CARSON CITY PURCHASING & CONTRACTS
ATTACHMENT B
TECHNICAL SPECIFICATIONS

Document No. 5006 ANCHOR BOLTS AND EXPANSION ANCHORS (12/31/00)

1. Scope:

This section covers cast-in-place anchor bolts and expansion anchors to be installed in hardened concrete.

2. General:

Except where specifically shown or specified otherwise, all anchor bolts shall be carbon steel at least 1/2 inch in diameter and expansion anchors shall be of the type specified herein.

3. Materials:

3.1 Bolts and Nuts:

Carbon Steel: ASTM A307

Stainless Steel: IFI-104, Grade 303 or 305

Galvanized Steel: Carbon steel bolts and nuts; hot-dip galvanized ASTM A153 or zinc plated ASTM A164 Type GS.

3.2 Flat Washers:

ANSI B27.2; of the same material as bolts and nuts.

3.3 Expansion Anchors:

Fed Spec FF-2-325; cinch anchor type, Group I, Type I, Class 2 (3 unit) or Group I, Type 2, Class 2, Style I (3 unit); or self-drilling type, Group III, Type I.

4. Anchor Bolts:

Anchor bolts shall be delivered in time to permit setting when structural concrete shall be provided with sufficient threads to permit a nut to be installed on the concrete side of the concrete form or supporting template. Two nuts shall be furnished for each anchor bolt. At least two threads shall extent beyond nut.

5. Expansion Anchors:

Expansion anchors shall be of the cinch anchor or self-drilling type. Installation methods shall be in conformity with the manufacturer's recommendations for maximum holding power, but in no case shall the depth of hold be less than four bolt diameters. Minimum distance between the center of any expansion anchor and an edge or exterior corner of concrete shall be not less than four and one half (4-1/2) times the diameter of the hole in which it is installed.

END OF DOCUMENT 5006

CARSON CITY PURCHASING & CONTRACTS
ATTACHMENT B
TECHNICAL SPECIFICATIONS

Document No. 6007 ELECTRICAL (6/10/02)

1. General:

The work of this division, where specified or shown on the Drawings or reasonably inferred therefrom, shall include all materials, labor, power, tools, transportation, services and equipment necessary and incidental to the furnishing, installation and completion of the electrical work of this division.

The Electrical Engineer or Construction Manager shall not be responsible for Contractor's failure to carry out the construction work in accordance with the contract documents, nor shall he be required to supervise conduct of the work or the construction procedures and safety procedures followed by Contractor or Subcontractors or their respective employees or by another person at the job site, other than that of the Electrical Engineer's or Construction Manager’s employ.

2. Scope of Work:

The systems to be installed shall consist essentially of the following:

Underground conduit system for primary wiring.

Pre-cast or poured-in-place concrete transformer pads.

Electrical Service equipment and Raceway Systems.

Weather tight conduit systems and equipment.

Connection of pumping and related equipment.

Modification of existing equipment

Conduit trenching and backfill, as shown on drawings.

Pump Control equipment, connection thereof.

Removal of existing power equipment as shown on the Plans.

Other work as specified herein or shown on Drawings.

3. Intent of Specification and Drawings:

It is the intent of this specification that all work shall be complete, tested and ready for operation unless specifically noted otherwise.

4. Codes and Standards:
All materials and workmanship shall comply with all applicable codes, specifications, state laws, labor union contracts, local ordinances, industry standards, utility company regulations and regulations of the State Fire Marshall. In case of difference between these and the contract documents, the most stringent shall govern. Contractor shall promptly notify Construction Manager in writing of any such differences.

The following industry standards, codes and specifications shall apply:

ANSI - American National Standards Institute

IPCEA - Insulated Power Cable Engineers Association

NEC - National Electrical Code as published by NFPA

NEMA - National Electrical Manufacturers Association

NFBU - National Board of Fire Underwriters

NFPA - National Fire Protection Association

OSHA - Occupational Safety and Health Administration, U.S. Department of Labor

UBC - Uniform Building Code as published by ICBO

UL - Underwriter's Laboratories, Inc.

IEEE - Institution of Electrical and Electronic Engineers

5. Materials and Equipment:

Where any specific material, process, method or manufactured article is specified, the specifications are to be used as a guide and are not intended to take precedence over the basic duty and performance of the system to be installed. Where manufacturer's name and number is used, it is to designate a quality standard, and the words, "Or Approved Equal" are implied unless the designation is followed by the words, "No Substitutions", "No Sub", etc.

Where Contractor proposes use of items other than specified, any and all redesign required, including drawings or layouts, shall be the responsibility of Contractor. Any change required for associated equipment or to building structure shall be made at no additional cost to Carson City. Unless substitutions are requested and approved by Construction Manager, no deviations will be allowed. If materials are installed at the jobsite that were not specified and/or were not approved substitution items, such materials shall be removed and replaced with specified materials free of charge to Carson City or other contractors.

All materials and equipment shall be new, of the best quality for the purpose intended, and shall be clearly marked or stamped with the manufacturer's name and nameplate data or stamp and rating.

Materials and equipment shall be suitable for the use and service intended, for the system as designed, and for the conditions that may be encountered in actual operation. All electrical equipment shall be capable of operating at full rated load, without failure at an ambient temperature of 104°F and specifically rated for an altitude of 5000 feet.

Shop drawings shall be required on specific items that are listed in a particular subdivision. In general, shop drawings will be required for substitution equipment, large and/or intricate equipment, and other equipment and/or materials that are critical because of their nature and/or application. Shop drawings shall also include electric power diagrams, control diagrams, installation instructions, control and other ancillary component details, and/or other pertinent information to fully describe all aspects of the items

6. Examination of Site:

Contractor shall visit the site to satisfy himself as to the location and nature of the work, the character of equipment and facilities needed preliminary to the work and during prosecution of the work, and all other matters which can in any way affect the work, or the cost thereof under this contract. Failure by Contractor to acquaint himself with all available information concerning these conditions shall not relieve him from complying with the Specifications or Drawings, and no allowance shall be subsequently made in his behalf for any expense due to failure in this respect.

7. Accuracy of Date:

The data given here and on the Drawings is as exact as could be obtained, but absolute accuracy cannot be guaranteed. The Drawings and Specifications are for the assistance and guidance of Contractor; therefore, exact locations, distances and elevations will be governed by the building itself and actual

jobsite or field conditions.

8. Cutting, Patching, and Repairing:

All cutting, chipping, digging, drilling and patching that may be necessary for the proper installation of work specified or shown shall be included. All such work shall be approved by Construction Manager or his representative before starting any of the above operations.

9. Workmanship:

Where other instructions are not given, equipment shall be installed in accordance with the recommendations of the manufacturer and the best standard practice for that type of work.

10. Damage:

Contractor shall be responsible for damage to the work of other trades and shall guarantee to repair or replace with like materials free of charge to Carson City or other contractors, any existing work or equipment damaged during the progress of construction or tests.

11. Coordination of Work:

The work called for under this section shall be coordinated with that of all other crafts. It shall be this Contractor's responsibility to check all the contract drawings and specifications for possible conflicts between his work and that of other crafts in equipment location; pipe, duct and conduit runs; electrical outlets and fixtures; air diffusers; and structural and architectural features.

12. Waterproofing:

Where any work pierces waterproofing, including waterproof concrete, Contractor shall furnish all necessary sleeves, caulking, and flashing required to make openings absolutely watertight. The method of installation shall be approved by Construction Manager.

13. Operating and Maintenance Instructions:

Contractor shall submit three(3) complete sets of operating and maintenance instructions for all equipment, fixtures, and devices, that require maintenance and parts lists to Construction Manager for review. When the sets are complete and approved, all the sets will be forwarded to Carson City. Each set shall be in hard-cover, loose-leaf ring binders.

Instructions shall include a reduced scale schematic control diagram along with the description and function of each control and its location so that Carson City may readily determine how and where adjustments may be made. All special tools for the proper operation and light maintenance of the equipment shall be furnished to Carson City by Contractor.

Sets will normally contain complete information on all components included in the systems, and auxiliary components of major and/or complex equipment. All documentation, diagrams, specification sheets, installation instructions and the like which accompany every component, shall be maintained in a neat and clean manner on the jobsite. All such documentation shall be submitted to Construction Manager prior to the time of final acceptance.

Contractor shall instruct (if required) Carson City (or it’s representative) in the complete operation of all items of equipment. These instructions are to be given to Carson City by Contractor at Carson City's convenience.

14. Record Drawings:

Contractor shall maintain an up-to-date and complete record set of prints of the work at all times during

construction. The prints shall be to show actual construction of the various systems. Contractor shall show, in red, any deviations in locations of ducts, pipes, conduits, equipment placement, etc., from the original design.

15. Vibration and Noise Control:

Every precaution shall be taken to ensure quiet and vibration-free operation of all mechanical and electrical equipment.

16. Standard Field Tests:

At completion of construction, Contractor shall demonstrate in the presence of Construction Manager, or his representative that all systems operate in accordance with the requirements of the specifications.

Contractor shall furnish all instruments and all personnel required for the tests and shall allow two (2) full working days for testing.

All equipment shall be tested in the presence of Construction Manager and as directed by Construction Manager.

Contractor shall furnish Construction Manager the required certificates of testing and the cost of all tests shall be paid by Contractor.

Work which fails to meet the requirements of any test and does not meet the requirements of the Contract Documents shall be considered defective and shall be promptly corrected or removed from the site.

The entire electrical installation shall be free from short circuits and improper grounds. Test panels and circuits with main disconnected from feeder, branches connected, switches closed, and all fixtures in place and connected for proper operation. Upon completion of the work, operate and test equipment under normal conditions, all to the satisfaction of Construction Manager.

The following tests and checks shall be performed on new, relocated or renovated equipment before it is placed in operation.

Check all bus and cable connections for proper contact pressure and mark each bolt to indicate it has been checked.

Check the equipment for mechanical adjustments, lubrications, and free operation. Remove all shipping blocks, hooks, loops, or eyelets etc.

Test all control circuits for correct connections and operation.

Perform rotation checks on motor circuits.

Check the polarity of receptacles, and test all GFIC protection receptacles.

Check circuits, feeder, and control circuits for correct connections. Check insulation resistance between phases and phase to ground using 500 volt megger.

17. Dynamic Operational Test:

As a condition of acceptance, the equipment installed under this contract shall operate in the normal (automatic) mode, under actual dynamic conditions, for seven (7) consecutive days - without failure.

17. Special Field Tests - Power:

Tests shall be complete enough to be conclusive and to ensure proper operation. This shall be certified in

test reports submitted to Construction Manager. All faulty equipment shall be replaced and tested until satisfactory results are obtained.

Tests shall be nondestructive and procedures used shall be approved by Construction Manager.

Throughout entire installation, inspect and make all necessary tests, including those which Construction Manager may request to insure that drawings and specifications have been followed and that:

the electrical equipment is installed correctly;

the wiring system is free of all grounds and faulty connection;

and that the resistance between grounded equipment and true ground is not more than 10 ohms. Greater than 10 ohms will not be acceptable.

Insulation Testing: After the visual inspection of terminations and connections and the application of tape and other insulating materials, all sections of the complete system of wiring shall be thoroughly tested for shorts and grounds. Contractor shall correct all defects.

Each motor shall have its insulation resistance to ground measured with 500 volt "Megger" prior to connection, in the presence of Construction Manager. Construction Manager will make a record of these values, and values of resistance of less than ten megohms will not be acceptable. Motor rotation shall also be checked.

Insulation resistance measurements of each 480-volt circuit shall be made with loads connected and contactors, if any, blocked closed to give complete circuits. Insulation resistance of complete circuit shall be measured from the circuit breaker load terminals with the breaker open. Construction Manager will witness and make record of these values. Values of resistance of less than fifty megohms will not be acceptable.

Overload Protective Devices: Contractor shall compile, by visual inspection of equipment installed for each motor, the following data in neatly tabulated form:

1. Horsepower	4. Temperature rating
2. Nameplate amperes	5. Overload catalog number
3. Service factor	6. Overload current range and setting

Test each individual power circuit at the panel with the equipment connected for proper operation. Correct any deficiencies.

Check the service voltage at each panel under maximum load and under no load and arrange for proper voltage, if voltages and regulations are not within acceptable limits. Submit a report to Construction Manager showing service voltages and corresponding loads.

19. Identification:

Provide nameplates, labels, and signs to identify all equipment and circuiting. Wording and size of characters shall be approved by Construction Manager. This shall include but is not limited to items such as: panelboards, transformers, disconnects, starters, control stations, relays, time switches, special receptacles, remote switches, signal systems, conductors, and terminals. Nameplates shall be black lamicoid with white letters.

Use Dymo labels for identification of components located inside control cabinets.

Use Brady wire markers for identification of control circuit and signal circuit wiring. Use stenciled,

typewritten or stick-on markers for terminal strips. Markers shall be slip-on PVC sleeve type as manufactured by Brady, Seaton, or Equal.

Use typewritten circuit directories for panelboards indicating type and location of load.

Nameplates shall be attached to the various devices using round head brass screws. Self-sticking nameplates and/or gluing shall not be used.

20. Sleeves and Plates:

Provide sleeves wherever openings are required through new concrete or masonry members. Place sleeves accurately and coordinate locations with structural work.

21. Direct Burial Underground Raceways:

Underground rigid steel conduit shall be PVC coated or wrapped.

Use rigid steel conduit for terminations extending above grade, including elbows against which pulling wire will rub.

Installation of green insulated ground conductors in all non-metallic conduits is acceptable.

Direct burial conduit shall be used only where listed on the Drawings.

22. Conduit Systems:

Provide Schedule 80 conduit for exposed work within five feet of exterior grade, within masonry or concrete structure located above grade.

Locknuts shall be steel or malleable iron. Bushings shall be metal with insulated throats.

EMT connectors and couplings shall be compression type. Connectors shall have insulated throat bushings.

Size shall be as indicated on the Plans, or required by the NE code for number and size of conductors installed.

Joints shall be cut square, threaded, reamed smooth and drawn up tight. Bend or offsets shall be made with standard elbows. Field bends shall be made with an approved bender or hickey. Number of bends per run shall conform to Code limitations.

Raceways shall be continuous from terminal to terminal and terminated with connectors, hubs, or locknuts and bushings in such manner that each shall be capped to prevent entrance of foreign materials during construction. Install systems completely before conductors are pulled in. Cap ends during construction.

Conduits shall be securely fastened in place with hangers, supports or fastenings provided at each elbow and at the end of each straight run terminating at a box or cabinet. Horizontal and vertical conduit runs may be supported by one-hole malleable straps, clampbacks, or other approved devices with suitable bolts, expansion shields or beam-clamps special brackets for mounting to building structure. Perforated iron strap and iron wire shall not be used for supporting conduits. Strength of the supporting equipment and size and type of anchors shall be based on the combined weight of conduit, hanger and cables with a safety factor of four.

Transitions between nonmetallic conduits and conduits of other materials shall be made with the manufacturer's standard adapters and designed for such purpose.

23. Flexible Conduit:

Provide liquid-tight flexible conduit with liquid-tight connectors for short connections to motors and devices requiring adjustment or subject to vibration. Maximum length is three feet. Provide bonding jumpers within conduit and attach to terminating boxes and equipment to ensure continuity of ground. **Solid wire shall not be installed in flexible conduits.**

24. 600 Volt Wire and Cable in Raceways:

Conductors shall conform to the requirement of the current edition of the Code's U.L. Standards. The size, type of insulation, voltage rating, and manufacturer's name shall be permanently marked on the covering at regular intervals.

Conductors shall be standard American Wire Gauge, soft-drawn copper; #12 and smaller may be solid; #10 and larger shall be stranded. Unless otherwise noted, minimum size shall be #12. Except where specifically noted, **aluminum conductors shall not be installed.**

Insulation shall be rated 600 volts. Unless otherwise noted, #14 through #4/0 cable insulation shall be type THW, THWN or THHN. All interior wiring in dry locations may be type TW in sizes up through #4.

Color code conductors consistently throughout the electrical system. All wire/conductors shall be full length, integral color pigmentation insulation in various colors and wire sizes up through at least #10, to indicate phase, voltage and/or duty in order to maximize safety in the system. Except when first approved by Construction Manager on submittal, no deviations will be allowed. Where integral pigmentation colors, other than black, white, and grey are not available, use colored plastic tape applied in a spiral halflap manner over exposed conductor portions in manholes, boxes, panels, switchboards, and other enclosures. Use only black insulated wire for power conductor, and apply at least 4 turns of identification color tape.

Only the integral color pigmentation insulation designated for neutral conductors will be allowed throughout the full length. Wherever bonding or grounding conductors are in raceway with other conductors, only green pigmentation insulation for the full length will be allowed. Color for control wires shall be red.

TYPICAL CONDUCTOR COLOR CHART		
CONDUCTOR	**SYSTEM VOLTAGE**	
	227-480	**120-240-208**
Phase A	Brown	Black
Phase B	Orange	Red
Phase C	Yellow	Blue
Neutral	Grey	White
Equipment ground & bond	Green	Green

Install wire and cable in conduits, ducts, or raceways after the raceway system has been completed. Exercise care to prevent damage to conductor or insulation. Cable lubricants shall be approved for the type of cable.

Cables and conductors shall be continuous from origin to equipment without running splices in intermediate pull or splice boxes. Where taps and splices are necessary and approved, they shall be made in approved splice boxes with suitable connectors as noted herein.

The Electrical Contractor shall furnish and install all hangers racks, cable cleats, and supports required to

make a neat and substantial cable installation.

25. Conductor Terminations and Splices:

Use solder-less pressure-type connectors, unless otherwise specified. Connectors shall be Scotchlok for wire size No. 14 through No. 8, Burndy type KVS for cable #6 and larger.

Where compression-type connectors are noted on Plans, they shall be of the type as manufactured by Burndy Company, and shall be installed with approved hydraulic tools to assure a permanent mechanically secure high-conductivity joint.

Where conductors are to be connected to metallic surface, the coated surfaces of the metal shall be polished before installing the connector. Lacquer coating of conduits shall be removed where ground clamps are to be installed.

Each conductor cable group in panels, pull boxes, or troughs shall have a permanent tape or pressure-sensitive label with suitable numbers and letters for easy identification.

26. Utilities:

All contractors shall contact the utility companies which provide services to the site. Each shall pay for any additional service connections, and shall provide piping, valves, meters, pits, detector checks, conduit, service drops, pull boxes, trenching and backfill, and/or other appurtenances required by the utility company.

Contractors shall coordinate with the electrical utility to establish clockwise phase rotation (A-B-C) at each three phase service installation.

27. Concrete Work:

Provide concrete work for duct banks, electrical equipment bases, unless specifically noted otherwise.

All concrete work shall conform to Technical Specification Doc No. 4001, “Concrete Structures”.

28. Telemetry:

Electrical Contractor shall coordinate with Construction Manager for installation of conduit and wiring systems which interface with telemetry equipment.

Carson City shall bear responsibility of installation, alignment and testing of all telemetry equipment.

Contractor shall notify Construction Manager, if it should become necessary to move, alter, adjust, modify, or disconnect any existing telemetry equipment. Carson City shall effect necessary changes.

29. Demolition:

At the completion of the installation, testing and acceptance of all new facilities, Contractor shall obtain permission of Construction Manager to begin disassembly and demolition of the old facilities, if any.

All electrical equipment and appurtenances shall remain the property of Carson City, except those items noted on the plans (those items left for disposal) or those which are required and supplied by Contractor to maintain the energy service as necessary to operate the existing facilities while construction is in progress. Such other equipment as removed from the site shall be disposed of at an approved disposal location.

Contractor shall make every effort to coordinate demolition with Carson City and shall take care to deliver all salvaged equipment to Carson City without damage and in good working condition.

30. Service Change:

Contractor shall coordinate his work with Sierra Pacific Power Company (SPPCo.) for the installation of all power requirements including temporary power as required at all the Construction Site(s). Contractor shall provide all additional items as necessary to maintain power at all existing stations, if any, until the full and satisfactory operation of the new system and authorization of Construction Manager.

Contractor shall notify Construction Manager Forty Eight (48) hours prior to any shut-down of power to any segment of the functional system.

Contractor shall coordinate his work with Nevada Bell for the installation of all required telephone services or modifications thereof.

31. System Start-Up:

After all testing has been completed to the satisfaction of Construction Manager, Contractor shall notify Construction Manager, Twenty Four (24) hours prior to start-up of the new system, for start-up instructions.

END OF DOCUMENT 6007

SECTION 12610
FIXED AUDIENCE SEATING

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Provision of services as listed herein and related to the manufacturing, delivery and complete installation of fixed theatre chairs.

2. Coordination with all related sections doing adjacent or integrated work.

3. Upon acceptance by the architect, installed seating shall be turned over to the owner complete, cleaned and ready for use.

1.02 UNIT COSTS

A. Provide per-seat installed unit costs for the following:

1. Fixed Chair

2. Fixed Chair with Removable Base

1.03 REFERENCES

A. Comply with all national, state and local regulations. In the event of conflict between these specifications and the applicable regulations, the more stringent shall govern.

B. Reference:

1. * 2006 International Building Code

2. * 2006 International Existing Building Code

3. * 2006 International Fire Code

4. * 2005 National Electrical Code

1.04 SYSTEM DESCRIPTION

A. The scope of the work in this section is to provide and install fixed auditorium seating in the center seating section only.

B. The seating shall be provided with seat uplift devices in order to provide the required passing width in the seating rows.

C. Seating layout:

1. Seat width combinations shown on drawings may be revised by the Contract only if warranted by actual field dimensions and if approved by the Architect.

2. Seats shall stagger in the center seating sections. All row ends shall be aligned at aisles.

3. Seat counts shall be maximized.

1.05 CHAIR DESIGN CRITERIA

A. The overall front-to-back envelope dimension of every chair with the seat having risen without assistance with the tablet arm stored shall be no greater than 21.5” in order to comply with building code for clear passing widths.

B. Chairs shall have been tested and certified as complying with BIFMA Voluntary Upholstered Furniture Flammability Standard BIFMA X5.7-1991 or current equivalent.

C. Seats shall have passed the following tests. Independent test laboratory results shall be provided upon request.

1. Vertical Drop Impact Test to Seat

   a. Repeated impacts of 125#, 16” diameter weight dropped on the seat at a rate of 18-30 impacts per minute. The center of the impact shall be the center of the seat.

   b. Cycles: The weight shall be dropped 50,000 from a height of 3”.

   c. Acceptance criteria: Measurements of the seat angle are to be taken at the completion of the test. The angle of the seat measured at the front edge shall not drop more than below parallel with the level floor. There shall be no loosening of the floor fastenings or of the seat pivots. The seat must be able to return to normal fold position.

2. Swinging Impact Test

   a. Repeated impacts of the chair backs of a three unit assembly by two 40#, 10” diameter bags. The bags mounted at 13” centers are to be pivotally hung from a horizontally reciprocating actuating bar cycling at approximately 37 strokes per minute. The bags shall be hung with the bottom of the bag 32” below the pivot suspension point and 10” below the top of the chair back. The chair back is to be centered with the bags when the bags are in the center of the stroke.

   b. Cycles: 100,000 impacts through a horizontal stroke of 9”.

   c. Acceptance criteria: At completion of the test, the middle standards shall have demonstrated sufficient strength and durability to withstand the test without failure or irregularities that would impair the chair’s usefulness. In addition, no visible evidence of failure or irregularities shall have occurred in the seat or back of the unit.

3. Static Load Test:
   a. A vertical static load of 600# is to be applied to the top of the seat with the center of the load approximately 3” from the front edge and equal distance from the sides. A 2” x 4” beam is to be used to distribute the load transversely across the seat.

b. Acceptance Criteria: Chair must withstand a minimum load of 600# with a permanent distortion not to exceed 5/8” and shall deflect below parallel with the level floor.

Deflections and permanent distortions are to be measured at the front center of the seat.

4. Self Lifting Seat Oscillating Test

   a. ASTM 851-87

   b. Seat shall be lowered mechanically against the down-stops and released.

   c. Cycles: 100,000 cycles within a period not to exceed 14 calendar days.

   d. Acceptance criteria: There shall not be dimensional deviation fro the front of the seat to the back in the “up” position exceeding 1-1/2”.

1.06 SUBSTITUTIONS

A. All requests for substitutions from the specified materials, assemblies or related services shall be submitted for review by the Architect prior to bid. Substitution requests made after bid shall be neither reviewed nor accepted. Requests shall be made in accordance with Division 1 of the specifications, and in a timely fashion so as to not affect the project schedule in either case of the substitution being accepted or rejected.

B. Documentation for the substitution shall be submitted with supporting material and shall including the related information for the item as specified so that equivalence can be demonstrated. The burden of proof rests solely upon the Contractor. The Architect shall be the sole evaluator of the fitness of the substitution.

C. All expenses related to the substitution including, but not be limited to, all fees and expenses incurred in the evaluation of the substitution, and any effect on the costs and schedule of other trades whether or not the substitution is accepted, shall be borne by the Contractor.

1.07 SUBMITTALS

A. Submittals shall be made in a timely fashion so as to not affect the project schedule, and shall allow adequate time for review and resubmittal.

B. Submittals shall be reviewed and field dimensions verified prior to commencing acquisition for, and fabrication of the work in this section. All services and parts of the work in this section shall be verified by through the submittal process.

C. Shop Drawings:

1. Submit scaled shop drawings that show the following:

   a. Detailed seating layout with every seat width indicated

   b. Verified field dimensions

c. Clear aisle dimensions and exact placement of new aisles relative to the room and required aisles, in the coordination of other trades. Provide other required clearances

d. Inventory of seat widths required and provided

e. Indication of transfer arm locations and swing

f. Row letter and seat numbering scheme

g. Mounting details

h. Product information for removable bases

i. Finish and accessory schedule

2. Contractor shall assume complete responsibility for the accuracy of all chair measurements and field dimensions shown on the shop drawings.

D. Product Data:

1. Submit data sheets for standard component parts, which shall include all information necessary to verify compliance with this Section.

E. Samples:

1. Submit samples of the following:

a. Metal and plastic finish selection card.

b. Wood finishes selection card and actual finished sample chips.

c. Fabric selection cards.

F. Mock-up:

1. Upon review and approval of the shop drawings, data and selection of finishes, provide one complete and operating chair mock-up. Mock up shall demonstrate all finishes as selected.

2. Mock-up shall be a single chair mockup built with a 22” seating width. The mock-up shall be built with one aisle end standard with aisle light and the other end arm shall be an ADA compliant swing away end panel with compliant signage.

3. Mock-up shall be reviewed and approved prior to commencing acquisition for, and fabrication of the work in this section, and shall be retained as a model for comparison to the final installation. The chair shall become the property of the owner at the time of final acceptance.

4. All costs for shipping of the mock-up to the Architect’s office and, following review, to the job site shall be borne by the Contractor. Following approval of the finished installation, the mockup shall be turned over to the City.

G. Certification of Flame Proofing or Flame Resistance: Submit certification, recommendations and instructions for laundering of specific fabrics and maintenance of entire installation.

H. Record Documents:

1. At time of final acceptance, submit regulatory listings and certifications as required by prevailing building codes.

2. Within 30 days, submit six copies of “as built” submittals including shop drawings, product data, and care and maintenance instructions and warranty documents.

1.08 WARRANTY

A. Warranty shall provide coverage of material defects, assembly workmanship and installation for a period of five years following the date of acceptance by the City.

B. Items under warranty shall be serviced to the satisfaction of the Owner with 14 days of notification to the Contractor.

1.09 DELIVERY, STORAGE AND HANDLING

A. Materials shall be packed for shipment by personnel qualified in seating installations and shipping. Packing shall prevent damage to the chairs during transit. Costs to repair or replace all chairs damaged during the course of the contract services shall be borne by the Contractor.

B. Do not deliver materials in this Section until building is ready for installation. Contractor is responsible to properly sequence the work and to protect from damage during delivery, handling, storage and installation.

C. Contractor is responsible to coordinate and provide secure and protected storage as required for the execution of the Contract.

1.10 PROJECT CONDITIONS

A. Contractor shall examine the work in place to ensure their manufacturing and services properly reflect the field conditions.

B. Defects in the field which may impact the work in this Section shall be reported to the Architect and corrected in accordance with the requirements of the applicable Section of work prior to commencement of the work in this Section.

C. Contractor shall protect existing work from damage due to dust and other construction related activities.

1.11 MAINTENANCE

A. Provide spare parts from the same production run as the installed chairs:

1. Provide spare seat and back covers in a quantity equal to 5% of chairs provided, prorated to sizes of chairs used.

B. Maintenance stock shall be packaged in labeled long term storage packaging and turned over to the City.

PART 2 – PRODUCTS

2.01 PRE-APPROVED CONTRACTORS

A. The following seating specialty contractors have been pre-approved for bidding for the work in this section:

Irwin Seating
Larry Kleinman
The Kleinman Group
1933 Baja Vista Way
Camarillo, California 93010
805-445-9243-O
805-445-9253-F

SEATING CONCEPTS
Robert Manness
National Sales Manager
2225 Hancock Street
San Diego, CA 92110
P 619-260 3831
F 619-491 3172

American Seating
David Muth
866 Hanlon St.
Benicia, CA 94510
tel. 707-746-0582

B. All other bidders must submit qualifications for approval prior to bid.

C. Bidder shall have been in business for at least ten years and submit with bids a list of at least (5) projects of similar size and scope and including the dates of installation and a current operations staff contact name and number.

2.02 MATERIALS

A. Padding Material:

1. Seat and back padding material shall be of new, prime manufacture, cold molded polyethylene foam. Padding materials shall comply with the flammability requirements outlined in CA Technical Information Bulletin #117, Resilient Cellular Materials, Section A & D, current edition, when tested in accordance with Federal Test Method Standard 191, Method 5903.2.

B. Wood:

1. Plywood, exposed or concealed, shall be hardwood. All plywood shall be hot press laminated using high frequency process. Interior plies shall be Class 3 or better. Exposed exterior plies shall be Class 1. Particle core shall be 55 pound density.

2. Finish of all wood parts shall be as selected from the Manufacturer's standard color line and shall match.

3. Wood finish shall be selected by architect.

C. Cast Iron:

1. Cast iron shall be grey cast iron conforming to ASTM A48/A48M-00, Class 25 (25,000 psi) minimum strength, and shall be free of blow holes and hot checks with parting lines ground smooth and shall be free of rough surfaces. Submit notarized certification that cast iron is 25,000 psi tensile strength.

D. Fabric:

1. Upholstery fabric shall meet Class 1 flammability requirements of the US Department of Commerce Commercial Standard 191-53 per CA TB#117.

E. Plastic Laminate:

1. Plastic Laminate shall meet or exceed performance standard as established by N.E.M.A.

2. Color shall be black.

F. Metal Parts:

1. Finish for all exposed metal parts shall be power coated with a hybrid epoxy powder coat finish and shall match. The powder coat finish shall be applied electrostatically to a dry film thickness of 3 mils, and shall provide durable coating having 2H pencil hardness and shall be smooth. Abrasion resistance shall be per Taber/Abraser CS-10 to less than 60mg weight loss, 1000G/1000 cycle. Prior to coating, metal parts shall be treated with a five-stage bonderizing process for finish adhesion by cross hatch method per D-3359-87, and after coating shall be oven baked at a minimum 350ºF for twenty minutes to cause proper flow of powder.

2. Colors shall be: Black

G. All exposed hardware shall be rust resistant.

2.03 CHAIR MODEL

A. Chair model shall be based on Seating Concepts BW-220 Contour

1. Or equal. Chair widths as noted on the drawings.

2.04 FABRIC

1. Upholstery fabric shall be Sherpa

   a. Manufacturer-

   Absecon Mills.
   Vienna & Aloe Avenues
   P.O. Box 672
   Cologne, NJ
   08213-0672
   info@absecon.com
   (609) 965.5373 .telephone
   (609) 965.7474 .fax

   b. Color shall be – Royal

2. Flame Resistance (meets or exceed):

   a. State of California Technical Bulletin #117-Class 1, Section E

   b. Dept. of Commerce Standard CS-191-53 Class 1

   c. Institutional Furniture Mfg. Assn. - #F.F.I.-78

   d. ASTM-E84 (81A) - Class A: Flame Spread: 10

   e. Smoke Developed: 40

3. Environmental Impact: Environmentally Improved Manufacturing Process: heavy metal free Dyes

2.05 CHAIR BACKS

A. Padded and upholstered back of rectangular shape.

B. Upholstery panel:

   1. The foam shall be cemented to an injection molded base with four ¼" threaded inserts for the attachment of two die formed metal supports.

   2. Upholstery panel constructed of 5-ply, 7/16" hardwood plywood shall be acceptable.

C. Rear outer back shall be injection molded plastic – color black.

D. All back foam shall have a minimum density of 1.5#/cu.ft. and an I.L.D. of at least 15#.

   1. Cold molded polyurethane foam thickness: Minimum 2" at top increasing to minimum of 3" at bottom contoured for lumbar support.

E. Seats shall be set a 16-degree back pitch.

F. Back shall be Seating Concepts BW-220 Contour.

1. Or equal.

2.06 CHAIR BOTTOMS

A. The seat frame and lift mechanism shall be enclosed with a decorative embossed, powder coated steel cover. The cover shall attach to the frame without screws or other fasteners but shall be removable with the use of a specially supplied tool.

B. Seat Cushion.

1. The seat cushions shall be of arch spring type. The cushion frame shall be of one piece reinforced injection molded polypropylene. Serpentine springs of normalized 10 gauge steel painted in epoxy paint to prevent corrosion, shall span the frame and be secured to the injection molded frame so as to eliminate noise. A durable inter-liner shall cover the spring assembly and prevent chaffing of the cold molded polyurethane cushion. The cushion shall be cold molded to the contour of the springs and provide a raised outer edge so the seat foam is contoured for support in the hip area. The seat shall be covered with the specified fabric. The fabric shall be of tailored, side panel construction. The cover shall be manufactured as a slip cover with a zipper. The cover shall fit over the entire assembly and allow for ease of replacement. The rear of the seat pan shall be vented to allow the foam to breathe.

2. Foam to have a minimum density of 3.44 LBS/FT3.

3. Foam thickness: minimum 3”

C. The seat frame shall have steel bars spanning the width of the cushion providing additional strength and support. The seat shall rotate on a minimum 1/2” diameter cold rolled steel hinge rod securely fastened to the seat frame. A steel tube shall be attached to the rear of the frame for added strength, support and stability.

D. The Seat lifting mechanism shall be a counter balance “gravity lift” type. Spring type lifting systems shall not be allowed. The counterbalance weight shall be securely fastened to the interior of the seat frame. There shall be a minimum of two ½” square tube stops, two counter stops and two 1” cold rolled steel bushings. All stops and bushings shall be reinforced. The Seats shall automatically lift to provide the maximum chair envelope dimension as specified above. No exceptions. Seating installations where the seat does not fully lift to the dimensions specified herein will be rejected.

E. Metal parts shall be finished as specified above for exposed metal parts.

2.07 STANDARDS

A. Chair standards shall be fabricated from columns of minimum 18GA steel forming a 1” x 3” rectangular tube.

1. Cast iron standards shall be acceptable.

B. Chair foot shall be deep formed minimum 14GA steel and concealed welded to column.

C. All chairs shall be floor mounted.

D. Metal parts shall be finished as specified above for exposed metal parts.

E. Standards shall be mounted through finished floor into concrete with expansion anchors and bolts.

1. Provide bolt caps finished as specified above for exposed metal parts.

2.08 INTEGRAL AISLE LIGHTS

A. Integral aisle lights shall be provided at all aisle seats.

1. The integral aisle lights shall:

a. Be low voltage dimmable LED with back-lit integral row marker/information panel.

b. Provide code compliant illumination in aisle pathways without introducing light pollution in the audience area.

B. Provide all equipment, materials and labor required for a complete installation.

2.09 ARM RESTS

A. Armrests shall be curved injection molded plastic color black.

1. There are no donor plates.

2.10 AISLE STANDARDS END PANELS

A. Aisle standards shall be semi oval, fabricated in the same manner as the center standards with a formed frame of minimum 16 gauge steel welded to the column. The frame shall accept a decorator panel. The decorator panel assembly shall be fabricated of solid wood or high density particle core, surfaced with injection molded or laminated plastic color black.

B. The aisle panel shall be a semi-oval shape.

2.11 ROW/SEAT IDENTIFICATION

A. Provide all seats with new bronze number and letter tags with black Helvetica medium letters. Finish to be brushed bronze or clear, as selected by Architect. Attach with dry adhesive.

B. Mounting of tags shall be within a recess on the seat pan or surface mounted in the armrests and aisle end panels. No escutcheon pins.

2.12 ADA RETRACTABLE ARMS

A. Provide (2) two compliant swing away end panels in locations to be located in the field, complete with designating, compliant graphics.

B. Transfer arms shall match decorative end standards as much as practical.

PART 3 – EXECUTION

3.01 PERFORMANCE OF THE WORK

A. The installation is to be performed under the direction of a qualified installation superintendent representing and employed by the Contractor.

3.02 INSTALLATION

A. Chairs to be attached by means of an approved type of fastener for the floor material. There shall be no less than (2) bolts per standard.

B. There shall be no gaps between edges of steps or rows and chair components that would cause a trip hazard greater than 3".

3.03 ADJUSTING AND CLEANING

A. All work is to be inspected, adjusted as necessary, and cleaned.

B. Remove from the jobsite all debris and packing materials and dispose of legally.

3.04 DEMONSTRATION

A. Installed seating shall be operated for approval and inspected by the Architect. Contractor shall make necessary adjustments as required.

B. Final inspection shall be scheduled according to the project schedules and based on the availability of the Architect. Contractor shall provide a written declaration that the project is completed and ready for final review.

1. Costs for re-inspection due to the Architect having deemed the installation incomplete and/or the work having been found not in compliance with the specifications shall be borne by the Contractor. These costs include, but are not limited to hourly consulting fees including travel time, travel and other expenses related to the re-inspection.

END OF SECTION