsible Contractor, the chances of recovering costs may be negated.

2.2 The General Conditions of the contract provide the justification necessary to effect a backcharge and recover costs for failure to perform per contract specifications. Refer to contract articles with titles such as "Inspection," Warranty," "Audit" and "Notification of Completion, Final Acceptance and Payment" for the contract in question when citing justification.

2.3 The vehicles for recovering costs for work performed under the backcharge procedure are Change Notices, Change Orders and Consultant Change Notices. These documents must be sufficiently backed up with all relevant data and a detailed breakdown of cost labor, materials, and equipment to ensure cost recovery.

2.4 In justifying backcharges in cases involving overlapping or follow-on contracts, it must first be determined that grounds for backcharging exist. The RE who identifies a nonconformance in the work must first determine if there are any pre-existing conflicts in the design drawings of the contracts involved that preclude a backcharge. For instance, in cases where facilities modifications are required to bring facilities work in line with what is shown on follow-on contract documents, the modifications are not backchargeable unless it can be clearly shown that the responsible contractor did not meet the specification requirements of the Responsible Contractor's contract.

3.0 DEFINITIONS

3.1 *Backcharge:* A reimbursable cost sustained by the Contractor completing the work and charged to another Contractor or entity responsible for nonconforming work, as outlined in the contract documents.

3.2 *Identifying Resident Engineer:* The RE who manages the Contractor whose work is effected and requires the remedial action that may or may not be backchargeable.

3.3 *Responsible Resident Engineer:* The RE who manages the Contractor who is performing the work to rectify the nonconformance.

3.4 *Reimbursable costs:* Cost incurred to correct and/or complete the backchargeable work. Reimbursable costs include all direct, indirect and administrative labor (construction management, design support and program management) required to correct the nonconforming work.

3.5 *Responsible Resident Engineer:* The RE who manages the Contractor responsible for the nonconformance.

3.6 *Identifying, Performing, and Responsible Resident Engineer:* In any given situation, the RE may actually be one or all three of these authorities. For purposes of this procedure, they are addressed separately.

4.0 RESPONSIBILITIES

4.1 Resident Engineers. All REs must clearly identify backcharge issues sufficiently in advance to notify the responsible parties and reach an agreement as to how the nonconformance will be rectified before follow-on work is begun. The RE who identifies a nonconformance that impacts his/her contract shall immediately notify the Project Manager and Deputy Project Manager, Construction, and shall complete a written Notice of Backcharge Work (Exhibit 7.1) per the instructions in this procedure. Administrative handling of the backcharge paperwork will be the responsibility of the Identifying RE, who will coordinate with the schedulers, estimators and cost engineers responsible for analyzing backcharge costs and schedule impacts.

4.2 Identifying Resident Engineer: The Identifying RE will track all issues related to backcharge work, whether or not they result in a backcharge or are resolved by the Responsible Contractor. The Identifying RE will:

- Review the General Terms and Conditions of the contract related to backcharges and advise the Responsible RE.
- Notify the appropriate cost engineer, scheduler and estimator as required and provide suspense dates for receipt of their input.
- Negotiate the final costs.
- Process the change documents as required, retaining sufficient documentation in the files to support an audit.

4.3 Responsible Resident Engineer: The Responsible RE reviews the Notice of Backcharge Work, transmits the notice and backup documentation to the Responsible Contractor, ensures the contractor meets the suspense date for reply, evaluates the contractor's response and coordinates implementation of the contractor's or an alternative work plan with the Performing RE.

4.4 Scheduler: The scheduler assigned to the task will review and analyze the change and identify any delay impacts on affected contracts.

4.5 Cost Engineer: The cost engineer will define cost tracking requirements for the backcharge, track all costs directly associated with the work and add verifiable pro-rated costs for construction management, design support, and program management. When CCNs are involved, the cost engineer will assure that in-house time sheet recording requirements are established and followed, and will arrange for a special account number, if appropriate.

4.6 Estimator: The estimator will review backcharge documentation for inclusion of all cost information pertinent to the backcharge and provide a fair cost estimate to the Identifying REs.

5.0 PROCEDURE

5.1 When nonconforming work is identified, the Identifying RE will notify the Responsible RE. Notification shall be given within 24 hours if the change is considered exigent but no later than five (5) work days by written notification.

5.2 If the nonconformance is discovered by the RE of a follow-on contract, the drawings for the interfacing/overlapping contracts must first be reviewed to determine that a nonconformance has indeed occurred. Once a nonconformance is verified, the Identifying RE will fill out a Notice of Backcharge Work (Exhibit 7.1). The form will contain a description of the nonconformance, citing contract specifications and

drawing numbers as applicable. All supporting documentation will be included as attachment to the form. The Notice of Backcharge Work shall contain as a minimum:

- Why it is a backcharge (in summary form).
- What the nonconformance work consists of (in summary form).
- The location of the work to be performed, referencing drawings, details and other contract documents.
- When the nonconformance was discovered.
- Who discovered it.
- The contract or entity responsible for the non-conforming work.
- The schedule impact, if any.

5.3 Upon receipt of a Notice of Backcharge, within 24 hours if the change is considered exigent but no later than two (2) working days, the Responsible RE will review the backcharge for concurrence. If the backcharge is agreed to, the Responsible RE will send the Notice of Backcharge Work with a cover letter and supporting documentation to the Responsible Contractor. The letter will state that the Contractor must respond to the notice within five working days. The letter will further direct the Contractor to correct the nonconformance or be backcharged for the cost of having others perform the work.

5.4 The Responsible Contractor will review the correspondence and decide what action to take. The Responsible Contractor will enter his response on the Notice of Backcharge Work and return same to the Responsible RE. The Responsible Contractor will exercise one of three options as follows within five (5) work days from receipt from Contractor:

5.4.1 Option 1: The Responsible Contractor agrees to perform the work, and submits a work plan to correct the non-conformance:

- After review and acceptance of the Responsible Contractor's work plan, the Responsible RE will forward a copy of the plan to the Identifying RE.
- The Responsible RE will coordinate the Responsible Contractor's work efforts with any overlapping or follow-on contracts, mitigate conflicts, and perform final inspection and acceptance of work.

5.4.2 Option 2: The Responsible Contractor accepts the backcharge, but not the performance of work.

- The Performing RE will prepare a detailed scope of work prior to agreeing on the price. The Responsible RE will reach an agreement with the Performing and Responsible Contractor(s) on the price prior to starting the work.
- When the price is agreed on, the Performing RE will process a change order for the Performing Contractor, and will provide all support documentation to the Responsible RE to prepare a parallel deductive change order for issuance to the Responsible Contractor.

5.4.3 Option 3: The Contractor rejects the backcharge and the performance work or the Contractor fails to respond within the time limit:

- The Responsible RE will notify the Identifying RE of the Responsible Contractor's rejection of the backcharge or failure to respond within five (5) days from Contractor's response or lapse of time allowance to Contractor five (5) days. In the latter case, the Responsible RE will notify the Responsible Contractor by registered letter that, in the absence of a response, a rejection of the backcharge has been assumed, and that a unilateral deductive change order will be issued for completion of the work by others.
- In the absence of an approved work plan and price agreement, the Performing RE will prepare and negotiate a change order for the Performing Contractor to proceed with the corrective work.
- A copy of the completed change order package will be sent to the Responsible RE who will then

prepare a unilateral deductive change order for the Responsible Contractor.

5.4.4 If the contract with the Responsible Contractor has already closed and a unilateral deductive change order cannot be issued, a backcharge against the Responsible Contractor will be pursued through a claim.

5.4.5 Nonconformances that are determined to be the responsibility of "third party" entities (utilities, local governments, municipalities, etc.) shall be referred to the DEO, Construction and the Third Party Administrator for disposition.

6.0 REFERENCES

None.

7.0 EXHIBITS

Exhibit	Title
7.1	Notice of Backcharge Work

Exhibit 7.1

NOTICE OF BACKCHARGE WORK

Date Prepared: _____

Originator Data:			
Contract No:	Contract Title:		
Backcharge:	Backcharge Title:		
Ref. No: CO:	CN:	RFC:	REI:
Backcharge To:			
Contract No:	Contract Title:		
Backcharge Amount $	CCR ☐ Yes ☐ No	PO Req ☐ Yes ☐ No	

Description of Work:

Notes: 1. All costs to be determined in accordance with the Pricing Provisions of the Contract performing the work.

Identifying Resident Engineer:

Signature: _____

Title Contract: _____

Date: _____

Responsible Resident Engineer:

Signature: _____

Title Contract: _____

Date: _____

Contractor:

☐ Accept Notice of Backcharge and submit Work Plan to correct the Non-Conformance

☐ Accept Backcharge, will not correct Non-Conformance

☐ Reject the Backcharge and Performance of Work

Signature: _____

Title Contract: _____

Date: _____

SECTION 6.04
DIFFERING SITE CONDITIONS

1.0 PURPOSE

This procedure provides a method for recording and documenting differing site conditions. It also gives the Resident Engineer (RE) guidelines for assessment of the impact and consequences of the site condition and notification process to mitigate delays in the construction process.

2.0 GENERAL

2.1 Alleged differing site condition(s) can, at a minimum, disrupt a Contractor's planned construction activities and delay completion of the project, and may result in increased contract costs and/or increased costs on other contracts (e.g., those associated with delayed access), and additional administrative and supervisory expense.

2.2 This procedure outlines the responsibilities of the RE in responding to notification by the Contractor of differing site conditions.

- Investigate the alleged differing site condition.
- Make an initial determination of impact on construction progress and request assistance as needed.
- Record and document differing site conditions at the site.
- Notify other project participants and third parties.

3.0 DEFINITIONS

3.1 *Differing Site Condition*: Subsurface or latent physical conditions differing materially from those indicated in the contract documents, or unknown physical conditions at the work site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in the contract.

4.0 RESPONSIBILITIES

4.1 The RE is responsible for investigations of any alleged differing site condition, for determining the effect of the differing site condition on work progress; for documenting and photographing the alleged differing site condition; for notifying all affected parties; for issuing a Change Notice (*CN*) for differing site conditions that can be readily resolved, and for monitoring continuing differing site conditions until the condition is remedied.

4.2 If the investigation does not find a differing site condition or finds that the differing site condition does not impact the contract cost or schedule, the RE will direct the contractor to resume the work in the area of the alleged differing site condition. If necessary, the RE will have the contractor submit a plan for resumption of the work.

5.0 PROCEDURE

5.1 CONTRACTOR NOTIFICATION OF DIFFERING SITE CONDITION

5.1.1 Per General Conditions, Differing Site Conditions of the Contract Documents, notification by the Contractor of an alleged differing site condition requires a prompt and decisive response by the RE. The RE must investigate the differing site condition before conditions are disturbed. Continued work in the area may make it difficult to verify the existence of the differing site condition or verify its original extent.

5.1.2 If the RE determines that an alleged differing site condition will materially affect the Contractor's operation, any interim contract milestone, critical or near-critical path activities, the RE will notify the DEO, Construction. This will alert the DEO, Construction to potential delays in work progress, or potential claims,

and provide an avenue for action when delays are not resolvable by the RE.

5.1.3 If the differing site condition affects design assumptions, the MTA Engineering will be notified by the RE of the potential redesign.

5.1.4 The RE will notify Public Affairs if the differing site condition affects the area residents and businesses.

5.2 RECORDING AND DOCUMENTING DIFFERING SITE CONDITIONS

5.2.1 The RE will investigate the alleged differing site condition. The RE will need a date-back camera and a measuring device. The measuring device will have a scale large enough to be clearly visible in the picture.

5.2.2 Photographs, measurements, and sketches of the differing site condition should be taken from a permanent reference point, and indicate the exact location of the condition being documented. Photos should be labeled with respect to the permanent reference point (eg.,"looking northeast from the drug store on the corner of..."). A scaled measure should be shown in the photos to provide visible evidence of depth and dimension, size (e.g., of obstructions such as boulders), and diameters (conduits, pipes, etc.). A third party should be able to review the field reports and identify the differing site condition.

5.2.3 The RE, or designee, documents the results of the site condition investigation. This documentation and the photos provide a permanent written and visual record of the differing site condition. The name of the investigator must be on the documentation for future reference.

5.2.4 The differing site condition will also be noted in the Daily Inspection Report. The impact on Contractor's work force and equipment must be included.

5.2.5 Appropriate entries will be made in the RE's Daily Diary.

5.3 CONTINUING DIFFERING SITE CONDITIONS

5.3.1 If the consequences of a differing site condition are readily apparent, the RE will issue a Change Notice in accordance with Policy CP14 for determination of merit. Upon determination of merit and approval of the Change Notice, the contract will be modified and the contractor authorized to proceed with the work, in accordance with the General Condition entitled CHANGES. Otherwise, the RE will direct the contractor to resume the work affected by the differing site condition and will continue to monitor, document and evaluate the long-range impacts of the differing site condition. The RE is responsible for keeping the DEO, Construction, informed on the status of the differing site condition.

5.3.2 The RE must ensure that Daily Inspection Reports continue to document the differing site condition and that copies of these reports are kept in the historical file.

5.3.3 The RE will coordinate all monitoring of the differing site condition by third-party experts.

6.0 REFERENCES

None

7.0 EXHIBITS

None

SECTION 6.05
CHANGE PROCESS

1.0 PURPOSE

This procedure outlines the Resident Engineer's (RE's) responsibilities in providing full and complete documentation for processing changes to MTA construction and procurement contracts. Additional detail requirements are contained in MTA Procedure CF14: Change Control: Construction/Procurement Contracts for CIP Projects. In the case of conflict or discrepancy, MTA procedures supersede any direction provided below, with the exception of discrepancies between the contract and the MTA procedures, in which case the contract requirements take precedence.

2.0 GENERAL

2.1 The change control process consists of five basic steps:

1. Change initiation
2. Change Notice (CN) processing
3. Negotiation/Cost verification
4. Change Order (CO) processing
5. Change cost posting and file closeout

All contract changes will be processed in accordance with California Public Utilities Code 130234 (Exhibit 7.1).

2.2 Terms and conditions vary from contract to contract, refer to the specific contract documents in question when processing changes.

3.0 DEFINITIONS

Refer to the MTA procedure CF14: Change Control: Construction/Procurement Contracts for CIP Projects for definitions of change-process terms.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

RE authority for approving and executing contract changes is defined in MTA Procedure CF14: Change Control: Construction/Procurement Contracts for CIP Projects. The RE is not authorized to execute any contract change extending contract duration or milestones or otherwise affecting the contract General or Special Conditions or to unilaterally execute changes without Contract Administrator approval. The RE is responsible for the earliest possible identification of potential changes, monitoring the progress of contract changes, tracking and reporting change status, coordinating change resolution with the Engineer, and contractor, preparing change documentation, ensuring that changes and contractor claims are processed in a timely manner, and ensuring that milestones and schedules within his/her jurisdiction are not affected or impacted by avoidable delays in processing changes.

4.2 CONTRACT ADMINISTRATOR

The Contract Administrator is responsible for general oversight of change activity on assigned projects, and for ensuring that all changes are processed in compliance with policy and procedure requirements, State Laws, and contract terms and conditions.

5.0 PROCEDURE

5.1 REQUEST FOR INFORMATION OR CHANGE

5.1.1 REQUEST FOR INFORMATION (RFI)

The RE will insure all that all RFIs are logged and tracked in the CCS. All RFI transmittals will be generated from CCS. RFIs will be reviewed by the Engineer for technical response when required. If the response to an RFI indicates a change is required or contains design modifications, the RE will generate a CN in accordance with MTA procedures. Multiple RFIs may be processed in a single CN.

5.1.2 REQUEST FOR CHANGE (RFC)

The RE will insure that all RFCs are logged and tracked in the CCS. All RFC transmittals will be generated from CCS. The RFC will be reviewed by the Engineer and the RE, and merit will be determined. If the RFC is merited, the RE will generate a CN in accordance with MTA procedures. If the RE determines the RFC has no merit, the contractor will be notified. If the contractor does not agree, it may submit a notice of intent to claim in the time frame required by the contract, typically 10 working days from the date of receipt of the RFC denial (refer to GREP 6.06).

5.1.3 RESPONSE TIME

All RFIs/RFCs shall be responded to in accordance with contractual requirements. Typically, the time from receipt to response should not exceed 10 working days.

5.2 CONTRACT CONTROL SYSTEM (CCS®)

Project construction/procurement contract changes will be logged, tracked, and reported using the CCS. All standard change documentation forms (e.g., CN, CO, Approval Sign-Off Sheets, Change Technical Evaluation, Summary/Detail Records of Negotiation, Finding-of-Fact statements, standard change document transmittals, etc.) will be generated from the CCS. All RE staff who participate in the change control process must attend a CCS instruction session, provided by the MTA, within 90 days of assignment to the contract.

5.3 CHANGE DOCUMENTATION

Change documentation will be processed in accordance with MTA procedure CF14: Change Control: Construction/Procurement Contracts for CIP Projects. The most recent revision of this procedure should be considered the definitive guide in the preparation of change documentation for the Project. Copies of this procedure may be obtained from the Manager, Document Control or the Manager, Change Control. Directives issued by the Manager, Change Control may supersede MTA procedure CF14 pending formal incorporation and release of revised procedures.

5.4 CHANGE STATUS REPORTS

Change status reports will be taken directly from the CCS database files. The RE is therefore responsible for keeping change information current by providing data to update critical database fields throughout the change process (e.g., "next action" and "need date" [for ball-in-court and priority reports]; CN/CO issue, acceptance, approval and execution dates; change cost data, cost recovery data). Change Status reports based on real-time CCS data may be generated at any time, therefore it is critical that the RE maintain current data at all times.

5.5 CHANGE CONTROL BOARD

All changes may be presented to the Project Change Control Board (CCB) as defined in CF14. The RE or designee shall be present at the CCB meeting to address the change, as requested.

5.6 CHANGE ORDER BOOKS

Change Order Books (Change File Packages) should be prepared as outlined in Change Control Procedure CF14. The Change Order Books are organized using a five-tab system. White sub-tabs should be used to break out documentation supporting individual CNs within a given tab (if the CO involves multiple CNs), to break out attachments and exhibits within a tab or to simplify reader access within a tab when several, or very lengthy documents are presented to the reader in a given section.

To insure that a Change Order Book is complete, the Change Package Document Completeness Checklist, generated from CCS, will be used to verify that all required documents are included in the book. The RE shall forward the completed Change Order Book to the Contract Administrator. The Contract Administrator will obtain approval signatures. When all signatures have been obtained, the Contract Administrator will return the original Change Order Book to Change Control, who will process the documents as required. On completion of processing, Document Control will forward a complete original copy, including all cost documentation to the Records Management Center for retention.

5.6.1 SIGNED ORIGINALS

All change documentation (especially originals requiring approval signatures) should be printed on MTA letterhead paper. Where indicated, document approval/validation shall be by wet ink signature. A typed name on a CCS-generated form does not constitute approval/validation.

5.6.2 SUPPORT DOCUMENTATION

All documents and correspondence related to change merit and cost determination are to be included in the change file, including any documentation generated following change execution. All correspondence, reports, or records will be listed as part of the Chronology of Events listing in the CCS change record. Any support documentation (e.g., daily time and material cost records, not included in the original Change Book), will be identified in the book by a target sheet. The support file is part of the legal project record and will be included in the project file at contract closeout.

5.7 NEGOTIATIONS

The RE will prepare or obtain an independent Fair Cost Estimate before negotiation of change cost as required by CF14. Prior to scheduling formal negotiations, the RE may form a negotiation team to develop a negotiation position and negotiating limits on cost and schedule impact, based on the Fair Cost Estimate and Time Impact Analysis. The RE will determine the time and place for the negotiations, schedule a meeting with the contractor, and contact negotiating team members to attend. All parties will be provided a minimum of two working days notice of negotiation meetings.

On COs requiring execution signature beyond the RE's authority, the CM will obtain the Contract Administrator's concurrence prior to negotiations taking place. The RE will implement the following procedures prior to starting change order negotiations.

For any CO within the criteria described in paragraphs 5.7.1 through 5.7.3, the evolution of negotiations from original position to final settlement shall be clearly documented and explained in the Record of

Negotiations.

5.7.1 CHANGES WITHIN RE AUTHORITY LEVEL

The RE establishes a pre-negotiation position based on FCE and/or other supporting data, notifies the Contract Administrator, and negotiates and documents the CO accordingly, including a Cost and Price Analysis form stating the method used for pricing the change.

5.7.2 CHANGES ABOVE THE RE AUTHORITY LEVEL

The contract administrator establishes a written pre-negotiation plan based on FCE and/or other supporting data and sends it to the RE.

The written pre-negotiation position is placed in the change file and is included in the final Change Order Book.

The RE and Contract Administrator negotiate the CO accordingly. If, during the course of negotiations, it appears that the final settlement is going to exceed the upper limit of the pre-negotiation position, the RE will prepare a revised negotiation plan.

5.7.3 MEETING MINUTES

Meeting minutes for negotiations and finding-of-fact sessions will be recorded by a designated team member, and an attendance roster will be circulated at the meeting. A finding-of-fact memorandum or Detail Record of Negotiations, if required, will be prepared after the meeting and will be included in the change documentation.

5.8 UNILATERAL CHANGES

5.8.1 METROPOLITAN TRANSPORTATION AUTHORITY

The contractor's contract gives the MTA the right to issue a unilateral CO to the contractor in the event the contractor and the MTA are unable to agree on an adjustment to the contract price or contract time. The contractor is then entitled to file a claim.

5.8.2 RESIDENT ENGINEER

The RE may choose to issue a unilateral CO or Work Authorization Change Notice (WACN) with prior approval by the Contract Administrator if:

- Negotiations with the contractor fail to result in agreement on cost and schedule adjustments.
- Notice and agreement of the contractor is not required.
- Contractor fails to submit a Cost/Schedule Proposal on time.
- Contractor refuses to accept the bilateral change by failing to sign the bilateral CO.

A unilateral CO is issued based on the cost and time adjustments determined by the RE, and documented by an independent Fair Cost Estimate and Time Impact Analysis. If the contractor wishes to dispute those adjustments, it must file a claim per the General and Special Conditions of the contract. Cost and schedule information supporting the change should be well documented, because of the high risk of

contractor claims resulting from issuance of a unilateral CO.

The RE, however, will not make a unilateral change in design or substitution of materials without the full consent and authorization of Engineering Project Leader and the Contract Administrator.

Prior to requesting approval to issue a unilateral CO and when the contractor fails to respond with a proposal within the allotted time, the RE will:

- Send the contractor a letter to establish a drop-dead date for submittal of the proposal based on the schedule needs. (Do not use an arbitrary number (e.g., two weeks) but base it on the schedule). Allow enough time to negotiate and implement the change if the contractor does respond.
- One week prior to the drop-dead date, notify the contractor that failure to submit the proposal on time will result in the issuance of a unilateral CO.

Once concurrence is received, proceed with the issuance of the unilateral CO in accordance with the contract and MTA procedures.

5.9 TIME AND MATERIAL CHANGES

There are only two situations that require time and material (T&M) records: Inability to forward price change work or disputed work.

5.9.1 TIME AND MATERIAL WORK AUTHORIZATION CHANGE NOTICE (WACN) ISSUING CONDITIONS

A WACN mandating submission of time and material cost records is issued under the following conditions:

- If it is impractical to ascertain the total cost of changes in the work
- If agreement cannot be reached on changes in the work or total contract price and it is necessary to proceed immediately to avoid delays

When a WACN is issued the contractor is required by the General Conditions to submit T&M records on a daily basis for cost documentation purposes. Work performed pursuant to a To-Be-Negotiated WACN also requires submittal of T&M records until the value of the change is negotiated. To-Be-Negotiated (not-to-exceed) values should not exceed the amount required to conduct final negotiations and the issuance of a change order.

5.9.2 TIME AND MATERIAL RECORDS

When a WACN is involved, the scope of work needs to be clearly understood by both parties. For example, the following conditions apply to T&M sheets when a WACN is involved:

- T&M sheets should reflect only that work for which the WACN is issued.
- Contract work and WACN work should not be commingled on the same time sheet.
- If there is a dispute over the amount of hours, material, or equipment on a particular time sheet, then the RE should not sign off on that timesheet.

- The contractor is required to submit time sheets on a daily basis and the RE needs to confirm and sign them on a daily basis. This must be enforced.

When an inspector signs off on the daily T&M sheet, information on the sheet shall include the name and craft, quantity of man-hours, equipment number, equipment description, equipment hours, and materials. It is also possible that the contractor may include items on the daily sheet that should be covered by the markups. Therefore, final resolution cannot be reached until the contractor submits completed T&M sheets that include all appropriate rates and markups.

Daily sign off by an inspector (or another knowledgeable staff member) should resolve the majority of reimbursement issues, provided there is a clear understanding of the scope of work. This should allow for prompt payment to the contractor as the work progresses. However, there should be a sheet-by-sheet audit by the RE--prior to finalization of the CO to verify that all the charges are in accordance with the contract. Refer to Exhibit 7.2, Time and Material Work Sheet.

If the T&M sheet does not contain language similar to that contained just above the inspector's signature on the Time and Material Work Sheet (Exhibit 7.2) the inspector (or knowledgeable RE staff member) should add this language (via a stamp or in writing) prior to signing the T&M sheet.

5.5.3 DISPUTED WORK/CLAIM CONDITIONS

In this situation, the contractor is proceeding with work as directed, but feels that a change is merited. The contractor has been directed to perform work by the Owner as part of the contract and has been denied a Request for Change. Consequently, the contractor intends to pursue reimbursement through the claim process.

In certain cases, T&M sheets should be kept without any acknowledgment of merit. The RE will state this requirement in the response to the RFC. This facilitates quantification of the cost of the disputed work. This requirement is identified in the General Conditions on Claims, regarding disputes over claims. Here, as in WACNs, it is important that there be a clear understanding of the scope of the disputed work and that the time sheets be submitted and signed off on a daily basis.

If the T&M sheet does not contain language similar to that contained just above the inspector's signature on the Time and Material Work Sheet (Exhibit 7.3) the inspector (or knowledgeable RE) should add this language (via a stamp or in writing) prior to signing the T&M sheet. The final paragraph of Exhibit 7.3, just above the inspector's signature, differs from the final paragraph of Exhibit 7.2.

6.0 REFERENCES

The following documents are referred to in this procedure and are available under separate publication:

1. CF14: Change Control: Construction/Procurement Contracts for CTP Projects
2. MTA Contract Control System (CCS) Users Manual, (accessible on-line).
3. GREP 6.06, Claims Process

7.0 EXHIBITS

The following exhibits are included in this procedure:

Exhibit	Title
7.1	California State Public Utilities Code 130234
7.2	Time and Material Sheet (Force Account Work Record)
7.3	Time and Material Sheet (Disputed Work Record)

Exhibit 7.1

TEXT OF CALIFORNIA STATE PUBLIC UTILITIES CODE 130234 (Initiated as AB1869)

Effective March 13, 1996

130243. The Los Angeles County Metropolitan Transportation Authority shall adopt a change order procedure for contracts awarded by the authority that includes each of the following requirements:

(a) When a change order is proposed, the contract administrator of the authority shall be notified and shall determine whether a change order is required. After consulting with the general counsel of the authority and appropriate technical advisers, the contract administrator shall either approve or disapprove the proposed contract change order.

(b) The general counsel of the authority shall be consulted on the proposed change order at the earliest possible time to consider and render advice on the legal implications of the proposed change. The contract administrator shall not approve a proposed change order unless the general counsel recommends changing the terms of the contract.

(c) The contract administrator shall require the contractor to submit certified cost and pricing data for the proposed change, and shall require an internal fiscal audit of any proposed change order that would cost in excess of one hundred thousand dollars ($100,000) to implement.

(d) The opinions of informed individuals working on the contract who oppose the adoption of a proposed change order shall be documented and be taken into consideration by the authority's change control board when determining whether a contract change is warranted.

Exhibit 7.2

TIME AND MATERIAL SHEET (FORCE ACCOUNT WORK RECORD)

Contractor: _____ CN Number: _____

Contract No: _____ Title: _____ Date: _____

Description of Work: _____

Approved by: _____ R.E. Accepted by: _____ Contractor

LABOR					MATERIAL & OTHER (Invoices Required)		
Name and Craft	Hours	Rate	Wages		Description	Unit Cost	Amount

Equip No.	EQUIPMENT	Hours	Rate	Amount		SUMMARY		
						Wages Paid		
						Travel Allowance		
						Subtotal		
						Mark-Up %		
						TOTAL LABOR		
						Material		
						Equipment		
						Subtotal		
						Markup %		
						TOTAL MATERIAL & EQUIPMENT		
						TOTAL		

This signature acknowledges verification of labor, equipment, and material quantities only. Costs and contract allowability are subject to audit verification in accordance with contract terms. Any costs determined not to be allowable for payment shall be deducted from the time sheet prior to final resolution of the change order.

Inspector _____ Signature _____ Date _____

Exhibit 7.3

TIME AND MATERIAL SHEET (DISPUTED WORK RECORD)

Contractor: _____ CN Number: _____

Contract No: _____ Title: _____ Date: _____

Description of Work: _____

Approved by: _____ R.E. Accepted by: _____ Contractor

LABOR					MATERIAL & OTHER (Invoices Required)			
Name and Craft	Hours	Rate	Wages		Description	Unit Cost	Amount	

Equip. No.	EQUIPMENT	Hours	Rate	Amount		SUMMARY			
						Wages Paid			
						Travel Allowance			
						Subtotal			
						Mark-Up %			
						TOTAL LABOR			
						Material			
						Equipment			
						Subtotal			
						Markup %			
						TOTAL MATERIAL & EQUIPMENT			
						TOTAL			

This signature acknowledges verification of labor, equipment, and material quantities expended under disputed contract work. This acknowledgment is for cost accounting only and in no way binds the Authority to pay for the itemized costs. Any costs determined not to be allowable for payment shall be in accordance with the contract terms and are subject to audit verification.

Inspector _____ Signature _____ Date _____

SECTION 6.06
CLAIMS PROCESS

1.0 PURPOSE

This procedure provides specific instructions for processing potential claims received from the contractor.

2.0 GENERAL

2.1 CLAIMS AND DISPUTES

Claims and disputes will be handled in accordance with the contract General Conditions articles governing:

- Disputes
- Notice of intent to claim
- Submittal of claims
- Mediation or Disputes Review Board

2.2 REQUESTS FOR TIME AND COMPENSATION

Contractor requests for additional time and compensation for work that are found to have merit are to be processed as bilateral change orders, whenever possible. If the request for change is determined to have no merit or a unilateral change order is issued and the contractor does not agree, the contractor may submit a notice of intent to claim.

2.3 CLAIMS AND FINAL PAYMENT

No claims shall be made after final payment is made to the contractor for the work. A claim will cease to be a claim if, at any time, a change order or contract amendment resolving the issue is signed by all parties.

3.0 DEFINITIONS

3.1 *Request for Change:* Any letter or correspondence from the contractor requesting modification to the contract.

4.0 RESPONSIBILITIES

4.1 The RE is responsible for initially assessing the validity of contractor requests for change, preparing a response to requests for change and appeals, and compiling a file of potential claims-related documentation and correspondence. The RE also has the primary responsibility for the negotiation of all change settlements, with the Contract Administrator assisting in the negotiation of claim settlements.

4.2 The Contract Administrator will assist the RE in coordinating the dispute-handling process between the RE and the contractor.

5.0 PROCEDURE

5.1 The process begins when the RE reviews a Contractor Request for Change (RFC) and makes a determination of merit. If the request has merit, the RE proceeds to issue a Change Notice in accordance with GREP 6.05. If the RE makes a "no merit" determination, the RE will issue a rejection letter to the contractor. All RFCs will be logged into the Contract Control System (CCS) on receipt.

5.2 If, despite the rejection letter, the contractor still believes the request has merit, the contractor may provide a written "Notice of Intent to Claim" to the RE. The RE will assign a control number to the NOI and enter appropriate information into the Claims Module of the MTA CCS computer tracking system. The RE shall establish a potential claim file with all pertinent information using the assigned CCS Claims Module tracking number.

5.3 The contractor and any subcontractors involved in a dispute are responsible for furnishing the information and details necessary for the determination of the facts or contentions involved in any potential claim. Requests for time extensions must include a revised construction schedule showing the effects of the delay on the schedule and must include proposals to minimize schedule impacts. Support data for any dispute involving a time extension will be submitted per the terms and conditions of the specific contract.

5.4 If, upon reconsideration of the contractor's request, the RE determines the request now has merit, the issue will be handled via a Change Notice that summarizes the basis for negotiation of cost or schedule impacts. If the RE determines the request still has no merit, the RE will write a second rejection letter and forward it to the contractor. The RE should assume at that point that the dispute constitutes a potential claim and should begin amassing pertinent documentation in support of the RE's "no merit" determination.

5.5 The contractor may now choose to pursue the issue by submitting a claim. Upon receipt of such a claim from the contractor, the RE will log pertinent information in CCS. Any applicable contractor reference numbers should be logged, along with the stated basis for claim. The request along with supporting documentation, will then be forwarded to the contract administrator for further processing.

6.0 REFERENCES

Contractor's Contract General Conditions

7.0 EXHIBITS

None

SECTION 6.07
CLAIMS AVOIDANCE

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for claims avoidance and to define the role of the RE in claims mitigation.

2.0 GENERAL

2.1 Potential claims may come from the Contractor in the form of:

- Notice of Intent to Claim
- Request for Information or Requests for Change
- Phone calls from the work site (informal notification)
- Notification of differing site conditions, deficient specifications or design drawings, conflicting information in contract documents

2.2 Contract specifications generally allow the Contractor to claim damages or delays provided adequate notice and documentation are furnished. It is essential that the RE recognize potential claims situations and look ahead pro-actively to identify potential claims. Prompt notification to the DEO, Construction of potential claims situations will give responsible parties sufficient time to set the mitigation process in motion and possibly avoid the claim entirely.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

4.1 The RE is responsible for the timely resolution of potential claims through the prompt negotiation of a change order, when appropriate. The RE is responsible for identifying potential claims; providing initial technical analysis and review of all requested changes; providing clear and concise descriptions of the change notice or change order scope of work; scheduling ahead for major changes; and communicating requirements and problems to the DEO, Construction, for prompt resolution.

4.2 The RE is responsible for keeping clear and accurate records of the events and issues leading to a potential claim. Timely response to Contractor Requests for Information or Requests for Change is coordinated through the RE and the Contract Administrator.

5.0 PROCEDURE

5.1 CLAIMS AVOIDANCE GUIDELINES

5.1.1 The RE should conduct periodic job coordination meetings with the Contractor to discuss work progress and any schedule, administrative or project problems. The Engineer should be included in these meetings, if specific design issues are to be addressed. Detailed meeting minutes should be kept.

5.1.2 The RE and inspector(s) should monitor the Contractor's work for compliance with plans, specifications, and contractual provisions, perform quality assurance inspections of the workmanship, materials and equipment and monitor the Contractor's quality control process.

5.1.3 The overall project schedule should be maintained and Contractor schedules monitored. Schedule progress should be compared against actual observed field progress. The RE may require the Contractor

to provide mitigation plans to recover the schedule if the Contractor is not maintaining schedule progress.

5.1.4 Payment requests, change notices, and change orders should be processed in a timely manner.

5.1.5 The RE should plan, schedule and expedite the delivery of MTA-furnished materials and equipment to the job site. This responsibility includes warehousing and coordination between supplier and Contractor.

5.2 IDENTIFYING AND DOCUMENTING A POTENTIAL CLAIM

5.2.1 The RE should anticipate and identify potential problem areas in the work. It is the RE's responsibility to alert the DEO, Construction, in order to allow as much lead time as possible to schedule major changes requiring action from the MTA Change Control Board and other Boards.

5.2.2 The RE will maintain a complete history of potential changes, to include written records of the following:

- Contract change possibilities
- Claim of differing site conditions
- Omissions or conflicting information in contract documents
- Cost or time revision requests

5.2.3 Any documentation relating to disputed work and/or documents, to include correspondence, memos, diaries, and photographs, should be kept in a potential claim file whenever a potential claim is recognized.

5.3 MITIGATING POTENTIAL CLAIMS

5.3.1 The RE will reach one of three decisions in determining the merit of a potential claim:

- There is merit in the claim and the Contractor clearly has the entitlement. In this case, the RE acts immediately to issue a Change Notice or Work Authorization Change Notice to remedy the problem.
- There is clearly no entitlement, in which case the RE notifies the DEO, Construction, the Contract Administrator and the Contractor that the potential claim has no merit.
- There is entitlement, but time and/or dollars cannot be quantified at this time. In such cases, the RE will issue a Change Notice or Work Authorization Change Notice.
- Authority limits and appeal procedures will follow the provisions in the Contract.

5.3.2 The RE is responsible for providing clear and concise descriptions of the scope of change notices and change orders. Unclear definition of the scope can delay the resolution process.

6.0 REFERENCES

None

7.0 EXHIBITS

None

SECTION 6.08
NOT USED

SECTION 6.09
NOT USED

SECTION 6.10
DOCUMENT CONTROL

1.0 PURPOSE

1.1 This procedure covers methods by which the Project records are controlled, retained, and secured for ready retrieval. Procedures include:

- Document sequence number identification and indexing
- Subject code/file assignment
- Records Management System (RMS)
- Document Response Tracking
- Document Distribution
- Case Files
- RE Diary and Telephone Log
- Records Storage
- Contract document maintenance

1.2 This procedure establishes document control methods for the Resident Engineer (RE) offices.

2.0 GENERAL

These procedures are compliant with the Document Control procedures and file coding system which provide requirements for records management and document control procedures for MTA construction / procurement contracts. The RE may delegate project file maintenance to the Document Control staff.

3.0 DEFINITIONS

Case Files: Files segregated by document type such as Change Orders, Submittals. Case files are segregated to provide efficient retrieval. See Paragraph 5.6 for a listing of required case files.

3.1 *Project Records*: All correspondence and records pertaining to the contract work includes but is not limited to:

- All correspondence and documents sent to and from the contractor
- All correspondence and documents sent to and from the MTA
- All correspondence and documents sent to and from the Engineer
- All correspondence and documents sent to and from third parties and agencies
- All contractor deliverables
- All contract documents

3.2 *Records Management System (RMS)*: The automated MTA correspondence and document indexing system.

3.3 *Sequence Files:* Correspondence and documents filed in sequence number order. See Section 5.1.

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

Each RE is responsible for controlling contract records received or generated by the RE and ensuring their safekeeping until formally transmitted to MTA Records Management Center as part of the contract closeout process as defined in GREP 4.12. The RE is responsible for ensuring that a complete record of Contract correspondence is maintained, and for ensuring that a complete and current set of contract and design documents is maintained by the RE at all times. The RE is responsible for maintaining files of all

contract deliverable documents. The RE's file is the official project record of the related contract until closeout transfer is completed. Exact copies of these documents in the possession of other departments or RE retained for convenience are not considered part of the record file.

The RE is responsible for maintaining accurate and detailed documentation in support of all construction activities, including the RE Diary, and for tracking all activities that impact the work. REs managing more than one contract must maintain a separate RE Diary for each contract.

4.2 DOCUMENT CONTROL

Document Control is responsible for coordinating with various departments and REs and for providing training and assistance, as required, to ensure consistency of document processing and filing. Document Control is also responsible for coordinating records storage, and transfer of completed project files.

5.0 PROCEDURES

5.1 DOCUMENT SEQUENCE NUMBER IDENTIFICATION AND INDEXING

5.1.1 SEQUENCE NUMBER ASSIGNMENT

Documents and correspondence to be included as part of project records and/or contract files will be assigned a unique document sequence number identifier and subject code.

5.1.2 SEQUENCE NUMBER LOCATION

For incoming and outgoing correspondence, the document sequence number should be placed in the upper portion of the document prior to its distribution. The sequence number may be typed or hand-written.

5.1.3 SEQUENCE NUMBER STRUCTURE

The document sequence number identifier for correspondence will include: project number - contract number - to/from code - sequence number. For example, for contract H0120, the first letter from the RE to the contractor shall be assigned R91-H0120-REC-00001. Subsequent letters would be assigned 00002, etc. The following list describes components of the document sequence number:

- Project Number: Example "R91"
- Contract Number: Example: "H0120"

  The alphanumeric contract number assigned at award. For documents not related to a specific contract, the contract number NCS (non-contract specific).

- From/To Acronym

  The following codes are used on all projects:

  REC = Identifies all RE to Contractor correspondence
  CRE = Identifies all Contractor to RE correspondence
  RED = Identifies all RE to Designer correspondence
  DRE = Identifies all Designer to RE correspondence
  IOC = Identifies all RE interoffice memos

- Sequence Number

  Sequence number shall be a five-digit sequence number beginning with 00001 for each "From/To" code and continuing sequentially until completion of contract and/or project.

5.1.4 CORRESPONDENCE INDEXING

The RE's office will enter all incoming and outgoing correspondence into the MTA RMS. During document approval cycle, if a sequence number is assigned and for whatever reason the document is canceled prior to signature and issuance, the originator will note "canceled" and the date in the indexing system for the corresponding sequence number. Canceled sequence numbers will not be re-used.

An issued document cannot be physically revised, recalled or withdrawn (images cannot be removed from the optical disk). If, for whatever reason, a document requires revision or cancellation, a subsequent document shall be issued to supersede, void, or rescind the document. The index shall be updated to reflect the superseded or voided document.

5.1.5 CASE FILE SEQUENCE ASSIGNMENT

For documents other than correspondence, sequence numbers may be the unique number or date assigned to the document. For example, Change Orders, Change Notices, Requests for Information, Requests for Change, Notice of Intent to Claim, Claims, and Submittals have a unique sequential number assigned to them. Refer to the procedure applicable to the document for assigning these sequence numbers. In the case of reports, either a sequential report number is assigned or the issue date of the report becomes the report number.

5.2 MTA CONSTRUCTION SUBJECT CODE/FILE SEQUENCE SYSTEM

5.2.1 CODING SYSTEM

MTA Construction maintains a unified Subject Code/File Sequence System. The latest listing, maintained by Document Control is required to be used for all project related correspondence and documents.

5.2.2 CODE CHANGES

Any changes or additions made to the index must be coordinated through Document Control. When changes are accepted, Document Control will distribute changes to appropriate staff.

5.2.3 CODING DOCUMENTS

The document originator will assign at least two code numbers. The first code number should be the sequence file code, and the second code number should be the appropriate subject code. Multiple code numbers may be assigned to a single document.

5.2.4 CODE NUMBER LOCATION

The subject/file code numbers will be placed on the document prior to distribution of the document. The code numbers may be typed or hand-written and will be located in the upper right hand corner of the document or as otherwise specified in the MTA File Coding System document (PA302).

5.2.5 SEQUENCE FILES

At a minimum, the RE maintains a complete (physical) sequence file of all incoming/outgoing correspondence. Duplicate copies of documents may also be filed in subject files at the discretion of the RE or as required for certain case files. See paragraph 5.6 for case file requirements.

5.3 RECORDS MANAGEMENT SYSTEM (RMS)

5.3.1 RMS INDEXING SYSTEM

The MTA is responsible for the maintenance of the RMS program. Input to the RMS document index provides an index of project-related correspondence and allows for prompt and accurate retrieval of records.

5.4 DOCUMENT RESPONSE TRACKING

The RE will establish and maintain a method for tracking incoming and outgoing correspondence that requires a response and is not tracked in other automated systems. The tracking of documents not controlled in other systems may be maintained manually or electronically. The RE is responsible for ensuring that a timely response is generated and that open items are closed. The following document types do not require separate response tracking as they are maintained and tracked in the Contract Control System (CCS): Requests-for-Information (RFI), Requests-for-Change (RFC), Change Orders/Change Notices, Claims/Notices of Intent to Claim (NOI), and Contractor Submittals.

5.5 DOCUMENT DISTRIBUTION

The originator of outgoing correspondence is responsible for specifying who will receive copies. The distribution will depend on the subject of the document. The RE will determine While standard distribution lists may exist, the originator must use good judgment to ensure that appropriate distribution of correspondence is made.

5.6 CASE FILES:

The following document types will be maintained in segregated subject sequence files:

- Request-for-Information (RFI)*
- Request-for-Change (RFC)*
- Change Orders/Change Notices*
- Claims/Notice of Intent to Claim (NOI)*
- Contractor Submittals: Submittals will be filed by Submittal Number.

*Note: RFI/RFC/CN/Claims files that are ultimately issued as a Change Order shall be filed in a single file under the Change Order number. The remaining files should include only these types of files. RFIs/RFCs that did not result in a contract change; CNs that were canceled or withdrawn; and claims that were canceled or unresolved.

5.7 RE DIARY AND TELEPHONE LOG

5.7.1 The RE will record the events of the day in a bound notebook. Handwritten entries will be made every working day by the RE or his/her designee. As an alternative, the RE may maintain the Daily Diary electronically. In that case each daily entry shall be printed out and signed and dated by the RE. The hard copy of these daily entries shall be maintained in a file separate from other RE records. The diary

shall remain at the office at all times. Legibility and ease of understanding are required.

5.7.2 The RE diary is not intended to duplicate information formally documented elsewhere. For example, Inspection Reports contain information about weather and site conditions. The RE diary should, as appropriate, contain information in addition to that documented elsewhere, including all verbal communication.

5.7.3 The diary should contain a record of all verbal agreements and telephone conversations between the RE and the contractor or other project participants. The diary should be sufficiently detailed to be used as a reference by construction management review teams or the MTA. Specific names, dates, locations, and other variables affecting the decision-making process at the work site should be noted. All conditions, events, or situations that might impact the progress of the work (e.g., notification of differing site conditions, adverse weather conditions affecting work progress, spot evaluations of an individual's performance on the job, and similar observations of the RE that pertain to job conditions) should also be included.

On days when no work is done, "No Entry" will be entered for that day (this includes weekends and holidays). The diary will be securely stored and is not to be made available to contractor personnel or the RE staff without RE permission.

5.7.4 The RE shall log significant telephone calls in his/her diary. Telephone calls that include agreements or negotiations must be documented with follow-up letters. The RE's Daily Diary will be retained as part of the Project File at contract closeout.

5.8 RECORDS STORAGE

The following procedure describes the requirements/process for preparing project files for archiving to records storage. Although this process generally occurs at project completion, preparation for records storage should be considered as files are maintained.

5.8.1 FILE QUALITY REVIEW

The RE will review all files prior to document closeout transfer. File folders for unused file codes and duplicate copies shall be removed and disposed of. Letter size file folders shall be used wherever possible. Files or records should be placed in a logical order that will allow for the prompt retrieval of records.

5.8.2 RECORDS INDEX PREPARATION

A Records Index must be completed by the originating RE for each storage box. Multiple boxes listed on a single page will not be accepted by Document Control. The completed form should be placed in the corresponding box.

The Records Index must include sufficient information to retrieve records, including document date or date range (from/to), applicable file codes, document numbers and contract numbers. For example, 10 boxes labeled "Harry's files" make it difficult to retrieve a specific document. All 10 boxes would have to be reviewed to find the requested document. Chronological files should indicate a date range and subject files should list subject headings.

5.8.3 BAR CODE

Document Control will coordinate with the Records Management Center to obtain bar code numbers.

Each box will be assigned a bar code number and the Records Index will include the Bar Code number assigned.

5.8.4 BOX PACKING

Records storage boxes must be full but not overflowing. Half-empty boxes are crushed when stacked and waste valuable space. Overflowing boxes will break and boxes will not stack well. Boxes received by Document Control not in compliance will be returned to the originator for correction.

Pendaflex (hanging) folders are designed for use in file cabinets, not storage boxes. Storage boxes will not support the weight of Pendaflex folders.

Generally, only standard record storage boxes (12 inches by 18 inches) will be accepted by Document Control for storage. Xerox or paper boxes will not be accepted for storage. The originator shall contact Document Control for assistance with records that will not fit in standard storage boxes.

5.9 CONTRACT DOCUMENT MAINTENANCE

The RE office will maintain a current conformed set of all contract documents at all times. The current conformed set of contract documents will include the "as-awarded" set of contract documents conformed to include all modifications or revisions issued to the contractor under a change notice, including mark-ups, sketches, or other technical direction issued to the contractor which alters or modifies the original contract terms, specifications, drawings, or design.

6.0 REFERENCES

The following documents are referred to in, or are related to, this procedure and are available under separate publication:

Document	Title
GREP 4.08	Construction Photographs
GREP 4.09	As-Builts
GREP 4.11	Physical and Fiscal Closeout
GREP 4.12	Document Closeout
GREP 6.01	Submittals
PA302	MTA File Coding System
CF4	Contractor Submittal Tracking
CF5	Document Control: As-Builts Processing
CF6	Document Control: Contract Closeout and Transfer of Records

7.0 EXHIBITS

None

SECTION 6.11
LESSONS LEARNED

1.0 PURPOSE

This procedure explains the process of identifying, documenting and evaluating potential lessons learned under the MTA Lessons Learned Program.

2.0 GENERAL

2.1 The purpose of the MTA Lessons Learned Program is to enable project management to take timely action to control the budget and schedule impacts associated with problems encountered on the job and to improve future design and performance.

2.2 The Lessons Learned Program is the vehicle for identifying problems and improvements affecting safety, quality, schedule, or budget. Subsequent to documenting and submitting a lessons learned item and its impact, management is able to prioritize the item and take remedial action in a timely manner.

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

4.1 RESIDENT ENGINEER

The Resident Engineer (RE) is responsible for submitting lessons learned items to the MTA Lessons Learned Coordinator for every significant change and improvement initiated which may impact other contracts, future design, or improve project management. The RE is responsible for evaluating contract changes for potential lessons learned items.

4.2 LESSONS LEARNED COORDINATOR

The Lessons Learned Coordinator is responsible for coordinating further evaluation, processing and tracking of Lessons Learned items. The Lessons Learned Coordinator is responsible for managing and operating the Lessons Learned Program.

5.0 PROCEDURE

5.1 IDENTIFYING LESSONS LEARNED

When a significant change or improvement occurs in response to problems encountered during construction and at contract close-out, the RE, and to a lesser extent support staff, will document Lessons Learned items as the follows:

- A description of the observed situation or issue
- Other contracts that are affected
- Drawings affected, if known
- A description of any immediate action that was taken to correct the situation
- The immediate cost or schedule impact, if known
- The recommended action to prevent a recurrence of a problem or to implement an improvement

Lessons Learned identified as part of the change process should be identified as part of the change record in the MTA CCS.

5.2 LESSONS LEARNED EXIT INTERVIEW

In order to systematically capture lessons learned, a lessons learned exit interview will be conducted by the RE with members of RE's staff. This interview is part of the contract closeout procedure. Refer to REP 4.11.

6.0 REFERENCES

MTA POLICIES AND PROCEDURES

DSGN 06 Engineering: Lessons Learned

7.0 EXHIBITS

None