CODES AND STANDARDS

1. Whenever an ASTM designation is herein referred to, it shall mean the particular edition of the publication of the American Society for Testing Materials.

   Whenever "Federal Specifications" is referred to, it shall mean the latest edition, including all amendments, published by the United States Government Printing Office, in effect on the date of the Advertisement to bid.

   Reference is made in the specifications to the above documents, and such references shall have the same force as if these documents had been repeated word for word herein.

   The work to be performed and the materials and equipment furnished under these Contract Documents shall be in strict conformity in every respect with the latest editions of the following governing codes, rules or regulations, or standards as most recently amended:

   STATE OF CALIFORNIA

   State Fire Marshal
   California Administrative Code
   Title 19, Public Safety, State Fire Marshal

   Installation of Air Conditioning and Ventilating Systems (Non-Residential), National Fire Protection Association NFPA No. 90a, Latest edition.

   Department of Industrial Relations
   California Administrative Code
   Title 8, Industrial Relations
   Division of Industrial Safety
   Construction, Trench, Lamp Scaffold and Parallel Safety Orders
   Electrical Safety Orders
   General Industry Safety Orders
   Painting Safety Orders

   TITLE 19, 21 & 24 CAC
   Nothing in these plans or specifications is to be construed to permit work not conforming to these codes.

TEMPORARY FACILITIES

1. Access Road and Parking

   All construction activity, all trucks, cars and personnel shall have access to the site only as indicated on the drawings. All construction parking shall be within the area indicated on the plan.

   Contractor will not be required to build an access road of any kind. Construction vehicles will drive in the location indicated.

2. Protective Measures

   Contractor shall provide all additional barricades, lanterns, lights, guardrails, signs, and any other protective measures required by State or local law or authorities. Upon completion, all such facilities shall be removed from the site.

3. Construction Office

   The Contractor shall provide and maintain during progress of this work, a field office building, approximately 8 x 12 feet in size, equipped with one window and one door, complete with proper locks and large built-in desk flattop along one side for stand-up inspection of plans; minimum 84" long, 36" deep, 36" high.

   The contractor may use a trailer or portable prefabricated building meeting the above criteria, subject to the Engineer's approval.

4. Telephone Service

   The Contractor shall provide and pay for telephone service to construction office.

5. Toilets

   The Contractor shall provide and maintain sanitary chemical type temporary toilets in quantity as required and of types approved by the governing authorities. Temporary toilets shall be enclosed and weatherproof and maintained in a sanitary condition at all times, and supplied with adequate amounts of tissue paper. Toilets shall be removed from the premises when and as directed.

6. Electricity, Light and Power and Gas

   The Contractor will furnish and pay for all electricity and gas required for testing and construction purposes at the nearest present point of electrical and/or gas distribution. The contractor shall provide and pay for all connections, piping, wiring and lamps. The illumination level shall be adequate to allow workmen to properly perform their work. Permanent lighting of all interior rooms must be on prior to second coat of paint. Absolutely no second coats of paint shall be completed under temporary lighting.

7. Heat

   Whenever temporary heat, in the judgment of the Engineer is required, the General Contractor shall provide the temporary heat at his own expense.

8. Water

   The Contractor will furnish all water required for construction and testing purposes at the point indicated on the drawings.

9. Shoring

   All temporary shoring required for installation of new work shall be included in this contract. Contractor shall assume all responsibility for this work and make good and damage caused by improper supports or failure of shoring. When permanent supports are completed, all shoring shall be removed by the Contractor.

10. Construction Debris

    Dumpsters shall be provided for on site for the collection of construction debris during the time of construction.

CLEANING UP

GENERAL REQUIREMENTS:

Each Contractor shall:

a. Proceed with due caution to protect the work of others.

b. During progress of the work, remove and legally dispose of all excess material, debris,etc., resulting from his work.

c. Clean all finger marks, smudges, smears, spatters, drippings, etc., from his work and the work of others caused by workmen in his employ.

d. Upon completion of his work and prior to quitting the project he shall meet with the authorized representative of the Owner and General Contractor, inspecting the work performed and making such corrections as may be found necessary.

   Note: This shall not be construed as the Final Inspection.

e. Supplementary cleaning shall be performed as may be required due to work performed pursuant to items as listed on Final Inspection (Punch List).

   Note: Cleaning of various items shall be done in accordance with recommended procedures for respective material and damage by improper cleaning shall be rectified by the Contractor at his expense.

SAMPLES AND SHOP DRAWINGS

SHOP DRAWINGS:

The following requirements apply to all shop drawings required.

a. Contractor shall submit, without causing delay in the work and within thirty (30) days of Contract award, sufficient quantities to permit Architect to retain three (3) copies for distribution to Owner, Engineer and file, and such additional copies as he and his subcontractor or supplier may require. Numerous or serious corrections will be returned with notations. Contractor shall resubmit required number of sets with corrections made.

b. Any corrections or changes indicated on shop drawings shall not be considered as an extra work order.

c. Before submitting shop drawings, check drawings of subcontractor for accuracy. See that work continuous with and having bearing on work indicated on shop drawings is accurately, distinctly illustrated and that the indicated work complies with contract requirements.

d. Cross reference all details with detail and sheet number on contract drawings.

e. Do not execute work required by shop drawings until approval is given.

f. Shop drawing approval will be general. It shall not relieve Contractor of responsibility for accuracy of such shop drawings, nor for proper fitting, construction or work, furnishing of materials or work required by contract and not indicated on shop drawings. Shop drawings approval shall not be considered as approving departures from contract requirements. If the shop drawings show variations from the contract requirements because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in his letter of transmittal in order that (if acceptable) suitable action may be taken for proper adjustment of the contract; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract, even though the shop drawings have been approved.

g. One set of stamped approved shop drawings shall be kept on the job in good condition at all times.

SAMPLES:

The following requirements apply to all samples required.

a. Submit without causing delay in the work, samples specified, required or directed by the Architect.

b. Submit names of proposed manufacturer's of materials as early as possible, to afford proper color and pattern selections.

c. Transactions with manufacturers or subcontractors shall be through Contractor.

d. Unless otherwise specified, submit samples in triplicate to the Architect and of adequate size showing quality, type, color range, finish, and texture.

e. Label each sample with material name, quality, contractor's name, date, project name, and other pertinent data.

f. Where the specifications require manufacturer's printed installation directions, submit triplicate copies of such directions with samples submitted for approval.

g. Do not order materials until receipt of written approval. Furnish materials equal in every respect to approved samples.

PROJECT CLOSEOUT

1. Contractor's Affidavit

   After the completion of the work contemplated by this contract, the Contractor shall file with the Owner his affidavit, sworn to before a Notary Public, stating that all workmen and persons employed all firms supplying the materials and all subsontractors upon the project have been paid in full, and that there are no bills outstanding against the project for either labor or material, except certain items, if any, to be set forth in such affidavit covering disputed claims, or other items in connection with the Notices to Withhold have been filed under the provisions of the Statutes of the State of California. The filing of such affidavit by the Contractor shall be a prerequisite to the making, by the Owner, of the final payment on the contract.

2. Guarantee

   After completion of the work prior and as addition to the filing of the Notice of Completion, the general contractor shall deliver to the Architect all required guarantees on the Guaranty-Warranty form, completely filled out and signed both by the Subcontractor and the General Contractor. All guarantees shall be on form mentioned above regardless of whether it is specifically mentioned in the particular section.

3. Punch List

   Upon notification of substantial completion by the contractor, the Engineer or his representative shall prepare a punch list indicating all items coming to the attention of the Engineer after final inspection which do not satisfactorily comply with the contract documents. Ten copies of the punch list will be presented to the contractor for correction and completion prior and as a condition to the signing of the Notice of Completion. No punch list shall be considered complete or final, or does it in any way waive or void and provisions of the contract documents.

4. As-Built Drawings

   As-Built drawings will be required indicating any changes from the Contract drawings for as-built conditions for the following:

   A. Changes in Architectural Floor Plans.

   B. Changes in Mechanical:
      Piping & Valving
      Equipment Location
      Controls

   C. Changes in Electrical:
      Raceways and Conductors
      Service
      Fixtures or Equipment Location or Type

Finished Grades - building, parking lot, walks and drives.
As-Built drawings shall be in accordance

Submittal Cuts, Specifications & Maintenance Manuals: Shall be as specified under the various sections such as 15, Mechanical and 16, Electrical.

ASPHALTIC CONCRETE PAVING

A. Work included: Asphaltic concrete paving required for this work is indicated on the drawings and includes, but is not necessarily limited to:

   1. Final preparation of subgrade;
   2. Weed killer under pavement;
   3. Mineral aggregate base course;
   4. Asphalt surfacing materials,
   5. Placing asphaltic concrete,
   6. Flood test,

B. Related work described elsewhere:
   Earthwork:

QUALITY ASSURANCE

A. Qualifications of workmen: Provide at least one person who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the design and application of work described for this Section, and who shall be present at all times during progress of the work of this Section and shall direct all work performed under this Section.

   For actual finishing of asphaltic concrete surfaces, and operation of the required equipment, use only personnel who are thoroughly trained and experienced in the skills required.

B. Codes and standards: In addition to complying with all pertinent codes and regulations, comply with the referenced portions of "Standard Specifications", dated January 1976 of the State of California, Department of Public Works, Division of Highways.

PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

FINAL PREPARATION OF SUBGRADES

A. After preparation of subgrade as specified in Section 02200 of these Specifications, thoroughly scarify and sprinkle the entire area to be paved, and then compact by rolling to a smooth, hard, even surface of 90% compaction to receive the mineral aggregate base. Finish to the required grades, with due allowance for the thickness of base course and finishes surfacing to be placed thereon.

EQUIPMENT

A. Compacting equipment shall be self-propelled tandem rollers having a minimum weight of ten tons, except that hand-held vibrator compactors may be used in areas not accessible to rollers when specially approved by the Architect.

B. Coating Equipment: All equipment for line painting, soil sterilizing, and seal coating shall be specifically designed for that purpose and shall be subject to the inspection and approval of the Architect.

C. Paving equipment shall be spreading, self-propelled asphalt paving machines capable of maintaining line, grade, and the minimum surface thickness specified, except that spreader boxes may be used in areas where specifically approved by the Architect.

PLACEMENT OF BASE COURSE

A. Preparation: After subgrade has been completed as described in Article 3.2 above, and has been approved, apply the specified sterilizer over the entire area to be paved, applying in strict accordance with the manufacturer's recommendations.

B. Placement: After completion of sterilizing operations, place the specified base material over all areas to be paved. Wet and compact the base material, using only the amount of water needed to secure optimum moisture content and compaction of 95%. Achieve the thickness of base shown on the drawings. Bring the compacted base finish to a uniformly smooth and hard surface conforming to the lines, grades, elevations, and cross sections shown on the drawings.

PLACEMENT OF ASPHALTIC CONCRETE

A. Receipt of materials: Do not accept material unless it is covered with tarpaulins until unloaded, and unless it has a temperature of at least 280 degrees F, unless approved by Architect.

   Do not place asphaltic concrete when the atmospheric temperature is below 50 degrees F, nor during fog, rain, or other unsuitable conditions.

B. Spreading: Spread material in a manner which requires the least hankling. Where thickness of finished pavement will be 2-1/2" or less, spread in one layer.

C. Rolling: After the material has been spread to the proper depth, roll with the specified equipment until the surface is hard, smooth, unyielding, and true to the thickness and elevations shown on the drawings.

   Roll the surface in at least two directions until no roller marks are visible.

   Finished surfaces shall be free from birdbaths, and shall show no variation from the designed elevations greater than 1/8" when checked with a 6'-0" straight edge.

APPLICATION OF SEAL COAT

A. Mixing: Place the entire contents of each drum of the specified sealer in a plaster mixer or pug mill mixer, and mix thoroughly. Where less than 50 gallons of sealer will be used, mixing may be performed in mortar box.

   During mixing, dilute sealer with water to produce a uniformly flowing consistency, in no case diluting with more than one part of water to four parts of sealer.

PROTECTION

A. Protect from traffic during all operations, and until sealer is thoroughly set and cured and does not pick up under foot or wheeled traffic.

FINISH TOLERANCES

A. Finish all surfaces to the following tolerances:

1. Base course:	Plus 0.00' to minus 0.10' from line and grade shown on the drawings.
2. Asphaltic concrete Surfacing:	Plus or minus 0.05' at any point from line and grade shown on the drawings.

SOIL STERILIZER

A. Material: Pacific Coast Borax Company's "Ployborchlorate", U.S. Borax "Monobar Chlorate", Chevron "Ortho C-B", or Casron.

B. Acceptable alternate: A commercial solution of sodium chlorate and soluble borax, if the content of the treatment includes one pound of sodium chlorate per 100 square feet of area to be paved.

C. Aggregate Base: Material shall be untreated rock base conforming to the provisions of Section 26 of the Division of Highway Specifications for Class 11-3/4" maximum size aggregate base material except the material may be spread by use of a motor grader.

D. Asphalt Concrete Paving: Asphalt Concrete shall consist of Type B mineral aggregate conforming to Section 39 of the Division of Highway Specifications. For 1/2" maximum, medium grading mixed with a bitumen content of 5% of 8% by weight of 85/100 penetration paving asphalt.

E. Mixing asphaltic concrete materials: All asphaltic concrete shall be hot plant mixed, and shall be furnished from a commercial asphalt hot mix plant.

   The aggregates shall have a temperature between 275 degrees F and 325 degrees F when placed in the mixer. The liquid asphalt shall be heated to a temperature between 275 degrees F and 350 degrees F, and shall be added during mixing.

   Mix the combined aggregates and liquid asphalt in a pug mill mixer with a capacity of not less than 3000 pounds per batch. Continue the mixing for at least 45 seconds after all ingredients have been placed in the mixture, and until the liquid asphalt is distributed uniformly throughout the mixture.

   The mixture shall have a temperature between 290 degrees F and 320 degrees F when it leaves the plant.

SEALER

A. Provide "Laycold Walk Top" sealer as manufactured by Chevron Asphalt Company, or an equal approved by the Architect.

EXECUTION

INSPECTION

A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

REINFORCING STEEL

MATERIALS:

a. Reinforcement Steel: Shall be new deformed, intermediate grade steel, conforming to ASTM A-615 grade, 40.

b. Deformation: ASTM A-305, except 1/4" bars.

c. Welded Steel Wire Fabric: Shall conform to ASTM A-185.

d. Tie Wire: Annealed copper-bearing steelwire, at least 16 gauge.

e. All reinforcing shall be new, clean free from oil, dirt, loose mill scale, excessive rust, mortar, or other coatings that would destroy or reduce the bond.

PLACING REINFORCEMENT:

a. Cleaning: Before use, reinforcement shall be cleaned so as to be free of mortar, oil, dirt, loose mill scale and loose rust or other coatings that would destroy or reduce the bond.

b. Bending: The bending and placing of all reinforcement shall conform to the "Manual of Standard Practice" of the American Concrete Institute. Bends shall be made around a pin having a diameter of not less than four times the bar diameter for stirrups and ties, six times the bar diameter for the other bars except for bars larger than 1" which shall be eight times the bar diameter. Bars shall be bent cold.

c. Placing: Reinforcing shall be accurately placed in accordance with the drawings and shall be securely tied in position with at least No. 16 gage annealed wire at all bar intersections. Metal chairs and bolsters shall be used to hold all steel above the form bottoms at the proper distance. Metal spacers shall be used to secure the proper spacing of the steel. Precast concrete blocks shall be used to support reinforcing steel off the ground

   footings and off the soffit of concrete exposed to weather. The clear distance between parallel bars shall not be less than 1-1/2 times the bar diameter, but in no case less than 1-1/2" nor less than 1-1/3 times the maximum size of course aggregate.

d. Splicing: Splices shall be made with a lap of at least 30 bar diameters (40 diameters in Masonry) unless noted otherwise. The bars shall be placed in contact and wired together in such a manner as to maintain a clearance of not less than the minimum clear distance to the other bars and to the surface of the concrete. In general, stagger splices at least 4'-0". Splice wire mesh with a lap at least the dimension of the mesh + 2".

e. Tolerances: Reinforcement shall be placed in speciffic positions within the following tolerances:

   (1) Depth: ± 1/4" for members 24" or less in depth.

   (2) Depth: ± 1/2" for member greater than 24" or less in depth.

   (3) Length: ± 1".

f. Masonry Dowels: The Masonry Contractor shall supervise and be responsible for the proper installation of reinforcing dowels into the concrete work by the reinforcing steel contractor. Bars shall be wired in place prior to casting of concrete.

CAST-IN-PLACE CONCRETE

MATERIALS:

a. Brands of cement or source of aggregates shall not be changed during course of work without prior written approval of Architect.

b. Cement: Standard brand, domestic Portland cement conforming to ASTM C-150 Type 11. Total alkali content not to exceed six-tenths (6/10) of one percent.

c. Aggregates: Conforming to ASTM C-33, except as modified herein, and U.B.C. 26-2-76.

   (1) Coarse Aggregates: From pits specifically approved by Architect, and shall conform to table 26-2A.

   (2) Fine Aggregates: Washed natural sand having hard, strong, durable particles and shall conform to table 26-2A.

   (3) Gradation: Maximum size used in any particular location shall not exceed 3/4 of the minimum clear space between reinforcing bars or between reinforcing bars and forms.

d. Admixtures:

   (1) Structural Concrete except mass footings "Pozzolith" "Normal" Master Builders.

e. Water: Potable.

f. Curing Compound: Shall conform to ASTM C-309. The compound shall not be of wax base and shall not impair in any way the application of floor coverings.

g. Liquid Sealer Hardner: West Chemical Products, Inc. "Filpor" or an approved water clear, non-yellowing sealer hardner guaranteed for three years by the manufacturer. Two coat application.

h. Rock Salt: Standard brand in coarse grade chips, similar to that packaged for use by general public in ice cream freezers.

i. Expansion Joint Filler:

   (1) Premolded Strips: Gray, synthetic sponge rubber, equal to "Cementone", Thomas Concrete Accessories.

   (2) Joint Sealers: Products Research Corporation, "No. 250".

CONCRETE:

a. Compressive Strength Requirements: Provide mix designed for minumum 28-day compressive strengths as noted on the structural drawings.

b. Maximum Slump: In conformance with ASTM C-143, and as follows:

   concrete cast on metal deck.........3" max.
   precast wall panels.................4" max.
   all other concrete.................5" max.

c. Transit-Mixed Concrete: Use Transit mixed concrete throughout conforming to ASTM C-94, except as otherwise specified for materials and tests.

d. Proportions: The Contractor shall propose to the Architect, Laboratory Designed Mixes based on the following proportions. The mix design(s) shall be approved prior to use. The Contractor shall pay the costs of concrete mix designs including the costs of aggregate gradation.

Concrete Strength	Maximum Size, Aggregate	Min. 94 lb. Sacks of Cement per yard of Conc.	Max. gallons water per 94 lb. sack of cement.
2000 P.S.I.			
	1"	5.50	7.3
	1 1/2"	5.25	7.3

GROUT AND DRYPACK:

a. Grout shall be composed of one (1) volume of Portland cement and three (3) volumes of fine aggregate and only enough water to make the mixture flow under its own weight.

b. Drypack shall be composed as for grout except that only enough water shall be added to set the mixture (no free water and no slump). Drypack shall be tamped into place.

c. Do not use grout or drypack that has been mixed longer than thirty (30) minutes.

d. Non-shrink grout: Master Builder's "Embeco".

INSERTS, ANCHORS, ETC.:

Conform to ACI 318.63 for embedded conduits and piping, except as modified by drawings. Contractor shall carefully check with all other trades before completing forms and placing concrete, to determine that all embedded items are in place. Contractor shall set all miscellaneous anchors, bolts, ties, dowels, plates, etc., necessary to complete work as detailed, except as modified herein before. See that all embedded tiems are clean and free from any coating which would reduce their bond.

FORMS:

a. General Construction Requirements: Forms shall be constructed of wood built true to line and grade, mortar tight, and sufficiently rigid to prevent excessive deflection between supports. The arrangement and construction shall be subject to the approval of the Engineer, but responsibility for adequacy of the so as to properly receive and engage other construction and all anchorages, sleeves, inserts, bolts, conduit, or other devices shall be installed prior to the placing of concrete.

b. Forms for Exposed Concrete: All exposed concrete shall be formed with 5/8" (minimum) Douglas Fir "plyform" placed with the grain of the outer plys in the direction of the span. The supporting studs or joists shall be spaced not more than twelve inches (12") center to center. The surfaces of the forms shall be smooth and free from irregularities. Wall form panels shall be placed with their long dimension horizontal and so as to form continuous horizontal joints. All exposed sharp corners shall be formed with 3/4" chamfers or fillets.

c. Form Ties: Form ties or bolts shall be used to fasten the forms. They shall be of sufficient strength and number to prevent spreading of the forms. They shall be of such type that they can be entirely removed or cut back one inch (1") or more from the finished concrete surface. Wire ties will not be permitted.

d. Form Coating: Forms shall be coated with a non-staining form oil applied shortly before the concrete is placed, but prior to placing the reinforcement.

e. Cleaning: All dirt, chips, sawdust, nails and other foreign matter shall be completely removed from the forms before concrete is placed. Forms previously used shall be thouroughly cleaned of all dirt, mortar and other foreign matter before being reused.

f. Removal: The forms shall not be removed until the concrete has sufficiently hardened to permit their removal with safety, but in no case in less time than as follows:
   Columns, Walls, Vertical Forms........24 hours
   Slabs..............................7 days
   Joists, Beams and Girders............14 days
   All removal shall be accomplished in such a manner as to prevent unjury to the concrete.

PLACING CONCRETE:

a. Cleaning of Forms: Before placing of any concrete, all forms shall be thouroughly cleaned, washed out with water, and made tight.

b. Time of Placing: Concrete shall not be placed until reinforcement and forms have been inspected and approved by Architect.

c. Concrete shall be delivered to the point of placing so as not to fall vertically more than 4 feet, and shall be deposited so that the surface is kept horizontal and level, a minimum amount being allowed to flow from one portion to another. Deposit concrete in forms as nearly as possible in its final location. Under no circumstances allow concrete to be deposited which has partially hardened.

d. Vibrate concrete internally (not thru form), supplement with hand rodding. Provide one vibrator per 30 cubic yards of concrete being placed; keep stand-by unit at job, ready for use.

e. Cold Weather Requirements: Concrete shall not be placed on frozen ground, nor shall it be mixed or placed while the atmospheric temperature is below 35° F., unless means are employed to heat the aggregates and water so the concrete shall have a minimum temperature of 50° F. The concrete shall then be protected from freezing or frost for a period of five (5) days after placing by a means acceptable to the Architect. Calcium Chloride shall not be added to the mix.

f. Construction Joints:

   (1) All vertical members, such as walls and columns, shall be poured at least two (2) hours before horizontal members are poured thereon to permit the concrete in the vertical members to take its initial settlement.

   (2) After the pour has been completed to the construction joint and the concrete has hardened, the entire surface laitence and clean course aggragate exposed by means of wire brushing and washing with a pressure stream of water. This shall be done at least two (2) hours but not more than four (4) hours after the concrete was placed.

b. Formed Surfaces:

   (1) After form removal, all fins and ridges shall be removed from the concrete surfaces. All exterior form bolts shall be removed to a depth of at least one inch (1") below the surface of the concrete. Voids and holes left by removal of form ties shall be cleaned and filled with mortar. Mortar shall consist of one (1) part by volume of cement to two (2) parts of sand. Rock pockets shall be chipped out down to sound material and filled with mortar.

   (2) Vertical control joints or construction joints shall be installed as shown on the plans or at a maximum spacing of sixty feet (60'-0") on center.

   (3) Architectural concrete or concrete surfaces to be left permanently exposed shall be patched as mentioned above and then honed smooth, rubbed and sacked. Coat areas completely with grout, wood float, let set and then rub with burlap.

CURING:

a. All newly placed concrete shall be kept moist for the first seven (7) days after the concrete has been placed.

b. Slabs poured in hot or dry weather shall have a fog spray applied to them commencing during the troweling. Slabs shall be cured by one of the following methods:

   (1) Ponding
   (2) Cotton mats, rugs or carpets kept continuously wet.
   (3) Kraft paper or plastic film with joints sealed or taped. The perimeter of the paper shall be sprinkled once daily.
   (4) "Curing Compound". The Contractor shall insure that any membrane type curing compound used will not affect the bonding of any applied floor finishes.

c. Forms shall be kept damp by sprinkling as is necessary and if they are removed before the seven (7) day curing period is over, the exposed surfaces shall be protected by one of the above mentioned methods for slabs.

Protection of Cement Finishes: All concrete surfaces scheduled or indicated to receive exposed aggregate finishes shall be fully and completely protected from damage or spillage by any trade during entire course of construction and shall be free of any flaws or damage at time of acceptance of surfaces by Owner. Otherwise entire surfaces from architectural break to architectural break where damage to occurs shall be removed and replaced to satisfaction of Architect, at no additional cost to Owner. This protection shall assure prevention of damage to surfaces from paint, oils, plaster, mortar, or other stains, scratches or abrasions.

CLEAN UP:

a. Upon completion of all other work in the building, all interior and exterior finished concrete surfaces shall be swept clean and all mortar, plaster, paint, oil and stains removed therefrom.

b. The Contractor shall remove from the premises all surplus material, equipment and debris which are the results of his operations.

TESTING AND INSPECION:

a. No concrete work shall be cast until the forms and reinforcing are inspected by the Engineer.

b. Cylinder Tests:

   (1) Three (3) cylinders of concrete shall be made for each fifty (50) cubic yards of concrete or fraction thereof being placed each day. Each cylinder shall be dated, given a number, the point in the structure from which the sample was taken noted thereon and the slump noted thereon.

   (2) Test cylinders shall be made at the job and stored in the testing laboratory in accordance with ASTM C-31. At the end of twenty-four (24) hours after making, the cylinders shall be stored under moist curing conditions at approximately 70° F. and maintained therein until tested. The cylinders shall be tested in accordance with ASTM C-39. The cylinders shall develop the following minimum ultimate compressive strengths:

Design Strength	7 Day Test	28 Day Test
2000 p.s.i.	1500 p.s.i.	2000 p.s.i.

   (3) If the strengths of the first two cylinder tests are satisfactory, the third cylinder shall not be tested, but destroyed. The third cylinder shall be tested if the strengths of the first two cylinders are not satisfactory.

   (4) If the strength of the cylinders does not meet the minimum as mentioned above, core tests of the hardened concrete shall be made as per ASTM C-42. If the core tests shown the concrete strength to be deficient, the concrete shall be deemed defective and removed. The Contractor shall pay all costs of these core tests.

STRUCTURAL STEEL MISC. METAL

GENERAL REQUIREMENTS:

A. Verification of Conditions: Verify conditions at the site affecting work of this Section, and obtain accurate dimensions. Report major discrepancies between drawings and field dimensions to Architect prior to commencing work.

B. Shop Drawings: In accordance with the General Conditions, submit shop drawings (5 sets) for review for all items in this Section, showing materials, construction and fabrication details, lay-out and erection diagrams as required, finish of exposed welds, and method of anchorage to adjacent construction. Prior to submittal, coordinate shop drawings with related trades to insure proper mating of assemblies.

MATERIALS: (Not to be construed as a complete list).

A. Steel Shapes and Plates: ASTM A36

B. Steel Tubing: ASTM A501

C. Threaded Bolts and Nuts: Standard, commercial quality, steel, ASTM A307, zinc coated where used with galvanized work.

D. Welding Electrodes: AWS E70XX, classification numbers and procedures recommended by electrode manufacturer for intended use.

WELDING:

Weld joints, unless otherwise indicated or specified, using shielded electric-arc method. Use coated welding rods, not fluxed, of type recommended by manufacturer for use with parent metal. Use only certified welders for structural construction.

A. Grinding: Grind all exposed welds to smooth flush joints.

B. Permanently concealed welds: No treatment required other than preparation for painting or galvanizing.

C. Base Plates and Bearing Plates: Shall be set in precise position, properly leveled. The plates shall be supported on double nuts, steel wedges or shims, as indicated, and shall be maintained in proper position until dry pack beds have been placed.

   Base Plate holes for anchor bolts may be 3/16 inch larger than the nominal diameter of the anchor bolt.

ERECTION:

The structural steel shall be erected plumb, square, true to line and level and in precise position as indicated on the drawings.

Temporary bracing shall be employed wherever necessary to accomodate all loads to which the structure may be subjected. Such bracing shall remain in place as long as may be required for safety.

MATERIALS AND WORKMANSHIP:

New stock of standard sizes specified or detailed; fabricated in shop producing high grade metal work. Form and fabricate to meet required conditions. Include clips, straps, bolts, screws and other fastenings necessary to secure work. Conform work to latest edition of AISC Specification and to applicable provisions of Building Code.

BUILT-IN ANCHORAGE:

Provide bolts, anchors, inserts, and other miscellaneous steel or iron fastenings installed in concrete forms. Provide steel plates, channels and angles for attaching work of other trades. Examine and check architectural, structural, mechanical and electrical drawings for number, type and location of such items.

FABRICATION:

A. General: The Contractor shall fabricate the material and erect same with workmen skilled in these branches of the structural steel industry.

B. Tolerances: Material, fabrication and erection tolerances shall be as set forth in the latest edition of the AISC Specification for the Design, Fabrication and Erection of Structural Steel Buildings.

C. Cleaning and Straightening: All material, before being fabricated shall be cleaned of all scale and rust and shall be thourougnly straightened by methods that will not injure the material; deformations resulting from fabrication processes shall be corrected by similar methods. Heat shrinkage of low alloy structural steels will not be permitted.

D. Gas Cutting: Shall be done by machine where possible. All re-entrant corners shall be shaped notch free to a radius of 1/2 inch minimum.

CONNECTIONS:

A. Bolted Connections:

   1. Holes for bolts shall be one-sixteenth inch (1/16") larger than the nominal diameter of the bolt. Holes may be punched if the thickness of the material is less than the nominal diameter plus one-eighth inch (1/8"). If the thickness of the material is greater than the nominal diameter plus one-eighth inch (1/8"), the holes shall be drilled or subpunched and reamed.

   2. Machine bolts shall be used in all bolted connections unless noted otherwise.

PAINTING:

A. General: Shop prime all structural steel and miscellaneous metal, except those members or portions of members to be embedded in concrete or grout. Do not paint surfaces which are to be subsequently welded.

B. Exposed Surfaces: Surfaces that will remain exposed after completion of the building shall be blast cleaned in accordance with the Steel Structures Painting Council (SSPC) SP-6 and painted with one coat Ameritone Ferrous Primer #54.

C. Surfaces not exposed: Provide a one-coat shop applied paint system complying with SSPC-PS7.01. (Power tool cleaning).

D. Field Painting: After erection, all parts where paint has been rubbed or burned off and all bolts, rivets, connection devices, and welded areas shall be prime painted as specified for shop painting.

FINISH CARPENTRY & ITEMS

GENERAL REQUIREMENTS:

A. Workmanship: Employ only skilled workmen experienced in their respective trades and work. All work performed in first class workmanlike manner and subject to approval of Architect or his representative.

B. Scaffolding: Scaffolding shall comply with the Rules and Regulations of the Industrial Accident Commission of the State of California.

C. Thresholds: Set all thresholds in waterproof mastic and securely anchor in place with at least three (3) expansion shields per 37" thresholds.

D. Millwork and Hardware: All doors, windows and casework hardware installed to operate freely but not loosely, without sticking or binding, without hinge bound conditions and with all hardware properly adjusted and functioning.

   Finish hardware fitted to wood or metal prior to painting and removed during painting operations. After all painting completed and dried, finish hardware to be reinstalled.

   All millwork neatly installed with all necessary scribing. No hammer tracks will be allowed. All trim applied in full lengths unless space limitations make it impracticable or impossible. In general, ends (where pieced) shall be mitered. All exterior angles shall be mitered and interior angles of moulded parts to be coped. All nails shall be set for putty.

   All casework shall be anchored to walls with a minimum of two (2) anchors at top and two (2) anchors at bottom of each individual unit. Anchorage on cases longer than 4'-0" shall have anchors 4'-0" o/c maximum. Anchorage to walls shall be #12 head screws with 1-1/2" penetration into studs or solid backing.

E. Backing: Provide adequate backing behind wall finish for anchorage of metal partitions, accessories, etc., including such blocking as may be required for items indicated but (N.I.C.).

HANGING DOORS:

Doors shall be hung free of hinge binding, with a clearance at bottom of 3/8" except where carpet is to be laid or noted under door swing in which case the door shall be trimmed to clear carpet installation. Side and top clearance shall be 1/8". Bevel lock stiles 1/8" in 2", ease all edges, doors shall fit in true alignment and plumb.

After hanging, remove hardware (except prime coated items and butts) until completion of painting work, then reset, fit and adjust all the hardware.

MATERIALS: (Not to be construed as a complete list).

Approvals: Brands of materials mentioned herein are used as a standard and requests for substitutions will be considered when submitted in accordance with the provisions as set forth in the General Conditions.

A. Finish lumber unless otherwise indicated shall be kiln dried vertical grain Douglas Fir, S4S, smooth, sound limber free of knots and selected for appearance. Where indicated Redwood, to be Clear All Heart.

Note: General Contractor to effect a firm understanding with all suppliers, fabricators, and Sub-Contractors regarding extent of work prior to bidding.

MILLWORK

MATERIALS: (All finish Kiln Dried) (Not to be construed as a complete list).

General: All casework shall be constructed PER ARCHITECTS APPROVAL

A. ALL WOOD CASEWORK SHALL BE STANDARD QUALITY

B. Finish shall be PAINT

   1. Exposed surfaces shall receive PAINT in color as selected by the Architect
   2. THERE SHALL BE NO HORIZ DIVIDERS BETWEEN DWRS

C. Counter Tops:

   1. All laminated plastic counter tops, and splashes unless otherwise indicated, shall be overlaid with approved high pressure laminate, as manufactured by Formica, Micarta, Texolite, or an approved equal in Decorator Solid Colors with suede finish as selected. (Allow for multiple colors).

      Note: Horizontal plastic laminate shall overlap vertical and have beveled edge.

D. Hardware Items: (Finish US 26D).

   Shelf Standards and Brackets
   End Mount - #255 & #256, Knape & Vogt
   Rear Mount - #83 & #183, Knape & Vogt

   Locks: Where specified - key per owners requirements.
   Drawer Slides
   2 Each drawer #335 Grant

GENERAL REQUIREMENTS:

A. Doors and drawers shall be flush type.

B. Scribing: Provide for scribing of all exposed surfaces abutting walls and items.

COMPOSITION ROOFING

MATERIALS (Not to be construed as a complete list)

A. ______ Composition Roofing
   Shall be listed by the manufacturer as a 20 year bondable roof, applicable for the surface to which it is to be applied. Completed system shall meet the requirements of UBC for "Fire Retardant Roof Covering".

B. Pitch Pockets
   Shall be filled with pitch unless otherwise approved in writing by the roofing material manufacturer.

GENERAL REQUIREMENTS

A. Responsibility
   It is the intent of the Contract Documents to place the responsibility for the water-tightness of the entire roof under the roofing contractor and material manufacturer. In submitting a bid the roofing contractor and manufacturer whose material he proposes to use, agree to the conditions as set forth in all the Contract Documents. They further agree that all conditions as set forth in said documents are complete and meet their specific requirements for a bonded roof of the period specified.

   In the event the Contract Documents do not completely or correctly cover their specific requirements, the roofing contractor shall provide for same in his bid. Under no circumstances will an extra be allowed for failure to comply with these requirements.

B. Expansion
   Roof areas requiring roofing vents or provisions for expansion and contraction to insure a smooth, blister and wrinkle free surface shall be called to Architect's attention a minimum of ten days prior to bidding. Failure to do so will necessitate any such requirements be provided by this Contractor at no increase in bid price.

C. Workmanship
   Roofing Contractor shall be approved by the Roofing Manufacturer, and shall employ only skilled workmen experienced in their respective trades and work. All work performed in a first-class workmanlike manner and subject to approval of Architect.

D. Materials
   Delivered to the site in original unbroken packages bearing manufacturer's label with weights and descriptions clearly stated thereon.

E. Deck Preparation
   Roof surface shall be dry, smooth and well secured. Large cracks or holes in concrete decks shall be filled. In wood decks, cover with sheet metal and secure in place. Surface shall be swept broom clean and moisture content shall be acceptable to the roofing material manufacturer.

F. Cooperation
   Roofers, sheet metal men and other tradesmen shall cooperate to assure a complete watertight and perfect job.

G. Inspection
   Manufacturer's representative to be notified prior to commencement of any roofing with ample time given for inspection of deck to be roofed and such other inspections as may be required by the roofing manufacturer.

H. Application of roofing, cants, and flashing
   Shall be in accordance with manufacturer's instructions.

I. Flashing
   The Roofing Contractor shall be responsible for the flashing of all openings through and items on the roof and intersections of roof with vertical surfaces.

GUARANTEE

The roofing Contractor shall guarantee in writing to maintain the work performed under this section in a watertight condition for a period of two (2) years from the date of the Notice of Completion of the project. Any repair work done on roof after first year shall be guaranteed for one (1) year after work is done.

BUILDING INSULATION

MATERIALS: (Not to be construed as a complete list).

A. Thermal Insullation: Incombustible batts, with paper on one side. Insullation shall have a minimum "R" value for insullation as noted on plans.

B. Sound Board: Rigid glass fiber board 1/2" thick of 3# per cubic foot density.

C. Sound Insullation Batts: Incombustible glass fiber thickness as noted.

D. Fasteners: Non-corrosibe type as recommended by insullation manufacturer.

E. All penetrations of exterior skin of building pipes, conduit, ducts, wires and etc., shall be fill tight with expansion foam, fill with a final layer of caulking on each side of wall.

INSTALLATION:

The intent is to provide the entire building shell with insullation: Provide batt insullation/at ceilings throughout. Architect shall make determination.

CAULKING AND SEALANT

SCOPE:

A. Provide all materials, labor, equipment and services necessary to perform the caulking and sealant work required to make a watertight, weathertight and sound retardant installation as indicated on the drawings and specified herein.

B. Examine drawings and specifications and be thoroughly familiar with extent of caulking and sealing involved.

MATERIALS: (Not to be construed as a complete list).

A. Joint backing: Closed-cell type sponge neoprene, vinyl or polyurethane equal to "PRC-89 preformed joint filler" or as recommended by sealant manufacturer.

B. Caulking Compound: ASA A-116.1, two-part polysulfide base sealing compounds. One part polysulfide or silicone type sealant possessing adhesion elongation and recovery properties equal to two-part compounds may be used upon Architect's approval. Sealants shall be manufactured by DAP, Grace, Pecora, PRC, Dow Chemical, or approved equal, and shall be of types for use required. Standard colors as selected to match adjoining surface.

GENERAL REQUIREMENTS:

A. Joint Cleaning: Apply sealant to clean, dry surface free from grease, oil, wax or other foreign matter tending to destroy or impair adhesion. Clean and prime in accordance with sealant manufacturer's instruction.

B. Joint Backing: Install sealant manufacturer's recommended backing of slightly larger diameter than joint width when depth exceeds 1/4" for joints up to 1/4" wide and when depth exceeds 1/2" for joints in excess of 1/4" width.

C. Application: Apply sealants strictly in accordance with manufacturer's instructions.

D. Cleaning and Protection: Carefully protect adjoining surfaces from staining. Immediately remove any material on surfaces not to receive sealant and restore finish as required. Where cleaning and restoration is not acceptable, remove affected work and provide new work conforming to applicable requirements as directed, at Contractor's expense.

A 48446 1985
CRL

DATE:	PRINTS ISSUED FOR:	MARK	DATE	REVISIONS
5.10.85	BOARD APPROVAL	1	6.18.85	OSA CHANGES/REBID
5.20.85	OSA	2		
5.23.85	BIDDING	3		
		4		
		5		

DRAWN CHRIS
DATE 5.10.85
JOB NO. 85.242.1
CHECK'D MMG

CAA
CHRIS A. ADDINGTON C-9093

SPECIFICATIONS

NEW PORTABLE CLASSROOM
FOR BAKERSFIELD CITY SCHOOL DISTRICT.
BAKERSFIELD · KERN COUNTY · CALIFORNIA

A7 OF 9 SHEETS

CHRIS A. ADDINGTON & ASSOCIATES
A.I.A. ARCHITECTS · 3434 TRUXTUN AVE. SUITE #240 · BAKERSFIELD · CALIF. 93301 / 805 · 327-1699