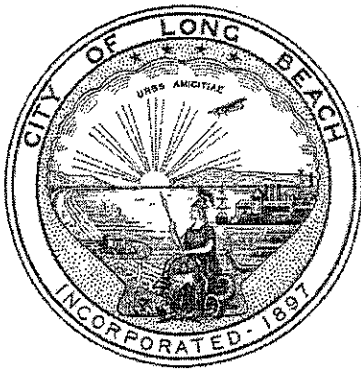


PART 1

**REQUEST FOR QUALIFICATIONS FOR CIVIL
ENGINEERING SERVICES FOR VARIOUS ON-CALL
PROJECTS FOR THE CITY OF LONG BEACH,
CALIFORNIA**



City of Long Beach

Working Together to Serve

Department of Public Works

**REQUEST FOR QUALIFICATIONS
For
CIVIL ENGINEERING SERVICES
For Various On-Call Projects
At The
CITY OF LONG BEACH**

Release Date: February 11, 2010

Submittal Deadline: March 29, 2010

Table of Contents

1.	INTRODUCTION	1
2.	REQUIREMENTS FOR CIVIL ENGINEERING SERVICES AND SUBSEQUENT APPLICABLE ENGINEERING TRADES	1
3.	SCHEDULE OF RFQ EVENTS	2
4.	PERIOD OF PERFORMANCE	3
5.	STATEMENT OF QUALIFICATIONS	3
6.	COST OF RFQ PREPARATION	4
7.	WITHDRAWAL OF STATEMENT OF QUALIFICATIONS	4
8.	GENERAL TERMS AND CONDITIONS	4
9.	KEY PERSONNEL	5
10.	OFFICE LOCATION/TRAVEL	5
11.	CONTRACT TYPE, OVERHEAD RATE AND FEE	5
12.	SCOPE OF WORK	5
14.	PREPARATION OF STATEMENT OF QUALIFICATIONS	6
15.	REQUIRED FORMAT FOR STATEMENT OF QUALIFICATIONS	6
16.	EVALUATION PROCESS AND CRITERIA	7
17.	NOTIFICATION AND DEBRIEFING OF UNSUCCESSFUL OFFERERS	9
18.	ADDITIONAL INFORMATION	9

Appendix A – Preliminary Scope of Work

Appendix B – Pro Forma Contract

Appendix C - Architectural and Engineering Guidelines for Building Design Services

Appendix D - City of Long Beach Engineering Bureau CADD Standards

Appendix E – City of Long Beach Engineering Bureau Sample QA/QC Manual

Appendix F - City Insurance Requirements

REQUEST FOR QUALIFICATIONS for CIVIL ENGINEERING SERVICES For Various On-Call Projects At The City OF LONG BEACH

The City of Long Beach desires to engage the services of a professional engineering firm to provide all aspects of civil engineering and various other engineering services to complete an assigned project for the following types of projects:

1. Complete design with various specifications including but not limited to:
 - a. City of Long Beach
 - b. CALTRANS
 - c. Standards Plans for Public Works Construction
 - d. Greenbook
 - e. LA County
 - f. Army Corp
2. Design drawing development and completion
3. Pavement management system (MICROPAVER) update, maintenance and modifications
4. Surveying services (Optional award at the City's discretion) in accordance with City requirements

1. INTRODUCTION

This RFQ is intended to procure professional services for civil engineering and all subsequent applicable engineering services for various on-call projects throughout the City of Long Beach.

The services required will include general civil engineering services and subsequent applicable engineering trades. A list of possible upcoming work this contract is included in Appendix A of this RFQ. **Please note work listed is not a guarantee and is dependant on available funding.**

2. REQUIREMENTS FOR CIVIL ENGINEERING SERVICES AND SUBSEQUENT APPLICABLE ENGINEERING TRADES

The Lead Engineer must be a licensed Civil Engineer in the State of California. In addition, the various work performed by the consultant shall be performed by, or, where appropriate, under the direction of, personnel possessing the appropriate State of California professional licenses or other certifications (civil engineer and land surveyor, etc.) required or desirable for the various disciplines necessary for the successful completion of the project.

Past experience in performing similar services, for ***civil engineering and subsequent engineering projects***, will be a heavily weighted factor in the selection process.

Quality of performance on previous design contracts, ability to meet schedules and budgets, ability to communicate well with construction personnel, city staff, tenants and regulatory agency staff will be some of the attributes and factors considered.

The consultant for ***civil engineering and subsequent engineering trades*** shall have full understanding of wide variety of project types and requirements to complete various types of sizes of projects for the City of Long Beach.

All firms participating in this RFQ process will be required to submit the following information:

1. The legal name of your company, address, and telephone number.
2. The year your present company was established as currently being operated.
3. The company's current number of personnel and the high and low variations during the past five years.
4. Describe the structure of your organization (i.e., whether an individual, partnership, corporation, joint venture, etc.).
5. The firm's current annual dollar volume of work.
6. A list of contracts that the firm has had with the City of Long Beach during the past five years.
7. The identification of the principal contact with the City.
8. The name, address, and telephone number of the person to whom correspondence should be directed.
9. A representative listing of Clients with up to date contact information that have received similar services for ***civil engineering and subsequent engineering trades*** projects as described in this RFQ. **CURRENT EMAIL ADDRESS OF REFERENCED CLIENTS WILL BE REQUIRED AS PART OF SUBMITTAL that the Department of Public Works will contact for reference checks.**
10. A list of airport clients and various other civil engineering and subsequent engineering projects completed.
11. The level of professional liability insurance carried by your firm.
12. If a Disadvantaged-, Minority- or Women-Owned Business Enterprise, the list of agencies with whom you are certified. If a DBE, MBE, or WBE and not certified, please indicate such.
13. Resumes

3. SCHEDULE OF RFQ EVENTS

The City reserves the right to amend, withdraw and cancel this RFQ. The City reserves the right to reject all responses to this RFQ at any time prior to contract execution. The City reserves the right to request or obtain additional information about any and all proposals. It is the goal of the City to select the consultant by **June 2010**. In preparation for that action, the following schedule of events has been prepared:

Deadline for submission of written questions to the City: **Wednesday, March 17, 2010 at 4:30 PM** (Questions should be emailed to Phillip Balmeo at the following email address Phillip.balmeo@longbeach.gov).

Statement of Qualifications are due no later than **Monday, March 29, 2010 at 4:30 PM**, Notification of the top ranked submittals for oral interview: **Week of April 26, 2010**

Top ranked proposers participate in oral interviews: **Week of May 17, 2010**
All requests for clarifications, changes, exceptions or deviations to the Scope of Work set forth in this RFQ must be submitted to **via email**:

Mr. Phillip Balmeo, Assistant City Engineer
Department of Public Works, City of Long Beach
Email: Phillip.balmeo@longbeach.gov

The City of Long Beach will respond to all written questions if applicable by issuing a written addendum, which will be posted on the website.

Prospective firms are encouraged to promptly notify the City of Long Beach of any apparent inconsistencies in this RFQ and attachments

4. PERIOD OF PERFORMANCE

Performance under a contract awarded pursuant to this RFQ is intended to commence after **July 2010** and extend for a period of thirty-six months. Notice to Proceed will be issued to the successful Proposer subject to successful conclusion of contract negotiations.

The City reserves the right to modify the composition of and the scope of services requested through this RFQ.

The Consultant for civil engineering and subsequent engineering are subject to performance and termination sections described in the Pro Forma Contract in Appendix B. **Consultants shall be required to accept the full Pro Forma of the City of Long Beach as part of the contract. No modifications of the typical City of Long Beach Pro Forma will be tendered by the City.**

5. STATEMENT OF QUALIFICATIONS

Seven (7) copies of the Statement of Qualifications, including one copy containing an original signature, must be provided no later than **Monday, 4:30 PM on March 29, 2010**. Submittals received after this time will not be accepted and will be returned unopened.

All submittals should be clearly marked with the submittal address as follows:

Department of Public Works, City of Long Beach
Attention: Phillip Balmeo, Assistant City Engineer
Bureau of Engineering, 9th Floor City Hall
333 W. Ocean Blvd.
Long Beach, CA 90802

RE: RFQ Submittal for:

Civil Engineering Services for Various On-call Projects at the City of Long Beach

6. COST OF RFQ PREPARATION

The City shall not be liable for any pre-contractual expenses incurred by any consultant preparing a submittal or portions thereof or by any selected consultant. Each consultant shall protect, defend, indemnify, and hold harmless the City from any and all liability, claims, or expenses whosoever incurred by, or on behalf of, the entity participating in the preparation of its response to this RFQ. Pre-contractual expenses are defined as expenses incurred by consultants, if any, in:

Preparing the Statement of Qualifications and related information in response to this RFQ.

Negotiations with the City on any matter related to this procurement.

Costs associated with interviews, meetings, travel or presentations.

All other expenses incurred by a proposer/consultant prior to the date of award and a formal notice to proceed.

7. WITHDRAWAL OF STATEMENT OF QUALIFICATIONS

Statement of Qualifications may be withdrawn by written notice received by the City at any time prior to the submittal deadline.

8. GENERAL TERMS AND CONDITIONS

Appendix B contains a copy of the pro forma contract (Agreement).

Each prospective consultant is expected to review the general terms and conditions and acknowledge their acceptance of Appendix B in the Statement of Qualifications Cover letter as a mechanism to expedite the contract negotiation process. The City reserves the right to further clarify the terms and conditions. The intent of the City is to enter into an agreement with the selected consultant as soon as possible after the CITY COUNCIL has approved the selection. **Consultants shall be required to accept the full Pro Forma of the City of Long Beach as part of the contract. No modifications**

of the typical City of Long Beach Pro Forma will be accepted by the City. In the event of a delay in reaching a contract agreement, the offer of key personnel identified in the RFQ shall be valid for 120 days after submittal of the Statement of Qualifications.

9. KEY PERSONNEL

It is imperative that the key personnel providing the requested services have the background, experience, and qualifications to provide the services described in this RFQ. The City reserves the right to approve all key personnel individually and all subconsultants for work on this contract. The consultant must identify all proposed key personnel. The Statement of Qualifications shall include a table for key personnel (i.e. direct report to the Project Manager) showing their availability to provide various design services that the City of Long Beach may have and commitment to other projects. Additional staff including but not limited to subconsultants shall be part of team.

All key staff shall be named in the contract. After the contract is signed, the proposer may not replace key staff without written agreement by the City. The City must approve replacement staff before a substitute person is assigned to this Civil Engineering Services. City reserves the right to request that the consultant replace a staff person assigned to the contract should the City consider such a replacement to be for the good of the project. Replacement staff would be subject to City approval prior to assignment to the design team.

10. OFFICE LOCATION/TRAVEL

There is no intention for consultant personnel to be housed at the City's office. The City does not intend to reimburse the Consultant for personnel relocation under this contract. Specialty staff identified in the proposals that are needed for specific assignments on this contract may, with City approval in advance, be eligible for reimbursement for all normal costs associated with travel outside their home office. In addition to Consultant staff, Consultant may be required to provide areas and equipment to support various City staff affiliated with the project as needed.

11. CONTRACT TYPE, OVERHEAD RATE AND FEE

The Proposed Fee for this contract will be based on firm fixed hourly rates subject to an overall contract cap and the reimbursement of other direct charges. Please note that the City of Long Beach does not permit mark-ups on other direct charges, including those for subconsultants. The rates will be fixed for the duration of the AGREEMENT. Any changes in the hourly rate charges will require the City's advance written approval.

12. SCOPE OF WORK

A list of possible upcoming work this contract is included in Appendix A of this RFQ

13. NEGOTIATIONS AND AWARD

Submittals will be evaluated by a panel comprised of City staff from relevant departments and/or bureaus. The City will negotiate with the person or entity whose Statement of Qualifications best meets the needs of the City. These negotiations will address a fair and reasonable price for services to be provided and the terms of any contract to be awarded as a result of this RFQ. If the City is unable to obtain a fair and reasonable price or cannot reach agreement regarding the terms of a contract, then the City will end negotiations with that person/entity and will begin negotiations with the next person or entity who best meets the needs of the City, and so on until the City and one of the proposers reaches agreement.

14. PREPARATION OF STATEMENT OF QUALIFICATIONS

The Statement of Qualifications shall be signed and sealed by a duly authorized official of the prime consulting firm or firms. The Statement of Qualifications shall contain an acknowledgment of receipt of all amendments and/or addenda to the RFQ.

15. REQUIRED FORMAT FOR STATEMENT OF QUALIFICATIONS

The City requires a specific format for the Statement of Qualifications. The Statement of Qualifications, not including the Appendices, shall not exceed 25 pages in length, utilizing 8.5" x 11" pages with one-inch margins. Font size shall be not smaller than 12 point for text and a minimum of 8 point for graphics. Dividers used to separate sections will not be counted. Creative use of dividers to portray team qualifications, etc. is discouraged.

15.1 Cover Letter

The cover letter shall be limited to two (2) pages maximum and will not be counted as part of the total page count for the submittal. The cover letter shall include a summary of the Statement of Qualifications, including a brief description of the proposed team firm(s), and other key staff. It shall make a commitment to accept the terms and conditions in the RFQ and Pro Forma contract, including acknowledgment of receipt of all amendments and/or addenda to the RFQ. **Consultants shall be required to accept the full Pro Forma of the City of Long Beach as part of the contract. No modifications of the typical City of Long Beach Pro Forma will be tendered by the City.** The letter shall also identify a single person for possible contact during the RFQ review process regarding contract language.

15.2 Project Understanding and Approach

This section should demonstrate an understanding of the scope of services. It should describe the general approach, organization, and staffing required for the services requested. All sub-consultants and their roles should be identified. The consultant shall include a matrix/summary identifying key personnel responsible for accomplishing all aspects of the work.

15.3 Qualifications of Consultant Staff and Subconsultant Staff

This section shall identify the qualifications and related experience of key and significant staff (i.e. direct reports and any others performing important tasks) assigned to the contract.

This section shall also include cameo resumes of all staff identified above. The cameos shall include a summary of relevant management and work experience, years of relevant experience, the current and proposed location of the person, a statement of availability, and identification of the firm this person is employed by. Two references shall be provided for each key staff member. This section shall also include a table of each key person showing their availability for the duration of this design contract as well as any commitment to other projects.

15.4 Experience of Firms

Relevant experience of the firms included in this RFQ shall be identified. Include project descriptions, status of the project, construction cost and dollar value of services provided. Clearly identify the role of key staff identified herein, and identify current client references. The focus should be on experience, analysis and documentation for similar **Various Civil Engineering** projects. Only recent similar projects completed in the past five years, should be included in this section. Do not include projects by the firm unless the key staff proposed had a significant role in the project.

15.5 Appendices

Full resumes of proposed staff shall be included in this section. Relevant firm project information may also be included in this section. However, other than staff resumes, firm information and general marketing materials will not be considered in the ranking of the firms submitting Statement of Qualifications. There is no page limit in this section.

16. EVALUATION PROCESS AND CRITERIA

The City Engineer will appoint a selection panel to evaluate the Statement of Qualifications. Each member of the selection panel will evaluate each proposal using a 100-point scale and the evaluation criteria listed below to calculate a "Statement of Qualification score" for each consultant. Each member will then rank the consultants by their respective "Statement of Qualification score" for each firm.

WRITTEN PROPOSAL EVALUATION CRITERIA:

1. Understanding of the project implementation, needs, and issues; and approach to managing this construction project. 25 Points
2. Proven experience in all aspects of Civil Engineering, including subsequent engineering trades, and optional surveying for similar projects. 25 Points
3. Qualifications/experience of key personnel, and availability/current workload of proposed staff 25 Points
4. References & record of previous budget/schedule project performance 10 Points
5. Project management experience in quality (Quality Assurance and Quality Control measures), cost and schedule controls 15 Points

TOTAL POSSIBLE SCORE

100 Points

Each member will then rank the consultants by their respective "Statement of Qualification score." The selection panel will convene to discuss and evaluate scoring, and to select a short list of the top-ranked consultant teams based upon the rankings (not scores) of the proposing firms.

Short-listed firms will be invited to respond to questions about their submittals at an oral interview. Presenters will be expected to participate in the interview to a degree commensurate with their role in the firm's proposal. Notification to the short-listed firms will include a time limit for their presentation after which the selection panel will evaluate each presentation using a 100-point scale and the following evaluation criteria to calculate an "oral-interview score" for each short-listed firm.

ORAL PRESENTATIONS OF TOP RANKED CONSULTANTS:

1. Clear understanding of the project, needs, and potential issues; and approach to managing this construction project. 20 Points
2. Innovative approaches and solutions to potential project issues. 15 Points
3. Project Manager's prior experience with similar projects; project cost and schedule control. 30 Points
4. Depth and availability of required resources. 20 Points
5. Oral communication/interpersonal skills including responses to questions. 15 Points

TOTAL POSSIBLE SCORE

100 Points

After the oral interviews are complete, each selection panel member will rank the consultants by their respective "oral-interview score" (scores and rankings from the written evaluations are not considered). The selection panel will determine the highest qualified firm based on the rankings (not scores) of the oral interviews. The City Engineer will submit the recommendation of the selection panel to the City Council for approval.

Upon selection of the successful firm and prior to the start of the contract negotiations, the Consultant is required to submit to the City with the initial cost proposal, the required insurance certificates for the Consultant and its subconsultants, and the completed DBE list if any.

17. NOTIFICATION AND DEBRIEFING OF UNSUCCESSFUL OFFERERS

The City Engineer shall notify all of the consultant teams of the selection panel's recommendation once the recommendation is transmitted to the City Council. Consultants desiring a debriefing will be allowed to make an appointment with the City Engineer's Project Manager. Debriefings will not be scheduled until the City Council has acted on the recommendation of the selection panel.

18. ADDITIONAL INFORMATION

18.1 POLICY ON DISADVANTAGED, MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES

It is the policy of the City of Long Beach to encourage the use of Disadvantaged-, Minority- or Women-Owned Business Enterprises in all aspects of contracting relating to construction, materials and services, professional services, land development related activities, leases and concessions.

18.2 EQUAL EMPLOYMENT OPPORTUNITY

The City of Long Beach is an equal opportunity employer and requires all consultants to comply with policies and regulations concerning equal employment opportunity.

18.3 CONFLICT OF INTEREST

The consultant **shall** be required to complete any and/or all conflict of interest forms. Additionally, if selected to provide the required services, the consultant's firms or its subsidiaries may not be allowed to propose or bid on other aspects of the projects.

18.4 USE TAX

The consultant shall cooperate with the City in all matters relating to taxation and the collection of taxes. It is the policy of the City to self-accrue use tax associated with its contracts. The use tax, which is self-accrued, will be remitted to the State of California pursuant to the City's permit with the State Board of Equalization.

18.5 INSURANCE

Should a contract be awarded to your firm, you must comply with the insurance specifications in the City's Standard Agreement:

- a) Insurance coverage must be provided by a company that is admitted to write in California and has a rating of A:VIII by A.M. Best & Company.
- b) An endorsement naming the City of Long Beach as additional insured on the general liability policy. Coverage equal to \$1,000,000 combined single limit for each occurrence and \$2,000,000 aggregate is required.
- c) A minimum of \$1,000,000 aggregate combined single limit in professional liability insurance.
- d) Workers' compensation insurance as required by the Labor Code of the State of California.
- e) Automobile liability insurance not less than \$500,000 combined single limit per accident for bodily injury and property damage covering owned, non-owned and hired vehicles.

Appendix A

(Preliminary Scope of Work)

PRELIMINARY SCOPE OF WORK

Background

The City of Long Beach desires to engage the services of a professional engineering firm to provide all aspects of design services, including developing and completing plans, specifications, estimates, reports, and surveying (optional to be awarded to consultant at the City's discretion) for the construction of improvements to various City Facilities, which include roadways, alleys, all types of drainage facilities, marinas, docks, seawalls, traffic signals, pavement management, associated lighting to the previously mentioned items, and all associated appurtenances related to proposed improvements.

In general, the design work may range from a wide variety of work to be done for all City owned property.

Preliminary Scope of Services

Professional Engineering Services

Design Services

- Development of Plans, Specifications, and Engineer's Estimates shall be in accordance with the City's Architectural and Engineering Guidelines for Building Design Services as deemed necessary by the City and all other applicable governing agencies for each specific project
- Assist the City in developing bid and contract documents
- Attend the City's meetings with the design team and various tenants, as needed
- Attend pre-bid conference
- Attend pre-construction conference
- Participate in team building sessions with the City, contractor, and other tenants
- Develop plans and specifications necessary for the orderly implementation and construction of multiple phases of construction work
- Utilize electronic information control system for use by the design consultant, City staff, and stakeholders.
- Minimize construction claims prevention as part of design
- Develop project Storm Water Pollution Prevention Plan
- Coordinate and assist the City in obtaining pertinent permits
- Develop construction schedules
- Develop all BMP measures for construction
- Respond to submittals and shop drawings as required

- Attend weekly meetings with the contractors and City staff on an as needed basis
- Coordinate or attend meetings with other City Departments or outside agencies, as deemed necessary
- Assist the City in responding to City Council and public inquiries or concerns regarding the design
- Develop on-going traffic handling and traffic control plans
- Develop drawings to minimize on-going airfield operations and construction interface and impacts
- Conduct Structural Observations as requested or required by the City
- Prepare quantity calculations
- Assist the City with interpreting contract documents and assist the City in resolving disputes or uncertainties
- Review, Track, Process Shop Drawings, Submittals, RFIs, RFCs, RFQs, etc. as needed by the City
- Recommend final approvals to the City
- Track, Monitor, and aid the City in obtaining Final Certificate of Occupancy as needed by the City
- Complete final "As-Built" construction drawings (red-line drawings) to be submitted to the and archived for final record drawings
- Prepare all documentation for storage
- Scan, Digitize, and organize all digital media related documents as deemed by the Engineer
- The City may require at any given time full justification for submitted invoiced for said work as standard audit requirements
- Implement and execute an extensive Quality Assurance/Quality Control program and correct overlooked material at consultant's sole expense at no additional cost to the City
- All developed material shall be the property of the City including electronic data compiled
- Implement a comprehensive Quality Assurance/Quality Control program.

Surveys

In general, the scope of services is to provide quality assurance and is described as follows:

- Follow City Standards with Survey data collection and distribution.
- Implement a comprehensive Quality Assurance/Quality Control program.
- Calculate grades, coordinates and other survey data for monitoring QA/QC surveying
- Perform specialty survey as requested by the City such as earth movement, structural elements locations, utility locations, etc.
- Attend project meetings and other meetings as requested by the City.

Potential Projects (no guarantee of work):

Civil Engineering Services

- **Update in Pavement Management System**
 - Local Street
 - Major Street
- **Various Subdivision Plan Check**
 - Parcel Maps
 - Tract Maps
 - Lot Line Adjustments
 - Final Maps
 - Grading Plans
 - Storm Drain Plans
- **Street Improvement Plans**
- **Various Marina Design**
- **Various Seawall Design**
- **Various Roadway Rehabilitation**
 - Local Street
 - Major Street
- **Various Pump Station Rehabilitation and New Construction Design**
- **Storm Drain Design**
- **Master drainage update**
- **Various BMP Design**
- **Various Plan check**
- **Various Bridge rehabilitation and abatement design**
- **Third Party QA/QC of other Consultant Designs**
- **Grant application assistance**
- **Provide Landscape Architecture for Street Medians and Parkway Enhancements**
- **Coordinate and acceptance of data collected by the City for:**
 - Traffic Studies
 - Traffic Signal Studies
 - Existing Materials Testing Results (i.e. R-value or CBR values of Existing Subgrade, etc.)

Appendix B

(Pro Forma Contract)

AGREEMENT

THIS AGREEMENT is made and entered, in duplicate, as of _____, for reference purposes only, pursuant to a minute order adopted by the City Council of the City of Long Beach at its meeting on _____, 20__, by and between (NAME OF CONSULTANT), a (STATE) corporation/limited liability company etc ("Consultant"), with a place of business at (ADDRESS), and the CITY OF LONG BEACH, a municipal corporation ("City").

WHEREAS, City requires specialized services requiring unique skills to be performed in connection with (SCOPE OF WORK ETC.) ("Project"); and

WHEREAS, City has selected Consultant in accordance with City's administrative procedures and City has determined that Consultant and its employees are qualified, licensed, if so required, and experienced in performing these specialized services; and

WHEREAS, City desires to have Consultant perform these specialized services, and Consultant is willing and able to do so on the terms and conditions in this Agreement;

NOW, THEREFORE, in consideration of the mutual terms, covenants, and conditions in this Agreement, the parties agree as follows:

1. SCOPE OF WORK OR SERVICES.

A. Consultant shall furnish specialized services more particularly described in Exhibit "A", attached to this Agreement and incorporated by this reference, in accordance with the standards of the profession, and City shall pay for these services in the manner described below, not to exceed _____ Dollars (\$_____), at the rates or charges shown in Exhibit "B".

B. Consultant may select the time and place of performance for these services; provided, however, that access to City documents, records and the like, if needed by Consultant, shall be available only during City's normal business

1 hours and provided that milestones for performance, if any, are met.

2 C. Consultant has requested to receive regular payments. City
3 shall pay Consultant in due course of payments following receipt from Consultant
4 and approval by City of invoices showing the services or task performed, the time
5 expended (if billing is hourly), and the name of the Project. Consultant shall certify
6 on the invoices that Consultant has performed the services in full conformance
7 with this Agreement and is entitled to receive payment. Each invoice shall be
8 accompanied by a progress report indicating the progress to date of services
9 performed and covered by the invoice, including a brief statement of any Project
10 problems and potential causes of delay in performance, and listing those services
11 that are projected for performance by Consultant during the next invoice cycle.
12 Where billing is done and payment is made on an hourly basis, the parties
13 acknowledge that this arrangement is either customary practice for Consultant's
14 profession, industry or business, or is necessary to satisfy audit and legal
15 requirements which may arise due to the fact that City is a municipality.

16 D. Consultant represents that Consultant has obtained all
17 necessary information on conditions and circumstances that may affect its
18 performance and has conducted site visits, if necessary.

19 E. CAUTION: Consultant shall not begin work until this
20 Agreement has been signed by both parties and until Consultant's evidence of
21 insurance has been delivered to and approved by City.

22 2. TERM. The term of this Agreement shall commence at midnight on
23 (BEGINNING DATE), and shall terminate at 11:59 p.m. on (ENDING DATE), unless
24 sooner terminated as provided in this Agreement, or unless the services or the Project is
25 completed sooner.

26 3. COORDINATION AND ORGANIZATION.

27 A. Consultant shall coordinate its performance with City's
28 representative, if any, named in Exhibit "C", attached to this Agreement and

1 incorporated by this reference. Consultant shall advise and inform City's
2 representative of the work in progress on the Project in sufficient detail so as to
3 assist City's representative in making presentations and in holding meetings on
4 the Project. City shall furnish to Consultant information or materials, if any,
5 described in Exhibit "D", attached to this Agreement and incorporated by this
6 reference, and shall perform any other tasks described in the Exhibit.

7 B. The parties acknowledge that a substantial inducement to City
8 for entering this Agreement was and is the reputation and skill of Consultant's key
9 employee, _____. City shall have the right to approve any person
10 proposed by Consultant to replace that key employee.

11 4. INDEPENDENT CONTRACTOR. In performing its services,
12 Consultant is and shall act as an independent contractor and not an employee,
13 representative or agent of City. Consultant shall have control of Consultant's work and
14 the manner in which it is performed. Consultant shall be free to contract for similar
15 services to be performed for others during this Agreement; provided, however, that
16 Consultant acts in accordance with Section 9 and Section 11 of this Agreement.
17 Consultant acknowledges and agrees that (a) City will not withhold taxes of any kind from
18 Consultant's compensation; (b) City will not secure workers' compensation or pay
19 unemployment insurance to, for or on Consultant's behalf; and (c) City will not provide
20 and Consultant is not entitled to any of the usual and customary rights, benefits or
21 privileges of City employees. Consultant expressly warrants that neither Consultant nor
22 any of Consultant's employees or agents shall represent themselves to be employees or
23 agents of City.

24 5. INSURANCE.

25 A. As a condition precedent to the effectiveness of this
26 Agreement, Consultant shall procure and maintain, at Consultant's expense for the
27 duration of this Agreement, from insurance companies that are admitted to write
28 insurance in California and have ratings of or equivalent to A:V by A.M. Best

1 Company or from authorized non-admitted insurance companies subject to
2 Section 1763 of the California Insurance Code and that have ratings of or
3 equivalent to A:VIII by A.M. Best Company, the following insurance:

4 (a) Commercial general liability insurance (equivalent in scope to
5 ISO form CG 00 01 11 85 or CG 00 01 10 93) in an amount not less than
6 \$1,000,000 per each occurrence and \$2,000,000 general aggregate. This
7 coverage shall include but not be limited to broad form contractual liability,
8 cross liability, independent contractors liability, and products and
9 completed operations liability. City, its boards and commissions, and their
10 officials, employees and agents shall be named as additional insureds by
11 endorsement (on City's endorsement form or on an endorsement
12 equivalent in scope to ISO form CG 20 10 11 85 or CG 20 26 11 85), and
13 this insurance shall contain no special limitations on the scope of
14 protection given to City, its boards and commissions, and their officials,
15 employees and agents. This policy shall be endorsed to state that the
16 insurer waives its right of subrogation against City, its boards and
17 commissions, and their officials, employees and agents.

18 (b) Workers' Compensation insurance as required by the California
19 Labor Code and employer's liability insurance in an amount not less than
20 \$1,000,000. This policy shall be endorsed to state that the insurer waives
21 its right of subrogation against City, its boards and commissions, and their
22 officials, employees and agents.

23 (c) Professional liability or errors and omissions insurance in an
24 amount not less than \$1,000,000 per claim.

25 (d) Commercial automobile liability insurance (equivalent in scope
26 to ISO form CA 00 01 06 92), covering Auto Symbol 1 (Any Auto) in an
27 amount not less than \$500,000 combined single limit per accident.

28 B. Any self-insurance program, self-insured retention, or

1 deductible must be separately approved in writing by City's Risk Manager or
2 designee and shall protect City, its officials, employees and agents in the same
3 manner and to the same extent as they would have been protected had the policy
4 or policies not contained retention or deductible provisions.

5 C. Each insurance policy shall be endorsed to state that
6 coverage shall not be reduced, non-renewed or canceled except after thirty (30)
7 days prior written notice to City, shall be primary and not contributing to any other
8 insurance or self-insurance maintained by City, and shall be endorsed to state that
9 coverage maintained by City shall be excess to and shall not contribute to
10 insurance or self-insurance maintained by Consultant. Consultant shall notify City
11 in writing within five (5) days after any insurance has been voided by the insurer or
12 cancelled by the insured.

13 D. If this coverage is written on a "claims made" basis, it must
14 provide for an extended reporting period of not less than one hundred eighty (180)
15 days, commencing on the date this Agreement expires or is terminated, unless
16 Consultant guarantees that Consultant will provide to City evidence of
17 uninterrupted, continuing coverage for a period of not less than three (3) years,
18 commencing on the date this Agreement expires or is terminated.

19 E. Consultant shall require that all subconsultants or contractors
20 that Consultant uses in the performance of these services maintain insurance in
21 compliance with this Section unless otherwise agreed in writing by City's Risk
22 Manager or designee.

23 F. Prior to the start of performance, Consultant shall deliver to
24 City certificates of insurance and the endorsements for approval as to sufficiency
25 and form. In addition, Consultant shall, within thirty (30) days prior to expiration of
26 the insurance, furnish to City certificates of insurance and endorsements
27 evidencing renewal of the insurance. City reserves the right to require complete
28 certified copies of all policies of Consultant and Consultant's subconsultants and

1 contractors, at any time. Consultant shall make available to City's Risk Manager
2 or designee all books, records and other information relating to this insurance,
3 during normal business hours.

4 G. Any modification or waiver of these insurance requirements
5 shall only be made with the approval of City's Risk Manager or designee. Not
6 more frequently than once a year, City's Risk Manager or designee may require
7 that Consultant, Consultant's subconsultants and contractors change the amount,
8 scope or types of coverages required in this Section if, in his or her sole opinion,
9 the amount, scope or types of coverages are not adequate.

10 H. The procuring or existence of insurance shall not be
11 construed or deemed as a limitation on liability relating to Consultant's
12 performance or as full performance of or compliance with the indemnification
13 provisions of this Agreement.

14 6. ASSIGNMENT AND SUBCONTRACTING. This Agreement
15 contemplates the personal services of Consultant and Consultant's employees, and the
16 parties acknowledge that a substantial inducement to City for entering this Agreement
17 was and is the professional reputation and competence of Consultant and Consultant's
18 employees. Consultant shall not assign its rights or delegate its duties under this
19 Agreement, or any interest in this Agreement, or any portion of it, without the prior
20 approval of City, except that Consultant may with the prior approval of the City Manager
21 of City, assign any moneys due or to become due Consultant under this Agreement. Any
22 attempted assignment or delegation shall be void, and any assignee or delegate shall
23 acquire no right or interest by reason of an attempted assignment or delegation.
24 Furthermore, Consultant shall not subcontract any portion of its performance without the
25 prior approval of the City Manager or designee, or substitute an approved subconsultant
26 or contractor without approval prior to the substitution. Nothing stated in this Section
27 shall prevent Consultant from employing as many employees as Consultant deems
28 necessary for performance of this Agreement.

1 7. CONFLICT OF INTEREST. Consultant, by executing this
2 Agreement, certifies that, at the time Consultant executes this Agreement and for its
3 duration, Consultant does not and will not perform services for any other client which
4 would create a conflict, whether monetary or otherwise, as between the interests of City
5 and the interests of that other client. And, Consultant shall obtain similar certifications
6 from Consultant's employees, subconsultants and contractors.

7 8. MATERIALS. Consultant shall furnish all labor and supervision,
8 supplies, materials, tools, machinery, equipment, appliances, transportation and services
9 necessary to or used in the performance of Consultant's obligations under this
10 Agreement, except as stated in Exhibit "D".

11 9. OWNERSHIP OF DATA. All materials, information and data
12 prepared, developed or assembled by Consultant or furnished to Consultant in
13 connection with this Agreement, including but not limited to documents, estimates,
14 calculations, studies, maps, graphs, charts, computer disks, computer source
15 documentation, samples, models, reports, summaries, drawings, designs, notes, plans,
16 information, material and memorandum ("Data") shall be the exclusive property of City.
17 Data shall be given to City, and City shall have the unrestricted right to use and disclose
18 the Data in any manner and for any purpose without payment of further compensation to
19 Consultant. Copies of Data may be retained by Consultant but Consultant warrants that
20 Data shall not be made available to any person or entity for use without the prior approval
21 of City. This warranty shall survive termination of this Agreement for five (5) years.

22 10. TERMINATION. Either party shall have the right to terminate this
23 Agreement for any reason or no reason at any time by giving fifteen (15) calendar days
24 prior notice to the other party. In the event of termination under this Section, City shall
25 pay Consultant for services satisfactorily performed and costs incurred up to the effective
26 date of termination for which Consultant has not been previously paid. The procedures
27 for payment in Section 1.B. with regard to invoices shall apply. On the effective date of
28 termination, Consultant shall deliver to City all Data developed or accumulated in the

1 performance of this Agreement, whether in draft or final form, or in process. And,
2 Consultant acknowledges and agrees that City's obligation to make final payment is
3 conditioned on Consultant's delivery of the Data to City.

4 11. CONFIDENTIALITY. Consultant shall keep all Data confidential and
5 shall not disclose the Data or use the Data directly or indirectly, other than in the course
6 of performing its services, during the term of this Agreement and for five (5) years
7 following expiration or termination of this Agreement. In addition, Consultant shall keep
8 confidential all information, whether written, oral or visual, obtained by any means
9 whatsoever in the course of performing its services for the same period of time.
10 Consultant shall not disclose any or all of the Data to any third party, or use it for
11 Consultant's own benefit or the benefit of others except for the purpose of this
12 Agreement.

13 12. BREACH OF CONFIDENTIALITY. Consultant shall not be liable for
14 a breach of confidentiality with respect to Data that: (a) Consultant demonstrates
15 Consultant knew prior to the time City disclosed it; or (b) is or becomes publicly available
16 without breach of this Agreement by Consultant; or (c) a third party who has a right to
17 disclose does so to Consultant without restrictions on further disclosure; or (d) must be
18 disclosed pursuant to subpoena or court order.

19 13. ADDITIONAL COSTS AND REDESIGN.

20 A. Any costs incurred by City due to Consultant's failure to meet
21 the standards required by the scope of work or Consultant's failure to perform fully
22 the tasks described in the scope of work which, in either case, causes City to
23 request that Consultant perform again all or part of the Scope of Work shall be at
24 the sole cost of Consultant and City shall not pay any additional compensation to
25 Consultant for its re-performance.

26 B. If the Project involves construction and the scope of work
27 requires Consultant to prepare plans and specifications with an estimate of the
28 cost of construction, then Consultant may be required to modify the plans and

1 specifications, any construction documents relating to the plans and specifications,
2 and Consultant's estimate, at no cost to City, when the lowest bid for construction
3 received by City exceeds by more than ten percent (10%) Consultant's estimate.
4 This modification shall be submitted in a timely fashion to allow City to receive new
5 bids within four (4) months after the date on which the original plans and
6 specifications were submitted by Consultant.

7 14. AMENDMENT. This Agreement, including all Exhibits, shall not be
8 amended, nor any provision or breach waived, except in writing signed by the parties
9 which expressly refers to this Agreement.

10 15. LAW. This Agreement shall be governed by and construed pursuant
11 to the laws of the State of California (except those provisions of California law pertaining
12 to conflicts of laws). Consultant shall comply with all laws, ordinances, rules and
13 regulations of and obtain all permits, licenses and certificates required by all federal, state
14 and local governmental authorities.

15 16. ENTIRE AGREEMENT. This Agreement, including all Exhibits,
16 constitutes the entire understanding between the parties and supersedes all other
17 agreements, oral or written, with respect to the subject matter in this Agreement.

18 17. INDEMNITY. Consultant shall, with respect to services performed in
19 connection with this Agreement, indemnify and hold harmless City, its Boards,
20 Commissions, and their officials, employees and agents (collectively in this Section,
21 "City") from and against any and all liability, claims, allegations, demands, damage, loss,
22 causes of action, proceedings, penalties, costs and expenses (including attorney's fees,
23 court costs, and expert and witness fees) (collectively "Claims" or individually "Claim")
24 arising, directly or indirectly, in whole or in part, out of any negligent act or omission of
25 Consultant, its officers, employees, agents, sub-consultants or anyone under
26 Consultant's control (collectively "Indemnitor"), breach of this Agreement by Indemnitor,
27 misrepresentation or willful misconduct by Indemnitor, and Claims by any employee of
28 Indemnitor relating in any way to workers' compensation. Independent of the duty to

1 indemnify and as a free-standing duty on the part of Consultant, Consultant shall defend
2 City and shall continue this defense until the Claim is resolved, whether by settlement,
3 judgment or otherwise. No finding or judgment of negligence, fault, breach or the like on
4 the part of Indemnitor shall be required for the duty to defend to arise. Consultant shall
5 notify City of any Claim within ten (10) days. Likewise, City shall notify Consultant of any
6 Claim, shall tender the defense of the Claim to Consultant, and shall assist Consultant at
7 Consultant's sole expense, as may be reasonably requested, in the defense.

8 18. AMBIGUITY. In the event of any conflict or ambiguity between this
9 Agreement and any Exhibit, the provisions of this Agreement shall govern.

10 19. COSTS. If there is any legal proceeding between the parties to
11 enforce or interpret this Agreement or to protect or establish any rights or remedies under
12 it, the prevailing party shall be entitled to its costs, including reasonable attorneys' fees.

13 20. NONDISCRIMINATION.

14 A. In connection with performance of this Agreement and subject
15 to applicable rules and regulations, Consultant shall not discriminate against any
16 employee or applicant for employment because of race, religion, national origin,
17 color, age, sex, sexual orientation, gender identity, AIDS, HIV status, handicap or
18 disability. Consultant shall ensure that applicants are employed, and that
19 employees are treated during their employment, without regard to these bases.
20 These actions shall include, but not be limited to, the following: employment,
21 upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or
22 termination; rates of pay or other forms of compensation; and selection for training,
23 including apprenticeship.

24 B. It is the policy of City to encourage the participation of
25 Disadvantaged, Minority and Women-Owned Business Enterprises in City's
26 procurement process, and Consultant agrees to use its best efforts to carry out
27 this policy in its use of subconsultants and contractors to the fullest extent
28 consistent with the efficient performance of this Agreement. Consultant may rely

1 on written representations by subconsultants and contractors regarding their
2 status. City's policy is attached as Exhibit "E" to this Agreement. Consultant shall
3 report to City in May and in December or, in the case of short-term agreements,
4 prior to invoicing for final payment, the names of all subconsultants and
5 contractors hired by Consultant for this Project and information on whether or not
6 they are a Disadvantaged, Minority or Women-Owned Business Enterprise, as
7 defined in Section 8 of the Small Business Act (15 U.S.C. Sec. 637).

8 21. EQUAL BENEFITS ORDINANCE. Unless otherwise exempted in
9 accordance with the provisions of the Ordinance, this Contract is subject to the applicable
10 provisions of the Equal Benefits Ordinance (EBO), section 2.73 et seq. of the Long Beach
11 Municipal Code, as amended from time to time.

12 A. During the performance of this Contract, the
13 Contractor/Consultant certifies and represents that the Contractor/Consultant will
14 comply with the EBO. The Contractor/Consultant agrees to post the following
15 statement in conspicuous places at its place of business available to employees
16 and applicants for employment:

17 "During the performance of a Contract with the City of Long Beach,
18 the Contractor/Consultant will provide equal benefits to employees with
19 spouses and its employees with domestic partners. Additional information
20 about the City of Long Beach's Equal Benefits Ordinance may be obtained
21 from the City of Long Beach Business Services Division at 562-570-6200."

22 B. The failure of the Contractor/Consultant to comply with the
23 EBO will be deemed to be a material breach of the Contract by the City.

24 C. If the Contractor/Consultant fails to comply with the EBO, the
25 City may cancel, terminate or suspend the Contract, in whole or in part, and
26 monies due or to become due under the Contract may be retained by the City.
27 The City may also pursue any and all other remedies at law or in equity for any
28 breach.

1 D. Failure to comply with the EBO may be used as evidence
2 against the Contractor/Consultant in actions taken pursuant to the provisions of
3 Long Beach Municipal Code 2.93 et seq., Contractor Responsibility.

4 E. If the City determines that the Contractor/Consultant has set
5 up or used its Contracting entity for the purpose of evading the intent of the EBO,
6 the City may terminate the Contract on behalf of the City. Violation of this
7 provision may be used as evidence against the Contractor/Consultant in actions
8 taken pursuant to the provisions of Long Beach Municipal Code section 2.93 et
9 seq., Contractor Responsibility.

10 22. NOTICES. Any notice or approval required by this Agreement shall
11 be in writing and personally delivered or deposited in the U.S. Postal Service, first class,
12 postage prepaid, addressed to Consultant at the address first stated above, and to City at
13 333 West Ocean Boulevard, Long Beach, California 90802, Attn: City Manager, with a
14 copy to the City Engineer at the same address. Notice of change of address shall be
15 given in the same manner as stated for other notices. Notice shall be deemed given on
16 the date deposited in the mail or on the date personal delivery is made, whichever occurs
17 first.

18 23. COPYRIGHTS AND PATENT RIGHTS.

19 A. Consultant shall place the following copyright protection on all
20 Data: © City of Long Beach, California ____, inserting the appropriate year.

21 B. City reserves the exclusive right to seek and obtain a patent
22 or copyright registration on any Data or other result arising from Consultant's
23 performance of this Agreement. By executing this Agreement, Consultant assigns
24 any ownership interest Consultant may have in the Data to City.

25 C. Consultant warrants that the Data does not violate or infringe
26 any patent, copyright, trade secret or other proprietary right of any other party.
27 Consultant agrees to and shall protect, defend, indemnify and hold City, its officials
28 and employees harmless from any and all claims, demands, damages, loss,

1 liability, causes of action, costs or expenses (including reasonable attorney's fees)
2 whether or not reduced to judgment, arising from any breach or alleged breach of
3 this warranty.

4 24. COVENANT AGAINST CONTINGENT FEES. Consultant warrants
5 that Consultant has not employed or retained any entity or person to solicit or obtain this
6 Agreement and that Consultant has not paid or agreed to pay any entity or person any
7 fee, commission or other monies based on or from the award of this Agreement. If
8 Consultant breaches this warranty, City shall have the right to terminate this Agreement
9 immediately notwithstanding the provisions of Section 10 or, in its discretion, to deduct
10 from payments due under this Agreement or otherwise recover the full amount of the fee,
11 commission or other monies.

12 25. WAIVER. The acceptance of any services or the payment of any
13 money by City shall not operate as a waiver of any provision of this Agreement or of any
14 right to damages or indemnity stated in this Agreement. The waiver of any breach of this
15 Agreement shall not constitute a waiver of any other or subsequent breach of this
16 Agreement.

17 26. CONTINUATION. Termination or expiration of this Agreement shall
18 not affect rights or liabilities of the parties which accrued pursuant to Sections 7, 10, 11,
19 17, 19, 22 and 28 prior to termination or expiration of this Agreement.

20 27. TAX REPORTING. As required by federal and state law, City is
21 obligated to and will report the payment of compensation to Consultant on Form 1099-
22 Misc. Consultant shall be solely responsible for payment of all federal and state taxes
23 resulting from payments under this Agreement. Consultant's Employer Identification
24 Number is _____. If Consultant has a Social Security Number rather than an
25 Employer Identification Number, then Consultant shall submit that Social Security
26 Number in writing to City's Accounts Payable, Department of Financial Management.
27 Consultant acknowledges and agrees that City has no obligation to pay Consultant until
28 Consultant provides one of these numbers.

28. ADVERTISING. Consultant shall not use the name of City, its officials or employees in any advertising or solicitation for business or as a reference, without the prior approval of the City Manager or designee.

29. AUDIT. City shall have the right at all reasonable times during the term of this Agreement and for a period of five (5) years after termination or expiration of this Agreement to examine, audit, inspect, review, extract information from and copy all books, records, accounts and other documents of Consultant relating to this Agreement.

30. THIRD PARTY BENEFICIARY. This Agreement is not intended or designed to or entered for the purpose of creating any benefit or right for any person or entity of any kind that is not a party to this Agreement.

IN WITNESS WHEREOF, the parties have caused this document to be duly executed with all formalities required by law as of the date first stated above.

(NAME OF CONSULTANT)

_____, 20__

By _____
President

Type or Print Name

_____, 20__

By _____
Secretary

Type or Print Name

"Consultant"

CITY OF LONG BEACH, a municipal corporation

_____, 20__

By _____
City Manager

"City"

This Agreement is approved as to form on _____, 20__.

ROBERT E. SHANNON, City Attorney

By _____

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

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Deputy

Appendix C

**(Architectural and Engineering Guidelines for
Building Design Services)**

**TO BE USED AS NEEDED FOR DELIVERABLES
BY THE CONSULTANT AS DIRECTED BY THE
CITY**

333 W. Ocean Blvd, Long Beach, California 90802

**ARCHITECTURAL & ENGINEERING
GUIDELINES
FOR
BUILDING DESIGN SERVICES**

July 17, 2006

Phillip Balmeo
Senior Civil Engineer, P.E

These guidelines shall be deemed invalid if they are altered or tampered with in any way

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	PROGRAMMING CONSULTANTS RESPONSIBILITIES	1
3.0	ARCHITECTS/ENGINEERS (A/E) RESPONSIBILITIES	2
4.0	CITY OF LONG BEACH (CITY) RESPONSIBILITIES	3
5.0	CODES & GOVERNMENT AGENCY APPROVALS/PERMITS	4
5.1	CODES	4
5.2	GOVERNMENT AGENCY APPROVALS/PERMITS	4
6.0	PROGRAMMING/PLANNING PHASE	5
7.0	DESIGN PHASES	5
7.1	SCHEMATIC DESIGN (SD) PHASE	5
7.2	DESIGN DEVELOPMENT (DD) PHASE	5
7.3	CONSTRUCTION DOCUMENTS (CD) PHASE	6
8.0	DESIGN SUPPORT SERVICES DURING THE BIDDING PHASE	6
9.0	DESIGN SUPPORT SERVICES DURING CONSTRUCTION	6
9.1	PRE-CONSTRUCTION MEETING	6
9.2	CONSTRUCTION OBSERVATION VISITS	6
9.3	CONSTRUCTION PROGRESS MEETINGS	7
9.4	INTERPRETATIONS/CLARIFICATIONS (RFI's)	7
9.5	CONTRACT CHANGE ORDERS (CCO's)	7
9.6	SHOP DRAWING, SAMPLES & TESTING REVIEW	8
9.7	SUBSTITUTIONS, EQUALS AND/OR DEVIATIONS	8
9.8	COLOR & FINISH MATERIAL SUBMITTALS	9
9.9	MONTHLY CONSTRUCTION PROGRESS REPORTS	10
9.10	ADDITIONAL SERVICES DURING CONSTRUCTION	10
9.11	AS-BUILT / RECORD SET DRAWINGS	11
9.12	DEFICIENCIES DURING WARRANTY PERIOD	11
10.0	DELIVERABLES	11
10.1	FORMAT & SOFTWARE	11
10.2	REQUIRED DOCUMENT SUBMITTALS	12
10.3	SCHEDULE OF REQUIRED DOCUMENTS	13
11.0	TABLE OF REQUIRED REPORTS	14
11.1	BASIS OF DESIGN REPORT (BDR)	14
11.2	SUMMARY PROGRAM ANALYSIS	14

11.3	SUMMARY PROGRAM VERIFICATION REPORT	16
11.4	SITE ANALYSIS	16
11.5	DETAILED DESIGN ANALYSIS	18
11.5.1	GENERAL REPORT REQUIREMENTS	18
11.5.2	CIVIL REPORT REQUIREMENTS	19
11.5.3	ARCHITECTURAL REPORT REQUIREMENTS	20
11.5.4	STRUCTURAL REPORT REQUIREMENTS	22
11.5.5	MECHANICAL REPORT REQUIREMENTS	23
11.5.6	PLUMBING REPORT REQUIREMENTS	24
11.5.7	FIRE PROTECTION REPORT REQUIREMENTS	25
11.5.8	ELECTRICAL REPORT REQUIREMENTS	25
11.5.9	LANDSCAPE & IRRIGATION REPORT REQUIREMENTS	26
12.0	TABLE OF REQUIRED DRAWINGS	28
12.1	GENERAL DRAWINGS	28
12.2	CIVIL DRAWINGS	30
12.3	ARCHITECTURAL DRAWINGS	32
12.4	STRUCTURAL DRAWINGS	38
12.5	MECHANICAL DRAWINGS	41
12.6	PLUMBING DRAWINGS	44
12.7	FIRE PROTECTION DRAWINGS	47
12.8	ELECTRICAL DRAWINGS	49
12.9	LANDSCAPE & IRRIGATION DRAWINGS	52
13.0	TABLE OF REQUIRED SPECIFICATIONS	54
13.1	DIVISIONS	54
13.2	CONTENTS	55
13.3	FORMAT	57
14.0	TABLE OF REQUIRED BUDGETS	60
14.1	SCHEMATIC DESIGN PHASE	60
14.2	DESIGN DEVELOPMENT PHASE	60
14.3	CD's PHASE	60
15.0	TABLE OF REQUIRED SCHEDULES	62
15.1	DESIGN PRODUCTION PLAN	62
15.2	PROJECT ACTIVITIES ASSIGNMENTS	62
15.3	PROJECT SCHEDULE	62
16.0	GLOSSARY OF ABBREVIATIONS AND TERMS USED	64

1.0 INTRODUCTION:

The purpose of these Architectural and Engineering Design Service Guidelines is to provide the Design Team made up of Architects, Engineers (A/E), Planners and Consultants working on City of Long Beach (CITY) related building projects, with a set of guidelines which allocate and define the responsibilities and requirements for the design work. These guidelines are meant to act as a guide for all building and renovation projects, establishing the requirements for the project design process, required meetings, reports, plans, specifications, budgets and schedules.

2.0 PROGRAMMING CONSULTANTS RESPONSIBILITIES:

The Programming Consultant, who may also be the A/E, will have the primary responsibility to ensure that all components of the Programming/Planning Phase are carried out in a timely manner, and that a well defined program, budget criteria and project schedule are established. Specific tasks for the Programming Consultant during the Programming/Planning Phase will include:

- 2.1 Establish project specific protocols and conduct appropriate staff interviews and surveys to determine the specific list of all program elements, space allocation areas, and prepare block diagram layouts of all required adjacencies for review and approval by the CITY.
- 2.2 Verify all project site information provided by the CITY.
- 2.3 Coordinate with the CITY to provide access to the existing site for the design team.
- 2.4 Field verify existing conditions to determine the best overall site layout for efficient site utilization, access, energy utilization, view, exposure, security, aesthetic issues and sufficiency of local utilities.
- 2.5 Identify and confirm a list of all-current applicable codes, regulatory permits, ordinances and identify the required reviews and approvals by all agencies during the subsequent design and construction phases.
- 2.6 Provide a summary progress report outlining all current major project issues, a preliminary budget projection and project schedule to be reviewed and approved by the CITY, based upon the requirements in these guidelines in **Section 10 "Deliverables"**, and **Section 11 "Table of Required Reports"**.
- 2.7 Organize Design Team, schedule and coordinate all Programming/ Planning meetings as determined by the CITY.
- 2.8 Prepare and conduct periodic design meetings with CITY staff as well as presentations to CITY staff, stake-holders, and the City Council as determined by the CITY.
- 2.9 Provide a Project Program, which will include a list of current and proposed project functions and specific space allocation and adjacency requirements for use by the A/E.

3.0 ARCHITECTS/ENGINEERS (A/E) RESPONSIBILITIES:

The A/E, which may also be the Programming Consultant, will have the primary responsibility to ensure that all aspects of the three Design Phases, Design Support Services during the Bidding and Construction Phases and preparation of the "As-Built" drawings, are carried out in a professional and timely manner. The A/E shall ensure that the design responds to the program criteria, is within the project budget and that the design work is completed within the project schedule. Specific tasks for the A/E during the project shall include:

- 3.1 Selecting and managing the Design Team of Engineers and Consultants that are appropriate for the project, which will typically include Civil, Structural, Electrical, Mechanical, and Plumbing Engineers. On some projects as required by the CITY the Design Team may also include (but are not limited to) Geotechnical & Environmental Engineers, Landscape Architect, Interior Design, Audio/Visual, Security and Computer Information Systems Consultants.
- 3.2 Provide necessary project documentation as required in these guidelines within **Section 10 "Deliverables"**.
- 3.3 Attend all meetings with the CITY, appropriate tenants, required Governmental Agencies and interested members of the public, as listed in these guidelines within **Section 11 "Table of Required Reports"**.
- 3.4 During the Design Phases the A/E will be responsible for maintaining minutes of all meetings involving the CITY, Tenant, Design Team, and other interested parties and following up on all appropriate issues.
- 3.5 Coordinate with the CITY to provide access to the proposed project site for the A/E design team of Engineers and Consultants.
- 3.6 Review and provide written validation of Program Requirements and **"Exhibit A - Scope of Work"**.
- 3.7 If Required by the CITY, provide a summary analysis outlining all current major project issues, updated budget projections and schedule to be distributed by the CITY.
- 3.8 Provide necessary graphical documents and plans as required in these guidelines within **Section 12 "Table of Required Drawings"**, which explains the design philosophy and current direction of the project. In addition, if required by the CITY, provide architectural renderings and models, and computerized models.

4.0 CITY OF LONG BEACH (CITY) RESPONSIBILITIES:

The CITY project team will participate fully with the Architect, Engineers, Planners and Consultants to provide the background information, requirements, evaluations and approvals of the project plans, budgets and schedules as necessary. Specific tasks for the CITY during the Project may include:

- 4.1 The CITY will assist in the A/E's compilation of the proposed project site, which may include a soils reports, CITY base maps, and a survey of existing conditions including any available underground utilities and piping. It shall be the sole responsibility of the A/E to secure accurate data as part of the complete design of the proposed project.
- 4.2 Appoint a Project Lead which will be a Project Manager (PM) and/or a Construction Manager (CM) to act as the overall manager for the project.
- 4.3 During the Bidding and Construction Phases and unless otherwise directed, the CITY CM will be responsible for the oversight, scheduling, preparing minutes for all meetings involving the Tenant, General Contractor (GC), Programming Consultant, A/E and Design Team and following up on all meeting minute action items and their resolution.
- 4.4 Provide guidance for the Programming Consultant, A/E and Design Team. A Project Advisory Committee may be established to work closely with the Programming Consultant, A/E and Design Team providing information resources, if determined necessary by the CITY for a specific project.
- 4.5 Provide a preliminary ***"Exhibit A - Scope of Work"***, which will include a list of current and proposed project functions to the A/E. In addition, the CITY may choose to provide certain specific space allocation requirements.
- 4.6 Provide access to requested information and resources to the Programming Consultant, A/E and Design Team.
- 4.7 Provide access to the proposed project site to the Programming Consultant, A/E and Design Team.
- 4.8 Evaluate and approve all work, designs, budgets and schedules for the project.

In addition, and depending upon the specific project, the CITY **may** choose to perform the following additional tasks during the Planning/Programming Phase:

- 4.9 Acquiring other consulting services as necessary for the delivery of the complete design of the proposed project.

5.0 CODES & GOVERNMENT AGENCY APPROVALS/PERMITS:

- 5.1 **Codes:** It is the sole responsibility of the A/E and the Design Team to research and verify all of the appropriate and applicable codes at the beginning of each design phase.

For projects located within the City of Long Beach, the current codes that have been adopted by the City of Long Beach include the following:

- 5.1.1 California Building Code
- 5.1.2 California Plumbing Code
- 5.1.3 California Mechanical Code
- 5.1.4 California Electrical Code
- 5.1.5 California Fire Code
- 5.1.6 Title 24 Energy and Disabled Access Codes

- 5.2 **Government Agency Approvals/Permits:** At the beginning of each design phase, the A/E and Design Team shall determine if review and approvals and permits required by any Governmental Agencies will be required during that phase and provide a list of the required approvals and when they are required.

Government Agencies which have jurisdiction for projects located within the City of Long Beach include but are not limited to:

- 5.2.1 City of Long Beach Planning, Building and Public Works Departments
- 5.2.2 Long Beach Fire Department, Fire Prevention Bureau
- 5.2.3 State of California, Division of Oil and Gas

6.0 PROGRAMMING/PLANNING PHASE:

The Programming/Planning Phase will provide a basis and framework for the entire project to ensure that all future design phases meet the following criteria:

- 6.1 Space planning needs are established and all current and future needs are determined and incorporate EIR mitigation measures Airport Guiding Principles which were approved by City Council as part of design and address the Airport Airline Affairs Committee needs for space and adjacencies.
- 6.2 Design options and alternatives are explored and evaluated to determine preferred design methods and decision-making process.
- 6.3 Design decisions and implementation schemes shall be logical, practical, coherent and cost effective.
- 6.4 Appropriate cost estimates and project budgets are established, evaluated and updated throughout the design and construction process to ensure that the project remains within the original budget.
- 6.5 Project progresses in a professional and timely manner to meet CITY goals and schedule.

- 6.6 Strict guidelines for all documentation from the preparation of minutes meeting to CD's are established, and a complete record of the entire process is maintained and periodically updated throughout the project.

7.0 DESIGN PHASES:

Refer to **Sections 10-15** of these guidelines for specific detailed requirements during each of the following design phases.

7.1 Schematic Design (SD) Phase:

In the SD Phase, the A/E and Design Team shall provide an exploration of space planning options and major building system designs that will maximize the criteria that was previously established in the Programming/ Planning Phase. For substantial projects (with budgets over \$1,000,000), a minimum number of unique design solutions shall be determined during the RFQ process and shall satisfy all of the major design criteria, illustrate general scope, scale, relationship, character and cost of the programmed facility requirements, shall be prepared by the A/E. When appropriate, the A/E shall prepare Life Cycle and Value Engineering comparisons for major systems and components.

7.2 Design Development (DD) Phase:

In the DD Phase, the A/E and Design Team shall develop and refine the selected design(s) previously explored in the SD Phase. The A/E and Design team shall provide the most practical, sustainable and efficient overall building design, including space planning options and major building system designs, that will maximize the criteria, define specific systems, equipment and design elements that fix and describe the size, character and cost of the entire project. When appropriate, the A/E and Design Team shall prepare Life Cycle and Value Engineering comparisons for major systems and components and shall include Peer Review and documentation.

7.3 Construction Documents (CD) Phase:

In the CD Phase, the A/E and Design Team shall prepare the final detailed construction drawings and specifications that will be used to obtain all the necessary approvals from the appropriate Governmental Agencies and bids for construction from the GC to construct the project. The CD phase will be complete when the A/E delivers the approved CD's consisting of the required plans, specifications and calculations to the CITY. The A/E and Design Team shall provide Peer Review, Constructability Review and documentation during the CD Phase.

8.0 DESIGN SUPPORT SERVICES DURING THE BIDDING PHASE

During the Bidding Phase, the A/E and Design Team shall co-ordinate with the CITY Project Lead to assist the CITY as requested, regarding any Request for Clarifications (RFC) and make any necessary changes or revisions to the Bid Documents. The A/E and Design Team will assist the CITY with the preparation of any resulting addenda as requested by the CITY.

9.0 DESIGN SUPPORT SERVICES DURING CONSTRUCTION

During the Construction Phase, the A/E and Design Team shall assist the CITY to assure that the construction of the project is in accordance with the construction contract requirements. Services shall include but not be limited to the following:

9.1 Pre-Construction Meeting

The CITY will schedule, provide an agenda and post notice of a Pre-Construction Meeting to include representatives of the CITY, GC, Sub-Contractors (and/or their respective representatives), Tenant(s) (as necessary), and A/E Design Team, to discuss general procedures, project requirements and schedules. This required meeting will be conducted by the CM.

9.2 Construction Observation Visits

During construction, the A/E and Design Team shall visit the project periodically (frequency as mutually agreed to by the A/E, Design Team and CITY) and provide other on-site services as requested by the CITY and as called for in the Agreement. The purpose of these visits will be to ascertain the adequacy of the design in achieving project objectives, early identification and correction of design deficiencies, and compliance of the work with the construction contract documents.

9.3 Construction Progress Meetings

During construction, appropriate representatives for the A/E and Design Team shall attend meetings on a regular basis (weekly, or as determined by the CITY).

9.4 Interpretations/Clarifications (RFI's)

During the construction phase, the GC shall submit all requests for interpretation and/or clarification of construction contract documents to the CM as Requests for Information (RFI's). The CM shall transmit those RFI's that require the A/E's and/or Design Teams response directly to the appropriate reviewer, and review the information within ten (10) working days. The receipt date, source, topic, transmittal date, RFI related correspondence, responses and disposition of all RFI's shall be logged by the CM.

The A/E and Design Team shall provide a written (fax or e-mail is acceptable) response to the RFI within three (3) working days from the date of receipt, unless otherwise agreed upon by all parties or per specifications or contract documents.

9.5 Construction Contract Change Orders (CCOs)

CCO's shall be defined as any changes in the construction work necessary to construct the project as defined by the permitted construction contract documents including but not limited to additions and unforeseen conditions or as defined in Standard Public Works Greenbook. Changes may be the result of RFI's (the A/E is not to use the RFI to initiate a change), Contractor Requested Changes (CRC's), CITY Requested Changes (PRC's) or Tenant Requested Changes (TRC's). These include, but are not limited, to any changes, which affect the project cost and/or construction schedule.

The A/E shall provide the design services necessary for any changes to the construction contract documents and resulting work following the procedures outlined as follows:

- 9.5.1 Prepare for approval by the CITY all requested changes to the construction contract documents necessitated by the CCOs. Any changes arising from discrepancies or deficiencies in the bid documents resulting from A/E and Design Team document coordination shall be carried out at the A/E and Design Team's own expense with no additional charges to the CITY.
- 9.5.2 Prepare for approval by the CITY all jurisdictional and regulatory agencies mandated changes to the construction contract documents.
- 9.5.3 When requested by the CITY, assist in preparing for approval by the CITY, a Request for Quotation (RFQ) to the CM for any proposed changes in the work and a estimate of construction cost showing material, equipment, and labor quantities relating to the proposed changes in the work.

9.6 Shop Drawing, Samples & Testing Review

- 9.6.1 In accordance with the Construction Contract, the GC will be required to transmit six (6) copies of all requested shop drawings, samples and test results to the CM to forward to the A/E, or other designated reviewer, for review, distribution and approval. The A/E shall be responsible for ensuring that those submittals the A/E reviews adhere to the approved construction contract documents.
- 9.6.2 The A/E shall review submittals including shop drawings, product data and samples, and test results for conformance with the construction contract documents. All reviews will be accomplished in the priority and sequence of construction as indicated on the approved construction schedule. The A/E review

period, including processing time, for all submittals shall not exceed twenty (20) working days, unless otherwise agreed upon by all parties to the agreement.

- 9.6.3 When shop drawings, samples, test results and other submittals are found to comply with construction contract documents, the A/E shall stamp (and sign) the submittal as "No Exceptions Taken", or "Make Corrections Noted" and submit a minimum of four (4) copies to the CM, notify the CM in writing of its approval and retain one (1) copy for the A/E files.
- 9.6.4 When shop drawings, samples and other submittals do not comply with construction contract documents, and are deemed unsatisfactory, the A/E shall stamp (and sign) the submittal as "Revise and Resubmit", "Submit Specified Item", or "Rejected" and submit a minimum of four (4) copies to the CM, notify the CM in writing of its disapproval and reasons for the disapproval, and retain one (1) copy for the A/E files.
- 9.6.5 Shop drawings, samples and other submittals for equipment or systems that are interrelated, i.e. designed by or affecting more than one A/E discipline must be approved by all applicable disciplines before submittal to the CM.

9.7 Substitutions, Equals and/or Deviations

- 9.7.1 The GC shall submit any proposed substitutions, equal(s) and/or deviation(s) from the specified materials and/or design to the CM prior to bid. The CM shall convey this information to the A/E.
- 9.7.2 Within seven (7) working days after receiving the submittal from the CM, the A/E and/or Design Team shall take the GC request and provide the CITY with an independent, objective detailed analysis and recommendation relative to the initial and long-term impacts of using the proposed substitutions(s), equal(s) or deviation(s) on the Project. At minimum, this analysis shall include the following:
 - 9.7.2.1 Manufacturer's (or system's) history and stability, current service and product reputation, product age, current and projected availability of replacement systems, equipment, parts and/or materials.
 - 9.7.2.2 Overall impact on construction methods, sequencing and scheduling (including lead times).
 - 9.7.2.3 Operations and maintenance impact including a life cycle cost analysis that incorporates initial cost savings, energy use, maintenance and replacement costs, potential and/or disruption to operations due to earthquake damage, etc.

- 9.7.2.4 Potential credits or additional costs to be realized from the use of the proposed equal(s) or deviation(s).
- 9.7.2.5 User safety requirements.
- 9.7.2.6 Impact on Project related design for the disabled.
- 9.7.2.7 Energy conservation impacts.
- 9.7.2.8 The CITY reserves the right not to accept any proposed substitution(s) and/or deviation(s).

9.8 Color & Finish Material Submittals:

- 9.8.1 The GC will be requested to prepare and submit to the CM, Color and Finish Materials sample boards, manufacturer brochures and data, which respond to the Color, and Finish Material Schedules specified by the A/E as described in these guidelines in **Section 13.2 "Table of Required Specifications-Contents"**. The CM will forward the Color and Finish Material submittals to the A/E for review, distribution and approval. The A/E shall specify in the bid documents that these Schedules are normally submitted by the GC to the CM for review and approval to allow adequate time for review and procurement of materials, not to impact the construction schedule as submitted by the GC and following commencement of construction or as otherwise required by the construction contract documents.
- 9.8.2 The A/E shall assist the Project Manager (PM) and CM with the review and approval of Color and Finish Schedules with the CITY, Tenant (as necessary) and other agencies.
- 9.8.3 Any alternatives to the contractually defined Color and Finish Materials Schedules shall follow the procedures defined in these guidelines.

9.9 Construction Progress Reports:

When requested the A/E shall assist the CM in preparing and providing written reports to the CITY, reporting and evaluating the progress and status of construction activities on the Project. When the CM requests assistance with a report it shall be submitted to the CITY within the timeframe requested by the CITY, or as otherwise defined in the Agreement. When requested by the CITY the A/E shall prepare a report to the PM that shall include at a minimum the following:

- 9.9.1 Separate sections, containing:
 - 9.9.1.1 Narrative review of all A/E design activities and decisions that occurred during the month.

- 9.9.1.2 Status of shop drawing and sample submittals and notify the CM of pending or outstanding submittals that have potential schedule impacts.
- 9.9.1.3 Status of outstanding review and written response to RFI's, and CCO's.
- 9.9.1.4 Updated A/E project budget.
- 9.9.1.5 Other Project issues and decisions as necessary.

9.10 Additional Services During Construction:

- 9.10.1 When requested by the CM the A/E shall assist the CITY in reviewing the acceptability and adequacy of all test reports, materials, equipment, construction methods and systems employed or applied as the case may be to the Project and prepare any other special reports requested by the CITY. The A/E will not be responsible for the Contractor's means and methods but shall be responsible for advising the CITY of the adequacy and acceptability of the Contractor's means and methods.
- 9.10.2 The A/E shall, when requested by the CM, assist the CITY with the review of all-applicable guarantees, operating and maintenance instruction books, diagrams and charts pertaining to the maintenance and operation of the equipment and machinery installed in the Project. The A/E shall assist with the verification that all required maintenance and operations training and manuals prior to substantial completion of the Project is scheduled and achieved as outlined in the Agreement. All training activities shall be indicated on the approved project schedule.
- 9.10.3 The A/E and Design Team shall assist the CITY in conducting all final acceptance inspections of the Project and advise the CITY as to when any identified deficiencies or unacceptable work of the contractor must be corrected and available for re-inspection pending final acceptance.

9.11 As-Built / Record Set Drawings:

The GC shall maintain for the duration of the construction, a set of redline "As-Built" drawings at the job-site. Upon completion of the construction phase, the CM will forward the "As-Built" drawings to the A/E.

Within thirty (30) calendar days after receiving the GC's "As-Built" from the CM, the A/E shall provide the CITY a final Record Drawing set, incorporating all "As-Built" conditions represented on the job-site redline "As-Built" drawings. The Record Drawings shall be in the CITY's format and shall include the following:

- 9.11.1 One original set of Record Drawings of the Project and one updated copy of the Technical Specifications, which incorporate and show all changes made during construction based upon the GC's, CM's, and A/E's records. Each sheet of these drawings shall be prominently labeled "As-Built", as shall the cover of the Technical Specifications. Scanned or electronically prepared copies of the As-Built Drawings and updated Technical Specifications shall not be acceptable.
- 9.11.2 One identical electronic copy of the Record Drawings, and updated Technical Specifications, in the electronic media format specified in **Section 10 "Deliverables"** of these Guidelines. The electronic copy of all documents shall be delivered to the CITY on a CD-ROM in the formats required in these guidelines in **Section 10.1 "Format and Software"**.

These documents and the CD shall become the property of the CITY.

9.12 Deficiencies during Warranty Period

During the warranty compliance period, the A/E and Design Team may be retained by the CITY to provide additional design services reasonably determined by the PM or CM for Warranty Compliance, as necessary to resolve problems arising out of deficiencies identified during and after construction.

10.0. DELIVERABLES:

10.1 Format & Software:

All required documents to be submitted by the Programming Consultant, A/E and Design Team to the CITY shall be presented in printed form as well as supplied on a CD-ROM, formatted for PC Windows XP Operating System or later version being used the CITY, using the following programs (verify and provide current versions used by CITY):

- 10.1.1 Microsoft Word: documents, letters, memos, transmittals, specifications, etc
- 10.1.2 Microsoft Excel: spreadsheets, budgets, and graphs.
- 10.1.3 Microsoft Project, or Primavera Systems: project schedules, timelines.
- 10.1.4 Microsoft Access: databases, project contacts list, vendor list.
- 10.1.5 Microsoft PowerPoint: slide show and multi-media presentations.

- 10.1.6 Microsoft Publisher: desktop publishing, newsletters, brochures, and media marketing materials.
- 10.1.7 Autodesk AutoCAD/Civil 3D: architectural & engineering documents, drawings, plans, details. *Layering and format to comply with current version of the "CITY Engineering Division CADD Drafting Standards".
- 10.1.8 Adobe Acrobat: Archive pdf file format of all required documents and drawings in these guidelines

Any other software programs that the Programming Consultant, A/E and Design Team elect to use for deliverables must be submitted for approval by the CITY in writing prior to using the software. If such approval is not granted by the CITY in writing, then the Programming Consultant, A/E and Design Team shall use the software and computer platform listed above.

10.2 Required Document Submittals:

The A/E and Design Team shall submit the number of full and half size sets as determined by the CITY during negotiations, and (1) electronic CD-ROM copy of the following documentation to the CITY PM and/or CM (as appropriate), for distribution, review and approval by the CITY, the Tenant (as necessary), user groups, occupants, commissions, and any other appropriate reviewing bodies:

- 10.2.1 Basis of Design Report (BDR) as outlined in these guidelines, in **Section 11.0 "Table of Required Reports."**
- 10.2.2 Drawings as outlined in these guidelines, in **Section 12.0 "Table of Required Drawings."**
- 10.2.3 Specifications as outlined in these guidelines, in **Section 13.0 "Table of Required Specifications."**
- 10.2.4 Budgets as outlined in these guidelines, in **Section 14.0 "Table of Required Budgets."**
- 10.2.5 Schedules as outlined in these guidelines, in **Section 15.0 "Table of Required Schedules."**
- 10.2.6 And any other reasonable materials requested by the CITY.

10.3 Schedule of Required Documents

The A/E and Design Team shall submit all of the required documents in accordance with the requirements of **Section 12.0 "Table of Required**

Drawings” in these guidelines, at the following intervals during the design phases and after the completion of the construction phase:

- 10.3.1 Programming/Planning completed.
- 10.3.2 SD 50% completed.
- 10.3.3 SD 100% completed.
- 10.3.4 DD 50% completed (if requested by the CITY).
- 10.3.5 DD completed.
- 10.3.6 CD's 50% completed.
- 10.3.7 CD's 90% completed (Building Department Submittal).
- 10.3.8 CD's 95% completed (Building Department Submittal).
- 10.3.9 CD's 100% completed (Building Department Approved).
- 10.3.10 Spec Read (prior to advertising for Bidding).
- 10.3.11 "As-Built-Record set (after substantial completion of construction).

11.0 TABLE OF REQUIRED REPORTS

The following table provides detailed descriptions of the reports and information required to be provided by the A/E and Design Team during the various Design Phases of the project.

Item #	Table 11 Required Reports Report Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
11.1	BASIS OF DESIGN REPORT (BDR) The Basis of Design Report is intended to document the entire Design process for all disciplines. The BDR is a mandatory design submittal. The BDR shall include but not be limited to the contents as outlined below:					
11.2	Summary Program Analysis	X		X		
11.3	Summary Program Verification Report		X	X		X
11.4	Site Analysis	X		X		
11.5	Detailed Design Analysis: by discipline			X		X

11.2 SUMMARY PROGRAM ANALYSIS:

The Summary Program Analysis documents the A/E and Design Team's understanding of the Program and the resulting philosophy and design approach used in reaching the proposed design solutions. This analysis includes summaries of the program analyses prepared by each of the respective design disciplines involved in preparing the Design Documents – including those retained under separate contract by CITY to provide project related materials.

11.2.1 **Brief statement:** In their own words, the A/E and Design Teams understanding of the overall program requirements.

11.2.1.1 **Building Space:** gross building size, building efficiency, floor size.

11.2.1.2 **Parking:** total parking spaces, number of public spaces, number of staff spaces, code requirements, handicapped, carpool spaces, compact car spaces.

- 11.2.1.3 **Site:** site coverage, future expansion potential, site landscaping and aesthetic treatments, site access (vehicular and public transit) etc.
- 11.2.1.4 **Summary:** of the Program analyses developed by each discipline as required in **Section 11.4** of these guidelines.
- 11.2.2 **Special Issues:** Discuss how special issues of concern have been addressed.
 - 11.2.2.1 **Security Systems:** overall site security, internal building security, parking lot security, use of lighting, use of electronic versus manned surveillance, building and site access control points, landscaping, building elements.
 - 11.2.2.2 **Code and Statute Compliance:** compliance source and authority for any exemption or variance, certification in writing that the final (100% Level) plans submitted comply with and have obtained the approval of all appropriate jurisdictional agencies, and that all permits can be obtained by appropriate contractors.
 - 11.2.2.3 **Green Building/Energy Conservation/Management:** "green building" design systems and equipment, use of passive systems, "smart" building control systems. Life Cycle and V/E comparison of initial systems costs, operating costs and, quantification of savings over time.
 - 11.2.2.4 **Plan and Vertical Irregularity Analysis:** impact of the proposed building configuration and character on structural systems, wind and seismic resistance.
 - 11.2.2.5 **HAZMAT Requirements:** Summation of the investigations conducted and a description of the results or actions that have been initiated completed, or need to be addressed.
 - 11.2.2.6 **Environmental Documentation Considerations and Concerns:** Discussion of any items identified in the project Environmental Documents impacting development of the site and/or building.
 - 11.2.2.7 **Mitigation Requirements:** Discussion of considerations given and actions taken to resolve all Environmental Document issues including all project related mitigation requirements.
- 11.2.3 **System Requirements:** A summary/overview of the identified system requirements. The standards applied to the project and a description of the materials used and the material standards applied on the project.
- 11.2.4 **Operation and Maintenance:** Report on the integration of operating and maintenance considerations into the building and site design and the standards applied.

11.2.5 **Value Engineering:** A summary of all value engineering activities or options. Results and recommendations including the overall life cycle cost analysis and total savings identified.

11.2.6 **Construction Budget/Cost Analysis:** Summary comparison of the construction cost estimate for the design presented in the present design phase documents with the original project budget and identifies reasons for any variance.

11.3 **SUMMARY PROGRAM VERIFICATION REPORT:**

The summary program verification report will be a comparison of the level of compliance the proposed design solutions have with the programmed needs and applicable codes for the project.

11.3.1 **Program Requirements:** Tabular-listing comparing the approved program requirements with the present design phase solutions – reporting on any deviations from the approved program and reasons for the deviation.

11.3.2 **Summary list of applicable codes, regulations and standards:** List all known regulation requirements that apply to the project and all agencies that must be consulted including but not limited to those listed below. Certify that the Design Documents comply with and have been reviewed and approved by all concerned jurisdictional agencies. Provide a rationale and the source of any approval for deviations from established codes, regulations and standards.

11.3.2.1 **Codes:** Building, Fire, Plumbing, Mechanical, Electrical, Health, etc.

11.3.2.2 **Regulations/Ordinances:** ADA. Title 24. CAL: OSHA. Local Zoning.

11.3.2.3 **Applicable Governmental Requirements/Reviews:** City of Long Beach, LB Fire Department, and CITY.

11.3.2.4 **CITY A/E Design Manuals and Standards:** Public Works, Flood Control, Long Beach Police Department, and Long Beach Airport Safety, CITY design criteria and standard plans, CITY Electrical Standards, and any other appropriate CITY Manuals or Standards.

11.3.2.5 **Established Industry Standards:** CSI (Construction Specifications Institute). UL (Underwriters Laboratories). ANSI (American National Standards Institute). NEMA (National Electrical Manufacturers Association).

11.4 **SITE ANALYSIS:**

Prepare a report analyzing and evaluating the project site as outlined below, if a site analysis is included in the architectural program. Provide a narrative analysis

validating the same and/or outlining any discrepancies/deviations to be considered during design. Incorporate a summary discussion of the key design related issues identified by CITY – supplied consultant materials or reports.

- 11.4.1 **General Site Information:** such as location, description, and history, surrounding development, future development.
- 11.4.2 **Site Topography:** Discussion of site topography and its impact on or incorporation into the design of the site, building and improvements, including site hydrology and drainage and flood plain considerations. Identify the site location on regional and local area maps indicating major features and/or roadways.
- 11.4.3 **Site Geology:** Discussion of the site geology, site soils and site geotechnical characteristics as they relate to and impact upon development of the site and building design.
- 11.4.4 **Site Seismic Analysis:** Describe the sites seismic history, current condition, seismic zone classification and any special seismic measures required in the project design.
- 11.4.5 **Site Hazmat Issues:** Summarize the research process applied by the CITY's consultant to identify the site's HAZMAT history and conditions including the primary information sources. Identify any findings that may impact the project design.
- 11.4.6 **Site Weather Analysis:** If required by the CITY, present a climatic and weather history of the site by month for the last 10 years that will include, but not be limited to:
 - 11.4.6.1 **Area Temperatures:** high, low, average, extremes and wind: chill factors
 - 11.4.6.2 **Humidity:** high, low, average and extremes for both wet and dry bulb
 - 11.4.6.3 **Solar Design Considerations:** site latitude, hours of daylight and sun angles, green building design
 - 11.4.6.4 **Area Rainfall:** low, high, average and extreme runoff/flooding design considerations
 - 11.4.6.5 **Wind Conditions:** wind rose, prevailing directions, low, high and average velocities and extremes impacting the building and site design
 - 11.4.6.6 **Fog Conditions:** density and/or degree of visibility reduction, frequency, and temperatures.
 - 11.4.6.7 **Barometric values/information**
- 11.4.7 **Utilities:** If required by the CITY, provide location and availability of all existing utilities and services to serve the site. Include telecommunications, power, water, gas/other fuels, sewer and security (fire, law enforcement).

- 11.4.8 **Land Use Zoning:** Description of current use of the property, surrounding property uses, current city zoning requirements and restrictions.
- 11.4.9 **Environmental Documents Impact Assessment:** Summary discussion of the Environmental Documents (if available) identifying any findings impacting the project design i.e. increased traffic accessing the site. Traffic circulation impact on-site off-site parking restriction, emergency/fire sites access routes.
- 11.4.10 **Off-Site Services and/or Requirements:** Identification of any activities necessary to provide utility services or access to the site, street/road development, utility system extension, expansion of existing infrastructure. including a discussion of the project schedule and cost implications.
- 11.4.11 **Security Access and Control System (SACS) Requirements:** Identification of any activities necessary to provide and maintain existing SACS extension, expansion of existing SACS and phasing during interim construction, including a discussion of the project schedule and cost implications.

11.5 DETAILED DESIGN ANALYSIS:

The A/E and each lead member of the Design Team shall prepare a detailed design analysis by discipline which will include, but not be limited to the following:

- 11.5.1 **General Report Requirements:** (for A/E and all Design Team disciplines)
 - 11.5.1.1 **Program analyses:** Statement of overall understanding of those project elements and requirements impacting each disciplines design.
 - 11.5.1.2 **Program Verification:** Discussion of the effects and results of the analyses made to confirm the reasonableness of the program requirements.
 - 11.5.1.3 **Codes or Standards of Specific Application:** Listing of all codes and/or standards applicable to the project for this discipline by title, chapter, section, paragraphs and version.
 - 11.5.1.4 **Site Considerations:** Listing of site issues specific to each individual discipline
 - 11.5.1.5 **Design Analyses:** Shall discuss and include all calculations, illustrations, and any specifications used to develop and validate the alternatives considered, recommended and approved for use on the project. As required these shall be supplemented with drawings.
 - 11.5.1.6 **Design Criteria Applied:** Project complies with existing applicable CITY standards for configurations, materials, equipment and controls where applicable.

- 11.5.1.7 **Develop System Alternatives and Diagrams:** As determined by the CITY, each Discipline shall provide an appropriate number of unique designs that meet the functional design requirements to be prepared and evaluated for all major related systems and elements of the project.
- 11.5.1.8 **Comparison Of The Alternatives:** A description and analyses of how the proposed site and building configuration and orientation functionally support the building program and operations, discussions will include but not be limited to as appropriate.
 - 11.5.1.8.1 Concept discussion and analyses
 - 11.5.1.8.2 Description of system types and system configurations
 - 11.5.1.8.3 Advantages and disadvantages of each concept
 - 11.5.1.8.4 Impact of infrastructure condition on potential future site or building development
 - 11.5.1.8.5 Special requirements, conditions and considerations
 - 11.5.1.8.6 Potential impact on other project elements or disciplines
- 11.5.1.9 **Value Engineering (VE) and Life Cycle Cost Analysis:** For all CSI Divisions specified by the CITY, that represent a substantial percentage of the total estimated construction cost.
 - 11.5.1.9.1 Identification of initial investment cost
 - 11.5.1.9.2 Estimate of the useful life of systems and/or components
 - 11.5.1.9.3 Estimates of applicable annual costs for energy, operations, maintenance, services, replacement and spare parts
 - 11.5.1.9.4 Life Cycle comparison of total initial cost(s) and annual operations(s) & maintenance cost(s)
- 11.5.1.10 **Analysis of Materials and Equipment:**
 - 11.5.1.10.1 Lead times/availability
 - 11.5.1.10.2 Maintenance and operating characteristics
 - 11.5.1.10.3 Compatibility with current CITY materials and equipment standards
- 11.5.1.11 **Recommended solutions** and/or selections with the rationale for any deviations or changes from the original program.

11.5.2 Civil Report Requirements:

As required, the Civil Reports shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

11.5.2.1 Program analyses: of parking spaces required, average and peak site occupancy, site and building development constraints.

11.5.2.2 Site Considerations:

11.5.1.2.1 Surrounding Area: Impact of vehicle and pedestrian circulation on surrounding areas and development, street parking, site parking, lighting spill, building shading and view impacts.

11.5.1.2.2 Utility Requirements: Availability and capacity of utilities, location of site connections, and the need to relocate any existing utilities.

11.5.2.3 Design Criteria Applied:

11.5.2.3.1 Site Circulation Traffic: Access, vehicle, pedestrian, disabled, public transit, emergency equipment, parking, signalization

11.5.2.3.2 Security: Guard shack, fencing, and bollards, CCTV, SACS, etc.

11.5.2.3.3 Grading: Soil and slope stability and existing land fills.

11.5.2.3.4 HAZMAT

11.5.2.3.5 Seismic Zone 4: design, liquefaction

11.5.2.3.6 Drainage: NPDES, SWPPP and BMP requirements, hydrological study, storm drains, structures and site water retention.

11.5.2.3.7 Site Structures and Features

11.5.2.3.8 Paving

11.5.2.3.9 Landscaping and Irrigation

11.5.2.3.10 Site Utilities: water, (domestic, fire, irrigation), gas & other fuels, communications (phone, data, security), power and sanitary sewer.

11.5.2.4 Develop System Alternatives and Diagrams: As required by the CITY, for each Civil issue representing a substantial percentage of the total estimated civil site construction cost, including but not limited to: concrete versus asphalt paving, water retention basins versus dry wells, area drains versus trench drains at driveways.

11.5.3 Architectural Report Requirements:

As required, the Architectural Report shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

- 11.5.3.1 **Program Analysis:** of building size, adjacencies, operating functional needs, minimum clearances, site constraints, security needs, types of space, energy conservation, building orientation, plan and vertical regularity.
- 11.5.3.2 **Site Considerations:** including land use plan and percentages for each type of use and lay out of the infrastructure system.
- 11.5.3.3 **Design Criteria Applied:**
 - 11.5.3.3.1 **Building Footprint and Floor Plan:** Square feet per floor, building efficiency ratios, tenant usable space per floor, comparison of programmed space to designed space. "Aesthetic" design related space losses.
 - 11.5.3.3.2 **Relationships and Adjacencies:** of functional areas, public and staff/secured circulation, public versus staff ingress and egress, life safety provisions.
 - 11.5.3.3.3 **Green Building Requirements:** Unless exempted, all new municipal buildings in the City of Long Beach shall fully comply with the **City of Long Beach "Green Building Policy for Municipal Buildings"**
 - 11.5.3.3.4 **Massing and Stacking Analysis:** Include site and building mass/block modeling and/or CADD generated fly-by simulations as appropriate and as directed by the CITY
 - 11.5.3.3.5 **Building Envelope and Fenestration:** Rhythms and patterns, Irregular (curved/angled) building shapes, modules, material colors, reflectance, energy efficiency, maintenance, durability, standard versus non-standard, special order and imported materials.
 - 11.5.3.3.6 **Scale and Relationship:** of project elements to the site and surrounding developments.

- 11.5.3.3.7 **Vertical/Horizontal Circulation:** Code analysis of elevator, stair, and corridor exiting requirements. Use of elevators, escalators and dumb-waiter systems, amount of building space dedicated to staff and public circulation corridors, fire corridors and assembly areas.
- 11.5.3.3.8 **Interior Environment and Treatment:** Use of materials, textures, finishes and colors to delineate and define spaces and create appropriate environments for the proposed uses, as well as providing sound and light control and attenuation.
- 11.5.3.3.9 **ADA & Title 24 Disabled Requirements:** Adherence to and considerations for disabled accessibility.
- 11.5.3.3.10 **Flexibility and Adaptability:** of the design for future expansion of buildings or changes in functions to include additional staffing and functions as well as reorganizing functions.
- 11.5.3.4 **Develop System Alternatives and Diagrams:** As determined by the CITY, for each major architectural element that represents a substantial percentage of the construction cost, including but not limited to: building configurations, site massing, building character and design, visual statements, exterior treatments, use of materials, integration and use of existing site features.

11.5.4 Structural Report Requirements:

As required, the Structural Report shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

- 11.5.4.1 **Program Analysis:** of floor loading, building heights, soil conditions, seismic considerations, column spacing/clear heights, vertical transportation.
- 11.5.4.2 **Site Considerations:** discussion and interpretation of soils and geotechnical materials, but not limited to:
 - 11.5.4.2.1 **Seismic History & Liquefaction Analysis**
 - 11.5.4.2.2 **Geotechnical Data**
 - 11.5.4.2.3 **Site Stability**
 - 11.5.4.2.4 **Soil Materials**

11.5.4.2.5 **Specifications**

11.5.4.3 **Design Criteria Applied:** which also comply with existing applicable CITY standards for configurations, material, equipment and controls where applicable.

11.5.4.3.1 **Seismicity & Liquefaction Analysis**

11.5.4.3.2 **Live Loads** (Floor and Roof)

11.5.4.3.3 **Essential Facility Importance Factor**

11.5.4.3.4 **Structural System**

11.5.4.3.5 **Conceptual Foundation Plan** and system description

11.5.4.3.6 **Conceptual Floor and Roof Framing Plans** and system

11.5.4.3.7 **Conceptual Lateral Load Resisting System:** elevations and system description

11.5.4.3.8 **Impact of Building Envelope** and shape on the performance of the system

11.5.4.3.9 **Supporting Calculations**

11.5.4.4 **Develop System Alternatives and Diagrams:** As required by the CITY, for each major structural element of the project that represents a substantial percentage of the construction cost, including but not limited to: cast-in-place concrete versus pre-cast concrete, structural steel frame versus reinforced concrete structural members, piles versus caissons.

11.5.5 **Mechanical Report Requirements:**

As required, the Mechanical Report shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

11.5.5.1 **Program Analysis:** Statement of overall understanding of those project elements and requirements impacting mechanical engineering, i.e. building population heat generation equipment, temperature, humidity ranges, noise attenuation.

11.5.5.2 **Site Considerations:** Building orientation, solar greenhouse effect and configuration air quality.

11.5.5.3 **Design Criteria applied:**

11.5.5.3.1 **Occupancy Type, Density and Schedule**

- 11.5.5.3.2 **Temperature, Humidity and Air Movement**
- 11.5.5.3.3 **Indoor Air quality:** Ventilation and Filtration
- 11.5.5.3.4 **California Title 24 Energy Standards Compliance**
- 11.5.5.3.5 **Energy Conservation and Green Building Requirements**
- 11.5.5.3.6 **Facilities Environmental Resource Management**
- 11.5.5.3.7 **Load Calculations:** by seasons, hourly
Heating/Cooling, load profile for the peak calendar days

11.5.4.4 **Develop System Alternatives and Diagrams:** As required by the CITY, prepare unique mechanical system alternatives that functionally meet the requirements of each major mechanical system and element of the project, which represents a substantial percentage of the construction cost including but not limited to: building orientation impact, co-generation, shading devices, building hvac systems, building envelope materials, thermal energy storage, energy conservation programs. All energy simulation analysis shall be processed with a CITY approved trace energy simulation program.

11.5.6 **Plumbing Report Requirements:**

As required, the Plumbing Report shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

- 11.5.6.1 **Program Analysis:** Statement of overall understanding of those project elements and requirements impacting the project plumbing design i.e. building occupancy availability, capacity of utilities infrastructure, site constraints.
- 11.5.6.2 **Site Considerations:**
 - 11.5.6.2.1 Availability capacity of utilities and infrastructure
 - 11.5.6.2.2 Consideration for future site development
- 11.5.6.3 **Design Criteria Applied:** which also comply with existing applicable CITY standards for configuration materials, equipment and controls where applicable:
 - 11.5.6.3.1 **Performance** and operational requirements
 - 11.5.6.3.2 **Facility population**, operation and projected growth
 - 11.5.6.3.3 **Water analysis** of appropriate sources and supplies

11.5.6.3.4 **Load analysis**

11.5.6.3.5 **Resource conservation**

- 11.5.6.4 **Develop System Alternatives and Diagrams:** As required by the CITY, prepare unique plumbing design alternatives that functionally meet the requirements of each major plumbing system and element of the project, which represents a substantial percentage of the construction cost including but not limited to: sewer systems (sanitary and storm water), potable water distribution, and water conservation fixtures. Describe system types and configurations with sufficient data to provide to the respective utility company for analysis and preliminary operating and installation cost estimates.

11.5.7 **Fire Protection Report Requirements:**

As required, the Fire Protection Reports shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

- 11.5.7.1 **Program Analysis:** statement of overall understanding of those project elements and requirements impacting fire protection including type of construction, building occupancy, availability and capacity of infrastructure, constraints, and specifically addressing adequacy of water supply and fire flow to the site.

11.5.7.2 **Site Considerations:**

- 11.5.7.2.1 Availability capacity of infrastructure
- 11.5.7.2.2 Disposition and building massing
- 11.5.7.2.3 Considerations for future site development

- 11.5.7.3 **Design Criteria Applied:** which also comply with existing applicable CITY standards for configurations, materials, equipment, and controls where applicable.

- 11.5.7.3.1 **Performance** and operational requirements
- 11.5.7.3.2 **Facility population**, operation, and project growth
- 11.5.7.3.3 **Water analysis** (if appropriate)
- 11.5.7.3.4 **Fire flows**
- 11.5.7.3.5 **Load analysis**

- 11.5.7.4 **Develop System Alternatives and Diagrams:** As required by the CITY, prepare unique fire protection design alternatives that meet the functional requirements of the fire safety systems, which

represents a substantial percentage of the construction cost including but not limited to: wet standpipe versus dry standpipe systems and fire water storage reservoir, unless a specific fire system design is directed by the jurisdictional agency.

11.5.8 Electrical Report Requirements:

The Electrical Report shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

11.5.8.1 Program Analysis: Statement of overall understanding of those project elements and requirements impacting electrical engineering i.e. building size, lighting levels, special motorized equipment, communications, security and other low voltage systems as ups requirements.

11.5.8.2 Site Considerations:

11.5.8.2.1 Availability, Capacity of infrastructure

11.5.8.2.2 Disposition and building massing

11.5.8.2.3 Considerations for future site development

11.5.8.3 Design Criteria Applied: Which also comply with existing applicable CITY standards for configurations, materials, equipment, and controls where applicable.

11.5.8.3.1 **Service Type** (size and voltage)

11.5.8.3.2 **Performance** and operational requirements

11.5.8.3.3 **System Growth** allowance

11.5.8.3.4 **Energy Conservation**

11.5.8.3.5 **Interior Environment**

11.5.8.3.6 **Emergency Back-up Systems:** for security systems, computers and communication systems, exit lighting, water and power

11.5.8.3.7 **Load Analysis and Calculations** (normal and emergency)

11.5.8.4 Develop System Alternatives and Diagrams: As required by the CITY, prepare unique electrical system design alternatives that meet the functional requirements of the electrical systems and elements, which represents a substantial percentage of the construction cost including but not limited to: lighting, power distribution, emergency power (capacity and distribution) energy conservation, special systems, communications, electronics, security and other low voltage requirements, elevators, escalators,

dumbwaiters, data processing/computers, building environmental automation systems.

11.5.9 Landscape & Irrigation Report Requirements:

As required, the Landscape and Irrigation Report shall contain all of the requirements in **Section 11.5.1 "General Report Requirements"** in these documents, and the following:

11.5.9.1 Program Analysis: Statement of overall understanding of those project elements and requirements impacting landscaping design i.e. water/energy conservation, maintenance, project budget, site or building development constraints.

11.5.9.2 Site Considerations:

11.5.9.2.1 Soils Conditions

11.5.9.2.2 Coverage: statutory requirements, density.

11.5.9.2.3 Site/Facility Orientation: solar/climatic, entrance

11.5.9.2.4 Site Art: Use of site art monuments

11.5.9.2.5 Occupant/Visitor use of landscape features, i.e. dining options, park/campus features.

11.5.9.3 Design Criteria Applied: which also comply with existing applicable CITY standards for configurations, materials, equipment, and controls where applicable.

11.5.9.3.1 Use of species indigenous to the area

11.5.9.3.2 Available static water pressure and pressure loss

11.5.9.3.3 Use of landscape elements for passive energy conservation

11.5.9.3.4 Minimizing ongoing maintenance cost i.e. plant replacement, water use, staff labor, mowing, pruning, clean up.

11.5.9.4 Develop System Alternatives and Diagrams: As required by the CITY, prepare unique landscaping and irrigation design alternatives that meet the functional requirements of the landscaping and irrigation systems and elements, which represents a substantial percentage of the construction cost including but not limited to: plant groups and types, recycled irrigation water, automated irrigation systems.

12.0 TABLE OF REQUIRED DRAWINGS

At the completion of each design phase, the A/E and Design Team will be required to provide accurately scaled and dimensioned drawings prepared in accordance with the **"CITY Engineering Division, CADD Drafting Standards"** and generally excepted standards of the industry which illustrate the overall character and intent of the project, the use of the site and facility, facility system designs and characteristics. The following table lists the minimum acceptable elements that will be included and/or illustrated in the required plan documents for the project.

Item #	Table 12 Required Drawings (General) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.1	General Drawings:					
12.1.1	Title Sheet: As required for the overall Drawing Set the first sheet of Drawings shall contain the following:					
12.1.1.1	Project location and vicinity map	100%				
12.1.1.2	List of all drawings organized by discipline	10%	25%	50%	75%	100%
12.1.1.3	Master list of symbols, legends and abbreviations	25%	50%	75%	100%	
12.1.1.4	List of current applicable Federal, State and City of Long Beach adopted building, fire, safety, electrical, plumbing, mechanical and energy codes	33%	67%	100%		
12.1.1.5	Project directory listing all architectural, engineering and consulting firms. Provide legal name of each firm, state license number with renewal date, address, phone and fax number, e-mail and website data, and key responsible architect, engineer, consultant or project manager of each firm	25%	50%	75%	100%	
12.1.1.6	Project data listing the legal description, proposed building use(s), construction type, overall site and building sq. ft., number of stories and maximum height, number of parking spaces required and provided, and overall scope of work	50%	75%	100%		
12.1.1.7	North arrow, scale and dimensions on every drawing sheet that contains a plan, elevation, side or perspective view illustration - as applicable	100%				
12.1.2	Reference Plans: For each appropriate discipline the first sheet of Drawings shall contain the following:					
12.1.2.1	Index listing of drawings			33%	67%	100%
12.1.2.2	List of symbols, legends and abbreviations			33%	67%	100%
12.1.2.3	Vicinity map and building location	75%	100%			

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (General) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.1.2.4	Certification of compliance with all current applicable Federal, State and City of Long Beach adopted civil, building, fire, safety, electrical, plumbing, mechanical and title 24 energy codes			33%	67%	100%
12.1.2.5	Program compliance and verification analysis, tabulations and notes for the building and site			33%	67%	100%
12.1.2.6	General Notes (applicable notes by discipline)			33%	67%	100%
12.1.2.7	Fire department notes (as required for discipline)		20%	50%	90%	100%
12.1.2.8	Schedules – applicable lists of equipment and/or materials			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Civil) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.2	Civil Drawings: as required, the Civil Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.2.1	Civil Site Plan:					
12.2.1.1	Site legal description – meets, bounds, and section, as provided by the CITY	50%	75%	100%		
12.2.1.2	Existing topography – based upon current surveyed conditions	50%	75%	100%		
12.2.1.3	Grades – drainage flow lines (existing and final)	50%	75%	100%		
12.2.1.4	Roads, walks, paving, curbs, buildings and other structures (existing and final)	25%	50%	75%	100%	
12.2.1.5	Parking areas and circulation patterns, dimensions of parking spaces and overall parking lot dimensions	25%	50%	75%	100%	
12.2.1.6	Paving materials and thickness (existing and final)	25%	50%	75%	100%	
12.2.1.7	On-site and off-site locations and sources of all utilities (existing and final)	50%	75%	100%		
12.2.1.8	Special requirements (security, access for the disabled, traffic.)	50%	80%	100%		
12.2.1.9	Dimensions of on-site and off-site improvements	25%	50%	75%	100%	
12.2.1.10	Locations of Soils Investigation test borings	50%	100%			
12.2.2	Civil Demolition and Remediation Plans: (if applicable)					
12.2.2.1	All existing buildings or structures to be remediated or removed	50%	100%			
12.2.2.2	Boundary of all existing areas of soil to be remediated	50%	75%	100%		
12.2.3	Phasing Plan: (if applicable)					
12.2.3.1	Clear definition of all work to be completed in each phase of the project	50%	75%	100%		
12.2.3.2	Indication of fencing and other security measures regarding vehicle and pedestrian access during each phase of the project	50%	75%	100%		
12.2.4	Site Fire Protection and Fire Access Plan: (if applicable)					

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Civil) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.2.4.1	Access and special parking locations for fire department	25%	50%	75%	100%	
12.2.4.2	Location of all fire department equipment, hook-ups, fire hydrants, fire department connections, alarm monitors.	25%	50%	75%	100%	

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Architectural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.3	Architectural Drawings: as required, the Architectural Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.3.1	Site Plan:					
12.3.1.1	Background Site Plan per CITY, Engineering Division Cadd Drafting Standards.	33%	67%	100%		
12.3.1.2	Limits of contract area	50%	75%	100%		
12.3.1.3	Dimensions to property lines for all existing and proposed buildings and major site improvements with dimensions referencing to centerlines of adjacent (or internal) public streets	33%	67%	100%		
12.3.1.4	Site access, circulation and pedestrian safety	33%	67%	100%		
12.3.1.5	Parking and delivery areas (paved and hardscaped)	33%	67%	100%		
12.3.1.6	Landscape and planter areas		50%	75%	100%	
12.3.1.7	On-site locations and sources of all utilities (i.e. sub-station, generators, water and sewer mains, telephone cable boxes.)	33%	67%	100%		
12.3.1.8	Walls, fences, gates, trash and generator enclosures and guard stations	33%	67%	100%		
12.3.1.9	Locations of all flagpoles pole lights, monument signs.		50%	75%	100%	
12.3.1.10	Special requirements (security, access for the disabled, traffic.)	33%	67%	100%		
12.3.1.11	Phasing plans – (if appropriate to the project)	50%	75%	100%		
12.3.2	Architectural Floor Plans:					
12.3.2.1	Background Floor Plans per CITY, Engineering Division Cadd Drafting Standards.	33%	66%	100%		
12.3.2.2	Grid lines and dimensions	33%	66%	100%		
12.3.2.3	Program "Project criteria-scope of work" compliance tabulations / notes for each floor		50%	100%		
12.3.2.4	All room and area names, numbers, and interior clear dimensions	33%	66%	100%		

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Architectural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.3.2.5	Wall locations, dimensions and types	33%	66%	100%		
12.3.2.6	Wall index indicating required fire and acoustical ratings		50%	100%		
12.3.2.7	Door and window locations, door swings, centerline dimensions	33%	66%	100%		
12.3.2.8	Door and symbols with reference to door and window schedules			50%	100%	
12.3.2.9	Elevator shafts, equipment rooms, stairwells, ramps, landings, all required railings, dimensions & clearances		50%	100%		
12.3.2.10	Built-in cabinet and counter locations with symbols with reference to interior elevations and details			50%	75%	100%
12.3.2.11	Electrical and mechanical equipment rooms, janitor closets, with major equipment, sizes and clearances indicated	25%	50%	75%	100%	
12.3.2.12	Plumbing fixtures: locations and required clearances (i.e. sinks, toilets, urinals, mop sinks, water fountains.) <i>Note: Architect may elect to provide enlarged floor plans and interior elevations for details and clarity of Title 24 disabled compliance for restrooms, stairs, elevators, and ramps.</i>		50%	100%		
12.3.2.13	Restroom equipment: (i.e.: toilet partitions, grab bars, toilet paper, soap and paper towel dispensers, trash receptacles.) including restroom fixture symbols, fixture type, number of each type of fixture required, size, manufacturer, model #, special requirements, finish, reference to installation and support details, and special notes			50%	75%	100%
12.3.3	Exterior Elevations: (all exterior sides of building, including courtyards if included)					
12.3.3.1	Outline of each side of building and all fenestration's with overall height and opening dimensions	33%	67%	100%		
12.3.3.2	All exterior materials and finishes – doors (indicating swing direction), windows, wall panels, exposed columns, exposed roofs and awnings with symbols referencing to exterior material and finish colors	25%	50%	75%	100%	
12.3.3.3	Top of each floor and bottom of each ceiling (shown as dashed lines) with floor to floor and overall height dimensions		50%	100%		
12.3.3.4	Top of roof lines with prominent roof mounted equipment (shown dashed)		33%	67%	100%	

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Architectural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
	12.3.3.5 Impact of planters, landscape, site grading, etc on exterior building elevations (shown dashed or solid as appropriate)		33%	67%	100%	
	12.3.3.6 Building signage, address numbers and dimensions		33%	67%	100%	
	12.3.3.7 Detail symbols indicating location of all appropriate exterior finish, door and window opening and waterproofing details				50%	100%
12.3.4	Building Sections and Elevations: (longitudinal and transverse cross sections through major and/or complex areas indicating overall horizontal and vertical support)					
	12.3.4.1 Background Building Sections and Elevations per CITY, Engineering Division Cadd Drafting Standards.	33%	67%	100%		
	12.3.4.2 All slabs, floors, walls, columns, beams, ceilings, roofs, door and window openings, major framing elements. that would be seen in cross section during framing, prior to finishes being installed	33%	67%	100%		
	12.3.4.3 Outline of exterior or building envelope and each floor of building with floor to floor and floor to window sill dimensions	33%	67%	100%		
	12.3.4.4 Detail symbols indicating location of all appropriate architectural details				50%	100%
12.3.5	Roof Plan:					
	12.3.5.1 Reference Roof Plan per CITY, Engineering Division Cadd Drafting Standards (to be used by all other applicable disciplines)	33%	67%	100%		
	12.3.5.2 Grid lines	33%	67%	100%		
	12.3.5.3 Exterior of building and all parapets with overall dimensions		50%	75%	100%	
	12.3.5.4 Skylights, smoke hatches, access hatches, roof mounted equipment and screening. including dimensions		50%	75%	100%	
	12.3.5.5 Roof drain, scupper and overflow locations			33%	67%	100%
	12.3.5.6 Roofing materials, slope and direction of flow			33%	67%	100%
	12.3.5.7 Detail symbols indicating location of all appropriate roof parapet, overhang, canopy, flashing, openings, equipment and screening details				50%	100%
12.3.6	Architectural Reflected Ceiling Plans: (may be done by Architect or Interior Design Consultant)					

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Architectural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.3.6.1	Reflected Ceiling Plans per CITY, Engineering Division Cadd Drafting Standards.		50%	100%		
12.3.6.2	Grid lines		50%	100%		
12.3.6.3	All walls, columns, door and window openings		50%	100%		
12.3.6.4	Room and area names, numbers, and symbol with reference to room finish schedule for ceiling types, height dimensions and finishes		50%	100%		
12.3.6.5	Soffits, exposed beams and other structures located above +7 feet above finish floor, dimensions, and reference to any required fire and acoustical ratings		50%	100%		
12.3.6.6	Ceiling patterns and grids, types and appropriate dimensions		33%	67%	100%	
12.3.6.7	Lighting fixture and hvac grille locations with symbol references to type of fixture or grille			33%	67%	100%
12.3.7	FFE (Fixtures Furnishings & Equipment Plans): (if required, may be done by Architect or Interior Design Consultant)					
12.3.7.1	Fixture, Furniture & Equipment Plans per CITY, Engineering Division Cadd Drafting Standards.			33%	67%	100%
12.3.7.2	Room numbers, and symbol with reference to room finish schedule for finishes			33%	67%	100%
12.3.7.3	Workstations, furniture, millwork/cabinet and equipment layouts, showing all desks, chairs, systems furniture, file cabinets, office and computer related equipment			33%	67%	100%
12.3.7.4	Detail symbols indicating location of all appropriate millwork/cabinetry and specialty built-in details				50%	100%
12.3.8	Interior Elevations: (may be done by Architect or Interior Design Consultant)					
12.3.8.1	Interior Elevations per CITY, Engineering Division Cadd Drafting Standards.			50%	100%	
12.3.8.2	All interior wall materials with symbols referencing to interior material, finish and colors			50%	100%	
12.3.8.3	Doors (indicating swing direction) , windows (indicate opening direction) with symbols referencing to door and window details			50%	100%	

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Architectural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.3.8.4	Height dimensions for all floor to ceiling and soffit heights, wainscot heights, door and window heights, and countertop and millwork heights			50%	100%	
12.3.8.5	Width dimensions for required disabled access clearances at hallways, stairways and in restrooms			100%		
12.3.8.6	Interior signage, materials, size and mounting height to comply with disabled access requirements				50%	100%
12.3.9	Interior Finish Schedule: (may be done by Architect or Interior Design Consultant)					
12.3.9.1	Room finish schedule spreadsheet listing all room and area names and numbers			100%		
12.3.9.2	All interior floor, base, wall, wainscot and ceiling finish materials, finishes and colors and details as needed, including transitions.			33%	67%	100%
12.3.10	Door and Window Schedules and Details:					
12.3.10.1	Doors listed by symbol, type, total number of each door unit, size, number of doors per opening, glazing size and type, hardware set, lock set, references to door details and special notes			50%	75%	100%
12.3.10.2	Door type elevations indicating swing direction, any glazed openings, opening height and width, hardware mounting height and reference symbol to door details			50%	75%	100%
12.3.10.3	Windows listed by symbol, type, total number of each window unit, size, number of glazing lites per opening, references to window details and special notes			50%	75%	100%
12.3.10.4	Door Details per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
12.3.10.5	Window Details per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
12.3.11	Millwork Schedules and Details: (if required, may be done by Architect, Interior Design Consultant or Millwork Cabinetry Sub-contractor)					
12.3.11.1	Millwork and Cabinets listed by symbol, type, total number or linear footage of each unit, size, references to millwork and cabinetry details and special notes				50%	100%
12.3.11.2	Millwork and Cabinet Elevations per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
12.3.11.3	Millwork and Cabinet Details per CITY, Engineering Division Cadd Drafting Standards.				50%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Architectural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.3.13	Architectural Details: (as appropriate, some finish details may be done by either Architect or Interior Design Consultant)					
	12.3.13.1 Architectural Details per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
	12.3.13.2 Details of all conditions of wall assemblies, wall, column and beam furring, soffits, and suspended ceilings				50%	100%
	12.3.13.3 Details of all ramps, stairs, landings, railings, elevators				50%	100%
	12.3.13.4 Details for seismic bracing for suspended ceilings, fixtures and equipment				50%	100%
	12.3.13.5 Details of all floor, wall, roof and skylight, penetration, flashing and waterproofing conditions				50%	100%
	12.3.13.6 Details required for disabled access compliance				50%	100%
	12.3.13.7 Details of any special complex areas, designs or systems transition details.				50%	100%
12.3.14	Architectural Renderings & Models: (as required by the CITY)					
	12.3.14.1 Architectural Renderings: Perspective Exterior & Interior Elevation views which indicate building scale, materials, colors and finishes.	33%	67%	100%		
	12.3.14.2 Architectural Models: 3 Dimensional scale models of proposed building Exteriors	33%	67%	100%		
	12.3.14.3 Virtual Computer Models: 3 Dimensional models that are shown on a Computer monitor or projector screen which indicate building scale, materials, colors and finishes. These can be still images, slide shows, fly over or walk-through movies with appropriate detail to the phase of the design.	33%	67%	100%		

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Structural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.4	Structural Drawings: as required, the Structural Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.4.1	Structural Reference Plan(s):					
12.4.1.1	Schedules including applicable footing, slab, pad, column, beam, shear wall, floor and roof framing schedules				50%	100%
12.4.2	Structural Site Plan: (If Required)					
12.4.2.1	Proposed location of project building(s) and parking structure(s) – if appropriate	50%	100%			
12.4.2.2	Location of test borings investigated in Soils Report	50%	100%			
12.4.2.3	Grades – drainage flow lines (existing and final)	50%	100%			
12.4.3	Foundation Plan(s):					
12.4.3.1	Foundation Plan(s) per CITY, Engineering Division Cadd Drafting Standards.			33%	67%	100%
12.4.3.2	Location, dimensions, size and reinforcement of all piles, grade beams, exterior, interior, and pad footings, and slabs with key references to structural schedules and reference symbol of each condition to appropriate foundation details			50%	75%	100%
12.4.3.3	Location of any special structural anchors with reference symbol to structural detail				50%	100%
12.4.3.4	Locations and length of shear walls with key reference to shear wall schedule			50%	75%	100%
12.4.3.5	Locations, dimensions and reinforcement of any special openings in the slab or footings for equipment or piping by others				50%	100%
12.4.4	Floor and Roof Framing Plan(s):					
12.4.4.1	Floor and Roof Framing Plan(s) per CITY, Engineering Division Cadd Drafting Standards.			33%	67%	100%
12.4.4.2	Location, dimensions, size and reinforcement of all columns, beams, girders, bearing walls, floor and roof slabs with key references to structural schedules and reference symbol of each condition to appropriate framing details			50%	75%	100%
12.4.4.3	Location, dimensions, size and spacing of repetitive secondary framing elements, joists with key references to structural schedules and reference symbol of each condition to appropriate framing details				50%	100%
12.4.4.4	Slab/decking assembly and thickness			100%		

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Structural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.4.4.5	Location of any special structural anchors with reference symbol to structural detail				50%	100%
12.4.4.6	Locations and length of shear walls with key reference to shear wall schedule			50%	75%	100%
12.4.4.7	Locations, dimensions and reinforcement of any special openings in the floor/roof slab for elevators, stairs, equipment, skylights, roof hatches or piping by others			50%	75%	100%
12.4.4.8	Location of floor/roof mounted equipment and screening with reference to weight and wind load studies in structural calculations				50%	100%
12.4.4.9	Reference to typical beam and girder loading and seismic studies in the structural calculations			33%	67%	100%
12.4.5	Building Sections & Elevations: (longitudinal and transverse cross sections through major and/or complex areas indicating overall horizontal and vertical support and the lateral load resisting system					
12.4.5.1	Building Sections and Elevations per CITY, Engineering Division Cadd Drafting Standards.			33%	67%	100%
12.4.5.2	All piles, grade beams, footings, slabs, floors, shear walls, columns, beams, girders, roofs, primary framing elements			50%	100%	
12.4.5.3	Top of exterior grade, top of each floor, shear walls, columns, beams, x-bracing, top of roof, primary framing elements			33%	67%	100%
12.4.5.4	Structural support and reinforcing in exterior bearing walls and surrounding window and door openings			50%	75%	100%
12.4.5.5	Detail symbols of typical structural conditions referencing appropriate structural details				50%	100%
12.4.6	Structural Details:					
12.4.6.1	Structural details per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
12.4.6.2	Pile, grade beam, foundation, slab, floor and roof assemblies and connections				50%	100%
12.4.6.3	Column, beam and girder connections				50%	100%
12.4.6.4	Shear walls, wall openings and framing for all door, window, skylight and roof opening conditions				50%	100%
12.4.6.5	Seismic bracing for all equipment				50%	100%
12.4.7	Structural Calculations:					

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Structural) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.4.7.1	List of current applicable Federal, State and City of Long Beach adopted building and seismic codes and certification of compliance			50%	100%	
12.4.7.2	List of minimum strength standards for all concrete, masonry, structural and reinforcing steel, and any other materials used for structural support			100%		
12.4.7.3	Detailed load analysis and sizing of all primary and secondary horizontal and vertical load bearing structural elements			50%	100%	
12.4.7.4	Detailed wind and/or seismic analysis and sizing of all lateral load bearing structural elements			50%	100%	

Item #	Table 12 Required Drawings (Mechanical) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.5	Mechanical Drawings: as required, the Mechanical Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.5.1	Mechanical Reference Plan(s): When required, the first sheet(s) of Mechanical drawings shall contain the following:					
12.5.1.1	Program compliance and verification analysis, tabulations and notes for the building envelope and each floor including HVAC loads in BTU's, air volumes in CFM, exhaust and make-up return air requirements				50%	100%
12.5.1.2	Schedules/lists of ducting, piping and hvac materials – including sizes, grades and standards				50%	100%
12.5.1.3	Mechanical Equipment Schedules – including mechanical equipment symbols, equipment type, locations, number of each type of equipment required, capacity rating, efficiency rating, size, weight, manufacturer, model #, electrical requirements, finish, reference to installation and support details, and special notes				50%	100%
12.5.1.4	Title 24 Energy Notes, Mandatory Measures, and Building Envelope Compliance Forms				50%	100%
12.5.2	Mechanical Site Plan: (Coordinated with other disciplines and showing)					
12.5.2.1	Location of buildings or rooms required for mechanical systems and equipment			50%	100%	
12.5.2.2	Single line diagram for routing of mechanical ducting and piping systems on site with appropriate duct/pipe sizes and required insulation			50%	100%	
12.5.2.3	Symbol reference to installation and support details, for site mechanical equipment				50%	100%
12.5.3	HVAC Floor Plans, Elevations, Building Sections and Roof Plans: (Coordinated with other disciplines and showing)					
12.E.3.1	HVAC Floor Plans, Elevations, Building Sections and Roof Plan per CITY, Engineering Division Cadd Drafting Standards.			33%	67%	100%
12.5.3.2	Location and symbols referencing all mechanical equipment including fans, condensers, compressors, evaporators, chillers, cooling towers, boilers.			50%	75%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Mechanical) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.5.3.3	HVAC zones, room temperature sensors and thermostat locations and mounting heights, thermal and smoke evacuation zoning				50%	100%
12.5.3.4	Ductwork – indicate double line for sections and mains, single line for branches and air volumes, location and size of all required pipe and duct shafts, Diffuser and VAV box locations and sizes, fire damper locations and types				50%	100%
12.5.3.5	Hot and/or chilled water piping and valves with size and flow direction and capacity				50%	100%
12.5.3.6	Detail symbols at typical HVAC equipment, ducting and piping conditions referencing appropriate mechanical and seismic support details				50%	100%
12.5.4	Multi-Story Requirements: (to be added to the HVAC Floor Plans if required by the Fire Department)					
12.5.4.1	Stair relief valve locations				50%	100%
12.5.4.2	Stair pressurization fan locations				50%	100%
12.5.4.3	Elevator shaft vent locations				50%	100%
12.5.4.4	Smoke evacuation system diagram				50%	100%
12.5.4.5	Sequence of all modes of operation showing the relationships between the sensors and equipment (tabular form is recommended)				50%	100%
12.5.5	Enlarged Equipment Layout Plans: (if required, for Chiller Room(s), Cooling Tower area(s), Boiler Room(s), Fan Room(s), Storage Tank(s). per CITY, Engineering Division Cadd Drafting Standards.					
12.5.5.1	Location, sizes and service/safety clearances for central HVAC equipment located in special areas and rooms with symbol reference to mechanical equipment schedules,			33%	67%	100%
12.5.5.2	Ductwork – indicate double line for sections and mains, single line for branches and air volumes				50%	100%
12.5.5.3	Hot and/or chilled water piping and valves with size and flow direction and capacity				50%	100%
12.5.5.4	Fire damper locations and types				50%	100%
12.5.5.5	Detail symbols at typical HVAC equipment, ducting and piping conditions referencing appropriate mechanical and seismic support details				50%	100%
12.5.6	Air and Water Flow Diagrams:					
12.5.6.1	All HVAC equipment w/ reference to Mechanical Equipment Schedule			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Mechanical) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.5.6.2	Air and Water Riser Diagram(s) – indicating sizes, capacity in CFM and GPM for all mains, and overall lengths (required for buildings over 2 stories in height)				50%	100%
12.5.6.3	Chilled Water, Condenser Water, and Hot water Flow Diagrams with pipe sizes and flow volumes (if required)				50%	100%
12.5.6.4	Location of all control sensors and Air Balance				50%	100%
12.5.7	Mechanical Details:					
12.5.7.1	HVAC details indicating all mechanical equipment, ducting, and piping connection conditions per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
12.5.7.2	Seismic support and bracing for all mechanical equipment				50%	100%
12.5.8	Title 24 Building Zone and Envelope Calculations :					
12.5.8.1	Applicable Title 24 energy notes, mandatory requirements and certification of compliance			33%	67%	100%
12.5.8.2	Slab, wall, door, window, floor, and roof assemblies, diagrams, tabulations and calculations			33%	67%	100%
12.5.8.3	HVAC Load summaries – normal and peak by season			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Plumbing) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.6	Plumbing Drawings: as required, the Plumbing Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.6.1	Plumbing Reference Plan(s): When required, the first sheet(s) of Plumbing drawings shall contain the following:					
12.6.1.1	Program compliance and verification analysis, tabulations and notes for the site, overall building and each floor including identifying water loads (GPM), sewer loads (EFU), and gas loads (CFM) with separate itemization for space heating and hot water demands, and minimum plumbing fixture requirements			33%	67%	100%
12.6.1.2	Schedules/lists of piping and plumbing materials – including sizes, grades and standards			33%	67%	100%
12.6.1.3	Plumbing fixture schedules – including plumbing fixture symbols, fixture type, number of each type of fixture required, size, water and sewer loads, manufacturer, model #, electrical requirements, finish, reference to installation and support details, and special notes			33%	67%	100%
12.6.1.4	Schedules for all domestic hot water heaters and booster pumps – including equipment symbols, type, number of each type required, size, weight (full), capacity, connection sizes, manufacturer, model #, electrical, gas, overflow and seismic bracing requirements finish, reference to installation and support details, and special notes			33%	67%	100%
12.6.2	Plumbing Site Plan: (Coordinated with other disciplines and showing)					
12.6.2.1	Locations, type and size of all related off-site and on-site service pit(s) and connection sizes and requirements		33%	67%	100%	
12.6.2.2	Locations, type and size of all underground and above ground tanks, location type and size of all site pumping equipment including pumps, back check flow valves, water mains.			50%	100%	
12.6.2.3	Locations, type and size of all gas meters, and where gas line(s) enter the site and building(s). Locations type and size of all plumbing utility systems between building(s) and the site. Locations, type and size of all sewer mains and storm drain lines leaving the site and the building(s).		33%	67%	100%	

Item #	Table 12 Required Drawings (Plumbing) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
	12.6.2.4 Height of sewer invert elevations at five feet outside the foundation wall, at the street property line and at the street curb directly above the building sewer line		33%	67%	100%	
	12.6.2.5 Symbol reference to installation and support details, for site plumbing equipment and piping				50%	100%
12.6.3	Plumbing Floor Plans, Elevations, Building Sections and Roof Plan: (Coordinated with other disciplines and showing)					
	12.6.3.1 Plumbing Floor Plans, Elevations, Building Sections and Roof Drainage Plan per CITY, Engineering Division Cadd Drafting Standards.			33%	67%	100%
	12.6.3.2 Location and symbols referencing all plumbing equipment including meters, pumps, shut-off and flow valves, tanks.			33%	67%	100%
	12.6.3.3 Storm water system – including all roof and overflow drain locations, types sizes. Sanitary sewer system – including all sewer, drain, and vent locations, types and sizes. Domestic water systems – including all hot and cold water and hot water return (if required) locations, types and sizes. Gas systems – including gas piping locations, types and sizes. Special systems - including gas piping locations, types and sizes.			33%	67%	100%
	12.6.3.4 Location and size of all required pipe shafts and clearances				50%	100%
	12.6.3.5 Detail symbols at typical plumbing equipment, piping conditions referencing appropriate plumbing and seismic support details				50%	100%
12.6.4	Enlarged Restroom Plumbing Plans: (if required)					
	12.6.4.1 Location and fixture symbols referencing all plumbing fixtures in restroom(s) (i.e.: toilets, lavatories, and urinals)			33%	67%	100%
	12.6.4.2 Sanitary sewer system – including all sewer, drain, and vent locations, types and sizes			33%	67%	100%
	12.6.4.3 Domestic water systems – including all hot and cold water and hot water return (if required) locations, types and sizes			33%	67%	100%
	12.6.4.4 Detail symbols at typical plumbing equipment, fixtures and piping conditions referencing appropriate plumbing and seismic support details				50%	100%
12.6.5	Flow and Riser Diagrams: (isometric plans if required)					
	12.6.5.1 Piping flow diagrams with all valves and components to and from water heater and booster pumps				50%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Plumbing) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.6.5.2	Domestic Water Riser Diagram(s) – indicating hot and cold water piping sizes and connection to each plumbing fixture (required for buildings over 2 stories in height)				50%	100%
12.6.5.3	Sewer and Vent Riser Diagram(s) – indicating sewer and vent piping sizes and connection to each plumbing fixture (required for buildings over 2 stories in height)				50%	100%
12.6.6	Plumbing Details:					
12.6.6.1	Plumbing Details indicating typical plumbing equipment and piping connection conditions per CITY, Engineering Division Cadd Drafting Standards.				50%	100%
12.6.6.2	Seismic support and bracing for all plumbing equipment and fixtures				50%	100%

Item #	Table 12 Required Drawings (Fire Protection) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.7	Fire Protection Drawings: as required, the Fire Protection Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.7.1	Fire Protection Reference Plan(s): When required, the first sheet(s) of Fire Protection drawings shall contain the following:					
12.7.1.1	Program compliance and verification analysis, tabulations and notes for the building and each floor including identifying water loads (GPM) for the fire protection system				50%	100%
12.7.1.2	Schedules/lists of fire protection equipment, materials and piping – including sizes, grades and standards				50%	100%
12.7.1.3	Fire Protection equipment schedules – including fixture unit loads, water loads, reference to installation and support details, and special notes				50%	100%
12.7.2	Fire Protection Site Plan: (Coordinated with other disciplines and showing)					
12.7.2.1	Locations, type and size of all related off-site and on-site fire service lines and connection sizes and requirements		33%	67%	100%	
12.7.2.2	Locations, type and size of all existing and proposed fire hydrants, fire department connections, locations of detector check valve, post indicator valve and fire pump room		50%	100%		
12.7.2.3	Locations, type and size of Water source – municipal, pump requirements, location of emergency water tanks or fire pumps (above and/or below grade), energy source, size and connections.		33%	67%	100%	
12.7.2.4	Locations, type and size of all Fire Protection utility systems between building(s) and the site		33%	67%	100%	
12.7.2.5	Emergency accesses fire truck circulation, clearances.		33%	67%	100%	
12.7.2.6	Symbol reference to installation and support details, for site Fire Protection equipment and piping			50%	100%	
12.7.3	Fire Protection Sprinkler Plans (Reflected Ceiling Plan): (Coordinated with other disciplines and showing)					
12.7.3.1	Fire Protection Sprinkler Plans per CITY Engineering Division Cadd Drafting Standards.			33%	67%	100%
12.7.3.2	Location and symbols referencing all Fire Protection equipment including, pumps, shut-off and flow valves, risers and tanks.			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Fire Protection) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
	12.7.3.3 Fire protection water system – including all sprinkler heads, piping types, and sizes				50%	100%
	12.7.3.4 Sensor/alarm locations, types and mounting heights				50%	100%
	12.7.3.5 Detail symbols at typical fire protection equipment, and piping conditions, referencing appropriate fire protection and seismic support details				50%	100%
	12.7.3.6 Special fire protection systems - Identify on drawings the fire protection system for all computer and telecommunications equipment rooms (if required)			33%	67%	100%
12.7.4	Enlarged Fire Pump Room Plan: (if required, per the CITY Engineering Division Cadd Drafting Standards.)					
	12.7.4.1 Location and fixture symbols referencing all fire protection equipment, fixtures and main piping			33%	67%	100%
	12.7.4.2 Detail symbols at typical fire protection equipment, fixtures and piping conditions referencing appropriate fire protection and seismic support details				50%	100%
12.7.5	Fire Protection Riser Diagrams: (if required)					
	12.7.5.1 Fire protection piping flow diagrams with all valves and components to and from fire service main/pump to main shut off valve at each floor (required for buildings over 2 stories in height)				50%	100%
	12.7.5.2 Detail symbols at typical fire protection equipment, fixtures and piping conditions referencing appropriate fire protection and seismic support details				50%	100%
12.7.6	Fire Protection Details:					
	12.7.6.1 Details indicating typical fire protection equipment and piping connection conditions per CITY Engineering Division Cadd Drafting Standards				50%	100%
	12.7.6.2 Seismic support and bracing details for all fire protection equipment				50%	100%

Item #	Table 12 Required Drawings (Electrical) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.8	Electrical Drawings: as required, the Electrical Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.8.1	Electrical Reference Plan(s): The first sheet(s) of electrical drawings shall contain the following:					
12.8.1.1	Schedule list of electrical equipment, outlets, fixtures, conduit and wiring including sizes, grades and standards			33%	67%	100%
12.8.1.2	Single Line Diagram – indicating schematic layout of primary electrical power distribution			33%	67%	100%
12.8.1.3	Panel Schedules - including all power and lighting distribution panels				50%	100%
12.8.1.4	Lighting Fixture Schedule – including light fixture symbol, fixture type, size, number of each fixture type required, manufacturer, model #, lamp type(s), wattage, finish and trim, reference to lighting fixture detail, and special notes			33%	67%	100%
12.8.1.5	Title 24 Energy notes, mandatory measures and signed compliance forms			33%	67%	100%
12.8.2	Electrical Site Plan: (Coordinated with other disciplines and showing the following:)					
12.8.2.1	Location of main serving utility transformer			50%	100%	
12.8.2.2	On-site transformer, pad and enclosure location(s)			50%	100%	
12.8.2.3	Source and routing of all electrical lines, off-site and on-site including the underground and overhead distribution for all site electrical, site lighting, telephone, data, security, CCTV distribution conduits and lines			50%	100%	
12.8.2.4	Telephone and data communications equipment and wiring transmitters			50%	100%	
12.8.2.5	Locations of exterior lighting for parking lot, building entrances and features with symbol referencing lighting fixture schedule			50%	100%	
12.8.2.6	Site security – CCTV controlled entry points, intrusion detectors, alarm equipment and transmitters.			50%	100%	
12.8.3	Power Floor Plan(s): per the CITY Engineering Division Cadd Drafting Standards (Coordinated with other disciplines and showing the following)					
12.8.3.1	Location and height of all electrical equipment including meters, main switchgear, transformers, panels, sub-panels. with required clearance and service dimensions			50%	100%	

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Electrical) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
	12.8.3.2 Type, location and height of all electrical outlets				50%	100%
	12.8.3.3 All power wiring shown from outlet locations with indication of sub panel and circuit number. Conduit size with number and size of wires indicated on each run				50%	100%
	12.8.3.4 Detail symbols of typical electrical conditions referencing appropriate electrical details				50%	100%
12.8.4	Lighting Plan(s): per CITY Engineering Division Cadd Drafting Standards (Coordinated with other disciplines and showing the following)					
	12.8.4.1 Location and height of all electrical equipment including meters, main switchgear, transformers, motor control centers, panels, and sub-panels.			50%	100%	
	12.8.4.2 Type, location and number of all lighting fixtures with reference symbol to lighting fixture schedule			33%	67%	100%
	12.8.4.3 All lighting wiring shown from lighting fixture to j-box to switch or clock locations with indication of sub panel and circuit number. Conduit size with number and size of wires indicated on each run				50%	100%
	12.8.4.4 Detail symbols at typical lighting fixture conditions referencing appropriate lighting and seismic support details				50%	100%
12.8.5	Electrical Distribution Diagrams, Schedules and Elevations:					
	12.8.5.1 Single Line Diagram – indicating schematic layout of primary electrical power distribution and overall load summary			50%	100%	
	12.8.5.2 Electrical Riser Diagram(s) – indicating riser conduit sizes, and overall lengths (required for buildings over 2 stories in height)			33%	67%	100%
	12.8.5.3 Special Systems - Single Line Diagrams (if required) for security systems, CCTV, low voltage, ground loops, data processing/IS (cat-5 and fiber), telecommunications, phone.			33%	67%	100%
	12.8.5.4 Schematic Wiring Diagrams of Control Systems (if required)				50%	100%
	12.8.5.5 Switchgear, Electrical Equipment and Panel Schedules - including all motor control centers, power and lighting distribution panels			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Electrical) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.8.5.6	Switchgear, Motor Control Center, Power and Lighting Panel Elevations including floor, wall and ceiling lines with floor to ceiling height, equipment layout, size and clearance dimensions, size of conduit between all equipment and detail symbols at electrical equipment support and bracing locations referencing appropriate electrical details			33%	67%	100%
12.8.5.7	Emergency Generator Switchgear (if required) equipment schedule, locations, dimensions, layouts, conduit and wiring sizing and service/safety clearances			33%	67%	100%
12.8.5.8	Battery Operated UPS (Uninterrupted Power System) (if required) equipment schedule, locations, dimensions, layouts, conduit and wiring sizing and service/safety clearances			33%	67%	100%
12.8.6	Electrical Details:					
12.8.6.1	Electrical power and lighting details indicating all electrical conditions. Typical conduit details to insure proper clearances and cover				50%	100%
12.8.6.2	Seismic support and bracing for all electrical equipment and fixtures				50%	100%
12.8.7	Electrical and Title 24 Lighting Calculations:					
12.8.7.2	Load summaries – normal, peak and emergency			33%	67%	100%
12.8.7.3	Lighting loads and Title 24 analysis and compliance			33%	67%	100%
12.8.7.4	Other Studies: Voltage drop, voltage transient study (Normal, peak and emergency), short circuit, coordination study, system harmonics study, lightening/grounding study.				50%	100%

Item #	Table 12 Required Drawings (Landscape & Irrigation) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.9	Landscape and Irrigation Drawings: as required, the Landscape and Irrigation Drawings shall contain all of the requirements in Section 12.1 "General Requirements" of these documents, and the following:					
12.9.1	Landscape and Irrigation Reference Plan(s): When required, the first sheet(s) of Landscape and Irrigation drawings shall contain the following:					
12.9.1.1	Program compliance and verification analysis, tabulations and notes for the site, identifying water loads (GPM), and minimum Landscape and Irrigation fixture requirements			33%	67%	100%
12.9.1.2	Schedules/lists of piping and Landscape and Irrigation materials – including sizes, grades and standards			33%	67%	100%
12.9.1.3	Landscape and Irrigation fixture schedules – including Landscape and Irrigation fixture symbols, fixture type, number of each type of fixture required, size, water loads, manufacturer, model #, electrical requirements, finish, reference to installation details, and special notes			33%	67%	100%
12.9.2	Landscape Irrigation Plan: (Coordinated with other disciplines and showing)					
12.9.2.1	Locations, type and size of all related off-site and on-site connection sizes and requirements			50%	100%	
12.9.2.2	Location and symbols referencing all Landscape Irrigation equipment including timer clocks, meters, pumps, shut-off and flow valves, tanks.			50%	100%	
12.9.2.3	Sizes, types and locations of all landscape piping and sprinkler heads				50%	100%
12.9.2.4	Symbol reference to installation details, for site Landscape Irrigation equipment and piping				50%	100%
12.9.3	Landscape Planting Plan: (Coordinated with other disciplines and showing)					
12.9.3.1	Overall clear dimensions of all planting areas			33%	67%	100%
12.9.3.2	Location, symbols and Schedule List of all trees, shrubs, ground cover, grasses and other planting materials			33%	67%	100%
12.9.3.3	Symbol reference to installation details, for site Landscape Planting				50%	100%
12.9.4	Landscape and Irrigation Details:					

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 12 Required Drawings (Landscape & Irrigation) Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
12.9.4.1	Landscape Irrigation details indicating typical Landscape and Irrigation equipment and piping connection conditions per CITY, Engineering Division CADD Drafting Standards				50%	100%
12.9.4.2	Landscape Planting installation details				50%	100%

13.0 TABLE OF REQUIRED SPECIFICATIONS

At the completion of each design phase, the A/E and Design Team will be required to provide project Specifications in Construction Specifications Institute (CSI) Format. In the Schematic Design Phase, the Specifications will be very broad and only major design elements will be required. At the conclusion of the Design Development Phase, the Specifications shall include all systems, building materials, and products that individually represent a minimum of 2% of the project cost. At the conclusion of the Construction Documents Phase the Specifications shall be complete, listing all systems, building materials, products and requirements of the project. The following table lists the minimum acceptable elements that will be included in the required specifications for the project at each phase:

Item #	Table 13 Required Specifications Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
13.0	Specifications (CSI Format)					
13.1	Divisions					
	The specifications shall include the following CSI Divisions and sections as appropriate					
13.1.0	General Conditions – Provided by the CITY	100%				
13.1.1	General Requirements	25%	50%	75%	100%	
13.1.2	Site-work	25%	50%	75%	100%	
13.1.3	Concrete			33%	67%	100%
13.1.4	Masonry			33%	67%	100%
13.1.5	Metals			33%	67%	100%
13.1.6	Wood and Plastics			33%	67%	100%
13.1.7	Thermal and Moisture Protection			33%	67%	100%
13.1.8	Doors and Windows			33%	67%	100%
13.1.9	Finishes			33%	67%	100%
13.1.10	Specialties			33%	67%	100%
13.1.11	Equipment			33%	67%	100%
13.1.12	Furnishings			33%	67%	100%
13.1.13	Special Construction			33%	67%	100%
13.1.14	Conveying Systems			33%	67%	100%
13.1.15	Mechanical			33%	67%	100%
13.1.16	Electrical			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 13 Required Specifications Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
13.2	Contents: Specifications utilizing the CSI format shall be prepared for all site and building systems and elements. These specifications will allow the CITY to receive proposals from the construction and development industry to provide and construct systems for the CITY with optimal life cycle cost solutions. The project elements and systems addressed in the specifications must include as a minimum, but not be limited to:					
13.2.1	Site Development					
13.2.1.1	Site Preparation	25%	50%	75%	100%	
13.2.1.2	Landscaping & Irrigation			33%	67%	100%
13.2.1.3	Paved Areas	25%	50%	75%	100%	
13.2.1.3.1	Parking	25%	50%	75%	100%	
13.2.1.3.2	Circulation	25%	50%	75%	100%	
13.2.1.4	Site Utility Distribution					
13.2.1.4.1	Sewer	25%	50%	75%	100%	
13.2.1.4.2	Water	25%	50%	75%	100%	
13.2.1.4.3	Gas	25%	50%	75%	100%	
13.2.1.4.4	Storm Water	25%	50%	75%	100%	
13.2.1.4.5	Electrical	25%	50%	75%	100%	
13.2.2	Structural					
13.2.2.1	Basement Excavation/Backfill			33%	67%	100%
13.2.2.2	Pads/Footings/Pilings			33%	67%	100%
13.2.2.3	Foundations			33%	67%	100%
13.2.2.4	Horizontal Framing System(s)			33%	67%	100%
13.2.2.5	Vertical Framing System(s)			33%	67%	100%
13.2.2.6	Roof Framing System			33%	67%	100%
13.2.2.7	Seismic Resistance System			33%	67%	100%
13.2.3	Exterior Envelope					
13.2.3.1	Exterior Walls			33%	67%	100%
13.2.3.2	Doors			33%	67%	100%
13.2.3.3	Windows			33%	67%	100%
13.2.3.4	Roof			33%	67%	100%

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

Item #	Table 13 Required Specifications Item Description	Schematic Design		Design Development	Construction Drawings	
		50%	100%		50%	100%
13.2.4	Interior Space					
	13.2.4.1 Permanent Walls and Finishes			33%	67%	100%
	13.2.4.2 Movable Walls and Finishes			33%	67%	100%
	13.2.4.3 Floor Finishes			33%	67%	100%
	13.2.4.4 Doors and Finishes			33%	67%	100%
	13.2.4.5 Ceiling Finishes			33%	67%	100%
	13.2.4.6 Fittings, Fixtures and Equipment			33%	67%	100%
13.2.5	Casework & Cabinetry			33%	67%	100%
13.2.6	Service Core/Utility Areas			33%	67%	100%
13.2.7	Conveying Systems (Elevators & Escalators)			33%	67%	100%
13.2.7	Fire Protection Systems			33%	67%	100%
13.2.8	Plumbing					
	13.2.8.1 Plumbing Equipment and Fixtures			33%	67%	100%
	13.2.8.2 Plumbing Domestic Water and Waste Piping			33%	67%	100%
	13.2.8.3 Plumbing Roof Drains and Piping			33%	67%	100%
	13.2.8.4 Plumbing Miscellaneous			33%	67%	100%
13.2.9	HVAC					
	13.2.9.1 HVAC Equipment			33%	67%	100%
	13.2.9.2 HVAC Water & Condensate Piping			33%	67%	100%
	13.2.9.3 HVAC Ducting and Grilles			33%	67%	100%
	13.2.9.4 HVAC Miscellaneous			33%	67%	100%
13.2.10	Electrical					
	13.2.10.1 Electrical Service Equipment, Outlets and Fixtures			33%	67%	100%
	13.2.10.2 Electrical Wiring & Conduit			33%	67%	100%
	13.2.10.3 Electrical Lighting Fixtures			33%	67%	100%
	13.2.10.4 Electrical Miscellaneous			33%	67%	100%
13.2.11	Communications					
	13.2.11.1 Alarm and Detection Systems			33%	67%	100%
	13.2.11.2 Telephone and Intercom Systems			33%	67%	100%
	13.2.11.3 Data and Computer Systems			33%	67%	100%
	13.2.11.4 Audio-Video Systems			33%	67%	100%

13.3 Format: The specifications shall identify and include information appropriate to each CSI division system(s) requirements(s) criteria and tests for the criteria as defined by the CSI. These specifications shall follow the CSI format elements for Specifying as illustrated in the following and include as a minimum:

I. General

A. Scope

1. System A
2. System B
3. System C

B. Related Work

1. System A
2. System B
3. System C

C. Submittals

1. Samples Catalog Data
2. Shop Drawing
3. Test Reports
4. Installation Details

D. References & Standards

1. CITY Standards
2. 2001 California Building Code
3. American Society for Testing Materials (ASTM)
3. Underwriters Laboratories (UL)

E. System Description

1. Summary description and/or listing of the system element(s) being specified.
 - a. Element 1
 - b. Element 2
 - c. Element 3
2. Definitions
 - a. Term 1
 - b. Term 2
3. Others – As Required

II. Systems/Products

A. System Performance

1. Requirement A
 - a. Attribute 1
 - a.1 Criterion A
 - a.2 Criterion B
 - b. Attribute 2
 - b.1 Criterion A
 - b.2 Criterion B

2. Requirement B (same format as A above)
3. Requirement C (same format as A above)

B. System Components

1. Component A
 - a. Attribute/Requirement 1
 - a.1 Criterion A
 - a.2 Criterion B
 - b. Attribute/Requirement 2
 - b.1 Criterion A
 - b.2 Criterion B
2. Component B (same format as A above)

C. Approved Manufacturers

1. System A
 - a. Manufacturer 1
 - b. Manufacturer 2
2. System B
 - a. Manufacturer 1
 - b. Manufacturer 2
3. System C
 - a. Manufacturer 1
 - b. Manufacturer 2

III. Execution

A. Installation

1. General
 - a. Instruction 1
 - b. Instruction 2
2. Connections
 - a. Instruction 1
 - b. Instruction 2

B. Support Systems

1. General
2. System A
 - a. Instruction 1
 - b. Instruction 2
3. System B
 - a. Instruction 1
 - b. Instruction 2

C. Submittals

1. General
2. System A
 - a. Instruction 1

- b. Instruction 2
 - 3. Alternate Equipment
 - a. Instruction 1
 - b. Instruction 2
 - 4. Custom Equipment
 - a. Instruction 1
 - b. Instruction 2
- D. Operating Instructions**
 - 1. Operations
 - 2. Instructions
 - a. Instruction 1
 - b. Instruction 2
- E. Payment**
 - 1. Submittals
 - a. Purchase Order
 - b. Work Order
 - c. Deposit
 - 2. Verification
 - a. Delivery Receipt
 - b. Inspection Report
 - c. Observation Report

14.0 REQUIRED BUDGETS

At the 50% and 100% completion of each design phase, the A/E and Design Team will be required to provide a Project Budget in CSI Format. The following Budget templates indicate the required level of detail for the Project Budget at the end of each design phase:

- 14.1 Schematic Design Phase** (100% completion) the Preliminary Project Budget will be very broad and only major design elements will be required. Partial example below (all applicable CSI Divisions will be required for each budget):

EXAMPLE					
SCHEMATIC DESIGN PHASE (50% and 100%) BUDGET					
DIVISION 2 – SITE WORK					
Item #	Description	Units	Quantity	Unit Price	Cost (\$)
2.1	Demolition (removal of existing soils – non contaminated)	Cubic Yard (CY)	20,000	15.50	310,000
2.2	Earthwork (Rough & Finish Grading)	Cubic Yard (CY)	22,000	2.85	62,700
2.3	Concrete Curbing (6" wide x 12" high)	Linear Feet (LF)	2,560	12.00	30,720
2.4					
2.T	(SD) TOTAL FOR DIVISION 2 – SITE WORK				\$

- 14.2 Design Development Phase** (100% completion), an updated Project Budget shall include all systems, building materials, products and labor, that individually represent a minimum of 2% of the project cost (refer to partial example below):

EXAMPLE					
DESIGN DEVELOPMENT PHASE (100%) BUDGET					
DIVISION 2 – SITE WORK					
Item #	Description	Units	Quantity	Unit Price	Cost
2.1	Demolition (removal of existing soils – non contaminated)	Cubic Yard (CY)	20,000	15.50	310,000
2.2.1	Earthwork (Rough Grading)	Cubic Yard	22,000	2.10	46,200

City of Long Beach - Architectural & Engineering Guidelines for Building Design Services
7/16/2003

		(CY)			
2.2.2	Earthwork (Staking)	Crew Day (CD)	6	1,600	9,600
2.2.3	Earthwork (Finish Grading)	Cubic Yard (CY)	90,000	0.08	7,200
2.T	(DD) TOTAL FOR DIVISION 2 – SITE WORK				\$

- 14.3 Construction Documents Phase:** (50% and 100% completion) the A/E and Design Team shall prepare a highly detailed Project Budget, listing all systems, building materials, products and labor and special requirements of the Project (refer to partial example below):

EXAMPLE					
CONSTRUCTION DOCUMENTS PHASE (50% and 100%) BUDGET					
DIVISION 2 – SITE WORK					
Item #	Description	Units	Quantity	Unit Price	Cost (\$)
2.1.1	Demolition (Man days for removal of existing soils – non contaminated)	Man Day (MD)	15	400	60,000
2.1.2	Demolition (Heavy Equipment Rental)	Per Day (PD)	15	525	4,200
2.1.3	Demolition (Truck Hauling & Dump Fee)	Per Load (PL)	250	95	23,750
2.2.1.1	Earthwork (Man days for Rough Grading – Cut & removal)	Man Day (MD)	6	400	2,400
2.2.1.2	Earthwork (Heavy Equipment Rental)	Per Day (PD)	6	525	3,150
2.2.2	Earthwork (Staking)	Crew Day (CD)	2	1,600	3,200
2.2.3.1	Earthwork (Man days for Finish Grading)	Man Day (MD)	8	400	3,200
2.2.3.2	Earthwork (Heavy Equipment Rental)	Per Day (PD)	8	525	4,200
2.2.3.3	Earthwork (Soils Import hauling & Placement)	Per Load (PL)	250	95	4,750
2.4					
2.T	TOTAL FOR DIVISION 2 – SITE WORK				\$

15.0 REQUIRED SCHEDULES

- 15.1 Design Production Plan:** At the end of the Schematic Design 50% completed Phase the A/E and Design Team will be required to provide a Design Production Plan. At the end of the Design Development 100% completed Phase, the A/E and Design Team will be required to provide a revised Design Production Plan. These Design Production Plans shall include the following:
- 15.1.1 **Estimated Man-hours:** summarized for each key individual and task.
 - 15.1.2 **Sheets of Drawings:** By discipline with estimated numbers of sheets and details anticipated and meeting the Drawing requirements defined in **Section 12.0 "Table of Required Drawings"**, in these documents.
 - 15.1.3 **Pages or Sections of Specifications and Cost Estimates:** By discipline with estimates of the number of sheets and details anticipated and meeting the Drawing requirements defined in **Section 12.0 "Table of Required Drawings"**, in these documents.
 - 15.1.4 **QA/QC Reviews**
 - 15.1.5 Any other resources as agreed upon by A/E and CITY PM.
- 15.2 Project Activities Assignments:** At the end of each Design and Construction Documents Phase, the A/E and Design Team will be required to provide an updated Project Activity Assignments that identify the responsible party for each task in the Project Schedule including:
- 15.2.1 **CITY/Management Activities:** Contractor/Developer interviews, contract negotiations, management reviews and presentation, Environmental Documentation preparation, submission, submittal, reviews.
 - 15.2.2 **A/E & Design Team Assembly:** Team assembly, proposal preparation, negotiations, financing arrangements and bonding.
 - 15.2.3 **Activities of A/E and Design Team:** Design Document preparation including times for the detailed design and specification of systems, preparation of construction documents. QA/QC team review points.
 - 15.2.4 **Activities of Third Party Consultants or Vendors:** FF&E, CITY communication installation, furniture systems installation, data processing equipment installation, movers.
 - 15.2.5 **Governmental Agencies Activities:** Design review, commission approvals, permits.
- 15.3 Project Schedule:** At the end of each Design and Construction Documents Phase, the A/E and Design Team will be required to provide an updated Schedule that identifies all project activities including the sequence, relationships and forecast start and finish of all major design activities based upon a CPM network and developed using the software specified in these documents including but not limited to the following:

- 15.3.1 **Schematic Design 50% completed**
- 15.3.2 **Schematic Design 100% completed**
- 15.3.3 **Design Development completed**
- 15.3.4 **Construction Documents 50% completed**
- 15.3.5 **Construction Documents 100% completed** and submitted for approvals
- 15.3.6 **Construction Documents approved** for permits
- 15.3.7 **Bidding and Awarding:** Including advertisement time, response to request for information, bid evaluation, selection and award of contract to lowest bidder.
- 15.3.8 **Construction Activities:** The sequence relationships and forecast start and finish of all major construction activities – including phasing if appropriate.
 - 15.3.8.1 **Procurement of Long Lead Items:** Real property, structural, plumbing, mechanical, electrical, glass, furnishings.
 - 15.3.8.2 **Demolition:** Acquisition of permits, relocation (if applicable).
 - 15.3.8.3 **Site Work:** Staking, grading, utilities (water, sewer, storm drain, gas, electrical) paving, landscaping.
 - 15.3.8.4 **Off-Site Improvements as Applicable:** Streets/roads, signalization, telecommunication, electrical, sewer, water.
 - 15.3.8.5 **Structure:** Production and delivery of materials, pilings, footings/foundations, erection/placement of floors and structure.
 - 15.3.8.6 **Plumbing:** Installation of domestic water and sewer systems, gas systems, and drainage systems.
 - 15.3.8.7 **Mechanical:** Installation of air handlers, heat exchange units, ducts, and system balancing.
 - 15.3.8.8 **Electrical:** Connection to utility power source, installation of site and building transformers, panels, wiring, low voltage, control systems, security.
 - 15.3.8.9 **Architectural Finishes:** Construction or installation of walls, carpet, cabinetry, ceilings, painting.
 - 15.3.8.10 **Systems Testing and Start-Up:** Including training of CITY maintenance and operations staff.
 - 15.3.8.11 **Final Inspection:** Identification and verification of the completion of any and all deficiencies and/or unacceptable construction work.
 - 15.3.8.12 **Acceptance:** Receipt of all warranties and guaranties, equipment/systems operating and maintenance, manuals, certificate of occupancy.
- 15.3.9 **Occupancy:** Move-in and start-up of operations

16.0 Glossary of Abbreviations and Terms Used

ADA	Americans with Disabilities Act of 1991
Additional Services	Any and all other services performed by consultants as more fully described in the Agreement.
A/E	A licensed California Architect and/or Engineer from any licensed discipline.
A/E Manual	City of Long Beach A/E Design Services Manual dated 7/2/03
Agreement	A contract between the Architect/Engineer and the City of Long Beach for project related professional design and construction administration services – also referred to as the Architect/Engineer Agreement or Design Services Agreement.
BDR	Basis of Design Report
BGSF	Building Gross Square Feet. The total amount of enclosed space in a facility as measured from the interior of the building exterior walls or glass-lines, including all utility areas, vertical shafts, life safety spaces and corridors, public spaces, walls and columns.
BHC	City Council
BMP	Best Management Practices, State of California requirements during construction
Council	The City of Long Beach City Council
CA	Construction Administration. All services that are customarily rendered by the Architect Engineer of Record during the construction phase of a project as more fully described in the Agreement.
CAD	Computer Aided Design. An integrated and automated process that utilizes automated systems and equipment to prepare the documentation (drawings, specifications and calculations) needed for construction. Also, commonly referred to as CADD (Computer Aided Drafting Design).
CD	Construction Documents (Phase of Design). The phase of design, during which final drawings, construction details, specifications, project manuals, construction cost estimates and other engineering data necessary to define the building systems, materials and methods for construction are produced. Construction Documents are normally prepared by the Architect Engineer of Record and are sufficiently complete for the CITY to use to obtain not-to-exceed construction bids.
CD-R	Compact Disk - Readable

CEQA	California Environmental Quality Act
City, LB	City of Long Beach
Construction Cost	The total amount paid for fees, labor, material, constructor general and administrative expenses, overhead and profit to construct the Project – including all site work, utilities infrastructure and related facilities and structures ("Hard Costs").
Cost Estimate	The estimated construction cost of a Project as more fully described in the Manual and the Agreement and presented in the formats illustrated in Section 14.0 "Required Budgets" in these documents for the respective Project design phases.
County	The County of Los Angeles, California
CRC	Contractor Requested Changes
DD	Design Development (Phase of Design). The second phase of design during which preliminary building concepts and schematic designs, specifications, cost estimates and other relevant project data are refined, and when the building systems and materials to be used are more fully defined.
EIR	Environmental Impact Report
GC	General Contractor The entity responsible for procuring and coordinating all building trade services and materials needed to execute the Project Design. Also referred to as the "Constructor" or "Construction Element".
Jurisdictional Agencies	All governmental or other agencies having regulatory authority and responsibility under the law with respect to the design, construction, operation and/or occupancy of the project.
Life Cycle Cost	The total facility and operating costs incurred in a facility during its useful life and occupancy for staffing, maintenance and alterations, utilities, insurance, interest, taxes, design/space-use efficiency.
Manual	The City of Long Beach, Public Works Department, A/E Design Services Manual
NPDES	National Pollution Discharge
ORC	Owner Requested Changes
PM	Program Manager. The designated CITY representative providing direction to the A/E and acting as liaison between the A/E and the CITY and its Divisions.
PRC	CITY Requested Changes
Program	List of specific requirements including room/area names, rough

	square footage sizes and adjacencies.
Project	The work including all research, co-ordination, design, production of construction documents, reports, schedules, budgets, and construction.
RFP	Request for Proposal
RFQ	Request for Quotation
RSOQ	Request for Statement of Qualifications
RFI	Request for Information
SD	Schematic Design (Phase of Design). The first project design phase during which the Architect/Engineer, Client and tenant departments explore and adjust proposed alternative building and site concepts, configurations and systems until a functionally efficient and affordable design is approved for further development.
SWPPP	Storm Water Pollution Prevention Plan
Tenant	The intended company or group of individuals that will occupy the project when completed.
TRC	Tenant Requested Changes
Title 24	The section of the California State Building Standards Code that deals with many specific issues including but not limited to design for the disabled, and energy conservation requirements.
VD	Value Design The embodiment of a design culture/philosophy in which Architects/Engineers systematically conduct and document basic economic analyses that consider the value of functional benefits received and the first and life-cycle costs resulting from all design decisions and design solutions to justify all project design or system-related decisions.
VE	Value Engineering. A creative, systematic and systemic process applied throughout the design and construction of the project to insure provision of the project's functional requirements at the lowest total cost – including life cycle costs.

Appendix D

(City of Long Beach Engineering Bureau CADD Standards)

Appendix E

**(City of Long Beach Engineering Bureau Sample
QA/QC Manual)**

Table of Contents

1.0	Introduction	3
1.1	Purpose	3
1.2	Policy	3
1.3	Scope	4
1.4	Referenced Documents	4
1.5	Proposing Additions and Changes to this CADD Data Standard	5
2.0	Drawing Organization	6
2.1	Base Files and Production Files	6
2.2	Naming Convention	6
2.2.2	Production Files	7
2.2.3	Survey Point Files	8
3.0	Appearance and Presentation	9
3.1	Appearance	9
3.2	Sheet Organization	10
3.3	North Arrow	12
3.4	Drawing Scale	12
3.5	Dimensioning	13
4.0	Layer List	19
5.0	Symbols	29
6.0	Point Description Codes	31
7.0	Standard Border – 24" x 36" Title Sheet (New Format)	34
8.0	Standard Border - 24" x 36" Sheet w/ Profile Grid (New Format)	35



1.0 Introduction

The following introductory sections (scope, purpose, and reference documents) will help the reader understand this document and its overall relationship to the City of Long Beach CADD system.

1.1 Purpose

This document establishes the data standard for Computer Aided Design and Drafting (CADD) submittals to the City of Long Beach, Engineering Bureau. This standard is necessary to ensure electronic data exchange (EDE) between Public Works (PW) and its consultants, contractors, local, state, federal government agencies including city, police, fire, FBI, CALTrans, FAA, and TSA. This manual was developed specifically for architectural, engineering, and construction (AEC) disciplines, this standard is designed to enforce commonality amongst data required throughout the lifecycle of PW's various facilities. The CADD data, addressed herein, will be incorporated into PW's repository containing spatial and attributed data. These CADD data standards are critical to supporting the City's infrastructure throughout its lifecycle starting from planning, design, construction, and extending through operation and maintenance, until reconstruction or demolition of the subject project.

1.2 Policy

It is the policy of PW that all drawings developed be in Computer Aided Design and Drafting (CADD) format and comply with the Engineering Bureau's standards for planning, drafting, and revising drawings. The drafting guidelines, CADD guidelines, and revision guidelines shall apply to all work performed by PW's Engineering personnel, consultants to PW and contractors providing CADD deliverables to the PW. They shall, in addition, apply to any other work so designated by PW.

All plan sheets (interim and final) must bear the name and license of the professional engineer in responsible charge. The final plan set must bear the signature of the professional engineer along with the date of signing on all plan sheets. Electronic seal and signature are acceptable for all the plan sheets except for the Title Sheet. The Title Sheet must have a wet (original) signature.

Unless an exemption is specifically provided in these standards, or in writing, in advance by the City Engineer, these standards shall apply to all project drawings. Managers, engineers, CADD users, technicians, and designers are responsible for following the criteria as presented in this manual.



1.3 Scope

This document provides instructions for standardizing various aspects of CADD data (i.e. drawing organization, appearance, & presentation, layers, symbols, etc.). This standard applies primarily to CADD data which may be generated by planning, environmental, telecommunications, and other projects. CADD data submittal requirements (e.g. submittal milestones, file formats, metadata, media & compression, and quality control & quality assurance) are addressed in this manual in a later section. This PW CADD Data Standard is directly based on the U.S. National CADD Standard 2nd Edition, Version 2.0, which is maintained by the National Institute of Building Sciences (NIBS). The document presents the most critical aspects of the National CADD standard details refer to the NCS. The complete NCS may be purchased via the Internet from NIBS.

This standard is supplemented by various electronic files containing standard layer templates, line type library files, pattern library files, plot configuration files, AEC symbol blocks, aircraft blocks, and title blocks.

1.4 Referenced Documents

The following are documents referenced here within:

National Institute of Building Sciences, (NIBS) (2001), "U.S. National CADD Standard, 2nd Edition", Version 2.0, National Institute of Building Sciences, (NIBS), Washington D.C.

American Institute of Architects. (2001). AIA CAD layer guidelines: U.S. national CAD standard version 2. American Institute of Architects Press, Washington, DC.

The CADD/GIS Technology Center (2001). "A/E/C CADD standard: Main text and appendices A-E," Release 2.0, U.S. Army Engineer Research and Development Center.





1.5 Proposing Additions and Changes to this CADD Data Standard

This standard is intended to be updated and enhanced as appropriate over time. Recommended additions and suggestions for change should be directed to:

James Cool
Senior Engineering Technician II
Address: City of Long Beach
Department of Public Work, Project Development
9th Floor
333 W. Ocean Blvd.
Long Beach, CA 90802

Telephone: (562)570-6527
Email: James_Cool@LongBeach.gov

If a recommended addition or modification results in any changes to the template, or any of the supported files, then the suggested changes must be submitted in the following formats:

- Layer Change:
 - A comma separated value (csv) file containing the following values:
 - Layer Name (NCS compliant)
 - Layer description
 - Layer Color (1-255)
 - Line Weight (in/mm)
 - Line Style
- Line Type/Style:
 - For AutoCAD provide a line type file (*.lin)
- Text Style
 - For AutoCAD provide a drawing file (*.dwg)
- Blocks
 - For AutoCAD provide a drawing file (*.dwg)



2.0 Drawing Organization

This section addresses CADD model and production files naming convention, and external reference files.

2.1 Base Files and Production Files

Two distinct types of CADD files are addressed in this standard: base files and production files. Base files contain the physical components of a building, roadway and typically represent plans, profiles, elevations, cross-sections, etc. Base files are generally referenced by other drawings. A production file is synonymous with a plotted CADD drawing file, which is a selected view of a portion of the model file(s) within a sheet. Sheet files are typically plotted at a particular scale and can reference one or more base files.

2.2 Naming Convention

Naming convention for electronic files (base and production) allow users to identify the content and relevance of the drawing. They provide basic minimum information for organizing the files within a project directory and or entering them into an electronic document management system.

2.2.1 Reference Files

The reference file naming convention (shown in Figure 1) has three mandatory fields which must be used in correct sequence.

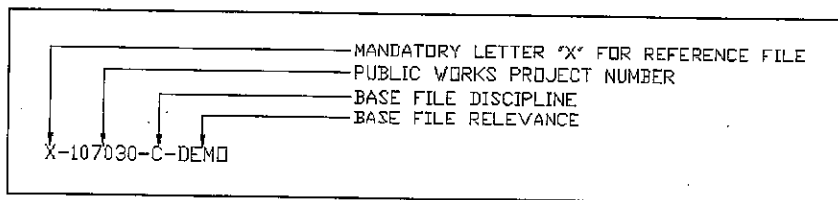


Figure 1

Following the Mandatory "X" and Public Works Project Number, the next character field represents the Reference File Discipline please refer to Table 1. Following the Reference File Discipline is the Reference File Relevance.

Figure 1 translated would be: a Reference file, Project number 107030, Civil Sheet for all of Demolition.

Table 1

Discipline	Designator
------------	------------



A	Architectural
B	Geotechnical
C	Civil
D	Process
E	Electrical
F	Fire Protection
G	General
H	Hazardous Material
I	Interiors
L	Landscape
M	Mechanical
O	Operations
P	Plumbing
Q	Equipment
R	Resources
S	Structural
T	Telecommunications
V	Survey/Mapping
W	Civil Works
X	Other Disciplines
Z	Contract Shop Drawings

External Reference Files to other CADD files may be used to subdivide a large CAD drawing into several smaller, more efficient drawings. The use of this procedure will reduce drawing size, increase performance, improve operator efficiency, and make coordination of disciplines easier.

Referenced files may also be used to split a drawing by disciplines. Coordinate reference file naming with your designated Project Manager. ALL reference files shall reside in the same directory as the drawings they are associated with.

2.2.2 Production Files

The production file naming convention (Figure 2) has five mandatory fields. Similar to the reference files, all fields must be used and in the correct sequence. PW Project Numbers are developed by PW and will be designated by an authorized PW representative accordingly.

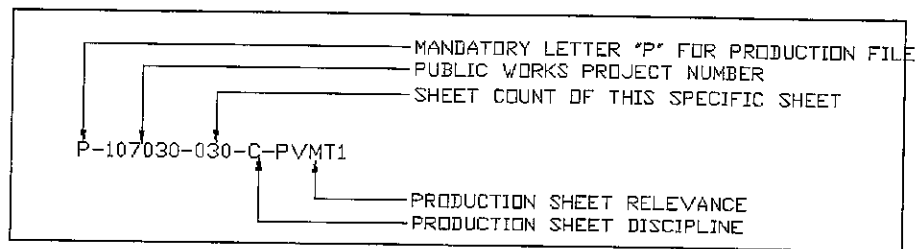


Figure 2

Figure 2 translated would be: a Production File, Project number 107030, Sheet Count of this Specific Sheet (030), Civil Sheet, Pavement Plan Sheet 1.

2.2.3 Survey Point Files

The Point File shall be as follows:

1. Word Pad text file format (i.e. *.txt type of file or ASCII type of file)
2. PNEZD type of format
 - a. The descriptions shall be in accordance with Section 6.
 - b. The descriptions shall not have any spaces in them.
 - c. The descriptions shall not be more than 11 characters long.
3. Comma Separate Value

P#	Northing	Easting	Elv	Descrip
1130	1757521.418	6515098.861	44.62766	AC
1135	1757565.539	6515074.91	43.75909	AC
1136	1757540.979	6515074.393	44.45267	AC
1137	1757521.946	6515074.005	44.74421	AC
1138	1757503.836	6515073.807	44.87726	AC
1139	1757485.351	6515073.655	44.69874	AC
1140	1757466.053	6515073.908	44.50987	AC

Figure 3

Additional deliverables by for survey files shall be:

1. Electronic Drawing File – including Curve Data
2. Hardcopy - including Curve Data



3.0 Appearance and Presentation

In this standard, CADD appearance and presentation involves lines, text, sheet organization, north arrow, drawing scale, and dimensioning.

3.1 Appearance

Appearance involves primarily line width, line style, line color, and text style font.

3.1.1 Line Width and Color

The following is a general guideline for typical line weights and line color for more detailed description see layer guideline exhibit?

Extra-Fine (0.18 mm) Drawing Color: White (7), Use-dimension lines, leader lines, centerlines, hatch patterns etc.

Fine (0.35 mm) Drawing Color: Yellow (2), Use-Existing construction. Existing Profiles, Text for existing items and elevations,

Medium (0.50 mm) Drawing Color: Cyan (4), Use-Text, New Elevations,

Bold (0.70 mm), Drawing Color: Red (1), Use-New design, Titles, Street Names,

3.1.2 Line Style

Line Types (Styles) shall be AutoCAD standard line types except as noted in the Layer Guideline.

City of Long Beach Custom Line Types are included in the CLB.Lin file as follows

Line type Definitions:

;; City of Long Beach Custom Linetypes

;;
;;
;;

*BOUNDARY, _____
A,1.5,-.25,.25,-.25,.25,-.25,.25,-.25

*EDISON,Edison line ---- E ---- E ---- E ----
A,.25,-.125,.25,-.125,.25,-.125,["E",ROMANS,S=.1,R=0.0,X=-0.1,Y=-.05],-.025





3.2.1 Sheet Size

Except for special situations (record of survey maps, etc.) where the size of the drawing is controlled by other agencies, all projects shall be a minimum of 24" x 36" (ARCH D-size), unless otherwise required by associated agencies. Other common sheet sizes are shown in Table 2. The sheet medium shall be mylar.

Table 2

Designation	Sheet Size (in.)
ANSI A	8.5 X 11.0
ANSI B	11.0 X 17.0
-	18.0 X 26.0
ARCH D	24.0 X 36.0
ARCH E1	30.0 X 42.0

3.2.2 Title Block

A standard title block around graphical information contained in a base or production sheet provide necessary metadata (information about the data contained in the drawing) and shall be inserted into paper space. Electronic files containing PW approved title block (which includes any associated logos) are provided as supplement files to this CADD standard.

The title block shall be placed vertically with horizontal lettering along the right-hand edge of the sheet, with the exception of the drawing number, specification number, sheet number and sheet count for multi-sheet drawings. The drawing title shall be aligned, lettered as specified below on the approved title block as part of Figure 4.

Note: See Pages 33 and 34 for the overall layout of the PW - Standard Title Block – (New Format)

Airport Facilities will use a slightly different Title Block format – to be provided upon request.



BOTTOM EDGE
(Shown rotated
90 Degrees)

FIG. XXXXXX
DATE: 09/09/04
PLUT SCALE: 1"=30'

CITY OF LONG BEACH - DEPARTMENT OF PUBLIC WORKS

**PROJECT TITLE
FROM SPECIFICATIONS**

FIELD BOOK PAGE GRAPHIC SCALE 0 1 2 3

DRAWING NO. X-XXXX
SHEET X OF X
JOB NO. PWD000X DC

RIGHT-HAND EDGE

Figure 4

3.3 North Arrow

The project north arrow symbol (see appropriate block in the supplement files to this standard) shall be placed in the orientation should be up or to the right. Additional plan views will require additional north arrows.

3.4 Drawing Scale

All graphical scale bar shall be placed in the title block.

**PROJECT TITLE
SPECIFICATIONS**

GRAPHIC SCALE 0 1 2 3

GRAPHIC SCALE

SECTION HEAD
PROJECT MANAGER
INSPECTION
SURVEY CONTROL



3.5 Dimensioning

Dimensioning for 20 Scale: Lines and Arrows

Modify Dimension Style: DIM20

Lines and Arrows | Text | Fit | Primary Units | Alternate Units | Tolerances

Dimension Lines

Color: ☐ White

Lineweight: ☐ ByBlock

Extend beyond ticks: 0.00

Baseline spacing: 0.50

Suppress: ☐ Dim Line 1 ☐ Dim Line 2

Extension Lines

Color: ☐ White

Lineweight: ☐ ByBlock

Extend beyond dim lines: 1.50

Offset from origin: 1.00

Suppress: ☐ Ext Line 1 ☐ Ext Line 2

Arrowheads

1st: ☒ Closed filled

2nd: ☒ Closed filled

Leader: ☒ Closed filled

Arrow size: 2.50

Center Marks for Circles

Type: ☒ Mark Size: 4.00

OK Cancel Help

Text

Modify Dimension Style: DIM20

Lines and Arrows | Text | Fit | Primary Units | Alternate Units | Tolerances

Text Appearance

Text style: ROMANS

Text color: ☒ Cyan

Text height: 2

Fraction height scale: .09

☐ Draw frame around text

Text Placement

Vertical: Above

Horizontal: Centered

Offset from dim line: .75

Text Alignment

☐ Horizontal

☒ Aligned with dimension line

☐ ISO Standard

OK Cancel Help



Fit

Modify Dimension Style: DIM20

Lines and Arrows | Text | **Fit** | Primary Units | Alternate Units | Tolerances

Fit Options

If there isn't enough room to place both text and arrows inside extension lines, the first thing to move outside the extension lines is:

- ☒ Either the text or the arrows, whichever fits best
- ☐ Arrows
- ☐ Text
- ☐ Both text and arrows
- ☐ Always keep text between ext lines

☐ Suppress arrows if they don't fit inside the extension lines

Text Placement

When text is not in the default position, place it:

- ☒ Beside the dimension line
- ☐ Over the dimension line, with a leader
- ☐ Over the dimension line, without a leader

Scale for Dimension Features

- ☒ Use overall scale of:
- ☐ Scale dimensions to layout (paperspace)

Fine Tuning

- ☐ Place text manually when dimensioning
- ☒ Always draw dim line between ext lines

OK Cancel Help

Primary Units

Modify Dimension Style: DIM20

Lines and Arrows | Text | Fit | **Primary Units** | Alternate Units | Tolerances

Linear Dimensions

Unit format:

Precision:

Fraction format:

Decimal separator:

Round off:

Prefix:

Suffix:

Measurement Scale

Scale factor:

☐ Apply to layout dimensions only

Zero Suppression

- ☒ Leading ☐ 0 Feet
- ☒ Trailing ☐ 0 Inches

Angular Dimensions

Units format:

Precision:

Zero Suppression

- ☐ Leading
- ☒ Trailing

OK Cancel Help



Alternate Units



Modify Dimension Style: DIM20

Lines and Arrows | Text | Fit | Primary Units | Alternate Units | Tolerances

☐ Display alternate units

Alternate Units

Unit format: Decimal

Precision: 0.00

Multiplier for all units: 25.4

Round distances to: 0

Prefix:

Suffix:

Zero Suppression

☐ Leading ☒ 0 Feet

☐ Trailing ☒ 0 Inches

Placement

☒ After primary value

☐ Before primary value

OK Cancel Help

Tolerances

Modify Dimension Style: DIM20

Lines and Arrows | Text | Fit | Primary Units | Alternate Units | Tolerances

Tolerance Format

Method: None

Precision: 0.00

Upper value: 0

Lower value: 0

Scaling for height: 0.0

Vertical position: Middle

Zero Suppression

☐ Leading ☒ 0 Feet

☐ Trailing ☒ 0 Inches

Alternate Unit Tolerance

Precision: 0.00

Zero Suppression

☐ Leading ☒ 0 Feet

☐ Trailing ☒ 0 Inches

OK Cancel Help



Dimensioning for 40 Scale: (Civil 3D)

Lines

Modify Dimension Style: DIM40

Lines | Symbols and Arrows | Text | Fit | Primary Units | Alternate Units | Tolerances

Dimension lines

Color: ☐ White

Linetype: ByBlock

Lineweight: ByBlock

Extend beyond ticks: .00

Baseline spacing: 1.25

Suppress: ☐ Dim line 1 ☐ Dim line 2

Extension lines

Color: ☐ White

Linetype ext line 1: ByBlock

Linetype ext line 2: ByBlock

Lineweight: ByBlock

Suppress: ☐ Ext line 1 ☐ Ext line 2

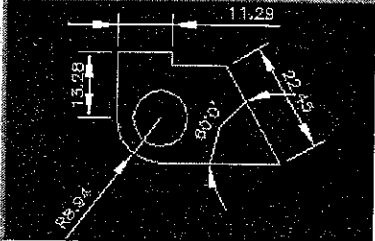
Extend beyond dim lines: 2.00

Offset from origin: 1.50

☐ Fixed length extension lines

Length: 1.00

OK Cancel Help



Symbols and Arrows Text

Modify Dimension Style: DIM40

Lines | Symbols and Arrows | Text | Fit | Primary Units | Alternate Units | Tolerances

Arrowheads

First: Closed filled

Second: Closed filled

Leader: Closed filled

Arrow size: 5.00

Center marks

☐ None Size: 6.00

☒ Mark

☐ Line

Arc length symbol

☒ Preceding dimension text

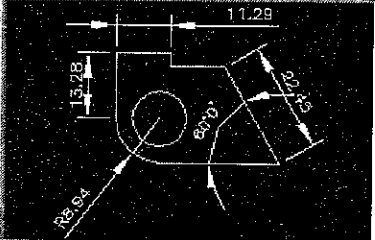
☐ Above dimension text

☐ None

Radius dimension log

Log angle: 45d0'0"

OK Cancel Help





Text

Modify Dimension Style: DIM40

Lines | Symbols and Arrows | **Text** | Fit | Primary Units | Alternate Units | Tolerances

Text appearance

Text style: ROMANS

Text color: Cyan

Fill color: None

Text height: 4.00

Fraction height scale: 1.00

☐ Draw frame around text

Text placement

Vertical: Above

Horizontal: Centered

☐ Offset from dim line: 1.50

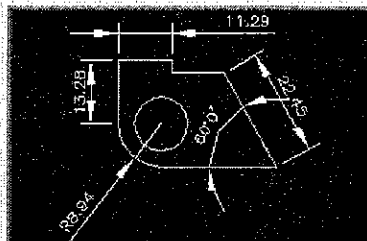
Text alignment

☐ Horizontal

☒ Aligned with dimension line

☐ ISO standard

OK Cancel Help



Fit

Modify Dimension Style: DIM40

Lines | Symbols and Arrows | Text | **Fit** | Primary Units | Alternate Units | Tolerances

Fit options

If there isn't enough room to place both text and arrows inside extension lines, the first thing to move outside the extension lines is:

☒ Either text or arrows (best fit)

☐ Arrows

☐ Text

☐ Both text and arrows

☐ Always keep text between ext lines

☐ Suppress arrows if they don't fit inside extension lines

Text placement

When text is not in the default position, place it:

☒ Beside the dimension line

☐ Over dimension line, with leader

☐ Over dimension line, without leader

Scale for dimension features

☒ Use overall scale of: 1.00

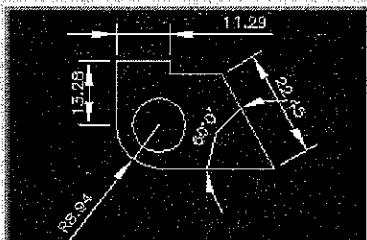
☐ Scale dimensions to layout

Fine tuning

☐ Place text manually

☒ Draw dim line between ext lines

OK Cancel Help





Primary Units

Modify Dimension Style: DIM40

Lines | Symbols and Arrows | Text | Fit | **Primary Units** | Alternate Units | Tolerances

Linear dimensions

Unit format: Decimal

Precision: 0.00

Fraction format: Horizontal

Decimal separator: . (Period)

Round off: .00

Prefix:

Suffix:

Measurement scale

Scale factor: 1.00

☐ Apply to layout dimensions only

Zero suppression

☒ Leading ☐ Trailing

☐ 0 feet ☐ 0 inches

Angular dimensions

Units format: Degrees Minutes Seconds

Precision: 0d00'

Zero suppression

☐ Leading ☒ Trailing

OK Cancel Help

Alternate Units

Modify Dimension Style: DIM40

Lines | Symbols and Arrows | Text | Fit | Primary Units | **Alternate Units** | Tolerances

☐ Display alternate units

Alternate units

Unit format: Decimal

Precision: 0.00

Multiplier for alt units: 25.40

Round distances to: .00

Prefix:

Suffix:

Zero suppression

☒ Leading ☐ Trailing

☐ 0 feet ☐ 0 inches

Placement

☒ After primary value

☐ Below primary value

OK Cancel Help



Tolerances

Modify Dimension Style: DIM-10

Lines | Symbols and Arrows | Text | Fit | Primary Units | Alternate Units | **Tolerances**

Tolerance format:

Method: **None**

Precision: **0.00**

Upper value: **00**

Lower value: **00**

Scaling for height: **1.00**

Vertical position: **Middle**

Zero suppression:

☒ Leading ☒ Trailing ☒ Feet ☒ Inches

Alternate unit tolerance:

Precision: **0.00**

Zero suppression:

☒ Leading ☒ Trailing ☒ Feet ☒ Inches

OK Cancel Help

4.0 Layer List Airport Layers

ORDER	ITEM	LAYER	COLOR	LINETYPE	LINEWEIGHT
A					
	Arresting gear (Runway)	C-RUNW-ARST	Yellow	Cont	
	Airfield runway edge	C-RUNW-EDGE	White	Cont	
	Annotations-TAXIWAY	C-TAXI-IDEN	White	Cont	
	Annotations-TAXILANE	C-TXLN-IDEN	White	Cont	
	Annotations - RUNWAY	C-RUNW-IDEN	White	Cont	
	Aerial Photography Boundaries	V-AERI-BNDY			
	Aerial Photo Index	V-AERI-INDX			
	Aerial flight lines/path	V-AERI-PATH			
	Alignment coordinates and curve -Existing	V-ALGN-DATA			
	Alignment coordinates and curve - Proposed	C-ALGN-DATA			
	Alignment - Existing	V-ALGN-LINE			
	Alignment - Proposed	C-ALGN-LINE			
	Alignment tick mark - Existing	V-ALGN-MARK			
	Alignment tick mark - Proposed	C-ALGN-MARK			
	Alignment stationing - Existing	V-ALGN-STAT			
	Alignment stationing - Proposed	C-ALGN-STAT			
	Aircraft/Helicopter Operational areas	C-AIRF-AHOA			
	Aircraft Non Movement Area(Airfield- Ai NOMV	C-AIRF-DSRF- NOMV			



	Airspace obstruction - Line(Airfield)	C-AIRF-OBST-LINE			
	Airspace obstruction-Polygon(Airfield)	C-AIRF-OBST-POLY			
	Airspace obstruction-Point(Airfield)	C-AIRF-OBST-PPNT			
	Airport Property (Airfield)	C-AIRF-PROP			
	Approach surface isoclines (Airfield)	C-AIRS-ISOC			
B	Border	G-ANNO-TTLB	White	Cont	
	Building & other structures text-Existing	V-BLDG-IDEN	Cyan	Cont	
	Building & other structures text-Proposed	C-BLDG-IDEN	Cyan	Cont	
	Building & other structures outline-Existing	V-BLDG-OTLN	White	Cont	
	Building & other structures outline-Proposed	C-BLDG-OTLN	White	Cont	
	Building pattern & hatching	C-BLDG-PATT	8	Cont	
	Breaklines - TOPO - Existing	V-TOPO-BKLN			
	Breaklines - TOPO - Proposed	C-TOPO-BKLN			
	Borings - TOPO - Existing	V-TOPO - BORE			
	Borings - TOPO - Proposed	C-TOPO - BORE			
	Beacons - Identifier tags, symbol modifier and text	V-BCNS-IDEN			
	Beacons-Misc. nav aids, windcones and beacons	V-BCNS-MISC			
	Beacons - Strobe	V-BCNS-STRB			
	Building Restriction Lines	C-AIRF-DSRF-BLDR			
C					
	Centerline - Taxiway - Existing	V-TAXI-CNTR	White	Centerline	
	Centerline - Taxiway - Proposed	C-TAXI-CNTR	White	Centerline	
	Centerline - Runway - Existing	V-RUNW-CNTR	White	Centerline	
	Centerline - Runway - Proposed	C-RUNW-CNTR	White	Centerline	
	Centerline - Perimeter Road - Existing	V-ROAD-CNTR	White	Centerline	
	Centerline - Perimeter Road- Proposed	C-ROAD-CNTR	White	Centerline	
	Centerline - Taxilane- Existing	V-TXLN-CNTR	White	Centerline	
	Centerline - Taxilane- Proposed	C-TXLN-CNTR	White	Centerline	
	Centerline Annotations - TAXIWAY	C-TAXI-CNTR-IDEN			
	Centerline Annotations - TAXILANE	C-TXLN-CNTR-IDEN			
	Centerline Annotations - RUNWAY	C-RUNW-CNTR-IDEN			
	Centerline Markings - TAXIWAY	C-TAXI-CNTR-MARK			
	Centerline Markings - TAXILANE	C-TXLN-CNTR-MARK			
	Centerline Markings - RUNWAY	C-RUNW-CNTR-MARK			
	Coordinate Grid Ticks and Text - TOPO-Existing	V-TOPO-COOR			
	Coordinate Grid Ticks and Text - TOPO-Proposed	C-TOPO-COOR			
	Communications airfield navigational aides	C-AIRF-AIDS-COMM			



	Contours(Major) - Existing	V-TOPO-MAJR			
	Contours(Major) - Proposed	C-TOPO-MAJR			
	Contours(Minor) - Existing	V-TOPO-MINR			
	Contours(Minor) - Proposed	C-TOPO-MINR			
	Contours(Major) Annotation - Existing	V-TOPO-MAJR-IDEN			
	Contours(Major) Annotation - Proposed	C-TOPO-MAJR-IDEN			
	Contours(Minor) Annotation - Existing	V-TOPO-MINR-IDEN			
	Contours(Minor) Annotation - Proposed	C-TOPO-MINR-IDEN			
	Communication - Surface Utility	V-UTIL-COMM-SURF			
	Communication - Substructure Utility	V-UTIL-COMM-SUBS			
D	Dimension leaders & text - Existing	V-ANNO-DIMS	White	Cont	
	Dimension leaders & text- Proposed	C-ANNO-DIMS	White	Cont	
	DTM Points - TOPO - Existing	V-TOPO-DTMP			
	DTM Points - TOPO - Proposed	C-TOPO-DTMP			
	DTM Triangles - Existing	V-TOPO-DTMT			
	DTM Triangles - Proposed	C-TOPO-DTMT			
	Ditches and swales	V-TOPO-DTCH			
	Demolition Plan	C-SITE-DEMO-OTLN			
	Demolition Plan Hatching and Pattern	C-SITE-DEMO-PATT			
	Demo Plan Hatching and Pattern for Keyplan	C-SITE-DEMO-KEYN			
E	Edge - Taxiway - Existing	V-TAXI-EDGE	White	Cont	
	Edge - Taxiway - Existing	V-TXLN-EDGE	White	Cont	
	Edge - Runway - Existing	V-RUNW-EDGE	White	Cont	
	Edge - Taxiway - Proposed	C-TAXI-EDGE	White	Cont	
	Edge - Taxiway - Proposed	C-TXLN-EDGE	White	Cont	
	Edge - Runway - Proposed	C-RUNW-EDGE	White	Cont	
	Erosion control-riprap, revetment, stone protection, breakwaters, dikes	C-SITE-EROS	White	Cont	
	Erosion control annotation	C-SITE-EROS-IDEN	Cyan	Cont	
	Elevations - Spot -Existing	V-TOPO-ELEV			
	Elevations - Spot - Proposed	C-TOPO-ELEV			
	Electrical - Surface	V-UTIL-ELEC-SURF			
	Electrical - Substructure	V-UTIL-ELEC-SUBS			
F	Fences & Handrails -Existing	V-SITE-FENC	Cyan	Cont	
	Fences & Handrails - Proposed	C-SITE-FENC	Cyan	Cont	
	Fences & Handrails - Annotation-Existing	V-SITE-FENC-IDEN	Cyan	Cont	
	Fences & Handrails - Annotation-Proposed	C-SITE-FENC-IDEN	Cyan	Cont	
	Flood Zone - Topo	C-TOPO-FLZN			
	Fuel tanks	V-FUEL-TANK			
	Fuel line	V-FUEL-LINE			



	Fuel annotation	V-FUEL-IDEN			
	Fuel line trench	V-FUEL-TRCH			
	Flight Track Line (Airfield)	C-AIRF-TRKL			
	Flight Track Point (Airfield)	C-AIRF-TRKP			
	FAR Part 77 Approach Surface (Airspace)	C-AIRF-APRC			
	FAR Part 77 Conical Surface (Airspace)	C-AIRF-CONL			
	FAR Part 77 Horizontal Surface (Airspace)	C-AIRF-HORZ			
	FAR Part 77 Primary Surface (Airspace)	C-AIRF-PRIM			
	FAR Part 77 Transitional Surface (Airspace)	C-AIRF-TRNS			
G	Gas Valve, gas line				
	Grid lines- Profile- Major-Existing	V-GRID-MAJR	White	Dashed	
	Grid lines- Profile- Major-Proposed	C-GRID-MAJR	White	Dashed	
	Grid lines-Profile - Minor-Existing	V-GRID-MINR	White	Dots	
	Grid lines-Profile - Minor-Proposed	C-GRID-MINR	White	Dots	
	Grid lines-Profile - Text-Existing	V-GRID-TEXT	Cyan	Cont	
	Grid lines-Profile - Text-Proposed	C-GRID-TEXT	Cyan	Cont	
	Grid frame -Existing	V-GRID-FRAM			
	Grid frame - Proposed	C-GRID-FRAM			
	GPS airfield navigational aides	C-AIRF-AIDS-GPS			
	Gates - Existing	V-SITE-GATE			
	Gates - Proposed	C-SITE-GATE			
	Gas - Surface Utility	V-UTIL-GAS-SURF			
	Gas - Substructure Utility	V-UTIL-GAS-SUBS			
H	Hatching & Pattern - Existing	V-ANNO-PATT		Cont	
	Hatching & Pattern - Proposed	C-ANNO-PATT		Cont	
	Hatching & Pattern - General	G-ANNO-PATT		Cont	
	Holding lines - Taxiway	C-TAXI-HOLD			
	Holding lines - Taxilane	C-TXLN-HOLD			
	KeyPlan Hatching and Pattern	C-SITE-KEYN-PATT	WHITE		
I	Instrument Landing System	C-AIRF-AIDS-ILS			
J	Joints-Taxilane	C-TAXI-JOIN	RED	Cont	
k	Key Plan outline	G-SITE-OTLN	Red	CONT	
	Key Plan Notes	G-SITE-OTLN-NOTES	White	Cont	
	KeyHols	C-AIRF-DSRF-KEYH			
	KeyPlan Hatching and Pattern	C-SITE-KEYN-PATT	WHITE	CONT	
L	Legend & Schedule - General	G-ANNO-LEGN	White		
	Legend & Schedule - Civil	C-ANNO-LEGN	White		
	Legend & Schedule - Survey	V-ANNO-LEGN	White		
M	Mview (viewport)	G-ANNO-MVIEW	White	Cont	
	Mview (viewport) No plot	G-ANNO-MVIEW-NPLT	White	Cont	
	Matchline & Text	G-ANNO-MTCH	Magenta		



	Markings- EXISTING	V-MRKG	White	VARIES	
	Markings -PROPOSED	C-MRKG	White	VARIES	
	Markings - TEMPORARY	C-MRKG-TEMP	White	VARIES	
	Major Contours - Existing	V-TOPO-MAJR			
	Major Contours - Proposed	C-TOPO-MAJR			
	Minor Contours - Existing	V-TOPO-MINR			
	Minor Contours - Proposed	C-TOPO-MINR			
	Major Contours Annotation - Existing	V-TOPO-MAJR- IDEN			
	Major Contours Annotation - Proposed	C-TOPO-MAJR- IDEN			
	Minor Contours Annotation - Existing	V-TOPO-MINR- IDEN			
	Minor Contours Annotation - Proposed	C-TOPO-MINR- IDEN			
	Microwave airfield navigational area	C-AIRF-AIDS- MCWW			
N	NOTES-General notes and remarks	C-ANNO-NOTE	Cyan	Cont	
	NOTES-General notes and remarks	V-ANNO-NOTE	Cyan	Cont	
	Non-plotting graphic information -Design	C-ANNO-NPLOT	White	Cont	
	Non-plotting graphic information -General	G-ANNO-NPLOT	White	Cont	
	Non-plotting graphic information -Existing	V-ANNO-NPLOT	White	Cont	
	Noise Complaint	C-TOPO-AUCO	White	Cont	
	Noise Monitoring System	C-TOPO-AUST			
	Noise Contour/Zone	C-TOPO-AUZN			
	Navigational Aid-Critical Area	C-AIRF-AIDC			
	Navigational Aid-Site	C-AIRF-AIDS			
O	Outline - Taxiway	C-TAXI-OTLN	White	Cont	
	Outline - Taxilane	C-TXLN-OTLN	Red	Cont	
	Outline - Floor outline/perimeter/bldg footprint	C-PLAN-OTLN	Red	Cont	
	Object Free Area-Taxiway	C-TAXI-OFA	White	Cont	
	Object Free Area-Taxilane	C-TXLN-OFA	White	Cont	
	Object Free Area- Runway	C-RUNW-OFA	White	Cont	
	Obstacle free zone - Runway	C-RUNW-OFZ	White	Cont	
	Obstacle free zone - Inner approach	C-RUNW-OFZ- APCH	White	Cont	
	Obstacle free zone - Inner transitional	C-RUNW-OFZ- TRAN	White	Cont	
	Other airfield navigational aides	C-AIRF-AIDS- OTHR			
	Object Free Area(Airfield)	C-AIRF-DSRF- OFZ			
	Object Free Zone(Airfield)	C-AIRF-OFA			
	Other Surface (Airspace)	C-AIRS-OTHR			
	Oil Line - Surface Utility	V-UTIL-OILL-SURF			
	Oil Line - Substructure Utility	V-UTIL-OILL-SUBS			
P	Property bearing and distance labels	V-PROP-BRNG			
	Property lines(County boundary)	V-PROP-CNTY			
	Property lines(Government easements)	V-PROP-ESMT			
	Property annotations	V-PROP-IDEN			
	Property lease lines(surveyed)	V-PROP-LEAS			



	Property lines(Existing recorded plans)	V-PROP-LINE			
	Property land use area	V-PROP-LUSE			
	Property Municipal boundary	V-PROP-MUNI			
	Property quarter lines	V-PROP-QTRS			
	Property right of ways	V-PROP-RWAY			
	Property section lines	V-PROP-SECT			
	Property(State boundary)	V-PROP-STAT			
	Property sixteenth lines(40 lines)	V-PROP-SXTS			
	Property zoning areas	V-PROP-ZONG			
	Pavement - Road,parking lot,railroad				
	pavement Annotation - Existing	V-PVMT-IDEN			
	Pavement - Road,parking lot,railroad				
	pavement Annotation - Proposed	C-PVMT-IDEN			
	Pavement - roads, parking lots, railroad				
	pavements-Existing	V-PVMT-ROAD			
	Pavement - roads, parking lots, railroad				
	pavements-Proposed	C-PVMT-ROAD			
	Pavement runway - Existing	V-PVMT-RUNW			
	Pavement runway - Proposed	C-PVMT-RUNW			
	Pavement Taxiway - Existing	V-PVMT-TAXI			
	Pavement Taxiway - Proposed	C-PVMT-TAXI			
	Pavement Taxilane -Existing	V-PVMT-TXLN			
	Pavement Taxilane - Proposed	C-PVMT-TXLN			
	Precision Object Free Area(Airfield)	C-AIRF-DSRF-OFS			
	Pavement - joint layout - Existing	V-PVMT-JOIN			
	Pavement - joint layout - Proposed	C-PVMT-JOIN			
	Pavement - joint layout text	C-PVMT-JOIN-IDEN			
	Pavement Perimeter road - Existing	V-PVMT-PERI			
	Pavement Perimeter road - Proposed	C-PVMT-PERI			
	Pavement Misc. Airfield - Existing	V-PVMT-MISC			
	Pavement Misc. Airfield - Proposed	C-PVMT-MISC			
	Pole - Utility	V-UTIL-POLE			
	Pole annotation - Utility	V-UTIL-POLE-IDEN			
Q					
R	Redlines	C-ANNO-REDL	White	Cont	
	Revisions	C-ANNO-REVS	Yellow	Cont	
	Runway - LAND & HOLD SHORT AREA	C-ANNO-LAHS	Yellow	Cont	
	Radio airfield navigational aides	C-AIRF-AIDS-RADI			
	Radar airfield navigational aides	C-AIRF-AIDS-RADR			
	Remote airfield navigational aides	C-AIRF-AIDS-RMTE			
	Runway Protection zone(Airfield)	C-AIRF-DSRF-RPZ			
	Runway Safety Area(airfiled)	C-AIRF-DSRF-RSA			
S	Shoulder - TAXIWAY - Existing	V-TAXI-SHLD	GREEN	Cont	
	Shoulder - TAXILANE - Existing	V-TXLN-SHLD	Yellow	Cont	
	Shoulder - RUNWAY - Existing	V-RUNW-SHLD	White	Cont	
	Shoulder - TAXIWAY - Proposed	C-TAXI-SHLD	GREEN	Cont	



	Shoulder - TAXILANE - Proposed	C-TXLN-SHLD	Yellow	Cont	
	Shoulder - RUNWAY - Proposed	C-RUNW-SHLD	White	Cont	
	Symbols -Design	C-ANNO-SYMB	Yellow	Cont	
	Symbols -Existing	V-ANNO-SYMB	Yellow	Cont	
	Symbols -General	G-ANNO-SYMB	Yellow	Cont	
	Safety Area - RUNWAY	C-RUNW-SAFT	Yellow	Cont	
	Safety Area - TAXIWAY	C-TAXI-SAFT	Yellow	Cont	
	Safety Area - TAXILANE	C-TXLN-SAFT	Yellow	Cont	
	Section - material beyond section cut - Existing	V-SECT-MBND	Yellow	Cont	
	Section - material beyond section cut - Proposed	C-SECT-MBND	Yellow	Cont	
	Section - material cut by section - Existing	V-SECT-MCUT			
	Section - material cut by section - Proposed	C-SECT-MCUT			
	Section identification numbers - Existing	V-SECT-IDEN	Cyan	Cont	
	Section identification numbers -Proposed	C-SECT-IDEN	Cyan	Cont	
	Section hatch patterns	C-SECT-PATT	Magenta	Cont	
	Site Improvements	C-SITE-IMPR	Yellow	Cont	
	Site Improvement Annotation -Existing	V-SITE-IDEN	Cyan	Cont	
	Site Improvement Annotation - Proposed	C-SITE-IDEN	Cyan	Cont	
	Site features-play structures, bike racks, benches, recreational equipment- Existing	V-SITE-OTLN			
	Site features-play structures, bike racks, benches, recreational equipment- Proposed	C-SITE-OTLN			
	Slope-Cut/Fill slope TOPO	C-TOPO-SLOP			
	Slope-cut/Fill slope TOPO	C-TOPO-SLOP-FILL			
	Slope-cut/fil slope annotation TOPO	C-TOPO-SLOP-IDEN			
	Slopes Top/Toe - TOPO	C-TOPO-TOPT			
	Slopes Top/Toe - TOPO	C-TOPO-SLTP			
	Survey data, benchmarks, and horizontal control points or monuments	V-SURV-DATA			
	Survey, baseline and control line annotation	V-SURV-IDEN			
	Survey, baseline and control line	V-SURV-LINE			
	Security Identification Display Area	C-AIRF-SIDA			
	Sewer - Surface Utility	V-UTIL-SSWR-SURF			
	Sewer - Substructure Utility	V-UTIL-SSWR-SUBS			
	Storm Drain - Surface Utility	V-UTIL-STRM-SURF			
	Storm Drain - Substructure Utility	V-UTIL-STRM-SUBS			
T	Title block	V-TTLB-XREF	Varies	Cont	
	TEXT - General	G-ANNO-TEXT	Cyan	Cont	
	TEXT - Proposed	C-ANNO-TEXT	Cyan	Cont	
	TEXT - Existing	V-ANNO-TEXT	Cyan	Cont	
	TERPS surfaces (Airspace)	C-AIRS-TERP			



U	UTILITY				
	Electrical - Surface	V-UTIL-ELEC-SURF			
	Electrical - Substructure	V-UTIL-ELEC-SUBS			
	Gas - Surface	V-UTIL-NGAS-SURF			
	Gas - Substructure	V-UTIL-NGAS-SUBS			
	Water - Surface	V-UTIL-WATR-SURF			
	Water - Substructure	V-UTIL-WATR-SUBS			
	Sewer - Surface	V-UTIL-SSWR-SURF			
	Sewer - Substructure	V-UTIL-SSWR-SUBS			
	Storm Drain - Surface	V-UTIL-STRM-SURF			
	Storm Drain - Substructure	V-UTIL-STRM-SUBS			
	Oil Line - Surface	V-UTIL-OILL-SURF			
	Oil Line - Substructure	V-UTIL-OILL-SUBS			
V	Vegetation and treelines - Existing	V-SITE VEGE			
	Vegetation and treelines - Proposed	C-SITE-VEGE			
W	Water valve, Water meter, Water line				
	Walk trails and bicycle paths - Existing	V-SITE-WALK			
	Walk trails and bicycle paths - Proposed	C-SITE-WALK			
	Water features - Existing	V-SITE-WATR			
	Water features - Proposed	C-SITE-WATR			
	Wetland	V-TOPO-WETL			
	Weather airfield navigational aides	C-AIRF-AIDS-WTHR			
	Water - Surface Utility	V-UTIL-WATR-SURF			
	Water - Substructure Utility	V-UTIL-WATR-SUBS			
X	Xreference Titleblock	XREF-TTLB			
	Xreference Base plan	XREF-BASE	White	Cont	
	Xreference Attributes	XREF-ATTR	White	Cont	
	Xreference Design	XREF-DSGN			
	Xreference Notes	XREF-NOTE			
	Xreference Geometry	XREF-GEOM			
	Xreference Elecetrical	XREF-ELEC			
	Xreference Marking	XREF-MRKG			
	Xreference Drainage	XREF-DRAN			
	Xreference Demolition	XREF-DEMO			
	Xreference Erosion	XREF-EROS			
	Xreference Grading	XREF-GRAD			
	Xreference Pavement	XREF-PVMT			



	Xreference Utility	XREF-UTIL			
	Xreference Survey	XREF-SURV			
Y					
Z					

Road and Street Layers

ORDER	ITEM	LAYER	COLOR	LINETYPE	LINE WEIGHT
A	Above grade Utilities-Power Poles, Street Lights, Traffic Signals	V-TOPO-UTIL-ABV	2 (Yellow)	Continuous	
	Airport Boundary Line	V-BNDY-AIR	1 (Red)	Boundary	
B	Building Hatch	V-TOPO-BLDG-HTCH	7 (White)	Continuous	
	Building-Existing	V-TOPO-BLDG	2 (Yellow)	Continuous	
C	City Boundary Line	V-BNDY-CITY	1 (Red)	Boundary	
	Construction Notes and Callouts on Plan View	C-ANNO-NOTE-CONS	4 (Cyan)	Continuous	
	Construction Notes on Title sheet	G-NOTE-CONS	4 (Cyan)	Continuous	
	Coring Locations	C-ROAD-CORE	2 (Yellow)	Continuous	
	Curb-Existing	C-ROAD-CURB	2 (Yellow)	Hidden	
	Curb-New	C-ROAD-CURB-N	1 (Red)	Continuous	
D	Details and Sections	G-DET	2 (Yellow)	Continuous	
	Dimensions	C-ANNO-DIM	7 (White)	Continuous	
	Drawing Text	C-ANNO-TEXT	4 (Cyan)	Continuous	
	Driveways-Existing	C-ROAD-DWY	2 (Yellow)	Hidden	
	Driveways-New	C-ROAD-DWY-N	1 (Red)	Continuous	
E	Existing Elevations Shown on Plan	C-ROAD-ELEV	2 (Yellow)	Continuous	
F	Field Survey - Layers to be determined by Survey	VF-xxxx-xxxx	7 (White)	Continuous	
G	General Notes	G-NOTE-GEN	4 (Cyan)	Continuous	
	Gutter-Existing	C-ROAD-GUTT	2 (Yellow)	Hidden	
	Gutter-New	C-ROAD-GUTT-N	1 (Red)	Continuous	
H	Hatching	C-ANNO-HTCH	7 (White)	Continuous	
L	Legend	G-LEGN	4 (Cyan)	Continuous	
M	Match line and Match line Text	C-ANNO-MATC	6 (Magenta)	Phantom	
	Misc items	C-ROAD-MISC	2 (Yellow)	Continuous	



P	Profile Grid - Use template	C-ROAD-PROF-GRID	7 (White)	Hidden2	
	Profile-Existing	C-ROAD-PROF	2 (Yellow)	Hidden	
	Profile-New (Design)	C-ROAD-PROF-N	1 (Red)	Continuous	
	Profile-New-Label (Design)	C-ROAD-PROF-N ANNO	4 (Cyan)	Continuous	
	Property Lines	V-PROP	1 (Red)	Continuous	
S	Sheet Index	G-INDEX	4 (Cyan)	Continuous	
	Sidewalk-Existing	C-ROAD-WALK	2 (Yellow)	Hidden	
	Sidewalk-New	C-ROAD-WALK-N	1 (Red)	Continuous	
	Signs	V-TOPO-SIGN	2 (Yellow)	Continuous	
	Street Centerline (Alignment) - Use Template	C-ROAD-CL	7 (White)	Center	
	Street Centerline Stations, Bearings, Distances	C-ROAD-CL-ANNO	4 (Cyan)	Continuous	
	Street Centerline Stations, Tick Marks	C-ROAD-CL-STA-MRK	2 (Yellow)	Continuous	
	Striping and Pavement Markings-Existing	C-ROAD-MRKG	7 (White)	Hidden2	
	Striping and Pavement Markings-New	C-ROAD-MRKG-N	4 (Cyan)	Continuous	
	Striping Dimensions	C-ANNO-DIM-MRKG	2 (Yellow)	Continuous	
	Substructure Utilities-Gas lines, waterlines, sewer lines etc. See utility line type for line types to be used	V-TOPO-UTIL-SUB	7 (White)	Continuous	
	Surface Utilities-Valves, Vaults, Meters, Manholes, Pull Boxes.	V-TOPO-UTIL-SURF	2 (Yellow)	Continuous	
T	Title Block Text-Drawing Number, Drawing Title...	G-TTLB-TEXT	4 (Cyan)	Continuous	
	Title Block- use sheet border	G-TTLB	7 (White)	Continuous	
	Trees	V-TOPO-TREE	2 (Yellow)	Continuous	
V	Vicinity Map	G-MAP	7 (White)	Continuous	



5.0 Symbols

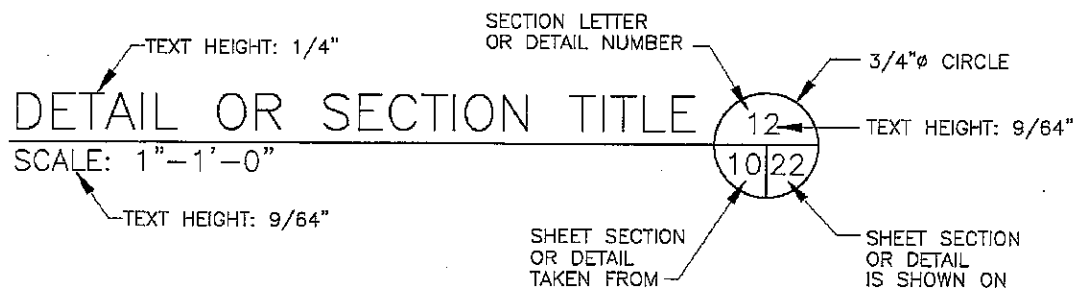
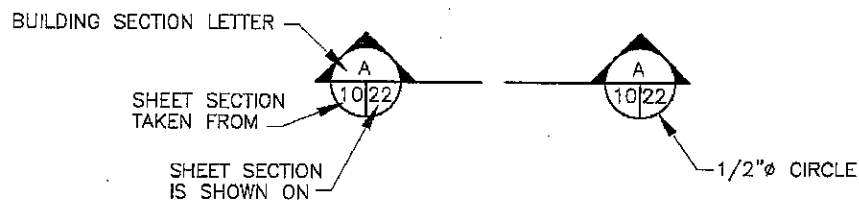
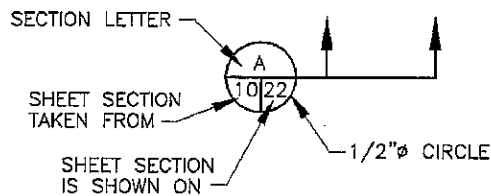
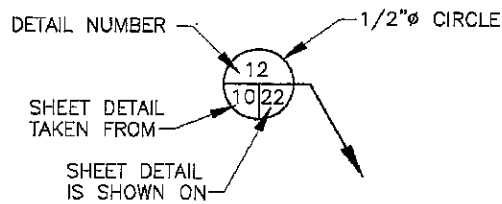
<u>SYMBOL</u>	<u>SYMBOL NAME - Description</u>	<u>SYMBOL</u>	<u>SYMBOL NAME - Description</u>
	STLT - Street Light		SIGNAL - Traffic Signal
	SIGN - Sign		POST - Post or Iron Pipe
	SIGN2 - Sign with Square Post		POLE
	PB - Pull Box		PP - Power Pole
	CONTROL - Signal Control Box		GUYWIRE - Guy Wire
	WM - Water Meter		TREE
	GV - Gas Valve		PALM
	WV - Water Valve		SHRUB
	FH - Fire Hydrant		FLOW - Flowline Direction
	SMH - Sewer Manhole		JOIN - Join Existing Improvements
	SDMH - Storm Drain Manhole		
	TMH - Telephone Manhole		
	EMH - Edison Manhole		
	MONUMENT - Survey Monument		NORTH - Drawing North Arrow
	BM - Survey Bench Mark		

CITY OF LONG BEACH - CALIFORNIA
DEPARTMENT OF PUBLIC WORKS, ENGINEERING BUREAU

DRAFTING SYMBOLS



DETAIL AND SECTION CALLOUTS



- NOTE: 1. ALL SIZES GIVEN ARE FOR 1 TO 1 SCALE, ADJUST AS NECESSARY FOR DRAWING SCALE
2. ALL TEXT SHALL BE ROMANS.SHX WITH A HEIGHT OF 3/32" UNLESS NOTED



6.0 Point Description Codes

<u>Code</u>	<u>Abbreviation</u>	<u>Description</u>	<u>Sub-Code</u>	<u>Abbreviation</u>	<u>Description</u>
1	TC1	Top of Curb	0.01	BCR	Begin Curb Return
2	TC2	Top of Curb	0.02	MOC	Middle of Curb Return
3	TC3	Top of Curb	0.03	ECR	End of Curb Return
4	TC4	Top of Curb	0.04	BC	Begin Curve
5	TC	Top of Curb	0.05	PRC	Point of Reverse Curve
6	FL1	Flow Line (Gutter)	0.06	EC	End of Curve
7	FL2	Flow Line (Gutter)	0.07	PC	Point on Curve
8	FL3	Flow Line (Gutter)	0.08	PI	Point of Intersection
9	FL4	Flow Line (Gutter)	0.09	GB	Grade Break
10	FL	Flow Line (Gutter)	0.10	TD	Top of Drive
11	Lip1	Lip of Gutter	0.11	BD	Bottom of Drive
12	Lip2	Lip of Gutter	0.12	CLD	Centerline of Drive
13	Lip3	Lip of Gutter	0.13	TR	Top of Ramp
14	Lip4	Lip of Gutter	0.14	BR	Bottom of Ramp
15	Lip	Lip of Gutter	0.15	LD	Local Depression
16	CL	Center Line of Road	0.16	Ang	Angle Point
17	Crown	Crown Line of Road	0.17	BOT	Bottom
18	WLK	Walkway	0.18	TOP	Top
19	CWlk	Carriage Walk	0.19	Cen	Centerline
20	TRWell	Tree Well	0.20	NW	North West Corner
21	PL	Property Line	0.21	NE	North East Corner
22	INL	Inlet at Catch Basin	0.22	SW	South West Corner
23	INV	Invert Elev (Curb Drain,Size)	0.23	SE	South East Corner
24	RR	Railroad Tracks	0.24	NO	North
25	Abut	Bridge Abutment	0.25	SO	South
26	BRCol	Bridge Column	0.26	EA	East
27	EP	Edge of Pavement	0.27	WE	West
28	EG	Existing Grade	0.28	LF	Left
29	CLSW	Center Line of Swale	0.29	RT	Right
30	TSW	Top of Swale			
31	TRDR	Trench Drain			
32	Cul	Culvert			
33	Head	Headwall			
34	BRM	Berm			
35	EL	Spot Elevation			



Code Abbreviation Description (cont'd)

40	ERW	Edge of Runway
41	ETW	Edge of Taxiway
42	ES	Edge of Shoulder
43		
44	RWLT	Runway Light
45	TWLT	Taxiway Light
46	PAPI	Precision Approach Slope Indicator
47	VASI	Visual Approach Slope Indicator
48	RWS	Runway Sign
49	TWS	Taxiway Sign
50	ST	Striping
51	Loop	Monitoring Loops
52	FAA	FAA equipment (type)
53	Duct	Duct Markers

MATERIALS

<u>Sub-Code</u>	<u>Abbreviation</u>	<u>Description</u>
0.30	PCC	Portland Cement Concrete
0.31	AC	Asphalt
0.32	NG	Natural Grade (Dirt)
0.33	BRK	Brick
0.34	PATT	Pattern Concrete
0.35	CHL	Chain Link
0.36	Wd	Wood
0.37	Blk	Concrete Block
0.38	Stu	Stucco
0.39	WI	Wrought Iron

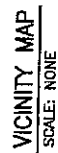
Code Abbreviation Description

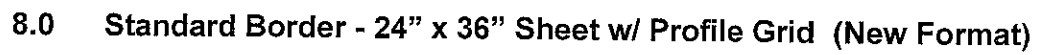
60	MH	Manhole
61	V	Valve
62	M	Meter
63	PB	Pull Box
64	CB	Catch Basin
65	VLT	Vault
66	Grate	
67	CO	Clean Out
68	SL	Street Light
69	TS	Traffic Signal
70	CAB	Utility Cabinet
71	FH	Fire Hydrant
72	PP	Power Pole (Number/ID)
73	GW	Guy Wire
74	GP	Guy Pole
75	Tree	
76	Palm	
77	Bush	
78	BlkWall	Concrete Block Wall (Ht)
79	CLF	Chain Link Fence (Ht)
80	Wd Fnc	Wood Fence (Height)
81	Gate	

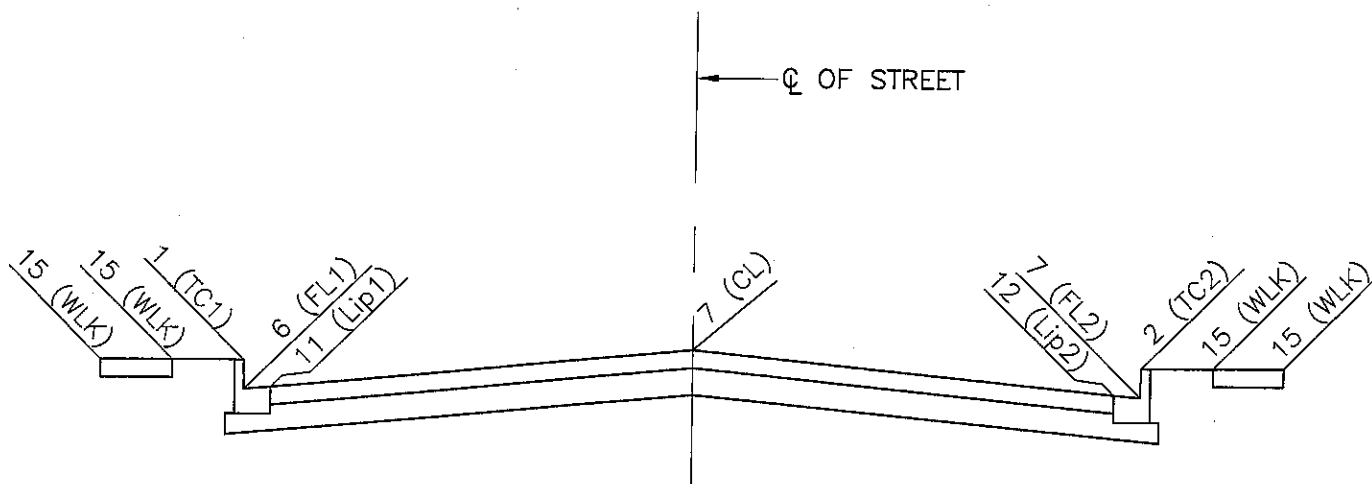
<u>Sub-Code</u>	<u>Abbreviation</u>	<u>Description</u>
0.40	S	Sewer
0.41	SD	Storm Drain
0.42	LASD	LA County Storm Drain
0.43	E	Electrical (Edison)
0.44	G	Gas
0.45	W	Water
0.46	Tel	Telephone
0.47	SL	Street light
0.48	TS	Traffic Signal
0.49	CTV	Cable TV
0.50	O	Oil Company
0.51	UNK	Unknown



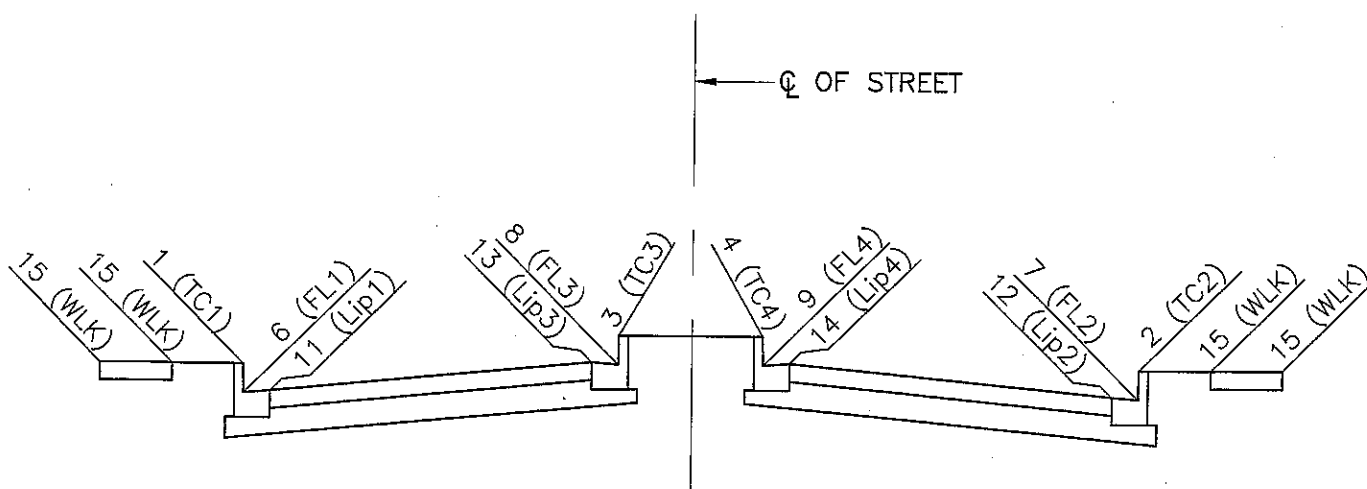
<u>Code</u>	<u>Abbreviation</u>	<u>Description (cont'd)</u>
82	Pole	Pole (Size)
83	Post	Guard Post (Size)
84	GRail	Guard Rail
85	Bldg	Building
86	FF	Finish Floor
87	BkFl	Back Flow Preventer
88	IRR	Irrigation (Sprinkler)
89	CV	Control valve
90	Planter	Planter
91	Sign	
92	Mail	Mail Box
93	TelB	Telephone Booth
94	Misc	(See Note)
95	Misc	(See Note)
96	Misc	(See Note)
97	Misc	(See Note)
98	Misc	(See Note)
99	Misc	(See Note)
100	Mon	Survey Monument (#)
101	BM	Survey Benchmark (#)
102	IP	Iron Pipe
103	SPK	Spike
104	LT	Lead & Tack
105	TBM	Temporary Bench Mark
106	CP	Control Point
107	BH	Bore Hole



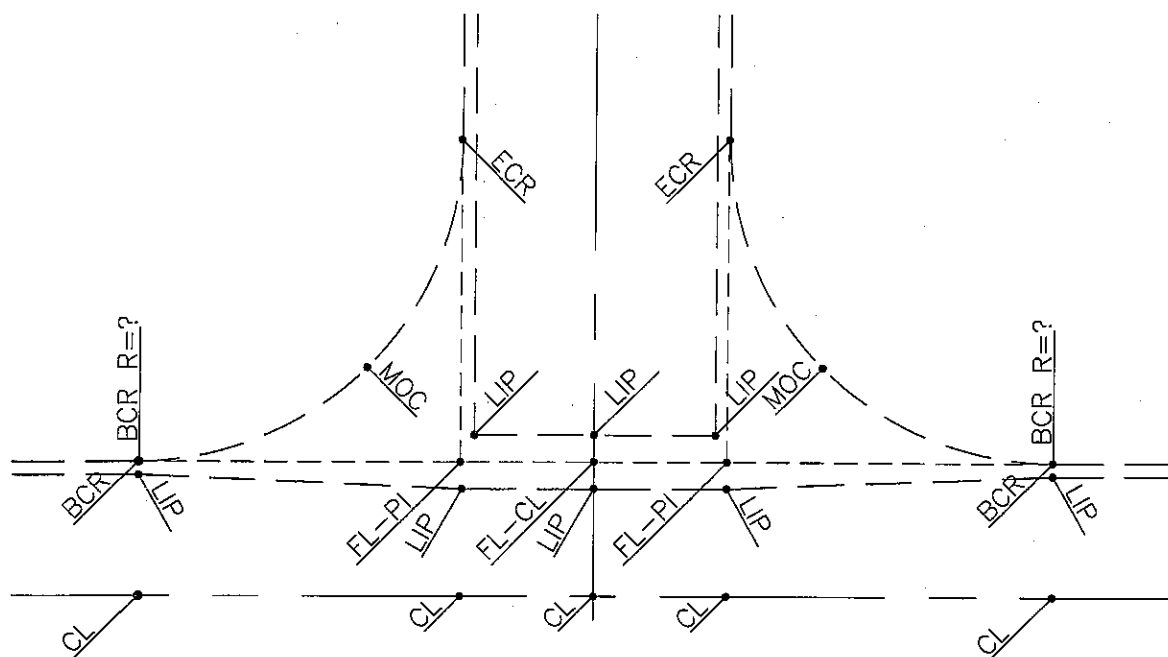




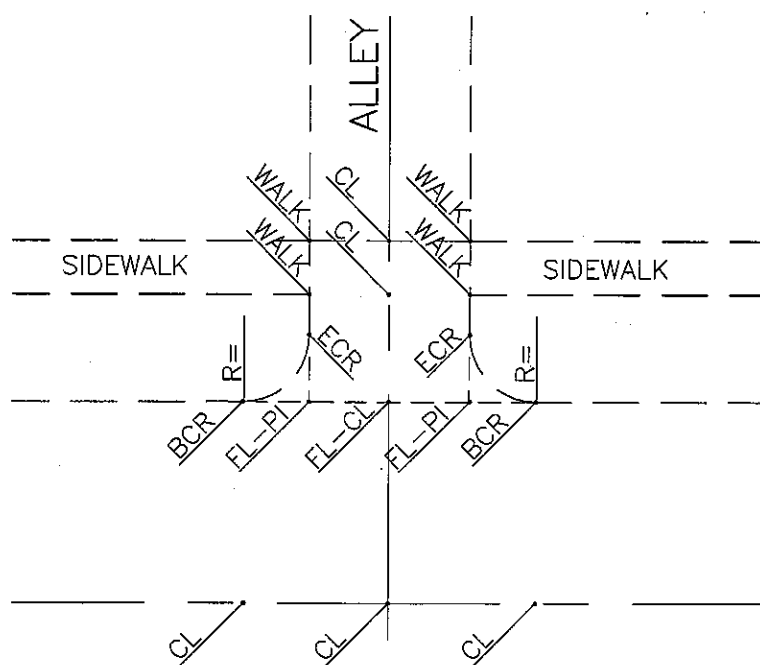
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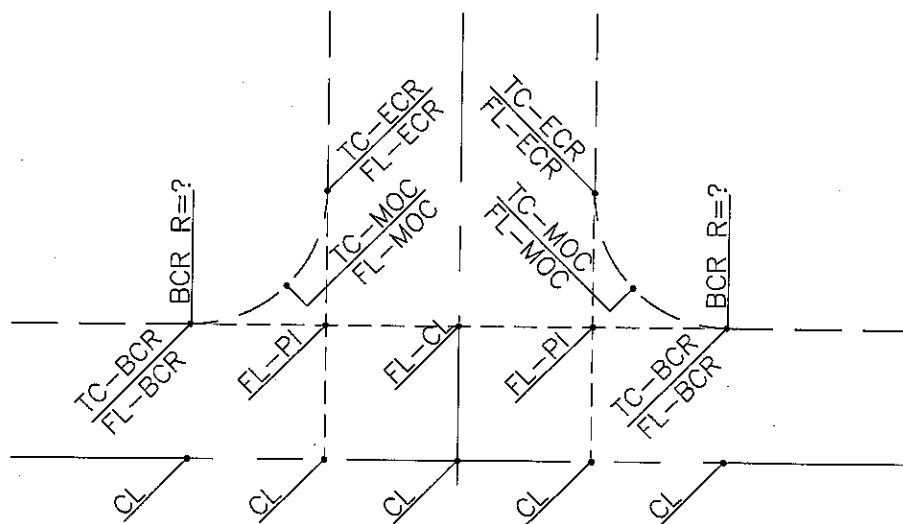
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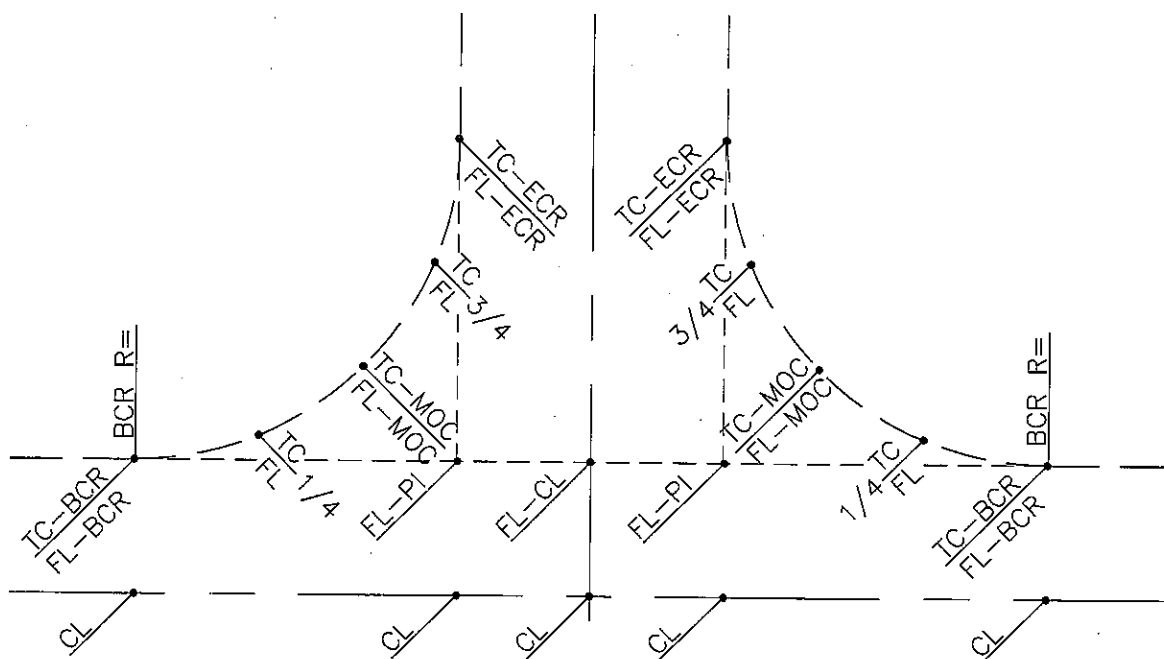
INTERSECTION WITH CROSS GUTTER



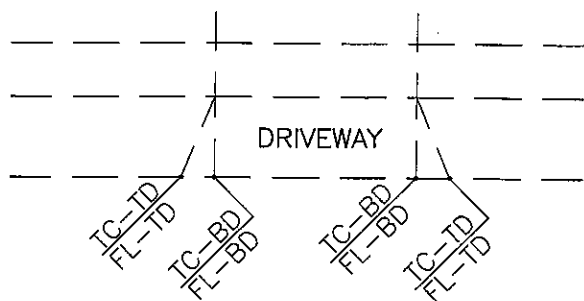
ALLEY ENTRANCE



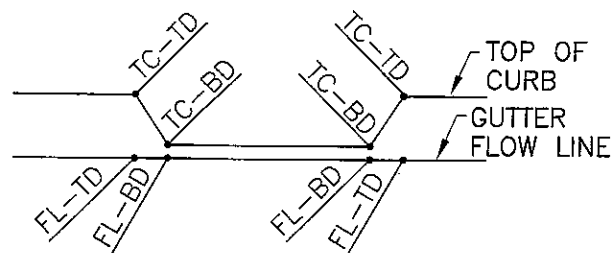
INTERSECTION WITH RADIUS LESS THAN OR EQUAL TO 20'



INTERSECTION WITH RADIUS GREATER THAN 20'

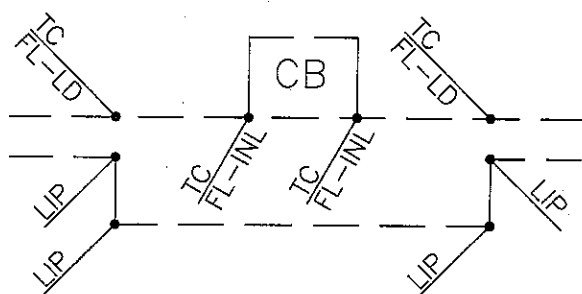


PLAN VIEW

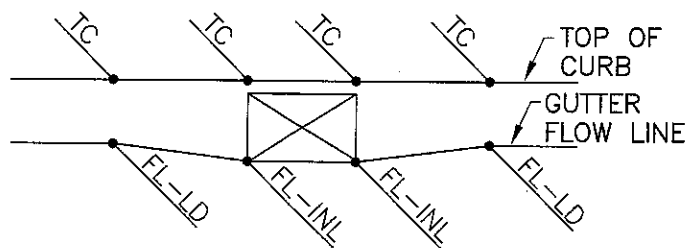


ELEVATION

DRIVEWAYS



PLAN VIEW



ELEVATION

LOCAL DEPRESSION

