



**City of Redding
Public Works Department
Engineering Division**

**Capital Improvement Project
Submittal Requirements**

March 2013

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1 PLAN SHEETS

Project plans are engineering or architectural drawings containing information from which contractors prepare bids, surveyors use to stake the project, successful bidders use to construct the project, and inspectors use to inspect the contractor's work. The plans must contain sufficient information such that the work shown is biddable and buildable, and in the case of building structures, permissible. These plans, as revised during construction, become a permanent record in the form of Record Drawings for future reference.

All plans shall be prepared on City of Redding standard title block sheets. All plans shall be drawn using line codes, text sizes, abbreviations, symbols and drafting conventions as described in the City of Redding CAD Drafting Standards, Caltrans Drafting and Plans Manual, Sheets A10-A through A10-E (Abbreviations, Lines and Symbols) of the Caltrans Standard Plans (current edition), page 600.00 of the City of Redding Construction Standards (current edition), Section 1-3 "Abbreviations" of the Standard Specifications for Public Works Construction "GREENBOOK," or as otherwise approved by Engineering. Full size sheets shall be architectural D 24"x36" Mylar. Half size sheets shall be ANSI B 11"x17" reductions of the full size sheets.

Unless otherwise approved by the Engineering Division, all plan submittals shall be made on ANSI B 11"x17" reductions of the full size sheets.

All plans shall be affixed with the State of California license seal and signature of the civil, electrical, structural or mechanical engineer, geologist, architect, or landscape architect who is in responsible charge of developing that plan.

If the plan was prepared by a consultant, the firm name and address of the consultant that prepared the plan shall be shown in the title block.

1-1 Plan Orientation

Stationing should run from south to north or west to east and the layout of plan sheets should be arranged to indicate that the north arrow is directed toward the top of the sheet or to the right edge of the sheet.

1-2 Title Sheet

The following shall be shown on the title sheet:

- Vicinity map - Shows general location in City.

- Location map - Shows City limits, street names, waterway names, structures and the beginning and end of construction.

- Sheet index

- Project name

- Signature block

- Required contractors license classification

- General notes as applicable

1-3 Data Sheet

The following shall be shown on the Data Sheet and shall be located as the second sheet of the drawing set:

- Abbreviation list

- Legend

- Summary of quantities

- Listing of all applicable City of Redding construction standards applicable to the project

1-4 Typical Cross Section Sheets

The following shall be shown on the typical cross section sheets:

- Design Designation

- Scale (or labeled "NO SCALE")

The following shall be shown on each cross section:

- Layout Line (centerline, station line, horizontal alignment)

- Profile Grade Point

- Widths of Pavement, Shoulders, Medians, Sidewalks, Gutters, Etc.

- Cross Slopes (%)

- Basic Right of Way Widths

- Stationing Limits (Below Each Cross Section)

- Pavement Width Transitions

- Type, Class and Thickness of Pavement, Base and Subbase

- Curb and Gutter Types

1-5 Layout Sheets

These plan sheets shall adequately show all work to be performed. All pertinent topographic features and improvements shall be shown, such as elevations, underground utilities, poles, ditches, edge of pavement, curb and gutter, sidewalk, structure, trees, and other features of the area which may affect design.

All existing features shall be shown as faded or dashed lines. All proposed improvements shall be shown in solid heavy lines. All right-of-way lines, easements, section lines, and temporary construction easements, both existing and proposed, shall be shown and dimensioned on the plans. All proposed streets shall be dimensioned from centerline to lip of gutter, face of curb or back of sidewalk, and to right-of-way. All radius dimensions shall be shown. Cut and fill lines, pavement removal, existing pavements, curbs, dikes, sidewalks, driveways, wheelchair ramps, road approaches, right of way lines, and topography (when pertinent) are to be shown.

Line types and symbols used which are not included in the data sheet abbreviations and legend must be defined individually.

All layout sheets shall show:

- North Arrow

- Scale

- Bearing and Distance on all stationed lines

Layout line/centerline designations, horizontal alignment and curve data
Stationing
R/W Lines
Easements
Survey Monuments, control points, and bench marks

1-6 Profile Sheets - Roadway Work

These plan sheets shall show layout line/centerline designations (consistent with layout sheets), original ground line, and profile grade line.

Stations shall be provided for all intersections, curb returns, curve returns, beginning of curve (BC), point of compound curve (PCC), point of reverse curve (PRC), and end of curve (EC).

Roadway excavation and embankment quantities should be shown at the bottom of the profile and shall be summarized in the summary of quantities table on the Data Sheet.

All profile sheets shall show:

- Existing centerline and proposed centerline with percentage of grade labeled
- Existing and proposed gutter flow lines
- All manhole stationing, pipe size, pipe material and pipe lengths

1-7 Grading Sheets

Grading sheets shall show all existing pertinent topographic features, proposed elevations, pad elevations, and on-site drainage information.

Ties to survey monuments and control points shall be shown as necessary for all proposed improvements.

All grading sheets shall show:

- North Arrow
- Scale
- R/W Lines
- Easements
- Survey Monuments/Benchmark references and ties

1-8 Construction Details Sheets

These sheets shall provide supplemental information and construction detailing that cannot be shown on the layout plan sheets due to project complexity and/or the amount of detailing required to fully describe the work.

1-9 Drainage Plan and Drainage Profile Sheets

Drainage plans shall show the layout and location of all existing and proposed drainage facilities. System and unit identification of drainage facilities shall be shown.

Drainage profiles shall be shown that include original ground line, finished grade lines and flow lines of drainage facilities.

Details shall be provided for drainage facilities for which there is no Standard Detail.

A summary of quantities for all drainage components which are pay items shall be provided.

1-10 Sanitary Sewer Plan and Profile Sheets

Sanitary sewer plans shall show the layout and location of all existing and proposed sanitary sewer facilities. System and unit identification of sanitary sewer facilities shall be shown.

Sanitary sewer profiles shall be shown that include original ground line, finished grade lines and flow lines of sanitary sewer facilities.

Details shall be provided for sanitary sewer facilities for which there is no Standard Detail. A summary of quantities for all sanitary sewer components which are pay items shall be provided.

1-11 Water Plan and Profile Sheets

Water distribution systems plans shall show the layout of existing and proposed water mains as well as the location of all gate valves, fire hydrants, blow-offs, water services, etc., and any special details.

Stationing along the center lines of streets and at street intersections shall appear on all water plans.

The location of in-line gate valves, fire hydrants, water services, and blow-offs at the terminus of dead-end water mains shall be indicated by engineer's station or by dimensions from property lines.

Plans for water distribution systems shall show the geometric alignment and right-of-way width of all dedicated streets, existing and proposed curbs, gutters, sidewalks, and existing aboveground and underground utilities.

Show all existing and proposed obstructions that may interfere with the placement of water main pipe such as bridges, culverts, open channels, traffic islands, underground vaults, etc.

A profile shall be shown for all proposed waterlines and all adjacent utility crossings shall be shown.

All existing underground utility crossings shall be positively located and shown on the profile.

A summary of quantities for all water distribution components which are standard City of Redding contract pay items shall be provided.

1-12 Summary of Quantities Sheets

The Summary of Quantities is an aid in determining the quantities for all pay items located throughout the plan set required to complete the work.

Quantities shall be calculated and listed for each separate contract pay item.

Headings for individual pay items shall be identical to pay items shown in the Construction Cost Estimate.

Items of work shown in the summary of quantities which are not separate pay items but are included in other items of work are to be indicated with the symbol "(N)" in the column heading. When this symbol is used, the following note shall be added below the summary of quantities:

(N) = Not a separate pay item; for information only.

Quantities may be summarized in tables on the sheets depicting the work, or on the Data Sheet if separate Quantity Sheets are not warranted.

1-13 Other Plan Sheets

Provide plans for construction area signs, pavement delineation, construction funding signs (when engineers estimate is greater than \$150,000), and work shown or indicated on the layout sheets.

Verify that cross-referenced details, drawings and plans are included in the project plans.

In addition to these plan sheets requirements, building project plan sheets shall also conform to the commercial plan check submittal requirements found elsewhere in these guidelines.

2 SPECIFICATIONS

2-1 General

Specifications for a City of Redding construction contract include the requirements contained in the following:

- A. Standard Specifications for Public Works Construction "GREENBOOK." The "GREENBOOK" contains the "standard" requirements for bidding, constructing and administering City of Redding contracts.
- B. Special Provisions written specifically for a contract and containing specific contract clauses setting forth conditions or requirements peculiar to the project and modify or supplement the "GREENBOOK."

The Standard Specifications for Public Works Construction are divided into six sections:

- Part 1 - General Provisions
- Part 2 - Construction Materials
- Part 3 - Construction Methods
- Part 4 - Rock Products
- Part 5 - System Rehabilitation
- Part 6 - Modified Asphalts

All City of Redding construction contracts and bid documents shall be prepared, in accordance with Part 1 of the Standard Specifications and the City of Redding special provisions that modify Part 1. Engineering will prepare the special provisions that modify Part 1 of the Standard Specifications.

All City of Redding construction contracts and bid documents shall be prepared in accordance with Parts 2, 3 and 4 of the Standard Specifications unless the work is not covered by the Standard Specifications. In the case of work that is not covered by the Standard Specifications, technical specifications shall be written to describe the construction materials, construction methods, measurement and payment of that work.

Technical specifications shall not duplicate or conflict with Part 1 of the Standard Specifications.

2-2 Measurement and Payment Clauses

A method of measurement and payment must be provided for all work shown on the plans and specified in the specifications. Special provisions shall be provided for items of work that are not covered by the Standard Specifications.

One of the following payment clauses shall be used for work not covered by the Standard Specifications:

A. Contract Item Pay Clause

The contract item pay clause is used to cover payment for a contract item of work not covered in the Standard Specifications is worded as follows:

The contract **(1)** price paid per **(2)** for **(3)** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in **(4)**, complete in place, including **(5)** as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

(1) "Lump sum" if item is lump sum. "Unit" if item is each. No entry for other measurements (cubic yard, foot, etc.)

(2) Cubic yard, foot, etc. No entry if lump sum or each and delete the word "per."

(3) Exact wording of the contract item used in the Engineer's Estimate.

(4) Description of work (contract item wording is usually sufficient).

(5) Special or unusual work or work that is normally paid for separately but is to be included in this contract item. (Note: Also used to exclude work.)

B. Modified Contract Item Pay Clause

Use the following modified clause when a contract item is to be measured and paid for in the same manner specified for a similar item in the Standard Specifications:

(1) will be measured and paid for (2) in the same manner specified for (3) in Section (4) of the Standard Specifications.

(1) Exact wording of the contract item.

(2) On a lump sum basis, by cubic yard, etc. If “lump sum” is used, delete the words “measured and”

(3) Exact wording of the similar Standard Specifications item.

(4) Standard Specifications Section which provides payment for the item listed on (3).

C. Full Compensation Pay Clause

Use the full compensation clause to include compensation for work in another contract item instead of making a separate contract item.

Full compensation for (1) shall be considered as included in the contract (2) price paid per (3) for (4) and no (5) therefor.

(1) The work which is not to be paid for separately.

(2) “Lump sum” if item is lump sum. “Unit” if item is each. No entry for other measurements.

(3) Cubic yard, foot, etc. Nothing is entered for lump sum or each and delete the word “per.”

(4) Exact wording of the contract item which is to include compensation for work listed in (1). Should be related contract item or in the “items involved” when the work is not necessarily tied to one item.

(5) Use phrase, “separate payment will be made,” if the work listed in (4) is usually a separate contract item. Use phrase, “additional compensation will be allowed,” when (5) does not apply.

2-3 Trade Names

The term “trade names” used in this section includes proprietary items and brand names. If a material, product, thing or service is specified by the use of a trade name, at least two trade names of comparable quality and function must be listed followed by the words or equal. The use of a single trade name for a material, product, thing or service must have specific, prior written approval by the Engineering Division.

2-4 Liquidated Damages

Liquidated damages are based on the estimated cost of field construction engineering. In special cases, liquidated damages greater than the estimated field construction engineering cost may be specified provided detailed reasons are given to support the greater amount. In all cases, show the calculations that support the recommended rate. Liquidated damages are not to be used as disincentives or incentives to encourage timely completion.

Use the following formula to avoid excessive liquidated damages:

$$\frac{\text{L\% (see table below) x Total Estimate}}{\text{Working Days}} = \text{Liquidated Damages}$$

Minimum Liquidated Damages are \$1,000 a day for projects less than \$2 million.

Working days used to calculate liquidated damages should not include water pollution or plant establishment days.

Liquidated Damages Factor (L%)

Project Estimate

Over \$5 million L=3%

\$2 million - \$5 million L=5%

Except when the minimum liquidated damages apply as provided herein, the calculated liquidated damages should be to the nearest \$100 increment:

2-5 Contract Items

Contract items are the bid items of work used in the Construction Cost Estimate, the bid proposal and the contract. The item description shall be consistent between the plans, specifications and the estimate. The item description and unit measurement should be exactly as shown in the City of Redding Contract Item Database.

3 CONSTRUCTION COST ESTIMATE

The Construction Cost Estimate provides a fair and reasonable price that the City should expect to pay for each of the items of work to be performed, based on expected prices at the time the estimate is submitted. The reliability of the Construction Cost Estimate is necessary for responsible fiscal management. Unreliable cost estimates result in severe problems in the City's budgeting and planning. This, in turn, affects the City's relations with other agencies, contractors, the public, and results in a loss of credibility.

The amount of funds allocated for a project should not influence the estimated prices. Reducing prices to keep the cost estimate within the budgeted amount will not reduce bid prices at the time the bids are opened. Bid overruns can cause serious problems such as delay of award, rejection of all bids or cause a rebid cycle. Likewise, estimates should not be artificially raised to avoid a bid overrun.

A Construction Cost Estimate is a particular dollar amount for a base bid or alternative. The Construction Cost Estimate does not include additional contingency amounts. Estimated ranges and opinions of probable cost are not acceptable in lieu of a Construction Cost Estimate. The Engineer or Architect in charge of the preparation of the Construction Cost Estimate is responsible for its accuracy.

Unless otherwise approved by the Engineering Division, all construction cost estimate shall be itemized using the City of Redding Contract Item List.

The method used to develop the cost estimate shall be described in the consultants Quality Control Plan.

All Construction Cost Estimates will be prepared in accordance with City Council Policy 1503, "Capital Project Estimating Process."

4. QUALITY CONTROL

The Consultant has total responsibility for the accuracy and completeness of the plans and all other work furnished, and shall meet that responsibility through the implementation of a Quality Control Plan. The Consultant's Quality Control Plan shall, at minimum, establish the process necessary to ensure the accuracy and completeness, and all other work furnished. The Consultant shall have a Quality Control Plan in effect to assist quality assurance.

- A. The Quality Control Plan shall establish a process whereby all work is independently checked, corrected and back-checked, in accordance with accepted practice, by a person qualified and appropriately registered in the State of California. All original drawings and calculations shall be maintained for the duration of the design Contract and submitted to the Engineering Division at the completion of the work.
- B. Coordination and checks shall be provided on those drawings that show different work in the same area (i.e., plans coordinated with specifications), to see that conflicts and misalignment do not occur between plan sheets, and between the plans and specifications.
- C. The Consultant shall verify the constructability of the plans in relation to City of Redding Construction Standards, The "GREENBOOK", and the Project Special Provisions.
- D. Delivery of plans and computations must be accompanied by supporting documentation that demonstrates Consultant is following its Quality Control Plan. The documentation may include copies of appropriate lists of deliverables, tables, plan sheet punch lists, etc., which show columns for checking, revising, back-checking, and quality reviews. Design review submittals not accompanied by sufficient verification of quality control procedures will be returned to

Consultant. Documentation of quality assurance procedures is considered to be a requisite element of each review submittal.

- E. The Consultant shall include Quality Control Statements with the 30%, 60%, 90% and Final submittals. The statements shall include checklists for those pertinent items that are required for the timely, uninterrupted processing of submittals with the Engineering Division.
- F. Prior to beginning work, the Consultant shall submit to the Engineering Division two copies of their Quality Control Plan. The Engineering Division will review the plan established by Consultant to determine if quality assurance procedures are adequate and appropriate to the complexity of the project requirements. Review comments will be returned to the Consultant. If appropriate, the revised plan, which incorporates the comments of the Engineering Division shall be resubmitted. No work shall be begin until the Consultants Quality Control Plan has been approved by the Engineering Division.
- G. Evidence that the Quality Control Plan is functioning will be periodically confirmed by the Engineering Division. Deliverables that do not conform to the approved plan will be returned to Consultant without review by the Engineering Division.

5 PROJECTS REQUIRING BUILDING PERMITS

The Permit Center's commercial plan check submittal checklist is attached which contains the complete list of Building Division submittal requirements for all documents submitted to the Building Division for plan review and project permitting. The Consultant shall complete the commercial plan check submittal and submit with the 90% submittal. The Engineering Division will submit the plans and to the Building division for review.

The consultant shall be responsible for all plans and calculation revisions required by the City of Redding's Building Division as required to obtain all required building permits.

The consultant shall be responsible for review, shop stamping, and distribution of all shop drawings associated with consultants work and for as many review cycles as is needed to obtain approved shop drawings from the contractor or contractor's fabricator.

6 DESIGN SUBMITTALS AND REVIEW TIMELINES

30% Review Typical Engineering Division Review Time: 5-10 wd

Consultant Submittal to City Shall Include:

- Five sets of 30% Complete Plan Sheets (11X17) showing base mapping and conceptual design
- One electronic PDF file of plans
- Consultant's Quality Control Plan
- 30% Quality Control Statement

- List of proposed Permitting Agencies
- Preliminary Construction Cost Estimate
- Project Scoping Report/Technical Memo
- Preliminary PS&E Delivery Schedule

Engineering will:

- Circulate 30% Plans to City Utilities and Departments for review and comment
- Provide Electronic copy of City title sheet, data sheet and plan border
- Approve Project Scoping Report/Technical Memo

60% Review Typical Engineering Division Review Time: 5-10 wd

Consultant Submittal to City Shall Include:

- Five sets of 60% Complete Plan Sheets (11x17)
- One electronic PDF file of plans
- Two sets, (hardcopy) and one electronic PDF of Technical Specifications (“GREENBOOK” based unless otherwise approved by the Engineering Division)
- 30% Review Comments and resolution
- 60% Quality Control Statement
- Design Calculations (structural, hydraulic, etc.)
- Updated List of proposed Permitting Agencies
- Updated Construction Cost Estimate
- Updated Project Scope
- Updated PS&E Delivery Schedule

Engineering will:

- Circulate 60% Plan Set to City Utilities and Departments for review and comment
- Provide Project Specification Review and Comment

90% Review Typical Engineering Division Review Time: 10-15 wd

Consultant Submittal to City Shall Include:

- Five sets of 90% Complete Plan Sheets (11x17)
- One electronic PDF file of plans
- Two sets (hardcopy) and one electronic PDF of GREENBOOK Special Provision and Technical Specifications¹

If Technical Specifications other than the “GREENBOOK” are used, measurement and payment clauses shall be included for each item of work.

If Technical Specifications other than the “GREENBOOK” are used, they shall conform to the requirements of the Sections 1-9 of the “GREENBOOK” and the City’s modification thereto.

¹ If additional technical specifications are submitted, the submittal shall be both hard copy and electronic. Electronic specifications shall be on CD/DVD in WordPerfect or Word (current version compatible with the City of Redding).

Low Bid Selection Criteria (Per California Public Contract Code if additive or deductive alternates are used).
Lump Sum Breakdown (if project or major component is lump sum)
Liquidated Damage rate.

- 60% Review Comments and resolution
- 90% Quality Control Statement
- Design Calculations (structural, hydraulic, etc.)
- Revised Construction Cost Estimate
- Copy of submittals to Permitting Agencies
- Cross Sections (as required)

Engineering will:

- Provide "A" Numbers for Drawings
- Provide "Front end" documents for the Notice Inviting Bids, Bid Proposal and standard Special Provisions
- Circulate 90% Plan Set, Special Provisions and Technical Specifications to City Utilities and Departments for Review and Comment
- Provide Bid Schedule and "A" numbers for final submittal²

Final Submittal Typical Time Between Submittal & Advertising: 10 wd to 15 wd (Varies depending on complexity, required coordination and workload)

Consultant Submittal to City Shall Include:

- Environmental Document (CEQA or NEPA as appropriate)
- Copy of permits (as appropriate)
- 90% Review Comments and resolution
- One set of Final plans on architectural D 24"x36" mylar sheets and one set of ANSI B 11"x17" bond sheet³
- Submit plans in accordance with City Electronic Posting of Capital Project Bid Document Procedure.
- All sheets:
 - Shall be stamped & signed by the engineer or architect of record (except title sheet)
 - Shall have Engineering Division "A" numbers as assigned
 - Shall have Bid Schedule Number on each sheet
 - Shall have standard City plan border and title block
- The Specifications shall be stamped and signed by the Engineer or Architect in responsible charge and will be approved by City Engineer (Signatures will be coordinated following compilation of specification book)
- Construction Cost Estimate
- Final Quality Control Statement

² Prior to final submittal, Engineering will determine publishing and bid opening dates, verify available funds, and obtain a Bid Schedule number. The Bid Schedule number shall then be included on each plan sheet.

³ In addition to the hard copies, the consultant shall provide electronic copies of the final drawing, shape, font and library files in AutoCAD Civil 3D .dwg format on CD/DVD. All electronic copies of the final drawing, drawings, shape, font and library files become the property of the City of Redding upon submittal.

- Final Technical Specifications:
 - If technical specifications or modified Greenbook Specifications are used, measurement and payment clauses shall be included for each item of work.
 - If Technical specifications other than the Standard Specifications are used, they shall conform to the requirements of the Sections 1-9 of the Standard Specifications and the City's modification thereto.
 - Low Bid Selection Criteria (Per California Public Contract Code if additive or deductive alternates are used).
 - Lump Sum Breakdown (if project or major component is lump sum)
 - Liquidated Damage rate.
- Three sets of stamped and signed calculations (structural, hydraulic, etc.)
- Resident Engineer file
 - Pay Item Quantity Calculations
 - Cross Sections (if applicable)
 - Contact Lists (engineers, property owners, utility contacts)
 - Critical Project Correspondence
 - Design Exceptions

Engineering will:

- Provide Reproduction of bid documents (Plans & Specifications).
- Advertise Notice Inviting Bids
- Issue any necessary addendums.
- Attend Bid opening and perform bid evaluation (Consultant input as required)
- Process Award of contract by City Council
- Verify contractor's license, bonds and insurance and process execution of the contract.
- Provide Contract Administration -, e.g., scheduling of preconstruction meeting; issuance of Notice to Proceed; processing of change orders, pay estimates, retention, notice of completion, and maintenance bond.
- Provide Construction inspection (unless this service is provided by consultant).

7 ADDENDUMS

The Engineer or Architect who stamped the original plans or specifications shall prepare addendums during the bidding process as determined necessary by the Engineering Division. If an addendum includes new or revised plan sheets, the number of new or revised plan sheets provided shall equal the number of original plan sheets provided. New or revised plan sheets shall have the addendum number and revision date clearly shown. Changes, clarifications or additions to the specifications shall be provided in the same manner as the original specifications. All plan sheets and specifications provided for addendums shall be stamped and signed by the engineer or architect of record and shall be prepared in accordance with the plan sheet and specification requirements found elsewhere in these guidelines.

8 RECORD DRAWINGS

A set of "As-Built" plans will be provided to the Consultant marked with the changes made in the field, during construction of the project. Within 60 days of receiving the marked-up plans, the Consultant shall provide the City with a complete set of original architectural D 24"x36" mylar plans reflecting the changes.

Each plan sheet shall be signed as a "Record Drawing" as provided in the plan sheet title block.

Each plan sheet shall be affixed with the license seal and signature of the licensed engineer/architect who is in responsible charge for the changes made to the plan sheet, unless the changes were made by the original engineer/architect of record.

9 Public Works - Engineering Division Acceptable Plan Sheet Designations

- Title Sheet
- Data Sheet (abbreviations/Legend/Standards List)
- Typical X-Sections
- Layout Plans (with Existing Utilities, Control and Drainage Systems)
- Profile (with Existing Utilities)
- Grading Plan
- Construction details
- Roadway quantities
- Drainage Plan and Profile
- Drainage details and quantities
- Sanitary sewer Plan and Profile
- Sanitary sewer details and quantities
- Water Line Plan and profile
- Water Line details and quantities
- Landscaping plans
- Landscaping quantities
- Construction area signs
- Construction staging
- Traffic signals and lighting
- Signing and striping
- Redding Electric Utilities
- Structures
- City of Redding Building Division Requirements:
 - Grading Permit - General Plan
 - Architectural
 - Plumbing
 - Mechanical
 - Electrical

NOTE: Various types of information (e.g., Layout Plans and Water Plans) may be combined on one sheet depending on the complexity and type of project.



PLAN CHECK SUBMITTAL NEW COMMERCIAL



City of Redding
777 Cypress Avenue
Redding CA 96001
Telephone:
(530) 225-4013
FAX: (530) 225-4360

Design Criteria:

- Seismic Design Category D (unless otherwise justified by a geotechnical report and spectral response accelerations)
- Basic wind speed (85 mph)
- Snow load (30 psf, nonreducible)
- Maximum rain intensity (3" per hour)
- 2010 editions of the California Building Code (CBC), California Plumbing Code (CPC), California Mechanical Code (CMC), California Fire Code (CFC), and California Health and Safety Code amendments
- California Electrical Code (CEC)
- California Energy Code Energy Efficiency Standards, Climate Zone 11
- Class 4 soil per CBC Table 1804.2 or a soils report per CBC 1802

Drawing Criteria:

Preferably, drawings shall be limited in size to 24 by 36 inches maximum. Plans must be clear and legible; nonlegible plans **will not be accepted**. Preferred scale: 1/4 inch per foot for structural and architectural; 1 inch = 20 feet for site plans.

Architects/engineers must affix their seal and wet sign all appropriate sheets of plans (cover sheet of supporting documents to be stamped and wet-signed).

NOTICE: Development Impact fees can be substantial. Please obtain a free fee estimate early in the process to avoid late surprises.

Submittal Plan Documentation:

- Completed and processed Fee Estimate.
- Two complete sets of legible building plans to include:
 - Cover sheet
 - Plot/Site plan
 - Architectural & Structural plans
 - Plumbing plan
 - Mechanical plan
 - Electrical plan
 - Civil drawings, City of Redding signed/approved
 - Landscape/irrigation plan
 - Food equipment plan
 - Fire and life safety
 - Assessor's plan
- Two sets of water efficient landscape documentation
- Two sets of structural calculations, stamped and signed by licensed California architect or engineer
- Two sets of truss calculations, stamped and signed by licensed California architect or engineer
- Two sets of energy calculations, signed by designer and/or owner
- One Assessor's plan (floor plan and site plan)
- One Shasta County Environmental Health Division approval plan where food is served or sold.
- One set of electrical plans (for Electric Department)
- Forms:
 - Permit Application
 - Owner Builder Form
 - Electric utility information
 - Electrical Load Form
 - Hazardous Material Checklist
 - Hazardous Material Agency Approval (if required)
 - Wastewater

Specific Information on the Above Drawings:

Cover Sheet - General Information/Building Analysis:

- Project name and address as well as project owner's name, address, and phone number (contact person)
- Name, title, address, and phone number of architect or engineer of record
- Assessor's parcel number
- Occupancy group(s), type of construction, and fire sprinklers
- Project design codes (CBC, CPC, CMC, CEC, CFC, California Health and Safety Code, and Title 24 Energy and Disabled Access Regulations).
- Total square footage of building
- Zoning
- Description or scope of work
- Index of drawings
- Vicinity map, location, and north arrow
- Stamp and wet signature of architect or engineer (design professional may be used with prior Building Official approval)
- Allowable area calculations
- Conditioned floor area
- Impervious acreage
- Water meter size
- Service equipment size

Plot/Site Plan:

- Lot dimension showing whole parcel and property lines
- Building footprint (provide dimensions to property lines and adjacent buildings)
- Identify location within building footprint where work is to be done
- Parking layout showing
 - Location of pedestrian path of travel from public sidewalk and public transit facilities to building main entrance
 - Location of disabled access parking stall(s)
 - Disabled access path of travel from parking stall(s) to building main entrance
- Identify backflow device
- Identify uses of adjacent tenant spaces, suites, or buildings
- Identify building orientation with north arrow
- Show location of:
 - Electric meters/service
 - Septic system
 - Access roadways
 - Trash enclosure
 - Gas meters
 - Easements, rights of way, etc.
 - Mandatory requirement of Planning Division and/or use permit
 - Other structures on property

Architectural and Structural Plans:

- Foundation plan if applicable
- Floor plan (show each floor drawn to scale and fully dimensioned):
 - Show size of all openings/swings of doors
 - Show exiting systems to a public way
 - Identify rated corridor systems
 - Show location of all mezzanines and stairways
 - Show construction information for any tenant walls
 - Show location of all restrooms and provide details & dimensions depicting compliance with disabled access regulations
 - Identify uses of all rooms
 - Reference to section details
 - Show smoke detector locations
 - Show location of electric panels
 - Identify exit lights/emergency lighting
 - Fire extinguishers
- Floor/wall/ceiling/roof framing plans
- Seating plan within assembly uses
- Interior and/or exterior elevations
- Reflected ceiling plans
- Details architectural/structural:
 - Cross sections
 - Bracing and support details
 - Accessibility details
 - Hardware
 - Framing details
 - Flashing
 - Section details
 - Roof drains with sizing calcs
 - Occupancy separation details with listing reference numbers
 - Protection of penetrations in rated assemblies with listing numbers
 - Footing details (piers, grade beams, etc.)
 - Rated corridors, shafts, and rated floor ceiling/roof ceiling assemblies with listing numbers
 - Handrails and guardrails along with support details
 - Structural material specifications
 - Door/window schedules (list size and type)
 - Energy compliance documents
 - Structural connections (hold downs, welding, columns, etc.)

Plumbing Plan:

Commercial plumbing plans shall be stamped and signed by a California licensed architect/engineer; or in the case of design-build, a California licensed contractor may sign the plans.

- Floor plan
- Single-line and/or isometric drawings showing location, materials, size, fixture units, and lengths of:
 - Drains/clean outs
 - Vents
 - Waterlines
 - Water sizing calculations
 - Water heater/boiler
 - Sewers
 - Fixtures
 - Condensate lines
 - Overflow plan
 - Medical gases
 - Supports
 - Back-flow preventer
- Gas lines: Provide single-line and isometric drawings showing
 - Location of all equipment
 - Type of materials
 - Size and length of piping
 - BTU/hour demands (use 1,000 BTU/CFH)
 - Gas meter location
 - Gas line sizing calcs
 - Other:

Mechanical Plan:

Commercial mechanical plans shall be stamped and signed by a California licensed architect/engineer; or in the case of design-build, a California licensed contractor may sign the plans.

- Floor plans (show new and existing work):
 - Size and location of all duct work, plenums, registers, fire/smoke dampers, smoke detectors, fresh-air intakes, and air flows in CFM. Include support criteria
 - Size and location of all combustion air openings(when gas equipment is used)

- Size, type, and termination of any gas vents
- Details of any rated shafts
- Equipment (show size, weight, attachment details, location and access, and make and model number) (BC21) suspended from roof/floor or wall hung over 200 lbs or roof/floor mounted over 400 lbs
- Indicate which rooms are to be conditioned
- Provide minimum required ventilation per current CMC
- Walk-in cooler boxes. (Note: Provide spec sheets for manufactured and/or details of any site built)
- Title 24 mandatory measures and mechanical equipment schedules
- Type I/II Hoods (provide the following):
 - Construction details of rated shafts with listing numbers
 - CFM calculations
 - Location, type, and size of hood, ducts, and equipment
 - CFM of exhaust and makeup air
 - Type of fire-suppression equipment
 - Location of exhaust termination
 - Equipment approvals and listings
 - Other:

Electrical Plan:

Commercial electrical plans shall be stamped and signed by a California licensed architect/engineer; or in the case of design-build, a California licensed contractor may sign the plans.

- Exit lights/emergency lighting
- Medical buildings, industrial buildings, and services over 800 amps will require engineered electrical plans
- Single-line diagram (power):
 - Service entrance (conduit and wire size)
 - AIC rating (new buildings) and service upgrade
 - Feeder, conduit, pipe, and wire sizes to panels, transformers, and fixed equipment
 - Main disconnect size
 - Grounding electrode and grounding electrode conductor size
 - Number of service meters
- Load Calculations:
 - Complete CaEC load calculation (CaEC based on square-foot area, including 125 percent for continuous load and largest motor)
 - Complete panel schedules, actual loads (totaled), with fixture and equipment schedules (new and existing loads)
- Panel schedules:
 - Bus size
 - Voltage, phase, amperage
 - Breaker sizes, circuit description, and connected KW
- Floor plan showing electrical item locations:
 - Lighting fixtures and schedule
 - Fixed and portable equipment
 - HVAC equipment
 - New and existing and to be removed
 - Receptacles and light switches
 - Shop and process equipment
 - Panel locations
 - Title 24 mandatory measures for lighting
 - Exterior lighting plan and fixture details per Redding Municipal Code (RMC) 18.40.090
- Site plan showing:
 - Utility transformer location
 - Service entrance conduit route
 - Parking lot lighting at 1FC/SF, including pole mounting, fixture type, and wattage
- Emergency features:
 - Fire pump
 - Emergency generator system

Civil Drawings (new buildings only):

- Streets (streetlights, plan, profile, etc.)
- Drainage system (and water sheds)
- Erosion-control plan
- Underground fire main size and location
- Direction arrows showing drainage from and on property
- Grading plan with new and existing elevations
- Fire hydrant main size and location
- Water meter size and location
- Storm drain, sanitary sewer, and waterline size and location

Landscape Drawings:

- Plan delineating all landscape areas, features, and requirements
- Planting plan and plant schedule
- Water Efficient Landscape Documentation
- Irrigation plan and equipment legend
- Landscape installation specifications

Food Equipment Plan and Food Facility Related Requirements:

- Make, manufacturer, and model number of all food equipment (must be NSF or equivalent)
- Water heater information: type, size, recovery rate, etc.
- Storage areas for food, employee garments, and cleaning supplies
- Interior room finishes
- Approved Shasta County Health Department Plans

Fire and Life Safety (Fire Prevention):

- Sprinkler plans with calculations
- Fire alarm plans
- Spray booths
- High-piled storage plans to include:
 - Draft curtains
 - Heat/smoke vents
 - Exiting, signs, lights, etc.
 - Flammable & hazardous materials
 - Fire hydrant placement
 - Hose lines
 - Show new and existing work to sprinkler system
 - Medical gas plans
 - Site access for fire apparatus, including turning radius
 - Existing fire sprinkler design
 - Fire extinguishers
 - Emergency lighting

Separate Plans and Permits:

- Storage racks with storage level over 8’ high. Provide calculations and details.
- Fire alarm/smoke detection systems
- Flammable liquid storage areas, compressed gases
- Spray booths
- Automatic fire sprinkler/extinguishing systems
- Retaining walls

Assessor’s Plan:

- Floor plan depicting scaled dimensions
- Site/plot plan

Notes:

Multiple information can be combined on plans for simple buildings if clarity is maintained. This is not a complete list of all required submittals, and additional information may be required to facilitate plan review. Other City departments and/or public agencies may have to review approved plans before permits can be issued.

Environmental Health/Air Quality Divisions:

Approval is required for:

- Food Facilities
- Septic systems
- Hotels/motels
- Water wells
- Commercial pools, spas, and related recreational buildings
- Hazardous materials/gases

DEPARTMENTS AND AGENCIES TO CONTACT IF QUESTIONS ARISE ON SPECIFIC REQUIREMENTS:		
Department	Phone No.	Responsibility
Building Division	225-4013	Plan review, building permits, and inspections
City Clerk	225-4056	Business license
Cross Connection Control	224-6031	Commercial water supply
Customer Service	339-7200	Utility services
Electric Department	224-4384	AIC ratings/ transformer location, size, and service conductors
Fire Prevention	225-4150	Plan review and inspection
Industrial Waste	224-6068	Commercial and industrial wastewater
Planning Division	225-4020	Use permits, signs, and zoning
Engineering Division	225-4190 245-7007	Grading/drainage permits, erosion control, and utility/street improvements
Shasta County:		
Office of Education	225-0225	School fees
Environmental Health Division	225-5787	Septic systems, water wells, and pools
Air Quality Management District	225-5674	Hazardous materials and gases

Website: www.ci.redding.ca.us/devserv/permits/formsonline.html



PLAN CHECK SUBMITTAL COMMERCIAL T.I. / ADDITIONS/ALTERATIONS

REDDING
CALIFORNIA
City of Redding
777 Cypress Avenue
Redding CA 96001
Telephone:
(530) 225-4013
FAX: (530) 225-4360

Design Criteria:

- Seismic Zone Design Category D (unless otherwise justified by a geotechnical report and spectral response accelerations)
- Basic wind speed (85 mph)
- Snow load (30 psf, nonreducible)
- Maximum rain intensity (3" per hour)
- 2010 editions of the California Electric Code (CEC), California Building Code (CBC), California Plumbing Code (CPC), California Mechanical Code (CMC), California Fire Code (CFC), and California Health and Safety Code amendments.
- California Energy Code Energy Efficiency Standards, Climate Zone 11
- Class 4 soil per CBC Table 1804.2 or a soils report per CBC 1802

Drawing Criteria:

Preferably, drawings shall be limited in size to 24 by 36 inches maximum. Plans must be clear and legible; nonlegible plans **will not be accepted**. Preferred scale: 1/4 inch per foot for structural and architectural; 1 inch = 20 feet for site plans.

Plans must be wet-signed on each page. Architects/engineers must affix their seal and wet sign all appropriate sheets of plans (cover sheet of supporting documents to be stamped and wet-signed). Non-registered design professional may prepare the plans only when approved by the Building Official.

Submittal Plan Documentation:

- Completed and processed Fee Estimate.
- Two complete sets of legible building plans to include:
 - Cover sheet
 - Site plan
 - Key plan for location within building
 - Architectural plans
 - Structural plans:
 - Foundation plan
 - Floor framing plan
 - Roof framing plan
 - Cross sections
 - Roof framing plan
 - Structural framing details
 - Relevant information on plumbing, mechanical, and electrical components
 - Landscape Plan and Water Efficient Landscape Documentation if landscaping more than 2,500 feet
 - Truss layout
- Two sets of structural calculations, when required, stamped and signed by licensed California architect or engineer
- Two sets of truss calculations, when required, stamped and signed by licensed California architect or engineer
- Two sets of energy calculations signed by designer and/or owner
- One Assessor's floor plan
- Forms:
 - Permit Application
 - Owner Builder Form
 - Electrical Load Form

Notice: Development Impact Fees can be substantial. Please obtain a free fee estimate early in the process to avoid late surprises.

Specific Information on the Above Drawings:

General Information/Building Analysis (cover sheet):

- Project name and address as well as project owner's name, address, and phone number (contact person)
- Name, title, address, and phone number of architect or engineer of record
- Assessor's parcel number
- Occupancy group(s), type of construction, and if fire sprinklers are being used
- Total square footage of building and improvements (existing and new)
- Zoning
- Vicinity map, location, and north arrow
- Stamp and wet signature of architect/engineer (all sheets). Design professional may be used with prior Building Official approval.
- Conditioned floor area
- Electrical service equipment size
- Existing use. Proposed Use
- Shell permit information (permit number and type of construction)

Plot/Site Plan:

- Lot dimension showing whole parcel and property lines
- Building footprint (provide dimensions to property lines and adjacent buildings)
- Identify building orientation with north arrow
- Direction arrows showing drainage from and on property
- Grading plan with new and existing elevations
- Show location of:
 - Electric meters/service
 - Septic system
 - Location of well
 - Easements, right-of-way, etc.
 - Other structures on property
 - Water meter
 - Driveway
 - Gas meters
 - Mandatory requirements of Planning Division and/or use permit
 - Fire hydrant
 - Trash enclosure
 - Backflow Device

Key Plan:

- Location within building where work is being done
- Path of travel from space to exterior exits
- Path of travel to main entrance per Title 24 regulations for the physically disabled

Architectural and Structural Plans:

- Foundation plan
- Floor plan (show new and existing work and show each floor drawn to scale and fully dimensioned):
 - Show size of all openings/swings of doors
 - Reference to section details
 - Show location of all stairways
 - Show exiting systems to a public way
 - Show construction information for any tenant walls
 - Identify exit lights
 - Identify uses of all rooms
 - Show smoke detector locations
 - Show location of electric panels
 - Show location of all restrooms, and provide details and dimensions depicting compliance with disabled access regulations
- Floor/wall/roof framing plans
- Exterior elevations

- ❑ Details architectural/structural:
 - Cross sections
 - Framing details
 - Section details
 - Flashing
 - Footing details (piers, grade beams, rebar, etc.)
 - Bracing details
 - Handrails and guardrails along with support details
 - Structural material specifications
 - Door/window schedules (list size and type)
 - Structural connections (hold downs, straps, etc.)
 - Fire-rated assemblies and protection of penetrations with listing numbers

Plumbing Plan:

Commercial plumbing plans shall be stamped and signed by a California licensed architect/engineer; or in the case of design-build, a California licensed contractor may sign the plans.

- ❑ Plumbing fixture and single-line schematics with pipe sizes (isometric diagram may be required for complex plumbing plans)
- ❑ Sand and oil/grease interceptor specifications, sizes, and location when applicable
- ❑ Gas line: provide single-line drawing showing meter location, size, and length of piping and BTU demands
- ❑ Location of backflow preventor when required

Mechanical Plan:

Commercial mechanical plans shall be stamped and signed by a California licensed architect/engineer; or in the case of design-build, a California licensed contractor may sign the plans.

- ❑ Gas line sizing calcs
- ❑ Size and location of all ductwork, plenums, registers, fire/smoke dampers, and fresh-air intakes
- ❑ Size and location of all combustion air openings (when gas equipment is used)
- ❑ Size, type, and termination of any gas vents
- ❑ Type I/II hoods will require additional details (ask for details)

Electrical Plan:

Commercial electrical plans shall be stamped and signed by a California licensed architect/engineer; or in the case of design-build, a California licensed contractor may sign the plans. High-rise, medical, and industrial buildings, along with services over 800 amps, must be stamped and signed by an electrical engineer.

- ❑ Floor plan showing proposed electrical item locations:
 - Lighting locations and switching
 - Mechanical equipment and disconnects
 - Receptacles and GFCI receptacles
 - Distribution panel locations
 - Exterior lighting plan and fixture details per Redding Municipal Code (RMC) 18.40.090
- ❑ Single-line diagram and all of the following that apply:
 - Load calculations based on Article 220 of the CaEC
 - Main switch size and type of disconnect
 - Service equipment size, voltage, and phase
 - Number of service meters and location
 - Conduit size, type, and location (under slab, in attic, etc.)
 - Conductor size, type, and type of insulation
 - Derating factors for conduit fill and ambient temperature
 - A.I.C., or fault current in amps available to the main service equipment
 - Transformer locations, sizes, and type, noting method of grounding separately derived systems as per Section 250-26 of the CaEC
 - Panel schedules, connected load, circuit size, and total load of each phase and panel
 - Method of grounding and size, noting all necessary bonding jumpers and size
 - ▶ If using drop calculations, remember that UL does not allow fuse let-through to be used in calculating point-to-point loads
 - ▶ If using a series-rated system, provide copy of UL-approved combination of breakers-to-breakers or fuse-to-breakers being used in series
 - ▶ Otherwise, note that the system is to be fully rated, meaning that all breakers shall have a rating greater than what is available

Separate Plans and Permits:

- Storage racks with storage level over 8' high. Provide calculations and details
- Fire alarm/smoke detection systems
- Flammable liquid storage areas, compressed gases
- Spray booths
- Automatic fire sprinkler/extinguishing systems
- Retaining walls

Assessor's Plan:

- Floor plan depicting scaled dimensions
- Site/plot plan

Notes:

Multiple information can be combined on plans for simple buildings if clarity is maintained. This is not a complete list of all required submittals, and additional information may be required to facilitate plan review. Other City departments and/or public agencies may have to review approved plans before permits can be issued.

Environmental Health/Air Quality Divisions:

Approval is required for:

- Water wells
- Septic systems
- Restaurant/food preparation
- Commercial/multiple family pools

DEPARTMENTS AND AGENCIES TO CONTACT IF QUESTIONS ARISE ON SPECIFIC REQUIREMENTS:		
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