

# Construction Management

Manual

September 2006 • 2nd version



**Don Gindling, P.E.**  
*Principal Construction  
Engineer*

City of Cincinnati  
Department of Transportation & Engineering



# City of Cincinnati



Department of Transportation and Engineering  
Division of Engineering

City Hall, Room 450  
801 Plum Street  
Cincinnati, Ohio 45202-5704

September 29, 2006

Eileen Enabnit  
*Director*

To All Construction Management Manual Users:

I am pleased to provide each of you with this Manual for your use in administering City of Cincinnati construction contracts. The Manual represents a current compilation of collective experiences and good practices that have accumulated during the years of managing the construction of the City of Cincinnati's infrastructure. This is the second version of this Manual. Many thanks to the Construction Engineers who have successfully used this Manual since it was first publication in March 2001, and have reviewed and updated it to conform with current practices and policies.

The Manual provides guidance in several key areas. Guidance is provided on effective means of managing field construction operations. Equally important, the Manual addresses record keeping and field administrative procedures that are essential in achieving cost effective projects with clear audit trails. All of us involved in executing the City of Cincinnati construction program, including planners, designers, construction managers and inspectors, safety, quality assurance, accounting, legal and public relations staff, must perform our jobs with professionalism, integrity and excellence.

Diligent application of the Manual's guidance will ensure attainment of the high quality, cost effective and timely construction expected by our citizens. Please follow the procedures and utilize the forms contained in the Manual in administering your contracts.

As you use this Manual in your day-to-day work, be alert for ways to improve the Manual. Your comments on refinements to the Manual will be welcome. We will update the Manual as required based upon information received from field, design, planning, accounting staff and others involved in the construction process.

Again, my sincerest thanks for your continuing dedicated efforts to build the high-quality infrastructure that the citizens of Cincinnati expect and deserve.

Sincerely,

Eileen Enabnit, Director  
Department of Transportation and Engineering

# City of Cincinnati



Department of Transportation and Engineering

Room 450, City Hall  
801 Plum Street  
Cincinnati, Ohio 45202  
Phone: (513) 352-2366  
Fax: (513) 352-6246

Eileen Enabnit  
*Director*

## Statement from the Construction Management Principal Engineer

A primary goal of the Construction Management Section is to provide consistent high quality contract administration for City of Cincinnati construction contracts. This Construction Management Manual will assist members of the Construction Management Section in achieving that goal by providing helpful information in the form of text, forms and documents. The text gives general guidance and is supplemented by specific formats of documents to be used in managing City construction projects. Compliance with the comprehensive guidance in the CM Manual will allow us to manage and document assigned construction projects to the high standards we seek.

This is the second version of this manual which was first published in March 2001, through the hard work of many of the Construction Engineers that use this on a daily basis and participated in completing this version. Please continue to use the practices as established in the manual and maintain the high standards that we have established over the past 5 years.

A handwritten signature in black ink, appearing to read "Don Gindling".

Don Gindling, P.E.  
Principal Engineer  
DOT&E/Construction Management

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## INTRODUCTION

The DOT&E Construction Management Section's primary purpose is to administer construction contracts for City capital projects within the right of way and other City Agencies' capital projects as requested. A Construction Management (CM) organization must adopt standard operating procedures in order to promote uniformity and efficiency. The use of consistent CM practices as provided in this Manual will be beneficial.

### CONTRACT ADMINISTRATION

Contract Administration consists of providing construction engineering and inspection services during the construction phase of a project, to assure the conditions of the contract have been met. The DOT&E Construction Management staff includes a Principal Construction Engineer (PCE), Construction Engineers (CE) and Public Works Inspectors (CI).

The CM staff's primary function should be to observe, monitor and document that:

- The project is built in accordance with the plans and specifications and in accordance with sound engineering and construction practices.
- The Contractor's work is being completed in accordance with the approved schedule and within budget.
- The Contractor is paid correctly in accordance with the contract for accepted work.
- All claims and changes are appropriate and properly defined.
- Contract interpretations are made fairly and equitably using sound engineering practices.
- Contract files and as-built information are properly archived.

The CE is responsible to administer the contract once it is awarded. However, before award, the CM staff should assist in constructability review, final bid document review, pre-bid conference, review of bids received and attend pre-award meetings. The CM staff is responsible to follow the practices and procedures of this Manual where applicable and feasible.

### JOB DESCRIPTIONS AND DUTIES

This Construction Management Manual describes the duties involved in the construction management of projects. The following job descriptions cover the normal range of duties of Project Manager, Principal Construction Engineer, Construction Engineer, Construction Inspector, and Database Inputter. These job descriptions are not a complete list of duties and responsibilities and all construction management staff should recognize that every project will be different to some degree and will require flexibility in the procedures and responsibilities in adapting them to a particular project.

#### Project Manager (PM)

The Project Manager is the person whom is responsible for the oversight and control of the entire project. The PM is responsible for securing funding, budgeting, planning, scheduling, preparing bid documents, approving changes, and general oversight of the project from inception to completion. In some cases the PM and the Design Engineer are the same. Although the PM is not in our Section and is not the direct supervisor of the CE, the CE reports to the PM for a particular project/contract and needs to have a good working relationship and line of communication with them. For details on the PM roles see the DOT&E Project Management Manual.

#### Principal Construction Engineer (PCE)

The PCE oversees the CEs. To assure consistency throughout the Section, the PCE will guide the CE in controversial contract interpretations and keep the entire CM staff aware of conflicts,

interpretations and changes in standard contract documents. The PCE will meet with the CE and Contractor to try to resolve any conflicts before a certified claim is filed (see City Proposal Note #25). The PCE oversees the Construction Database and authorizes changes to it. The PCE reviews and signs off on Change Orders, Contingency Allocations and Final Payments. The PCE assigns contracts to the CE.

#### Construction Engineer (CE)

The CE is the primary contact with the Contractor.

The CE is responsible for the administration of the construction contract to assure to the extent possible that the contract is completed according to the plans and specifications and to the required quality standards, within the contract time allowed for the construction, and within the contract price authorized for the work.

The CE is responsible for monitoring the work of the Contractor to ensure that the work is installed in accordance with an agreed schedule and to ensure that support services from the City of Cincinnati comply with the construction schedule. The CE will receive and resolve, requests for information and clarification of the construction documents and resolution of field conditions that may represent a change to the contract conditions. The CE shall process all requests for changes, either from the Contractor or the PM, including any changes in the contract price or time that result from changes.

The CE is responsible for responding professionally, timely, and courteously to concerns about the construction from the public, city administration, and City Council. The CE is expected to take reasonable steps to minimize the impact of construction on the affected residents, travelers, and businesses including meeting attendance and written/oral communications.

The CE is responsible for checking all payments for the work through interim and final payments and shall maintain a comprehensive document record of all quantities and payments made. This will include quantities and payments for any changes in the work. The document record shall include all supporting documents required for payment, such as material certifications, affidavits for payments to subcontractors and suppliers, insurance certificates and invoices for stored materials. The Construction Section has a database to record and tally the daily quantities for items of work complete. The CE checks and approves the input of these quantities and produces a payment spread sheet to be sent to the contractor. See Appendix 5 Database User Manual for details.

The CE is responsible for monitoring the quality of the work installed to confirm that it meets the specifications and industry quality standards. This will include processing of shop drawings and other submittals, monitoring of all testing both on-site and off-site, observation of the work being installed and gathering of certifications, warranties, and guarantees. The CE shall record all non-conforming work and completion of corrective action.

The CE is responsible for monitoring the Contractor for conformance with contractual safety requirements and shall bring all observed violations to the attention of the Contractor. The CE is not responsible for safety of the work, but shall require correction of serious situations observed and shall stop work that poses a serious and imminent danger to life or substantial property damage.

The CE is responsible for monitoring the work of others assigned to assist the CE in the administration of construction contracts and shall ensure that they perform their duties as required. The CE shall provide assistance and guidance as necessary so as to promote a team environment and a positive work experience. The CE shall perform periodic reviews of the work



of the CE staff and shall advise the staff of the results of the reviews and shall monitor the implementation of any corrective action.

The CE is responsible for regular and timely reporting to the PM on the progress of the work. The CE shall promptly report any major deviations from the schedule, the contract price, or the quantity of the work to the PM. All accidents requiring medical attention or property damage shall be immediately reported to the city administration. Any visits by the media shall be immediately reported to the Principal Construction Engineer, who is responsible to report it to the City Engineer. The CE shall inform the CPE of any adverse incidents that will require their attention or involvement for resolution. The CE shall report any staff situations that may require special attention to the PCE.

The CE is responsible to set up and maintain the project files. The CE is responsible for developing lists of submittals for the project and for receiving, distributing to the PM for review, expediting review and timely return to the Contractor of all submittals required by the contract. The CE shall maintain a log of all submittals and re-submittals.

The CE shall conduct Progress Meetings and shall provide minutes in accordance with procedures.

The CE shall receive and process all requests for information and changes and shall expedite and document this process. The CE will determine where the response to RFI will come from and expedite. Any changes from the RFI will be processed through change documentation.

The CE shall monitor all testing and shall maintain all records of testing, certification and all other quantity records. The CE shall notify the PM of quantity/testing issues and monitor and document resolution. The CE shall authorize payments to testing agencies.

#### Construction Inspector (CI)

The Construction Inspector works under the direction of the Construction Engineer. The CI is responsible to perform inspection of a construction contractor's work, as assigned by the CE; to assure the work is in compliance with approved contract plans and specifications. The CI observes the contractor's work and recommends approval of the inspected work to the CE based upon tests conducted in accordance with published procedures and good construction practices. The CI maintains inspection records and records pertinent data regarding equipment, material, and labor. The CI prepares daily inspection reports and keeps the CE advised of inspection results, particularly items requiring re-work because of quality deficiencies. The CI will verify and maintain on a daily basis quantity data for use in processing progress payments. For projects with limited service staffs, the CI will assume additional responsibilities as assigned by the CE. Comply with the duties and responsibilities as per the PWI and PWII job descriptions and the Construction Inspector Manual.

#### Database Inputter (DI)

The DI checks the design input, contract descriptions and unit price compared to the contract. In some cases the DI enters the design information in to the database. The DI receives the Inspector Daily Reports (IDR). The DI checks quantity computations attached to the IDR. The DI enters as built quantities and locations into the database from the information on the IDR. The DI reports to the CE and should bring to their attention any irregularities in the IDR compared to the contract requirements.

## **CONSTRUCTION MANAGEMENT SECTION STAFF**

The Construction Management Section has the following staff:

- Principal Engineer
- Supervising Engineer
- Senior Engineers (5)
- Public Works Inspectors (20)
- Clerk/Typists 3
- Administrative Tech.
- Database Inputter (part time consultant)

The PCE maintains a Table of Organization and Work Assignment chart that is discussed monthly at the section staff meetings. New contracts and inspector's assignment are determined in those meetings.

## SECTION 1.0 PRE-BID PROCEDURES

### 1.1 CONSTRUCTABILITY REVIEW AND PRELIMINARY SERVICE ESTIMATE

When drawings are 50-75 percent complete, a constructability review should be conducted by the CE. The review will identify problems in constructing the project as designed. Recommendations are provided to the designer on changes that will facilitate construction while retaining the design intent. Other actions taken in conjunction with the review of plans and specifications are a check of bid items and quantities, development of a schedule and sequence of work and a review of right-of-way and utility issues. The CE should make a site visit to review and document existing condition. The CE should prepare and review with the PM a preliminary service estimate.

### 1.2 FINAL BID DOCUMENT REVIEW

Before Construction Section's Principal Engineer signs off on the title sheet, a thorough review should be made of the final plans, specifications and bid form. This review provides an opportunity to insure that all issues previously identified have been addressed properly. Not only should incorporation of comments on earlier stage document reviews be verified, but also appropriate action taken on other pending issues regarding real estate, utilities, permits, environmental issues, cost estimate compared to available funds and items of concern to abutting property owners and the public. Resolution of these matters before the contract award process begins will reduce significantly the cost and schedule impacts.

### 1.3 BIDDING AND PROCUREMENT

The City's bidding and procurement process is defined in detail in the DOT&E project management manual. Although the CE is not responsible for bidding and procurement of contracts he should be thoroughly familiar with the Bid and Award procedures, including dates and times of events, conditions for issue of documents and all the requirements and constituents of a responsive bid. Care should be taken to see that Bid Documents, i.e., plans, specifications, soil reports, surveys and other listed items are available at the time, date and location listed in the Notice to Bidders.

Telephone questions should be avoided as far as possible during the bid period. Answers to questions that confirm what the contract documents say are acceptable, however any answer that may materially change the requirements of the contract shall be required to be submitted in writing to the Purchasing Agent. Telephone logs should be maintained to record all calls. All such communications should be copied to the Purchasing Agent.

Addendums to bids are issued by the Purchasing Agent. The CE may be asked to review or provide input. If the CE becomes aware of any ambiguities or problems with the contract documents he should notify the PM.

### 1.4 PRE-BID CONFERENCE

The bid procedures will usually include one or more Pre-Bid Conferences. These may or may not be combined with bidders' site inspection. Some contracts will require attendance at the Pre-Bid Conference as a condition of bidding. Mandatory attendance is permitted but should only be used where necessary. The location and facilities of the Pre-Bid Conference should be carefully reviewed for access, availability, space, lighting, sound systems, screens, video players and other media aids. The venue should be visited the day before the Pre-Bid Conference and checked to verify everything is in order. The conduct of the Pre-Bid Conference should be carefully planned. Who will chair the meeting, who will attend, who will speak on which subjects, who will keep

minutes and who will answer questions should all be addressed by the PM. An agenda must be prepared and agreed upon and a system utilized that will record subjects or questions that will be covered by a formal, written addendum. A sample Pre-Bid Conference Agenda is included in Appendix 1.

The purpose of the Pre-Bid Conference is to convey a thorough understanding of the project to prospective bidders. The more the bidders understand the project and its conditions, the more intelligent and realistic will be their bids, and the potential for conflict during construction much reduced. To this end, consideration should be given to maximize use of visual aids such as colored and highlighted drawings, aerial photographs; large-scale location maps showing major access routes and restrictions, scale models and three dimensional and CADD graphics, when available.

The Pre-Bid Conference should begin on time, even if people are still arriving. It is important to those who made sure to be on time and will indicate that time and promptness are important to this project. All attendees should be required to sign in and indicate whom they represent. Speakers should balance brevity with clarity in addressing their subjects and should have taken time to prepare their presentation. It is important to leave ample time for questions.

Responses to questions are most important. If the response merely provides clarification of the contract documents, there is no need for inclusion in an addendum. **However, if the question clearly requires modification or expansion of the information provided in the documents, the response must be included in an addendum. All plan holders not just those in attendance will receive the addendum. Obviously, questions, which cannot be answered at the Pre-Bid Conference, should be responded to in an addendum. Responses that will be addressed by addendum should be clearly recorded. An appointed recorder should provide concise yet comprehensive minutes.**

## SECTION 2.0 AWARD PROCEDURES

### 2.1 BID AND PRE-AWARD PROCESSING

The normal sequence of activities used by the City in award process is detailed in the DOT&E Project Manual, Section 14 for typical and emergency bids. Most of the tasks in the award process are done by the city's Purchasing Agent or the PM, however the CM shall assist where requested.

On the day of bid opening there should be clear understanding of the process. Bidders may have the bids returned to them upon written request anytime prior to the designated time for bid opening. Once the designated time has passed bids will not be returned. Under no circumstances are bids received after the designated time for opening. A clock showing the correct time should be clearly visible and tables provided to allow an orderly processing of the opening of bids

At the time of bid opening the purchasing agent should announce that time for receipt of bids has passed and no further bids will be received. The purchasing agent will then declare that this is the time and place for opening of bids for designated contract(s), welcome all attendees, make any required formal announcements and proceed to opening of bids.

The purchasing agent will take the opened bid, read out the name of the bidder, declare that bid bond is included and receipt of addenda acknowledged and then clearly read out the base bid amount, followed by the amount(s) of any alternate(s) and/or substitutions. These amounts should be entered on to the bid tabulation sheet. Discussions about the acceptability of the bids as they are read should be avoided

At the close of the bid opening all bids should be collected and held at a secure location. Upon request bid bonds should be returned to any bidder who is not in contention for an award. All bids are considered good for a reasonable amount of time, usually considered to be ninety days or until an award is made and the contract is executed. Bidders who due to excess pricing are clearly not in contention may request and receive their bid bonds upon request, however the City is not required to comply.

Bid tabulation sheets should be prepared by the purchasing agent and forwarded the PM. Typically the bid tabulation sheet will show the title of the contract or contracts to be opened, space for names of bidders, columns for noting receipt of bid bond and acknowledgment of receipt of addenda, a column for base bid and columns for each bid alternate.

The CE shall assist the PM in reviewing bid prices and compliance with other requirements of the bid documents.

Bid evaluation sheets and a recommendation for award should be prepared by the PM. If it is a lump sum contract without alternates, there is usually little to evaluate other than total cost and conformance with the Instructions to Bidders. The bids should be compared to the Construction Estimate. The range of bids should be reviewed regarding where the estimate came in relation to all bids, the gap between first and second bids, and all bids. If the bid is over 10% the engineers estimate, the PM must supply a written explanation of why the bid should be awarded along with an explanation of additional funding required per administrative regulation 27. An award should be made within 90 days from bid closing date. If the 90-day period expires the award should only be made if the bidder is agreeable.

If all or most bids are substantially above or below the estimate, the estimate should be carefully checked to see if the disparity can be determined. If there is a large gap between the low and other bids, and the other bids are within the region of the estimate, the low bid should be carefully examined.

If the contract is a unit price contract the bid evaluation form should list all the bid items and quantities down the side and the bidders along the top so that each unit price can be compared. Evaluation of unit price bids require more care and a good understanding of the project and bidding strategies. A bidder will try to determine if quantities for any item are likely to increase or decrease in the construction of the work. The bidder will likely reduce his unit price for an item expected to decrease and increase the unit price on an item that will over-run the bid quantity.

It is possible in this review process to detect potential strategies. For instance, if there is an item for sheet piling and the bidder shows only one cent per square foot, it is possible that the intent is to not use sheet piling and to achieve the effect some other way, i.e., open-cut. On the other hand the bidder may have elected to put the money in another item for reasons known only to the bidder.

On open competitive bidding, there is little one can do about unusual pricing in the unit price bid. If one can demonstrate that the pricing will create front-end loading so that the Contractor will be paid more than the real value of the work in the early stages of the contract, the bid could be rejected. However, this could lead to litigation and delay to the project.

Add or deduct alternates shall be carefully evaluated since acceptance or rejection may affect who the low bidder is. Substitutions offered by the contractors shall be carefully evaluated since acceptance may also alter the low bidder. The recommendation of award letter shall address acceptance and rejection of substitutions with sound technical reasoning.

## **2.2 PREPARE SERVICE ESTIMATE AND OBTAIN FUNDING**

After reviewing the bid tab the CE should prepare a Service Estimate to be submitted to the PM. The CE and PM must determine what level of construction engineering and inspection services and support services such as surveying and materials testing are required for the project. The scope of services and the schedule should be developed. The funds needed to obtain these services should be estimated and coordinated with the Project Manager. Adjustments in the scope of services may be required if available funds are not adequate any reduction in the scope of service should be in writing and agreed to by the PM. The CE should request the PM to obtain appropriate certification of funds if outside agencies are responsible for service funds. The CE should also obtain from the PM a Job Order Number for personnel costs and request that funds be certified to the testing agent's contract.

## **2.3 EXECUTION OF CONTRACT DOCUMENTS**

Prior to award of contract, a Pre-Award Conference may be held with the successful low bidder. Attendees should include at minimum the contractor, purchasing agent, contract compliance, CE and PM. This conference will provide an opportunity to question the low bidder on the degree of understanding of the project and contract documents. If there are unit prices that are particularly high or low in relation to industry prices or other bids, the Contractor can be asked to justify these. The Contractor can be asked if there were any particular concerns that caused an inflation of some or all of the bid prices and discussion may indicate an unwarranted area of concern

The Pre-Award Conference will provide an opportunity to review the project and the requirements of the contract and determine if there are any discrepancies, mistakes or

misunderstandings that could seriously jeopardize the successful completion of the contract. The Pre-Award Conference should provide a degree of confidence in all parties in proceeding to award of contract, if this is not achieved the award should not be recommended.

The conditions precedent to the award of contract are usually defined in the contract documents. The Contract is prepared by the City and transmitted to the Contractor for signature. In returning the signed contract, the Contractor is usually required to attach other documents. These will usually include Performance and Payment Bonds and evidence of valid current insurance. The contract documents shall be thoroughly checked for conformance to the contract requirements.

The City Purchasing Agent may withdraw contract awards anytime prior to final execution of the contract.

Commencement of the work is not permitted prior to execution of contract and the City is not responsible for any resources committed to the project by the contractor prior to execution of the contract. However, the contract documents may stipulate limited commencement of work by Notice of Award, official Notice of Award occurs when the Purchasing Division sends the contractor a written notification with the actual contract document. This would normally be followed by Notice to Proceed. Generally, the Notice to Proceed signifies the commencement of the contract time. The CE and his staff should be aware of the procedures for commencement of work and be fully set up on site ready to administer the contract from its inception.

#### **2.4 PRE-CONSTRUCTION CONFERENCE**

The CE should schedule and chair a Pre-Construction Conference and invite City representatives including, the PM, the City Engineer, the Principal Construction Engineer, the Contract Compliance Officer, the Purchasing Agent, the Designer-of-Record, Public Utilities and government agencies including MSD, Traffic Engineering, and HMD, the Contractor and assigned subcontractors. The CE should complete checklist of attendees to be notified. The purpose of the meeting is to introduce all the participants in the project and to discuss actions necessary to the successful start, prosecution, and completion of the contract. Items to be discussed should be listed on a prepared agenda issued to the participants. Agenda items should include the following:

- a. Introductions - City personnel, Design team, Contractor's personnel
- b. Submittals - Shop Drawings, Working Drawings, Samples
- c. Mobilization - Site Access, Contractor's Area, Field Offices
- d. Compliance with laws, codes and regulations - Permits, Environmental concerns, Erosion Control, Disposal of Construction Debris and Excavated Materials
- e. Quality - Contractor's QC Plan and Procedures, Inspection, Testing, Non-Conformance Notices (NCN), Off-site Inspection, Testing and Documentation
- f. Survey and Layout
- g. Schedule - Preliminary, Final, Updates and Revisions, Coordination with other Contracts, Construction Methods
- h. Status of Right of Way
- i. Utilities Conflicts
- j. Status of Contract, Notice to Proceed Date
- k. Meetings - Progress, Schedule, Coordination, Safety
- l. Document Control - Drawings, Requests for Information (RFI), Correspondence, Reports, Progress Photos
- m. Payment - Interim, Final, Stored Materials, Supporting Documents
- n. Changes - Contract modifications, changed conditions, claims, and disputes, Request for Proposals and Proposal Requests

- o. Safety - Contractor's Safety Plan, Insurance, Maintenance and Protection of Traffic, Jobsite Housekeeping, Jobsite Security, Accident Reporting, First Aid and Emergency Services
- p. Labor - EEO/AA, SBE participation, Certified Payrolls, Training
- q. Project Completion - Closeout Procedures and Schedule, Punch Lists, Final Inspection, O&M Manuals, Spares, Training, Warranties and Guarantees, Closeout Documentation, As-Built and Record Drawings, Final Quantities and Final Payment

The Pre-Construction Conference is important for setting the tone for the relationships and to prepare the groundwork for the efficient administration of the contract. The Contractor should be urged to come prepared for the meetings with a written list of any questions, requests, or suggestions to be addressed at the meeting. Detailed minutes should be recorded and an action list included and attached for subsequent actions agreed at the meeting. The Pre-Construction Conference minutes will constitute an important contract record and appropriate care should be given to their preparation and distribution.

Because of the importance of the Pre-Construction Conference, care should be given to selecting the location. Ill-furnished trailers with no heat or air-conditioning, subject to noise, dust and interruptions are not conducive to efficiency. The venue should be comfortable, quiet, not subject to interruptions and phone calls. There should be adequate seating for all attendees around a table. Looking at, and talking to the backs of people's heads, as in a classroom setting, is not likely to generate team spirit or to promote familiarity between participants.

The CE will chair the meeting. Be sure to allow adequate time to discuss all items on the agenda. Matters requiring subsequent response should be clearly recorded in the meeting minutes with action assigned to a specific person and a date by which response must be made.

## **2.5 ISSUE NOTICE TO PROCEED AND RELATED DOCUMENTS**

The CE shall issue the documents required to start construction. A written Notice to Proceed (NTP), on a timely basis soon after a contract is executed. The CE cannot authorize work to commence (Notice to Proceed) until the contract is fully executed. If circumstance warrants it the CE may delay the Notice to Proceed at the request of the Project Manager, Contractor, and/or Outside Agencies. To avoid delay claims, if right of way acquisition problems or utility conflicts are found the CE may also delay the NTP, until these are resolved. Any delay in start of work needs to be approved by the PM. The Notice of Proceed is official start date and first day counted towards the completion. In accordance the Ohio Revised Code, the CE should prepare a Notice of Commencement to be signed by the DOT&E accounting representative and sent to the contractor with the Notice to Proceed.

The Purchasing agent will issue a Tax Exempt Certificate.



## SECTION 3.0 CONSTRUCTION START-UP

It is generally agreed in construction that an efficient, organized, and planned start-up can go a long way towards ensuring a successful conclusion. An unplanned, poorly organized start-up can lead to initial delays and problems that are very difficult to recover from and can have repercussions throughout the life of a project.

Start-up can be a challenging time for Contractors. Labor and equipment have to be mobilized from other projects, since they are rarely sitting idle waiting for this project to come along. Material purchase orders and subcontractors have to be finalized, permits obtained, statutory requirements fulfilled and schedules produced. A well-organized and prepared CE Staff can provide much assistance and facilitate the efficiency of the startup process. A thorough knowledge of the plans, specifications and contract requirements, status of right of way and utility relocations and familiarity with the site and the surrounding areas, all forms and contract administration procedures prepared and in place will make the field staff a resource to help get the project started on the right foot.

### 3.1 ORGANIZATION AND MANAGEMENT

A CM team consists of the CE, CI, DI and Accountant. Prior to start of work the CE should provide copies of executed contracts to all team members. The CE should check to see that the contact is entered into the construction database and check the design and accounting information entered so it matches the actual contract.

All formal communications should be made with the authorized representatives of the Prime Contractor, and not with subcontractors or vendors. These representatives should be identified at or before the pre-construction conference. The CE/CI should establish who the on-site representative is along with an emergency phone number. The CE/CI should also know who the competent person is representing the contractor.

It is very important to promote harmonious working relationships with the contractors, utility companies, public agencies, and other governmental authorities whose facilities are affected by the project.

The CE/CI should conduct his relations with the Contractors in a professional, cooperative, and business-like manner. Absolute integrity is required and excessive fraternization with key personnel of the Contractor's staff must be discouraged. **The acceptance of gifts or favors from Contractors by any member of the CE staff is strictly forbidden, regardless of their size or value.**

### 3.2 FIELD OFFICES AND FACILITIES

Ideally, the planning for mobilizing and establishing field offices should have been done during the design and bid phases of this project. The site should be reviewed for potential areas for site offices, workshops and storage taking into account access, impact on local residences and businesses, effect on permanent work and cost of Contractor having to provide facilities off site. Where areas are available, this should be made known to bidders in the bid documents including details on provision of temporary services such as power, water, sewer, parking, etc. Where areas are not available on the site, it may be more economical for the City to make off-site facilities available to the Contractor. This should all be part of the pre-bid planning.

The Field Office should be of sufficient size to accommodate the maximum predicted level of staffing. The accommodation and furnishings should reflect the level and professionalism of the

services to be provided from the Field Office. The CI is to maintain a clean, efficient, professional environment and the CE should be insistent that the Field Office be maintained adequately. The Field Office should be separate from the Contractor's offices and should be secure and should be equipped per contract specifications. The CE should include his recommendation for field office and equipment in the constructability review.

Where an area is provided for Contractor's use, this should be clearly indicated in the construction documents. Where the area is to be shared with other Contractors, the space for each Contractor should be indicated. The Contractor should be required to submit a plan of the office/yard layout prior to mobilization. The plan should be reviewed with regard to provision of services, handling of oil, gas and other potential hazardous materials, access for supplies and for emergency vehicles, impact on local residents and businesses and demobilization, including dealing with contaminants from workshops and storage areas.

The Contractor should schedule early installation of utilities with the utility companies. This process should be regularly checked and expedited. Field offices can be operated with temporary power sources and this should be planned where provision of power is likely to take some time. Where it is possible to do so, early planning should involve the utility companies so that they are aware of upcoming requirements and can have plans in place when services are ordered.

Temporary facilities should be covered in the pre-construction planning. Access to the site should be reviewed with regard to labor commuting, delivery of materials and movement of major construction and permanent equipment. Routes should be planned to avoid residential areas, school zones, hospitals, and similar sensitive areas wherever possible. Routes should be investigated for low bridges, weight restrictions, overhead utilities, and condition of roads. Where reasonable and possible, the contract conditions should restrict the Contractor's access to designated routes. Where private roads or parking areas abut the construction site, the Contractor must be instructed not to use these without written authorization of the owners, copies of which must be furnished to the CE.

Adequate provision for parking of workers' vehicles should be provided. Workers should not be permitted to park anywhere on the construction site. The Contractor should be required to submit plans for handling of employee vehicles and to control their access to the site. This is necessary for safety, security, and operational reasons.

The site security requirements will usually be specified in the construction contract and the CE should be familiar with the requirements. Where the documents are not specific, there are certain basic requirements that safety, prudence, and common sense dictate. Any site security plan should cover prohibition of access to the public to areas of hazard or danger, security of storage of materials and equipment, security of offices and files and vandalism.

If a job does not specify a field office the CE should direct the CI where and what time to report to work each day and identify where their base office is to get mail and turn in IDRs.

### **3.3 CONTRACT FILES**

The CE must guide others on his staff in establishing the contract files. A standard filing system is shown in Appendix 2. The CE and staff should utilize those portions of Appendix 2 that are applicable to the contract they are starting. Field files (IDRs) should be stored in fireproof, locked filing cabinets. All members of the staff should be aware of the extreme importance of creating and maintaining comprehensive contract files. The City's ability to defend against contractor claim or a lawsuit is dependent upon the detailed information contained in the contract files. Similarly, contract closeout can be accomplished efficiently if the contract files have been

properly maintained. Since City projects are subject to audits, the administrative records of contracts must provide clear evidence that the contract has been performed in accordance with contract documents.

The CE should provide an orientation on files for members of the staff and provide them documents such as the designer's quantity take-offs, contact list, property and maintenance agreement and all other files that are necessary to start the project.

### **3.4 DRAWINGS AND SPECIFICATIONS**

The CE shall obtain from the project manager and provide to the CI all applicable specifications and drawings referenced in the contract, including all standards referenced. He should also provide any corrections issued as part of the contract. In the course of construction the contractor will question many details of the plans and technical specifications. The field staff must be knowledgeable about the drawings and the specifications. Although it is often necessary to refer Requests for Information from the Contractor to the designer, a well-informed CE staff can resolve many issues in the field quickly. The CI should be responsible for insuring that inspectors are familiar with the requirements in the contract. The CI should also play a lead role in meetings with the Contractor regarding Quality Control measures to be employed as new construction activities are started.

The CE must insure that appropriate quantities of drawings and specifications are distributed to the CI, city surveyor (if city is doing the layout), the Contractor and testing agencies. Care must be taken to insure that all recipients of contract documents use revised documents. When drawings are revised as part of contract modifications, plan sets must be updated with the changed drawings.

Prior to any work beginning the CE should confirm who is and the method of keeping as-built information. He should also set up a procedure to periodically review this information.

### **3.5 TESTING SERVICES**

The CE should verify that the PM has certified money for the preferred testing agent and shall notify the testing agent of the scheduled start of work. The quality of construction is highly dependent upon the effectiveness of the materials testing program. The CE and staff must coordinate testing requirements with the Contractor and the testing agencies. The Contractor must provide reliable schedule information about when specific types of construction activities are to be performed. The appropriate testing equipment and staff must be available for earthwork, concrete placement, asphalt production and lay-down and other specialties as the work occurs.

Requirements for any off-site inspection must be established. Off-site concrete batch plants, concrete trucks, asphalt plants, precast concrete plants, steel fabrication facilities and specialty mechanical/electrical equipment manufacturing plants often require visits by testing agencies.

The CE must insure that test data records are maintained in the project files and the CI should log all testing activities on the IDR. A Notice of Nonconformance shall be issued for any materials, which fail test, and they should be replaced, reworked, or otherwise corrected to the satisfaction of the Project Manager.

### **3.6 PERMITS**

The CE should review the specifications with the PM and produce a checklist of all permits known to be required and who is responsible to get them. This list should be presented and discussed with the contractor at the pre-construction meeting. This list does not relieve contractor of his responsibility to obtain all the permits required. Failure to obtain permits on a timely basis can

delay the start of construction and can prompt claims for delay costs. Depending upon the nature of the contract the following permits may be required: Building Permit, Land Disturbance, Demolition, Erosion and Sediment Control, Cut and Fill, Tree Removal, Haul Routes, Traffic Control, Off-site Grading Plans, Noise, Plumbing/Mechanical/Electrical, Sewer Connection, Elevator/Escalator, Automatic Sprinkler and Certificate of Occupancy.

### **3.7 PUBLIC RELATIONS**

Public relations is a major factor in public works projects. The CE must be active in public information and involvement programs, handling complaints and providing the interface between residents, businesses, other city agencies, and the construction forces.

The CE should be familiar with contract requirements relating to public relations and be prepared to cooperate with official programs and to monitor Contractor compliance with PR requirements.

The impact of the project on the local community must be recognized and all reasonable steps taken to mitigate or avoid potential nuisance, disruption, noise, and irritants. The CE should notify affected property owners of the contract scope, schedule and start date of construction. On some projects it may be necessary for the CE to provide updates to residents and businesses at some specific intervals or when items such as parking restrictions and driveway access are significantly altered. The CE should carefully review the drawings and specifications during the constructability reviews for loss of driveway access to multi-tenant buildings and businesses and includes in the contract documents means for temporary driveways and accesses.

The Contractor is required to notify the property owner in advance of the loss of driveway access. The CE should review the contractor's notification procedures and insure that they comply with their contractual requirements.

The Contractor should be instructed to notify the CE of complaints received from the public and incidents or disputes that arise from construction operations. These should be communicated to appropriate City agencies. Consideration for the welfare of the local community will help to prevent incidents and disputes that can affect the progress and/or cost of the work. Where the local community can see that their comfort, safety and convenience are important and given due consideration, they will be far more cooperative. The CE, in the absence of any specific PR requirements or prohibitions, should consider public relations an essential element of their duties.

The CE should obtain and distribute to the project team the Contact List as generated by the PM.

### **3.8 SUBCONTRACTORS**

The construction contract will usually stipulate certain requirements relating to subcontracting. The CE should be aware of these requirements such as, qualifications, pre-approval, percentage of work that may be performed by subcontractors, and payments to subcontractors. Although the city does not have a direct contract with subcontractors they do need to be managed by the CM team through the general contractor. The contract will include Form 2003 Subcontractor Utilization Plan which should include all subcontractors the contractor plan on using. Any deviation from this plan needs to have prior approval using a form 2006 Subcontractor Substitution. The contractor is also to submit prior to start of work a form 2004 Subcontractor Approval for every subcontractor listed on form 2003. The CE needs to identify all subcontractors doing work on their IDRs. The CE should review the IDRs to verify all subcontractors have been approved for use.

Subcontractors are an essential element in the construction process and should always be treated with respect for their dignity and their contribution to the project. To the extent possible and

permitted by the Prime Contractor, they should be involved in planning and scheduling meetings, problem resolution, implementation of changes and any other areas where their expertise and resources can benefit the project. With the Prime Contractor's permission, they can be copied direct with information such as minutes of meetings, correspondence, notification of potential changes, resolution of design or field problems. Where the CE can promote the enthusiastic involvement and cooperation of the subcontractors, with the Prime Contractor's affirmation and support, while maintaining a contractual "arms-length" relationship with subcontractors, this will be of substantial benefit to the project.

It is critically important that the Contractor be aware of, and involved in, any discussions, correspondence or other interaction by the CE with subcontractors. The Contractor should never have the impression, real or imagined, that the CE and a subcontractor are keeping the Contractor out of some matter. Provided that this is done, the Contractor will have more confidence in involving subcontractors in discussions, meetings, and negotiations that involve subcontractors and their work.

**Since subcontractors are contracted only to the General Contractor and have no privity of contract with the City, all official communications with subcontractors must always be through the Prime Contractor. The CE must at all times avoid contractual involvement with the subcontractor and must beware of being drawn into any negotiations, disputes, or differences between the Prime Contractor and subcontractor.**

Nevertheless, subcontractors will constitute a substantial part of the resources required to deliver the project and balancing the interface and relationships with and between, the CE Field Staff, the Contractor and the subcontractors will require considerable tact, ingenuity, forethought and caution. The object is to promote cohesive, cooperating, mutually respectful, and beneficial team relationships between all the site participants without entering into, or being perceived to be entering into, the Contractor's responsibility for managing the work.

### **3.9 EEO/AFFIRMATIVE ACTION & SMALL BUSINESS ENTERPRISE SUBCONTRACTING**

City contracts require compliance with non-discrimination and minority participation legislation. The contract documents require regular reporting and auditing procedures. The requirements will usually cover affirmative action to achieve stipulated levels of employment for minorities in various trades, confirmation that non-discriminatory policies are employed at the job site, payment of minimum wage rates and subcontracting of stipulated percentages of the work to Small Business Enterprises. The CE should be familiar with these requirements.

All EEO, prevailing wage and Small Business Enterprise (SBE) subcontracting is to be monitored by the City's Contract Compliance office. Contract Compliance representatives must be invited to all pre-construction meetings. All forms related to EEO and SBE utilization must be submitted to Contract Compliance. The Contractor shall copy the CE on all certified payrolls submitted. Although the CE is not responsible for monitoring the prevailing wage, EEO and SBE requirements of the contract, he is the eyes and ears of the contract compliance officer and if he has any suspicions of any irregularities he should bring it to the contract compliance officer's attention.

## SECTION 4.0 COMMUNICATIONS CONTROL

On a complex undertaking such as a construction project where there are many participants, control of the communications will contribute to clarity of understanding, reduction of misunderstandings and enhancement of open, frank, and constructive communications.

Communications may be verbal in one-on-one discussions and phone calls or in meetings between individuals and groups. They may be in written form, in correspondence, memorandums, reports, studies, meeting minutes and telephone conversation memorandums. Communications may be visual in the form of photographs, films, videotapes, or videodiscs. It is extremely important, for relational, commercial, contractual and legal reasons, that there be clearly defined systems for control of communications and that an adequate documentation system is established to record the communications.

Verbal communications are the most common form and are the most difficult to capture on permanent records and create the greatest opportunity for misunderstanding. It is important in verbal communications to ask frequent questions to be sure one is being understood. It is also very important to listen carefully and to ask questions if the communication is not clear. Occasional use of a tape recorder at meetings can be useful but constant use of a tape recorder will undermine trust and rapidly inhibit communications.

It is frequently necessary to document conversations for the official record and to disseminate the information to a wider audience. If care is taken to maintain clarity and understanding in verbal communications, it should be relatively easy to reduce the conversation to its salient points and matters and commit these to paper, either in diary form, correspondence, meeting minutes or reports. The CE should give careful consideration to the recording of verbal communications in order to complete the permanent records of the administration of the contract.

Honesty and integrity is absolutely essential if one is to maintain trust in verbal communications. The document record of communications should be a concise, clear statement of what was said and positions expressed. There should be no attempt to embellish the conversation or to draw unwarranted conclusions. If the recorder has not understood what was being communicated, corrections should be made or, in the case of disagreements, the positions of the different parties to the disagreement.

### 4.1 CORRESPONDENCE

A large part of the documentary record of the communications on a project will be in the form of correspondence, letters between various participants that inform, instruct, advise, or question. The handling of correspondence requires great care. The CE is the focal point for all correspondence and is responsible for ensuring that all incoming correspondence is read, prioritized, distributed, acted upon, and filed as necessary.

- \* Correspondence where appropriate shall be assigned an ID # and logged.
- \* All outgoing correspondence shall go out under the CE's signature.
- \* The PM shall be copied on all correspondence; other copies shall be distributed as necessary.
- \* Outgoing correspondence must be addressed to the proper individual, generally the responsible senior person.
- \* Outgoing correspondence should be numbered when appropriate, indicate subject matter, and distributed.

The CE is responsible for maintaining the document record of the construction of the project including all correspondence. Maintenance of this record requires an efficient filing system. A Standard Index is included in Appendix 2 of this manual. Files are to be kept secure at all times.

Important telephone conversations always take place on the project, those calls should be recorded, summarized and a copy should be mailed to the other party in order to have validity.

The use of e-mail is a convenient way to communicate and documents conversations and to distribute to a multiple number of recipients. Since e-mails are not face to face communication the initiator sometimes feel a little more bold in expressing their opinions. Keep e-mails business like and appropriate to the subject. Be aware that every e-mail is recorded and can be distributed to anyone. The City Policy for use e-mail must be followed at all times. E-mails should be printed and filed in the CE contract file.

**Any changes to the contract amount or completion date can only be done through a Change Order, City Form 11AS (see Appendix 4 for instructions).**

#### **4.2 DAILY/MONTHLY REPORTS**

##### a) Daily Reports

It is mandatory for the Inspectors to fill out Daily Reports, one for each contract they are working on. These are on standard Inspector Daily Report (IDR) forms. The IDR will constitute the official daily diary of the project. It will provide the most comprehensive record of the installation of the work of the project, the weather, and other conditions affecting the work. The IDR must adequately describe the day, date and contract day number, (determined usually by the Notice to Proceed, i.e., Day #1 is the first day after date of Notice to Proceed) weather conditions and temperatures, personnel and equipment on site, work performed, instructions given or received, problems encountered, delays and disruptions, materials received, quantities of work installed, visitors to the site and other relevant information. As one of the principal forms of documentation on the project, great care should be taken to be thorough and accurate when completing the IDR. The IDR should not be viewed as an exception report, detailing only the negatives, but rather as a definitive report that accounts for all construction work and practices observed by each inspector, whether or not in compliance with the contract documents. It is permissible to commend good work and extra efforts as well as record deficiencies. It is recommended that the IDR be made out using fine-point ink pens, not pencil that can fade and smudge over time. IDR shall be filled out on the City standard form per the instructions attached.

##### b) Monthly Report

A Monthly Report should be done for each active contract. It should take the form of the standard Monthly Report form as produced by the CE in the construction database. Major events, milestones, starts and completions of large activities, visitors, changes and claims should be described on the Monthly Report, together with summaries of work complete and time expired, where required.

The Monthly Report should contain observations on concerns and potential problems with some indication of possible effects and remedies. The Monthly Report should also record positive elements and commendations for Contractor's employees who have demonstrated a high regard for quality, safety, and team building, and for other parties, such as utility/agency representatives who positively impact the project. Where possible, photographs of the project should be included demonstrating work complete that month.

The CE should keep in mind that the Monthly Report may have wide circulation, and attention must be given to its preparation. Together with the IDRs, the Monthly Report provides the detailed job history and will have great importance in the event of claims or disputes leading to litigation.

### 4.3 MEETINGS

For coordination and information purposes, there will be a need for getting people together for meetings. The CE can expect, and should not hesitate to call for, various meetings with various people at various times and at various locations. Often, the only way to get progress on some issues is to get the people involved to sit down together and agree on how to go forward or to resolve some issue. Meetings should not be called unless really necessary and should be as brief as the business allows. The CE should chair the meetings whenever possible and keep the meeting focused and on track.

All meetings should generate minutes to describe the business of the meeting, decisions agreed, action items to follow, to identify attendees and to indicate distribution of the minutes. Brief, intelligible, and accurate minutes are important and should be given sufficient attention and care. If meetings are in the field or time is critical, it is permissible to distribute handwritten notes, provided they are legible.

Meetings should also generate Action Item Lists. These may be part of the minutes or a separate document. Actions to be taken following the meeting should be clearly described so all parties understand what the action is, should have a specific name assigned to carry out or otherwise be responsible for the action, and a date by when the action will be completed.

#### a) Progress Meetings

The CE should establish the frequency of progress meetings in coordination with the Contractor. In general, bi-weekly progress meetings are preferred and shall be adopted unless otherwise directed. Where meetings are held at regularly scheduled intervals, the use of a standard agenda makes sense. The CE shall see that the minutes are accurately kept, distributed, and filed. The PM and PCE shall be copied on all project-meeting minutes. The recommended agenda for progress meetings is as follows:

1. Minutes of Previous Meeting
2. Progress. Construction activities last period (week, two-weeks)
3. Related Business. Problems encountered
4. Schedule for next period (week, two-weeks)
5. Submittals - Other Information or Approval Requirements
6. Requests for Information
7. Utilities
8. Safety
9. Quality Issues
10. Changes, Claims, Delays
11. Any Other Business
12. List of Action Items

Depending on the project, other subjects can be added but all of the above should be addressed. If there is nothing to report or discuss on a particular subject, the minutes should so note to indicate that the subject was raised.

Progress meetings are important for coordination and management of the project but also for the record of progress they generate. It should always be kept in mind that



progress meetings are intended to review and record progress for the past period and to review the planned schedule for the upcoming period. This apparent statement of the obvious is sometimes lost in the other subjects covered at the meetings.

It cannot be overemphasized that progress-meeting minutes constitute one of the most important elements of the contract document record and should receive the requisite care and attention. They are important to the management and coordination of the work through the distribution of information to all parties, on and off the project site. They are important for educating new participants on the projects and they are often critical in the resolution of claims or disputes.

#### **4.4 AGENCY/UTILITY COORDINATION MEETINGS**

Most projects will involve the participation of public utilities, i.e., water, sewer, gas, electric, cable TV, petroleum products, and statutory agencies such as State, County, and City Governmental Agencies. Coordination with these utilities/agencies is an important element in the work of the CE and can be critical to the success of the project. It may be necessary to hold separate Utility/Agency Coordination Meetings from time to time.

Depending on the extent of utility/agency involvement in the construction, these meetings may be regular or ad hoc. Utility/agency representatives should be encouraged to attend Progress Meetings and where their work or involvement is crucial to schedule and progress. There may also be a need for additional separate meetings with the utilities/agencies for investigation, for planning strategies, for financial considerations, etc. These may be formal meetings in the office or informal meetings in the field. In any event, notes of the meetings must be taken and distributed to all who need to know.

#### **4.5 PHOTOGRAPHIC RECORDS**

The Construction Contract will often indicate specific requirements for progress and record photos of the work. The Contractor may be given the responsibility for progress photos or the City may contract with a professional photography service. The CE should pay particular attention to the project requirements and ensure that they are fully met.

## SECTION 5.0 DRAWING CONTROL

The Contract Drawings and Specifications represent the graphical and textual information indicating the work to be constructed. It is essential that this graphical and textual information be carefully controlled and distributed so that all contributors to the construction can be assured that they are working on the latest and most accurate information and that there exists a formal procedure for clarifying, expanding or amending that information.

### 5.1 CONTRACT DRAWING DISTRIBUTION AND REVISIONS

The CE will ensure that the field office receives sufficient copies of the contract drawings and specifications, including all addenda issued prior to contract. The CE shall deliver to the Contractor the number of copies of plans and specifications stipulated in the construction contract, together with all addenda. Copies of plans and specifications may be required by other entities such as governmental agencies, public utilities, railroads, other inspection agencies, and other Contractors interfacing with the work of contract. The CE shall ensure that plans and specifications are sent to the correct parties as requested. Whenever revisions to plans and specifications are issued, the CE shall issue a Proposal Request to the contractor to incorporate into the contract.

### 5.2 SHOP DRAWINGS, WORKING DRAWINGS, SAMPLE SUBMITTALS

Shop drawings are provided by the Contractor to expand, verify, or complete the information provided by the Designer on the plans or in the specifications. These may include catalog cuts, manufacturer's standard drawings and details, fabricators' detailing, equipment performance characteristics, etc.

Working drawings are provided by the Contractor to indicate means and methods of construction and design and description of temporary works including, sheeting, shoring, underpinning, cofferdams, temporary construction loads, etc.

Samples are provided by the Contractor to indicate conformance with descriptions of finishes or to provide a selection for final choice by the Designer.

The contract documents will indicate the shop and working drawing and sample submittals required of the Contractor. Where submittals are normally required but are not indicated in the contract documents, this should be clarified with the Designer to determine if submittals are, in fact, required. If so, this information should be provided to the Contractor.

The CE should request from the PM a list of all required submittals. The CE should review this list with the contract documents and prepare a final list of all contract-required submittals. This submittal list should be forwarded to the Contractor for review and confirmation that the list is fully inclusive of all required submittals. The Contractor should be instructed to include the list of submittals in the construction schedule and to return the submittal list with each submittal numbered consecutively in the order of priority determined by the schedule.

The CE shall maintain a Submittal Log indicating each submittal's unique identification number, title, date of receipt from Contractor, date forwarded to reviewer, date received back from reviewer, status (i.e., accepted, accepted as noted, not accepted) and date returned to Contractor. Where there is more than one reviewer, additional columns should indicate date sent to and received from each reviewer. "Re-submittals shall have the original identification number with the suffix "A", "B" or "C" indicating each re-submittal. The CE shall maintain the Submittal Log so as to provide a clear history of the processing of each submittal.

The CE or designer shall review each submittal to confirm that the submittal is in accordance with contract requirements. If not, the submittal shall be returned to the Contractor with a letter of transmittal indicating the deficiencies in the submittal. If the submittal is satisfactory, it is to be forwarded to the reviewer (usually the designer) as quickly as possible. The reviewer shall stamp the submittal; "Accepted, Accepted as Noted or Not Accepted". It is the responsibility of the CE to track and expedite the review process of all submittals and to provide notification to relevant parties when the review process is exceeding, or is likely to exceed, the scheduled or stipulated or reasonable review period. Submittal progress should always be an agenda item at Progress Meetings and all parties kept informed.

The CE shall track all submittals returned to the Contractor and shall note the reviewer's comments and action required.

The CE shall maintain copies of the approved submittals and keep a clean copy in the field office for record and audit purposes. The CE staff must ensure that work is not performed without approved shop or working drawings or samples. On completion of the work, a copy of all submittals shall be included in the Contract records.

### **5.3 REQUESTS FOR INFORMATION/CLARIFICATION**

From time to time the Contractor may request information in addition to the information provided in the contract documents or for clarification of information provided. These Contractor requests must be logged and documented. Prior to the commencement of construction, the CE should provide to the Contractor a supply of Request for Information (RFI) forms. The Contractor should be instructed to use these RFI forms for all information or clarification requests, numbering each request consecutively. For projects with multiple contracts, the RFI number should be pre-fixed with the contract number.

The Contractor should be instructed to use the RFI forms only for information or clarification purposes. They should not be used to request changes to the work or to offer savings through different materials, processes, or procedures. A request for information or clarification may result in a change, which will then be dealt with by a Request for Proposal submitted by the contractor or a Proposal Request issued by the CE. On receipt of a RFI, the CE shall review to determine who is to respond.

The CE will track and expedite the RFI to ensure a timely response. The CE will forward the response to the Contractor together with any further instructions generated by the response. For instance, the RFI may indicate a need to change the design or contract requirements, which will, in turn, generate a Proposal Request.

The CE shall maintain a RFI Log which will list the RFI numerically, describe the nature of the RFI, indicate date of receipt, dates to and from the A/E, date response returned to Contractor and any changes or other instructions generated by the RFI. The RFI Log should be reviewed at Progress Meetings to ensure that processing of RFIs does not impede the progress of the work.

### **5.4 PROJECT RECORD DOCUMENTS**

It is an exceptional project that does not experience minor field changes. These minor field changes will not warrant the formal issue of revisions to drawings or specifications but do need to be officially recorded for operations and maintenance purposes and for possible future expansion or renovation of the facility. The CE shall set up and monitor a process to record as built information. Upon completion of the contract the CE shall submit to the PM the as built information along with shop and working drawings. The PM is responsible to incorporate the changes in a final completed set of drawings for archiving.

## SECTION 6.0 SCHEDULE CONTROL

The successful delivery of a construction project will depend, to a large degree, on the quality of the planning provided at the beginning of the project and the diligent monitoring of the construction plan during construction.

### 6.1 CONSTRUCTION CONTRACT SCHEDULE

There must be adequate time allowed for the Contractor to prepare a realistic schedule. At the same time, it is important to know as soon as possible those activities that will occur early so that the CE can plan their supervision. The contractor shall be advised and required to submit a general plan of work sequence from start to finish at the preconstruction meeting. The contractor shall submit a final schedule within two weeks after the notice to proceed. The CE should expedite this review and send a final copy to the project manager.

A second important consideration is for procurement activities, including submittal and approval of shop and working drawings and samples, to be included on the construction schedule. To this end, the early preparation and agreement of the required submittals list is important. The CE should require all procurement activities to be shown on the schedule with supporting information for the procurement durations shown. Particular care should be given to major equipment or material purchases where delays could severely impact the schedule.

The construction schedule activities should be limited to a maximum of 15 working days duration, whether a CPM or bar-line schedule, and should show interrelation with sequential and parallel activities. The schedule must clearly indicate the completion date and any contractual milestone dates. The CE and field staff shall review the schedule to establish that there is a logical sequence of activities, that the durations for activities are sensible and achievable based on the known or reasonably expected resources available, and that the format meets all contractual requirements. The review is not expected to comment on means, methods, techniques or practices except where such are required or prohibited by contract or where they deviate from good and usual construction practices.

The CE and field staff should be willing to meet with the Contractor during the formulation of the construction schedule and indicate areas of concern regarding the logic of the schedule or deviations from contract requirements. It is permissible to offer advice and suggestions on development of the schedule so long as it is clearly understood, and documented in the minutes of any meetings, that the Contractor accepts full and final responsibility for the construction schedule, and that any advice or suggestions offered by the CE field staff are not to be construed as directions or even recommendations to the Contractor in the development of the construction schedule.

It is essential that the construction schedule be developed and completed early and that no delay to submittal and acceptance of the schedule be permitted beyond the contractually mandated periods. The Contractor should be advised that payment can be withheld for work installed after the date that the construction schedule should have been received and accepted, until such acceptance has been achieved. The CE should give full attention to this matter since the establishment of a sensible, achievable schedule is critical to the installation of the work and the avoidance of delay claims.

*On more complicated projects, where the contractor submits a CPM schedule produce by a scheduling software, the CE may want to use the services of scheduling consultant.*

## 6.2 SHORT-TERM SCHEDULES

Although the construction schedule is the master plan for the completion of the work, the day-to-day installation of the work by the Contractor's field foremen and superintendents is usually managed by means of short-term schedules extracted from the overall construction schedule. These short-term schedules normally cover periods from one to four weeks, with two-week look-ahead schedules being usual.

If the construction contract is not explicit on the requirement for look-ahead schedules, it can usually be interpreted as implicit and every effort should be made to require that the Contractor submit short-term schedules. Since these short-term schedules are normally the Contractor's primary guide to day-to-day construction activities, it is important that the CE field staff have these schedules for monitoring of the work.

The CE should insist upon short-term schedules containing specific, measurable activities. The Contractor may resist specificity in order to avoid being held accountable. Vagueness may be preferred to avoid being called to account for failure to achieve. A requirement for specificity demands that careful thought be given to planning the two-week schedule. Review of the proposed short-term schedule at the Progress Meetings will determine if the resources are sufficient and available to meet the schedule. This will include Contractor resources and support resources such as CE supervision, information, and approvals.

Attention given to the detail of short-term schedules will greatly increase the planning of the work and the efficiency of its installation. This will be to the benefit of all parties, not least the Contractor. This will usually lead to increased willingness to participate by the Contractor and enhancement of the team approach to the work, which in turn will lead to greater likelihood of successful completion. To achieve this cohesion will usually require considerable effort on the part of the CE in the early stages of the contract and regular reinforcement throughout.

Regular submission of the short-term schedules and the regular marking up of the schedules with the actual achievement will provide a detailed history of the planned versus actual installation of the work. Such a record can be invaluable in the resolution of claims for delay and disruption. These records usually indicate clearly where actual installation differed from planned installation and the reasons therefore. The causes for the delay can usually be clearly discerned as City, Contractor, or third-party responsibility. With this information available, resolution of problems can quickly be agreed.

## 6.3 SCHEDULE UPDATES AND REVISIONS

The construction schedule is a living document and must be continually assessed against actual events to determine its continuing viability. The CE should advise the Contractor early that contractual schedule updates will be required and reviewed.

The schedule review by the Contractor and the CE field staff should carefully consider the work installed during the period compared to the planned installation. Reasons for differences should be examined and the impact on following work assessed. Where targets were exceeded by small amounts, the logic is best left unchanged and the additional float maintained to cope with possible obstacles in the following period. Similarly, where targets were missed by small margins, the additional work in the following period can probably be absorbed without changing durations.

Where there are trends over two or more periods where targets have been exceeded or unmet, the reasons should be examined to determine if they are short-term and unique or long-term and systemic. If short-term, the loss may be made up with a short burst of additional resources without need to revise the logic for following work. Minor schedule gains or losses can be

incorporated into the schedule by shortening or lengthening following activities which increases or decreases float without affecting the logic or completion date of the project.

Major gains or losses of time, major changes to the contract, changes to fundamental means and methods may all require revisions to the contract. The CE staff should be available to the Contractor in the examination and development of changes in logic, sequences, means and methods, resource allocation and other steps to recover, maintain, or accelerate the schedule.

The primary aim is maintenance of the contract completion date without additional cost to either the City or the Contractor. Regardless of fault, delay to the scheduled completion will usually incur additional cost to the City, despite liquidated damages.

Where completion to schedule cannot be maintained without additional costs, the CE should be prepared to examine various strategies. The costs of acceleration to meet the contract completion date should be compared with the costs of delay including the costs to the Contractor and to the City.

Schedule updates and schedule revisions are to be maintained on file together with documented review comments and recommendations. The Contractor should be clearly informed that delay in submission of the schedule update may result in a withholding of payment.

#### **6.4 SCHEDULE COMMUNICATIONS AND MEETINGS**

Early establishment of the reporting relationships between the Contractor's staff and the CE staff is important for the successful planning of the work. Meetings shall be established for earliest possible development of the preliminary and overall project schedules. The CE staff should be prepared to meet as frequently as necessary with the Contractor's staff to expedite the provision of a Project Schedule.

Regular Schedule Update Meetings shall be established and may be incorporated in to the normal progress meetings. These meetings should be attended by the CE, the Contractor's Superintendent, Contractor's field superintendents and superintendents of major subcontractors and senior CE field staff. When needed other City representatives should be invited as well as representatives from the PM, utilities and government agencies where their input and cooperation is essential to maintaining the schedule. The PM should be a regular attendee except perhaps in the later stages of the project.

The Schedule Update Meetings are intended to be practical, cooperative working sessions to determine the best possible plan for the on-going completion of the work. The purpose of the meeting is to determine the most efficient and effective way forward based on the construction knowledge and expertise of all parties present, working in a supportive and cooperative team environment. The CE should give special attention to developing and maintaining this team attitude at the Schedule Update Meetings and to persuading the Contractor to bring the best field expertise to the meetings.

#### **6.5 PROCUREMENT CONTROL**

Procurement control is normally the responsibility of the contractor. However, the CE should be aware that untimely procurement of critical items would delay the completion the project. Thus, the CE should exercise some monitoring over critical items. The CE should require the contractor to provide a critical list of materials needed (for example anchor bolts, street pavers, end dams, architectural finishes) and when delivery is scheduled. Where shop drawings and/or samples are required the delivery times should include appropriate review time. The CE should monitor this list, delivery schedule, and the return time for any reviews at each progress meeting.

For City furnished items, (for example traffic controllers) the CE should require the contractor to supply adequate notice of when the items are needed. The CE should verify at the beginning of the project that these items would be available upon request by the contractor. The contractor should submit a receipt of pick up or delivery, which should be filed in the project file.

For items issued by the City's Highway Maintenance storeroom, the CE should fill out the requisition completely with job title and fund number.

#### **6.6 TIME EXTENSIONS**

*A Contractor's claim for time extension must be supported by a schedule analysis. The analysis must identify the cause, responsibility and length of the delay and how it impacts the critical path. Time extensions should only be granted for delays that impact an activity on the critical path. The CE needs to determine if a delay is excusable-noncompensable, excusable-compensable, nonexcusable, weather related or concurrent.*

## SECTION 7.0 COST CONTROL

The responsibility for controlling and recording the flow of funds for the construction of the work and for managing changes to the work that affect the cost of the project must be achieved by development and maintenance of clear, accurate, sufficient document records that detail the flow of funds and the contractual transactions controlling that flow. The document record must be available for audit at any time during and after the project and must be maintained neatly, current and accessible.

*The City has developed a comprehensive database to record as built quantities and produce related reports including contractors pay request. A database user manual is included in Appendix 5 of this manual. All CE are required to use the construction database on their contracts.*

### 7.1 PROGRESS PAYMENTS

Most contracts stipulate that the work will be paid for at regular intervals, usually monthly, during the course of construction. The contract will stipulate the period for payment; the timing of submission for payment; the required documentation and amount of retainage. The cut off date for quantities is the last day of each month unless otherwise discussed and agreed to with the contractor and PCE. The essential requirements are that only acceptable work installed be paid for; that the amount remaining to be paid, including retainage, is sufficient to complete the work in the event of default by or termination of the Contractor; and that contractual requirements necessary for payment are fulfilled. Progress payment applications shall be submitted on City Claim Voucher-Invoice (Form 37) and supported by Affidavit of Original or Sub-Contractor (Labor and Material) (Form PURCH 66) and Affidavit of General or Mechanical Branch Contractor (Form 97S). Before final payment is made the Contractor is required to submit all documentation as specified in the City of Cincinnati Supplement to ODOT *Section 109.12*.

The database user manual defines the role of the CE in producing partial payments.

#### 7.1.1 METHOD OF PAYMENT

Payment for construction may be by several methods. These include unit price payments, lump sum payments, or a combination of these. The contract documents will stipulate the method of payment.

Lump sum payments are paid upon completion of specific portions of the work. The Contract Lump Sum is usually broken down into several stage payments, the amounts for each stage being as bid or as approved by the City, per approved schedule of values

Unit Price Contracts include a detailed Bill of Quantities, each item of which is priced by the bidder. The total of all the unit prices is the total contract bid. Payment is made against the actual quantities installed and the final total may or may not be the same as the original total bid.

#### 7.1.2 METHOD OF MEASUREMENT

Interim payments on a Lump Sum Contract require a breakdown of the Lump Sum. This Billing Breakdown, usually referred to as a Schedule of Values, should give a detailed list of the components of the work with a cost assigned to each component. Many Lump Sum items can be quantified, foundations for example. The CE should insist that the Schedule of Values sufficiently breaks down the Lump Sum so that estimation of interim payments is largely a mathematical



exercise. Progress Payments should not rely on extensive subjective estimates of completion of large sections of the work. It may be a simple matter for a CE and Contractor's Project Manager to look at an element of work and agree that it is 20%, 40%, 60%, or some other percent complete. It is not such a simple matter to maintain an auditable document trail to justify the estimates of completion.

Unit Price Contracts are usually the easiest for preparing Progress Payments. However, they do create an administrative burden with the volume of paperwork required. The first essential with a Unit Price contract is to request from the DE a complete quantity take-off from the bid-drawings to check the Bid Quantities. Any major discrepancies in the actual quantities of work performed and the DE take-off must be reconciled with DE. Work installed must be measured or calculated on a daily basis recorded on the Inspectors' Daily Report and entered in to the construction database. Price adjustments for reductions or additions of unit priced quantities shall be made per contract specifications and documented by a contingency allocation or change order. Payment for items when they exceed the bid estimated quantity is permissible as long as the final contract amount does not exceed the original certification. A final change order shall be processed to document these adjustments in quantities. The CE must constantly be aware of trends for quantity overruns of an item. The CE should review monthly data to recognize these trends and take positive action to mitigate or obtain additional funding from the PM.

The CE shall check the pay quantities entered on the IDR to assure that the contractor is being paid per the conditions of the contract. The CE shall before producing a pay request check the quantities entered in the database compared to what is on the IDR.

Many Unit Price contracts include Lump Sum items. These may include General Conditions, Mobilization, Temporary Field Offices, and other items. Where these lump sums are large and extend over several pay periods, the CE should require a breakdown of these lump sums in the same manner as a lump sum contract.

## 7.2 CONTRACT CONTINGENCY

In any construction contract it is not possible to completely predict all the issues that will arise in the field. During construction, unexpected events, contractors failures, incorrect assumptions, public demands, even design deficiencies will require directives to the contractor and payment for additional or changed work.

In order to preserve the contract schedule a realistic contingency account needs to be established and included in each construction contract. These contingencies will be a lump sum item to be disbursed only by an authorized Contingency Allocation form. By this means the funds will be authorized and available throughout the contract, but only dispensed if and when the needs arise and a contingency allocation is processed. If some or all funds are not expended, they will accrue to the City by final change order, not to the contractor.

**All spending towards this contingency must be for work directly relevant to the completion of the contract. Any additional scope changes or work not relevant to the contract must be added by change order.**

Approval chain for Contingency Allocations are; Contractor, Construction Engineer, Principal Construction Engineer, Design Engineer (if the change is design related), Project Manager (Client).

The CE is to enter all contingency information in the construction database which will produce a standard form. After getting all required signatures, the CE shall forward the contingency form

along with any associated back up documentation to the DOT&E Accounting Section. Contingency items will not show up pay request reports unless approved by DOT&E Accounting.

### 7.3 CHANGE ORDERS

During most construction projects conditions or circumstances may arise that will cause or create a change to the contract. The construction contract documents will stipulate the conditions or circumstances that constitute changed conditions and the procedures to be adopted to amend the contract to incorporate the changed condition.

Assessment of potential changes and the resolution and processing of change requests requires contractual skills, tact, diplomacy, and a thorough knowledge of the site and contract conditions. The CE staff must be knowledgeable of the terms of the contract in regard to changes and move swiftly to institute the procedures as soon as a potential for change becomes apparent.

The CE shall review all notifications of change from the Contractor and shall provide recommendations to the PM. If current work is affected by the situation, the CE staff will monitor all labor, equipment and materials involved and any delays incurred. In certain circumstances, for safety, for maintenance of schedule or to avoid major costs, it may be necessary for work on the change to proceed prior to agreement on costs and processing of the change order. The CE should obtain approval for work to proceed from the Principal Construction Engineer and follow up with the PM and the processing of a change order the next working day, notify the Contractor and maintain time and material records.

A changed condition may be occasioned to add to, delete or modify the work of the contract. A change may be due to an error, omission, or change in the design, which requires a change in the work. A change may be occasioned by differing site conditions or situations arising that were not contemplated in the contract, could not have been reasonably foreseen by the Contractor, and will cause a change in the work. For a no cost change order due to a change condition the CE can authorize work to proceed immediately with verbal approval from the Principal Construction Engineer and follow up with a change order. When the change requires additional money to be certified to the contract, work should not proceed except for the reasons above until the money is certified through the City system.

The Contractor is required to notify the CE of changed site conditions or situations. The CE and Field Staff should be alert to field conditions to anticipate potential conditions for change. The CE shall notify the Designer of the potential or actual changed conditions or situations that may lead to change orders.

**Scope-related changes and design required changes shall be approved by the PM. The CE will issue a Proposal Request to the Contractor requesting the cost and schedule implications of the change. Scope additions cannot be authorized until a Construction Change Order (Form 11AS) is certified.** The CE should request a detailed breakout of labor and material costs and avoid lump sum cost responses from the contractor. Each change order must include a justification cover letter and all documentation verifying the amount and method of payment to be made for this work.

If the CE agrees with the Contractor's proposal, the proposal is forwarded for approval. If there is a difference between the CE estimate and the Contractor's proposal, the CE will attempt to negotiate with the Contractor.

It may occur that agreement on costs and/or time cannot be achieved between the CE and the Contractor. In these circumstances the CE shall forward the CE estimate and the Contractor

proposal with recommendations. The PM will determine if there is a basis for accepting the Contractor's proposal and shall so advise the CE in writing. Alternatively, the PM can authorize the work be paid for on a time and material basis.

A change order may require an extension of contract time. If there is no time extension granted by change order, the CE should assess liquidated damages if the contractor fails to meet his completion.

The CE is to enter all change order information in to the construction database. This will produce a standard change order form. After getting all required signatures, the CE shall forward the change order form along with a justification memo and any associated back up documentation to the City Purchasing via the DOT&E Accounting Section. Change order items will not appear on the monthly pay request reports until they approved by the DOT&E Accounting Section.

## **7.4 CLAIMS**

A claim, in a broad legal context, generally includes making a demand for money or services and alleging a right thereto. A claim is usually referenced as a request by a Contractor or subcontractor for added compensation (money or time) for work performed outside the scope of the contract or for work performed within the scope of the contract but under conditions that were neither bid nor anticipated. Invariably, when a claim evolves, every party involved in the project has played a role in its formation. A contractor or subcontractor should only submit a claim when he believes he will not receive compensation for something to which he believes he is entitled, and has exhausted the available contract remedies.

### **7.4.1 CLAIMS AVOIDANCE**

Claims avoidance procedures should have started early in the design process. Through constructibility and biddability reviews, many errors, omissions, and ambiguities can be identified and corrected prior to bid. The more comprehensive and clear the bid documents are, the fewer the claims likely to be submitted by the Contractor.

The CE's first efforts at claims avoidance is total familiarity, by all of the CE staff, with the plans, specifications, contract language and site conditions. An experienced eye will note areas where the potential for claims exists and contingency plans will be prepared.

The contract records are the second major defense against claims with particular reference to records of planned versus actual installation of the work. A large proportion of claims stems from schedule problems. It is not unusual for a Contractor to fall behind schedule in the early months of a project as the construction forces go through the learning curve and the teaming process. Later the progress will improve and the schedule will be recovered and the end-date achieved. However, the Contractor may often try to blame the initial delays on problems outside of Contractor control and therefore compensable by the City. A detailed record of when work was actually installed in relation to when it was scheduled to be installed and the reasons for the differences, where they exist, will often deter the Contractor from submitting a claim that cannot be sustained in face of the CE's document record. The CE's contract records should be factual and nonbiased.

Various clauses of the contract specifications allow for conditions which enable the Contractor to request additional money or time, provided adequate notification and backup are given. The CE should recognize any situation of potential claim and, where possible, take steps to minimize impacts and ensure complete documentation of before and after conditions.

Whenever possible, visibly changed conditions or other conditions which could result in a claim by the Contractor should be photographed by the CE or staff as evidence for future use.

#### **7.4.2 IDENTIFYING AND CLASSIFYING A CLAIM**

Early identification of potential claim scenarios will allow the CE to document and minimize the impacts. The CE should be with types and causes of construction claims.

#### **7.4.3 CLAIMS PROCEDURES**

At the Pre-Construction Conference, the Contractor should be reminded of the contract conditions regarding the submission and processing of claims. Requirements regarding timely notification shall be clearly addressed and the Contractor advised that no relaxation of the requirements would be permitted. The CE should request this notification be in writing with a detailed description of why the contractor feels they are due additional compensation. The contractor is required to proceed with the work in question even though payment of such work is in question.

As soon as the potential for a claim is apparent, a separate file for that issue shall be opened. Alternatively, upon receipt of a notice to claim from the Contractor, a file for that claim shall be opened. The CE shall acknowledge receipt of notice of intent of claim, in writing, without any commitment or even indication of the CE's opinion regarding the claim, to the Contractor. The CE should copy the PCE on all notices of intent to file a claim.

The contract language stipulates the dispute resolution procedures to be adopted on the project. The CE should be familiar with these procedures and be prepared to participate in the various processes. The CE shall assemble all documentary and other evidence relating to the claim, including correspondence, photos, reports, drawings, contract language and specifications, and prepare a summary report. This summary report shall be a factual analysis citing specific evidence that will support or refute the Contractor's position. The CE may provide any alternative strategies that will mitigate the cost of the claim, and include his recommendations. The CE should review the claim and recommendation for settlement with the PCE and asked for comment. The CE should present the claim to the PM and PCE along with a recommendation for settlement and request a final decision on payment. The CE should notify the contractor of the PM final decision. If the decision involves an increase in time or money the CE should process a Contingency Allocation or Change Order.

## SECTION 8.0 QUALITY ASSURANCE AND CONTROL

The terms Quality Assurance (QA) and Quality Control (QC) are much confused and the terms, though distinctly different, are often interchanged and used as if they are the same. The following definitions of Quality Assurance and Quality Control are taken from ISO 8402 which is the International Standard referencing Quality Vocabulary. It is also important to define "Quality" so that we all understand what Quality Assurance and Quality Control are designed to produce.

**Quality:** The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs. In a contractual environment, needs are specified. Needs may include aspects of visibility, safety, availability, reliability, maintainability, economics and environment.

**Quality Assurance:** All those planned and systematic actions necessary to provide **adequate confidence** that a product or service will satisfy given requirements for quality. For effectiveness, quality assurance usually requires a continuing evaluation of factors that affect the design or specification for intended applications as well as verification and audits of production, installation, and inspection operations. Providing confidence will usually involve producing evidence.

**Quality Control:** The operational techniques and activities that are used to fulfill requirements for quality. Quality Control involves operational techniques and activities aimed both at monitoring a process and at eliminating causes of unsatisfactory performance at relevant stages of the quality loop in order to result in economic effectiveness.

In effect, Quality Control consists of those activities required to meet the specified requirements while Quality Assurance consists of those oversight activities that confirm and assure that Quality Control is in place and is effective.

### 8.1 RESPONSIBILITIES

It must first be firmly established that the Contractor is contractually responsible for the quality of the work and QA or QC activities performed by other parties in no way invalidate the Contractor's responsibility for quality. As such, the Contractor must have in place QC activities to ensure that quality requirements are met.

The QA/QC program will usually be under the direction of the CE. The CE will be assisted by trained and experienced inspectors capable of documenting the operation and results of the QA/QC program. The CE must have available qualified personnel or subconsultants for sampling and testing, for survey checks of the Contractor's work, and for other specialist QA/QC activities.

### 8.2 CONTRACTOR QUALITY CONTROL PLAN

If the construction contract specifically requires QC to be performed by the Contractor, the Contractor will be required to provide a CQC Plan. The CE should require early submittal of the CQC Plan before any construction work is begun. Normally, the contract will forbid commencement of any construction prior to approval of the CQC Plan.

QC Plans should be reviewed by the CE and discussed with the Contractor. When satisfactory, they should be copied to the Designer of Record (DOR). Compliance with the approved plan should be monitored and recorded.

### 8.3 INSPECTION

It is the duty of the CE and Inspectors to monitor and verify that the project is being constructed in accordance with the plans and specifications and in compliance with the terms of the contract. The Inspector has, and shall exercise, the authority to reject both unsatisfactory workmanship and materials. Such rejections must be made immediately upon discovery documented and referenced to the appropriate plan or specification requirement. Documentation should include photographs where possible. However, the work shall not be directed to stop unless the non-conforming work will be covered up or the correction of the non-conforming work will have a critical impact on completion of the project.

The CE or CI will ensure that inspection of the work is so organized as to support the Contractor's schedule and that inspection forces are available and sufficient to meet the schedule. Every effort should be made to cooperate with the Contractor so that inspection activities will dovetail with the Contractor's work. The Inspection staff must be aware of the daily and weekly schedules provided by the Contractor and schedule their own work accordingly.

The Inspectors will provide daily inspection reports indicating work performed, inspections and tests carried out, non-conformances noted, and any other information relative to the quality of the work. Daily reports must be completed on City standard Inspector Daily Report Form per the attached instructions, be neat and legible, and fully describe the work performed.

Off-site inspections may be required. These will be scheduled by the CE with the Contractor. Inspectors shall provide details of inspections, tests, sampling performed, and conditions observed. Status of progress in fabrication/production and conformance with required schedule should be noted and the CE informed of any potential for delays due to quality or production problems.

Inspection staff is required to inspect all materials delivered to the work-site and to confirm that the materials meet the specified requirements. All incoming materials should have required documentation including certification that materials have been manufactured/processed in accordance with specified quality standards and passed all required inspections and tests. The Inspectors will check all such documentation and forward it to the field office for filing. Storage and protection of all delivered materials shall be checked periodically to ensure that there is no deterioration in the materials prior to incorporation in the work.

Inspectors are expected to be knowledgeable in the work, familiar with the contract plans, specifications and contract conditions, and experienced in the methods of installation. As such, the Inspection staff constitutes a valuable resource to the project. They will be called upon to assist in the interpretation of plans and specifications and can offer valuable insight on methods and techniques of construction. They must be careful not to direct the Contractor in means, methods, techniques, sequences, or procedures of construction or to make recommendations. Any advice requested and offered must be qualified with the statement that the Contractor, alone, is responsible for the construction of the work.

The inspectors are required to be familiar with the duties and responsibilities as stated in the CM Inspectors Manual when it becomes available and shall be familiar with standard practice and procedures for installation of the related work as referenced in other manuals provided to them by the CE.

### 8.4 TESTING

The CE and field staff shall schedule the subcontract testing services to ensure that their resources are planned and available. To the fullest extent possible, an Inspector should observe

testing performed by the consultants and statutory agencies and document it on the daily report. Any test certificates issued must be safeguarded and filed.

Particular attention should be given to testing work or materials which will shortly thereafter be covered up or become otherwise inaccessible. Satisfactory testing results are required in order that follow-on work may proceed. The testing resources should be organized to be available as the work is installed and test results provided as soon as reasonably possible. Every effort should be made to cooperate with the Contractor.

Should the Contractor insist on covering work which has not been tested, the Contractor shall be informed, in writing by a Non-Compliance Notice, that such work is not acceptable, that no payment will be made for the work, that any costs associated with uncovering the work will be solely the responsibility of the Contractor, and that there will be no extension to the contract time as a result of uncovering untested work or work for which a test result was unsatisfactory.

Off-site testing may be conducted. The CE shall require the Contractor to provide adequate notice for all testing requirements.

Test results for all off-site testing should be received at the site before material/equipment is incorporated in the work. If the Contractor elects to use/install material/equipment without test results being available, the Contractor shall be notified that it will be entirely at the Contractor's risk and responsibility for any consequent costs or delays.

All test results are to be distributed to all required parties upon receipt and all test reports are to be maintained on file. The DOR should be consulted with regard to matters arising out of unsatisfactory test results.

## **8.5 MATERIAL CERTIFICATIONS**

Per the City Supplement to the ODOT CMS the contractor's are required to provide certification of material compliance for any material before it is incorporated in to the work. For ODOT LPA jobs the is a state requirement per the City/ODOT agreement. The CE should be aware of this requirement and enforce it to the best of his ability.

## **8.6 SURVEY CONTROL**

The standard City contract requires layout to be performed by the City. The CE and staff should require the contractor to give adequate notice of layout needs and schedule it accordingly with the survey crews so as not to cause delay in construction. Basic survey controls are to be protected and, as and when necessary, relocated.

There should be frequent checks on layout to confirm work is accurately installed. The CI and surveyors should do regular spot checks of measurements and elevations should be made including pile locations; foundation elevations; anchor bolts for structural framing and major equipment; rooms, recesses and closets to receive furniture, fixtures and equipment fabricated off-site; ceiling heights and space for utilities.

Final pay items that can be verified by survey should be final measured and documented by the survey crew at the completion of the project.

### **8.7 NON-COMPLYING WORK**

The contract records shall indicate that non-conforming work was brought to the attention of the Contractor; that corrective action was taken by the Contractor to bring the work into compliance; that the corrective action was, where required, pre-approved by the DOR and CE; that the corrective action was observed and the finished work was re-inspected, re-tested or re-assessed and found to be in compliance.

In general, minor non-conformances can be verbally notified to the Contractor and correction observed and confirmed. Where verbal notification does not produce correction within a short period, written notification of non-compliance shall be issued. Where there is a major non-compliance, a written notification to the Contractor shall be issued. Where a test result does not meet specified minimum requirements, a written notification of non-compliance for the work represented by the test result shall be issued.

Notification of non-conforming work shall be by means of a Non-Compliance Notice (NCN). The NCN shall identify the non-conforming work or non-compliance and, if re-work is extensive or complicated or time-consuming, shall require the Contractor to submit a proposal for corrective action. The corrective action proposal shall be reviewed by the DOR if required and the CE and, if acceptable, approval will be notified to the Contractor.

All NCNs shall be logged and tracked. The status of NCNs shall be discussed at Progress Meetings. The intent is that non-conforming work be corrected as quickly as possible. There may be a tendency, with some Contractors, to put off correcting defective work until late in the project in the hope that the work will be accepted as is in order to maintain schedule. The CE should not allow corrective action to be delayed and should refuse to approve for payment the maximum amount of work associated with the NCN. Any direct costs incurred by the City caused by non-conforming work should be the responsibility of the contractor.

### **8.8 QUALITY PROMOTION**

The CE and field staff should work with Contractor's staff to promote a team approach to quality assurance and control, to inspection and testing, everyone working together towards a common goal of quality construction. Everyone should be made aware of the costs of poor quality, of the time and cost of re-work, of the negative effects on morale of having to tear out work that one has worked hard to install. The inspection/testing program should be seen as only one element in a total quality program designed to assist all participants in achieving superior levels of quality.

### **8.9 COORDINATION WITH STATUTORY AUTHORITIES**

The CE should be aware of other statutory authority's inspection and testing requirements. For installation of waterlines and sewer lines, CWW and MSD inspection and testing of installed work is required. For Traffic Engineering items the CE will inspect the initial installation and will call upon Traffic Engineering staff for support as needed and a final inspection is required by Traffic Engineering. For any work outside the right-of-way Building Department inspection and testing is required, including IBI inspection for electric work. For structures in the right-of-way that will have public occupancy, Building Department inspection and testing is required for life safety systems. For all other utility installations the CM staff is not responsible for the actual inspection of the utility itself but must check that line and grade is maintained per the approved drawings and all restoration is done in accordance with City standards.



## SECTION 9.0 SAFETY AND LOSS CONTROL

The subject of safety on the construction project is complicated and requires diligent study by the CE. In general, the construction Contractor is **solely** responsible for safety of the work including work done or materials supplied by subcontractors, consultants, and vendors. This responsibility cannot be delegated to subcontractors, suppliers, or other persons. The Contractor is responsible for complying with the requirements for safety, accident prevention, and loss control contained in the construction contract and for compliance with all Federal, State, and Local Authority ordinances, regulations and standards applicable to the work.

All projects in the U.S. are subject to the Federal Occupational Health and Safety Act (OSHA) Sections 1910 and 1926.

### 9.1 CITY'S SAFETY PROGRAM

The CE and field staff shall maintain familiarity with the City's Employee Safety Instruction Manual. For Jobsite safety the CE shall be familiar with Sections 107.07 and 107.08 of the City Supplement.

### 9.2 CONTRACTOR'S SAFETY PLAN

At the Pre-Construction Conference, the Contractor should be instructed to submit a formal Safety Plan that meets the requirements of Sections 107.07 and 107.08 of the City Supplement.

**The CE field staff should be familiar with the Contractor's Safety Plan and shall comply with the requirements of the Safety Plan when conducting their duties at the construction site. This will include use of personal protective equipment, using only designated accesses, obeying controlled access and lockout procedures, etc.**

### 9.3 MONITORING COMPLIANCE WITH CONTRACT REQUIREMENTS

Safety should be an agenda item at the Progress Meetings and safety issues should be discussed and recorded in their minutes.

1. During normal inspection of the work for quality, quantity and progress purposes, if any major safety violations, unsafe practices or hazardous conditions become apparent, these should be noted in the Inspector Daily Report and the Contractor's nearest supervisor informed. The name of the person informed and the date and time should be noted in the report. The City of Cincinnati Construction Safety Memorandum and Construction Safety Hazard Notification forms (copies are in Appendix 1) should be used to document observations, hazards and deviations. Details of corrective action taken, and the date and time of the action should be noted in the report or a subsequent report. If corrective action does not begin within a short period (short being determined by the degree of exposure created by the condition) the Inspector must report the condition to the CE. The CE will immediately contact the Contractor and advise that corrective action should be instituted without delay. Copies of the City's forms and the Inspector's Daily Reports should be placed in the safety file.

The CE and staff should not attempt to inspect work to which there is not adequate and safe access. The Contractor should be notified that any work installed that is not inspected due to inadequate, unsafe access will not be included for payment.

2. Copies of all accident reports and other reports and statistics shall be required from the Contractor. CE will meet with the Contractor, if necessary, to review accident reports and

determine if additions or amendments to the Contractor's Safety Plan need to be instituted. Changes to the Contractor's Safety Plan and other corrective actions shall be documented and copied to the safety file.

In the event of a major accident, incident, or emergency, the CE shall notify the Principal Engineer as soon as possible.

#### **9.4. CITIZENS' CLAIMS PROCEDURES**

Upon receipt of a claim by a citizen asserting damage incurred as a result of construction activities, the CE will forward the information to the construction section's administrator to issue a Notice of Damage Claim to the Contractor's insurance company. The CE will follow-up to ensure the Contractor investigates and provides a written response on the disposition of the matter within two weeks.

#### **9.5 OTHER AGENCIES' CLAIMS PROCEDURES**

The CE will administer claims by City agencies against the Contractor. A Notice of Emergency Repair Work Done by City will be used in the event emergency repair work is performed to correct hazardous conditions created by the Contractor. The costs associated with claims by City agencies will be recovered in an appropriate manner, including deducting the costs from progress payments.

#### **9.6 ENVIRONMENTAL ISSUES**

In addition to safety of the individual, increasing emphasis is being placed on protection of the environment and the clean up of earlier degradation. Many elements that were common in construction, or were routinely buried as harmless wastes, are now recognized as hazardous materials and there are extensive and extending regulations governing the handling of these materials. Of particular concern in construction are asbestos, lead in paints or other materials, volatile organic compounds such as oil, petro-carbons, thinners, adhesives, etc., that give off potentially damaging fumes, and other exotic chemicals.

If suspected hazardous materials are encountered which were not expected, Project Manager and Principal Construction Engineer are to be immediately informed and authorization obtained to stop the work and make the area secure. The CE should contact the City Office of Environmental Management (OEM) to get direction on how the situation will be remediated. If costs are involved the CE should get approval from the Project Manager to proceed and check with the Engineering Accounting section to verify funds are available and certified. The CE should safeguard the health of the field staff by avoiding contact with the suspected hazardous materials until clear instructions are received.

Supervision, monitoring, and inspection of hazardous waste handling and remediation plans normally require special training and should be coordinate with the OEM. The CE will ensure that only suitably trained personnel are deployed on HAZMAT remediation work.

## SECTION 10.0 PUBLIC RELATIONS

We are in an age of ever-increasing public participation in the decision-making and oversight process of matters affecting construction projects. People are demanding the right to be involved in the conduct of works that affect their community. As a result, the CE should expect to be involved in matters of Public Relations and should be prepared to perform public relations activities in a manner consistent with the City policies.

The CE should, at the earliest stage of the project, become aware of aspects of the project that can be expected to impact negatively on the local community and develop strategies to minimize that impact. The CE should be acquainted with the history of the project, of concerns that have been raised, and any local personalities who have been involved in the planning of the project. It is useful to review back-copies of the local newspapers to get a feel for the public attitude towards the project and to be prepared to address particular concerns that may have been raised.

The most effective public relations tool is to conduct oneself in matters involving the public in a professional manner. Courtesy is of prime importance, and every member of the public and their representatives must be treated with courtesy and respect. The CE and staff must not respond negatively to provocation but should remain calm and respectful at all times.

### 10.1 CONTACTS WITH THE CITY ADMINISTRATION AND COUNCIL

The CE must keep the Principal Construction Engineer aware of progress, potential problems and proposed action, and cost/schedule forecasts. The PE will seek to keep the City Administration and Council from being surprised by adverse citizen or media reports.

### 10.2 CONTACTS WITH THE PUBLIC

The CE and Inspectors should be known to local businesses and residences that will be most impacted by the presence of the project and these businesses and residents should feel that they can approach the CE and Inspectors with any complaints, questions or suggestions. The CI should note any contacts with the public on their Daily Report.

Legitimate complaints should be dealt with expeditiously by the CE and staff. If the complaint is regarding Contractor operations involving dust, mud, noise, obstruction, or trash accumulation, the Contractor should be instructed to rectify the condition forthwith.

City wide complaints are received, logged, and tracked through the city's Customer Service Response (CSR) system. If the CE receives a CSR, he should contact the citizen making the complaint and try to resolve their concerns. The CE should notify the Principal Construction Engineer that he has contacted the citizen and resolved the concerns. The PCE will close out the CSR.

The CE should treat every complaint seriously. Swift resolution of complaints will do a great deal for maintaining good community relations. Complaints about matters that one can do nothing about should be received sympathetically and, to the extent possible and prudent, given an explanation given as to why the problem cannot be mitigated. The complainant should be advised that every effort is being made to complete the work in the shortest possible time in order to remove the nuisance or concern as soon as possible. Sometimes, a sympathetic ear is all that is needed.

### **10.3 CONTACTS WITH THE NEWS MEDIA**

If the CE has any contact with the news media he must take great care as to what he says and one should expect whatever one says to be selectively reported. It is acceptable to say "no comment", and refer them to your supervisor. If contacted by the Media and the subject or story is going to be controversial, the CE and Staff should decline comment, and refer them to the Director of DOT&E, and **immediately** contact the Director's office, the PCE and the PM. The CE should not provide any written documentation that may be controversial to the media unless it is requested in writing to the Director of Transportation.

### **10.4 ENHANCEMENT OF PUBLIC IMAGE**

As the public takes more interest in matters affecting their community, public perception becomes more important to the construction process. Media and general public attention can be expected to focus more attentively on projects, particularly those that will have a major impact on the environment, public amenities, local economy, and tax base. The CE and field staff need to give adequate attention to promoting and maintaining a positive and professional public image.

### **10.5 STREET REHAB NOTIFICATIONS**

For Street Rehab contracts the CM Section mails out a street rehab brochure detailing the work to be done to every address on the streets to be rehabbed. The CE should prepare an insert detailing the list of streets, contractor's name, the Engineer's name and phone number, and tentative start date. The CE should give this insert to the Office Clerk no later than two weeks prior to the start date and request that he begin the mailing process.

### **10.6 CONSTRUCTION PRESS RELEASE AND TRAFFIC RESTRICTION UPDATES**

The CM Section sends out Press Releases for construction start up notice and any unique lane closures or milestones for all our construction projects. The CE should prepare the Press Release in Standard Form and forward to the Office Clerk for review and mailing.

The CE should also provide and update a list of any traffic restrictions to the Office Administrator. This information is gathered and released in a report to various outlets bi-weekly.

## SECTION 11.0 CONTRACT COMPLETION AND CLOSEOUT

Contract completion and closeout is a critical element in the life of a construction project. It is not unknown for a team to build up an excellent reputation during the construction process only to have that reputation destroyed by a poor closeout procedure. As the end of a project approaches, there can be a slackening off of control and attention to detail. The Contractor will often transfer key people to other projects and leave insufficient resources to supervise closeout. As the workload diminishes, it must be expected that the number of people on the project will be reduced, and this is normal and proper. What is essential is that there be a clearly defined closeout plan and procedures in place to allow the remaining staff to close out a project efficiently and effectively.

The time to start to plan the closeout of the project begins at the commencement of the project. The CE should, in the early days, begin to develop the closeout plan and procedures. This will begin with a thorough knowledge of the contract requirements relating to closeout. This will be followed by the insistence that the project schedule prepared by the Contractor includes all closeout activities and that the activities have adequate durations and resources assigned and that the logic and interfaces will permit timely conclusion.

Other major elements include insisting that non-conforming work be corrected within a reasonable period of notification. This will avoid a build up of punch list items at the end of the project. Closeout punch lists should only refer to work installed within the last few weeks.

As-built drawings should be checked monthly through the life of the project to ensure that they are marked up regularly and are current.

The City Engineer has mandated that contract close out shall be a priority of the CE.

### 11.1 CLOSEOUT PROCEDURES IN GENERAL

Each project will normally specify the closeout procedures in the construction contract. The CE should become thoroughly familiar with the closeout procedures at the beginning of the project and manage the project with close out in mind. The City's Closeout Checklist should be used during planning and during the closeout process.

The Contractor should notify the CE when he believes that he has achieved substantial completion. The CE should consult with the CI and PM to confirm that the project is substantially complete. The CE shall issue a Notice of Substantial Completion. If the date of substantial completion is after the contract completion date, the CE shall consult with the PM and PCE and decide if liquidated damages are to be charged or the contract completion extended. Immediately after substantial completion, the CE shall prepare a punch list to indicate all work or corrective actions remaining before final acceptance of the project. The CE sends the punch list to the contractor stating the time frame in which the work is to be completed, standard 30 days. Failure to complete this work within the specified time will result in an administrative fee of \$100 per calendar day. A copy of the punch list should be forwarded to the PM and Design Engineer.

The Contractor should notify the CE when the Contractor believes that all required contract work is completed and ready for final inspection. The CE shall conduct a final inspection within 10 days of this notice. The PM and any other agencies that will maintain any portion of the project should participate in the final inspection. Notify the contractor of any work that is not acceptable; this work shall be corrected immediately after notification. The CE should receive as-built information and close out manuals as required by contract prior to final completion. The CE shall issue a Notice of Final Completion after all

work is accepted. The PM must sign-off on this notice. The date of final completion ends the contractor's responsibility for maintenance and beginning of the one-year correction and repair period.

As soon as possible after all work is completed, the CE shall prepare an agreement for final pay quantities report. This report shall be signed-off by the Contractor, CE, PM and PCE. Once all are in agreement, the CE shall prepare and process a final change order establishing final contract amount and time. The contractor has 30 days to agree or dispute the agreement to final quantities. If a dispute arises, the CE shall meet with the contractor and try to resolve the disputed items as soon as possible.

The Contractor is to submit all final paperwork and along with final invoice within 60 days of the Final Completion date. The CE shall monitor this, and if the final paperwork and final invoice is not submitted within the 60 days, the CE shall send the contractor a Final Paperwork Delinquent Notice, requiring all paperwork be submitted within 30 days or \$100 administrative fee will be assessed.

Prior to final payment, the CE shall collect and put in order all Construction files related to that contract. The CE shall turn, these files over to Construction Administrative staff to log and archive. When labeling these files, use exact name and contract number as listed on the contract.

Upon receipt of letter to authorize final payment, the PCE will create a Final Payment pay request in the construction database.

The CE shall perform a one-year warranty inspection prior to one year after final completion. The CE shall complete a One Year Inspection Notice form.

### **11.2 AS-BUILT DRAWINGS AND RECORD DRAWINGS**

As-built, record, and utility drawings are an essential requirement of those who manage and maintain facilities. It is usually a requirement of the construction contract that the Contractor shall maintain these drawings and deliver them to the CE on completion of the project.

Whatever is required, the CE should take responsibility for ensuring that the complete as-built, record plans are delivered to the appropriate Project Manager, and that the receipt of such as acknowledged in writing.

### **11.3 WARRANTIES, GUARANTEES, AND OPERATING START-UP**

The technical specifications normally stipulate the requirements for warranties and guarantees. The CE should prepare a list of warranties and guarantees required by contract, including the format and periods of warranty/guarantee, as part of the Closeout Plan. Before project completion, the CE should begin coordinating with the Contractor for the delivery of warranties/guarantees. The intent is to have all warranties and guarantees in hand and, properly bound, at contract completion, ready to transmit to the Client.

Warranties/guarantees usually become effective on the date of Substantial Completion. However, where equipment/systems are put into operation prior to contract completion, there may be some reluctance on the part of the equipment/system supplier to extend the warranty/guarantee period.

During the preparation of the Closeout Plan, the CE should review the construction contract documents to see if this issue is addressed. The contract may allow commencement of the warranty/guarantee period from date of start-up of equipment put into early use, particularly if this is for the benefit of the City.

If there is no provision in the contract, or if the contract clearly states that warranty/guarantee periods will commence on the date of final completion, the Contractor should be required to submit plans for maintaining the warranty/guarantee period on equipment/systems put to early use. This matter should be raised early in the contract before the Contractor has made final purchases of equipment/systems. The Contractor will then have the opportunity to negotiate extended warranties/guarantees.

Upon receipt of warranty and guaranty, it should be carefully reviewed to confirm that the warranty/guarantee is in accordance with the contract specification. Attention must be given to the fine print to ensure that there are no provisions that would limit or reduce the protection to the City as stipulated in the specifications. The CE will reject such warranties/guarantees and advise the Contractor that Final Certificate and Final Payment cannot be released until all warranties/guarantees are in conformance with the contract. All warranties shall be transmitted to the PM.

All City contracts have a standard one-year warranty. The CE shall arrange for a one-year warranty inspection prior to the expiration of this warranty

For projects with Mechanical and Electric equipment that require start up by the contractor, the CE should be familiar with those requirements and should notify the maintaining agent and PM of any training, and testing to be supplied by the contractor for operation start-up.

#### **11.4 CONTRACTOR'S FINAL PAYMENT/FINAL ESTIMATE**

Release of the Contractor's Final Payment/Final Estimate usually signifies the completion of the contract and the settlement of all outstanding issues. The construction contract will usually stipulate the requirements for release of final payment. The CE should be familiar with these requirements and incorporate them into the Closeout Plan. The Contractor should be thoroughly educated in these requirements well before contract completion and advised that all requirements for release of final payment must be met.

The Final Payment will take into account all changes to the contract. It is therefore important that change orders and claims be resolved as they arise and not put off until late in the contract. Early resolution of changes and claims will contribute to a swift and efficient preparation of the Final Payment/Final Estimate documentation.

Release of Final Payment cannot occur until all contract requirements have been met; the CE must make certain that all requirements have been met in full accordance with the contract requirements. The ability to require Contractor compliance after release of Final Payment is severely diminished.

#### **11.5 FINAL MEASUREMENT BY SURVEYORS**

Final payment should include adjustments, if any are necessary, to reconcile progress payment quantities with final quantities established by survey. Any discrepancies between the Contractor's survey data and the City's surveying contractor must be reconciled. The CE and CI should coordinate the reconciliation.

#### **11.6 CLOSEOUT DOCUMENTATION**

For the CE, there are two phases to Closeout Documentation. The first phase is the documentation required from the Contractor prior to release of final payment. The second phase is the delivery of the total Document Record for the project to appropriate City representatives.

The contract conditions will specify the documentation required for closeout. This will usually include an affidavit of payment of payroll, materials, equipment, etc.; consent of surety to release of retainage and final payment; lien waivers; warranties and guarantees; operation and maintenance manuals; spare

parts; and as-built drawings. The CE should utilize the City's Closeout Checklist in coordinating the closeout.

The CE should institute procedures for documenting receipt of closeout documentation and marking off the checklist. The checklist should indicate any partial submittals, the dates all submittals are required, and when they are actually submitted by the Contractor. The CE should not recommend release of final payment until the checklist is complete.

The second phase of closeout documentation involves the transfer of the contract records. The project document records will include all files relevant to the project that will have been determined early in the project.

The CE will ensure that all document files are indexed, inventoried and securely boxed.

Prior to boxing, the CE and field office staff should carefully review the files and cull any unnecessary duplicate copies. Caution must be exercised to prevent originals or only copies from being discarded. It is always preferable to ship more copies than required than to be missing one vital document.

### **11.7 ARCHIVING FILES AND DRAWINGS**

Documents will be divided into two categories. Documents necessary for operation and maintenance of mechanical and electrical equipment will be provided to City representatives who are responsible for operating and maintaining the systems. Other documents related to the construction contract administration will be boxed properly with contents listed on inventory forms and box contents marked clearly. These contract administration documents will be sent for archiving.

### **11.8 PROJECT FINANCIAL FILE**

In addition to the CE's file, the DOT&E maintains a financial file for each project (see Project Financial File Checklist for its content). Upon completion of the project, this file shall be included in the project file. File 1180 will contain this file as submitted by the accountant maintaining this file. Portions of this file will be duplicated in the CE's file. The CE can reference this file if they choose to keep those duplicate files blank in the standard project file folder.



**CONSTRUCTION FORMS**

The following is a list of forms used by the Construction Management Section. This manual offers guidance for the use of these forms. Not all forms are referenced in the manual. These forms have been used successfully and are referenced within this manual to assist the CE and his staff. The current version as a Word template for many of these forms can be access on the G drive under DOTE Template / Construction Forms.

**CONSTRUCTION FORMS**

Additional Work Pay Items  
Application for Permit for City Contract  
Calculation Sheet  
Close-Out Check List  
CODE Flex Time Approval  
Construction Notice  
Curb Sheet  
DOTE TROD MOU Work Authorization and Evaluation Form  
Equipment List  
Final Completion Notice  
Final Document Delinquent Notice  
Flatwork Sheet  
Force Account Record  
Inspector Daily Report  
Job Hazzard Analysis  
Law Enforcement Office Time Sheet  
Material Certification Log  
Meeting Attendance  
Mileage Log  
Mileage Reimbursement  
Noncompliance Notice  
Notice of Commencement  
Notice of Damage  
Notice of Damage Claim  
Notice of Emergency Repair Work Done by City  
One Year Inspection Notice  
Performance Evaluation  
Permission to Enter Upon Property  
Pre-Approval of Work Overtime Time Log  
Pre-Approval to Work Overtime Time Sunday Holiday  
Preconstruction Meeting Notice  
Proposal Request  
Request for Information  
Request for Information (RFI) Log  
Safety Memo  
Safety Notice  
Service Estimate  
Street Rehab Casting Sheet  
Street Rehab Curb Flatwork Sheet  
Street Rehab Full Depth Repair Sheet  
Street Rehab MSD SWM Manhole Adjustment  
Street Rehab Set-up Summary Sheet

**CONSTRUCTON FORMS CONTINUED..**

Street Rehab Set-up Title Sheet  
Submission Transmittal  
Submittals Required and Log  
Substantial Completion Notice  
Transmittal

**STORES FORMS**

Form 1 – Requisition for Materials, Supplies and Services  
Form 25 – Application for Leave of Absence  
Form 36 – Inter-Department Order  
Form 37 – Claim Voucher – Invoice  
Form 68 – Payroll Record of Compensatory Time Earned  
Form 70 – Request for Permission to Travel  
Form 71 – Statement of Travel Expense  
HMD Stores Order & Issue

**PURCHASING DEPARTMENT FORMS**

Form 22S – Instructions for Bidding Construction Projects  
Form 66 – Affidavit of Original or Sub-Contractor (Labor and Materials)  
Form 68 – Certificate of Insurance  
Form 97S – Affidavit of General or Mechanical Branch Contractor – Partial Payment  
Form 217 – Request for Project and Wage Determination

## STANDARD FILING SYSTEM

### USERS INSTRUCTIONS

In order to provide uniformity of procedures on construction contracts, a Standard File Index has been developed. For projects with multiple construction contracts, the contract number for each contract will precede the file numbers of the Standard File Index.

The Standard File Index has been developed around the Table of Contents of the Construction Management Manual. For instance, Section 7.0 of the CM Manual deals with Cost Control and cost control files are numbered 700 to 799 in the File Index. Similarly, Section 8.0 of the RE Manual deals with Quality Assurance and Control and all QA/QC files are numbered 800 to 899 in the File Index. For normal jobs the CE files consist of one folder for each section, section 0 - 14. Entries should be filed in chronological order within each file folder. Complex jobs may require dividing folders within a section. Inspector Daily Reports are kept in a separate file cabinet throughout the life of the project. Before close out the CE shall incorporate these and other pertinent CI's files in to the contract files.

There are 11 sections in the updated CM Manual and there are 14 sections in the File Index. This is because there are more filing requirements than there are CM Manual requirements.

There is frequently a need for cross-filing documents under subject headings that relate to the actual work. To provide subject files, a 1300 series section has been provided for building-type contracts and a 1400 series section has been provided for highway, bridge and heavy construction type contracts.

The File Index has been developed to provide maximum flexibility within the standard procedure. Any file can be subdivided and sub-subdivided as the need arises. A wholly numerical numbering system is used for simplicity, using only standard numerals.

<b>CONTRACT #</b>	<b>FILE #</b>	<b>FILE SECTIONS</b>
	0 – 99	General Information
	100 – 199	Pre-Bid Information and Correspondence
	200-299	Award Information and Correspondence
	300-399	Construction Start-Up
	400-499	Communications Control
	500-599	Drawing Control
	600-699	Schedule Control
	700-799	Cost Control
	800 – 899	Quality Assurance and Control
	900 – 999	Safety & Loss Control
	1000 – 1099	Public Relations
	1100 – 1199	Contract Completion and Close-out
	1200 – 1299	EEO/AA/Payroll Records
	1300-1399	Subject Files – Building Contracts
	1400-1499	Subject Files – Highway, Bridge & Heavy Construction Contracts

## Sub files

<b>CONTRACT #</b>	<b>FILE #</b>	<b>FILE 0 – 99 GENERAL INFORMATION</b>
	001	Consultant Agreements
	002	Construction Contract General Conditions, General Requirements, Special Provisions and Specifications
	003	City/Contractor Construction Contract
	010	Permits and Correspondence 010.1 Sub-file for each Permit
	011	Utility Agreements and Correspondence 011.1 Sub-file for each Utility
	012	Right-of-Way Agreements and Correspondence 012.1 Sub-file for each R.O.W Agreement
	013	Land Acquisition and Correspondence 013.1 Sub-file for each Parcel
	014	Survey Records 014.1 Survey Correspondence
	015	Agreements and Correspondence with other Statutory Authorities 015.1 Sub-file for each Statutory Authority
		<b>FILE 100 – 199 PRE-BID Information and Correspondence</b>
	100	Constructability Review
	101	Final Bid Document Review
	102	Invitation to Bid – Bidding Procedures
	103	Pre-Bid Conference – Minutes
	104	Addenda and Pre-Bid Correspondence
	105	Bidders Lists
	106	Prequalification 106.1 Sub-file for each bidder requesting prequalification
		<b>FILE 200 – 299 AWARD Information and Correspondence</b>
	200	Bid Tabulations and Evaluations
	201	Pre-Award Conference – Minutes
	202	Execution of Contract Documents
	203	Notice of Award/Notice to Proceed
		<b>FILE 300 – 399 CONSTRUCTION START-UP</b>
	300	Pre-Service Conference – City/Designer – Minutes
	301	Pre-Construction Conference – Minutes – Correspondence
	302	Essential Personnel and Emergency Phone Numbers Lists
	303	Field Office/Workshop Layout Plans
	304	Subcontractors – Approvals and Correspondence 304.1 Sub-file for each Subcontractor
	305	Agreements between Contractor and Local Businesses/Land Owners 305.1 Sub-file for each Agreement
	306	EEO/AA Compliance/Procedures
	307	Correspondence/Complaints – Local Residents and Businesses – Subdivide as necessary
	308	Suppliers – Approvals and Correspondence 308.1 Sub-file for each major supplier
	330	Photographic Records
	340	Contractor's Equipment Reports

<b>CONTRACT #</b>	<b>FILE #</b>	<b>FILE 400 – 499 COMMUNICATIONS CONTROL</b>
	401	Correspondence To/From Designer of Record
	402	Correspondence To/From Contractor
	403	Correspondence To/From Public Utilities
	403.1	Sub-file for each Utility
	404	Correspondence To/From Statutory Authorities
	404.1	Sub-file for each Statutory Authority
	405	Correspondence To/From Consultants
	405.1	Sub-file for each Consultant
	420	Inspectors Daily Reports (IDRS)
	421	Weekly Construction Report
	422	Monthly Construction Report
	423	Chief Inspector Daily Report/Diary
	424	Construction Engineer Daily Diary
	425	Progress Meeting Minutes
	426	Monthly Schedule Meeting Minutes
	427	Agency/Utility Coordination Meeting Minutes
	428	Other Meeting Minutes
		<b>FILE 500 – 599 DRAWING CONTROL</b>
	501	Drawing Distribution Transmittals
	502	Shop Drawings, Working Drawings, Samples Submittals
	503	Requests for Information/Clarification
	504	As-Built Drawings
	505	Field Sketches
	506	Drawing Changes
	510	Specifications
	511	Specification Revisions
		<b>FILE 600 – 699 SCHEDULE CONTROL</b>
	601	Master Schedule Correspondence
	602	Master Schedule Updates
	603	Project Schedule Correspondence
	604	Project Schedule Updates
	605	Short Term Schedules
		<b>FILE 700 – 799 COST CONTROL</b>
	701	Payment Applications and Log
	702	Payment Applications – Correspondence
	703	Unit Prices
	704	Schedule of Values (Lump Sum Billing Breakdowns)
	705	Advance Payments for Materials
	706	Quantity Records
	706.1	Sub-file as necessary
	707	Force Account Records
	707.1	Sub-file as necessary
	708	Material Receiving Reports
	708.1	Sub-file as necessary
	710	Field Orders
	711	Change Orders
	711.1	Sub-file for each Change Order

	712	Value Engineering Change Proposals
		712.1 Sub-file for each V.E.C.P.
<b>CONTRACT #</b>	<b>FILE #</b>	713 Claims
		713.1 Sub-file for each Claim
		714 Disputes Procedures
		715 Disputes Resolution Board Correspondence
		716 Disputes Resolution Board Meetings Minutes
		720 Budgets, Funding, Cash Flow Reports – Subdivide as necessary

**FILE 800 – 899 QUALITY ASSURANCE AND CONTROL**

	801	City QA/QC Plan and Correspondence
	802	Contractor QC Plan and Correspondence
	803	QA/QC Meeting Minutes
	804	City Audit Reports
	810	Inspection Correspondence
	811	Off-Site Inspection Reports
	812	Final Inspection Reports and Punch Lists
	820	Testing Correspondence
		820.1 Testing Requirements
	821	Geotechnical Test Reports
	822	Earthwork Test Reports
		822.1 Compaction Tests
		822.2 CBRs
		822.3 Settlement Tests
	823	Pile Test Reports
	824	Concrete Test Reports
	825	Sub-base Test Reports
	826	Asphalt Test Reports
	827	Sewer and Drain Test Reports
	840	Site Visit Reports – Designer of Record
	841	Site Visit Reports – City, County, State Inspectors
	842	Site Visit Reports – Other Statutory Agencies
	850	Survey Control Records
	851	Deficiency/Deviation Acceptance Records
	860	Non-Conformance Notices and Log
	861	Quality Promotion Correspondence
	862	Awards, Commendations, Recognitions
	870	Partnering Procedures and Correspondence
	871	Partnering Meeting Minutes
	872	Partnering Training
	873	Awards, Commendations, Recognitions

**FILE 900 – 999 SAFETY AND LOSS CONTROL**

	901	City's Safety Plan and Correspondence
	902	Contractor's Safety Plan and Correspondence
	903	Minutes of Safety Meeting – City/Contractor
	904	Contractor's Safety Meeting Minutes
	905	Toolbox Safety Meetings – Agenda, Attendance, Reports
	906	City Safety Inspection Reports
	907	Contractor Safety Inspection Reports
	908	OSHA/STATE Safety Inspection Reports
	909	Insurer Safety Inspection Reports
	910	Safety Training & New Employee Orientation Records, City

	911	Safety Training and New Employee Orientation Records, Contractor
	912	Accident Reports
	920	Consultant Insurance Certificates
	921	Contractor/Subcontractor Insurance Certificates
	930	Stop Work Notices
<b>CONTRACT #</b>	<b>FILE #</b>	
	940	Safety Promotion
	950	City Controlled Insurance Plan
	970	Environmental Issues
		<b>FILE 1000 – 1099 PUBLIC RELATIONS</b>
	1001	City Community Relations Plan
	1002	Contacts with Public – Complaints, Queries, Notices, etc
	1003	Contacts with News Media – Interviews, Reports, Notices, etc.
		<b>FILE 1100 – 1199 CONTRACT COMPLETION &amp; CLOSE-OUT</b>
	1101	Close-out Procedures
	1102	As-Built Drawings – Record Drawings
	1103	Equipment Start-up Correspondence
		1103.1 Start-up Procedures
		1103.2 Operator Training
		1103.3 Equipment Maintenance Records
	1104	Warranties and Guarantees
	1105	Spare Parts Lists
	1106	Certificate of Substantial Completion
		1106.1 Punch Lists
	1107	Certificate of Final Acceptance
		1107.1 Punch Lists
	1110	Final Estimate
	1120	Close-out Documentation
	1121	Contract Close-out Report
	1130	List of Contractors, Subcontractors, Vendors for Warranty/Maintenance Support
		<b>FILE 1200 – 1299 EEO/AA/DAVIS BACON FILES</b>
	1201	EEO/AA/DBE Requirements – Consultants
	1202	EEO/AA/DBE Requirements – Contractor
	1203	EEO Reports – Consultants
	1204	EEO Reports – Contractor
		1204.1 Sub-file for Subcontractors, as necessary
	1205	Certified Payrolls
		1205.1 Sub-file for each Subcontractor, as necessary
	1206	Training Records
		1206.1 Sub-file for each Subcontractor, as necessary
	1207	EEO/AA/DBE Audits
<b>Building Projects</b>		<b>FILE 1300 – SUBJECT FILES</b>
	1302	Sitework
		1302.1 Sub-file by sub-title
	1303	Concrete
		1303.1 Sub-file by sub-title
	1304	Masonry
		1304.1 Sub-file by sub-title

	1305	Metals
		1305.1 Sub-file by sub-title
	1306	Wood and Plastics
		1306.1 Sub-file by sub-title
	1307	Thermal and Moisture Protection
		1307.1 Sub-file by sub-title
<b>CONTRACT #</b>	<b>FILE #</b>	1308
		Doors and Windows
		1308.1 Sub-file by sub-title
	1309	Finishes
		1309.1 Sub-file by sub-title
	1310	Specialties
		1310.1 Sub-file by sub-title
	1311	Equipment
		1311.1 Sub-file by sub-title
	1312	Furnishings
		1312.1 Sub-file by sub-title
	1313	Special Construction
		1313.1 Sub-file by sub-title
	1314	Conveying Systems
		1314.1 Sub-file by sub-title
	1315	Mechanical
		1315.1 Sub-file by sub-title
	1316	Electrical
		1316.1 Sub-file by sub-title

#### Highway, Bridge and Heavy Construction Contracts

##### FILE 1400 – SUBJECT FILES

	1402	Grading
		1402.1 Erosion Control
		1402.2 Clearing and Grubbing
		1402.3 Earthwork
	1403	Subgrade – Sub-bases – Bases
		1403.1 Lime Treated Subgrade
		1403.2 Cement-treated Subgrade
		1403.3 Aggregate Sub-Bases and Bases
		1403.4 Cement-treated Base
		1403.5 Lean Concrete Base
	1404	Surface Treatments and Pavements
		1404.1 Portland Cement Concrete Pavement
		1404.2 Asphalt Pavements
	1405	Drainage Facilities
		1405.1 Concrete Pipe
		1405.2 Metal Pipe
		1405.3 Plastic Pipe
		1405.4 Structures
	1406	Utilities
		1406.1 Water
		1406.2 Sewer
		1406.3 Electrical
		1406.4 Gas
		1406.5 Telephone
		1406.6 CTV



	1407	Structures
		1407.1 Concrete Piling
		1407.2 Steel Piling
		1407.3 Drilled Shafts
		1407.4 Concrete
		1407.5 Reinforcing Steel
		1407.6 Pre-stressing
		1407.7 Structural Steel
		1407.8 Painting
<b>CONTRACT #</b>	<b>FILE #</b>	
	1408	Traffic Control
		1408.1 Maintenance of Traffic
		1408.2 Signs and Signals
		1408.3 Pavement Markings
		1408.4 Curb and Gutter
		1408.5 Barriers
		1408.6 Fencing
		1408.7 Guard Rail
		1408.8 Slope and Bank Protection
	1409	Railroad
		1409.1 Insurance
	1410	Transit and Subways
Develop further as necessary.		

## **CONSTRUCTION INSPECTOR'S MANUAL**

The Construction Management Section has developed a Construction Inspector's Manual to help identify the roles and responsibility of the CI. Since the CE is responsible for the CI he should be very familiar with this manual and it's contents. A hard copy can be found under separate cover or on the G drive under Construction Management.

## APPENDIX 4 CHANGE ORDER INSTRUCTIONS

Interdepartment  
Correspondence Sheet

# City of Cincinnati



Date December 4, 2000

To: Distribution

From: Supervising Buyer

Copies to: Director of Finance, and City Purchasing Agent

Subject: Construction Award and Change Order Process - EPS

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The requisitioning, certification, and change orders for construction will now be processed through EPS. There will be a meeting to review these new procedures and address any questions that you may have. It will be held in the Centennial Two Auditorium, 805 Central Avenue on Friday, December 15, at 10:00 a.m.

Procedure Number 27, attached, explains the steps that shall be taken by the Purchasing Division, agency, and Accounts and Audits in the processing of the award.

Procedure Number 28, attached, sets forth a new procedure for making changes to construction contracts. To allow change order in process to flow through the system, the old process and form 11AS may be used for all construction contracts certified by a form 9 and all year 2000 and prior construction PCQs.

Included in Procedure Number 28 is the new Form 11AS - R12/00 along with instructions for completion of the documents. Please follow the instructions.

Construction change orders should be prepared by the City employee responsible for administering the particular contract. The Solicitor's Office must be involved in any dispute resolution if a construction change order is settlement of legal obligations such as delays and damages.

Procedure 27 and 28 will go into effect on January 2, 2001.

If you have any questions pertaining to the two new procedures, please make a note of them and bring them to the meeting. If you are unable to attend, you may contact Senior Buyer, at 352 3205, or myself at 352-3203.

## PROCEDURE NO. 27

**OPERATIONS MANUAL  
PURCHASING DIVISION  
CONSTRUCTION AWARD PROCESS - EPS**

Since the Construction project's estimated cost is forwarded to Purchasing by way of a sealed estimate, the RXQ should not be issued for the project's estimate. So that the estimate can remain concealed, the RXQ should be issued in the amount of \$1.00. The RXQ text must explain how the drawings, specifications, Forms 22S and 217 are being forwarded. These documents should include the RX document number.

The following steps shall be taken by the Purchasing Division in the processing of the award:

1. Recommendation of award is made by the Buyer and concurrence received from the department.
2. EEO approval is requested from Contract Compliance. (Approval Received).
3. Purchasing documents are generated. Board of Control Recommendation is generated, if applicable. (Approval received).
4. The Price Agreement Summary Table (PASM] is loaded with the pertinent information pertaining to the contract. (The total amount of the contract is entered into the Authorized Limit). The associated tables, Text Table, (PATX), Security Table, (PASC), and Vendor/Commodity Table, (PAVC), are also to be completed by the Purchasing Division staff. The RXQ is unfrozen and the department is instructed to cancel it.
5. The two copies of the construction contracts are sent to the responsible agency with instructions, by way of a cover letter (Form CAPE), to issue a Service Contract (SC) for the total amount of the contract. In the comment field, enter "Construction". Approve the SC to Pend 5 and then put the document on "HOLD".
6. The department sends both copies of the construction contracts along with the "screen" print of the SC, showing it on "Hold", to Finance - Accounts and Audits.
7. Upon receipt of the Construction contracts, Accounts and Audits shall apply Level 5 approval to the pending SC and affix the Director of Finance signature stamp to the space provided on the final page of the contracts and forward both signed and certified copies of the construction contracts to the Purchasing Division.
  - A. Upon receipt of the hard copies of the SC, Finance - Accounts and Audits shall retain their copy and forward the other two (2) copies to the Purchasing Division.
8. The two certified construction contracts are sent to the contractor for signature and any other required documentation(s). (Bonding, Insurance, Worker's Compensation, etc.).
9. Returned contracts are forwarded to the Solicitor's office for approval as to form.
10. Upon receipt of the contracts from the Solicitor's Office, they are forwarded to the City Purchasing Agent for signature.
  - A. Finance, Accounts and Audits are sent their copy of the contract.
  - B. Both copies of the Service Contract (SC] are sent to the responsible department along with their copy of the construction contract.
11. The contractor is sent their copy of the contract.

**CONSTRUCTION AWARD PROCESS - EPS**

Construction Purchase Orders may also be done as Service Contracts (without Price Agreements) or Centralized Purchase Orders (PCQs). The department would be required to issue an RXQ for the total amount of the project or in the amount of \$1.00 if the project is to be competitively bid. If the RX was issued in the amount of \$1.00, it is necessary that the department modify the RX prior to Purchasing issuing the PCQ for the full amount of the order.

**DEPARTMENT CONSTRUCTION CERTIFICATION INSTRUCTIONS**

Agency No.: \_\_\_\_\_ SC Document No.: \_\_\_\_\_ Date Sent To Department \_\_\_\_\_

1. Enter a service contract, SC, release in the amount of \$\_\_\_\_\_ (Total Amount of the Contract)
2. In the comment field, enter Construction.
3. Put the following text In the SC:

**THIS IS NOT A NOTICE TO PROCEED - FOR CERTIFICATION OF FUNDS ONLY.**

4. Approve the SC to Pend 5 and then place the document on hold.
5. Send both copies of the construction contracts along with the "screen" print of the SC, showing it on hold, to Finance- Accounts and Audits.

**ACCOUNTS & AUDITS**

1. Apply Level 5 approval to the service contract, SC.
2. Affix the Director of Finance signature stamp to the space provided on the final page of the contract (s), perforate it in the proper space, and return both copies of the construction contracts to the Purchasing Division.

**OPERATIONS MANUAL  
PURCHASING DIVISION  
CONSTRUCTION CHANGE ORDERS**

WITHOUT BOARD OF CONTROL REVIEW

Contracts **Less Than \$100,000** with Changes under \$20,000 and 25% and

Contracts **Over \$100,000** with changes under \$100,000 and 25%

DEPARTMENT:

Department initiating the change will complete Form 11AS-R12/00 in its entirety. The Construction Change Order must include the contract number and the SC Release number that will be used when modifying the SC along with all of the required signatures prior to submitting to Purchasing for review and approval.

PURCHASING:

The Supervising Buyer, Team Leader, or City Purchasing Agent will sign the Form 11AS-R12/00 and return it to the department through inter-office mail. (Make a copy of the justification letter and place it in the file). Upon approval of the change order the Supervising Buyer or Senior Buyer increases the authorized limit in the PASM table by the change amount requested on the Form 11AS-R12/00.

DEPARTMENT:

Upon receipt of the approved change order, the department will modify the existing SC. Enter text. The text should read: This is a change order to..... Take to the highest approval level within your department and then place the document on "HOLD". Send the approved change order to Finance - Accounts and Audits, along with a screen print of the SC modification on "Hold".

FINANCE - ACCOUNTS & AUDITS:

Upon receipt of the Change Order and the screen print, Accounts and Audits shall apply Level 5 approval to the SC Modification and affixed the Certification Stamp in the specified area on the change order. Finance retains their copy of the change order and modified SC and returns the remaining copies to the department.

DEPARTMENT:

Department distributes copies of the modified SC and Form 11AS-R02/00 to:

- Purchasing
- Contractor (mailing the modified SC to the contractor is optional)
- Department's File

WITH CITY PURCHASING AGENT AND/OR BOARD OF CONTROL APPROVAL:

DEPARTMENT:

Department initiating the change will complete Form 11AS-R12/00 in its entirety. The Construction Change Order must include the contract number and the SC Release number that will be used when modifying the SC along with all of the required signatures prior to submitting to Purchasing for review and approval.

PURCHASING:

The Supervising Buyer or in his absence, the Team Leader, and the City Purchasing Agent will sign the Form 11AS-R02/00 and send it to the Board of Control (City Manager or his designee) through inter-office mail.

BOARD OF CONTROL:

The Board of Control (City Manager or his designee) approves Form 11 AS and returns it to the Purchasing Division.

**CONSTRUCTION CHANGE ORDERS**

PURCHASING:

The Supervising Buyer, Team Leader, or City Purchasing Agent will sign the Form 11AS-R02/00 and return it to the department through inter-office mail. (Make a copy of the justification letter and place it in the file). Upon approval of the change order the Supervising Buyer or Senior Buyer increases the authorized limit in the PASM table by the change amount requested on the Form 11AS-R12/00.

DEPARTMENT:

Upon receipt of the approved change order the department will modify the existing SC. Enter Text. The text should read: This is a change order to ..... Take to the highest approval level within your department and then place the document on "HOLD". Send the approved change order to Finance - Accounts and Audits, along with a screen print of the SC modification on "Hold".

FINANCE - ACCOUNTS & AUDITS:

Upon receipt of the Change Order and the screen print, Accounts and Audits shall apply Level 5 & approval to the SC Modification and affixed the Certification Stamp in the specified area on the change order. Finance retains their copy of the change order and modified SC, and returns the remaining copies to the department.

DEPARTMENT

Department distributes copies of the modified SC and Form 11AS-R12/00 to:

- Purchasing
- Contractor (mailing the modified SC to the contractor is optional)
- Department's File

FORM 11AS-R12/00

CITY OF CINCINNATI Construction Change Order No. \_\_\_\_\_

Date: \_\_\_\_\_ Agy. No. \_\_\_\_\_ Contract No. \_\_\_\_\_ SC No. \_\_\_\_\_

Project: \_\_\_\_\_

CHANGE DESCRIPTION & REASON:

IMPORTANT: Attach a "detailed" description of the change and the reason for the change in the work to this form. Failure to provide this information will delay the approval of this change order.

\*Contractor \_\_\_\_\_ \*Vendor No. \_\_\_\_\_

The contract with the City is based on Competitive bids: \_\_\_\_\_ YES \_\_\_\_\_ NO

\*Initiated \_\_\_\_\_ of \_\_\_\_\_ \*Date \_\_\_\_\_ Concurred \_\_\_\_\_ of \_\_\_\_\_ Date \_\_\_\_\_

Additional Documentation (Reference to Proposal Requests, warranty decreases effective only if noted on this form)

Items (All work in accordance with contract requirements unless otherwise clearly identified): COST

Contractor \_\_\_\_\_ Date \_\_\_\_\_ Designer \_\_\_\_\_ Date \_\_\_\_\_ (Optional if quantity change at bid unit price. Sec. 5525.14 O.R.C.)

Manager \_\_\_\_\_ Date \_\_\_\_\_ Division Head \_\_\_\_\_ Date \_\_\_\_\_

Authorization and Approval Limits Apply. See & follow instructions.

Director \_\_\_\_\_ Supervising Buyer: \_\_\_\_\_ (Optional - Senior Buyer)

City Purchasing Agent: \_\_\_\_\_ Date \_\_\_\_\_

Board of Control: City Manager, funding Board or delegated person. \_\_\_\_\_ Date \_\_\_\_\_

<b>Certification Stamp Goes Here</b>	ORIGINAL CONTRACT TIME	_____	ORIGINAL CONTRACT AMOUNT	\$ _____
	PREVIOUS TIME CHANGES	_____	PREVIOUS CHANGES	\$ _____
	THIS TIME CHANGE	_____	THIS CERTIFICATION CHANGE	\$ _____
	NEW CONTRACT TIME	_____	NEW CONTRACT AMOUNT	\$ _____

Distribution by Initiator: Original to Finance; Copies to Purchasing, Contractor & Signatories. Call Initiator at \_\_\_\_\_



**HOW TO FILL OUT FORM NO. 11AS - R12/00**

A Construction Change Order (EXHIBIT CO) has been completed with numbers identifying the various, items that must be completed. Each Identifying number is in parentheses and is further explained below.

- (1) Construction Change Order No: Insert the number of this change, sequence numbers on a per contract basis.
- (2) Date: Fill in the date the change order is transmitted for approval.
- (3) Project: Insert the name of the project or contract.
- (4) Contract No.: Insert the contract number of the original purchase order, contract, or agreement.
- (4a) SC No.: Insert the SC release number.
- (5) Change Description & Reason: Give a brief change description and reason for the change in the space provided. ALSO: Attach a "detailed" description of the change and the reason for the change in the work to the form 11AS-R12/00. This documentation shall justify the need for the change order, including a reason and support for any price being changed. The reason why the Construction Change Order is needed must be addressed in substance and to the point. This will be kept in the contract file.
- (6) Fill in the contractor's name and address within the asterisks so it will show in a window envelope. The change order will be mailed in accordance with this information. If the contractor's name or address has changed since the inception of the contract, the initiator should contact the Purchasing Division.
- (7) Vendor No: Fill in the contractor's vendor number.
- (8) Competitive Bid: Check yes if the contract was based on a competitive bid; no, if it was not.
- (9) Initiated: Fill in who initiated the change order, from which department and the date it was initiated. The authority to approve a change order to the contractor beginning the new work has been delegated to the Department Director who is responsible for and paying for the project. In simple cases, this Initial authority may be delegated through the organization to the Project Engineer, but no further down the organization. In other instances, the Director or Chief Engineer must verbally approve the work or change before the work is begun. Each department must promulgate rules under which authority is to be delegated. In the absence of such written rules, the approval authority remains with the Department Director alone.
- (10) Concurred By: Fill in who concurred with the change before it was undertaken, from which department and the date it was concurred.
- (11) Additional Documentation: Fill in if additional documentation is available, briefly stating what the documentation is and where it can be found. Simply using "See Attached" is discouraged.
- (12) Items: List description, quantity, and unit price or lump sum cost of the change. Include complete extended cost of each item in a column on the right. Construction Change Orders cannot be used to substitute for settling disputes with a contractor which should be referred to the Solicitor's Office; however, settlements resolved through the Solicitor's Office may be enacted through a Construction Change Order.
- (13) Contractor: Contractor's signature, if required, and date signed. In accordance with section 5525.14, of the Ohio Revised Code, the simple changes in quantity at bid unit

price can be processed without the contractor's additional concurrence within certain limits and as long as the character of work is not altered.

- (14) Designer: Designer's signature and date signed.
- (15) Manager: Construction Manager's signature and date signed. Both the Director and the Manager recommending the change should sign the Form 11AS-RO2/00 which will make the change official.
- (16) Division Head: Division Head and date signed.
- (17) Director: Funding Department Director's Approval signature and date signed. The Director is authorized to sign the Change Order pursuant to a delegation of authority from the Purchasing Agent under Section 321-145 of the Cincinnati Municipal Code. The maximum authority delegated to the Director from the City Purchasing Agent is \$20,000 and 25% of the new contract amount, whichever is smaller, for contracts less than \$100,000; or \$100,000 and 25% of the new contract amount, whichever is smaller, for contracts over \$100,000. All Construction Change Orders must be reviewed and approved by the buyer and all Construction Change Orders in excess of such guidelines shall be signed by the buyer for that project, (or the Supervising Buyer), and the City Purchasing Agent. Please see Delegation Guidelines issued by the City Purchasing Agent. Both the Director and the person on staff recommending the change should sign the Form 11AS-RO2/00 which will make the change.
- (18) Buyer, (optional - Supervising Buyer): Buyer for that projects signature and date.
- (19) City Purchasing Agent: City Purchasing's Agent signature and date.
- (20) Board of Control: If the new contract amount is equal to or less than \$100,000, and if the cumulative change order, amount is greater than 25% of the original contract amount, or \$20,000, whichever is smaller, then the Purchasing Division review and approval is required.
- For contracts, of which the new contract amount is greater than \$100,000 and if the cumulative change order amount is greater than 25% of the original contract amount, or \$100,000, whichever is smaller, then the Deputy City Manager (for departments reporting directly to the City Manager or the Board or Commission for the Department of Health, Parks, and Recreation) is required to approve the change orders.
- (21) Contract Time: Fill in the original time, previous time changes, the time change for this change, and the new contract time frame on the appropriate lines with ' justification in the space provided in #12, Items. If the change involves only a time adjustment, then Board of Control is not needed.
- (22) Contract Amount: Fill in the original contract amount, amount of any previous changes, the amount of this change and the contract amount on the appropriate lines. Use this area to compute the limits for (17). If the total of previous changes plus the certification change exceed \$20, 000 and 25% of the Original Contract Amount for contracts under \$100, 000 or \$100,000 and 25% of the Original Contract Amount for contracts over \$100, 000, whichever is smaller, then the Construction Change Order must also be routed through the City Purchasing Agent. If no cost is involved with the change or it is a price reduction, then the Board of Control is not needed.
- (23) Call Initiator: Fill in the Initiator's telephone extension to answer any questions.

ROUTING INSTRUCTIONSWITHOUT BOARD OF CONTROL REVIEW

For contracts less than \$100,000 and changes under \$20,000 and 25% of the new contract amount, whichever is smaller, and for contracts over \$100,000 with changes under \$100,000 and 25% of the new contract amount, whichever is smaller, the directors of departments with construction projects may approve the Construction Change Order without the Board of Control Review.

DEPARTMENT

Department initiating the change will complete Form 11AS-R02/00 in its entirety. The Construction Change Order must include the contract number and the SC Release number that will be used when modifying the SC along with all of the required signatures prior to submitting to Purchasing for review and approval.

PURCHASING

The supervising buyer, team leader, or City Purchasing Agent will sign the Form 11AS-R12/00 and return it to the department through inter-office mail. The supervising buyer or senior buyer, upon approval of the change order, increases the authorized limit in the PASM table by the change amount requested on the Form 11AS-R12/00.

DEPARTMENT

Upon receipt of the approved change order, the department will modify the existing SC and place it on "HOLD". Department sends the approved change order to Accounts and Audits along with a screen-print of the SC modification on "Hold".

FINANCE - ACCOUNTS & AUDITS

Upon receipt of the Change Order and the screen print, Accounts and Audits shall apply Level 5 approval to the SC modification and affixed the Certification Stamp in the specified area on the change order. Finance retains their copy of the change order and modified SC and returns the remaining copies to the department.

DEPARTMENT

Department distributes copy of SC and Form 11AS - R12/00 to:

Purchasing  
Contractor (mailing the modified SC to the contractor is optional).  
Department's File

WITH CITY PURCHASING AGENT AND/OR BOARD OF CONTROL APPROVAL.DEPARTMENT

Department initiating the change will complete Form 11AS-R12/00 in its entirety. The Construction Change Order must include the contract number and the SC Release number that will be used when modifying the SC along with all of the required signatures prior to submitting to Purchasing for review and approval.

PURCHASING

The supervising buyer or in his absence, the team leader, and the City Purchasing Agent will sign the Form 11AS-R12/00 and send it to the Board of Control, (City Manager or his designee) through inter-office mail.

BOARD OF CONTROL.

The Board of Control approves the Form 11AS-R12/00 and **returns it to the Purchasing Division.**

PURCHASING

The supervising buyer or senior buyer upon approval of the change order increases the authorized limit in the PASM table by the change amount requested on the Form 11AS-R12/00. Upon approval, the signed Form 11AS-R12/00 is returned to the department through inter-office mail.

DEPARTMENT

Upon receipt of the approved change order, the department will modify the existing SC and place it on "HOLD". Department sends the approved change order to Accounts and Audits along with a screen-print of the SC modification on "Hold".

FINANCE - ACCOUNTS & AUDITS

Upon receipt of the Change Order and the screen print, Accounts and Audits shall apply Level 5 approval to the SC modification and affixed the Certification Stamp in the specified area on the change order. Finance retains their copy of the change order and modified SC and returns the remaining copies to the department.

DEPARTMENT

Department distributes copy of SC and Form 11AS - RI2/00 to;

Purchasing

Contractor (mailing the modified SC to the contractor is optional).

Department's File

EXHIBIT CO

FORM 11AS-R12/00

CITY OF CINCINNATI Construction Change Order No. (1)

Date: (2) Agy. No. Contract No. (4) SC No. (4a)

Project: (3)

CHANGE DESCRIPTION & REASON: (5)

IMPORTANT: Attach a "detailed" description of the change and the reason for the change in the work to this form. Failure to provide this information will delay the approval of this change order.

\*Contractor (6) \*Vendor No. (7) The contract with the City is based on Competitive bids: YES NO (8)

\*Initiated (9) of \*Date Concluded (10) of Date

Additional Documentation (Reference to Proposal Requests, warranty decreases effective only if noted on this form) (11)

Items (All work in accordance with contract requirements unless otherwise clearly identified): COST (12)

Contractor (13) Date Designer (14) Date (Optional if quantity change at bid unit price. Sec. 5525.14 O.R.C.)

Manager (15) Date Division Head (16) Date

Authorization and Approval Limits Apply. See & follow instructions.

Director (17) Supervising Buyer: (18) (Optional - Senior Buyer)

City Purchasing Agent: (19) Date

Board of Control: City Manager, funding Board or delegated person. (20) Date

Table with 4 columns: Certification Stamp Goes Here, ORIGINAL CONTRACT TIME, ORIGINAL CONTRACT AMOUNT, PREVIOUS TIME CHANGES, PREVIOUS CHANGES, THIS TIME CHANGE, THIS CERTIFICATION CHANGE, NEW CONTRACT TIME, NEW CONTRACT AMOUNT. Includes dollar signs and blank lines for input.

Distribution by Initiator: Original to Finance; Copies to Purchasing, Contractor & Signatories. Call Initiator at (23)

## EXAMPLE MEMO

Date: February 28, 2000

To: Nate Mullaney, Purchasing Department

From: Don Gindling, Fort Washington Way Construction Manager

Copies To: John Deatrick; Russ Weber; J. Pietch; F. Craig; R. Mendelsohn; F. Wagner

Subject: **FWW Contract 9 - Change Order No. 1 - Watermain**

Please expedite the execution of the attached change order, which includes the Conditions of Change Order No. 1, Attachment "A", and the attached agreed to unit prices. This change order covers the installation of a new 12-inch watermain in Third Street between Central Ave. and Broadway. This work is to be funded 100% by CWW.

The decision to do this work did not come until FWW Contract 49 was awarded. The only way to complete this work and maintain the overall FWW schedule is to add it to this contract. The agreed to prices take into account working in a confined work area, an aggressive work schedule, and is to have no impacts on Contract #9 completion schedule. A majority of this work will have to be done during non-business working hours.

See the attached memo dated February 12, 2000 from CWW on why this is needed.

Please expedite this change order. If you have any questions, please call me at 352-1518.

Attachment

## DOT&E Contingency and Change Order Policy

Purpose, to establish guidelines for use of contract contingency and change orders.

Francis Wagner, City Finance Department, defined contract contingency item as, the total amount the Project Manager/Designer anticipates using for unforeseen conditions or quantity variations to complete the project. **For no reason should the original contingency amount be increased** (this would constitute a change to the original contract without a bid), for this reason; we recommend that the greater of 5% of the Engineer's Estimate or \$5,000 be put in every contract. Some contracts depending on their complexity will require more than 5%, however the total contingency bid item should not exceed 10% the Engineer's Estimate.

It was also understood that; it is often necessary to authorize work before a change order is executed. In fact, ODOT 109.04 recognizes that for emergencies and to avoid delay, work can be authorized before a written change order is executed and that the contractor needs to proceed with the work. however the contractor will not be paid until the change order is executed. Prior to authorization of such work, the Construction Engineer must check with the Project Manager to confirm that funds are available to cover the work and must follow up with initiating a written change order within 5 workdays.

### Use of contingency

The contingency item is used to create new items in the contract for work that is needed to properly complete the contract scope and was not included in the original bid. The contingency item may also be used to fund quantity overruns. Monies from nonperformance of underrun quantities cannot be added to the contingency.

This creates a real problem for us in dealing with quantity overruns and under runs. The ODOT CMS and Ohio Revised Code both acknowledge there will be quantity overruns but does not go in to detail on how these will be handled. Overruns will be handled by the following.

The Construction Engineers keep a separate spreadsheet on quantity overruns and under runs. Overruns can be paid without a Change Order up to the point where the total amount of estimated work to complete the contract exceeds the total amount certified to the contract. At that point a Change Order needs to be executed to cover quantity overruns. It is also understood that; quantity overrun change orders will be after the fact Change Orders, where the Change Order will identify overruns to the contract bid items for work that has been actually completed. **As-built amounts for total amount paid of an individual change order and contingency may not exceed the original amount of that change order or contingency.**

A final Change Order to balance contingency and establish final contract quantities will be executed for each contract.

**DATABASE USER MANUAL**

This appendix is referenced in Section 7. The City has developed a comprehensive database to record as built quantities and produce related reports including contractor's pay request. All CEs are required to use this database on their contracts. The database user manual can be found under separate cover or on the G drive under Construction Management.