Notice Inviting Bids

Construction Services for
Duct Cleaning for HVAC
At SBVC
NIB # 01-2122-01

NIB RELEASED: 09/09/2021
Site Walk and Conference (mandatory): 9:00 A.M. PDT on 09/23/2021
REQUESTS FOR INFORMATION DUE: 5:00 P.M. PDT on 09/30/2021
FINAL ADDENDUM ISSUED: 3:00 PM PDT ON 10/06/2021
Bids DUE: 3:00 P.M. PDT on 10/12/2021
Bids PUBLICALLY OPENED: 3:01 P.M. ON 10/12/2021

Submit Requests for Information to:
Hassan Mirza, SBCCD, Facilities
Project Manager Phone: 909.388.6958
Email: hmirza@sbccd.edu

Submit Bids To:
San Bernardino Community College District
ATTN: **Hassan Mirza, Facilities Project Manager**
550 E Hospitality Ln #200, San
Bernardino, CA 92408
Phone: 909.388.6958

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1.0 INSTRUCTION TO BIDDERS:

1.1. NOTICE FOR INVITING BIDS:

NOTICE IS HEREBY GIVEN that the San Bernardino Community College District, hereinafter referred to as "District", is calling for and will receive sealed Bids for the award of a contract for the "**Duct Cleaning for HVAC At SBVC Project, NIB# 01-2122-01."** Bids will be accepted up to but not later than, the time stated in Section 1.3 below.

License Required: California Contract License C-20

1.2. PREQUALIFICATION REQUIREMENTS:

~~In compliance with the Resolution for the Districtwide Pre-Qualification Program for all Construction Projects adopted on August 13, 2015 by the District's Board of Trustees, prequalified contractors and subcontractors that have participated in the District's Prequalification Program and have received a prequalification approval status and can meet the specific scope of work and services requirements are hereby invited to submit their Bid for the project listed above.~~

To learn more about the Prequalification Program you can access this link: https://sbccd.edu/district-services/facilities-planning-construction/prequalification-uccap.php

Note: Prequalification not required to bid. This Bid is open to all Public Works Contractors with a valid C-20 License and registered with the DIR.

1.3. TIMELINE:

The anticipated timeline, subject to change, for the complete process is as follows:

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Event	Tentative Date
NIB Release – Response Window Opens:	09/09/2021
Site Walk and Conference (MANDATORY) –9:00 AM PDT	09/23/2021
Requests for Information Due – 5:00 p.m. PDT	09/30/2021
Final Addendum Issued – 3:00 PM PDT	10/06/2021
Bids Due – 3:00 p.m. PDT	10/12/2021
Bids Publicly Opened – 3:01 p.m. PDT	10/12/2021

Construction Contract subject to Board of Trustees	11/18/2021
Notice to Proceed issued	11/22/2021
Project Work Completion Deadline	02/25/2022

1.4. BID SUBMISSION:

Bid Submission Deadline: ***3:00 p.m. on the 12th day of October 2021*.**

Place of Bid Receipt: San Bernardino Community College District

Board Room
550 E Hospitality Ln
#200, San Bernardino,
CA 92408

All Bids shall be made and presented only on the forms presented by the District and pursuant to the instructions set forth in this NIB. Any Bids received after the time specified above, or after any extensions due to material changes, shall be returned unopened.

1.5. PRE-BID INFORMATION:

There will be one scheduled Mandatory Site Walk and Conference. Attendance by a representative of the Contractor is MANDATORY for submitting a Bid to this NIB.

The MANDATORY Site Walk and Conference will be held on September 23th ,2021 at 9:00 AM PDT at San Bernardino Valley College – Library building, CA 92408. See Exhibit G for building location

Coordinate with Robert Jenkins, Director, Facilities, Maintenance & Operations, SBVC**,** rjenkins@sbbc.cc.ca.us

1.6. PROJECT IDENTIFICATION & DESCRIPTION:

Duct cleaning for the HVAC systems at San Bernardino Valley College (NIB # 01-2122-01)". The scope includes all works required to clean the ducts for HVAC systems at the buildings listed below. The scope description is shown in Exhibit E. The plan start date for duct cleaning works is November 24th, 2021 and to be completed by February 25th, 2022.

The buildings included in the duct cleaning works are:

1. ADSS: Administration and Student Services
2. ART: Art Center
3. AUD: Auditorium
4. B: Business
5. CC /BOOK: Campus Center and Book store
6. CDC: Child Development Center
7. CTS/M&O/SHS: Computer Technology Services, Maintenance & Operation, and Student Health Services
8. GYM: Main Gym building, Plus Visitor Team building, Home Team building, Restrooms, Ticket/Concessions
9. HLS: Health, Life & Science
10. LA: Liberal Arts
11. LIB: Library
12. MC: KVCR
13. NH: North Hall
14. PL: Planetarium
15. PS: Physical Science
16. T: Applied Tech
17. TRAN: Transportation

The Contractor is required to develop, submit and gain approval from the City of San Bernardino and any other approval as required to ensure Contractor's work complies with any and all applicable federal, state, local or municipal laws, rules, orders, regulations, statutes, ordinances, codes, decrees, or requirements of any Governmental Authority prior to starting this scope of work

1.7. INQUIRIES:

Inquiries regarding the Project are to be directed to personnel listed below. All Bid documentation questions, concerns, and clarification requests shall be in writing and submitted via email. All inquiries via writing shall be clearly identified as Duct cleaning for HVAC at SBVC, NIB#01-2122-01.

All telephonic inquiries will be documented in writing. No Requests for Information will be accepted after 5:00 p.m. PDT on September 30th, 2021.

Hassan Mirza, Facilities Project Manager
Phone: 909.388.6958
Email: hmirza@sbccd.edu

1.8. DSITRICT'S EXECUTIVE VICE CHANCELLOR AUTHORITY: DELEGATED BOARD AUTHORITY TO INCREASE AND DECREASE CONTRACT TIME AND CONTRACT PRICE:

The District's Board of Trustees has delegated authority to the District's Executive Vice Chancellor for Fiscal Services to execute change orders, partial change orders, Construction Directives, and compromises, which may increase and/or decrease the Contract Price and/or may increase and/or decrease the Contract Time for this Project. As such, the Executive Vice Chancellor signature on a change order, partial change order, Construction Directive, and/or compromise is sufficient to bind the DISTRICT provided that the increased and/or decreased costs of individual changes do not exceed five percent (5%) of the original contract price

1.9. EQUAL OPPORTUNITY EMPLOYMENT

The District is an equal opportunity employer. The District encourages the participation of minority, women, and disabled veteran businesses.

1.10. COMPLIANCE WITH BID REQUIREMENTS

Each bid must strictly conform with and be responsive to the contract documents as defined in the General Conditions.

The District reserves the right to reject any or all bids, and to waive any irregularities or informalities in any bid or any requirements of these specifications as to bidding procedures.

1.11. SUBCONTRACTORS

Each bidder shall submit with its bid, on the form furnished with the contract documents, a list of the designated subcontractors on this Project as required by the Subletting and Subcontracting Fair Practices Act, California Public Contract Code Sections 4100 et. seq.

1.12. BID SECURITY

~~In accordance with California Public Contract Code Section 22300, the DISTRICT will permit the substitution of securities for any monies withheld by the DISTRICT to ensure performance under the contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the DISTRICT, or with a state or federally chartered bank as the escrow agent, who shall then pay such monies to the Contractor. Upon satisfactory completion of the contract, the securities shall be returned to the Contractor.~~

Each bidder's bid must be accompanied by one of the following forms of bidder's

security: (1) cash; (2) a cashier's check made payable to the DISTRICT; (3) a certified check made payable to the District; or (4) a bidder's bond executed by a California admitted surety as defined in Code of Civil Procedure Section 995.120, made payable to the District in the form set forth in the contract documents. Such bidder's security must be in an amount not less than ten percent (10%) of the maximum amount of bid as a guarantee that the bidder will enter into the proposed contract, if the same is awarded to such bidder, and will provide the required Performance and Payment Bonds and insurance certificates. In the event of failure to enter into said contract or provide the necessary documents, said security will be forfeited.

1.13. PUBLIC WORKS REFORMS (SB 854) REQUIREMENTS

No contractor or subcontractor may be listed on a bid for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

1.14. PREVAILING WAGES REQUIREMENTS

The DISTRICT has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this work is to be performed for each craft, classification, or type of worker needed to execute the contract. These per diem rates, including holiday and overtime work, as well as employer payments for health and welfare, pension, vacation, and similar purposes, are on file at the DISTRICT, and are also available from the Director of the Department of Industrial Relations at; http://www.dir.ca.gov/OPRL/PWD/index.htm. Pursuant to California Labor Code Sections 1720 et seq., it shall be mandatory upon the Contractor to whom the contract is awarded, and upon any subcontractor under such Contractor, to pay not less than the said specified rates to all workers employed by them in the execution of the contract.

1.15. WITHDRAWAL OF BIDS

No bidder may withdraw any bid for a period of sixty (60) calendar days after the date set for the opening of bids.

1.16. BONDS

Separate payment and performance bonds, each in an amount equal to 100 % of the total contract amount are required, and shall be provided to the District prior to execution of the contract and shall be in the form set forth in the contract documents.

All bonds (Bid, Performance, and Payment) must be issued by a California

admitted surety as defined in California Code of Civil Procedure Section 995.120.

1.17. TIMELY DELIVERY OF BIDS

It is each bidder's sole responsibility to ensure its bid is timely delivered and received at the location designated as specified above. Any bid received at the designated location after the scheduled closing time for receipt of bids shall be returned to the bidder unopened.

2.0 DISTRICT PROFILE

The District was established in 1926 and serves most of the County of San Bernardino and a small portion of the County of Riverside. The District includes two comprehensive community colleges: San Bernardino Valley College and Crafton Hills College, a Professional Development Center, and KVCR-TV and FM. The District employs approximately 800 full- time permanent faculty and staff and approximately 600 part-time faculty, and have approximately 17,000 students enrolled in one or more courses during the 2015 Spring Semester.

3.0 PROJECT MANAGER AND PRIMARY CONTACT

Hassan Mirza is the primary contact regarding this NIB [email: hmirza@sbccd.edu]
And will continue as the Project Manager for the project duration.

4.0 NIB EXHIBITS*:*

4.1 EXHIBIT A - BID FORMS
4.2 EXHIBIT B - GENERAL CONDITIONS
4.3 EXHIBIT C - SUPPLEMENTAL CONDITIONS
4.4 EXHIBIT D – PROJECT SPECIFICATION
4.5 EXHIBIT E - SCOPE DESCRIPTION
4.6 EXHIBIT F - AGREEMENT FORM
4.7 EXHIBIT G - JOB WALK INFORMATION
4.8 EXHIBIT H - AVAILABLE PLANS

END OF NOTICE INVITING BIDS

EXHIBIT A

BID FORMS

SECTION 00 20 00 - INSTRUCTIONS TO BIDDERS

1. Preparation of Bid Form. The DISTRICT invites bids on the form attached to be submitted at the time and place stated in the Notice Inviting Bids. Bids shall be submitted on the prescribed Bid forms and completed in full. All bid items and statements shall be properly filled out. Numbers shall be stated both in words and in figures where so indicated. The signatures of all persons signing the bid shall be in permanent blue ink. Prices, wording and notations must be in ink or typewritten. Erasures or other changes shall be noted over by signature of the bidder. This section is intended to assist the bidders with submitting their bid proposals for this Project and is not in any way intended to make changes to the project specifications, plans, or contract

2. Form and Delivery of Bid Proposals. All bid proposals shall be made on the bid proposal form provided, and the complete bid, together with any and all additional materials as required by the Contract Documents, shall be enclosed in a sealed envelope, addressed and delivered to the designated location and must be received on or before the time set forth in the Notice Inviting Informal Bids. All envelopes containing bids shall be sealed and plainly marked with the bidder's name, address, telephone number, bidder's California contractor's license number and the particular project for which the bid is submitted. The DISTRICT reserves the right to reject any bid if all of the information required on or by the Bid Proposal Form not furnished. **The following is the list of required items: Bid Proposal Form, Bid Guarantee Form, Bid Bond (*Notarized)*, Designation of Subcontractors, Non-collusion Declaration, Contractor's Certification Regarding Worker's Compensation, Acknowledgement of Bidding Practices Regarding Indemnity, Bidder's Acknowledgement of Project Duration, and Site Visit Certification.** It is each bidder's sole responsibility to ensure its bid(s) is timely delivered and received at the location designated in the Notice Inviting Informal Bids. Any bid received at the designated location after the scheduled closing time for receipt of bids shall be returned to the bidder unopened.

3. Bid Security. Each bid must be accompanied by one of the following forms of bidder's security: (1) cash; (2) a cashier's check made payable to the DISTRICT; (3) a certified check made payable to the DISTRICT; or (4) a bidder's bond executed by a California admitted surety as defined in Code of Civil Procedure section 995.120, made payable to the DISTRICT, in the form set forth in the contract documents. Such bidder's security must be in an amount not less than ten percent (10%) of the maximum amount of such bidder's bid as a guarantee that the bidder will enter into the proposed contract, if the same is awarded to such bidder, and will provide the required Performance and Payment Bonds and insurance certificates. In the event that a bidder is awarded the contract and such bidder fails to enter into said contract or provide the necessary documents within ten (10) calendar days after notification of the award of the contract to bidder, said security will be forfeited.

4. Signature. The bid form, all bonds, all designations of subcontractors, the Contractor's Certificate, the Agreement, and all Guarantees must be signed in permanent blue ink in the name of the bidder and must bear the signature of the person or persons duly authorized to sign the bid.

If bidder is a corporation, the legal name of the corporation shall first be set forth, together with two signatures: one from the President and one from the Secretary or Assistant Secretary. Alternatively, the signature of other authorized officers or agents may be affixed, if a certified copy of the resolution of the corporate board of directors authorizing them to do so is presented to the DISTRICT upon request. Such documents shall include the title of such signatories below the signature and shall bear the corporate seal.

If bidder is a partnership, the true name of the firm shall first be set forth, together with the names of all persons comprising the partnership or co-partnership. The bid must be signed by all partners comprising the partnership unless proof in the form of a certified copy of a statement of partnership acknowledging the signer to be a general partner is presented to the DISTRICT, in which case the general partner may sign. Bids submitted as joint ventures

must so state and be signed by each joint party. Bids submitted by individuals must be signed by the bidder unless an up to date power- of-attorney is on file in the DISTRICT office, in which case, said person may sign for the individual.

The above rules also apply in the case of the use of a fictitious firm name. In addition, however, where a fictitious name is used, it must be so indicated in the signature.

5. Modifications. Changes in or additions to the bid form, recapitulations of the work bid upon, alternative proposals, or any other modification of the bid form which is not specifically called for in the contract documents may result in the DISTRICT's rejection of the bid as not being responsive to the Notice Inviting Informal Bids. No oral or telephonic modification of any bid submitted will be considered.

6. Erasures, Inconsistent or Illegible Bids. The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction creates no inconsistency and is suitably authenticated by affixing in the margin immediately opposite the correction the signature or signatures of the person or persons signing the bid. In the event of inconsistency between words and figures in the bid price, words shall control figures. In the event that the DISTRICT determines that any bid is unintelligible, inconsistent, or ambiguous, the DISTRICT may reject such bid as not being responsive to the Notice Inviting Bids

7. Examination of Site and Contract Documents. At its own expense and prior to submitting a bid proposal, each bidder shall examine carefully the site of the work and the Contract Documents, and shall satisfy itself as to the character, quality, and quantity of the surface and subsurface materials or obstacles to be encountered. The submission of a bid proposal shall be conclusive evidence that the bidder has satisfied itself through bidder's own investigation as to the conditions to be encountered; the character, quality, and scope of work to be performed; ~~the design and DSA approval to be furnished;~~ the materials and equipment to be furnished; and all requirements of the Contract Documents. ~~Where investigations of subsurface conditions have been made with respect to foundation or other structural design, and that information is made available to bidder or shown in the Contract Documents, said information represents only a statement as to the character of materials which have been actually encountered and is only made available or included for the convenience of bidders. Investigations of subsurface conditions are made for the purpose of design, and the District assumes no responsibility whatsoever with respect to the sufficiency or accuracy of borings, the log of test borings, or other investigations, or of the interpretation thereof, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work, or any part of it, or that unanticipated conditions may not occur. When a log of test borings is made available to bidder or included in the Contract Documents, it is expressly understood and agreed that said log of test borings does not constitute a part of the Contract, and represents only an opinion of the District as to the character of the materials to be encountered, and is made available or included in the Contract Documents only for the convenience of the bidders.~~ Making such information available to bidders is not to be construed in any way as a waiver of the requirement that bidders perform their own investigation, and bidders must satisfy themselves, through their own investigations, as to conditions to be encountered. The Bidder shall familiarize itself with all local laws, ordinances, rules and requests that may affect the work or the performance of the work. Bidders shall thoroughly examine and be familiar with the drawings and specifications. The failure or omission of any bidder to receive or examine any contract documents, form, instrument, addendum, or other document or to visit the site and become acquainted with conditions there existing shall not relieve any bidder from obligations with respect to the bid or to the contract. The submission of a bid shall be taken as prima facie evidence of compliance with this Paragraph. Bidders shall not, at any time after submission of the bid, dispute, complain, or assert that there were any misunderstandings with regard to the nature or amount of work to be done.

8. Withdrawal of Bids. Any bid may be withdrawn, either personally or by written request, at any time prior to the scheduled closing time for receipt of bids. The bid security for bids withdrawn prior to the scheduled closing time for receipt of bids, in accordance with this Paragraph, shall be returned upon demand therefore. No bidder may withdraw any bid for a period of 60 calendar days after the date set for the opening of bids.

9. Agreements, Insurance, and Bonds. The Agreement form which the successful bidder, as Contractor, will be required to execute, and the form of the bonds and insurance endorsements which such Contractor will be required to furnish, are included in the contract documents and should be carefully examined by the bidder. Payment bond and performance bonds in the amount of one hundred percent (100%) of the amount of the contract and insurance endorsements must be furnished in four (4) identical counterparts as required in the contract, all prior to execution of the contract.

Base Bid shall include all costs required to perform the work as required by the contract documents.

10. Interpretation of Plans and Documents. If any prospective bidder is in doubt as to the true meaning of any part of the contract documents, or finds discrepancies in, or omissions from the drawings and specifications, and/or applicable Federal, State, or local regulations or requirements a written request for an interpretation or correction thereof shall be submitted to the Project Manager. The bidder submitting the request shall be responsible for its prompt delivery. Any interpretation or correction of the contract documents will only be made by addendum duly issued, and a copy of such addendum will be mailed or delivered to each Contractor receiving a set of the contract documents**.** No person is authorized to make any oral interpretation of any provision in the contract documents, nor shall any oral interpretation be binding on the DISTRICT. If discrepancies on drawings, or in specifications, or conflicts between drawings and specifications are not covered by addenda, bidder shall include in the bid methods of construction and materials resulting in the higher bid.

11. Award of Contract. The DISTRICT reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding. The award of the contract, if made by the DISTRICT, will be by action of the governing board and to the lowest responsible and responsive bidder from among those bidders responsive to the call for bids. In the event an award is made, and such bidder fails or refuses to execute the contract and provide the required documents within ten (10) calendar days after notification of the award of the contract to bidder, the DISTRICT may award the contract to the next lowest responsible and responsive bidder or release all bidders. Each bid must conform, and be responsive, to the contract documents as defined in the General Conditions.

Alternates. The lowest bid shall be the lowest total bid price on the base contract and all additive and/or deductive items and/or project allowances. If alternate bids are called for, the contract may be awarded at the election of the governing board to the lowest responsible and responsive bidder alternates as selected by the governing board. In the event there is a tie for the lowest total bid price, the tie will be broken by flipping a coin.

12. Evidence of Responsibility. In selecting the lowest responsible bidder, consideration will be given not only to the financial standing but also to the general competency of the bidder for the performance of the Work covered by the bid. Upon the request of the DISTRICT, a bidder whose bid is under consideration for the award of the contract shall submit promptly to the DISTRICT satisfactory evidence showing the bidder's financial resources, surety and insurance claims experience, construction experience, completion ability, workload, organization available for the performance of the contract, and other factors pertinent to a Project of the scope involved.

13. Listing of Subcontractors. Each bidder shall submit with his bid, on the form furnished with the contract documents, a list of the names and locations of the places of business of each subcontractor who will perform work or labor or render service to the bidder in or about the Project, or a subcontractor who under subcontract to the bidder, specially fabricates and installs a portion of the work, in an amount in excess of one-half of 1 percent of the bidder's total bid as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code section 4100, et. seq.). Bidders shall be required to supply the Distinct the CSLB number of each listed subcontractor. If License numbers are not included on bid day sub list log bidders shall no latter that 24hr after bids are received resubmit the subcontractor log with the required license information. Forms should be delivered to same location bids were received.

14. Workers' Compensation. In accordance with the provisions of Labor Code section 3700, the successful bidder as the Contractor shall secure payment of compensation to all employees. The Contractor shall sign and file with the DISTRICT the following certificate prior to performing the work under this contract: "I am aware of the provisions of section 3700 of the Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract." The form of such certificate is included as a part of the contract documents.

15. Contractor's License. The bidder must possess the appropriate valid contractor's license specified in the Notice Inviting Informal Bids at the time the bids are opened. If, at the time the bids are opened, bidder is not licensed to perform the Project in accordance with Division 3, Chapter 9, of the Business and Professions Code for the State of California and the Notice to Contractors calling for bids, such bid will not be considered and the Contractor will forfeit its bid security to the DISTRICT. The bidder must maintain the required license(s) throughout the duration of the contract.

16. Anti-Discrimination. It is the policy of the DISTRICT that in connection with all work performed under contracts, there be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, or marital status. The Contractor agrees to comply with applicable federal and California laws, including, but not limited to, the California Fair Employment and Housing Act, beginning with Government Code section 12900 and Labor Code section 1735. In addition, the Contractor agrees to require like compliance by any subcontractors employed on the work by such Contractor.

17. Hold Harmless. Contractor shall defend, indemnify and hold harmless DISTRICT, Architect, Project Manager, Program Manager, Inspector, the State of California and their officers, employees, agents and independent contractors from all liabilities, claims, actions, liens, judgments, demands, damages, losses, costs or expenses of any kind arising from death, personal injury, property damage or other cause based or asserted upon any act, omission, or breach connected with or arising from the progress of Work or performance of service under this Agreement or the Contract Documents. As part of this indemnity, Contractor shall protect and defend, at its own expense, DISTRICT, Project Manager, Program Manager, Architect, Inspector, the State of California and their officers, employees, agents and independent contractors from any legal action including attorneys fees or other proceeding based upon such act, omission, or breach.

Furthermore, Contractor agrees to and does hereby defend, indemnify and hold harmless DISTRICT, Project Manager, Program Manager, Architect, Inspector, the State of California and their officers, employees, agents and independent contractors from every claim or demand made, and every liability, loss, damage, expense or attorneys fees of any nature whatsoever, which may be incurred by reason of:

(a) Liability for (1) death or bodily injury to persons; (2) damage or injury to, loss (including theft), or loss of use of, any property; (3) any failure or alleged failure to comply with any provision of law or the Contract Documents; or (4) any other loss, damage or expense, sustained by any person, firm or corporation or in connection with the Work called for in this Agreement or the Contract Documents, except for liability resulting from the sole or active negligence, or the willful misconduct of the DISTRICT.

(b) Any bodily injury to or death of persons or damage to property caused by any act, omission or breach of Contractor or any person, firm or corporation employed by Contractor, either directly or by independent contract, including all damages or injury to, loss (including theft), or loss of use of, any property, sustained by any person, firm or corporation, including the DISTRICT, arising out of or in any way connected with Work covered by this Agreement or the Contract Documents, whether said injury or damage occurs either on or off DISTRICT property, but not for any loss, injury, death or damages caused by the sole or active negligence or willful misconduct of the DISTRICT.

(c) Any dispute between Contractor and Contractor's subcontractors / supplies / sureties, including, but not limited to, any failure or alleged failure of the Contractor (or any person hired or employed directly or indirectly by the Contractor) to pay any Subcontractor or Material man of any tier or any other person employed in connection with the Work and/or filing of any stop notice or mechanic's lien claims.

Contractor, at its own expense, cost, and risk, shall defend any and all claims, actions, suits, or other proceedings that may be brought or instituted against the DISTRICT, Owner's Representative, Project Manager, District Consultant, Architect, Inspector, its officers, agents or employees, on any such claim or liability, and shall pay or satisfy any judgment that may be rendered against the DISTRICT, its officers, agents or employees in any action, suit or other proceedings as a result thereof.

18. Disqualification of Bidders and Proposals. More than one proposal for the same work from any individual, firm, partnership, corporation, or association under the same or different names will not be accepted; and reasonable grounds for believing that any bidder is interested in more than one proposal for the work will be cause for rejecting all proposals in which such bidder is interested and the bidder will forfeit their bid security to the DISTRICT.

19. Unbalanced or Altered Bids. Proposals in which the prices are obviously unbalanced, and those which are incomplete or show any alteration of form, or contain any additions, exclusions or conditional or alternate bids that are not called for or otherwise permitted, may be rejected. A proposal on which the signature of the bidder has been omitted may be rejected.

20. Employment of Apprentices. The Contractor and all Subcontractors shall comply with the provisions of California Labor Code sections 1777.5, 1777.6, and 1777.7 concerning the employment of apprentices. The Contractor and any Subcontractor under him shall comply with the requirements of said sections, including applicable portions of all subsequent amendments in the employment of apprentices; however, the Contractor shall have full responsibility for compliance with said Labor Code sections, for all apprentice-able occupations, regardless of any other contractual or employment relationships alleged to exist.

21. Non-Collusion Declaration. Public Contract Code section 7106 requires bidders to submit a declaration of non-collusion with their bids. This form is included with the bid package and must be signed and dated by the bidder and each subcontractor under penalty of perjury.

22. Wage Rates, Travel and Subsistence.

(a) Pursuant to Labor Code Sections 1770 et. seq., the DISTRICT has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this work is to be performed for each craft, classification or type of worker needed to execute the contract. Copies are available from the DISTRICT to any interested party on request and are also available from the Director of the Department of Industrial Relations. The Contractor shall obtain copies of the above-referenced prevailing wage sheets and post a copy of such wage rates at appropriate, conspicuous, weatherproof points at the Site.

(b) Any worker employed to perform work on the Project and such work is not covered by any classification listed in the published general prevailing wage rate determinations or per diem wages determined by the Director of the Department of Industrial Relations, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to the employment of such person in such classification.

(c) Holiday and overtime work, when permitted by law, shall be paid for at the rate set forth in the prevailing wage rate determinations issued by the Director of the Department of Industrial Relations or at least one and one-half (1½) times the specified basic rate of per diem wages, plus employer payments, unless otherwise specified in the contract documents or authorized by law.

(d) The Contractor shall post, at appropriate, conspicuous, weatherproof points at the site, a schedule showing all determined minimum wages actually earned.

(e) These per diem rates, including holiday (New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day) and overtime work, and employer payments for health and welfare, pension, vacation, and similar purposes, are on file at the administrative office of the DISTRICT, located as noted above and are also available from the Director of the Department of Industrial Relations. It is the Contractor's responsibility to ensure the appropriate prevailing rates of per diem wages are paid for each classification. It shall be mandatory upon the Contractor to whom the contract is awarded, and upon any subcontractor under such Contractor, to pay not less than the said specified rates to all workers employed by them in the execution of the contract.

23. No Telephone or Facsimile Availability. No telephone or facsimile machine will be available to bidders on the DISTRICT premises at any time.

24. Filing of Bid Protests. Bidders may file a "protest" of a contract award with the DISTRICT's Director of Business Services: San Bernardino Community College District, Business Services, 114 Del Rosa Drive, San Bernardino, CA 92408. In order for a bidder's protest to be considered valid, the protest must:

(a) Be filed timely and in writing as detailed in this Paragraph.

(b) Clearly identify in detail the specific issues related to the bid protest.

(c) Clearly identify in detail the specific DISTRICT Staff/Board recommendation or action being protested.

(d) Clearly identify in detail the specific grounds of the protest and the facts supporting the particular protest.

(e) Include all relevant and supporting documentation with the protest at the time of filing.

(f) The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest, which may be adversely affected by the outcome of the protest. Such parties include all other bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

The District will issue a decision on the protest. If the District determines that a protest is frivolous, the party originating the protest may be determined to be irresponsible and that party may be determined to be ineligible for future Contract awards.

The procedure and time limits set forth in this section are mandatory and are the bidder's sole remedy in the event of bid protest and failure to comply with these procedures shall constitute a waiver of any rights to further pursue the bid protest, including filing a Government Code claim or legal proceeding.

If the bid protest does not comply with each and every one of the requirements set forth above, it will be rejected as invalid. A protest regarding the recommended award of a contract solicited by the Notice Inviting Informal Bids must be filed in writing with the DISTRICT within five (5) calendar days after the bid opening. If the protest is valid, the DISTRICT shall review the basis of the protest along with all relevant information and documents and will provide the protesting bidder a written decision.

25. Ambiguity. In the event of ambiguity due to a conflict between words and numbers with respect to the amount of the bid, words shall govern over numbers.

26. Bids: Bids to receive consideration, shall be made in accordance with the following instructions.

Local Hire: The San Bernardino Community College District (SBCCD) strongly encourages local hire and apprenticeship participation in the construction workforce, refer to Board Policy BP-6610 . Bidder attention is directed to the following provisions:

1. The definition of contractor is limited to the total workforce of the prime or principal contractor and all subcontractors who work in SBCCD under the construction contract.

2. A "local hire" is defined as an employee whose residence is within SBCCD at the time of the project bid opening.

3. Bidders are to complete the "Local Hire Information and Form Checklist".

~~With respect to application of the local hire policy, bidder attention is directed to the following:~~

~~1. The SBCCD strongly encourages, within the constraints of federal and state law, the employment of SBCCD residents on SBCCD construction projects.~~

~~2. Bidders on construction projects will be required to complete a "Local Hire Information Form & Checklist" to be submitted with construction bids which indicates the bidder's effort to employ local hire.~~

~~3. To the extent possible and applicable and as permitted by law, bidders are expected to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment and its "Helmets to Hardhats" programs to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and others needs as identified by the District. The District may request the awarded contractor to provide documents or other evidence to demonstrate efforts to comply with these requests.~~

Apprenticeship Program: Unless such provision would conflict with a state or federal law or regulation applicable to a particular contract for a public works project, SBCCD contracts shall contain provisions pursuant to which each contractor or subcontractor shall make a good faith effort to employee apprentices who are enrolled in, and participating in, an apprenticeship program serving the San Bernardino and Riverside Counties, and approved by the State Department of Apprenticeship Standards. This apprenticeship requirement shall apply to any apprentice-able craft or trade in which the contractor employs workers in performing any work under the contract. A contractor may evidence its good faith effort by complying with California Labor Code Section 1777.5 and the implementing regulations, and by seeking apprentices from apprenticeship programs serving San Bernardino and Riverside Counties.

A contractor employing apprentices pursuant to this section shall employ apprentices in a ratio consistent with the provisions of the California Labor Code or federal requirements as applicable for federal aid contracts.

This section shall not be construed to exempt a contractor from any otherwise-applicable requirement imposed upon the contractor by federal or state law.

END OF SECTION

SECTION 00 30 01 – BID PROPOSAL FORM

PROPOSAL FOR: Construction Services for RFP # 01-2122-01 – DUCT CLEANING FOR HVAC AT SBVC

TO: San Bernardino Community College District, acting by and through its Governing Board, herein called "DISTRICT."

RE: (BIDDER): _____

1. Pursuant to and in compliance with your Notice Inviting Bids and other documents relating thereto, the undersigned bidder, having familiarized himself with the terms of the contract, the local conditions affecting the performance of the contract and the cost of the work at the place where the work is to be done, hereby proposes and agrees to perform within the time stipulated, the contract, including all of its component parts, and everything required to be performed, including its acceptance by the DISTRICT, and to provide and furnish any and all labor, materials, tools, expendable equipment, utility and transportation services, and California sales and other applicable taxes, permits, licenses and fees required by the agencies with authority in the jurisdiction in which the work will be located necessary to perform the contract and complete all of the work in a workmanlike manner required in connection with the work required by this bid proposal**,** for **DUCT CLEANING FOR HVAC AT SBVC Project** in the DISTRICT described above, all in strict conformance with the drawings and other contract documents on file at the Purchasing Office of said DISTRICT for amounts set forth herein.

2. ADDENDA: The undersigned has thoroughly examined any and all Addenda (if any) issued during the bid period and are thoroughly familiar with all contents thereof and acknowledges receipt of the following Addenda: (Bidder to list all addenda).

ADDENDUM NO. _____	DATE RECEIVED _____
ADDENDUM NO. _____	DATE RECEIVED _____
ADDENDUM NO. _____	DATE RECEIVED _____
ADDENDUM NO. _____	DATE RECEIVED _____
ADDENDUM NO. _____	DATE RECEIVED _____
ADDENDUM NO. _____	DATE RECEIVED _____

3. TOTAL BID

Base Bid shall include all costs required to perform the work as required by the contract documents and as may be expanded and/or reduced by Addenda.

The bidder agrees to perform all work required for this BID Proposal for the lump sum (turnkey) of:

a. BASE BID:

_____ Dollars
(In words printed or typed)

$_____ (In figures)

~~***b.* BID ALLOWANCE:**~~

~~BID ALLOWANCE~~	~~DESCRIPTION~~	~~VALUE ($)~~
~~ALLOWANCE 1~~	~~Unforeseen Conditions and Not Included in the Scope of Work.~~	~~$0,000.00~~
~~ALLOWANCE 2~~	~~Unforeseen Conditions and Not Included in the Scope of Work.~~	~~$0,000.00~~

~~Allowance per each package~~ ~~$ 0,000.00~~

…. Dollars

c. **Total Bid = Base Bid + Bid Allowance**

_____Dollars
(In words printed or typed)

$ _____ (In figures)

Total bid amount shall include the base bid amounts, ~~alternate bids (if applicable),~~ and total package allowances, if any. The lowest responsive bid shall be determined based on the sum of the base bids, ~~add alternates~~ and allowances.

4. The undersigned bidder shall be licensed and shall provide the following information:

   Bidder's California Contractor's License Number: _____

   License expiration date: _____

   Name on License: _____

   Type of License: _____

   If the bidder is a joint venture, each member of the joint venture must include the above information.

5. Attached is bid security in the amount of not less than ten percent (10%) of the bid: $ _____. Bid bond, certified check, cashier's check, or cash. (circle one)

6. The names and contact information of all persons interested in the foregoing proposal as principals are as follows:

_____

_____

_____

_____

_____

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, state the legal name of such corporation, as well as the names of the president, secretary, treasurer, and manager thereof; if a co-partnership, state the true names of the firm, as well as the names of all individual co-partners comprising the firm; if bidder or other interested person is an individual, state the first and last names in full.)

7. Notice of Intent to Award Contract or other correspondence should be addressed to the undersigned at the address stated below.

_____

_____

_____

_____

_____

8. ATTACHED TO THIS BID LETTER: Attached to this bid letter and by this reference incorporated herein and made a part of these completed Contract Bid Forms are:

	Name of Form/Document	**Section Number**
❑	Bid Proposal Form	Section 00 30 01
❑	Bid Guarantee Form	Section 00 30 02
❑	Bid Bond (Notarized)	Section 00 30 03
❑	Designation of Subcontractors	Section 00 30 04
❑	Non-Collusion Declaration (Notarized)	Section 00 30 05
❑	Contractor's Certification Regarding Worker's Compensation	Section 00 30 06
❑	Prevailing Wages Certification	Section 00 30 07
❑	Acknowledgement of Bidding Practices Regarding Indemnity	Section 00 30 08
❑	Bidder's Acknowledgement of Project Duration	Section 00 30 09
❑	Site Visit Certification	Section 00 30 10

9. TIME FOR COMPLETION: The DISTRICT may give a notice to proceed within thirty (30) days of the award of the bid by the DISTRICT. Once the CONTRACTOR has received the notice to proceed, the CONTRACTOR shall complete the work in the time specified in the Agreement.

   In the event that the DISTRICT desires to postpone giving the notice to proceed beyond this thirty (30) day period, it is expressly understood that with reasonable notice to the CONTRACTOR, the DISTRICT may postpone giving the notice to proceed. It is further expressly understood by the CONTRACTOR, that the CONTRACTOR shall not be entitled to any claim of additional compensation as a result of the postponement of giving the notice to proceed.

   If the CONTRACTOR believes that a postponement will cause a hardship to it, the CONTRACTOR may terminate the contract with written notice to the DISTRICT within ten (10) days after receipt by the CONTRACTOR of the DISTRICT's notice of postponement. It is further understood by the CONTRACTOR that in the event that the CONTRACTOR terminates the Contract as a result of postponement by the DISTRICT, the DISTRICT shall only be obligated to pay the CONTRACTOR for work performed by the CONTRACTOR at the time of notification of postponement. Should the CONTRACTOR terminate the contract as a result of a notice of postponement, the DISTRICT shall have the authority to award the contract to the next lowest responsible bidder.

10. It is understood that the DISTRICT reserves the right to reject any or all bids and/or waive any irregularities or informalities in this bid or in the bid process. The CONTRACTOR understands that it may not withdraw this bid for a period of sixty (60) days after the date set for the opening of bids.

11. The required List of designated subcontractors is attached hereto.

12. The required notarization: Bid Bond and the Non-Collusion Declarations for CONTRACTOR***, and the Non-Collusion Declarations for*** ~~subcontractors are attached hereto~~.

13. It is understood and agreed that if written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned after the opening of the bid, and within the time this bid is required to remain open, or at any time thereafter before this bid is withdrawn, the undersigned will execute and deliver to the DISTRICT a contract in the form attached hereto in accordance with the bid as accepted and prepared by Owner, and that he will also furnish and deliver to the DISTRICT the Performance Bond and Payment Bond, all within ten (10) calendar days after receipt of notification of award, and that the work under the contract shall be commenced by the undersigned bidder, if awarded the contract, by the start date provided in the DISTRICT's Notice to Proceed, and shall be completed by the CONTRACTOR in the time specified in the contract documents.

14. Time is of the essence regarding this contract, therefore, in the event the bidder to whom the Notice of Intent to Award Contract is given fails or refuses to post the required bonds and return executed copies of the Agreement form within ten (10) calendar days from the date of receiving the Notice of Intent to Award Contract, the DISTRICT may declare the bidder's bid deposit or bond forfeited as damages.

15. Pursuant to Government Code section 4552, in submitting a bid to the DISTRICT, the bidder offers and agrees that if the bid is accepted, it will assign to the DISTRICT all rights, title, and interest in, and to all causes of action it may have under section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Business and Professions Code sections 16700, et. seq.,), arising from the purchase of goods, materials, or services by the bidder for sale to the DISTRICT pursuant to the bid. Such assignment shall be made and become effective at the time the DISTRICT tenders final payment to the bidder.

16. The bidder declares that he/she has carefully examined the location of the proposed work, that he/she has examined the Plans, General Conditions of the contract, Supplemental Conditions of the contract, and Specifications, and read the accompanying instructions to bidders, and hereby proposes and agrees, if this

proposal is accepted, to furnish all materials and do all work required to complete the said work in accordance with the Plans, General Conditions of the contract, Supplementary Conditions of the contract, and Specifications, in the time and manner therein prescribed for the unit cost and lump sum amounts set forth in this Bid Form.

17. In the event of ambiguity due to a conflict between words and numbers with respect to the amount of the bid, words shall govern over numbers.

18. The bidder is familiar with Government Code sections 12650, et. seq., and Penal Code section 72 and understands that false claims can lead to imprisonment.

19. The bidder acknowledges that that they have reviewed the work outlined in the contract documents and fully understands the Scope of work required in the Proposal, and further acknowledges that this proposal includes the scope of work within this Bid Proposal. It is further understood that no exceptions, exclusions, or clarifications will be considered.

20. The undersigned has notified the District through the Project Manager of any discrepancies or omissions, or of any doubt about the meaning of any of the Contract Documents, and has contacted the District before bid date to verify the issuing of any clarifying Addenda.

I, the below-indicated bidder, declare under penalty of perjury that the information provided and representations made in this bid are true and correct.

_____
Proper Name of Bidder

_____
Address

By:_____ Date:_____
Signature of Bidder

Corporate Seal:
(If Corporation)

NOTE: *If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of authorized officers or agents and the document shall bear the corporate seal; if bidder is a partnership, the true name of the firm shall be set forth above, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership; and if bidder is an individual, his signature shall be placed above.*

All signatures must be made in permanent blue ink

END OF SECTION

SECTION 00 30 02 – BID GUARANTEE FORM

PART 1 GENERAL

1.01 BID SECURITY

A. All bids must be valid for the time specified in **NIB# 01-2122-01** and Section **00 30 01 Bid Proposal Form**.

B. Each proposal shall be accompanied by Bid Security, pledging that the Bidder will enter into a contract with the DISTRICT in accordance with the terms stated in the proposal, and will furnish bonds as described in Sections **00 50 01 Payment Bond (California Publics Works)** and **00 50 02 Performance Bond (California Public Works)**. Should the Bidder refuse to enter into such contract or fail to furnish such Bonds, the amount of the Bid Security shall be forfeited to the DISTRICT as liquidated damages, not as a penalty.

C. Bid Security shall be in the amount of ten percent (10%) of the Base Bid(s).

D. Bid Security shall be in the form of a Bid Bond, Cashier's Check or a Certified Check. The DISTRICT shall be listed as oblige on the bond or payee on the check.

E. If a Bid Bond is submitted, the attorney-in-fact who executes the bond on behalf of the Surety shall attach to the Bond a certified, current copy of his Power of Attorney. The bid bond form supplied by the surety is adequate.

F. Bid security from all bidders will be retained for fifteen (15) days after which the bid security will be retained for the two lowest responsible bidders until the successful bidder executes its contract.

G. Bid Security for the two lowest responsible bidders will be returned to Bidders within ten (10) days after construction contracts have been signed. If the successful bidder withdraws his bid within the period specified therein for acceptance, or upon acceptance thereof the DISTRICT, fails to enter into the Contract and provide bonds within the time specified after the forms are presented to him, he shall be liable for any difference by which the cost of securing the supplies or services exceeds the amount of bid, and the bid security shall be available toward offsetting such difference.

END OF SECTION

SECTION 00 30 03 – BID BOND

DUCT CLEANING FOR HVAC AT SBVC

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned, (hereafter called "Principal"), and _____ (hereafter called "Surety"), are hereby held and firmly bound unto San Bernardino Community College District (hereafter called "Owner") in the sum of ($_____)

TOTAL PRICE IN WORDS

_____DOLLARS for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors, and assigns.

SIGNED this _____ day of _____, 202_.

The condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain Bid, attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of the DUCT CLEANING FOR HVAC AT SBVC.

NOW, THEREFORE,

a. If said Bid is rejected, or

b. If said Bid is accepted and the Principal executes and delivers a contract or the attached Agreement form within five (5) days after acceptance (properly completed in accordance with said Bid), and furnishes bonds for his faithful performance of said Contract and for payment of all persons performing labor or furnishing materials in connection therewith,

then this obligation shall be void; otherwise, the same shall remain in force and effect. Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract, or the call for bids, or the work to be performed there under, or the specifications accompanying the same, shall in anyway affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of said contract, or the call for bids, or the work, or to the specifications.

In the event suit is brought upon this bond by the DISTRICT and judgment is recovered, the Surety shall pay all costs incurred by the DISTRICT in such suit, including without limitation, attorneys' fees to be fixed by the court, even if such fees exceed the penal sum of the bond.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year first set forth above.

PRINCIPAL: _____

ATTEST: (if individual, two witnesses are required)

By:_____ By:_____

Title:_____ Title:_____

ATTEST: (if corporation)

By:_____

Title:_____
(Corporate Seal)

SURETY: _____

_____

ATTEST: (if individual, two witnesses are required)

By:_____ By:_____

Title:_____ Title:_____

ATTEST: (if corporation)
By:_____

Title:_____
(Corporate Seal)

IMPORTANT: THIS IS A REQUIRED FORM

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or Project is financed, in whole or in part, with federal, grant, or loan funds, it must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)

_____

_____

_____

(Name and Address of agent or representative for service of process in California if different from above)

_____

_____

_____

(Telephone Number of Surety and agent or representative for service of process in California)

_____

_____

_____

END OF SECTION

SECTION 00 30 04 – DESIGNATION OF LISTED SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (California Public Contract Code sections 4100 et. seq.,) and any amendments thereof, each bidder shall set forth below: (a) the name, license number, and location of the place of business of each subcontractor who will perform work or labor or render service to the Contractor, who will perform work or labor or work or improvement to be performed under this contract, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvements according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent of the Contractor's total bid; and (b) the portion and description of the work which will be done by each subcontractor under this Act. The Contractor shall list only one subcontractor for each such portion as is defined by the Contractor in this bid.

If a Contractor fails to specify a subcontractor, or if a Contractor specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the Contractor's total bid, the CONTRACTOR shall be deemed to have agreed that the CONTRACTOR is fully qualified to perform that portion, and that the CONTRACTOR alone shall perform that portion.

No Contractor whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow the relevant portion of the work to be performed by anyone other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the Contractor's total bid where the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act.

Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the Contractor's total bid where no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding, reduced to writing as a public record, of the authority awarding this contract setting forth the facts constituting the emergency or necessity.

NOTE: If alternate bids are called for and bidder intends to use different or additional subcontractors on the alternates, a separate list of subcontractors must be provided for each such alternate.

DUCT CLEANING FOR HVAC AT SBVC PROJECT
LIST SUBCONTRACTORS ON THE FOLLOWING PAGE.

DESIGNATION OF SUBCONTRACTORS FORM

Description & Portion of Work	Name of Subcontractor & CSLB Number	City of Place of Business	Certifications

DATED: _____ _____
Proper Name of Bidder

By: _____
(Signature of Bidder)

Address: _____
_____
_____

Phone: _____

SECTION 00 30 05 - NON-COLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

(Public Contract Code section 7106)

The undersigned declares:

I am the [INSERT NAME OF President] of [insert name of company], the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____[date], at _____[city], _____[state].

_____
Signature

_____
Print Name

END OF SECTION

SECTION 00 30 06 – CONTRACTOR'S CERTIFICATE REGARDING WORKERS' COMPENSATION

Labor Code section 3700 in relevant part provides:

Every employer except the State shall secure the payment of compensation in one or more of the following ways:

1. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

2. By securing from the Director of Industrial Relations a certificate of consent to self-insure which may be given upon furnishing proof satisfactory to the Director of Industrial Relations, of ability to self-insure and to pay any compensation that may become due to employees.

I am aware of the provisions of Labor Code section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provision before commencing the performance of the work of this contract.

Proper Name of Bidder: _____

By: _____

_____
Signature

_____
Date

In accordance with Article 5 (commencing at section 1860), Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body before performing any work under this contract.

END OF SECTION

SECTION 00 30 07 - PREVAILING WAGE CERTIFICATION

1. Wage Rates, Travel and Subsistence.

   (a) Pursuant to Labor Code Sections 1770 et. seq., the DISTRICT has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this work is to be performed for each craft, classification or type of worker needed to execute the contract. Copies are available from the DISTRICT to any interested party on request and are also available from the Director of the Department of Industrial Relations. The Contractor shall obtain copies of the above-referenced prevailing wage sheets and post a copy of such wage rates at appropriate, conspicuous, weatherproof points at the Site.

   (b) Any worker employed to perform work on the Project and such work is not covered by any classification listed in the published general prevailing wage rate determinations or per diem wages determined by the Director of the Department of Industrial Relations, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to the employment of such person in such classification.

Holiday and overtime work, when permitted by law, shall be paid for at the rate set forth in the prevailing wage rate determinations issued by the Director of the Department of Industrial Relations or at least one and one-half (1½) times the specified basic rate of per diem wages, plus employer payments, unless otherwise specified in the contract documents or authorized by law.

The Contractor shall post, at appropriate, conspicuous, weatherproof points at the site, a schedule showing all determined minimum wages actually earned.

These per diem rates, including holiday (New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day) and overtime work, and employer payments for health and welfare, pension, vacation, and similar purposes, are on file at the administrative office of the DISTRICT, located as noted above and are also available from the Director of the Department of Industrial Relations. It is the Contractor's responsibility to ensure the appropriate prevailing rates of per diem wages are paid for each classification. It shall be mandatory upon the Contractor to whom the contract is awarded, and upon any subcontractor under such Contractor, to pay not less than the said specified rates to all workers employed by them in the execution of the contract.

I am aware of the provisions of the provisions of Article 2 (commencing at § 1720), Chapter 1, Part 7, Division 2, of the Labor Code, and I will comply with such provisions in accordance with Prevailing Wage Requirements in execution of this contract.

Contractor: _____

By: _____

_____
Signature

_____
Date

SECTION 00 30 08 – ACKNOWLEDGMENT OF BIDDING PRACTICES

TO: San Bernardino Community College District
550 E Hospitality Ln #200,
San Bernardino, CA 92408

RE: Construction Contract for **DUCT CLEANING FOR HVAC AT SBVC**

Please be advised that with respect to the above-referenced Project, the undersigned CONTRACTOR, on behalf of itself and all subcontractors, hereby waives the benefits and protection of Labor Code section 3864, which provides:

> "If an action as provided in this chapter is prosecuted by the employee, the employer, or both jointly against the third person results in judgment against such third person, the employer shall have no liability to reimburse or hold such third person harmless on such judgment or settlement in the absence of a written agreement to do so executed prior to the injury."

This Agreement has been signed by an authorized representative of the contracting party and shall be binding upon its successors and assignees. The undersigned further agrees to promptly notify the DISTRICT of any changes of ownership of the contracting party or any subcontractor while this Agreement is in force.

_____
Contracting Party

_____
Name of Agent/Title

_____
Date

END OF SECTION

SECTION 00 30 09 – ACKNOWLEDGEMENT OF PROJECT DURATION

Construction Milestones and Constraints: shall be defined to include all scopes of work, including but not limited to:

MILESTONES:

The **DUCT CLEANING FOR HVAC AT SBVC Project** will require the project to be 100% complete including commissioning, substantial completion, and punch list no later than February 25 2022.

NTP:

1- ~~**Construction with materials' procurement**~~ **project duration (93 Calendar Days) – work starts on November 24, 2021 and must be completed no later than February 25 ,2020** issued after District Board Approval and execution of the contract, shall consist of all general requirements, including but not limited to required surveys, submittals, deferred approvals, design services, permits and approvals, pre-construction meetings and activities, site walks, long lead procurement requirements, hall off, installation, operation, and complete contract scope of work as defined in the project document by **February 25 ,2020.**

CONSTRAINTS:

A. As set forth in General Conditions Specification Section 00 40 00 (Exhibit B), 00 40 01 (Exhibit C) and Project Specification (Exhibit D)

B. **Site coordination with other District's vendors at the site.**

DURATIONS:

~~***Construction Complete … calendar days***~~
Total Project Contract Duration – 93 calendar days

The undersigned acknowledges that he/she has carefully and thoroughly reviewed the Project Schedule Specification Section and Project Durations and fully understands the scheduling and manpower requirements necessary to complete the project in accordance with the Project Durations, Contractor agrees to furnish all labor, materials and equipment necessary, upon District acceptance of bidder's proposal, to fully comply with this duration requirement. The undersigned agrees to comply with any and all requirements to schedule, to ensure project completion as stipulated in the Contract Documents.

ACKNOWLEDGED AND AGREED:

DATE:_____

_____
CONTRACTOR

By:_____
(Signature)

_____
(Typed Name)

_____
(Title)

END OF SECTION

SECTION 00 30 10 – CONTRACTOR'S CERTIFICATION OF SITE CONDITIONS

I certify that I have visited the Project site, and I have had all others that I deem required visit the Project site, of the proposed Project and Work. We have fully acquainted ourselves with the conditions of the Project site, as well as those relating to the construction and labor for the Project, and we fully understand the facilities, difficulties, and restrictions, which may impact the total and adequate completion of the Project.

I agree to fully defend, indemnify and hold harmless the Owner, Project Manager, Architect, Inspectors and their directors, officers, employees, agents and volunteers from any damages, costs, expenses or omissions related to conditions that could or should have been identified during my visit to the site, and/or had I undertaken an investigation thereof.

I agree and to fully coordinate with other District's vendors, contractor, suppliers and installers working on the **DUCT CLEANING FOR HVAC AT SBVC**

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____
Bidder

_____
Signature

_____
Typed or Printed Name

_____
Title

END OF SECTION

EXHIBIT B

GENERAL CONDITIONS

Section 00 40 00

General Conditions

San Bernardino Community College District

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ARTICLE 1

1.1 BASIC DEFINITIONS

Action of the Governing Board is a vote of a majority of the District's governing board.

Addenda mean written errata, interpretation and revisions to the Bid Documents issued by the District before opening of the Bids.

Approval means written authorization through action of the governing board. However, the DISTRICT'S Governing Board has delegated authority to the DISTRICT'S Vice Chancellor for Fiscal Services to execute change orders, partial change orders, and Construction Directives which increase and/or decrease the Contract Price and/or increase and/or decrease the Contract Time for this Project. As such, the Vice Chancellor for Fiscal Services' signature on a change order, partial change order, and Construction Directive is sufficient to bind the DISTRICT provided that the Vice Chancellor for Fiscal Services' delegated authority is limited to approving increased and/or decreased costs of individual changes that do not exceed five percent (5%) of the original contract price

.

Architect means the architect, engineer, or other design professional engaged by the District to design and perform general observation of the work of construction and interpret the drawings and specifications for the Project.

As shown, as indicated, as detailed refer to drawings accompanying this specification.

Bid means the written offer of a Bidder (when submitted on the approved bid form) to furnish the necessary materials and to perform the Work in accordance with the Bid Documents.

Bid Security means the certified check, cashier's check or a Bid Bond accompanying the Bid submitted by the Bidder, as a guarantee that the Bidder will enter into the Contract with the District for the performance of the Work and will furnish acceptable bonds and insurance if the Contract is awarded to the Bidder.

Bidder means an individual, firm, partnership, corporation or combination thereof, submitting a proposal for the Work contemplated, acting directly or through a duly authorized representative.

Campus Operations means all services; facilities; utilities; functions; events; and all administrative, academic, instructional, public safety, life/fire/safety, construction, and/or maintenance efforts and operations, conducted by or on behalf of the DISTRICT, or conducted with the DISTRICT'S permission on DISTRICT property. Contractor and those performing by, through and/or under the Contractor, shall not affect, in any way, any Campus Operations in the performance of the Contract. Contractor is required to include in its bid any and all costs to perform as required by the Contract without affecting, in any way, any Campus Operations. If Contractor believes that the performance required by the Contract will affect, in any way, any Campus Operations, Contractor shall immediately notify the Project Manager in writing specifically stating what must be done and how it may/will affect any Campus Operation(s). Contractor shall not perform Work that affects any Campus Operations without express written permission from the DISTRICT'S Vice Chancellor for Fiscal Services. This does not mean that Contractor can stop performing as required by the Contract, rather Contractor is

required to perform said Work in such a manner and at such times so as not to affect, in any way, Campus Operations, all at no extra cost or expense, of any kind, to the DISTRICT.

Change Order ("**CO**"), **Partial Change Order** ("**PCO**") and a **Compromise** means a written instrument prepared by the Project Manager and signed by the District, Contractor, Project Manager, and Riverside County (Planning and Engineering Department) stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Price/Sum, if any; and (3) the extent of the adjustment in the Contract Time, if any.

Construction Directive (**"CD"**) means a written instrument prepared by the Project Manager and signed by the DISTRICT'S Vice Chancellor for Fiscal Services directing the Contractor regarding: (1) a change in the Work; (2) directing the Contractor to proceed in a specific manner; (3) the amount of adjustment in the Contract Price/Sum, if any; and/or (4) the extent of the adjustment in the Contract Time, if any. The DISTRICT'S Project Manager is authorized to issue Construction Directives, however, unless signed by the DISTRICT'S Vice Chancellor for Fiscal Services, a Construction Directive issued by the Project Manager and not signed by the DISTRICT'S Vice Chancellor for Fiscal Services, is not binding on the DISTRICT to increase and/or decrease the Contract Price/Sum and/or Contract Time.

Contract or Agreement mean all of the Contract/Construction Documents for the Project. The Contractor's signing of the Contract signifies its acceptance of the time of completion as being sufficient for completion of the Work, as well as acceptance of all of the other terms and conditions of the Contract/Construction Documents. Contractor acknowledges that it has read every clause n the Agreement, these conditions, and the specifications; has examined the location where the Work is to be done; and has made all inquiries and investigation necessary to enable it to understand thoroughly the intent of all parts of the Contract/Construction Documents, and the nature of the Work; and agrees that it will not make any claim for compensation, extension of time or other allowance of any sort, based upon or arising out of any alleged misunderstanding by it of any part of the Contract documents.

General Contractor, Contractor, District, Program Manager, Project Manager and Architect are those mentioned as such in the Agreement. They are treated throughout the Contract/Construction Documents as if they are of singular number and neuter gender. Any reference to "Owner" shall mean "District". The term, "Contractor" and "General Contractor" are each references to the other term. These terms are used interchangeably in the course of the Contract/Construction Documents.

Contract Sum/Price is stated in the Contract and, includes authorized adjustments pursuant to Change Orders, Partial Change Orders, and/or Construction Directives and is the total amount payable by the District to the Contractor for performance of the Work under the Contract.

Contract Time, unless otherwise provided, is the period of time, including authorized adjustments, allotted in the Contract for Completion of the Work

Days mean calendar days.

Drawings are graphic and pictorial portions of the Contract/Construction Documents prepared for the Project and approved changes thereto, wherever located and whenever issued, showing the design, location, and scope of the Work, generally including plans, elevations, sections, details, schedules, and diagrams as drawn or approved by the Architect.

Emergency shall be defined as a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. Emergency includes such occurrences as fire, flood,

earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.

Equal/Equivalent means a product, service, component or system which is demonstrated, through the submittal process, to the satisfaction and specific approval of the District or its designee to be equal to the product, service, component or system specified as set forth in these Contract.

Equipment is a general term which refers to vehicles, systems, assemblies, sub-assemblies, products, material, fittings, devices, appliances, fixtures, apparatus, supplies and the like used in the performance of a specific function or functions or Contract obligation.

Extra Work means work of which the performance or compensation thereof is not otherwise provided for in the Contract, but found by the Owner to be necessary or desirable to the satisfactory completion of this Contract and within its intended scope.

Inspector of Record is the individual retained by the District in accordance with titles 21 and 24 of the California Code of Regulations and who will be assigned to the Project.

Locality in which the work is performed means the county in which the Project is located.

Modification(s) means a written amendment to the Contract signed by parties, a Change Order, a Partial Change Order, a Construction Directive, a Compromise, or a written order for a minor change in the Work issued by the Architect.

Notice to Proceed means a written notice from the Owner to Contractor to proceed with the Work by a specified date.

Program Manager means the firm or individual retained by the District to manage all aspects of the Measure 'M' Capital Improvement Program as an extension of the District's staff.

The Project is the complete construction of the Work performed in accordance with the Contract/Construction Documents.

Project Manager for the Project will be SBCCD. The Project Manager will be the District Representative during construction of the Project and will assist the District in the administration of the contract. All instructions from the District to the Bidders (and to the Contractor, when the contracts are awarded) shall be directed through the Project Manager. The Project Manager's address is 114 S. Del Rosa Drive San Bernardino CA 92408.

The Project Manual means the volume assembled for the Work which may include, without limitation, the bidding requirements, sample forms, Conditions of the Contract, and Specifications.

Provide shall include "provide complete in place," that is "furnish and install."

Project Schedule The "Project Schedule" is the schedule produced by the General Contractor of the combined itemized CPM schedules activities to complete the scope of work within the Bid Documents. General Contractor shall staff the project sufficiently to maintain the project schedule durations and milestones. The schedule will be monitored and tracked by the General Contractor and submitted for review monthly to the Project Manager.

Reference Standards for Material, Equipment, Work, procedures or workmanship established by reference to standards or procedures published in a described reference text. Referenced Standards shall have the same force and effect as if they are physically incorporated in the Contract.

Regular Work Day consists of eight hours as required under Section 1810 of the California Labor Code.

Safety Orders are those issued by any cognizant city, county, state or federal agency.

Site refers to the grounds of the Project as defined in the Contract Documents and such adjacent lands as may be directly affected by the performance of the Work.

The Specifications are that portion of the Contract Documents consisting of the written requirements for material, equipment, construction systems, instructions, quality assurance standards, workmanship, and performance of related services.

Substantial Completion of the Work: unless defined differently in the Supplemental Conditions, the phrase means, that point in the progress of the Work where the Work is completed according to the requirements of the Contract Documents so that the District can occupy, have beneficial use of, and enjoy, the entire Project for its intended purpose; and where only minor and/or trivial defects in the Work remain that do not preclude the District occupying, having beneficial use of, or enjoying the entire Project for its intended purpose.

Standards, Rules, and Regulations referred to are recognized printed standards and shall be considered as one and a part of these specifications within limits specified. Federal, state and local regulations are incorporated into the Contract Documents by reference.

Subcontractor(s), as used herein, includes those having direct or indirect contracts with Contractor and one who furnishes labor, services, materials, products, equipment, supplies, apparatus, and the like, or one who furnishes services for a special design according to plans, drawings, and specifications of this Work. The definition includes all persons and/or entities that are entitled to file a Stop Notice on the Project under applicable law.

Surety is the person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond.

Work of the Contractor or Subcontractor shall include all labor, services, materials, products, equipment, supplies, apparatus, and the like, necessary for the Contractor to fulfill all of its obligations pursuant to the Contract Documents. It shall include the initial obligation of any Contractor or Subcontractor who performs any portion of the Work, to visit the Site of the proposed Work (a continuing obligation after the commencement of the Work), to fully acquaint and familiarize itself with the conditions as they exist and the character of the operations to be carried out under the Contract Documents, and make such investigation as it may see fit so that it shall fully understand the facilities, physical conditions, and restrictions attending the Work under the Contract Documents. Each such Contractor or Subcontractor shall also thoroughly examine and become familiar with the Drawings, Specifications, and associated bid documents before preparing and submitting any bid.

Workers include laborers, workers, and mechanics.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 Correlation and Intent

1.2.1.1 ***Documents Complementary and Inclusive.*** The Contract Documents are complementary and are intended to include all items required for the proper execution and completion of the Work. All Contract Documents form the Contractor's contract with the District. Any item of Work mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be provided by Contractor as if shown or mentioned in both.

1.2.1.2 ***Coverage of the Drawings and Specifications.*** The Drawings and Specifications generally describe the Work to be performed by Contractor. Generally, the Specifications describe Work which cannot be readily indicated on the Drawings and indicate types, qualities, and methods of installation of the various materials and equipment required for the Work. It is not intended to mention every item of Work in the Specifications, which can be adequately shown on the Drawings, or to show on the Drawings all items of Work described or required by the Specifications even if they are of such nature that they could have been shown. All materials or labor for Work, which is shown on either the Drawings or the Specifications (or is reasonably inferable there from as being necessary to complete the Work), shall be provided by the Contractor to provide a complete Project. It is intended that the Work be of sound, quality construction, and the Contractor shall be responsible for the inclusion of adequate amounts to cover installation of all items indicated, described, or implied in the portion of the Work to be performed by them.

1.2.1.3 ***Conflicts.*** In the event there is a discrepancy between the various Contract Documents, it is intended that the more stringent, higher quality, and greater quantity of Work shall apply. All conflicts in the Contract Documents shall be reported to the Project Architect through the Project Manager before proceeding with work affected.

1.2.1.4 ***Division of Plans and Specifications.*** All sections of the specification shall be read and interpreted as constituting a whole and not as an aggregation of individualized parts, and whatever is specified in one section shall be construed as applying to all sections.

1.2.1.5 ***Conformance With Laws.*** Each and every provision of law required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, even if through mistake or otherwise any such provision is not inserted, or is not correctly inserted.

Before commencing any portion of the Work, Contractor shall check and review the Drawings and Specifications for such portion for conformance and compliance with all laws, ordinances, codes, rules and regulations of all governmental authorities and public and municipal utilities affecting the construction and operation of the physical plant of the Project, all quasi-governmental and other regulations affecting the construction and operation of the physical plant of the Project, and other special requirements, if any, designated in the Contract Documents. Such checking shall include Title 21 and Title 24 of the California Code of Regulations, California Building Code, local utility, local water connection, local grading and all other applicable agencies. In the event Contractor observes any violation of any law, ordinance, code, rule or regulation, or inconsistency with the Contract Documents, Contractor shall, within three (3) days, notify Architect, Project Manager, Program Manager and District in writing of same and shall ensure that any such violation or inconsistency shall be corrected in the manner provided hereunder prior to the construction of that portion of the Project.

The Contractor shall bear all expenses of correcting Work done contrary to said laws, ordinances, rules, and regulations if the Contractor performed same (1) without first consulting the Architect for further instructions regarding said Work or (2) disregarded the Architect or Project Manager's instructions regarding said work.

1.2.1.6 ***Ambiguity and Inconsistency.*** Before commencing any portion of the Work, Contractor shall carefully examine all Drawings and Specifications and other information given to Contractor as to materials and methods of construction and other Project requirements. Contractor shall, within three (3) days, notify Architect, Project Manager, Program Manager and District in writing of any perceived or alleged error, inconsistency, conflict, ambiguity, or lack of detail or explanation in the Drawings and Specifications in the manner provided herein. If the Contractor or its Subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any Work under the Contract Documents, which it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all costs arising there from including, without limitation, the cost of correction thereof without increase or adjustment to the Contract Price or the time for performance. If Contractor performs, permits, or causes the performance of any Work under the Contract Documents prepared by or on behalf of Contractor which is in error, inconsistent or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all resulting costs, including, without limitation, the cost of correction, without increase to or adjustment in the Contract Price or the time for performance.

1.2.2 Addenda and Deferred Approvals

1.2.2.1 ***Addenda*** are the changes in specifications, drawings, contract documents, and plans which have been prepared by the Architect and authorized in writing by the District and which alter, explain, or clarify the contract documents. Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda unless otherwise specified in the addenda.

1.2.2.2 ***Deferred Approvals.*** Contract Documents which require deferred approval items are meant to be for illustration purposes only. Contractor is responsible for all deferred approval requirements set forth in the Contract Documents. Contractor is responsible to comply with all laws, building codes, and regulations necessary to obtain all necessary approvals, including those required from the Riverside County (Planning and Engineering Department) and the State Fire Marshal. Contractor shall not be granted an extension of time for failure to obtain necessary approvals due to failure to comply with laws, building codes, and other regulations (including Title 24 of the California Code of Regulations). Contractor shall schedule all deferred approval items in its progress schedule pursuant to Article 3. If Contractor fails to include deferred-approval items in its schedule which results in a critical path delay, then Contractor shall be subject to the assessment of liquidated damages.

1.2.3 Specification Interpretation

1.2.3.1 ***Titles.*** The Specifications are separated into titled sections for convenience only and not to dictate or determine the trade or craft involved.

1.2.3.2 ***As Shown, Etc.*** Where "as shown," "as indicated," "as detailed," or words of similar import are used, reference is made to the Drawings accompanying the Specifications unless otherwise stated. Where "as directed," "as required," "as permitted," "as authorized," "as accepted," "as selected," or words of similar import are used, the direction, requirement, permission, authorization, approval, acceptance, or selection by Architect is intended unless otherwise stated.

1.2.3.3 ***General Conditions.*** The General Conditions, and the Supplemental Conditions if any, are a part of each and every section of the Specifications.

1.2.3.4 ***Abbreviations.*** In the interest of brevity, the Specifications are written in an abbreviated form and may not include complete sentences. Omission of words or phrases such as "Contractor shall," "shall be," etc., are intentional. Nevertheless, the requirements of the Specifications are mandatory. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings. In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and

"an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.2.3.5 ***Plural.*** Words in the singular shall include the plural whenever applicable or the context so indicates.

1.2.3.6 ***Metric.*** The Specifications may indicate metric units of measurement as a supplement to U.S. customary units. When indicated thus: 1" (25 mm), the U. S. customary unit is specific, and the metric unit is nonspecific. When not shown with parentheses, the unit is specific. The metric units correspond to the "International System of Units" (SI) and generally follow ASTM E 380, "Standard for Metric Practice."

1.2.3.7 ***Standard Specifications.*** Any reference to standard specifications of any society, institute, association, or governmental authority is a reference to the organization's standard specifications, which are in effect at the date of the Contractor's proposal unless directed otherwise. If applicable specifications are revised prior to completion of any part of the Work, the Contractor may, if acceptable to Architect and Project Manager, and approved by the District perform such Work in accordance with the revised specifications. The standard specifications, except as modified in the Specifications for the Project, shall have full force and effect as though printed in the Specifications. Architect will furnish, upon request, information as to how copies of the standard specifications referred to may be obtained.

1.2.4 Rules of Document Interpretation

1.2.4.1 Should the Contractor discover any conflicts, omissions, or errors in the Contract Documents, or have any question concerning interpretation or clarification of the Contract Documents, or if it appears that the Work to be done or any matters relative thereto are not sufficiently detailed or explained in the Contract Documents, then before proceeding with the work affected, the Contractor shall within 48 hours notify the Project Manager in writing and request interpretation, clarification, or additional detailed instructions and/or drawings concerning the work. All such questions shall be resolved and instructions to the Contractor issued by the Project Manager.

Should the Contractor and/or their subcontractors proceed with the work affected before receipt of instructions from the Project Manager it shall remove and replace or adjust any work, which is not in accordance therewith, and it shall be responsible for any resultant damage, defect, or added cost.

1.2.4.2 If any portion of the Contract Documents shall be found to be in conflict with any other portion, the various Documents comprising the Contract Documents shall govern in the following order of precedence: Permits from outside agencies required by law and applicable codes or laws, Modifications; the Owner/Contractor Agreement; addenda; supplemental conditions; General Conditions; other Division 0 and Division 1 documents and Sections; specifications; the drawings. As between figures given on drawings and the scaled measurements, the figures shall govern. As between large scale drawings and small scale drawings, the larger scale shall govern. Cost of the work, Schedule of values.

1.2.4.3 In general, the Drawings will show dimensions, position, and kind of construction; And the Specifications, qualities and methods. Any work called for in the Drawings and not mentioned in the Specifications, or vice versa, shall be performed as though fully set forth in both. Work not particularly detailed, marked, or specified shall be the same as similar parts that are detailed, marked, or specified.

1.2.4.4 In case of conflict between the Drawings and Specifications, the Drawings shall govern in matters of quantity, the Specifications in matters of quality. In case of conflict within the Drawings involving quantities or within the Specifications involving quality, the greater quantity and the higher quality shall be furnished.

1.2.4.5 Should an error appear in the Drawings or Specifications, or in the work done by others affecting this work, the Contractor shall notify the Project Manager at once. In conjunction with the Architect, the Project

Manager will issue instruction as to procedure. If the Contractor proceeds with the work so affected without instructions from the Project Manager, he shall make good any resulting damage or defects.

1.2.4.6 The general character of the detail work is shown on the Contract Drawings. Any work executed before receipt of such details, if not in accordance with same, shall be removed and replaced, or adjusted, as directed, without expense to the Owner. Should any detail submitted later than the Contract Drawings is, in the opinion of the Contractor, more elaborate than the Scale Drawings and the Specifications indicated, written notice thereof shall be given to the Project Manager within three (3) days of receipt of same. The claim will then be considered, and, if justified, said detail drawings will be amended or the extra work authorized. Non receipt of such notice shall relieve the Owner of any claim.

1.2.4.7 Where on any Drawings a portion of the work is drawn out and the remainder is indicated in outline, the drawn out parts shall apply to all other like portions of the work. Where ornament or other detail is indicated starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to other similar parts in the work, unless otherwise indicated.

1.2.4.8 When specified brands or kinds of material are called for they are mentioned merely as standards and the Contractor has the option of using any other brand of equal quality if approved by the Architect. Any materials named in the Specifications, or which may be substituted, must, if so desired by the Architect, be tested by said Architect at the expense of Contractor.

1.2.4.9 Any material specified by reference to the number, symbol, or title of a specified standard such as a Commercial Standard, a Federal Specification, a trade association standard, or other similar standards, shall comply with the requirements in the latest approved revision thereof and any amendments or supplements thereto in effect on the date of Notice to Contractors, except as limited to type, class, or grade, or modified in such reference.

1.2.4.10 The standards referred to, except as modified in the Specifications, shall have full force and effect as though printed in these Specifications. These standards are not furnished to bidders, for the reason that the manufacturers and trades involved are assumed to be familiar with their requirements. The Architect will furnish, upon request, information as to how copies of the standards referred to may be obtained.

1.2.4.11 Where it is required in the Specifications that materials, products, processes, equipment or the like be installed or applied in accordance with manufacturers' instructions, directions, or specifications, it shall be construed to mean that said application or installation shall be in strict accordance with the printed instructions furnished by the manufacturer of the materials considered for use under conditions similar to those at the job site. Eight copies of such instructions shall be furnished to the Project Manager.

1.2.4.12 Where ever an article, device or piece of equipment is referred to in singular number, such reference applies to all such articles shown on Drawings or required to complete the installation.

1.3 OWNERSHIP AND USE OF ARCHITECT'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

The Drawings, Specifications, and other contract documents including Contractor shop drawings and submittals for the Project are the property of the District. The Contractor may retain one contract record set. Neither the Contractor nor any Subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect. All copies except the Contractor's record set, shall be returned or properly accounted for upon completion of the Work. The Drawings, Specifications, and other documents prepared by the Architect, and copies thereof furnished to the Contractor are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work. The District and/or Architect hereby grants the Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings, Specifications, and other documents prepared for the Project in the execution of their Work under

the Contract Documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the District's property interest or other reserved right.

ARTICLE 2

2.1 INFORMATION AND SERVICES REQUIRED OF THE DISTRICT

2.1.1 Site Survey.

The District will furnish, at its expense, a legal description of the Site and a land survey showing the boundaries of the Site. Contractor shall be responsible for all surveys regarding location of construction, grading and site work.

2.1.2 Soils

When required by the scope of the Project, the District will furnish, at its expense, the services of geotechnical engineers or consultants when reasonably required and deemed necessary by the Architect or as required by local or state codes. Such services, with written reports and appropriate written professional recommendations, may include test boring, test pits, soil bearing values, percolation tests, air and water pollution tests, and ground corrosion and resistivity tests, including necessary operations for determining subsoil, air, and water conditions.

The Soils Report recommendations may be less restrictive than the Project specifications. The most stringent shall apply and therefore the Contractor shall construct the earthwork and soil related portion of the Project. The Soils Report is supplementary to the specifications, and is attached as an exhibit for reference and information only. **Contractor must review the "Information Available to Bidders", section 00 50 11 in the Bid Documents and familiarize itself with the contents thereof.**

2.1.3 Contractor Reliance

A soils investigation report has been obtained from test holes at the Site, and such report is available for the Contractor's use in preparing its bid and Work under this Contract. The soils report is available at the Project Manager's office for review, the soils report is for reference only. Any information obtained from such report or any other information given on drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only. If, during the course of Work under this Contract, Contractor encounters subsurface conditions which differ materially from those indicated in the soils investigation report, then Contractor shall notify the District, Project Manager and Architect through the Project Manager within three (3) calendar days of discovery of the condition, and changes to the contract price may be made in accordance with Article 7 entitled "Changes in the Work." Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages in the event the Contractor fails to notify District within the three-day period mentioned above. **Contractor must review the "Information Available to Bidders", section 00 50 11 in the Bid Documents and familiarize itself with the contents thereof.**

WARNING: DISTRICT DOES NOT WARRANT THE SOILS AT THE PROJECT SITE. SOILS INVESTIGATION REPORT IS PROVIDED FOR CONTRACTORS INFORMATION ONLY. CONTRACTOR HAS CONDUCTED AN INDEPENDENT INVESTIGATION OF THE PROJECT SITE AND THE SOILS CONDITIONS OF THE SITE. DISTRICT DOES NOT WARRANT THE SOILS CONDITIONS OF THE SITE AND CONTRACTOR IS FULLY RESPONSIBLE TO ASCERTAIN SITE CONDITIONS FOR THE PURPOSES OF DETERMINING CONSTRUCTION MEANS AND METHODS PRIOR TO COMMENCING

CONSTRUCTION. THE SOILS INVESTIGATION REPORT IS NOT A CONTRACT DOCUMENT.

2.1.4 Utilities

2.1.4.1 ***Regional Notification Center.*** Contractor, except in an emergency, shall contact the appropriate regional notification center at least two working days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and carried out by the Contractor unless such an inquiry identification number has been assigned to the Contractor or any subcontractor of the Contractor and the District has been given the identification number by the Contractor. Any damages arising from failure to make appropriate regional notification shall be at the sole risk of Contractor. Any delays caused by failure to make appropriate regional notification shall be at the sole risk of Contractor and shall not be considered for extension of time pursuant to Article 8.4.

2.1.4.2 ***Utilities - Removal and Restoration.***

The District has endeavored to determine the existence of utilities at the Site of the Work from the records of the District of known utilities in the vicinity of the Work. The positions of these utilities as derived from such records are shown in the Contract Documents.

No excavations were made to verify the locations shown for underground utilities. The service connections to these utilities may not be shown on the plans. It shall be the responsibility of the Contractor to determine the exact location of all service connections. The Contractor shall make its own investigations, including exploratory excavations, to determine the locations and type of service connections, prior to commencing work, which could result in damage to such utilities. The Contractor shall immediately notify the Project Manager as to any utility discovered by Contractor in a different position than shown in the Contract Documents or which is not shown on the Contract Documents.

Contractor shall coordinate its Work with all utilities, including, but not limited to electricity, water, gas and telephone and meet with said utilities prior to the start of any work.

2.1.5 Existing Utility Lines; Removal, Relocation

The contractor has the responsibility to identify, with reasonable accuracy, all utilities necessary to complete their scope of work. The Contractor shall exercise due diligence and shall not be compensated by the District for the actual verified cost of locating, and removing, relocating, protecting or temporarily maintaining existing utility services.

- The District shall furnish an existing utility survey as-built for reference.
- The Contractor shall hire an independent underground utility locator service company to identify and verify existing underground utilities within the scope of work. All cost and fees associated with this work shall be at the Contractor’s own expense and included in the base bid.
- Upon completion of the independent under utility locator survey and prior to any excavations, Contractor’s project manager, superintendent and subcontractor/excavator are required to conduct an onsite field verification of existing conditions, shall mark-out the utilities, and transfer all information to a working utility as-built. Contractor’s utility survey as-built shall be submitted to District.

- In the event an existing utility service is interrupted or damaged the Contactor shall be required to make all necessary repairs within 4hrs. Also, District shall be entitled to recover from the Contractor all damages the District sustains, at its, shall calculate and the damages against the Contractor for disruption to any Campus Operation(s), including but not limited to, extended loss

  of utility services resulting in shut down of classes, instructional labs, administrative offices, public safety offices, M&O offices and fire/life/safety services of students and staff. Contactor shall furnish to the District, the Contractor's on-call emergency repair contact list of contacts/companies, consisting of, but not limited to, fiber optics, gas, water, electric and sewer.

- Adjustment of the Contract Amount, Milestones and/or Contract Time will be allowed to the extent the existence of such revealed conditions directly causes an increase in Contractor cost and/or time of performance of the Work shall be subject to the conditions noted above.

- Contractor shall not be entitled to an adjustment in the Contract Amount, Milestones and/or Contract Time if: (1) Contractor was aware of the condition at the time of the bid; and/or (2) the existence of discovery of the condition could have been discovered as a result of any reasonable examination, investigation, exploration, test and/or examination of the Project Site and areas adjoining the Project Site as required by the Bid Documents before Contractor submission of Bid.

If the Contractor believes any subsurface or physical condition uncovered, revealed or otherwise exposed at the project site is of such character and/or nature as to require a change in the Contract Documents; materially different from that shown, indicated or described in the Bid Documents; or an unusual nature materially different from conditions normally encountered and generally recognized as inherent in Work of the character provided for in the Bid Documents, then Contactor shall upon discovery notify the District/Project Manager in writing within (1) one calendar day.

2.1.6 Easements

District shall secure and pay for easements for permanent structures or permanent changes in existing facilities, if any, unless otherwise specified in the Contract Documents.

2.2 DISTRICT'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails (within a (72) Seventy Two hour period after receipt of written notice or a shorter time period expressly stated in the written notice from the District in an emergency situation) to commence and continue correction of such default with diligence and promptness, the District may correct such deficiencies without prejudice to other remedies the District may have, including those set forth in Article 14 after providing three-day written notice to Contractor and Surety. If during this three (3) day period, Surety personally delivers notice to District that it intends to perform such work, District shall allow Surety seven (7) days to perform. In an emergency situation, the District may correct such deficiencies without prejudice to other remedies the District may have, including those set forth in Article 14 after providing 48 hours' notice to the Contractor. In either case, the Contractor will be invoiced the cost of correcting such deficiencies, including compensation for additional services and expenses made necessary by such default, or neglect. The invoice amount shall be deducted from the next payment due the Contractor. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the District. The District may at exercise their right to carry out the work, in the event the Contractor, and/or anyone performing under and/or through the Contractor, fails to meet the minimum conditions outlined below:

1. Failure to supply adequate workers on the entire Project or any part thereof;
2. Failure to supply a sufficient quantity of materials, products, equipment, apparatus, and the like;

3. Failure to perform any provision of this Contract;
4. Failure to comply with safety requirements, or due to Contractor's creation of, and/or failure to immediately resolve, an unsafe condition;
5. In the case of bona fide emergency;
6. Failure to order materials/products/equipment/apparatus, and the like, in a timely manner;
7. Failure to prepare deferred-approval items or shop drawings in a timely manner;

8. Failure to comply with Contractor's schedule which would result in a delay to any critical path activity; or
9. Failure to comply with the Subletting and Subcontracting Fair Practices, Public Contract Code section 4100, et seq.

2.3 STOP WORK CLAUSE FOR CONSTRUCTION CONTRACT

2.3.1 Archaeological Resources

In the event that archaeological materials or historic-age (i.e., over 50 years old) features are encountered during ground-disturbing construction activities (e.g., grading, trenching, excavating), these activities must be suspended within 100 feet of the find and the Project Archaeologist at ECORP Consulting, Inc. notified. The ECORP archaeologists(s) will then record and evaluate the find for eligibility to the California Register of Historical Resources (CRHR). If evaluated as CRHR- eligible and determined eligible by the San Bernardino Community College District, the site must be avoided and preserved. It that is not feasible, an archaeological data recovery program shall be completed. The appropriate level of work required will be determined by the Project Archaeologist. Work in the vicinity of the find can commence when cleared by the Project Archaeologist.

2.3.2 Human Remains

If bone of any kind is found during construction, work must be suspended within 100 feet of the find and the Project Archaeologist at ECORP consulting, Inc. notified. The ECORP archaeologist will then determine if the bone is human. If it is determined or even suspected that the bone represents human remains, the requirements of CEQA Guidelines Section 150645(e) must be followed and will be implemented by ECORP, in coordination with the San Bernardino Community College District. According to these requirements, all construction activities must cease immediately. The San Bernardino County Coroner will be notified by ECORP. The Coroner will examine the remains and determine the next appropriate action based on his/her findings. If the coroner determines the remains to be of Native American origin, he/she will notify the Native American Heritage Commission (NAHS). The NAHC will then identify the most likely descendants (MLD) to be consulted regarding treatment and/or reburial of the remains. If an MLD cannot be identified or the MLD fails to make a recommendation regarding the treatment of the remains within 48 hours after being granted access to the property, the San Bernardino Community College District shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location a not subject to further subsurface disturbance. Work cannot continue until clearance has been granted by the County Coroner and the College District.

2.3.3 Paleontological Resources

Portions of the project area consist of Pleistocene alluvial sediments that have a high potential to contain significant, nonrenewable paleontological resources. A mitigation program is being developed by ECORP Consulting, Inc. for the project and will require the presence of a qualified vertebrate paleontologist during all ground-disturbing activities in undisturbed Pleistocene sediments. Monitoring may be required during excavation. The monitor will be present during initial excavation in these areas and will determine the appropriated schedule for monitoring based on examination of the exposed soils. The monitor will have the authority to temporarily halt or divert equipment to allow recovery of significant fossils. Work can continue in the area when cleared by the Project Paleontologist.

- If the Work is delayed for any reason for which neither Contractor nor Owner are responsible, Contractor's and Owner's sole and exclusive remedy for such delay will be a non-compensable extension of the Contract Time for the duration of such delay to the critical path as shown by the current approved schedule.

ARTICLE 3

3.1 SUPERVISION AND CONSTRUCTION PROCEDURES

3.1.1 Contractor

The Contractor shall continually supervise and direct the Work using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures; and shall coordinate all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. The Contractor shall not perform the Work without utilizing the Contract Documents or, where required, approved shop drawings, product data, or samples for any such portion of the work. If any of the Work is performed by contractors retained directly by the District, Contractor shall be responsible for the coordination and sequencing of the work of those other contractors so as to avoid any impact on the Project schedule pursuant to the requirements of Article 6 and Article 8. Specific duties of the Contractor shall include those set out in section 43 of Title 21 of the California Code of Regulations and section 4-343 of Title 24 of the California Code of Regulations. These duties include, but are not limited to the following:

.1 Responsibilities. It is the duty of the Contractor to complete the Work covered by his or her contract in accordance with the approved Contract Documents. The Contractor in no way is relieved of any responsibility by the activities of the Project Manager, Architect, Engineer, Inspector or Riverside County (Planning and Engineering Department)in the performance of their duties.

.2 Performance of the Work. The Contractor shall carefully study the approved Contract Documents and shall plan its schedule of operations well ahead of time. If at any time it is discovered that work is being done which is not in accordance with the approved Contract Documents, the Contractor shall correct the work immediately but not without the knowledge of the Districts representative.

(i). All inconsistencies or times, which appear to be in error in the Contract Documents, shall promptly be called to the attention of the Architect or Engineer through the Project Manager for interpretation or correction. Local conditions, which may affect the Work, shall be brought to the Architect's attention at once. In no case, shall the instruction of the Architect be construed to cause work to be done, which is not in conformity with the approved Contract Documents and as required by law.

(ii). The Contractor shall not carry on Work except with the knowledge of the Inspector of Record.

(iii). Verified Reports. The Contractor shall make and submit to the office daily, verified reports as required in section 36 of Title 21 and section 4-366 of Title 24.

(iv). Contractor shall fully comply with any and all reporting requirements of Education Code section 81147 in the manner prescribed by Title 24, as applicable.

3.1.2 Contractor Responsibility

The Contractor shall be responsible to the District for acts and omissions of the Contractor's employees, Subcontractors, material, product, and equipment suppliers, and their agents, employees, invitees, and employees, Subcontractors, material, product, and equipment suppliers, and their agents, employees, invitees, and other persons performing portions of the Work under direct or indirect contract with the Contractor or any of its Subcontractors.

3.1.3 Obligations not Changed by Architect's Actions

The Contractor shall not be relived of obligations to perform the work in accordance with the Contract Documents either by activities or duties of the District, Inspector of Record, Architect or the Project Manager, in the administration of the Contract or tests, inspections, or approvals required or performed by persons other than the Contractor.

3.1.4 Performance of Work With Own Force

Contractor shall be allowed to self-perform any portion of the work provided the Contractor is licensed by the State of California. Contactor shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the Work in accordance with the Contract Documents.

3.2 SUPERVISION

3.2.1 Full Time Supervision

The Contractor shall staff and retain at all times during its progress of work a competent construction Superintendent satisfactory to the District. The Superintendent shall be present on a full-time basis, shall be dedicated exclusively to the Project and shall not share duties with another project or job. The Superintendent shall not be replaced except with written consent of the District. The Superintendent shall represent the Contractor and shall be fully authorized to receive and fulfill any instruction from the Project Manager, Architect, the Inspector, the Program Manager, the District or any other District representative. No Work shall begin on any day by any Subcontractor or other person on the Project site until the Superintendent has arrived, or shall any Work continue during the day after the Superintendent has departed from the Project site. The Superintendent shall have authority to bind Contractor through the Superintendent's acts. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be binding on the Contractor. Prior to mobilization the Contractor shall provide written notice to Project Manager containing the name and a Statement of Qualifications of site superintendent. Superintendent shall not be changed except with written consent of District, unless a superintendent proves to be unsatisfactory to Contractor and ceases to be in its employ, in which case, Contractor shall notify District, Project Manager, and Architect in writing. Contractor shall provide a replacement superintendent approved by the District prior to performing additional work.

3.2.2 Staff

Notwithstanding other requirements of the contract documents, the Contractor and each Subcontractor shall: (1) furnish a competent and adequate staff as necessary for the proper administration, coordination, supervision, and superintendence of its portion of the Work; (2) organize the procurement of all materials and equipment so that the materials and equipment will be available at the time they are needed for the Work; and (3) keep an adequate force of skilled and fit workers on the job to complete the Work in accordance with all requirements of the Contract Documents.

3.2.3 Right to Remove

The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the assigned task as defined in the contract documents.

The Contractor shall remove, or cause a subcontractor to remove from the Project, any incompetent employee, or any employee not skilled for the type of work required as defined in the contract documents. The District and/or Project Manager may, in writing, require the Contractor to remove from the Work any employee with or without cause.

3.3 LABOR, MATERIALS, ETC.

3.3.1 Contractor to Provide

The Contractor shall provide and pay for labor, material, products, equipment, tools, construction equipment and machinery, water, heat, air conditioning, utilities, transportation, and other facilities, services and permits necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.3.2 Quality

Unless otherwise specified, all materials, products, and equipment to be permanently installed in the Project shall be new and shall be of the highest quality or as specifically stated in the Contract Documents. The Contractor shall, if requested by the District or Project Manager, furnish, within ten (10) days of written request, satisfactory evidence as to kind and quality of materials, products, and equipment along with bona fide copies of invoices for materials, products, equipment, or services provided for the Project. Contractor shall forward information to Project Manager and District. All labor shall be performed by workers skilled in their respective trades, and shall be of the same or higher quality as with the standards of other college construction.

3.3.3 Replacement

Any work, materials, products, or equipment, which do not conform to these requirements or the standards set forth in the Contract Documents, may be disapproved by the District or Project Manager, in which case, they shall be removed and replaced by the Contractor at no additional cost to the District and at with no or extension of time to the Contractor.

3.3.4 Discipline

The Contractor shall enforce strict discipline and good order among the Contractor's and Subcontractor's employees, and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. As used in this subsection, "unfit" includes any person whom the District or Project Manager concludes is improperly skilled for the task assigned to that person, whom fails to comply with the requirements of this article, or whom creates safety hazards which jeopardize other persons and/or property.

3.3.5 Noise, Drugs, Tobacco, and Alcohol

Contractor shall take all steps necessary to insure that employees of Contractor or any of its subcontractors' employees do not use, consume, or work under the influence of any alcohol, tobacco or illegal drugs while on the Project. Contractor shall further prevent any of its employees or its subcontractor employees from playing any recorded music devices or radios or wearing any radio headphone devices for entertainment while working on the Project. Likewise, Contractor shall prevent its employees or subcontractor's employees from bringing any animal onto the Project. Contractors shall not violate any written District or Project Manager policies.

3.3.6 Delivery of Materials, Etc.

Contractor shall place orders for materials, products, and equipment so that the Work may be completed in accordance with the Construction schedule for the Work as set forth in Article 8 of this Agreement. Contractor shall, upon demand from the District or Project Manager, furnish documentary evidence including, but not limited to purchase orders, invoices, bills of materials, work orders, and bills of lading, showing that orders have been placed.

3.3.7 Liens and Other Security Interests of Subcontractors and Material Suppliers

No material, supplies, or equipment for the Work shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with all improvements and appurtenances constructed or placed thereon by it, to District free from any claims, security interests, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any Work covered by this Contract shall have no right to place a lien upon the premises or any improvement or appurtenance thereof, except that Contractor may install metering devices or other equipment of a utility company or political subdivision, title to which is commonly retained by the utility company or political subdivision. In event of installation of any such metering device or equipment, Contractor shall advise the District through the Project Manager as to its owner within three (3) days of such installation in writing, prior to making the installation.

3.3.8 Title to Materials, Etc.

The title to new materials, products, or equipment for the Work of this Contract, and attendant liability for its protection and safety, shall remain with Contractor until incorporated in the Work of this Contract and accepted by the District, Project Manager and Architect; no part of said materials, products, or equipment shall be removed from its place of storage, and Contractor shall keep an accurate inventory of all said materials, products, and equipment in a manner satisfactory to the District or its authorized representative. If title remains with Contractor for materials, products, and/or equipment until installed, District cannot pay for such stored materials, products or equipment.

3.3.9 Assemblies

For all materials, products, and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, products, equipment, and services necessary for complete assemblies and complete working systems. Incidental items not indicated on the Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized in the Contract Documents in every detail. In all instances, materials, products, and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

3.3.10 Noise Control

The Contractor shall be responsible for the installation of noise reducing devices on construction equipment. Contractor shall comply with the requirements of the city and county having jurisdiction with regard to noise ordinances governing construction sites and activities. Construction equipment noise is subject to the control of the Environmental Protection Agency's Noise Control Program (Part 204 of Title 40, Code of Federal Regulations. Contractor shall schedule the performance of all work or make other arrangements so that construction operations do not cause disruption or disturbance to Campus Operations. In no event shall Contractor have a right to receive additional compensation or an extension to the contract time as a result of any such rescheduling or the making of such arrangements.

3.4 WARRANTY

The Contractor warrants to the District and Project Manager that materials, products, and equipment furnished under the Contract will be of the highest quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. Contractor's warranty to District includes, but is not limited to the following representations:

(a) *Contractor shall, and hereby does, warranty all Work for a period of (1) year after the date of Notice of Completion. This is in addition to any longer written warranties that may also apply.*

(b) In the event of failure of Contractor to comply with above mentioned conditions within one week after being notified in writing, District is hereby authorized to proceed to have defects repaired and made good at expense of Contractor who hereby agrees to pay costs and charges therefore immediately on demand. If Contractor fails to do so, District may back charge Contractor and/or set off the costs thereof against monies in the Contract and/or held as retention, in addition to any other right and/or remedy District may have.

(c) If, in the opinion of the District, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the District, the District will attempt to give the notice required by this Article. If the Contractor cannot be contacted or does not comply with the District's requirements for correction within a reasonable time as determined by the District, the District may, notwithstanding the provisions of this article, proceed to make such correction or attention which shall be charged against Contractor who hereby agrees to pay costs and charges therefore immediately on demand. If Contractor fails to do so, District may back charge Contractor and/or set off the costs thereof against monies in the Contract and/or held as retention, in addition to any other right and/or remedy District may have. Such action by the District will not relieve the Contractor of the guarantee provided in this Article or elsewhere in this Contract.

(d) This Article does not in any way limit the guarantee on any items for which a longer warranty is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish District and Project Manager, all appropriate guarantee or warranty certificates upon completion of the Project.

3.5 TAXES

Contractor will pay all applicable Federal, State, and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Contract Documents. District is exempt from Federal Excise Tax, and a Certificate of Exemption shall be provided upon request.

3.6 PERMITS, FEES AND NOTICES

3.6.1 Payment

The Contractor shall secure all permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work which are necessary after execution of the Contract and are legally required by any authority having jurisdiction over the Project, except those required by the Riverside County (Planning and Engineering Department). Contractor shall be responsible for payment of specific permits such as OSHA, etc. and shall not be reimbursable by the District. District shall be responsible for all testing and inspection as required by the Riverside County (Planning and Engineering Department)and Contract Documents.

3.6.2 Compliance

The Contractor shall comply with and give notices required by any law, ordinance, rule, regulation, and lawful order of public authorities bearing on performance of the Work.

3.6.3 Responsibility

The Contractor shall perform all Work in conformance with every law, statute, ordinance, building code, rule or regulation. The Contractor shall assume full responsibility for such Work and shall bear the cost of correction or Project delay.

3.7 CONTRACTOR'S CONSTRUCTION SCHEDULE

3.7.1 Project Schedule:

Project Schedule is provided by the Contractor. Contractor shall be required to supply the Project Manager the following:

No later than twenty-one (21) calendar days after Notice to Proceed, or such other time as may be set forth in the special provisions, and before commencement of work, the Contractor shall furnish to the Project Manager a critical path method (CPM) baseline schedule for the entire Project. Schedule shall include the following as minimum standards:

A. Activities of all trades and subcontractor's that must be completed prior to starting various components of the Work.

B. Long lead procurement requirements.

C. Submittals and shop drawings required for every spec section included in this contract, using the logic required herein.

D. The Contractor's plan for completion of work in sufficient detail to allow observation and monitoring by the Project Manager and the District.

E. Activities shall be broken down by building or area, by trade, subcontractor, and by observable sequence of work. All activities shall be broken down into phases two weeks or less in length.

F. Inspections required to gain approval of all work installed by this Contractor.

The schedule provided must allow for completion within the milestone durations established in the contract documents and overall project duration. It is the Contractor's responsibility to provide adequate labor resources and to sequence its work in a way to meet these contractual durations, and to coordinate with other District Contractors to allow their work to be completed concurrently if the schedule requires. No progress payments will be approved until schedule input has been reviewed and accepted by the Project Manager and the District satisfying all of the criteria listed.

The Contractor shall provide status of its activities monthly and submit the monthly update with the progress payment request.

Short Interval Scheduling (SIS) will be used throughout the on-site construction activity.

In the event of a delay affecting the completion date and/or milestones of the Project, Contractor shall advise the District and Project manager within (48) hours regarding significant distribution of the work sequence. It is not the Owner's responsibility to ensure the Contractor the ability to use "optimal" crew size throughout the Project and no adjustment of the Contract Sum will be made for minor variations in crew size or claimed loss of efficiency or disruption that result from schedule adjustments. If the Contractor contends that a schedule adjustment will cause a significant disruption of its work sequence or ability to perform work efficiently, it shall notify the District within forty-eight (48) hours of receipt of the adjustment request. Failure to provide timely notice constitutes a waiver by Contractor of any claim for compensation arising out of the schedule adjustment.

Time is of the essence of this agreement. The Contractor shall, to the fullest extent possible, carry on the various classes or parts of the Work concurrently, and shall not defer construction of any portion of the Work in favor of any other portion of the Work. The Contractor shall staff the project to ensure completion of activities within original durations allowed in the approved Baseline Schedule produced by the Contractor and approved by the Project Manager. The Contractor shall furnish such manpower, materials, facilities and equipment and shall work such hours, including night shifts, overtime operations, Sundays and holidays as may be necessary to insure the prosecution and completion of the Work in accordance with the Final Baseline schedule. If work on a critical path is seven days or more behind the currently updated schedule the Contractor will implement whatever steps it deems necessary to make up all lost time. If the actions taken are not successful, the Contractor will make further attempts using the following sequence of events:

A. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities.

B. If the above cannot be achieved then;

1. The Contractor shall increase manpower in such quantities and crafts as will substantially eliminate, the backlog of work; or increase the number of working hours, shifts per working day, working days per week or the amount of equipment or any combination of the foregoing sufficiently to substantially eliminate the backlog of work.

2. In addition, the Contractor is required to submit a recovery schedule within ten (10) calendar days to the District and Project Manager demonstrating its program and proposed plan to make up a lag in scheduled progress and to ensure completion of the Work within the Contract Time. If the actions taken by the Contractor are unsatisfactory, the Project Manager may require the Contractor to take any of the actions set forth in the previous Article without additional cost to the District to make up the lag in scheduled progress.

Failure of the Contractor to comply with the requirements of this Section shall be considered grounds for a determination by the Distinct and Project Manager, that the Contractor is failing to prosecute the Work with such diligence as will ensure its completion within the time specified.

The District and the Project Manager will not be responsible for the failure of the Contractor to plan, schedule and execute the Work in accordance with the approved schedule or the failure of the Contractor to meet the Contract milestone/completion dates or the failure of the Contractor to schedule and coordinate the Work of the Contractor's own trades and Subcontractors or to coordinate and cooperate with other District Contractors." Refer to Milestone Schedule Constraints as outlined below:

3.7.2 Sequencing of the scope of work shall be coordinated with the Project Manager and Campus.

SCHEDULE MILESTONES:

A. Standard Work Hours for Existing Building Occupants: 8:00am to 5:30pm

B. Contractor will have access to the site 24/7. The contractor will need to coordinate with Property Manager for access to building occupant spaces on the 1st and 3rd floor. Also note that certain operations must be performed outside the normal working hours (8:00 am – 5:30 pm) of Monday through Friday to prevent the disturbance or interruption of normal business operations. These operations include, but are not limited to:

i. Drilling or cutting of the concrete floor slab.

ii. Drilling or cutting of any concrete structural member.

iii. Sanding, chiseling or leveling of the concrete structure.

iv. Any work which generates noise or vibration which may be disruptive to normal office procedures elsewhere in the Project Site.

v. Any work that creates an odor that is disruptive to Owner and/or its tenants.

vi. Any work otherwise is disruptive to Owner and/or its tenants.

C. Notice to Proceed Milestones

i. Construction (93 Calendar Days) - issued after District Board Approval and execution of the contract, shall consist of all general requirements, including but not limited to required surveys, submittals, deferred approvals, design services, permits and approvals, pre-construction meetings and activities, site walks, long lead procurement requirements, hall off, installation, operation, and complete contract scope of work as defined in the project document by February 25, 2022

D. Interim Milestones

i. No interim milestone for this project.

E. Completion Milestones

i. Substantial Completion: (1) calendar day, within duration of NTP 1.

ii. Punch list: (7) calendar days, within duration of NTP 1.

iii. Final Completion (1) calendar day, within duration of NTP 1.

iv. Notice of Completion (1) calendar day, within duration of NTP 1.

F. Phasing of Work

i. Constraints: See General Requirements Division 1, Section 01 32 16; Project Construction Schedule.

3.7.3 Failure to Meet Requirements

Failure of the Contractor to provide proper schedules as required by this Article and Article 9 is a material breach of the contract and grounds for termination pursuant to Article 14. The District, at its sole discretion, may choose, instead, to withhold, in whole or in part, any progress payments or retention amounts otherwise payable to the Contractor.

3.8 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the Site for the District one current copy of the Uniform Building Code, Titles 19, 21 and 24 of the California Code of Regulations and one record copy of the Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record changes and selections made during construction. In addition, the Contractor shall maintain at the Site approved Shop Drawings, Product Data, Samples, and similar required submittals. These documents shall be available to the Architect and Project Manager and shall be delivered to the Project Manager for delivery to the District upon completion of the Work.

3.9 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.9.1 Submittals defined

3.9.1.1 ***Shop Drawings.*** The term "shop drawings" as used herein means drawings, diagrams, schedules, and other data, which are prepared by Contractor, Subcontractors, manufacturers, suppliers, or distributors illustrating some portion of the Work, and includes: illustrations; fabrication, erection, layout and setting drawings; manufacturer's standard drawings; schedules; descriptive literature, instructions, catalogs, and brochures; performance and test data including charts; wiring and control diagrams; and all other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, products, equipment, or systems and their position conform to the requirements of the Contract Documents. The Contractor shall obtain and submit with shop drawings all seismic and other calculations and all product data from equipment manufacturers. "Product data" as used herein are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work. As used herein, the term "manufactured" applies to standard units usually mass-produced, and "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop drawings shall: establish the actual detail of all manufactured or fabricated items, indicate proper relation to adjoining work, amplify design details of mechanical and electrical systems and equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions.

3.9.1.2 ***Samples.*** The term "samples" as used herein are physical examples furnished by Contractor to illustrate materials, equipment, or quality and includes natural materials, fabricated items, equipment, devices, appliances, or parts thereof as called for in the Specifications, and any other samples as may be required by the Architect to determine whether the kind, quality, construction, finish, color, and other characteristics of the materials, etc., proposed by the Contractor conform to the required characteristics of the various parts of the Work. All Work shall be in accordance with the approved samples.

3.9.1.3 ***Schedule for Submission of Shop Drawings.*** Contractor shall obtain and shall submit all required shop drawings, samples, etc., in accordance with the Project Schedule as required in the scheduling portion of the General Conditions at Article 3.7 with such promptness as to cause no delay in its own Work or in that of any other Contractor or subcontractor but in no event later than ninety (90) days after the execution of Notice to Proceed. Contractor shall submit all shop drawings, samples, and manufacturer's descriptive data for the review of the District, Project Manager and Architect. By submitting shop drawings, product data, samples, etc., the Contractor represents that it has determined and verified all materials, field measurements, catalog numbers, related field construction criteria, and other relevant data in connection with each such submission, and that it has checked, verified, and coordinated the information contained within such submittals with the requirements of the Work and Contract Documents. The submission of the shop drawings, product data, samples, etc., shall not deviate from the requirements of the Contract Documents including detailing and design intent which is specifically outlined in Contract Documents except as specifically authorized by the Architect or through an accepted substitution. All deviations from the Contract Documents shall be described, in a narrative format, in a transmittal accompanying the shop drawings. Shop drawings shall not be used as a means of requesting a substitution. Review by District, Project Manager and Architect shall not relieve the Contractor or any Subcontractor from its responsibility in preparing and submitting proper shop drawings in accordance with the Contract Documents. Any submission, which in District's and Project Manager's opinion is incomplete, contains errors, or has been checked superficially, will be returned un-reviewed by the Architect for resubmission by the Contractor. Contractor shall stamp, sign, and date each submittal indicating its representation that the submittal meets all of the requirements of the Contract Documents and evidence Contractor's review through execution of the following stamp to be placed on each shop drawings:

> "The Contractor has reviewed and approved the field dimensions and the construction criteria, and has also made written notation regarding any information in the shop drawings that does not conform to the contract documents. This shop drawing has been coordinated with all other shop drawings received to date by Contractor and this duty of coordination has not been delegated to

subcontractors, material suppliers, District, Project Manager, Architect, or the Engineer(s) on this Project.

_____
Signature of Contractor and Date

3.9.1.4 ***Extent of Review.*** In reviewing shop drawings, the District, Architect and Project Manager will not verify dimensions and field conditions. The Architect will review and approve shop drawings, product data, samples, etc., for aesthetics and for conformance with the design concept of the Work and the information in the Contract Documents. The Architect's and Project Manager's review shall neither be construed as a complete check which relieves the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents unless the Contractor has, in writing, called the Architect's attention to the deviations at the time of submission. The Architect's and Project Manager's review shall not relieve the Contractor or Subcontractors from responsibility for errors of any sort in shop drawings or schedules, for proper fitting of the Work, coordination of the differing subcontractor trades and shop drawings and Work which is not indicated on the shop drawings at the time of submission of shop drawings. Contractor and Subcontractors shall be solely responsible for any quantities which may be shown on the submittals or Contract Documents.

3.9.2 Drawing and Submission Procedure

3.9.2.1 ***Transmittal Letter and Other Requirements.*** All submittals and shop drawings must be properly identified with the name of the Project, submittal number organized by division, dated, and each lot submitted must be accompanied by a letter of transmittal referring to the name of the Project and to the Specification section number for identification of each item clearly stating in narrative form, as well as "clouding" on the submissions, all qualifications, departures, or deviations from the Contract Documents. Shop drawings, for each section of the Work shall be numbered consecutively by division, and the numbering system shall be retained throughout all revisions. All Subcontractor submissions shall be made through the Contractor. Each drawing shall have a clear space for the stamps of Architect and Contractor.

3.9.2.2 ***Copies Required.*** Each submittal shall include eight (8) reproducible and / or legible prints of each drawing or schedule, table, cut sheet, etc., including fabrication, erection, layout and setting drawings, and such other drawings as required under the various sections of the Specifications, until final acceptance thereof is obtained. Subcontractor shall submit copies, in an amount as requested by the Contractor, of: (1) manufacturers' descriptive data for materials, equipment, and fixtures, including catalog sheets showing dimensions, performance, characteristics, and capacities; (2) wiring diagrams and controls; (3) schedules; (4) all seismic calculations and other calculations; and (5) other pertinent information as required by the District or Architect.

3.9.2.3 ***Corrections.*** The Contractor shall make all corrections required by Architect and shall resubmit within seven (7) calendar days, as required by Architect or Project Manager, corrected copies of shop drawings or new samples until approved. Contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections required by the Architect or Project Manager on previous submissions. Professional services required for more than one (1) re-review of required submittals of shop drawings, product data, or samples are subject to charge to the Contractor.

3.9.2.4 ***Approval Before Commencement of Work.*** No portion of the Work requiring a shop drawing or sample submission or other submittal shall be commenced until the submission has been reviewed by Contractor, Project Manager, and Architect, and approved by the Architect, unless specifically directed in writing by the Architect. All such portions of the Work shall be in accordance with approved shop drawings and samples.

3.9.3 Sample Submissions Procedure

3.9.3.1 ***Samples Required.*** In case a considerable range of color, graining, texture, or other characteristics are anticipated in finished products, a sufficient number of samples of the specified materials shall be furnished by

the Contractor to indicate the full range of characteristics which will be present in the finished products; and products delivered or erected without submittal and approval of a full range of samples shall be subject to rejection. Except for range samples, and unless otherwise called for in the various sections of the Specifications, samples shall be submitted in **quantities of (8).** All samples shall be marked, tagged, or otherwise properly identified with the name of the submitting party, the name of the Project, the purpose for which the samples are submitted and the date, and shall be accompanied by a letter of transmittal containing similar information, together with the submittal number, and Specification section number. Each tag or sticker shall have clear space for the review stamps of Contractor and Architect.

3.9.3.2 ***Labels and Instructions.*** All samples of materials shall be supplied with the manufacturer's descriptive labels and application instructions.

3.9.3.3 ***Architect's Review.*** The Architect and Project Manager will review and, if appropriate, approve submissions and will return them to the Contractor with the Architect's stamp and signature applied thereto, indicating the timing for review and appropriate action in compliance with the Architect's (or District's) standard procedures.

3.9.3.4 ***Record Drawings and Annotated Specifications.*** The Contractor is responsible for any required as-built record drawings and specifications. The Contractor shall at the time of installation and no less than on a weekly basis, update a master set of as-built reproducible drawings to be maintained in the project office. In addition, an as-built set of blue line drawings should be kept current at the project site and be clearly labeled "As-Built Progress Documents". These shall be made available to for viewing by the District/Project Manager and the Architect at any time. The following information shall be inserted and dimensioned on said drawings and specifications, in RED, by the Contractor: the exact horizontal and vertical location of all installations in their finished condition, including but not limited to changes made by change orders, partial change orders, construction directives, responses to RFI's, ASI's, verbal confirmations, and other modifications described in these Contract Documents: Locations of Work buried under and outside the building, such as plumbing and electrical lines and conduits: Locations of significant Work concealed inside the building whose general locations have been changed from those shown on the Contract Documents: Locations of items, not necessarily concealed, which have been changed with the District/Project Manager or Architect's prior acceptance, from the location shown on the Contract Documents: Locations of main runs of piping, conduit, ductwork, and similar items by dimensions: Locations other items either by dimensions or in relation to spaces within the building: Record deviations from the sizes, locations, and other features of installation shown in the Contract Documents: Establish locations of underground Work by dimension to column lines or walls, locating turns, and by referenced centerline and invert elevations and rates of fall: Give sufficient information to locate Work concealed in the building. Exact dimensioned location of all utilities underground within the construction limit lines.

The Contractor shall update the drawings as work progresses. Failure to comply with the preparation and submission of as-built drawings may result in the District and/or Project Manager withholding the next month's progress payment.

3.9.3.5 ***Equipment Manuals.*** Contractor shall obtain and furnish, in the quantity described in Section: Contract Closeout of the General Requirements; complete sets of manuals containing the manufacturers' instructions for maintenance and operation of each item of equipment and apparatus furnished under the Contract Documents and any additional data specifically requested under the various sections of the Specifications for each division of the Work. The manuals shall be arranged in logical, sequential order, labeled, indexed, and placed in three-ring binders. At the completion of its Work, the Contractor shall certify, by endorsement thereon, that each of the manuals is complete, accurate, and covers all of its Work. Prior to submittal of Contractor's Application for Final Payment, and as a further condition to its approval by the Architect, each Subcontractor shall deliver the manuals, arranged in logical, sequential order, labeled, indexed, endorsed, and placed in three-ring binders, to the Contractor, who shall assemble these manuals for all divisions of the Work, review them for completeness, and submit them to the District through the Project Manager.

3.9.3.6 ***District's Property.*** All shop drawings, computer disks, annotated specifications, samples and other submittals shall become the District's property upon receipt by the District, Project Manager or Architect.

3.9.4 Substitutions

3.9.4.1 ***One Product Specified.*** Whenever the Contract Documents indicate any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction or any specific name, make, trade name, or catalog number, with or without the words "or equal," such specification shall be deemed to be used for the purpose of facilitating description of the material, process, or article desired and shall be deemed to be followed by the words "or equal." The Contractor may, unless otherwise stated, offer any material, process, article, etc., which shall be materially equal or better in every respect to that so indicated or specified ("Specified Item") and will completely accomplish the purpose of the Contract Documents.

3.9.4.2 ***Products Specified Which are Commercially Unavailable.*** If the Contractor fails to make a request for substitutions for products and such products subsequently become commercially unavailable, the Contractor may request a substitution for such commercially unavailable item. The decision to grant this request is solely at the District's discretion. The written approval of the District, consistent with the procedure for Change Orders, shall be required for the use of a proposed substitute material. The District may condition its approval of the substitution upon the delivery to District of an extended warranty or other assurances of adequate performance of the substitution as well as an equitable deduction in the contract price should the substituted item cost less than the Specified Item. All risks of delay due the approval of a requested substitution by the Riverside County (Planning and Engineering Department), or any other governmental agency having jurisdiction, shall be on the requesting party. All additional costs, all procurement and construction delays, and all costs for review by the Architect or its consultants shall be the responsibility of the Contractor and deducted via Change Order.

3.9.4.3 ***Substitution Request Form.*** Requests for substitutions of products, materials, or processes in place of the Specified Item must be in writing on the District's Substitution Request Form (refer to Contract Documents)

The Request Form must be accompanied by evidence as to whether the proposed substitution:

1. Is equal in quality/service/ability to the Specified Item;
2. Will entail no changes in detail, construction, and scheduling of related work;
3. Will be acceptable in consideration of the required design and artistic effect;
4. Will provide no cost disadvantage to the District;
5. Will require no excessive or more expensive maintenance, including adequacy and availability of replacement parts; and
6. Will require no change of the construction schedule.

Only one request for substitution will be considered for each product. By completing and submitting the request for substation the Contractor acknowledges that should the request for substitution not be approved by the District that the Contractor shall supply the specified at no addition claim for cost to the District.

Substitution proposals will not be considered before bidding for the award of a contract. All requests for substitutions shall be made within thirty (30) days of the Contractors receipt of Notice to Proceed No. 1 and should be considered priority initial submittals. Failure to meet said time period shall constitute a waiver by the Contractor and an acceptance of the specified materials. Late submittals may be considered only when the Project Manager consents in writing that it is in the District's best interests so require.

The District, Project Manager and the Architect shall evaluate said request, and shall approve, deny, approve with conditions, or initiate the procedure for a Change Order in response to the Contractor's request. If the proposed substitution is rejected, the Contractor shall provide the material originally specified. Such decision shall be final.

Failure by the Contractor to identify all deviations from the Contract Documents in its request for substitution shall render any District action taken thereon null and void. The Contractor shall bear all costs resulting from any error in the request for substitution.

3.9.4.4 ***List of Manufacturers and Products Required.*** The Contractor shall require all Subcontractors to prepare and submit to the Contractor, within thirty (30) days of execution of the Subcontract, comprehensive lists, in quadruplicate, of the manufacturers and products proposed for the Project, including information on materials, equipment, and fixtures required by the Contract Documents, as may be required for the Contractor's or Architect's approval. Approval of such lists of products shall not be construed as a substitute for the shop drawings, manufacturer's descriptive data, and samples, required by the Contract Documents, but rather shall be considered as a base from which more detailed submittals shall be developed for final review by the Contractor, Project Manager, District and the Architect.

3.9.5 Deferred Approvals

Deferred approvals shall be submitted and processed pursuant to the requirements of Division 1 of the Specifications. All deferred approvals shall be prepared by Contractor or Contractor's agent early enough so as to not delay the Project. Contractor is aware that Title 21 California Code of Regulations section 17(g) and Title 24 California Code of Regulations section 4-317 have specific requirements for deferred approval as to governing agencies and as to the Architect and Engineer for the Project. As a result, any delay associated with the time for approval by applicable agencies or by the Architect or Architect's consultants shall be Contractor's.

3.10 INTEGRATION OF WORK

3.10.1 Scope

The Contractor shall be responsible for cutting, fitting, or patching to complete the Work and to make all parts fit together properly. Contractor shall be responsible for ensuring that all subcontractors are coordinated and scheduled so as to ensure the timely and proper execution of the work. When modifying existing work or installing new Work adjacent to existing work, Contractor shall match, as closely as conditions of Site and materials will allow, the finishes, textures, and colors of the original work, refinishing existing work at no additional cost to District. All cost caused by defective or ill-timed work shall be borne by Contractor. Contractor shall be solely responsible for protecting existing work on adjacent properties and shall obtain all required permits for shoring and excavations near property lines.

3.10.2 Structural Members

New or existing structural members and elements, including reinforcing bars and seismic bracing, shall not be cut, bored, or drilled except by written authority of the Architect AND APPROVED BY RIVERSIDE COUNTY (PLANNING AND ENGINEERING DEPARTMENT). Work done contrary to such authority is at the Contractor's risk and subject to replacement at its own expense without reimbursement under the Contract. Schedule delays resulting from Agency approvals for unauthorized work shall be the Contractor's responsibility.

3.10.3 Subsequent Removal

Permission to patch any areas or items of the Work shall not constitute a waiver of the District's or the Architect's right to require complete removal and replacement of the areas of items of the Work if, in the opinion of the Architect, Project Manager or the District, the patching does not satisfactorily restore quality and appearance of the Work or does not otherwise conform to the Contract Documents.

3.11 CLEANING UP

3.11.1 Contractor's Responsibility

Contractor at all times shall keep premises free from debris such as waste, dust, excess water, storm water runoffs, rubbish, and excess materials and equipment. Contractor shall not leave debris under, in, or about the premises, but shall promptly remove debris from the premises and dispose of it in a lawful manner. Disposal receipts or dump tickets shall be furnished to the Project Manager daily. Upon completion of Work, Contractor shall clean interior and exterior of buildings, including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected, so surfaces are free from foreign material or discoloration; Contractor shall clean and polish all glass, plumbing fixtures, equipment, finish hardware and similar finish surfaces. Upon completion of the Work, Contractor shall also remove temporary utilities, fencing, barricades, planking, sanitary facilities and similar temporary facilities from Site.

Contractor shall remove rubbish and debris resulting from the Work on a daily basis. Contractor shall maintain the structures and Site in a clean and orderly condition at all times until acceptance of the Project by the District. Contractor shall keep its access driveways and adjacent streets, sidewalks, gutters and drains free of rubbish, debris and excess water by cleaning and removal each day.

Final cleanup of the Site and buildings shall be the responsibility of the Contractor.

3.11.1.1 In addition to the general cleaning, the following special cleaning shall be done at the completion of the work in accordance with the specifications including, but not limited to:

(a) Remove putty stains from glazing, then wash and polish glazing.

(b) Remove marks, stains, fingerprints and other soil or dirt from painted, stained or decorated work.

(c) Remove temporary protection and clean and polish floors and waxed surfaces.

(d) Clean and polish hardware and plumbing trim; remove stains, dust, dirt, plaster and paint.

(e) Remove spots, soil, plaster and paint from tile work, and wash tile.

(f) Clean all fixtures and equipment, remove excess lubrication, clean light fixtures and lamps, polish metal surfaces.

(g) Vacuum-clean carpeted surfaces.

(h) Remove debris from roofs, down spout and drainage system.

3.11.2 Failure to Cleanup

The Contractor shall properly clean its work and the Site, and maintain its work area in an orderly manner. The Contractor shall remove all dirt, debris, waste, rubbish, and implements of service from the Project, the adjacent sidewalks and streets, and the working area daily or as directed by the District and/or Project Manager. Debris, waste, or unused construction materials shall not be left under, in, or about the Project, nor allowed to accumulate on the Site or in the working area.

The Contractor, at its sole cost, shall contract with a disposal company to remove all such rubbish, and shall have the refuse containers emptied at frequent enough intervals so that waste does not overflow the containers.

If the Contractor fails to clean up during progress or upon completion of the Work, the District and or Project Manager may, at the Contractor's expense who hereby agrees to pay costs and charges therefore immediately on

demand. If Contractor fails to do so, District may back charge Contractor and/or set off the costs thereof against monies in the Contract and/or held as retention, in addition to any other right and/or remedy District may have.

3.12 ACCESS TO WORK

The Contractor shall provide the Project Manager, District, the Architect, Engineers and the Inspector of Record, access to the Work in preparation and progress wherever located. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

3.13 ROYALTIES AND PATENTS

3.13.1 Payment and indemnity for Infringement

Contractor shall hold and save the District and its officers, agents, and employees, the Architect, and the Architect's consultants, the Project Manager and its officers, agents and employees harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the District, unless otherwise specifically provided in the contract documents, and unless such liability arises from the sole negligence, or active negligence, or willful misconduct of the District, the Architect, or the Architect's consultants.

3.13.2 Review

The review by the Architect and Project Manager of any method of construction, invention, appliance, process, article, device, or material of any kind shall be for its adequacy for the Work and shall not be an approval for the use by the Contractor in violation of any patent or other rights of any person or entity.

3.14 INDEMNIFICATION

3.14.1 Contractor

Contractor shall defend, indemnify and hold harmless District, Project Manager, Architect, Project Manager, Inspector, their officers, employees, agents and independent contractors from all liabilities, claims, actions, liens, judgments, demands, damages, losses, costs or expenses of any kind arising from death, personal injury, property damage or other cause based or asserted upon any act, omission, or breach connected with or arising from the progress of Work or performance of service under this Agreement or the Contract Documents. As part of this indemnity, Contractor shall protect and defend, at its own expense, District, Architect, Project Manager, Inspector, their officers, employees, agents, and independent contractors, from any legal action including attorney's fees or other proceeding based upon such act, omission, or breach.

Furthermore, Contractor agrees to and does hereby defend, indemnify and hold harmless District, Architect, Project Manager, Inspector, their officers, employees, agents, and independent contractors, from every claim or demand made, and every liability, loss, damage, expense or attorney's fees of any nature whatsoever, which may be incurred by reason of:

(a) Liability for (1) death or bodily injury to persons; (2) damage or injury to, loss (including theft), or loss of use of, any property; (3) any failure or alleged failure to comply with any provision of law or the Contract Documents; or (4) any other loss, damage or expense, sustained by any person, firm or corporation or in connection with the Work called for in this Agreement or the Contract Documents, except for liability resulting from the sole or active negligence, or the willful misconduct of the District;

(b) Any bodily injury to or death of persons or damage to property caused by any act, omission or breach of Contractor or any person, firm or corporation employed by Contractor, either directly or by independent contract, including all damages or injury to, loss (including theft), or loss of use of, any property, sustained by any person, firm or corporation, including District, arising out of or in any way connected with Work covered by this Agreement or the Contract Documents, whether said injury or damage occurs either on or off District property, but not for any loss, injury, death or damages caused by the sole or active negligence or willful misconduct of the District;

(c) Any dispute between Contractor and Contractor's subcontractors/ suppliers/ sureties, including, but not limited to, any failure or alleged failure of the Contractor (or any person hired or employed directly or indirectly by the Contractor) to pay any Subcontractor or Material man of any tier or any other person employed in connection with the Work and/or filing of any stop notice or mechanic's lien claims; and/or

(d) Any breach of this Agreement by Contractor, and/or its subcontractors, sub-subcontractors and/or suppliers and/or materialmen.

Contractor, at its own expense, cost, and risk, shall defend any and all claims, actions, suits, or other proceedings that may be brought or instituted against the District, its officers, agents or employees, on any such claim or liability, and shall pay or satisfy any judgment that may be rendered against the District, its officers, agents or employees in any action, suit or other proceedings as a result thereof. Contractor hereby agrees to pay costs and charges therefore immediately on demand. If Contractor fails to do so, District may back charge Contractor and/or set off the costs thereof against monies in the Contract and/or held as retention, in addition to any other right and/or remedy District may have.

Contractor shall ensure that its contract with each of its subcontractors contains provisions requiring the subcontractors to defend, indemnify and hold harmless the District, Architect, Project Manager and Inspector to a minimum level as set forth in this Article.

The Contractor's and Subcontractors' obligation to defend, indemnify and hold harmless the District, Architect, Project Manager, Inspector, and their officers, employees, agents and independent contractors hereunder shall include, without limitation, any and all claims, damages, and costs for the following: (1) any damages or injury to or death of any person, and damage or injury to, loss (including theft), or loss of use of, any property; (2) breach of any warranty, express or implied; (3) failure of the Contractor or Subcontractors to comply with any applicable governmental law, rule, regulation, or other requirement; and (4) products installed in or used in connection with the Work.

3.15 DAILY REPORTS

The Contractor shall submit Daily Report to Project Manager daily. Submission of Contractor daily report is a condition precedent for the processing of Contractors progress payments.

3.16 RECORD DRAWINGS

3.16.1 General

The Contractor shall maintain a record set of full-size project drawings upon which all field changes are recorded on a daily basis as described in the General Conditions and as required herein. As a condition of final acceptance of the project, this record set of project drawings with as-built changes shall be signed by the Contractor, shall be delivered to the District and Project Manager and shall be considered the property of the District.

Original data that is superseded shall be lined out and still remain legible. Original figures shall not be eradicated, nor corrections made over an item.

The contractor shall record any changes, deletions, additive, rerouting, stub outs, offsets or any other deviation from the plans on the as-built drawings. All underground and concealed work shall be recorded with exact location by dimension and elevation as detailed below, even when installed in conformance to original drawings.

Elevations shall refer to MLLW datum.

Dimensions shall be shown from permanent installations rather than from fencing or other temporary locations that are subject to change.

Two reference dimensions shall be given for each underground or concealed installation.

Trenches for underground lines shall not be backfilled, nor shall concealed work be covered until elevations and dimensions are recorded complete on as-built drawings and a check has been made of lines versus recorded data by Engineer. If backfill is placed without approval, the works shall be uncovered so that a proper check can be performed. Original data that is superseded shall be lined out and still remain legible. Original figures shall not be eradicated, nor corrections made over an item.

The Contractor is responsible for any required as-built record drawings. The Contractor shall at the time of installation and no less than on a weekly basis, update a master set of as-built reproducible drawings to be maintained in the project office. In addition, an as-built set of blue line drawings should be kept current at the project site and be clearly labeled “As-Built Progress Documents”. These shall be made available to for viewing by the District/Program and Project Manager, and the Architect at any time. The following information shall be inserted and dimensioned on said drawings and specifications, in RED, by the Contractor: the exact horizontal and vertical location of all installations in their finished condition, including but not limited to changes made by change orders, partial change orders, responses to RFI's, ASI's, construction directives, verbal confirmations, and other modifications described in these Contract Documents: Locations of Work buried under and outside the building, such as plumbing and electrical lines and conduits: Locations of significant Work concealed inside the building whose general locations have been changed from those shown on the Contract Documents: Locations of items, not necessarily concealed, which have been changed with the District/program and Project Manager or Architect's prior acceptance, from the location shown on the Contract Documents: Locations of main runs of piping, conduit, ductwork, and similar items by dimensions: Locations other items either by dimensions or in relation to spaces within the building: Record deviations from the sizes, locations, and other features of installation shown in the Contract Documents: Establish locations of underground Work by dimension to column lines or walls, locating turns, and by referenced centerline and invert elevations and rates of fall: Give sufficient information to locate Work concealed in the building. Provide exact dimensioned location of all utilities underground within the construction limit lines.

The Contractor shall update the drawings as work progresses. Failure to comply with the preparation and submission of as-built may result in the District and/or Program and Project Manager withholding the next month’s progress payment.

ARTICLE 4

4.1 ARCHITECT

4.1.1 Replacement of Architect

In the case of the termination of the Architect, the District may appoint another architect or another construction professional or may perform such functions with its own licensed professional personnel. The status of the replacement Architect under the Contract Documents shall be the same as that of the former architect.

4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT

4.2.1 Status

Pursuant to Titles 24 and 21 of the California Code of Regulations and as required pursuant to the Field Act, Education Code 81130.3 et seq. the Architect will provide administration of the Contract Documents and the Work during construction, as well as during the one (1) year period following the commencement of any warranties. The Architect will have authority to act on behalf of the District only to the extent provided in the Contract Documents and permitted by California Community Colleges Chancellor's Office.

4.2.2 Site Visits

The Architect will visit the Site at intervals necessary in the judgment of the Architect to become generally familiar with the progress and quality of the Work and to determine in general if the Work is being performed in accordance with the Contract Documents. The Architect will attend all Weekly Owner – Contractor Meetings.

4.2.3 Limitations of Construction Responsibility

The Architect, District and Project Manager shall not have control over, charge of, or be responsible for construction means, methods, techniques, schedules, sequences or procedures, fabrication, procurement, shipment, delivery, receipt, installation, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility under the Contract Documents. The Architect, District and Project Manager shall not be responsible for the Contractor's, Subcontractors', material or equipment suppliers', or any other person's schedules, or failure to carry out the Work in accordance with the Contract Documents. The Architect, District and Project Manager shall not have control over or charge of acts or omissions of the Contractor, Subcontractors, their agents or employees, or any other persons or entities performing or supplying portions of the Work. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect, District or Project Manager in administration of the Contract Documents, or by tests, inspections, or approvals required or performed by persons other than the Contractor.

4.2.4 Communications Facilitating Contract Administration

Except as otherwise provided in the Contract Documents or when direct communications are warranted by special circumstances, the District and the Contractor shall communicate through the Project Manager. The Project Manager shall be promptly informed, and shall receive copies of all written communications. Contractor shall not rely upon any communication from the District that is not from the District's Vice Chancellor for Fiscal Services. Communications by and with the Architect's consultants shall be through the Project Manager. Communications by and with Subcontractors and material or equipment suppliers shall be through the Contractor.

4.2.5 Payment Applications

The Project Manager will review and make recommendations to the District regarding the amounts due the Contractor on the Certificates for Payment pursuant to Article 9 and subject to the Inspector's approval and Architect, and Project Manager's observation.

4.2.6 Rejection of Work

In addition to the rights, duties, and obligations of the Inspector under this Article, the Architect or Project Manager, may recommend to the District that the District reject Work which does not conform to the Contract Documents. Whenever the Architect or Project Manager considers it necessary or advisable to achieve the intent of the Contract Documents, the Architect or Project Manager may, recommend to the District that the District require additional inspection or testing of the Work, whether or not such Work is fabricated, installed, or completed.

However, neither this authority of the Architect or Project Manager nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or Project Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

4.2.7 Warranties Upon Completion

The Architect and Project Manager, in conjunction with the Inspector will conduct field reviews of the Work to determine the date of completion, shall receive and forward to the District for the District's review and records written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment when the Architect and Project Manager believe the Work has been completed in compliance with the requirements of the Contract Documents. The handling by the Architect or Project Manager of such warranties, maintenance manuals, or similar documents shall not diminish or transfer to the Architect or Project Manager any responsibilities or liabilities required by the Contract Documents of the Contractor or other entities, parties, or persons performing or supplying the Work.

The Architect and Project Manager will conduct a field review of the Contractor's comprehensive list of items to be corrected (final punch list) upon receipt of such list. Within seven days of receipt of such list, Architect and Project Manager shall also add to that list any items that it/they determine (supplemented final punch list) should be on said list. At the same time, the Architect and Project Manager will also provide a cost estimate to complete and/or correct each item on the final punch list and supplemental final punch list and provide same to the Contractor and the District's Vice Chancellor for Fiscal Services. The Architect and Project Manager will conduct as many follow-up field reviews as needed to insure timely completion of both lists. If more than two follow up field reviews are required by the Architect and/or Project Manager, the cost incurred by the District for further field reviews, and/or the preparation of further punch lists by the Architect or Project Manager, shall be invoiced to the Contractor who hereby agrees to pay costs and charges therefore immediately on demand. If Contractor fails to do so, District may back charge Contractor and/or set off the costs thereof against monies in the Contract and/or held as retention, in addition to any other right and/or remedy District may have.

4.2.8 Interpretation

The Architect will interpret and decide matters concerning performance and requirements of the Contract Documents.

4.2.9 Additional Instructions

4.2.9.1 ***Typical Parts and Sections.*** Whenever typical parts or sections of the Work are completely detailed on the Drawings, and other parts or sections which are essentially of the same construction are shown in outline only, the complete details shall apply to the Work which is shown in outline.

4.2.9.2 ***Dimensions.*** Dimensions of Work shall not be determined by scale or rule. Figured dimensions shall be followed at all times. If figured dimensions are lacking on Drawings, Architect shall supply them on request. The District's decisions on matters relating to aesthetic effect will be final.

4.3 INSPECTOR OF RECORD

4.3.1 General

One or more Project inspectors employed by the District and approved by the Division of the State Architect will be assigned to the Work in accordance with the requirements of Title 24 of the California Code of Regulations. The Inspector(s) duties are as specifically defined in Title 24.

4.3.2 Inspector's Duties

All Work shall be under the observation of the Inspector. The Inspector shall have free access to any or all parts of the Work at any time. The Contractor shall furnish the Inspector such information as may be necessary to keep the Inspector fully informed regarding progress and manner of Work and character of materials. Such observations shall not, in any way, relieve the Contractor from responsibility for full compliance with all terms and conditions of the Contract, or be construed to lessen to any degree the Contractor's responsibility for providing efficient and capable superintendence. The Inspector is not authorized to make changes in the drawings or specifications nor shall the Inspector's approval of the Work and methods relieve the Contractor of responsibility for the correction of subsequently discovered defects, or from its obligation to comply with the Contract Documents.

4.3.3 Inspector's Authority to Reject or Stop Work

The Inspector shall have the authority to reject Work in writing noting specific deficiencies whenever provisions of the Contract Documents are not being complied with, and Contractor shall instruct its Subcontractors and employees accordingly. In addition, the Inspector, District, or Project Manager may stop any Work that poses a probable risk of harm to persons or property. The Contractor shall instruct its employees, Subcontractors, material and equipment suppliers, etc., accordingly. The absences of any Stop Work order or rejection of any portion of the Work shall not relieve the Contractor from any of its obligations pursuant to the Contract Documents. The District will not be responsible financially for work stoppages that are the responsibility of the Contractor.

4.3.4 Inspector's Facilities

The Inspector will provide temporary facilities as required.

4.3.5 Testing Times

The District will provide inspection and testing at its cost during the normal eight (8) hour day Monday through Friday (except holidays). Work by the Contractor outside of the normal eight (8) hour day shall constitute an authorization from the Contractor to the District to provide inspection and testing as required outside of the normal eight (8) hour day. Contractor shall reimburse District for any additional costs associated with inspection and testing (including re-inspection and re-testing) outside the normal eight-hour day and for any retests caused by the Contractor.

4.4 RESPONSIBILITY FOR ADDITIONAL CHARGES INCURRED BY THE DISTRICT FOR PROFESSIONAL SERVICES

At any time during the project, if District is required to provide or secure additional professional services for any reason by any acts of Contractor or its Subcontractors, Contractor may be responsible for the cost and expense thereof. Upon notice to Contractor, District shall retain and provide additional professional services and may by assessment, recover all incurred costs for any additional professional services. Additional services shall include, but not be limited to:

(a) Services made necessary by the default of the Contractor.

(b) Services made necessary due to the defects or deficiencies in the Work of the Contractor.

(c) Services required by failure of the Contractor to perform according to any provision of the Contract Documents.

(d) Services in connection with evaluating substitutions of products, materials, equipment, Subcontractors' proposed by the Contractor, and making subsequent revisions to drawings,

specifications, and providing other documentation required (except for the situation where the specified item is no longer manufactured or available).

(e) Services for evaluating and processing claims submitted by the Contractor in connection with the Work outside the established change order and/or dispute resolution process.

(f) Services required by the failure of the Contractor to prosecute the Work in a timely manner in compliance within the specified time of completion.

(g) Services in conjunction with the testing, adjusting, balancing and start-up of equipment other than the normal amount customarily associated for the type of Work involved.

(h) Services in conjunction with more than one (1) re-review of submittals of shop drawings, product data, samples, etc.

4.5 DISPUTES & CLAIMS

The District and Contractor agree that Article 7, in its entirety, must be followed as a condition precedent to proceeding under Articles 4.5 through 4.5.10 below. Together, Article 7 and Articles 4.5 through 4.5.10 establish the exclusive procedures for resolving disagreements, "Disputes" and "Claims" between the Contractor and the District regarding this Agreement, except as may be expressly exempted elsewhere in this Agreement.

Disagreements, "Disputes" and "Claims" relate to time, money, the scope of work required by this Agreement, deleted and/or extra work that is requested by the District, change order requests from the Contractor, unforeseen underground conditions, non-conforming conditions not caused by the Contractor and/or others working under the Contractor, and/or all or some of the foregoing. They are only distinguished by where in the claims resolution process they may be at a given point in time.

Another intent of this exclusive resolution procedure is that if the process set forth in Article 7, in its entirety, does not resolve a purported add or deduct to the Contract, in whole or in part, then both the Contractor and District agree to resolve each "Dispute" or "Claim" as close as possible to the conclusion of the event(s) and /or circumstance(s) giving rise to the "Dispute" or "Claim". In this way, the information and documentation available to both parties will be as fresh as possible and permit the best informed resolution to occur. Both parties acknowledge that their failure and/or refusal to follow this exclusive process will irreparably prejudice the other party and as such, should a party to this Agreement fail or refuse to comply with this exclusive process, any "Dispute" or "Claim" they may have shall be waived and forfeited.

This exclusive process set forth below, following both parties initially complying with Article 7, in its entirety, shall apply equally to the District as it does to the Contractor.

4.5.1 Disputes - Decision of Architect

A Dispute between the District and Contractor involving money or time, including those alleging an error or omission by the Architect, shall be referred initially to the Architect, through the Project Manager, for action as provided in Article 4.5.2. The Dispute shall be submitted within five (5) days of the Article 7 process not resolving a party's sought after relief. The Dispute shall contain a detailed narrative of the Dispute together with detailed estimates and/or calculations regarding costs and/or time, and all supporting information and documentation to prove entitlement to the relief sought by the Party submitting the Dispute.

4.5.2 Architect's Review

The Architect will review the Dispute and take one or more of the following actions in writing within ten (10) days of receipt of a Dispute: (1) request additional supporting data from the claimant; (2) recommend the rejection of the Dispute in whole or in part, stating reasons for rejection; (3) recommend approval of the Dispute in whole or in part, stating reasons for approval; or (4) suggest a compromise. Once the Architect takes action under Article 4.5.2 (2) and/or 4.5.2 (3), the parties shall, within five (5) days of the Architect's action notify each other in writing whether the Architect's recommended proposal is acceptable.

4.5.3 Documentation if Resolved

If a Dispute has been resolved pursuant to Article 4.5.2 (3) and/or 4.5.2 (4), by both parties agreeing to do so in writing, the Architect and/or Project Manager will prepare or obtain appropriate documentation in the form of either: a change order; partial change order; constructive directive; and/or compromise. If within the Vice Chancellor for Fiscal Services' limits of delegated authority, the Vice Chancellor for Fiscal Services will sign the documentation and have the documentation processed.

4.5.4 Actions if Not Resolved

If a Dispute has not been resolved pursuant to Article 4.5.2 (3) and/or 4.5.2 (4), the party submitting the Dispute shall, within five (5) days after a rejection of the Architect's written decision by either party, submit the Dispute as a Claim to the District's Vice Chancellor for Fiscal Services or the Contractor's President, as applicable, pursuant to Article 4.5.5, with a copy to the Architect and Project Manager.

4.5.5 Claims Resolution Process – Submission Of Claim

4.5.5.1 First Step

.1 Once a Claim has been submitted to the District's Vice Chancellor for Fiscal Services or the Contractor's President, as applicable, the Contractor and the District shall to try to resolve same amicably as follows.

.2 The Claim submitted shall contain all of the information and documentation required under Article 4.5.1.

.3 Within thirty (30) days of submission of the Claim, the other party shall prepare and send back to the Claim proponent a detailed written explanation either agreeing with, in whole or in part, and/or disputing, in whole or in part, the Claim.

.4 Within ten (10) days of this response, the District's Vice Chancellor for Fiscal Services and the President/owner of the Contractor shall meet face to face to try and resolve the Claim. If they agree to resolve the Claim in its entirety at the meeting, a change order, construction directive, and/or compromise, will be prepared. If within the Vice Chancellor for Fiscal Services' limits of delegated authority, the Vice Chancellor for Fiscal Services will sign the documentation and have the documentation processed. If the resolution exceeds the delegated authority of the Vice Chancellor for Fiscal Services, District Staff will place the matter on the Board of Education's agenda for consideration and action. If the Board agrees to resolve the Claim as presented, the Board will approve same and the documentation will be processed. If however the Board agrees to resolve only part of the Claim presented, a partial change order, construction directive and/or compromise will be prepared and the documentation processed. If only part of the Claim presented to the Board is approved, the proponent of the Claim is then required to take action under Article 4.5.5.2. or the remainder of the Claim is forever waived and forfeited. If the Board does not agree at all, the proponent of the Claim is then required to take action under Article 4.5.5.2. or the remainder of the Claim is waived and forfeited.

4.5.5.2 Second Step

.1 If the meeting between the District's Vice Chancellor for Fiscal Services and the President/owner of the Contractor does not resolve the Claim at all, or resolves only part of the Claim, and

if the proponent of the Claim wishes to pursue the remainder, then the proponent of the Claim must send a written demand for mediation to the other party as required below.

.2 Such mediation shall take place within thirty (30) days of the proponent requesting it in writing. The costs thereof shall be shared equally by the parties.

.3 A Mediator must have substantial experience mediating, arbitrating and/or litigation public works K-14 construction matters.

.4 The proponent of the mediation must send out written demand for mediation within five (5) days of the meeting between the District's Vice Chancellor for Fiscal Services and the President/owner of the Contractor concluding. With the written demand for mediation, the party demanding mediation must include therein the names of six (6) such mediators. The opponent shall within five (days) of receipt of the written demand for mediation either select one, or provide the names of six (6) other such mediators. If the opponent fails to do so, then the proponent shall immediately identify the mediator to be used. If the party demanding mediation fails to identify in its demand six (6) such mediators, then the other party shall select such a mediator.

.5 If the proponent of the Claim fails to invoke the mediation required by this Article within the time required, then the Claim, or remaining portion thereof, is forever waived and forfeited.

.6 If mediation resolves the Claim, in whole or in part, a change order, partial change order, constructive directive, and/or compromise will be prepared. If within the Vice Chancellor for Fiscal Services' limits of delegated authority, the Vice Chancellor for Fiscal Services will sign the documentation and have the documentation processed. If the resolution exceeds the delegated authority of the Vice Chancellor for Fiscal Services, District Staff will place the matter on the Board of Education's agenda for consideration and action. If the Board agrees to resolve the Claim as presented, the Board will approve same and the documentation will be processed. If however the Board agrees to resolve only part of the Claim presented, a partial change order, construction directive and/or compromise will be prepared and the documentation processed. If only part of the Claim presented to the Board is approved, the proponent of the Claim is then required to take action under Article 4.5.5.3. or the remainder of the Claim is forever waived and forfeited. If the Board does not agree at all, the proponent of the Claim is then required to take action under Article 4.5.5.3. or the remainder of the Claim is forever waived and forfeited.

4.5.5.3 -The Exclusive Resolution Process is a Condition Precedent to Arbitration

.1 If mediation fails to resolve the Claim within thirty (30) days of the demand for mediation, or such additional period of time as both parties agree to in writing, then if a party wishes not to forfeit a Claim, or part thereof, a party must file a demand for arbitration. The process set forth in Article 4.5 is a condition precedent to the filing of any demand for arbitration between District and the Contractor.

.2 If the Claim is not resolved through the process outlined in Article 4.5 above, then the proponent of a Claim shall within five (5) days from the conclusion of the Mediation, send a written notice and demand for binding arbitration to either: the American Arbitration Association, JAMS Dispute Resolution, or ADR, with a copy to the DISTRICT and the Project Manager. All supporting documents and data in support of the Claim shall accompany the written notice and demand for arbitration with copies of all supporting documents and data thereof simultaneously sent to: the arbitration company selected; the District;

and the Project Manager. The hearing locale for any arbitration shall be in Riverside County or Los Angeles County, California, unless otherwise agreed by the parties in writing. If both parties agree in

writing, they may elect to use an independent arbitrator or an arbitrator from another alternative dispute resolution provider.

.3 The arbitration shall be held before a single arbitrator who has arbitrated more than 15 California public works construction disputes and must be mutually agreed to by both parties. The Arbitration must be held and concluded within sixty (60) days of the written demand for Arbitration, unless the Contractor and District agree otherwise in writing.

.4 The Arbitrator has no power to fashion a remedy that is solely "related to the Contract." Rather, each of the Arbitrator's decisions and award(s), interim and/or final, shall be in writing, shall set forth statements of fact and conclusions of law explaining how and why the each item of the decision/award was reached, shall be supported by substantial evidence, shall be supported by applicable law, and shall otherwise comply with the requirements of Code of Civil Procedure Section 1296.

.5 The fees of the Arbitrator and the administrative costs of the arbitration shall be shared equally between the parties, and the arbitrator has no power whatsoever to alter that sharing arrangement.

.6 Provided the Arbitrator has issued an award in compliance with the requirements of Articles 4.5.5.3.1 through 4.5.5.3.7, the Final Award is binding and all appellate rights are waived. Any judicial review of such an award is limited to the circumstances described herein for the Arbitrator's non-compliance with these requirements.

.7 The Arbitrator's Final Award shall be reflected in an additive or deductive Change Order and/or Partial Change Order, or, in the DISTRICT'S discretion, payment will be made as a Compromise as a claim on the Contract pursuant to the DISTRICT'S authority under Public Contract Code Section 9201. The CONTRACTOR'S performance bond surety shall participate any binding arbitration subject to the requirement of these Articles as a party thereto, and shall be bound by the Arbitrator's Final Award, just as the District and Contractor shall be bound thereto.

4.5.5.4 The Exclusive Resolution Process – Non-Applicability:

The procedures set forth in Article 4.5 shall not usurp District's authority, and do not apply to:

.1 determine what work is constructed, will be constructed, or whether the work complies with the Contract for purposes of accepting the work;

.2 the rights and obligations the District has as a public entity, such as, but without limitation, the revocation of pre-qualification status, barring a bidder from District contracts, and, without limitation, the imposition of penalties or forfeitures prescribed by statute or regulation and imposed by a governmental body upon a Contractor. However, penalties/interest/fees imposed against a governmental body, such as the District, or the Contractor, as applicable, by statutes such as Public Contract Code Sections 20104.50 or 7107, are encompassed by the mandatory dispute resolution provisions of this Contract;

.3 personal injury, wrongful death, or property damage, claims;

.4 latent defect, breach of warranty, or breach of guarantee to repair claims;

.5 stop notices; or

.6 District's rights and remedies as set forth elsewhere in this Contract and/or under applicable law.

4.5.6 Continuing Contract Performance

Pending final resolution of a Claim, including, negotiation, mediation, or litigation, the Contractor shall proceed diligently with performance of the Contract, and the District shall continue to make any undisputed payments in accordance with the Contract. If the dispute is not resolved, Contractor agrees it will neither rescind the contract nor stop the progress of the work

4.5.7 Claims for Concealed or Unknown Conditions

If conditions are encountered at the Site which are subsurface or otherwise concealed physical conditions, which differ materially from those indicated in the Contract, or unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than ten (10) calendar days after first observance of the conditions. The Architect will promptly investigate such conditions, and if they differ materially and cause an increase or decrease in the Contractor's cost of, time required for, or performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum, Contract Time, or both. If the Architect determines that the conditions at the Site are not materially different from those indicated in the Contract and that no change in the terms of the Contract is justified, the Architect shall so notify the District and Project Manager in writing, stating the reasons. The Project Manager shall notify the Contractor in writing of the Architect of Record's determination. Claims by either party in opposition to such determination must be made within ten (10) days after the Architect has given notice of the decision pursuant to Article 4.5.5. If the District and the Contractor cannot agree on an adjustment in the Contract Sum or the Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to other proceedings pursuant to Article 4.5.10.

4.5.8 Claims for Additional Cost

If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Each Claim for additional cost must include any claim for additional time and its associated costs. Prior notice is not required for claims relating to an emergency endangering life or property arising under Article 10.4.1. If the Contractor believes additional cost is involved for reasons, including, but not limited to the following: a written interpretation from the Architect, an order by the District to stop the Work where the Contractor was not at fault, a written order for a minor change in the Work issued by the Architect, failure of payment by the District, termination of the Contract by the District, the District's suspension of the Work, or other reasonable grounds, a claim shall be filed in accordance with the procedure established herein.

4.5.9 Claims for Extension of Time

If Contractor and District cannot agree upon an extension of time, whether compensable or not, then Contractor must have first completed the procedures set forth in Article 8.4. Upon completion of the procedures set forth under Article 8.4, Contractor must then comply with the requirements of Article 4.5.5.

4.5.10 No Limitation on District's Rights and Remedies as a Public Entity

The exclusive resolution process set forth in Articles 4.5 through 4.5.9 shall not in any way impair the rights and remedies set forth elsewhere for a party in this Agreement. Nor shall it in any way impair the rights and remedies of the District as a public entity such as, but without limitation, to withhold money pursuant to a stop notice, a labor code violation, withholding of retention, withholding of monies against progress payments, etc., all such rights and remedies being controlled by statute and/or applicable law.

ARTICLE 5

5.1 SUBCONTRACTORS

5.1.1 Sub-contractual Relations

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the same obligations and responsibilities, assumed by Contractor pursuant to the Contract Documents. Each subcontract agreement shall preserve and protect the rights of the District and the Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, including without limitation, the General Conditions, Supplemental Conditions, and portions of the Technical Specifications applicable to the Subcontractor's work and/or sub-subcontractor's work. The Contractor shall ensure that all Subcontractors and sub-subcontractors are all bound to the dispute resolution provisions found in Articles 4.5 through 4.5.10 of these General Conditions. Subcontractor the terms and conditions of the proposed subcontract agreement, which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

5.1.2 Subcontractor Licenses

All subcontractors shall be properly licensed by the California State Licensing Board.

5.1.3 Substitution of Subcontract

Substitution of Subcontractors shall be permitted only as authorized under Public Contract Code sections 4107 et. seq. Any substitutions of Subcontractors shall not result in any increase in the Contract Price or result in the granting of any extension of time for the completion of the Project.

5.1.4 Contingent Assignment of Subcontracts and Other Contracts

Each subcontract and other contract or agreement for any portion of the Work is hereby assigned by the Contractor to the District provided that:

(a) Such assignment is effective only after termination of this contract with the Contractor by the District as provided herein and only for those subcontracts and other contracts and agreements that the District accepts by notifying the Subcontractor or Material man (as may be applicable) in writing; and

(b) Such assignment is subject to the prior rights of the Surety(ies) obligated under the Payment Bond and Performance Bond.

The Contractor shall include adequate provisions for this contingent assignment of subcontracts and other contracts and agreements in each such document.

ARTICLE 6

6.1 DISTRICT'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 Separate Contracts

(a) District reserves the right to let other contracts in connection with this Work. Contractor shall afford other contractors reasonable opportunity for (1) introduction and storage of their materials; (2) access to the Work; and (3) execution of their work. Contractor shall properly connect and coordinate its work with that of other Contractors.

(b) If any part of Contractor's Work depends on proper execution or results of any other Contractor, the Contractor shall inspect and within twenty-four hours or less, report to Project Manager, in writing, any defects in such work that render it unsuitable for proper execution of Contractor's work. Contractor will be held accountable for damages to District for that work which it failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute its acceptance of other contractors' work as fit and proper for reception of its work, except as to defects, which may develop in other contractors' work after execution of Contractor's work.

(c) To ensure proper execution of its subsequent Work, Contractor shall measure and inspect Work already in place and shall at once report to the Project Manager in writing any discrepancy between executed Work as built and the Contract Documents.

(d) Contractor shall ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by District in prosecution of the Project and the potential impact of such work on Contractor's schedule.

(e) Nothing herein contained shall be interpreted as granting to Contractor the exclusive occupancy at the site of Project. Contractor shall not cause any unnecessary hindrance or delay to any other Contractor working on the Project Site. If execution of any contract by the District is likely to cause interference with Contractor's performance of its contract, District shall decide which Contractor shall cease work temporarily and which contractor shall continue, or whether work can be coordinated so that contractors may proceed simultaneously.

(f) District shall not be responsible for any damages suffered or extra costs incurred by Contractor resulting directly or indirectly from award or performance or attempted performance of any other contract or contracts at the Project, or caused by any decision or omission of District respecting the order of precedence in performance of contracts.

(g) Should Contractor, and/or any one performing under the Contractor fail to prosecute the work promptly, competently and/or as directed by a Construction Directive, District has the right and remedy to use its own forces and/or a third party contractor to remedy the Contractor's breach as declared in writing by the District without terminating this Contract. Upon the performance of such Work by its own forces and/or a third party contractor, District shall back charge the Contractor and/or set off from monies in the Contract and/or held as retention for the costs thereof. Should Contractor dispute the cost thereof, Contractor shall proceed by way of the dispute resolution provisions found in Articles 4.5 through 4.5.10 of these General Conditions.

(h) If any delays should arise from another Contractor working onsite under a different phase, Contractor's sole remedy for damages shall be against the contractor who caused such damage and not the

District. Contractor shall provide access to other contractors for other phases as necessary to prevent delays and damages to other contractors working on other phases of construction.

6.1.2 Designation as Contractor

When separate contracts are awarded to contractors on the Campus, the term "Contractor" shall be the person, firm, corporation or entity with whom the District has entered into a Contract.

6.1.3 Contractor Duties

The Contractor shall have overall responsibility to coordinate and schedule Contractor's activities with the activities of the District's own forces and District's other Contractors. Additionally, Contractor shall coordinate with the Project Manager, Architect and District inspector to ensure timely and proper progress of work.

6.2 CONSTRUCTIVE OWNERSHIP OF MATERIAL

Upon commencement of Work, the Contractor becomes the constructive owner of the improvements, material and equipment on its specific portion of the Project site. Contractor must ensure proper safety and storage of all materials and assumes responsibility of that portion of the Project site. All risk of loss or damage shall be borne by Contractor during the Work until the date of Completion. Contractor must carry adequate insurance in case of calamity and is not entitled to rely on the insurance requirements as set forth in this agreement as being adequate coverage in case of calamity.

ARTICLE 7

7.1 CHANGES

7.1.1 No Changes Without Authorization

There shall be no change whatsoever in the drawings, specifications, or in the Work, without an executed Change Order, Partial Change Order, Construction Directive, Compromise, or order by the Architect for a minor change in the Work as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District has authorized same and the cost thereof approved in writing by a signed Change Order, signed Partial Change Order, signed Construction Directive, or signed Compromise. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted in writing in a signed Change Order, signed Partial Change Order, signed Construction Directive, and/or signed Compromise. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications. Notwithstanding anything to the contrary in this Article 7, all Change Orders, Partial Change Orders, Construction Directives, and/or Compromises, shall be prepared and issued by the Project Manager, and approved by the Architect and Inspector of Record, and signed by the District's Vice Chancellor for Fiscal Services (if within the delegated authority) or the Board if the amount is in excess of the Vice Chancellor for Fiscal Services delegated authority. Contractor waives any claim of additional compensation for such additional work performed and/or additional time that is not in compliance with this Article.

Should any Change Order, Partial Change Order, Construction Directive, and/or Compromise result in an increase in the Contract Price, the cost of such Change Order, Partial Change Order, Construction Directive, and/or Compromise shall be agreed to, in writing, in advance by Contractor and District. In the event that Contractor proceeds with any change in Work without first notifying District and obtaining the District's written approval of a Change Order, Partial Change Order, Construction Directive, and/or Compromise, Contractor waives any claim of additional compensation and/or additional time for such alleged additional work.

Contractor understands, acknowledges, and agrees that the reason for this notice requirement is so that District may have an opportunity to analyze the work and decide whether the District shall proceed with the change or alter the Project so that such change in the Work becomes unnecessary.

7.2 CHANGE ORDERS ("CO") & PARTIAL CHANGE ORDERS ("PCO")

A CO is a written instrument prepared by the Project Manager with input from the Architect and signed by the District (either the Vice Chancellor for Fiscal Services or the District's Governing Board), the Contractor, the Architect, and the Riverside County stating their complete agreement upon all of the following:

(a) A description of a change in the Work;
(b) The amount of the adjustment in the Contract Sum, if any; and
(c) The extent of the adjustment in the Contract Time, if any.

A PCO is a written instrument prepared by the Project Manager with input from the Architect and signed by the District (either the Vice Chancellor for Fiscal Services or the District's Governing Board), the Contractor, the Architect, and the Riverside County (Planning and Engineering Department) stating their agreement in part upon any of the following:

(a) A description of a change in the Work;
(b) The amount of the adjustment in the Contract Sum, if any; and
(c) The extent of the adjustment in the Contract Time, if any.

7.3 CONSTRUCTION DIRECTIVES & COMPROMISES

7.3.1 Definition

A Construction Directive and/or Compromise is a written order prepared by the Project Manager and signed by the District's Vice Chancellor for Fiscal Services, Contractor and the Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The District may so order, without invalidating the Contract, changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions within. If applicable, the Contract Sum and Contract Time will be adjusted accordingly. A Constructive Directive may also be issued that states that no change in price or time is warranted. Contractor shall immediately comply with such a directive. However, if Contractor believes such directive does warrant a change in price and/or time, Contractor agrees to pursue relief via the change order and partial change order provisions of this Article and if still unresolved, then to pursue relief pursuant to Article 4.5 through 4. 5.10 of these General Conditions. In the case of a Construction Directive being issued, Contractor must commence Work immediately or delays from failure to perform pursuant to the Construction Directive shall be the responsibility of the Contractor.

7.3.2 Used to Direct Contractor

A Construction Directive shall be used in the absence of agreement on the terms of a CO, PCO or Compromise. A copy of a proposed form is provided at the end of this Article.

7.4 REQUEST FOR INFORMATION ("RFI")

7.4.1 Definition

An RFI is a written request prepared by the Contractor requesting the Architect to provide additional information necessary to clarify or amplify an item that the Contractor believes is not clearly shown or called for in the drawings or specifications, or to address problems that have arisen under field conditions.

7.4.2 Scope

The RFI shall reference all the applicable Contract Documents including specification section, detail, page numbers, drawing numbers, and sheet numbers, etc. The Contractor shall make suggestions on how to resolve, and interpretations of the issue raised, by the RFI. An RFI cannot modify the Contract Cost, Contract Time, or the Contract Documents.

7.4.3 Response Time

The Contractor must submit and RFI sufficiently in advance of when the Work related thereto is scheduled to begin in order to provide the District and the Architect with sufficient time to respond to the RFI after receiving the RFI and before such Work is then currently scheduled to be performed. If the Architect's response results in a change in the Work, then such change shall be effectuated by a written CO, PCO, or Construction Directive, if appropriate. If the Architect cannot respond to an RFI within a reasonable time, the Contractor, upon receiving a Construction Directive from the Project Manager, must commence Work immediately or the delays and costs related to failure to perform shall be the responsibility of the Contractor. Costs and/or time related to this work will be resolved initially pursuant to Section 7.7, and if not resolved thereby, then by the dispute resolution process set forth in these General Conditions. If the Architect cannot respond to the RFI within a reasonable time, not to exceed ten (10) working days, the Architect shall notify the Contractor, with a copy to the Inspector and the District, of the amount of time that will be required to respond as defined in Division 1, General Requirements.

7.4.4 Costs Incurred

The Contractor shall be responsible for any costs incurred for professional services, which shall be deducted from the next progress payment, if an RFI requests an interpretation or decision of a matter where the information sought is equally available to the party making such request. District, at its sole discretion, shall invoice Contractor for all such professional services arising from this Article and Contractor shall immediately pay same to the District. If not immediately paid, the District will back charge and/or off set against any monies in the Contract and/or held as retention the cost thereof.

7.5 REQUEST FOR PROPOSAL ("RFP")

7.5.1 Definition

An RFP is a written request prepared by the Project Manager requesting the Contractor to submit to the District, Project Manager and the Architect an estimate of the effect of a proposed change to the Contract Price and/or the Contract Time.

7.5.2 Scope

An RFP shall contain adequate information, including any necessary drawings and specifications, to enable Contractor to provide the cost breakdowns required by Article 7.7. The Contractor shall not be entitled to any additional compensation for preparing a response to an RFP, whether ultimately accepted or not.

7.6 CHANGE ORDER REQUEST ("COR")

7.6.1 Definition

A COR is a written request prepared by the Contractor requesting that the District and the Architect issue a CO based upon a proposed change called for in an RFP.

7.6.2 Changes in Price

A COR shall include breakdowns per Article 7.7 to validate any change in Contract Price due to proposed change.

7.6.3 Changes in Time

A COR shall also include any additional time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Project Schedule as defined in 3.7.1, Contractors Construction Schedule, Requirements of the General Contract. Any changes in time will be granted only if there is an impact to a critical path activity. If Contractor fails to request a time extension in a COR, then the Contractor is thereafter precluded from requesting or claiming a delay.

7.7 COST OF CHANGE ORDERS ("CO"), PARTIAL CHANGE ORDERS ("PCO") AND/OR COMPROMISES

7.7.1 Scope

Within ten (10) days after a request is made for a change that impacts the Contract Sum as defined in Contract Documents, the critical path, or the Contract Time, the Contractor shall provide the District, Project Manager and the Architect, with a written estimate of the effect of the proposed change order upon the Contract Sum and the actual cost of construction, which shall include a complete itemized cost breakdown of all labor and material showing actual quantities, hours, unit prices, and wage rates required for the change, and the effect upon the

Contract Time of such proposed change order. Changes may be made by District by an appropriate written CO, PCO, Compromise, or, at the District's option, such changes shall be implemented immediately upon the Contractor's receipt of an appropriate written Construction Directive.

Where the District and the Contractor cannot agree in full on a Change Order Request, but agree in part, the Project Manager shall prepare a PCO reflecting the extent of the Contractor's and District's agreement and the Contractor shall then proceed with the change as reflected therein. There is no need for the Contractor to reserve any rights to the balance of the proposed change order request not agreed to as the Contractor's sole remedy in that event is to immediately proceed with the filing of a Dispute/Claim under Article 4.5

District may, as provided by law and without affecting the validity of this Agreement, order changes, modification, deletions and extra work by issuance of written CO, PCO, Compromise, or Construction Directive from time to time during the progress of the Project, contract sum and/or time being adjusted accordingly. All such work shall be executed under conditions of the original Agreement except that any extension of time caused thereby shall be adjusted at time of ordering such change. District has discretion to order changes on a "time and material" basis with adjustments to time made after Contractor has justified through documentation the impact on a critical path of the Project.

7.7.2 Determination of Cost

The amount of the increase or decrease in the Contract Price from a CO, PCO, Compromise, or Construction Directive, if any, shall be determined in one or more of the following ways as applicable to a specific situation:

A. If the change in or addition to the Work will result in an increase in the contract sum, the Project Manager shall have the right to require the performance thereof in any of the following ways, at their sole election:

1. By agreed unit prices, if unit prices are required by the District's bid form and provided with Contractor's bid;
2. By proposal and acceptance of an agreed upon itemized lump sum;
3. On a time and materials basis; or
4. Project Manager's estimate of the value of the change.

B. If the District and/or Project Manager elects to have the change in the Work performed on a lump sum basis, such election will be based on a lump sum proposal that shall be submitted by the Contractor within five (5) days of the Project Manager's request therefore. Request for a lump sum proposal shall not be deemed an election to have the Work performed on a lump sum basis. The Contractor's proposal shall be completely itemized and segregate the cost of work by labor, materials for the various components of the change, taxes, and equipment (no aggregate or lump sum total will be acceptable on any of the above) and shall be accompanied by like kind signed proposals of any subcontractors which will perform any portion of the change, and of any persons who will furnish materials or equipment for incorporation therein. The proposal shall also include the Contractor's estimate of the time required to perform said changes or additional work. Costs of preparing the proposal shall not be compensable.

C. The term "extra work" as used shall mean actual costs incurred by the Contractor and each Subcontractor regardless of tier involved, and shall be limited to the following (to the extent the Contractor demonstrates that they were actually incurred):

1. Actual straight-time wages of salaries for employees employed at the Project site, or at fabrication sites off Project site, in the direct performance of the extra work. Wages shall be based on verified prevailing wage rates for the area and job classification or verified collective bargaining agreements for the area.
2. Actual Fringe Benefits and Payroll Taxes for employees employed at the Project site, or at fabrication site off the Project site, in the direct performance of the extra work. Benefits and Taxes

   shall be based on verified prevailing wage rates for area and job classification or verified collective bargaining agreements for area.
3. Actual Overtime wages or salaries specifically authorized in writing by the District or Project Manager, for employees employed at the Project site, or at fabrication sites off Project site, in the direct performance of the extra work. Wages shall be based on verified prevailing wage rates for area and job classification or verified collective bargaining agreements for area.
4. Actual Overtime Fringe Benefits and Payroll Taxes specifically authorized in writing by the District or Project Manager, for employees employed at the Project site, or at fabrication sites off Project site, in the direct performance of the extra work. Wages shall be based on verified prevailing wage rates for area and job classification or verified collective bargaining agreements for area.
5. Itemized costs of Materials and consumable items, which are furnished and incorporated into the extra work, as approved by the District or Project Manager. Such costs shall be charged at the lowest price available to the Contractor or its subcontractors. In no event shall such costs exceed verified competitive costs obtainable from other contractors, subcontractors, suppliers, manufacturers, and/or distributors in the area of the project site. All discounts, rebates, and refunds and all returns from sale of surplus, materials and consumable items shall accrue to the Project Manager and Contractor shall make provisions so that they may be obtained.
6. Sales taxes on the costs of materials and consumable items, which are incorporated into and used in the performance of the Extra Work. In no case shall the sales taxes exceed the amount required by the Project location.
7. Rental charges for necessary machinery and equipment, whether owned or hired, as authorized in writing by the District or Project Manager, exclusive of hand tools, used directly in the performance

of the Extra Work. Such rental charges shall in no case exceed the current California Department of Transportation's published equipment rental rates for the area of the Project. The charges for the equipment shall be for the actual time of use and shall not be subjected to minimum hourly charges without the approval of the Project Manager.

8. Actual additional costs of royalties and permits if required due to the performance of the Extra Work.

9. The cost of for all insurances required, including but not limited to general liability, auto, and workers compensation, and Bonds shall not exceed one percent (1%).

E. The term Contractor Fee shall mean the full amount of compensation, both direct and indirect (including without limitation all overhead and profit), to be paid to the Contractor for its own Work and the Work of all Subcontractors, for all expenses not included in the Cost of Extra Work, whether or not such costs and expenses are specifically referred to in D above. The Contractor Fee shall not be compounded. The Fee shall be calculated on pre marked up costs. The Contractor Fee shall be computed as follows:

1. Fifteen percent (15%) of the cost of that portion of the Extra Work to be performed by the Contractor with its own forces.

2. Fifteen percent (15%) of the cost of that portion of the Work to be performed by a subcontractor with its own forces, plus five percent (5%) for the Contractor.

3. Total combined Contractor and Subcontractor Fee shall not exceed twenty percent (20%) regardless of how many tiers of Subcontractors may be involved. If more than one tier of Subcontractors are involved, than the Subcontractor Fifteen percent (15%) shall be divided between all such Subcontractor tiers as the Contractor deems appropriate.

F. For work to be deleted, the reduction of the Contract sum shall be computed on the basis of one of the following:

1. By agreed unit prices, if unit prices are required by the District's bid form and provided with Contractor's bid;
2. By proposal and acceptance of an agreed upon itemized lump sum; or
3. On a time and materials basis; or
4. Project Manager's estimate of the value of the change.

G. In the event any one Change involves both Extra Work and Deleted Work in the same portion of the Work, the Contractor Fee will not be allowed if the deductive cost exceeds the additive cost. If the additive cost exceeds the deductive cost, the Contractor Fee will be allowed only on the difference between the two.

H. If the District and/or the Project Manager elects to have the change in the Work performed on a time and material basis, the same shall be performed, whether by the Contractor's forces or the forces of any of its subcontractors or sub-subcontractors, at actual costs to the entity or entities performing the change in the Work (without any charge for administration, clerical expense, supervision or superintendence of any nature whatsoever, including foremen, or the costs of use or rental of tools or plant). No other mark-ups shall be allowed hereunder. The Contractor shall submit to the Project Manager verified daily detailed and accurate records itemizing each element of cost and shall provide substantiating records and documentation, including time cards and paid invoices. Tickets, to include the identification number assigned to the change in the Work, the location and description of the change in the Work, the classification of labor employed (and names and social security numbers), the material used, the equipment rented (not tools) and such other evidence of cost as the Project Manager may require. The District and/or Project Manager may require authentication of all time and material tickets and invoices by persons designated by the Project Manager for such purpose. The failure of the Contractor to secure any required authentication shall, if the District and/ Project Manager elects to treat it as such, constitute a waiver by the Contractor of any claim for the cost of that portion of the change in the Work covered by a non-authenticated ticket or invoice; provided, however, that the authentication of any such ticket or invoice by the District shall not constitute an acknowledgment by the District that the items thereon

were reasonably required for the change in the Work. Such records and documentation shall be submitted to the Project Manager on a daily basis.

I. No overhead and profit will be paid by the District on account of a change in the Work except as specifically provided in this section. Overhead and Profit shall be deemed to include all costs and expenses, including site overhead and home office overhead, which the Contractor or any of its subcontractors may incur in the performance of the change in the Work and which are not otherwise specifically recoverable by them pursuant to this Article.

7.7.3 Format for Proposed Cost Change

The following requirements format shall be used as applicable by the District and the Contractor to communicate proposed additions and deductions to the Contract.

- Material (attach itemized quantity and unit cost plus sales tax)
- Labor (attach itemized hours and rates)
- Equipment (attach invoices)
- If Subcontractor performed Work overhead and profit not to exceed fifteen percent (15%).
- General Contractor's Overhead and Profit: Not to exceed fifteen percent (15%) for Contractor self-performed work. Not to exceed five percent (5%) mark-up for work performed by Subcontractor. If work was performed by Contractor and Subcontractors, cumulative mark-up shall not exceed a cumulative total of twenty percent (20%).
- Liability and Property Damage Insurance, Worker's, Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed as follows: FICA @ **6.2%**- with a wage ceiling of $84,900; Medicare @ **1.45%**- no wage ceiling; FUTA @ **.8%**- with a wage ceiling of $7,000; ETT and SUI @ **2.3%**- with a wage ceiling of $7,000; Workers' Compensation @ **5.94%**; Liability and Property Damage @ **2.5%**. {With OCIP, only offsite Worker's Compensation and liability is allowable and Contractor's personal property}**Total not-to-exceed is 19.19%.** (*Note: Modifications to these percentages will be evaluated and possibly modified only on a case-by-case basis and only after proper proof of alternate percentages are documented and approved in advance. In addition, as wage ceilings are met, those corresponding percentages must drop from the "burden" calculations).*
- Bond not to exceed one percent (1%)

- **Schedule Impact (Time)**

The undersigned Contractor approves the foregoing Change Order, Partial Change Order, Compromise, or Construction Directive as to the changes, if any, and the contract price specified for each item and as to the extension of time allowed, if any, for completion of the entire work on account of said Change Order, Partial Change Order, Compromise, or Construction Directive, and agrees to furnish all labor, materials and service and perform all work necessary to complete any additional work specified therein, for the consideration stated herein. It is understood that said Change Order, Partial Change Order, Compromise, or Construction Directive, shall be effective only when approved as stated in these General Conditions.

It is expressly understood that the value of such extra Work or changes, as determined by any of the aforementioned methods, expressly includes any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project which shall exclude Contractor and their subcontractor's cost of insurance. Any costs, expenses, damages or time extensions not included are deemed waived.

The Contractor expressly acknowledges and agrees that any change in the Work performed shall not be deemed to constitute a delay or other basis for claiming additional compensation based on theories including, but not limited to, acceleration, suspension or disruption to the Project.

Time and Material Added Work. Notwithstanding the failure of the District and the Contractor to agree as to the cost of the proposed change order, the Contractor, upon written order from the District, shall proceed immediately with the changed work. A Construction Directive (CD) signed by the District shall be used for this written order. At the start of each day's work on the change, the Contractor shall notify the Project Manager and Inspector of Record in writing as to the size of the labor force to be used for the changed work and its location. Failure to so notify may result in the non-acceptance of the costs for that day. At the completion of each day's

work, the Contractor shall furnish to the Project Manager a detailed summary of all labor, materials, products, equipment, apparatus, and the like, employed in the changed work. The Project Manager will compare his/her records with Contractor's daily summary and may make any necessary adjustments to the summary. After the Project Manager and the Contractor agree upon and sign the daily summary, the summary shall become the basis for determining costs for the additional work. The sum of these costs when added to an appropriate mark-up will constitute the payment for the changed work. The District, however, may make subsequent adjustments, based on later audits. When changed work is performed at locations away from the job site, the Contractor shall furnish in lieu of the daily summary, a summary submitted at the completion of the work containing a detailed statement of labor, materials, products, equipment, apparatus, and the like, used in the work. This latter summary shall be signed by the Contractor who shall certify thereon under penalty of perjury that the information is true, and the costs are as covered in the Contract Documents. If changed work is to be paid on the basis of time and materials, a credit for deleted contract work shall be included and deducted from the total cost of the work before mark ups are added. Mark-up shall be as covered in the Contract Documents.

The Contractor shall maintain and furnish, on demand of the District, itemized statements of cost from all vendors and subcontractors who perform changed work or furnished materials and equipment for such work. The vendors and the subcontractors must sign all statements.

7.7.4 Deductive Change Orders

All deductive Change Order(s) must be prepared pursuant to Contract Documents. Contractor will be allowed a maximum of 5% total profit and overhead. If subcontractor work is involved, subcontractors shall be entitled to a maximum of 5% profit and overhead on the deducted work. Any deviation from this Article shall not be allowed.

7.7.5 Discounts, Rebates, and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials, products, equipment, apparatus, and the like, shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omissions in the Work as provided herein.

7.7.6 Accounting Records

With respect to portions of the Work performed by Change Order, Partial Change Order, Compromise, or Construction Directive, on a time-and-materials, unit-cost, or similar basis, the Contractor shall keep and maintain cost-accounting records satisfactory to the District, which shall be available to the District on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents. Any Contractor or Contractor's Subcontractor MUST notify the Project Manager before each day of time and material commencement and again at the completion. All time and material tickets must be presented to the Project Manager daily for signature for verification of work performed and time. Project Manager MUST verify all time and material work and will not sign the time and material ticket if the Contractor or their Subcontractor has not properly notified the Project Manager, as stated above. All claims shall follow the same procedure, as noted above.

7.7.7 Notice Required

If the Contractor desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the Contract Documents and this Article. No claim shall be considered unless first made in accordance with this subArticle. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. A Change Order, Partial Change Order, Compromise, or Construction Directive shall authorize any change in the Contract Price or extension of the Contract Time resulting from such claim.

7.7.8 Applicability to Subcontractors

Any requirements under this Article 7 shall be equally applicable to any Change Order, Partial Change Order, Compromise, or Construction Directive, issued to Subcontractors by the Contractor to the same extent required by the Contractor.

7.7.9 Alteration to Change Order, Partial Change Order, Compromise, or Construction Directive Change Order Language

Contractor shall not alter or reserve time in a Change Order, Partial Change Order, Compromise, or Construction Directive, as all rights are reserved and subject to the dispute resolution process set forth in Articles 4.5 through 4.5.10. Contractor shall execute all agreed to Change Orders, and/or execute all Partial Change Orders, Compromises, or Construction Directives, to the extent Contractor agrees therewith, and then proceed under Article 4.5 with proper notice. If Contractor intends to reserve time, without an approved CPM schedule prepared pursuant to the Contract Documents then Contractor may be prosecuted pursuant to the False Claim Act.

[Forms are found on the following pages]

CONSTRUCTION DIRECTIVE No. 00

Project:	Date:
Owner:	Project No.:
Project Manager:	File No.:
	SBCCD File No.:
Architect:	

DESCRIPTION OF WORK TO BE PERFORMED:

Narrative:

Attachment(s):
Reason:
Code Legend:
Initiated By:

ACTION TO BE TAKEN:

☐ **Action 1.:** Make the described change in work at no change in the contract sum and no change in the contract time of completion.

☐ **Action 2.:** Promptly advise the Architect as to the credit or cost proposed for the described change. This is not an authorization to proceed with the change.

☐ **Action 3.:** In order to expedite the work and avoid or minimize delays in the work, which may affect Contract Sum or Contract Time, the Contract Documents are hereby amended as described above. Proceed with this work promptly, on a time and material basis, not to exceed **$ dollars and 00/100** Refer to Articles 7 and 7.7.6 of the General Conditions.

☐ **Action 4.:** In order to expedite the work and avoid or minimize delays in the work, which may affect Contract Sum or Contract Time, the Contract Documents are hereby amended as described above. Proceed with this work promptly. Submit costs for the work involved and change in contract time (if any). Work shall be carried out in accordance with Article 7 of the General Conditions unless noted otherwise.

☐ **Action 5.:** The Contract Time is proposed to (be adjusted) (remain unchanged). The proposed adjustment, if any, is an increase of N/A days) (a decrease of N/A days).

APPROVALS:

Architect:

By: Date:

Project Manager:

By: Date:

Owner:

By: Date:

Contractor:

By: Date:

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
Capital Facilities Program Management

Project Number

CHANGE ORDER/PARTIAL CHANGE ORDER

Original Contract Amount:	**$0.00**
Amount of Previous Contract Amendments:	**$0.00**
Amount of Previous Change Orders:	**$0.00**

School Name: _____ Date: _____

Project Description: _____ Contract No.: _____

To (Contractor): _____ Attn: _____

You are hereby directed to make the following changes in the above reference contract for:

Item No.: **Refer to attachments** Reference RFP No.**Refer to attachments**

Description of Work:

Refer to attached Project Memo No.
Contract Change Order No. : Item 1.1 - 1.9.

TOTAL COST of CONTRACT CHANGE ORDER : **$0.00**

Reason for Change:

Site Cost, Unforeseen Field Condition
Site Cost, Error And/or Omission
Building Cost, District Added or Deleted/Reduced Scope

Initiator of Change:

Contractor Request for Information

The original Base Contract Sum was:	**$0.00**
Net change by previous authorized Contract Amendment(s):	**$0.00**
The contract AMOUNT due to **C.O. No.** will be **increased** by:	**$0.00**
The revised BASE Contract Sum:	**$0.00**
Net change by previous authorized Change Order(s):	**$0.00**
The Contract Sum including previous authorized Change Orders:	**$0.00**
The revised Contract Amount, including this Contract Change Order is, therefore:	**$0.00**
The contract TIME due to **C.O. No.** will be **increased** by:	**0** calendar days.
The revised Contract Completion Date, including this Contract Change Order is, therefore	

SBCCD Change Order No. _____ includes Item Number(s): **1.1 through 1.9**

This Contract Change Order is not valid until signed by both the Architect and the District Representative (on behalf of the San Bernardino Community College District Board of Education)

Contractor's signature indicates agreement herewith, including any adjustment in the contract amount or contract time.

I have reviewed the figures submitted by the Contractor and they have been reviewed by the District, I believe this request is valid and recommend your approval for acceptance.

	Signature	Name (printed)	Date
Architect:		Project Architect	
.:		Project Manager	
District:		Vice Chancellor Fiscal Services	
Contractor:		Project Manager	
		Printed Name/Title	

State of California - Division of the State Architect Application No. _____ File No. _____

Approved _____ per Principal Structural Engineer: _____

San Bernardino Community College

ALLOWANCE DISBURSEMENT AUTHORIZATION

School Name:		Date:	
Project Name:		Allowance Disbursement No.:	
To: (PM/CM)		Project Number:	
From: (Contractor)		Contract Number:	

Descption of Item to be changed to Contract allowance is as follows:

Provide information on desciption and dollar values in this area

A. Original Contract Allowance	$ -
B. Net Allowance Disbursement previously authorized	$ -
C. Charges to Contract Allowance as a result of this authorization	$ -
D. Current Contract Allowance Balance Remaining	$ -

Project Manager Signature	Name (Printed)	Date
Contractor Signature	Name (Printed)	Date
Architect Signature	Name (Printed)	Date
District Signature	Name (Printed)	Date
Program Manager	Name (Printed)	Date

ARTICLE 8

8.1 DEFINITIONS

8.1.1 Contract Time

Contractor shall perform and complete all Work under this Contract within the time period specified in the Agreement Form. Moreover, Contractor shall perform its Work in strict accordance with any completion schedule, construction schedule or Project milestones developed pursuant to the provisions of the Contract including, but not limited to the Project Schedule set forth in the Specifications, if applicable.

8.1.2 Notice to Proceed

District may give a notice to proceed within three (3) months of the award of the bid by District. Once Contractor has received the notice to proceed, Contractor shall complete the Work in the period of time referenced in the Contract Documents.

In the event that District desires to postpone the giving of the notice to proceed beyond this three-month period, it is expressly understood that with reasonable notice to the Contractor, the giving of the date to proceed may be postponed by District. It is further expressly understood by Contractor, that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the giving of the notice to proceed

If the Contractor believes that a postponement will cause a hardship to Contractor, Contractor may terminate the contract with written notice to District within 10 days after receipt by Contractor of District's notice of postponement. It is further understood by Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement. Should Contractor terminate the contract as a result of a notice of postponement, District shall have the authority to award the contract to the next lowest responsible bidder.

8.1.3 Computation of Time

The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

The Contractor will only be allowed a time extension for unusually severe weather if it results in precipitation or other conditions, which in the amount, frequency, or duration is in excess of the norm at the location and time of year in question as established by NOAA weather data. No less than 22 calendar days will be allotted for in the Contractor's schedule. The weather days shall be shown on the schedule and if not used will become float for the Project's use. If the weather is unusually severe in excess of the NOAA data norm and prevents the Contractor from beginning work at the usual daily starting time, or prevents the Contractor from proceeding with seventy-five (75%) of the work force for the critical path activities for a period longer than four hours. Based on the approved baseline schedule contractor shall document workforce, schedule activities, weather report and daily reports, submit to Project Manager for approval. Upon completion of review and approval by the Project Manager/District, will designate such time as unavoidable delay and grant one (1) calendar-day extension. Weather delay will only grant time extension, no additional cost.

Normal weather conditions shall be considered and included in the planning and scheduling of all work influenced by high or low ambient temperatures and/or precipitation to ensure completion of all work within the Contract Time.

Time extensions for unusually severe weather: This provision specifies the procedure for determination of time extensions for unusually severe weather. The listing below defines the monthly anticipated adverse weather in work days to be used for the Contract Period.

Monthly anticipated adverse weather days:

January	7
February	7
March	7
April	5
May	3
June	1
July	0
August	1
September	1
October	3
November	4
December	5

The above schedule of anticipated adverse weather will constitute the base line for monthly weather evaluations. Upon acknowledgment of the Notice to Proceed, and continuing throughout the Contract, actual adverse weather days will be recorded on a work day basis and compared to the monthly anticipated adverse weather days listed above.

The number of actual adverse weather delays shall be calculated chronologically from the Notice to Proceed date for 365 calendar days. The term "actual adverse weather days" means the Work, critical to the timely completion of the Project, is prevented for 60% or more of the Contractor's work day. The Project Manager will convert any qualifying delays to calendar days on an annual basis. If the number of actual adverse weather days, for each year or portion thereof, exceeds the number of anticipated adverse weather days, an equitable adjustment in calendar days to the Contract performance period will be made.

8.2 HOURS OF WORK

8.2.1 Sufficient Forces

Contractors and Subcontractors shall continuously furnish sufficient forces to ensure the prosecution of the Work in accordance with the Construction Schedule.

8.2.2 Performance During Working Hours

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies.

8.2.3 Costs for After Hours Inspections:

If the Work done after hours is required by the Contract Documents and the required work is to be done outside the Inspector's regular working hours of Monday through Friday 7:00am – 4:00pm, the costs of any after hour inspections, shall be borne by the Contractor. If the District allows the Contractor to do Work outside regular working hours for the Contractor's convenience, the costs of any inspections required outside regular working hours shall be invoiced to the Contractor by the District and deducted via Change Order, Partial Change Order, Compromise, or Construction Directive.

If the Contractor elects to perform Work outside the Inspector's regular working hours, costs of any inspections required outside regular working hours shall be invoiced to the Contractor by the District and deducted via Change Order, Partial Change Order, Compromise, or Construction Directive.

8.3 PROGRESS AND COMPLETION

8.3.1 Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work. The Contractor shall, to the fullest extent possible, carry on the various classes or parts of the Work concurrently, and shall not defer construction of any portion of the Work in favor of any other portion of the Work. The Contractor shall staff the project as directed by the District and/or Project Manager to ensure completion of activities within original durations allowed in the Final Baseline Schedule produced by the Contractor.

8.3.2 No Commencement without Insurance

The Contractor shall not commence operations on the Project or elsewhere before the effective date of insurance and bonds required by Article 11. The date of commencement of the Work shall not be changed by the effective date of such insurance. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District claim for damages.

8.3.3 Expeditious Completion

The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time, time being of the essence under this Contract. The Contractor shall furnish such manpower, materials, products, facilities, equipment, apparatus, utilities, transportation, and the like, and shall work such hours, including night shifts, overtime operations, Sundays and holidays as may be necessary to insure the prosecution and completion of the Work in accordance with the Final Baseline schedule. If work on a critical path is seven days or more behind the currently updated schedule, and it becomes apparent from the current schedule that the Work will not be completed within the Contract Time, the Contractor will implement whatever steps it deems necessary to make up all lost time. If the actions take are not successful, the Contractors will make further attempts using the following sequence of events:

A. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities.

B. If the above cannot be achieved then;

1. The Contractor shall increase manpower in such quantities and crafts as will substantially eliminate, In the judgment of the District/Project Manager, the backlog of work; or increase the number of working

hours, shifts per working day, working days per week or the amount of equipment or any combination of the foregoing sufficiently to substantially eliminate in the judgment of the District/Project Manager the backlog of work.

2. In addition, the District/Project Manager may require the Contractor to submit a recovery schedule demonstrating its program and proposed plan to make up a lag in scheduled progress and to ensure completion of the Work within the Contract Time. If the actions taken by the Contractor are unsatisfactory, the Project Manager may require the Contractor to take any of the actions set forth in the previous Article without additional cost to the Project Manager and/or District to make up the lag in scheduled progress.

Failure of the Contractor to comply with the requirements of this Section shall be considered grounds for a determination by the District/Project Manager that the Contractor is failing to prosecute the Work with such diligence as will ensure its completion within the time specified.

8.4 EXTENSIONS OF TIME – LIQUIDATED DAMAGES

8.4.1 Liquidated Damages: Not applicable unless set forth in the Supplemental Conditions or Contract Agreement form.

8.4.2 Excusable Delay:

Contractor shall not be charged damages because of any delays in completion of Work that are not the fault or negligence of Contractor or its subcontractors, including acts of God, as defined in Public Contract Code section 7102, acts of enemy, epidemics and quarantine restrictions. Contractor shall within three (3) calendar days of beginning of any such delay notify District in writing of causes of delay; thereupon District shall ascertain the facts and extent of delay and grant extension of time for completing Work when, in its judgment, the findings of fact justify such an extension. Extensions of time shall apply only to that portion of Work affected by delay, and shall not apply to other portions of Work not so affected. An extension of time may only be granted after proper compliance with Article 3.7 requiring preparation and submission of a properly prepared CPM schedule.

No extended overhead, general conditions costs, impact costs, out-of-sequence costs or any other type of compensation, by any name or characterization, shall be paid to the Contractor for any delay to any activity not designated as a critical path item on the latest approved Project schedule.

The Contractor shall notify the Project Manager in writing of any anticipated delay and its cause, in order that immediate steps may be taken to prevent, if possible, the occurrence or continuance of delay, and may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work might be delayed thereby.

In the event the Contractor requests an extension of Contract time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in work. When requesting time, i.e., extensions, for proposed Change Order, Partial Change Order, Compromise, or Construction Directive, they must be submitted with the proposed change order with full justification and documentation. If the Contractor fails to submit justification with the proposed change order it waives its right to a time extension at a later date. Such justification must be based on the official Contract schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the scope of work. The justification must include, but is not limited to, the following information:

(a) The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform these activities within the stated duration.

(b) Logical ties to the project schedule for the proposed changes and/or delay showing the activity/activities in the schedule whose start or completion dates are affected by the change and/or delay. (A fragment of any delay of over ten (10) days must be provided.)

The Contractor and District understand and expressly agree that insofar as Public Contract Code Section 7102 may apply to changes in the Work or delays under this contract, the actual delays and damages, if any, and

time extensions are intended to, and shall provide, the exclusive and full method of compensation for changes in the Work and construction delays.

8.4.3 Notice by Contractor Required

The Contractor shall within three (3) calendar days of beginning of any such delay notify the District in writing of causes of delay with justification and supporting documentation. District will then ascertain the facts and extent of the delay and grant an extension of time for completing the Work when, in its judgment, the findings of fact justify such an extension. Extensions of time shall apply only to that portion of the Work affected by the delay and shall not apply to other portions of the Work not so affected. The sole remedy of Contractor for extensions of time under Article 8.4.2 shall be an extension of the Contract Time at no cost to the District.

Claims relating to time extensions shall be made in accordance with applicable provisions of Article 7 and then Articles 4.5 through 4.5.10.

8.4.4 No Additional Compensation for Delays within Contractor's Control

Contractor is aware that governmental agencies, such as the department of general services, gas companies, electrical utility companies, water districts and other agencies may have to approve Contractor prepared drawings or approve a proposed installation. Contractor has included delays and damages which may be caused by such agencies in Contractor's bid. Thus, Contractor is not entitled to make claim upon the District for damages or delays arising from the delays caused by such agencies. Furthermore, the Project has been scheduled for such delays and is not entitled to an extension of time for delays caused by governmental agencies which Contractor must obtain approvals from and, thus, Contractor is not entitled to an extension of time.

Contractor shall only be entitled to compensation for delay when the following conditions are met: (1) the District is responsible for the delay; (2) the delay is unreasonable under the circumstances involved; and (3) the delay was not within the contemplation of District and Contractor.

ARTICLE 9

9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents.

9.2 COST BREAKDOWN

9.2.1 Required Information

On forms approved by the Project Manager, the Contractor shall furnish the following:

(a) Within ten (10) calendar days of the award of the Contract, a detailed breakdown of the Contract Price (hereinafter "Schedule of Values"). The Schedule of Values to conform to the following format:

Site: (if applicable) – No single line item shall exceed 10% of the total contract value.
Specification Section
Material
Labor

Building: (if applicable) No single line item shall exceed 10% of the total contract value.
Specification Section (by floor)
Material
Labor
Equipment

Overall Schedule of Value:

Submittals (Design): 10%
Permit (Design): 15%
Construction: 65%
Punchlist: 5%
Closeout: 5%

(b) Within ten (10) calendar days of the award of the Contract, a schedule of estimated monthly payment requests due the Contractor showing the values and construction time of the various portions of the Work to be performed by it and by its Subcontractors or material and equipment suppliers containing such supporting evidence as to its correctness as the District may require;

(c) Within ten (10) days of the award of the Contract, the name, address, telephone number, telecopier number, email address, California State Contractors License number, classification, and monetary value of all Subcontracts for parties furnishing labor, material, or equipment for completion of the Project.

9.2.2 Approval Required

The Project Manager and the Architect shall review all submissions received pursuant to Article 9.2.1 in a timely manner. The Project Manager and the Architect must approve all submissions before becoming the basis of any payment.

9.3 PROGRESS PAYMENTS

9.3.1 Payments to Contractor

Unless the District has designated this Project as "Substantially Complex" by a finding of the Governing Board which is set forth in the Supplemental Conditions for this Project, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as certified by Architect and Inspector, reviewed by the Project Manager, and verified by Contractor) up to the last day of the previous month, less the aggregate of previous payments. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in said estimate shall operate to release the Contractor, or any surety upon any bond, from damages arising from such Work, or from the District's enforcement of each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment or payment made pursuant thereto.

If Contractor refuses or fails to proceed as directed by the District concerning the Work, or any portion thereof, the District shall back charge the Contractor or withhold from the Contractor's progress payment (and if none remain, then from the Retention) an amount sufficient to protect the District from any and all costs associated therewith. Contractor shall be entitled to receive any remaining amount due on such a progress payment, if any, that has been properly submitted and supported. If the District intends to back charge the Contractor or withhold from the Contractor's progress payment (and if none remain, then from the Retention) an amount sufficient to protect the District from any and all costs associated with Contractor's refusal or failure to proceed as directed by the District concerning the Work, then the District shall, at the time of such withhold and/or back charge provide to the Contractor written notification of doing so. The District's notice shall state the reasons why the withhold and/or back charge is being made, shall state the amount to be withheld and/or back charged, and shall also contain a calculation showing the Contractor how the District has arrived at the amount of the withhold and/or back charge.

Notwithstanding anything to the contrary stated above, the Contractor may include in its Request for Payment the value of any structural steel, mail order materials, G.F.R.C. panels and other such custom-made materials prepared specifically for the Project and unique to the Project so long as all of the following requirements are satisfied:

(a) The aggregate cost of materials stored off-site shall not exceed Contractor's actual costs less profit at any time without the written approval of the District to be given or withheld in the District's sole discretion;

(b) Title to such materials shall be vested in the District as evidenced by documentation satisfactory in form and substance to the District, including, without limitation, recorded financing statements, UCC filings and UCC searches;

(c) With Contractor Request for Payment, the Contractor shall submit to the District a written list identifying each location where materials are stored off-site (which must be a bonded warehouse) and the value of the materials at each location. The Contractor shall be responsible for the Owner Controlled Insurance Program (OCIP) deductible to cover losses for property stored on or off-site. Contractor is responsible for all costs of materials stored on or off-site in the amount not covered by the OCIP (Refer to Article 11).

(d) The consent of any Surety shall be obtained to the extent required prior to payment for any materials stored off-site;

(e) Representatives of the District shall have the right to make inspections of the storage areas at any time; and

(f) Such materials shall be (1) protected from diversion, destruction, theft and damage to the reasonable satisfaction of the District; (2) specifically marked for use on the Project; and (3) segregated from other materials at the storage facility.

9.3.2 Purchase of Materials and Equipment

The Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work, at no additional cost or advance payment from District, to assure that there will be no delays to the Work.

9.3.3 No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct any error subsequent to any payment.

9.3.4 Issuance of Certificate of Payment

The Architect and Project Manager shall, within seven (7) days after receipt of the Contractor's Application for Payment, either approve such payment or notify the Contractor in writing of the reasons for withholding approval in whole or in part as provided in Article 9.6. The review of the Contractor's Application for Payment by the Architect and Project Manager is based on the observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the Architect's and Project Manager's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to (1) an evaluation of the Work for conformance with the Contract Documents, (2) results of subsequent tests and inspections, (3) minor deviations from the Contract Documents correctable prior to completion, and (4) specific qualifications expressed by the Architect and Project Manager. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified.

If the Architect and Project Manager intend to deny any progress payment, in whole or in part, then within seven (7) days after receipt of the Contractor's Application for Payment, the Architect and Project Manager must notify the Contractor in writing of the reasons for the withholding as provided in Article 9.6; and the notice shall state the reasons why each portion of the Application for Payment is being denied so that the Contractor is expressly informed what it needs to do to properly support the Application for Payment. Subject to any back charges and/or with holds, all properly supported portions of a Contractor's Application for Payment will be paid within thirty (30) days of receipt thereof.

9.4 APPLICATIONS FOR PROGRESS PAYMENTS

9.4.1 Procedure for Submitting Applications for Payment

On or before the 25th of each calendar month, during the progress of the portion of the Work for which payment is being requested, the Contractor will forward a draft billing for the Project Manager's approval indicating the percentages representative of the work installed with all backup and supporting documents, such back up and support shall include, but not be limited to: all documents that support all labor, materials, products, equipment, apparatus, and the like; a list of all subcontractors, sub-subcontractors, and suppliers that have furnished labor, materials, products, equipment, apparatus, and the like, to the Project during the period of time reflected in the Application for payment; all required construction schedules and updates thereto, any required schedules of values and updates thereto; and as otherwise set forth below.

Upon receipt of the Contractor's draft billing (Application for Payment), the Project Manager shall affix comments and/or initials and return draft billing to the Contractor for review. Material invoices, evidence of equipment purchases and rentals, along with other support and details of cost, may be required to be submitted to the Owner from time to time when requested. Draft billings not returned to the Contractor will be assumed "correct as noted". The Contractor will then forward a formal billing (Application for Payment) to the Project Manager. The formal billing (Application for Payment), with applicable releases and other required documentation attached, and containing wet signatures, shall be returned to the Project Manager. The Application for Payment will then be collectively forwarded to the District for processing. Failure to return the billing or applicable attachments within the time frames specified by the Project Manager will result in a delay to the processing and payment of such Applications.

9.4.1.1 District, Architect or Project Manager has the discretion to require from Contractor any of the following information with any Application for Payment:

(a) Electronic copies of Certified Payroll(s) for the Project;

(b) Unconditional waivers and releases from all subcontractor/ suppliers for which payment was requested under the previous application for payment; and/or

(c) Material invoices evidence of equipment purchases, rentals and other support and details of costs

9.4.2 Prerequisites for Progress Payments

9.4.2.1 ***First Payment Request.*** The first payment request may not be processed by the District, and/or an appropriate amount of money may be withheld by the District, unless the following items, if applicable, are completed by the Contractor:

(a) Receipt by Architect of submittals;

(b) Installation of field office;

(c) Submission of documents listed in the Article 9.2 relating to Cost Breakdown;

(d) Schedule of unit prices, if applicable;

(e) Copies of necessary permits;

(f) Copies of authorizations and licenses from governing authorities;

(g) Copy of plans to be used as "As-Builts"

(h) Written acceptance of District's survey of rough grading, if applicable;

(i) List of all subcontractors, with names, license numbers, telephone numbers, and scope of work;

(j) All bonds and insurance endorsements; and

(k) Resumes of Contractor's key personnel as determined by District, and if applicable, job site Secretary, Record Documents Recorder, and job site Superintendent.

(M) First 60 days Initial Preliminary Baseline Schedule of work.

(N) Contractor Labor Force "Local Hire" Demographics Reporting Form (Monthly)

9.4.2.2 ***Second Payment Request.*** The second payment request may not be processed by the District, and/or an appropriate amount of money may be withheld by the District, until all submittals and shop drawings have been sent by the Contractor for review by the Architect.

9.4.2.3 ***All Payment Requests.*** Any payment request may not be processed by the District, and/or an appropriate amount of money may be withheld by the District, if the Contractor has failed to submit copies of the Certified Payroll records for the Work which correlates to the payment request, a proper CPM schedule, and any of the other requirements of this Contract regarding progress payments.

9.4.2.4 Any payments made to Contractor where criteria set forth in Article 9.4.2.1 or 9.4.2.2 have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers and that Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

9.5 WARRANTY OF TITLE

The Contractor warrants title to all work. The Contractor further warrants that all work is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment

relating to the Work. Failure to keep work free of liens, claims, security interests or encumbrances is grounds to make a claim against Contractor's payment and performance bond to immediately remedy and defend.

If a lien or stop notice of any nature should at any time be filed against the Work or any District property, by any entity which has supplied material or services at the request of the Contractor, Contractor and Contractor's surety shall promptly, on demand by District and at Contractor's and surety's own expense, take any and all action necessary to cause any such lien or stop notice to be released or discharged immediately therefrom.

If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or stop notice has been so released, discharged, or secured, then District may either discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract; or require the Contractor to post a Stop Notice Release Bond. If District sends written notice to the Contractor to post a Stop Notice Release Bond, Contractor shall have such a bond delivered to the District within five (5) calendar days of such written notice. See also Article 15.2.

9.6 DECISIONS TO WITHHOLD PAYMENT

9.6.1 Reasons to Withhold Payment

It is the District's intention to pay all properly submitted and supported progress payment applications submitted by the Contractor within thirty (30) days of receipt. However, the District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, such action is necessary. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to:

(a) Defective Work not remedied;

(b) Stop Notices served upon the District;

(c) Liquidated and/or actual delay damages assessed against the Contractor;

(d) The cost of completion of the Contract if there exists reasonable doubt that the Work can be completed for the unpaid balance of any Contract Price or by the completion date;

(e) Damage to the District or other Contractor;

(f) Unsatisfactory prosecution of the Work by the Contractor;

(g) Failure to store and properly secure materials;

(h) Failure of the Contractor to submit on a timely basis, proper and sufficient documentation required by the Contract Documents, including, without limitation, acceptable monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed Change Orders, Construction Change Directives, and verified reports;

(i) Failure of the Contractor to maintain record drawings;

(j) Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment;

(k) Unauthorized deviations from the Contract Documents;

(l) Failure of the Contractor to prosecute the Work in a timely manner in compliance with established progress schedules and completion dates.

(m) Failure to properly pay prevailing wages as defined in Labor Code section 1720, et seq.;

(n) Failure to properly maintain or clean up the Site;

(o) Payments to indemnify, defend, or hold harmless the District;

(p) Any payments due to the District including but not limited to payments for failed tests, or utilities changes or permits;

(q) Failure to submit an acceptable schedule in accordance with Article 3.8;

(r) Failure to pay Subcontractor or suppliers as required by Article 9.8.1; or

(s) Failure to provide releases from material suppliers or subcontractors when requested to do so.

(t) Failure of the Contractor to comply with any lawful or proper direction concerning t the Work given by any District representative authorized to have given such instruction;

(u) Claims and/or penalties which State law assesses against the Contractor for violation of such law;

(v) Any claim or penalty asserted against the District and/or Project Manager by virtue of the Contractor's failure to comply with the provisions of all governing laws, ordinances, regulations, rules, and orders;

(w) Any reason specified elsewhere in the Contract Documents, or by applicable law, that would require and/or entitle the District to a withhold, back charge and/or set off.

9.6.2 Reallocation of Withheld Amounts

District may, in its sole discretion, apply any withheld amount to payment of outstanding claims or obligations as defined in Articles 9.6.1 and 9.5. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then such amount shall be considered as a payment made under Contract by District to Contractor and District shall not be liable to Contractor for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of such funds disbursed on behalf of Contractor.

If Contractor defaults or neglects to carry out the Work in accordance with the contract documents or fails to perform any provision thereof, District may, after ten (10) calendar days written notice to the Contractor and without prejudice to any other remedy make good such deficiencies. The District shall adjust the total Contract price by reducing the amount thereof by the cost of making good such deficiencies. If District deems it inexpedient to correct Work that is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract price (of at least 150% of the estimated reasonable value of the nonconforming work) shall be made therefor.

9.6.3 Payment After Cure

When the grounds for declining approval are removed, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

9.7 NONCONFORMING WORK

Contractor shall promptly remove from premises all Work identified by District as failing to conform to the Contract whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract without additional expense to District and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If Contractor does not remove such Work which has been identified by District as failing to conform to the Contract Documents within a reasonable time, fixed by written notice, District may remove it and may store the material at Contractor's expense. If Contractor does not pay expenses of such removal within ten (10) calendar days' time thereafter, District may, upon ten (10) calendar days' written notice, sell such materials at auction or at private sale and shall account for net proceeds thereof, after deducting all costs and expenses that should have been borne by Contractor.

9.8 SUBCONTRACTOR PAYMENTS

9.8.1 Payments to Subcontractors

No later than ten (10) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

9.8.2 No Obligation of District for Subcontractor Payment

The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

9.8.3 Payment Not Constituting Approval or Acceptance

An approved Application for Payment, a progress payment, or partial or entire use or occupancy of the Project by the District shall not constitute acceptance of Work not in accordance with the Contract Documents.

9.8.4 Joint Checks

District shall have the right, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, any obligation from the District to such Subcontractor, or rights in such Subcontractor against the District.

9.9 COMPLETION OF THE WORK

9.9.1 Close-Out Procedures

9.9.1.1 ***Punch List Items***. Unless defined differently in the Supplemental Conditions for this Project, "Substantial Completion of the Work" means, that point in the progress of the Work where the Work is completed according to the requirements of the Contract Documents so that the District can occupy, have beneficial use of, and enjoy, the entire Project for its intended purpose; and where only minor and/or trivial defects in the Work remain that do not preclude the District occupying, having beneficial use of, or enjoying the entire Project for its intended purpose.

(i) When the Contractor considers the Project to have reached Substantial Completion of the Work, the Contractor shall prepare and submit to the Architect and Project Manager a comprehensive list of

minor and/or trivial defect items to be completed or corrected (hereinafter "Proposed Final Punch List").

(ii) The Architect and Project Manager will then review the Proposed Final Punch List. If in their collective opinion:

(a) the Contractor has achieved Substantial Completion of the Work, and if the Architect and Project Manager agree with the Proposed Final Punch List as submitted by the Contractor, the Architect and Project Manager shall promptly calculate and place an estimated value on each item on the Proposed Final Punch List and promptly send it out to the Contractor and the District as the "Final Punch List". The Contractor shall then proceed to correct and/or complete all remaining items on the Final Punch List pursuant to the Scheduling Specifications for the Project.

(b) the Contractor has achieved Substantial Completion of the Work, but either the Architect and Project Manager disagree with the Proposed Final Punch List as submitted by the Contractor, the Architect and/or the Project Manager shall promptly add any additional items to the Proposed Final Punch List and calculate and place an estimated value on all items on the Proposed Final Punch List and promptly send it out to the Contractor and the District as the "Final Punch List". The Contractor shall then proceed to correct and/or complete all remaining items on the Final Punch List pursuant to the Scheduling Specifications for the Project.

(iii) Conversely, if in the opinion of the Architect and/or the Project Manager, the Contractor has not achieved Substantial Completion of the Work, the Architect and Project Manager shall promptly notify the Contractor and District in writing stating all reasons why Substantial Completion of the Work has not then been achieved and what remains to be done to achieve Substantial Completion of the Work. The Proposed Final Punch List will be returned to the Contractor, with a copy to the District accompanied by the written reasons of the Architect and/or Project Manager. The Contractor will then immediately proceed to correct and/or complete all remaining Work identified by the Architect and/or Project Manager that has been identified to achieve Substantial Completion of the Work. When those items are completed, the Contractor shall submit a Proposed Final Punch List. If the Architect and Project Manager collectively agree that Substantial Completion of the Work has now been achieved, the process identified in Articles 9.9.1.1. (i) and/or (ii) (a) and/or (b) shall be followed.

(iv) Failure to include an item on a Final Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. If Contractor fails to complete and/or correct any item on the list, the District shall withhold 150% thereof and cause such work to be completed by others, deducting the actual costs thereof from any monies remaining in the contract, retention and/or recover shall from the performance bind surety, at the District's sole discretion and option.

(v) Warranties required by the Contract Documents shall commence on the date of the Contractor completing all of its obligations under the Contract Documents and the District's Governing Board acceptance of the Project**.**

9.9.1.2 ***Close-Out Requirements*.**

(a) **Draft Submittal** Contractor shall submit during product submittal review a draft close-out submittal package for format and content approval.

(b) **Utility Connections** Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected.

(c) Record Drawings

1. The intent of this procedure is to obtain an exact "as built" record of the Work upon completion of the Project. The following information shall be carefully and correctly drawn on the prints and all items shall be accurately located and dimensioned from finished surfaces of building walls on all record drawings.

a. Any Work not installed as originally indicated on drawings.

b. The exact location and elevations of all covered utilities, including valves, cleanouts, etc.

2. Contractor is liable and responsible for inaccuracies in as-built drawings, even though they become evident at some future date.

3. Upon completion of the Work and as a condition precedent to approval of final payment, Contractor shall obtain the Project Manager, Architect of Record and Inspector's approval of the corrected prints and employ a competent draftsman to transfer the "as-built" information to the most current set of reproducible bond paper drawings. When completed, Contractor shall deliver corrected reproducible drawings to the Project Manager.

(d) Maintenance Manuals. At least thirty (30) days prior to final inspection, three (3) copies of complete operations and maintenance manuals, repair parts lists, service instructions for all electrical and mechanical equipment, and equipment warranties shall be submitted. All installation, operating, and maintenance information and drawings shall be bound in 8-1/2" X 11 " binders. Provide a table of contents in front and all items shall be indexed with tabs. Each manual shall also contain a list of subcontractors, with their addresses and the names of persons to contact in cases of emergency. Identifying labels shall provide names of manufactures, their addresses, ratings, and capacities of equipment and machinery.

(e) Inspection Requirements

1. Before calling for final inspection, Contractor shall determine, as appropriate, that the following Work has been performed:

a. The Work has been completed.

b. All life safety items are completed and in working order.

c. Mechanical and electrical Work complete, fixtures in place, connected and ready for tryout and test.

d. Electrical circuits scheduled in panels and disconnect switches labeled.

e. Painting and special finishes complete.

f. Doors complete with hardware, cleaned of protective film relieved of sticking or binding and in working order.

g. Tops and bottoms of doors sealed.

h. Floors waxed and polished as specified.

i. Broken glass replaced and glass cleaned.

j. Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

k. Work cleaned, free of stains, scratches, and other foreign matter, replacement of damaged and broken material.

l. Finished and decorative work shall have marks, dirt and superfluous labels removed.

m. Final cleanup.

9.9.2 Costs of Multiple Inspections

More than two (2) requests of the District to make inspections required under the Contract Documents shall be considered an additional service of Architect, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

9.10 PARTIAL OCCUPANCY OR USE

9.10.1 District's Rights

The District may occupy or use any completed or partially completed portion of the Work at any stage. The District and the Contractor shall agree in writing to the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents. If District and Contractor cannot agree as to responsibilities such disagreement shall be resolved pursuant to Article 4.5.1. When the Contractor considers a portion complete, the Contractor shall prepare and submit a Punch List to the District as provided under Article 9.9.1.

9.10.2 Inspection Prior to Occupancy or Use

Immediately prior to such partial occupancy or use, the District and Project Manager, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.10.3 No Waiver

Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of the Work not complying with the requirements of the Contract Documents.

9.11 COMPLETION AND FINAL PAYMENT

9.11.1 Final Inspection

Contractor shall comply with Punch List procedures under Article 9.9.1.1, and maintain the presence of Project superintendent and Project foremen until the Final Punch List is complete to ensure proper and timely completion of the Final Punch List. Under no circumstances shall Contractor demobilize its forces before completion of the Final Punch List. Upon receipt of Contractor's written notice that all of the Final Punch List items have been fully completed and the Work is ready for final inspection and acceptance, Architect and Project Manager shall inspect the Work and shall submit to Contractor and District a final inspection report noting the work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Final Punch List items not yet satisfactorily completed.

Upon completion of the Work contained in the final inspection report, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect, Project Manager and the District find the Work contained in such final inspection report acceptable under the Contract Documents and, therefore, the Work fully completed, Project Manager shall notify Contractor, who shall then submit to the Project Manager its final Application for Payment.

Upon receipt and approval of such final Application for Payment, the Architect shall issue a final Certificate of Payment stating that to the best of its knowledge, information, and belief, and on the basis of its observations, inspections, and all other data accumulated or received by the Architect in connection with the Work, such Work has been completed in accordance with the Contract Documents. The District shall thereupon inspect such Work and either accept the Work as complete or notify the Architect, Project Manager and the Contractor in writing of reasons why the Work is not complete. Upon acceptance of the Work of the Contractor as fully complete (which, absent unusual circumstances, will occur all Final Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder. Upon receipt of the final payment from the District, the Contractor shall pay the amounts due all Subcontractors.

9.11.2 Release Of Undisputed Retention & Withholding of Disputed Retention

All disputed retention will be identified to the Contractor by the District when Substantial Completion of the Work has been achieved as defined in Article 9.9.1.1 and/or as required by Public Contract Code section 7107. Retention that is disputed may include, but is certainly not limited to, all amounts of money for all items remaining on the Final Punch List as of the date of its issuance, any back charges and/or off sets to be made by the District against the Contract Price as permitted by the Contract Documents and/or applicable law, any deductive credits owed to the District, any amounts of money the District is required to withhold from the Contractor as a matter of law (such as, but without limitation, for labor with holds, stop notices, safety violations, etc.); and any such other items and amounts identified by the District in its "Notice to Hold Disputed Retention and Release of Undisputed Retention". The Notice to Hold Disputed Retention and Release of Undisputed Retention will be issued to the Contractor by the District within seven (7) calendar days after the Substantial Completion of the Work has been achieved. Following issuance of the Notice to Hold Disputed Retention and Release of Undisputed Retention, said Notice may be revised deleting and/or adding other items, and appropriate disputed amounts, as they become known to the District.

9.11.3 Procedures for Application for Final Payment.

9.11.3.1 ***Prerequisites for Final Payment.*** The following conditions must be fulfilled before the District's obligation to make the Final Payment matures:

(a) A full and final waiver or release of all Stop Notices in connection with the Work shall be submitted by Contractor, including a release of Stop Notice in recordable form, together with (to the extent permitted by law) a copy of the full and final release of all Stop Notice rights.

(b) The Contractor shall have made all corrections to the Work which are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

(c) Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

(d) Contractor must have completed all requirements set forth in Article 9.9.1.2.

(e) Architect and Project Manager shall have issued a Final Certificate of Payment.

(f) The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents.

(g) The Contractor shall have completed final clean up as required by Article 3.12.

9.12 SUBSTITUTION OF SECURITIES

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300. The Escrow Agreement Form is found in section 00 50 04. Use of this form is mandatory.

ARTICLE 10

10.1 SAFETY PRECAUTIONS AND PROGRAMS

.1 Contractor Responsibility

The Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Contract and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the District. All work shall be solely at the Contractor's risk, with the exception of damage to the work caused by "acts of God" as defined in Public Contract Code section 7105(b)(2).

Contractor shall take, and require subcontractor to take, all necessary precautions for safety of workers on the Work and shall comply with all applicable federal, state, local and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where Work is being performed and to provide a safe and healthful place of employment. In addition to meeting all requirements of OSHA, Cal-OSHA, state, and local codes, Contractor shall furnish, erect and properly maintain at all times, as directed by District, Project Manager or Architect or required by conditions and progress of work, all necessary safety devices, safeguards, construction canopies, signs, audible devices for protection of the blind, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public, and shall post danger signs warning against hazards created by such features in the course of construction. Contractor shall designate a responsible member of its organization on the Work, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety and health of workers. The name and position of person so designated shall be reported to District by Contractor. Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. The Contractor shall conduct on-site, weekly safety meetings and provide those meeting reports to the Project Manager. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, such violation shall be corrected promptly.

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Also, in no case shall the District, the Project Manager, the Architect, the Inspector, or their agents, employees or representatives, have either direct or indirect responsibility for the means, methods, techniques, sequences or procedures utilized by the Contractor, or for safety precautions and programs in connection with the Work.

Certain work may be ongoing at the time school is in session; therefore, each Contractor shall take precautions to prevent injury and access to students, the public and staff. Material storage and vehicle access and parking shall be subject to District and/or Project Manager's approval.

The Contractor shall designate a responsible member of its organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the District, Project Manager and District Inspector.

.2 Subcontractor Responsibility

Contractor shall require that Subcontractors participate in, and enforce, the safety and loss prevention programs established by the Contractor for the Project, which will cover all Work performed by the Contractor and its Subcontractors. Each Subcontractor shall designate a responsible member of its organization whose duties shall include loss and accident prevention, and who shall have the responsibility and full authority to enforce the program. This person shall attend meetings with the representatives of the various Subcontractors employed to ensure that all employees understand and comply with the programs.

.3 Cooperation

All Subcontractors and material or equipment suppliers shall cooperate fully with Contractor, the District, and all insurance carriers and loss prevention engineers.

.4 Accident Reports

Subcontractors shall immediately, within two (2) days, report in writing to the Contractor all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or off the Site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger. Contractor shall thereafter immediately, within two (2) days, report the facts in writing to the District, Project Manager and the Architect giving full details of the accident.

.5 First-Aid Supplies at Site

The Contractor will provide and maintain at the Site first-aid supplies, which complies with the current Occupational Safety and Health Regulations.

.6 Material Safety Data Sheets and Compliance with Proposition 65

(a) Contractor is required to have material safety data sheets available in a readily accessible place at the job site for any material requiring a material safety data sheet per the Federal "hazard communication" standard, or employees' "right-to-know law". Copies of the data sheets shall be submitted to the Project Manager. The Contractor is also required to properly label any substance brought into the job site, and require that any person working with the material, or within the general area of the material, is informed of the hazards of the substance and follows proper handling and protection procedures.

Contractor is required to comply with the provisions of California Health and Safety Code section 25249, et seq., which requires the posting and giving of notice to persons who may be exposed to any chemical known to the State of California to cause cancer. The Contractor agrees to familiarize itself with the provisions of this section, and to comply fully with its requirements.

.7 Non-Utilization of Asbestos Material

NO ASBESTOS OR ASBESTOS-CONTAINING PRODUCTS SHALL BE USED IN THIS CONSTRUCTION OR IN ANY TOOLS, DEVICES, CLOTHING, OR EQUIPMENT USED TO EFFECT THIS CONSTRUCTION.

Asbestos and/or asbestos-containing products shall be defined as all items containing, but not limited to, chrysotile, amosite, anthophyllite, tremolite, and antinolite.

Any or all material containing greater than one-tenth of one percent (>.1%) asbestos shall be defined as asbestos-containing material.

All Work or materials found to contain asbestos or Work or material installed with asbestos-containing equipment will be immediately rejected and this Work will be removed at no additional cost to the District.

Decontamination and removal of Work found to contain asbestos or Work installed with asbestos-containing equipment shall be done only under supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency.

The asbestos removal Contractor shall be an EPA accredited contractor qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant, who shall have sole discretion and final determination in this matter.

The asbestos consultant shall be chosen and approved by the District, who shall have sole discretion and final determination in this matter.

The Work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

Interface of Work under this Contract with work containing asbestos shall be executed by the Contractor at his risk and at his discretion, with full knowledge of the currently accepted standards, hazards, risks, and liabilities associated with asbestos work and asbestos-containing products. By execution of this Contract, the Contractor acknowledges the above and agrees to hold harmless District and its assigns for all asbestos liability which may be associated with this work and agrees to instruct his employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

10.2 SAFETY OF PERSONS AND PROPERTY

.1 The Contractor

The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

(a) Employees on the Work and other persons who may be affected thereby;

(b) The Work, material, and equipment to be incorporated therein, whether in storage on or off the Site, under the care, custody, or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and

(c) Other property at the Site or adjacent thereto such as trees, shrubs, lawns, walks, pavement, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor is constructive owner of Project site as more fully discussed in Article 6.2.

.2 Contractor Notices

The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury, or loss.

.3 Safety Barriers and Safeguards

The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

.4 Use or Storage of Hazardous Material

When use or storage of explosives, other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall notify the District and Project Manager any time that explosives or hazardous materials are expected to be stored on Site. Location of storage shall be coordinated with the District, Project Manager and local fire authorities.

.5 Protection of Work

The Contractor and Subcontractors shall continuously protect the Work, the District's property, and the property of others, from damage, injury, or loss arising in connection with operations under the Contract Documents. The Contractor and Subcontractors, at their own expense, shall make good any such damage, injury, or loss, except such as may be solely due to, or caused by, agents or employees of the District.

The Contractor, at Contractor's expense, will remove all mud, water, or other elements as may be required for the proper protection and prosecution of its Work.

Contractor shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations. All permits, licenses, or inspection fees required for such repair Work shall be obtained and paid for by Contractor.

.6 Requirements for Existing Sites

Contractor shall (unless waived by the District in writing):

(a) When performing construction on existing sites, become informed and take into specific account the maturity of the students on the Site; and perform Work before or after college hours, enclose working area(s) with a substantial barricade(s), and arrange Work to cause a minimum amount of inconvenience and danger to students and faculty in their regular activities, the college routine, and Campus Operations. The Contractor shall comply with specifications and directives of the District regarding the timing of certain construction activities in order to avoid unnecessary interference with the functioning of the College at the Project site and in order to avoid unnecessary interference with all Campus Operations.

(b) Provide substantial barricades around any shrubs or trees indicated to be preserved.

(c) If Contractor's work disrupts Campus Operations and requires temporary re-routing of campus personnel or students, any and all site improvements will be accommodated by the Contractor.

(d) Deliver materials to building area over route designated by Architect.

(e) Take preventive measures to eliminate objectionable dust, noise, or other disturbances.

(f) Confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits or directions of Architect; and not interfere with the Work or unreasonably

encumber premises or overload any structure with materials; and enforce all instructions of District, Project Manager and Architect regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on the Project site.

(g) Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved land surveyor or civil engineer and all maps and records required there from shall be filed with county and local authorities, at no cost to the District. All filing and plan check fees shall be paid by Contractor.

(h) Contractor shall provide District with Contractor's written safety program and safety plan for each site.

(i) All of the foregoing is to be done at no cost to the District.

.7 Shoring and Structural Loading

The Contractor shall not impose structural loading upon any part of the Work under construction or upon existing construction on or adjacent to the Site in excess of safe limits, or loading such as to result in damage to the structural, architectural, mechanical, electrical, or other components of the Work. The design of all temporary construction equipment and appliances used in construction of the Work and not a permanent part thereof, including, without limitation, hoisting equipment, cribbing, shoring, and temporary bracing of structural steel, is the sole responsibility of the Contractor. All such items shall conform with the requirements of governing codes and all laws, ordinances, rules, regulations, and orders of all authorities having jurisdiction. The Contractor shall take special precautions, such as shoring of masonry walls and temporary tie bracing of structural steel work, to prevent possible wind damage during construction of the Work. The installation of such bracing or shoring shall not damage the Work in place or the Work installed by others. Any damage which does occur shall be promptly repaired by the Contractor at no cost to the District.

.8 Conformance Within Established Limits

The Contractor and Subcontractors shall confine their construction equipment, the storage of materials, and the operations of workers to the limits indicated by laws, ordinances, permits, and the limits established by the Project Manager and District, and shall not unreasonably encumber the premises with construction equipment or materials.

.9 Subcontractor Enforcement of Rules

Subcontractors shall enforce the District's and the Project Manager's instructions, laws, and regulations regarding signs, advertisements, fires, smoking, the presence of liquor, and the presence of firearms by any person at the Site.

.10 Site Access

The Contractor and the Subcontractors shall use only those ingress and egress routes designated by Project Manager, observe the boundaries of the Site designated by the Project Manager, park only in those areas designated by the Project Manager, which areas may be on or off the Site, and comply with any parking control program established by the District, such as furnishing license plate information and purchasing parking identifying stickers on vehicles.

.11 Security Services

The Contractor shall be responsible for providing security services for the work as needed for the protection of the work and as determined in the District's sole discretion.

10.3 EMERGENCIES

.1 Emergency Action

In an emergency affecting the safety of persons or property, the Contractor shall take any action necessary, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 7.

.2 Accident Reports

The Contractor shall promptly report in writing to the Project Manager all accidents arising out of or in connection with the Work, which caused death, personal injury, or property damage, giving full details and statements of any witnesses in conformance with Article 10.1.4. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported in accordance with Article 10.1.4, immediately by telephone or messenger to the District, and Project Manager.

10.4 HAZARDOUS MATERIALS

.1 Discovery of Hazardous Materials

In the event the Contractor encounters or suspects the presence on the job site of material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or any other material defined as being hazardous in accordance with the California Health and Safety Code, which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the District, Project Manager and the Architect in writing, whether or not such material was generated by the Contractor or the District. The Work in the affected area shall not thereafter be resumed, except by written agreement of the District and the Contractor, if in fact the material is asbestos, polychlorinated biphenyl (PCB), or other hazardous material, and has not been rendered harmless. The Work in the affected area shall be resumed only in the absence of asbestos, polychlorinated biphenyl (PCB), or other hazardous material, or when it has been rendered harmless by written agreement of the District and the Contractor.

.2 Hazardous Material Work Limitations

In the event that the presence of hazardous materials is suspected or discovered on the Site, the District shall retain an independent testing laboratory to determine the nature of the material encountered and whether corrective measures or remedial action is required. The Contractor shall not be required pursuant to Article 7 to perform without consent any Work in the affected area of the Site relating to asbestos, polychlorinated biphenyl (PCB), or other hazardous material, until any known or suspected hazardous material has been removed, or rendered harmless, or determined to be harmless by District, as certified by an independent testing laboratory and approved by the appropriate government agency.

.3 Indemnification for Hazardous Material Caused by Contractor

In the event the hazardous materials on the Project Site is caused by the Contractor, the Contractor shall pay for all costs of testing and remediation, if any, and shall compensate the District for any additional costs incurred as a result of Contractor's generation of hazardous material on the Project Site. In addition, the Contractor shall defend, indemnify and hold harmless District and Project Manager and their agents, officers, and employees from and against any and all claims, damages, losses, costs and expenses incurred in connection with, arising out of, or relating to, the presence of hazardous material on the Project Site.

.4 Terms of Hazardous Material Provision

The terms of this Hazardous Material provision shall survive the completion of the Work and/or any termination of this Contract.

ARTICLE 11

11.1 OWNER CONTROLLED INSURANCE PROGRAM (OCIP)

See Section 00 50 05 for the OCIP Information, Terms and Conditions, Forms, etc. required for this Project.

ARTICLE 12

12.1 UNCOVERING OF WORK

.1 Uncovering Work for Required Inspections

If a portion of the Work is covered without Inspector, Project Manager or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the Inspector, Project Manager or the Architect, be uncovered for the Inspector's or the Architect's observation and be replaced at the Contractor's expense without change in the Contract Sum or Time.

.2 Costs for Inspections not Required

If a portion of the Work has been covered which the Inspector, Project Manager or the Architect has not specifically requested to observe prior to its being covered, the Inspector, Project Manager or the Architect may request to see such Work, and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncover and replacement shall, by appropriate Change Order, be charged to the District. If such Work is not in accordance with Contract Documents, the Contractor shall pay such costs unless the condition was caused by the District or a separate Contractor, in which event the District shall be responsible for payment of such costs to the Contractor.

12.2 CORRECTION OF WORK

.1 Correction of Rejected Work

The Contractor shall promptly correct the Work rejected by the Inspector or the District upon recommendation of the Architect as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

.2 Warranty Corrections

If, within one (1) year after the date of Notice of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established under Article 9.9.1, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so unless the District has previously given the Contractor a written acceptance of such condition. This period of

one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation under this Article 12.2.2 shall survive acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

.3 District's Rights if Contractor Fails to Correct

If the Contractor fails to correct nonconforming Work within a reasonable time, the District may correct it. If in the judgment of the District, it is undesirable or impracticable to replace any defective or nonconforming Work, the compensation to be paid to the Contractor shall be reduced by Contract Change Order by such amount as in the judgment of the District and its authorized representative shall deem equitable.

ARTICLE 13

13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located.

13.2 SUCCESSORS AND ASSIGNS

The District and the Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.3 WRITTEN NOTICE

In the absence of specific notice requirements in the Contract Documents, written notice shall be deemed to have been duly served if delivered in person to the individual, member of the firm or entity, or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

13.4 RIGHTS AND REMEDIES

.1 Duties and Obligations Cumulative

Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

.2 No Waiver

No action or failure to act by the Inspector, the District, Project Manager, or the Architect shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.5 TEST AND INSPECTIONS

.1 Compliance

Tests, inspections, and approvals of portions of the Work required by the Contract Documents will comply with Title 24, and with all other laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction.

.2 Independent Testing Laboratory

The District will select and pay an independent testing laboratory to conduct all tests and inspections. Selection of the materials required to be tested shall be made by the laboratory or the District's representative and not by the Contractor. Any costs or expenses of inspection or testing incurred outside of a fifty (50) mile radius from the Project Site or not located in a contiguous county to the Site, whichever distance is greater, shall be paid for by the District, invoiced by the District to the Contractor, and deducted from the Contractor's next Progress Payment.

.3 Advance Notice to Inspector

The Contractor shall notify the Inspector within no less than seventy-two (72) hours in advance of its readiness for required observation or inspection so that the Inspector may arrange for same. The Contractor shall notify the Inspector a sufficient time in advance but in no case less than seventy-two (72) hours of the manufacture of material to be supplied under the Contract Documents which must, by terms of the Contract Documents, be tested in order that the Inspector may arrange for the testing of the material at the source of supply.

.4 Testing Off-Site

Any material shipped by the Contractor from the source of supply, prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said Inspector that such testing and inspection will not be required, shall not be incorporated in the Work.

.5 Additional Testing or Inspection

If the Inspector, the Architect, the District, Project Manager or public authority having jurisdiction determines that portions of the Work require additional testing, inspection, or approval not included under Article 13.5.1, the Inspector will, upon written authorization from the District, make arrangements for such additional testing, inspection, or approval. The District shall bear such costs except as provided in Article 13.5.7.

.6 Costs for Retesting

If such procedures for testing, inspection, or approval under Articles 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs arising from such failure, including those of re-testing, re-inspection, or re-approval, including, but not limited to, compensation for the Architect's and Project Manager's services and expenses. Any such costs shall be paid by the District, invoiced to the Contractor, and deducted from the Contractor's via Change Order.

.7 Costs for Premature Test

In the event the Contractor requests any test or inspection for the Project and is not completely ready for the inspection, the Contractor shall be invoiced by the District for all costs and expenses resulting from that testing or inspection, including, but not limited to, the Inspector's Project Manager's and Architect's fees and expenses, and the amount of the invoice of shall be deducted from the Contractor's via Change Order.

13.6 TRENCH EXCAVATION

.1 Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds $25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, submit to the District, Project Manager or a registered civil or structural engineer identified by the District or Architect, a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

.3 No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

.4 No Excavation Without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CAL OSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

13.7 WAGE RATES, TRAVEL AND SUBSISTENCE

.1 Wage Rates

Pursuant to the provisions of Article 2 (commencing at § 1720), Chapter 1, Part 7, Division 2, of the Labor Code, the District has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public works project is to be performed for each craft, classification, or type of worker needed for this Project from the Director of the Department of Industrial Relations ("Director"). These rates are on file at the administrative office of the DISTRICT and are also available from the Director of the Department of Industrial Relations. Copies will be made available to any interested party on request. The Contractor shall post a copy of such wage rates at appropriate, conspicuous, weatherproof points at the Site.

Any worker employed to perform work on the Project, but such work is not covered by any classification listed in the published general prevailing wage rate determinations or per diem wages determined by the Director of the Department of Industrial Relations, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to the employment of such person in such classification.

.2 Holiday and Overtime Pay

Holiday and overtime work, when permitted by law, shall be paid for at the rate set forth in the prevailing wage rate determinations issued by the Director of the Department of Industrial Relations or at least one and one-half (1½) times the specified basic rate of per diem wages, plus employer payments, unless otherwise specified in the contract documents or authorized by law.

.3 Wage Rates Not Affected by Subcontracts

The Contractor shall pay and shall cause to be paid each worker engaged in the execution of the Work on the Project not less than the general prevailing rate of per diem wages determined by the Director, regardless of any contractual relationship which may be alleged to exist between the Contractor or any Subcontractor and such workers.

.4 Per Diem Wages

The Contractor shall pay and shall cause to be paid to each worker needed to execute the Work on the Project per diem wages including, but not limited to, employer payments for health and welfare, pensions, vacation, travel time and subsistence pay as provided for in Labor Code §1773.1.

.5 Forfeiture and Payments

Pursuant to Labor Code §1775 the Contractor shall forfeit to the District, not more than dollar required by law for each calendar day, or portion thereof, for each worker paid less than the prevailing wages rates as determined by the Director of the Department of Industrial Relations, for the work or craft in which the worker is employed for any Work done under the Agreement by the Contractor or by any Subcontractor under it. The amount of the penalty shall be determined by the Labor Commissioner and shall be based on consideration of: (1) whether the Contractor or Subcontractor's failure to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily correct upon being brought to the attention of the Contractor or Subcontractor; and (2) whether the Contractor or Subcontractor has a prior record of failing to meet its prevailing wage obligations. Further details regarding the enforcement of paying prevailing wage rates, reporting violations, withholding contract payments, forfeitures and hearing to review withholding of contract payments can be reviewed on the Department of Industrial Relations' website.

13.8 <u>RECORD OF WAGES PAID: INSPECTION</u>

.1 Payroll Records

Pursuant to section 1776 of the Labor Code:

(a) Each Contractor and Subcontractor shall keep an accurate payroll record showing the name, address, social security number, work classification and straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by him or her in connection with the Project.

(b) All payroll records shall be certified and submitted to the District with each application for payment, but shall not be submitted less than once per month. All payroll records shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records shall be made available for inspection or furnished upon request to a representative of District, the Division of Labor Standards Enforcement or the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through the District, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to Article (2) above, the requesting party shall, prior to being provided the records, reimburse the costs, according to law for the

preparation by the Contractor, Subcontractor(s), and the entity through which the request was made. The public shall not be given access to such records at the principal office of the Contractor.

(c) The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division of Labor Standards Enforcement.

(d) The Contractor or Subcontractor(s) shall file a certified copy of all payroll records with the entity that requested such records within 10 calendar days after receipt of a written request.

(e) Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or obliterated to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor awarded the Contract or the Subcontractor(s) performing the Contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (Section 175a of Title 29 of the United States Code) shall be marked or obliterated only to prevent disclosure of an individual's name and social security number.

(f) The Contractor shall inform the District of the location of all payroll records, including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.

(g) The Contractor or Subcontractor(s) shall have 10 calendar days in which to comply subsequent to receipt of a written notice requesting payroll records. In the event that the Contractor or Subcontractor(s) fails to comply within the 10-day period, the Contractor or Subcontractor(s) shall, as a penalty to the District, forfeit Twenty-Five Dollars ($25.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

The responsibility for compliance with this Article and the District's Labor Compliance Program shall rest upon the Contractor.

.2 Withholding of Contract Payments & Penalties.

The District may withhold or delay contract payments to the Contractor and/or any Subcontractor if:

(a) The required prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations is not paid to all workers employed on the Project; or

(b) The Contractor or Subcontractor(s) fail to submit all required certified payroll records with each application for payment, but not less than once per month; or

(c) The Contractor or Subcontractor(s) submit incomplete or inadequate payroll records; or

(d) The Contractor or Subcontractor(s) fail to comply with the Labor Code requirements concerning apprentices; or

(e) The Contractor or Subcontractor(s) fail to comply with the District's Labor Compliance Program; or

(f) The Contractor or Subcontractor(s) fail to comply with any applicable state laws governing workers on public works projects.

Any withholding of contract payments and penalties are set forth in the District's Labor Compliance Program.

13.9 APPRENTICES

.1 Apprentice Wages and Definitions

All apprentices employed by the Contractor to perform services under the Contract shall be paid the standard wage paid to apprentices under the regulations of the craft or trade for which he or she is employed, and as determined by the Director of the Department of Industrial Relations, and shall be employed only at the craft or trade to which he or she is registered. Only apprentices, as defined in §3077 of the Labor Code, who are in training under apprenticeship standards that have been approved by the Chief of the Division of Apprenticeship Standards and who are parties to written apprenticeship agreements under Chapter 4 (commencing with §3070) of Division 3, are eligible to be employed under this Contract. The employment and training of each apprentice shall be in accordance with the apprenticeship standards and apprentice agreements under which he or she is training, or in accordance with the rules and regulations of the California Apprenticeship Council.

.2 Employment of Apprentices

Contractor agrees to comply with the requirements of Labor Code §1777.5. The Contractor awarded the Project, or any Subcontractor under him or her, when performing any of the Work under the Contract or subcontract, employs workers in any apprenticeable craft or trade, the Contractor and Subcontractor shall employ apprentices in the ratio set forth in Labor Code §1777.5. The Contractor or any Subcontractor must apply to any apprenticeship program in the craft or trade that can provide apprentices to the Project site for a certificate approving the contractor or subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected. However, the decision of the apprenticeship program to approve or deny a certificate shall be subject to review by the Administrator of Apprenticeship. The apprenticeship program or programs, upon approving the Contractor or Subcontractor, shall arrange for the dispatch of apprentices to the Contractor or Subcontractor upon the Contractor's or Subcontractor's request. "Apprenticeable craft or trade" as used in this Article means a craft or trade determined as an apprenticeable occupation in accordance with the rules and regulations prescribed by the California Apprenticeship Council. The ratio of work performed by apprentices to journeyman employed in a particular craft or trade on the Project shall be in accordance with Labor Code §1777.5.

.3 Submission of Contract Information

Before starting commencing work on the Project, the Contractor and Subcontractors shall submit contract award information to the applicable apprenticeship program(s) that can supply apprentices to the Project and make the request for the dispatch of apprentices in accordance with the Labor Code. The information submitted shall include an estimate of journeyman hours to be performed under the Contact, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. A copy of this information shall also be submitted to the District if requested. Within 60 days after concluding work on the Project, the Contractor and Subcontractors shall submit to the District, if requested, and to the apprenticeship program a verified statement of the journeyman and apprentice hours performed on the Project.

.4 Apprentice Fund

The Contractor or any Subcontractor under him or her, who, in performing any of the Work under the Contract, employs journeymen or apprentices in any apprenticeable craft or trade shall contribute to the California Apprenticeship Council the same amount that the Director determines is the prevailing amount of apprenticeship training contributions in the area of the Project. The Contractor and Subcontractors may take as a credit for payments to the California Apprenticeship Council any amounts paid by the Contractor or Subcontractor to an approved apprenticeship program that can supply apprentices to the Project. The Contractor and Subcontractors may add the amount of the contributions in computing his or her bid for the Contract.

.5 Contractor Compliance

The responsibility of compliance with Article 13 and §1777.5 of the Labor Code for all apprenticeable occupations is with the Contractor. Any Contractor or Subcontractor that knowingly violates the provisions of this Article or Labor Code §1777.5 shall be subject to the penalties set forth in Labor Code §1777.7 and the District's Labor Compliance Program.

13.10 ASSIGNMENT OF ANTITRUST CLAIMS

.1 Application

Pursuant to Government Code section 4552, in entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or Subcontractor offers and agrees to assign to the District all rights, title, and interest in and to all causes of action it may have under section 4 of the Clayton Act, (15 U.S.C. §15) or under the Cartwright Act (Chapter 2 [commencing with §16700] of Part 2 of Division 7 of the Business and Professions Code), arising from the purchase of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties. If the District receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under Chapter 11 (commencing with § 4550) of Division 5 of Title 1 of the Government Code, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the District any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the District as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

.2 Assignment of Claim

Upon demand in writing by the assignor, the District shall, within one (1) year from such demand, reassign the cause of action assigned pursuant to this Article if the assignor has been or may have been injured by the violation of law for which the cause of action arose and the District has not been injured thereby or the District declines to file a court action for the cause of action.

13.11 STATE AUDIT

Pursuant to and in accordance with the provisions of Title 29, Part 516 of the Code of Federal Regulations, or any amendments thereto, all books, records, and files of the District, the Contractor, or any Subcontractor connected with the performance of this Contract involving the expenditure of state funds in excess of Ten Thousand Dollars ($10,000.00), including, but not limited to, the administration thereof, shall be subject to the examination and audit of the Office of the Auditor General of the State of California for a period of three (3) years after final payment is made under this Contract. Contractor shall preserve and cause to be preserved such books, records, and files for the audit period.

13.12 PERFORMANCE AND PAYMENT BONDS

.1 Bond Requirements

Before starting any portion of the Work, the Contractor shall furnish separate payment and performance bonds for its portion of the Work which shall cover 100% faithful performance of and 100% payment of all obligations arising under the Contract Documents and/or guaranteeing the payment in full of all claims for labor performed and materials supplied for the Work. All bonds shall be provided by a corporate surety authorized and admitted to transact business in California as sureties. To the extent, if any, that the Contract Price is increased in accordance with the Contract Documents, the Contractor shall, upon request of the District, cause the amount of the

bonds to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to the District. To the extent available, the bonds shall further provide that no change or alteration of the Contract Documents (including, without limitation, an increase in the Contract Price, as referred to above), extensions of time, or modifications of the time, terms, or conditions of payment to the Contractor will release the surety. If the Contractor fails to furnish the required bonds, the District may terminate the Contract for cause. The Performance Bond form in section 00 50 02 is a mandatory form. The Payment Bond form in section 00 50 01 is a mandatory form.

.2 Surety Qualification

Only bonds executed by admitted Surety insurers as defined in Code of Civil Procedure section 995.120 shall be accepted. Surety must be a California-admitted surety and listed by the U.S. Treasury with a bonding capacity in excess of the Project cost.

.3 Alternate Surety Qualifications

If a California-admitted surety insurer issuing bonds does not meet these requirements, the insurer will be considered qualified if it is in conformance with section 995.660 of the California Code of Civil Procedure and proof of such is provided to the District.

.4 Stop Notice Release Bond Surety Different from Payment and Performance Bond Surety

Any stop notice release bond posted with the District for this Project must be issued from a surety that is not the surety that issued the payment bond or performance bond for this Project.

ARTICLE 14

14.1 TERMINATION BY THE CONTRACTOR FOR CAUSE

14.1.1 Grounds for Termination

The Contractor may terminate the Contract if the Work is stopped for a period of thirty (30) consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons performing portions of the Work for whom the Contractor is contractually responsible, for only the following reasons:

(a) Issuance of an order of a court or other public authority having jurisdiction; or

(b) An act of government, such as a declaration of national emergency.

14.1.2 Notice of Termination

If one of the above reasons exists, the Contractor may, upon written notice of seven (7) additional days to the District, terminate the Contract and recover from the District payment for Work executed and for reasonable costs verified by the District and Project Manager with respect to materials, equipment, tools, construction equipment, and machinery, including reasonable overhead, profit, and damages.

14.2 TERMINATION BY THE DISTRICT FOR CAUSE

14.2.1 Grounds for Termination

The District may terminate the Contractor and or this Contract for the following reasons:

(a) Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

(b) Persistently or repeatedly is absent, without excuse, from the job site;

(c) Fails to make payment to Subcontractors;

(d) Persistently disregards laws, ordinances, rules, regulations, or orders of a public authority having jurisdiction; or

(e) Otherwise is in substantial breach of a provision of the Contract Documents.

14.2.2 Notification of Termination

When any of the above reasons exist, the District may, without prejudice to any other rights or remedies of the District and after giving the Contractor and the Contractor's surety, if any, written notice of seven (7) days, terminate the Contractor and/or this Contract and may, subject to any prior rights of the surety:

(a) Take possession of the Project and of all material, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

(b) Accept assignment of Subcontracts. Contractor acknowledges and agrees that if the District (in its sole and absolute discretion) decides to take over completion of the Project, the Contractor agrees to immediately assign all Subcontracts to the District which the District has chosen to accept; and

(c) Complete the Work by any reasonable method the District may deem expedient, including contracting with a replacement contractor or contractors.

14.2.3 Payments Withheld

If the District terminates the Contract for one of the reasons stated in Article 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is complete. All costs associated with the termination and completion of the Project shall be the responsibility of the Contractor and/or its surety.

14.2.4 Payments Upon Completion

If the unpaid balance of the Contract Sum exceeds costs of completing the Work, including compensation for professional services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the District. The amount to be paid to the Contractor, or District, as the case may be, shall be certified by the Architect upon application. This payment obligation shall survive completion of the Contract.

14.3 TERMINATION OF CONTRACT BY DISTRICT (CONTRACTOR NOT AT FAULT)

14.3.1 Termination for Convenience

District may terminate the Contract upon fifteen (15) calendar days of written notice to the Contractor and use any reasonable method the District deems expedient to complete the project, including contracting with replacement contractor or contractors, if it is found that reasons beyond the control of either the District or Contractor make it impossible or against the District's interest to complete the work. In such a case, the Contractor shall have no claims against the District except: (1) the actual cost for labor, materials, and services performed which may be documented through timesheets, invoices, receipts, or otherwise, and (2) ten percent (10%) profit and overhead, and (3) five percent (5%) termination cost of the total of items (1) and (2). Contractor acknowledges and agrees that if the District (in its sole and absolute discretion) decides to take over completion of the Project, the Contractor agrees to immediately assign all Subcontracts to the District which the District has chosen to accept. Contractor also agrees and acknowledges that the compensation payable by this article 14.3.1 shall be the sole and exclusive compensation, damages and amount of money recoverable by Contractor for the District's termination of pursuant to this article 14.3.1.

14.3.2 Non-Appropriation of Funds/ Insufficient Funds

In the event that sufficient funds are not appropriated to complete the Project or the DISTRICT determines that sufficient funds are not available to complete the Project, DISTRICT may terminate or suspend the completion of the Project at any time by giving written notice to the Contractor. In the event that the DISTRICT exercises this option, the DISTRICT shall pay for any and all work and materials completed or delivered onto the site for which value is received, and the value of any and all work then in progress and orders actually placed which cannot be canceled up to the date of notice of termination. The value of work and materials paid for shall include a factor of fifteen percent (15%) for the Contractor's overhead and profit and there shall be no other costs or expenses paid to Contractor. All work, materials and orders paid for pursuant to this provision shall become the property of the DISTRICT. DISTRICT may, without cause, order Contractor in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as DISTRICT may determine. Adjustment shall be made for increases in the cost of performance of the Agreement caused by suspense, delay or interruption.

14.4 REMEDIES OTHER THAN TERMINATION

If a default occurs, the District may, without prejudice to any other right or remedy, including, without limitation, its right to terminate the Contract pursuant to Article 14.2, do any of the following:

(a) Permit the Contractor to continue under this Contract, but make good such deficiencies or complete the Contract by whatever method the District may deem expedient, and the cost and expense thereof shall be deducted from the Contract Price or paid by the Contractor to the District on demand;

(b) If the workmanship performed by the Contractor is faulty or defective materials are provided, erected or installed, then the District may order the Contractor to remove the faulty workmanship or defective materials and to replace the same with work or materials that conform to the Contract Documents, in which event the Contractor, at its sole costs and expense, shall proceed in accordance with the District's order and complete the same within the time period given by the District in its notice to the Contractor; or

(c) Initiate procedures to declare the Contractor a non-responsible bidder for a period of two to five years thereafter.

All amounts expended by the District in connection with the exercise of its rights hereunder shall accrue interest from the date expended until paid to the District at the maximum legal rate. The District may retain or withhold any such amounts from the Contract Price. If the Contractor is ordered to replace any faulty workmanship or defective materials pursuant to Article (b) above, the Contractor shall replace the same with new work or materials approved by the Architect and the District, and, at its own cost, shall repair or replace, in a manner and to the extent the Architect

and the District shall direct, all work or material that is damaged, injured or destroyed by the removal of said faulty workmanship or defective material, or by the replacement of the same with acceptable work or materials. In no event shall anything in this Article be deemed to constitute a waiver by the District of any other rights or remedies that it may have at law or in equity, it being acknowledged and agreed by the Contractor that the remedies set forth in this Article are in addition to, and not in lieu of, any other rights or remedies that the District may have at law or in equity.

ARTICLE 15

15.1 COPY OF PAYMENT BOND MUST BE POSTED ON PROJECT SITE

Contractor shall at all times post a full and complete copy of the payment Bond for the Project in a conspicuous place outside of the Inspector of Record's trailer and/or outside the Contractor's trailer in an enclosure to protect the document from the elements so that said Payment Bond is easily readable by any person performing and/or furnishing labor, skills, material, equipment, supplies, apparatus and the like, to the jobsite. District has the right, but not the obligation, to post a copy of such bond at the Project site as well.

15.2 STOP NOTICE RELEASE BONDS REQUIRED

Should a stop notice claimant file a Stop Notice with the District regarding the Project, the District will notify the Contractor in writing of same and provide the Contractor with a copy of the Stop Notice. Contractor shall then immediately do one or more of the following: (1) obtain a release of the Stop Notice and provide the original thereof to the District; (2) use the summary statutory declaration procedure for challenging the Stop Notice; and/or (3) provide the District with a Stop Notice Release Bond from a surety separate from the surety that issued the Payment Bond and Performance Bond for the Project. If the Contractor does not use the summary statutory declaration procedure for challenging the Stop Notice, then if the Contractor has not provided the District with a release of the Stop Notice within seven (7) calendar days of the District giving written notice thereof to the Contractor, Contractor shall immediately provide the District with a Stop Notice Release Bond from a surety separate from the surety that issued the Payment Bond and Performance Bond for the Project. Should Contractor fail to do so, the District has the right, but not the obligation, to obtain such a bond and back charge the Contractor the cost thereof as well as any other costs, fees, and/or expenses the District incurs as a result thereof.

END OF SECTION

EXHIBIT C

SUPPLEMENTAL CONDITIONS

SECTION 00 40 01- SUPPLEMENTAL CONDITIONS

The following supplemental information modifies changes, deletes from or adds to the General Conditions of the Contract and supply in greater detail other clarifications and requirements of the contract documents for Construction. Where any article/paragraph of the General Conditions or other requirements is modified or any article, paragraph, subparagraph, or clause thereof is modified or deleted by these Supplemental Conditions, the unaltered provisions of that article, paragraph, subparagraph, or clause shall remain in effect.

A. LIQUIDATED DAMAGES:

LIQUIDATED DAMAGES: It being impracticable and infeasible to determine the amount of actual damage, it is agreed that the GENERAL CONTRACTOR will pay the DISTRICT the sum of **$2,000.00** per calendar day for each and every day of delay beyond the time set forth in Article 2 of this Agreement for completing said work as liquidated damages and not as a penalty or forfeiture. GENERAL CONTRACTOR shall pay a percentage of the liquidated damages commensurate with the GENERAL CONTRACTOR's responsibility for each calendar day of delay as determined by the Project Manager and the DISTRICT in completing the work within the stipulated time as a result of: (a) the GENERAL CONTRACTOR's failure to complete the Contract within the time specified in the Notice to Proceed and/or; (b) the GENERAL CONTRACTOR's failure to complete the Contract in accordance with the Project Schedule. In the event the same is not paid, the GENERAL CONTRACTOR further agrees that the DISTRICT may deduct such amount thereof from any money due or that may become due the GENERAL CONTRACTOR under the contract. This Article shall not be construed as preventing the DISTRICT from the recovery of damages under provisions of the contract documents.

B. Regarding General Conditions, section 00 40 00, Article 3.7.2 "SCHEDULE":

1. Standard Work Hours for Existing Building Occupants: 8:00am to 5:30pm

2. Contractor will have access to the site 24/7. The contractor will need to coordinate with Property Manager for access to building occupant spaces on the 1st, 2nd and part of the 3rd floor. Also note that certain operations must be performed outside the normal working hours (8:00 am – 5:30 pm) of Monday through Friday to prevent the disturbance or interruption of normal business operations. These operations include, but are not limited to:

i. Drilling or cutting of the concrete floor slab.

ii. Drilling or cutting of any concrete structural member.

iii. Sanding, chiseling or leveling of the concrete structure.

iv. Any work which generates noise or vibration which may be disruptive to normal office procedures elsewhere in the Project Site.

v. Any work that creates an odor that is disruptive to Owner and/or its tenants.

vi. Any work otherwise is disruptive to Owner and/or its tenants.

C. REGARDING INSTRUCTION TO BIDDERS, SECTION 00 20 00, EVIDIENCE OF RESPONSIBILITY

1. A bidder whose bid is under consideration for the award of contract **must** be available for a Post-Bid Interview on March 19, 2020 between the hours of 10:00a.m – 12:00p.m. Bidders under consideration shall be contacted by Project Manager to schedule interview during above mentioned time frame.

~~**D. CONSTRUCTION DOCUMENTATION MANAGEMENT TOOL:**~~

~~1. The District is utilizing document management software for construction administration documentation.~~
~~2. CONTRACTOR shall utilize either Prolog Converge or eBuilder web-based software as directed by the District for coordination of construction documentation and communication including but not limited to: RFI's, submittals, change order requests, change orders, construction directives, and punch lists, etc.~~
~~3. CONTRACTOR will be provided one (1) licensing access paid by the District.~~
~~4. Project Manager, CONTRACTOR, Architect and Project Inspector will utilize the document management software.~~

~~**E. CONSTRUCTION DEMOGRAPHICS AND LOCAL HIRE REPORTING:**~~

~~1. The Contractor will be required to submit monthly demographics/local hire work force and payment summaries with each progress payment. The District is requiring the General Contractor to provide monthly reporting of workforce utilized on the project, separated by subcontract. In addition, the District will require monthly payment summaries corresponding to each employee wages, subcontractor progress payments and General Contractor payments. Furthermore, the General Contractor will be required to provide all local wages for local residents as shown on certified payroll, subcontract values, subcontractor payments differentiated by local vs. non-local. See Exhibit K for required monthly reporting forms.~~

F. NOTICE TO PROCEED MILESTONES:

1- Construction (93 Calendar Days) - issued after District Board Approval and execution of the contract, shall consist of all general requirements, including but not limited to required surveys, submittals, deferred approvals, design services, permits and approvals, pre-construction meetings and activities, site walks, long lead procurement requirements, hall off, installation, operation, and complete contract scope of work as defined in the project document by February 25, 2022. Liquidated damages are tied to the February 25, 2022 completion date. See Exhibit G Construction Agreement Form for more information related to LD's.

G. Completion Milestones

1. Substantial Completion: (1) calendar day, within duration of NTP 1.

2. Punch list: (7) calendar days, within duration of NTP 1.

3. Final Completion (1) calendar day, within duration of NTP 1.

4. Notice of Completion (1) calendar day, within duration of NTP 1.

H. REGARDING CONTRACTOR LOGISTICS AND SITE CONTRAINTS:

1. Logistics: prior to commencement of WORK, CONTRACTOR shall prepare and submit to the Project Manager, a detailed PROJECT specific Site Logistics Plan in legible size, setting forth CONTRACTOR plan of WORK relative to the following items:

a. Hauling route shall be in accordance with local ordinances. A truck access route to and from PROJECT site. Within the Campus, in accordance with Campus policies and procedures.

b. The identification of any overhead wire restrictions for power, lighting, signal or cable.

c. Pedestrian walkways and ADA pathway access and closure requirements.

d. Protection of sidewalk, walkways, pedestrians and vehicular traffic.

e. PROJECT site fencing and access gate locations.

f. Construction parking.

g. Material staging or delivery areas.

h. Material storage areas.

i. Temporary trailer locations.

j. Temporary service location and proposed routing of all temporary utilities.

k. Location of temporary or accessible fire protection.

l. Trash removal and location of dumpsters.

m. Concrete pumping locations.

n. Steel storing locations.

o. Operation equipment access route.

p. Crane locations.

q. Location of portable sanitary facilities.

r. Mixer truck wash-out locations.

s. Traffic control signage.

t. Perimeter and site lighting.

u. Stockpile or lay down areas.

v. Security lighting.

w. Fire Access.

x. Project signage locations.

~~2. Underground pipe and trenching for utility point of connections~~

~~3. Length of open trench at any one time to be coordinated with Project Manager and Campus and trench plate plan to be submitted for review and approval by District / Campus.~~

4. ~~Utilities Services Shut Downs, Tie-ins and Start-Ups~~.

5. FF&E: When project has reached Substantial Completion, the Owner's Furniture, Fixtures and Equipment (FF&E) and Information Technology (IT) vendors may start delivery and installation of systems. CONTRACTOR will be required to coordinate and allow access for these items and any additional Owner vendors that are identified.

I. Project Site Rules and Regulations Governing the Work

1. Permits:

All permits and licenses necessary for the prosecution of the Work shall be secured and paid for by the Contractor prior to commencement of the Work. It is the responsibility of the Contractor to forward an original certificate of occupancy to Owner prior to the release of any retainage held by Owner.

2. Work Area:

Before commencing any of the Work, the Contractor shall erect construction barriers acceptable to Owner and Development Manager between the area where the Work is being conducted (the "Work Area") and any public areas at and around the building in which the Work is constructed ("Project Site") and will keep the Work Area closed from public view until completion and occupancy by Tenant. The Contractor shall perform all construction activities and all storage of materials inside the Work Area.

3. Keys and Locks:

The Contractor shall provide Owner with keys to all locks installed on or in the Work Area. Owner and Development Manager shall be provided access to the Work Area at all times.

4. Common Areas:

The Contractor shall carefully protect all existing property and improvements, including walls, ceilings, floors and finishes applied to such walls, floors, ceilings, and, furniture and fixtures and shall pay for repair or replacement of all damaged existing property and improvements (whether caused by Contractor or its agents or subcontractors) upon request by Owner. The Contractor will not perform any construction activities or store any areas outside the Work Area. Alterations to multi-tenant corridors and public areas (e.g., door cut-in) shall either be complete within the first week of construction or a visual barrier (approved by Owner) shall be erected at Contractor's expense.

5. Elevators:

All construction materials, tools and trash are to be transferred to and from the Work Area via the swing (service) elevator. At no time shall the Contractor (or its subcontractors or suppliers) use the passenger elevators to move construction personnel, materials, equipment, tools or trash to or from the Work Area without the express prior written consent of the Owner and Development Manager. Furthermore, the use of the service elevator shall be scheduled by the Contractor with Owner and Development Manager. Any work or hauling of materials or trash on occupied floors shall be conducted so as to leave unobstructed at all times public corridors, service elevator vestibules or passenger elevator lobbies. Because the service elevator is the principle means of providing hoisting for tenants and the property management services as well as construction activities, the Contractor must cooperate in resolving any conflicts which may arise from time to time when the Contractor is required to share the service elevator with the Owner's property management staff, cleaning crews, other tenants, separate contractors, etc. At no time may the Contractor or its Subcontractors block

the service elevator open. In the event that any damage occurs to the service elevator or service elevator lobbies, the Contractor will bear the total cost of all repairs.

6. Water and Electricity During Construction:

Sources of water and electricity (in reasonable quantities for lighting, portable power tools, drinking water, water for testing and other such common uses during construction) will be made available to the Contractor by the Owner without cost to the Contractor. The Contractor shall make all connections or furnish any necessary extensions to or from such sources, and shall be responsible for promptly removing same upon completion of the Work.

7. Sanitary Facilities:

Sanitary facilities will be furnished to the Contractor by Owner. The Contractor shall use only those facilities specifically provided or designated by the Owner. All costs associated with clean-up or damage of any kind shall be the responsibility of the Contractor.

8. Dusty Work:

The Contractor shall notify Owner and Development Manager prior to the commencement of any extremely dusty work (e.g., sheetrock cutting, sanding, extensive brooming, etc.) such that Owner may arrange for additional filtering capacity on the affected HVAC equipment. Failure to make such prior notification will result in the Contractor absorbing any costs associated with returning any HVAC equipment and any other existing improvements damaged by dust to their original condition.

9. Disposition of Materials:

Any and all unused construction materials shall be disposed of by the Contractor in the same manner as waste or unwanted material, except as may otherwise be directed by Owner or required by authorities having jurisdiction.

10. Clean-up:

The Contractor shall at all times, on a day-to-day basis, keep the Work Area and other areas of the Project Site free from accumulations of waste material, debris or rubbish caused by or incidental to the Work. Upon completion of the Work, the Contractor shall promptly remove from the Work Area, and the Project Site, all tools, scaffolding, surplus materials, trash and debris, and shall leave the Project Site, and Work Area “broom clean”. Any debris, rubbish, materials or equipment left outside the Work Area may be disposed of by Owner, and the Contractor shall be responsible for promptly reimbursing Owner for the cost thereof.

11. Working Hours:

If the Work is being performed after initial occupancy of the Project Site has occurred, certain operations must be performed outside the normal working hours of Monday through Friday to prevent the disturbance or interruption of normal business operations. These operations include, but are not limited to:

A. Drilling or cutting of the concrete floor slab.

B. Drilling or cutting of any concrete structural member.

C. Sanding, chiseling or leveling of the concrete structure.

D. Any work which generates noise or vibration which may be disruptive to normal office procedures elsewhere in the Project Site.

E. Any work that creates an odor that is disruptive to Owner and/or its tenants.

F. Any work otherwise is disruptive to Owner and/or its tenants.

12. Workman Conduct:

No loud or abusive language or actions or the playing of music which can be heard outside the Work Area will be tolerated. It will be the responsibility of the Contractor to enforce this regulation on a day-to-day basis and/or in response to specific complaints from tenants, Owner or Development Manager.

13. Electrical Panel Changes:

All additional electrical circuits added to existing electrical panels or any new circuits added to new electrical panels will be appropriately marked as to the area and/or equipment serviced by the circuit(s) in question. All electrical panels which have covers removed for any reason (e.g., so as to allow the addition of new circuits) or any new electrical panels which are installed shall be left at the end of each day with all panel covers properly in place and all panel doors securely closed. Under no circumstances will power serving other tenants' premises or other areas of the Project Site be shut off without the specific advance approval of Owner and Development Manager.

14. Special Elevator Services:

Any work or repair which necessitates or involves the following must be scheduled in advance with Owner and Development Manager.

A. Access to the top of the service elevator cab.

B. Utilization of the service elevator to perform the Work.

C. Work on or in the service elevator.

Sufficient notice regarding such proposed activities should be given so as to allow Owner to arrange with the elevator installer or service contractor to provide personnel to perform or supervise such activities.

Under no circumstances should the Contractor permit their personnel to utilize the service elevator for any purpose other than the approved transport of materials and/or personnel. Contractor will be responsible for any extra costs incurred by the Owner resulting from or in connection with such use of the service elevators by the Contractor (or its employees or subcontractors).

15. Welding/Cutting Torch Use:

No welding, burning or cutting torch work is to be performed at the Project Site without the prior approval of Owner and Development Manager. If such approval is granted by Owner and Development Manager, the Contractor must have a firewatch, fire blankets and a fire extinguisher present in the Work Area at all times when the equipment is being used. Additionally, the Contractor may, at Owner's or Development Manager's request, be required

to perform any such work after-hours because of the fumes which may be associated with such welding/cutting torch usage.

16. Spraying of Varnishes/Lacquer in the Project Site:

No varnishes/lacquers or similar products are to be sprayed in the Project Site without the prior approval of the Owner and Development Manager. Because of their potential combustible nature, this type of work should normally be done off-site. Anyone found spraying these compounds in or around the Project Site without the prior written approval of the Owner and Development Manager will be required to cease such work.

17. Draining of Sprinkler Lines:

Any Work which will involve the draining of a sprinkler line or otherwise affect the Project Site's sprinkler system must be approved in writing in advance by Owner and Development Manager, and must be performed after hours. In all instances where this is done, the system may not be left inoperable overnight.

De-energizing of the fire pump related to drainage of the sprinkler lines will be done only by Owner's personnel and at such time of the day as determined by Owner. Contractor is required to given Owner 24-hours notice prior to such de-energizing to be performed.

18. Deliveries:

All deliveries and/or pick-ups by the Contractor or its vendors must be made through the loading dock and service entrance or as otherwise specifically provided by Owner. All delivery vehicles are governed by a 30 parking limitation.

19. Parking:

Construction workers will park only in areas designated by Owner and will be subject to towing if in violation thereof. Handicap parking stalls should not be used/blocked for loading or unloading under any circumstances. Should Contractor have a need for parking for subcontractors, Contractor shall obtain prior written permission from Owner. All of Contractor's employees or subcontractors must park in area designated by Owner. Notwithstanding the foregoing, Owner and Development Manager are not obligated to provide any parking spaces for Contractor or its subcontractors unless otherwise provided in the Contract Documents.

20. Safety Data Sheets:

All materials that have any potential for hazard (paints, glues, polishes, solvents, etc.) must have their associated MSDS sheets available at the Project Site during the performance of the Work.

21. Posting of These Project Site Rules and Regulations Governing the Work:

A copy of these Project Site Rules and Regulations Governing the Work, acknowledged and accepted by the Contractor, must be posted at the Project Site in a location clearly visible to all workers. It is the Contractor's responsibility to instruct its employees and all subcontractors to familiarize themselves with these rules and regulations and to enforce compliance with these rules at all times.

22. Fire Alarm System:

Should a Contractor's Work including welding, the use of a cutting torch, or any other activity that might interfere with the fire alarm system wiring or otherwise trigger or effect the fire alarm system, the Contractor must receive prior written approval from the Owner and Development Manager at least 24 hours prior to commencing such activity. Owner at its sole discretion shall select the time of day for such operations.

The Contractor shall take any and all steps to prevent accidental triggering of the fire and smoke detection devices within or adjacent to the Work Area and at the Project Site. Such steps shall not include disconnecting any such devices, but rather shall involve the installation of dust barriers around smoke detectors, etc.

23. Light Bulbs and Ballasts:

The Contractor is responsible for ensuring that all light fixtures in the Work Area are working properly and are fully lit upon completion of the Work. This includes replacement of tubes and ballasts as required in light fixtures that are replaced, added or repositioned.

24. Non-Compliance:

In addition to other rights and remedies afforded to Owner under the Contract Documents, non-compliance with these regulations will result in the possible barring of the Contractor from current or future activities at the Project Site. Any costs incurred by Owner or Development Manager resulting from the Contractor's activities (including the activities of any of the Contractor's employees or subcontractors) will be billed to the Contractor or set off against future payments to the Contractor in connection with the Work.

25. Damaged Property:

a. All costs associated with replacing, repairing or cleaning any property which have been damaged during the performance of the Work will be billed to the Contractor or set off against future payments to Contractor in connection with the Work..

J. WORK REQUIRED UNDER THIS PROPOSAL INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING INCLUSIONS:

Project Construction provisions/Work :

1. ~~Contractor shall provide provision for (10) ten temporary signage, and barricades as required for construction and trenching. Provide provision for traffic control, traffic re-routing and walkway/pathway/sidewalk alternate paths of travel and/or re-routing as necessary and required by conditions and progress of work. Directional signage is critical and shall be provided for review and approval to the Campus operations and student coordination as construction progresses at the construction site. Minimal signage requirements shall be defined as 24" x 36" polyvinyl waffle board signs with 4" lettering in contrasting colors, securely mounted to posts.~~

2. Contractor shall furnish, erect and properly maintain at all times, as directed by District, Project Manager, or Architect or required by conditions and progress of work, all necessary safety devices as required by OSHA, city requirements and local jurisdictions, including but not limited to: safeguards, construction canopies, signs, audible devices for protection of the blind, ADA ramps, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public, and shall post danger signs warning against hazards created by such features in the course of construction at the Project construction site and throughout the Campus where any construction activities will occur.

3. Contractor to comply with applicable California Environmental Quality Act (CEQA) as required by the Program Environmental Impact Report (PEIR) and coordinate with the Project Manager to the items listed in Section 5.0 Mitigation Monitoring Program including, but not limited to:

   a. Biological Resources: B-2, Cultural and Paleontological Resources: CR-1, CR-2, CR-5, Geology and Soils: G-1, G-2, Hazards and Hazardous Materials, if applicable: HAZ-1 though HAZ-13, Hydrology and Water Quality: H-1, Noise: N-1, N-2, N-3, N-4, N-5, N-6, N-7, N-8, N-9, N-10, N-12, N-15, . Contractors shall follow all directions given by the Project Manager. All requested work shall be at no extra cost to the Owner or Project Manager.

   ~~b. This project requires the following, but not limited to: nesting bird survey, archeological monitoring and Native American monitoring involving ground disturbances in undisturbed sediments. All construction activities shall ensure compliance with PEIR. The contractor shall familiarize themselves with all mitigation monitoring and coordinate with the Project Manager for all construction activities involving PEIR to ensure The District Consultant can be scheduled for the related activities with (2) weeks' notice.~~

   ~~4. Fence Plan: Contractor to coordinate actual fence location with the Project Manager and Campus to determine the perimeter locations. Fence plan parameters are defined on the exhibit and shall include construction screen. Submit fence plan showing the layout of the fencing to the Project Manager for approval prior to installing temporary fencing.~~

   ~~5. Contractor shall coordinate all deliveries, equipment and materials to be onsite within the construction temporary fence zone, no later than 7:00am. Deliveries will not be permitted during "off-hours" and weekends, without prior approval from Project Manager.~~

~~**S. UTILITY WORK: If applicable**~~

~~**1. IRRIGATION SCOPE OF WORK PROCEDURE:**~~

~~a. Irrigation scope of work will consist of tying into existing and active irrigation system that includes irrigation controllers and irrigation lines that control irrigation outside of the project site limits. Below is the procedure that will be followed:~~

~~b. District, Project Manager, CONTRACTOR, and Irrigation SUBCONTRACTOR will review state of existing irrigation systems and sign-off on the condition of the entire system prior to any WORK performed by the CONTRACTOR. Once the condition of the system is signed-off and while the CONTRACTOR is performing their required scope of work associated with the system the entire affected portions of the system will be deemed as being owned by the CONTRACTOR. It will be the responsibility of the CONTRACTOR to restore/return the system to its signed-off conditions at the completion of the CONTRACTOR'S irrigation scope of WORK.~~

~~c. CONTRACTOR to perform required irrigation scope of WORK and necessary WORK, to ensure irrigation system is returned to its signed-off condition.~~

~~d. Owner, Project Manager, CONTRACTOR, and Irrigation SUB-CONTRACTOR will review completed irrigation scope of WORK and once it is verified and agreed upon that the irrigation scope of WORK is complete and the irrigation system is returned to its signed-off condition it will be turned over to the owner. In addition to the WORK specified, CONTRACTOR will be responsible for survival/ restoration of all existing plant material within limits of WORK but not specified on contract documents. CONTRACTOR will also~~

be responsible for all existing plant material outside limits of WORK but dependent on irrigation system modified by the WORK in contract documents.

e. CONTRACTOR shall repair, fix and replace any landscape area valves/controllers and irrigation broken, damaged or disturbed during the course of construction with like materials at CONTRACTOR'S own cost.

2. UTILITY SCOPE OF WORK:

a. Contractor to coordinate, furnish and install all public utility service connections and provide all communication and scheduling.

b. All costs for public utility service installation fees.

c. *Regional Notification Center.* Contractor, except in an emergency, shall contact the appropriate regional notification center at least two working days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and carried out by the Contractor unless such an inquiry identification number has been assigned to the Contractor or any subcontractor of the Contractor and the District has been given the identification number by the Contractor. Any damages arising from failure to make appropriate regional notification shall be at the sole risk of Contractor. Any delays caused by failure to make appropriate regional notification shall be at the sole risk of Contractor and shall not be considered for extension of time pursuant to Paragraph 8.4.

Utilities - Removal and Restoration

The District has endeavored to determine the existence of utilities at the Site of the Work from the records of the District of known utilities in the vicinity of the Work. The positions of these utilities as derived from such records are shown in the Contract Documents.

No excavations were made to verify the locations shown for underground utilities. The service connections to these utilities may not be shown on the plans. It shall be the responsibility of the Contractor to determine the exact location of all service connections. The Contractor shall make its own investigations, including exploratory excavations, to determine the locations and type of service connections, prior to commencing work, which could result in damage to such utilities. The Contractor shall immediately notify the Project Manager as to any utility discovered by Contractor in a different position than shown in the Contract Documents or which is not shown on the Contract Documents.

Contractor shall coordinate its Work with all utilities, including, but not limited to electricity, water, gas and telephone and meet with said utilities prior to the start of any work.

Existing Utility Lines; Removal, Relocation

The contractor has the responsibility to identify, with reasonable accuracy, all utilities necessary to complete their scope of work. The Contractor shall exercise due diligence and shall not be compensated by the District for the actual verified cost of locating, and removing, relocating, protecting or temporarily maintaining existing utility services.

d. The District will furnish an existing utility survey as-built for reference.

e. ~~The Contractor shall hire an independent underground utility locator service company to identify and verify existing underground utilities within the scope of work. All cost and fees associated with this work shall be at the Contractor's own expense and included in the base bid.~~

f. ~~Upon completion of the independent underground utility locator survey and prior to any excavations, Contractor's project manager, superintendent and subcontractor are required to conduct an onsite field verification of existing conditions, shall mark out the utilities, and transfer all information to a working utility as-built. Contractor's utility survey as-built shall be submitted to District.~~

g. ~~In the event an existing utility service is interrupted or damaged the Contactor shall be required to make all necessary repairs within 4hrs. District, at their discretion, shall calculate and assess liquidated damages against the Contractor for disruption to Campus Operations, including but not limited to, extended loss of utility services resulting in shut down of classes, instructional labs, administrative offices, public safety offices, M&O offices and fire/life/safety services of students and staff. Contractor shall furnish to the District an on-call emergency repair contact list of contacts/companies, consisting of, but not limited to, fiber optics, communications, signal, gas, water, electric and sewer.~~

h. ~~Adjustment of the Contract Amount, Milestones and/or Contract Time will be allowed to the extent the existence of such revealed conditions directly causes an increase in Contractor cost and/or time of performance of the Work shall be subject to the conditions noted above.~~

i. ~~Contractor shall not be entitled to an adjustment in the Contract Amount, Milestones and/or Contract Time if: (1) Contractor was aware of the condition at the time of the bid; (2) The existence of discovery of the condition could have been discovered as a result of any examination, investigation, exploration, test and/or examination of the Project Site and areas adjoining the Project Site as required by the Bid Documents prior to Contractor submission of Bid.~~

j. ~~Contractor failed to provide notice in accordance with the General Conditions.~~

k. ~~If the Contractor believes any subsurface or physical condition uncovered, revealed or otherwise exposed at the project site is of such character and/or nature as to require a change in the Contract Documents; materially different from that shown, indicated or described in the Bid Documents; or an unusual nature materially different from conditions normally encountered and generally recognized as inherent in Work of the character provided for in the Bid Documents, then Contactor shall upon discovery notify the District/Project Manager in writing within (1) one calendar day.~~

T. <u>BUILDING CONNECTIONS</u>:

1. Shutdowns to any utilities of existing Campus buildings shall be coordinated with the Project Manager and Campus. Notification to Project Manager and Campus must occur a minimum of 2 weeks prior to utility disruption and coordinated with Campus Operations.

2. Any and all stucco and plaster repairs to be included in Contractors bid for existing building connections, penetrations to be protected against inclement weather conditions, and patched immediately to ensure protection.

3. Contractor is responsible for any and all repair including but not limited to: paint touch-up, drywall repairs, asphalt, concrete, plaster, framing, electrical, plumbing, etc. as a result of scope of work.

~~U. SWPP / BMPs / DUST CONTROL~~

1. ~~Furnish, install, monitor, document and maintain throughout the duration of the project, all SWPPP and BMP measures as required in the contract documents and state/local mandates or requirements. Measures include, but are not limited to stabilize construction entrances, silt fences, gravel bag barriers, catch basin, sediment barriers, fiber rolls, all details, and as required.~~

2. ~~Provide dust control and cleanup of streets while on site. Streets must remain clean each day. Use street sweeper and hand sweeping as necessary to keep streets clean.~~

3. ~~Contractor to comply with Storm Water Pollution control including conformance with erosion control plan and protection of own work as applies. Contractor is responsible to furnish, install and implement the erosion control plan complete per plans and specifications. Work is to include all sandbags, hay bales, swales, rumble pads, etc. as required to complete a system in compliance with all Federal, State, and Local requirements. All Contractors are responsible for repair and replacement of erosion control measures disturbed by or required by their own operations. Contractor shall follow all directions given by the Project Manager. All requested work shall be at no extra cost to the Owner or Project Manager.~~

V. WORK COORDINATION:

1. Contractor shall perform all construction activities as required per the contract documents, including but not limited to, removal and demolition of site areas, building elements and all connections as called out in drawings and site plans. Research existing record drawings and “as-built” for utility locations, “potholing” site as necessary to determine location of underground utilities, disconnecting, capping or sealing, and removing site utilities, re-routing of existing underground utilities, and field surveys as directed by the Owner.

2. All required pothole utility operations, as required to verify exact locations of existing utilities. Contractor is required to utilize a utility locating company, and ground penetrating radar as necessary to avoid damage to any existing utilities which remain. Contractor to immediately repair any damaged utility lines at their own cost.

3. As applicable and as necessary to conduct scope of work, vacuum excavator to be used at existing utility locations/sites to provide maximum protection of existing utilities.

4. Maintain full, uninterrupted and continuous use of all existing water, sewer, gas, electrical, and telecommunications / low volt systems at all Campus buildings. Provide temporary measures as needed and or required in order to ensure that this requirement is continuously met. Make all required notification as required per the specification prior to any shut down of existing systems.

5. Irrigation and sprinkler heads to be capped off in any construction activity areas.

6. Maintain adjacent irrigation systems to maintain existing landscape past the limits of work.

7. Tree protection: Provide temp fence at drip line of all tress. No storage or equipment to be placed in these areas.

8. Coordinate with the Project Manager and Owner, the lineal footage of trenching to be opened at any one time. The construction activities cannot impede the operations of the

campus. Construct and install as required, safety barricades and construction canopies for student and staff access to adjacent Campus Buildings and any area requiring coordination of egress and ADA access. Contractor shall provide trench plates at all open locations at the end of each day to provide pedestrian and vehicle access at all times.

9. Coordinate layout and sequence of work with other Contractors working on Campus. Bring to the attention of the Project Manager when coordination is required as related to Contractors scope of work.

10. Patch and repair pavement and resurface roadways where construction impacts have occurred.

11. Contractor shall remove and replace existing hardscape in kind.

V. SITE CLEARING AND DEMOLITION:

1. Contractor shall make note of any existing damage and notify the Project Manager prior to the start of work. Contractor to schedule a day with the Project Manager to walk the project site, adjacent off site, and building. Contractor to video tape existing condition and forward a copy of the video tape to the Project Manager for the District records prior to start of Construction. Any damage not noted and brought to the attention of the Project Manager, shall be repaired at the expense of the contractor.

2. Remediation and Abatement of any unforeseen Hazardous Materials will be required to be completed and proper clearance received by the District Environmental Consultant.

3. Site Lighting: Existing site lighting within the new building pad will need to be demolished and circuits retained to existing fixtures that are to remain to keep them operational.

4. Provide all site clearing and any demolition as required per contract documents, including but not limited to removal of all planting and landscaping material within areas of work including root systems, removal of existing site improvements, including asphalt paving, walkways, utility and irrigation system components, and related items, protection of existing trees to remain in planted areas, and demolition of structures as indicated on contract documents.

5. Removal of site concrete, walkways, and landscape as required for new construction. New walkways/pathways/sidewalks shall conform to ADA requirements.

6. All landscape repair and replacement due to construction activities indicated in contract documents are to be included in Contractors bid proposal.

7. Shoring where required. Shoring design, when required by state or safety regulations is to be prepared and stamped by an Engineer licensed with the State of California and all associated costs to be in the Contractors scope.

8. All OSHA approved temporary gang ladders, stairs, scaffolding, lifts and any other safety equipment as required accommodating the scope of work with all related permits, special permits as applicable and all height requirements accounted for.

9. All dewatering, pumping of rain water or minor ground water seepage as required for proper completion of the scope of work.

10. Daily cleanup of Contractor's debris, packing materials, boxes, daily trash: remove from site each day. Provide removal of debris from jobsite, including fees as necessary. Jobsite to be kept in a "broom-swept" condition at all times.

11. Prior to cutting concrete floors, walls or roofing: Contractor to provide x-ray to ensure rebar reinforcement is not removed.

12. Protection of all work and exteriors as necessary to prevent water damage to the interior from irrigation or weather elements.

13. Provide all weight and disposal tickets as necessary to comply with contract documents.

14. Include all necessary / incidental demolition to access areas that are schedule to be removed or connected as necessary.

15. Interior: Repair any walls or ceilings damaged as a result of connections to the existing buildings during demo or modification as necessary to install the scope of work. Exterior: Repair any roofing, plaster, finishes, concrete, etc. or related materials as necessary to install scope of work.

16. Protect all structures, appurtenances, equipment, finishes, etc. scheduled to remain as a result of new construction, repair work or connections to all existing buildings. Contractor shall take necessary provisions to provide protection measures for existing ornamental and architectural existing finishes to remain in place. Items to be protected in place are including but not limited to, theatrical audience chairs, windows, ceilings, architectural tiles and lights.

17. Provide appropriate caps or safe-off as required at Applied Technology Project construction site.

18. Contractor to provide all safety measures at any opening in roof, wall, floor or trench to meet all regulatory requirements.

W. HAZARDOUS REMEDIATION WORK:

1 Lead-containing paints, coatings, and glazings are known to be present on the project site. Owner has a zero-tolerance policy for uncontrolled lead releases during Lead Related Construction Activities. At no added cost to the Owner, all project site trades shall ensure compliance with California Code of Regulations Title 8 Section 1532.1 Lead. Each employer who has a workplace or operation covered by this standard shall initially determine if any employee may be exposed to lead at or above the action level and take all necessary steps to comply with the regulations.

2 Unforeseen asbestos, lead and transite or any other hazardous materials will be addressed through the allowances.

3 All hazardous materials which will be impacted during the demolition in the subject project are to be removed as part of this project scope.

4 Provide copies of all required notifications / certifications to the Project Manager and environmental consultants, as applicable.

5 During all work, provide monitoring and worker protective equipment in accordance with the California Occupational Safety and Health Administration (Cal-OSHA) and as

required by all regulating agencies. Where there is conflict, the most stringent requirement shall apply.

6 Contractor shall provide all specialized staff to demo and legally dispose of any transite, lead asbestos, or any other hazardous materials as encountered. Contractor shall have staff with lead awareness training and/or any required hazardous abatement material training, as required to perform your work and all work will be scheduled for monitoring through the Project Manager for the District's Environmental Consultant: Citadel Environmental.

7 The abatement workers shall have received Cal-OSHA accredited training and be certified for asbestos abatement work. All removal and disturbance of asbestos-containing materials shall be performed by an asbestos abatement contractor, using 32-hour asbestos certified workers (Asbestos Worker trained as outlined in 40 CFR 763). Abatement contractor's workforce shall be supervised by experienced persons trained, knowledgeable and qualified in the techniques of asbestos abatement, handling and disposal of asbestos-containing and/or asbestos-contaminated materials, and the subsequent cleaning of contaminated areas, including, at a minimum, Competent Person/Contractor Supervisor training as outlined in 40 CFR 763.

8 All removal and disturbance of lead-based materials shall be performed by a state-licensed contractor, using CDPH certified workers with at least one CDPH certified Supervisor. All removal and disturbance of lead-containing materials (not meeting the definition of "lead-based) as defined in 8 CCR 1532.1, shall be performed by a state-licensed contractor, using lead trained workers with certification of training meeting the requirements of 8 CCR 1532.1. Abatement contractor's workforce shall be supervised by experienced persons trained, knowledgeable and qualified in the techniques of lead abatement, handling and disposal of lead containing and/or lead contaminated materials, and the subsequent cleaning of contaminated areas.

9 When exposure monitoring of a particular lead-related task indicates that the permissible exposure limit (PEL) is or will be exceeded, the contractor shall use CDPH certified lead workers to complete the task. Contractors performing work that disturbs any Lead Containing Materials (LCM) must submit proof of negative exposure assessment (NEA) if personal protective equipment is not to be used. It is necessary for the Contractor to coordinate all lead-related construction work with the specifications and all regulating agencies. During all work, provide monitoring and worker protective equipment in accord with the California Occupational Safety and Health Administration (Cal-OSHA) and as required by contract documents. Where there is conflict, the most stringent requirement shall apply.

10 For Cal/OSHA compliance purposes, all other painted, varnished, and glazed lead-containing surface coatings (LCSCs) require that contractors performing activities that will disturb these surfaces/materials comply with the requirements of 8 CCR 1532.1. These surfaces were identified in the above referenced report to have detectable levels of lead, at concentrations less than 0.7 mg/cm^2 lead (the LBP standard) by X-Ray fluorescence.

11 Contractor shall utilize employees with HAZWOPER training, as outlined in 29 CFR 1910.120 and 8 CCR 5192, when handling all "other" hazardous materials, including fluorescent light ballasts and tubes, mercury switches, refrigerants, batteries, and the like.

12 Contractor shall furnish all labor, materials, services, insurance (specifically covering the handling and transportation of asbestos, lead, and other hazardous materials), and equipment which is specified, shown or reasonably implied for the removal, transport, and disposal of the hazardous materials.

13 The Work may include the removal, transport, and disposal of the following contaminated Materials:

a. All hazardous materials identified.

b. All materials used for work area preparation.

c. All discarded personnel protective equipment.

d. All other potentially contaminated materials.

14 Damages caused during the performance of abatement activities shall be repaired by Contractor (e.g. paint peeled off by barrier tape, nail holes, water damage, etc.) at no additional expense to Owner, unless other arrangements and approval have been provided by the Owner.

15 Contractor to perform this work shall be licensed by the State of California, Contractors State License Board and be registered to perform asbestos related work with the Division of Occupational Safety and Health, Department of Industrial Relations.

16 Transportation of Friable and Non-Friable Asbestos Containing Materials:

a. Contractor shall itself be or have a subcontractor who is a registered hazardous waste transporter with the State of California, Department of Toxic Substances Control.

17 Subcontractors shall hold all licenses applicable to specified trade work.

18 Comply with all federal, state, and local regulations pertaining to asbestos removal, storage, transportation and disposal; employee health and safety; Contractor certifications; and all licenses, permits, and training.

19 Contractor shall provide all labor, material, and equipment for PCB containing material removal, abatement and disposal in association with all demolition or connections to existing buildings. Workers involved in the removal of PCBs shall have received specific training on the hazards, appropriate personal protection and decontamination procedures associated with PCBs.

20 Contractor shall provide proper notification and obtain proper permits for the AQMD Air Quality District prior to start of work.

21 Contractor to keep all required paperwork onsite for review by AQMD.

~~X. ALLOWANCES:~~

~~Allowances to be included in the total bid amount as identified below. Use of any allowance will be at the sole discretion of the Owner/Project Manager and must be authorized in writing at the discretion of the Owner/Project Manager. No General Contractor or Subcontractor overhead and profit markups will be allowed on any allowance items. Any money used from the Allowances will be processed for payment to the Contractor using the District's Allowance distribution form. Any amount of money remaining in any of the Allowance line items upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests.~~

~~BID ALLOWANCE~~	~~DESCRIPTION~~	~~VALUE ($)~~
~~ALLOWANCE NO. 01~~	~~Unforeseen Conditions and Not Included in the Scope of Work.~~	~~$00,000.00~~

~~Allowance Subtotal~~ ~~$ 00,000.00~~
0 Dollars

~~Y. CONCRETE WORK FOR ADA REPAIR OF SIDEWALKS, PATHWAYS, WALKWAYS:~~

1. ~~Concrete allowance shall be used at Owners discretion. Allowance to be used for flatwork currently not identified in the drawings. All flatwork currently identified in the drawings shall be in Contractors bid proposal.~~

2. ~~All concrete work and concrete repair work which will be impacted during the demolition and construction operations for the project are to be removed as part of this project scope and replaced as ADA compliant throughout the project.~~

3. ~~Concrete panel Joint to joint replacement for a uniform and code compliant walkway. Demolition and concrete removal of panels to be joint to joint. Saw cutting to existing joints, reference drawings to replace existing concrete per section, contractor to match finish, color and grades to existing concrete and maintain positive drainage. Cross slope shall not exceed 2% maximum.~~

4. ~~Provide flush transition and replace accessible slopes where accessible walkways are disrupted.~~

~~Z. CONCRETE WORK~~

1. ~~All pumping, placement, and finish of concrete as required.~~

2. ~~Concrete trucks to be washed out at an area as designated by Project Manager. Washout and containment receptor shall be water tight to not allow leakage. Contractor shall be responsible for containment and removal of washout debris and any other hazardous waste, including water, generated by its operation to a legal dumpsite offsite. No pit clean-out areas will be allowed.~~

3. ~~Provide all forming of concrete at retaining walls, patch back, sack, and slurry.~~

4. ~~All placement of all concrete and finishing as required per the contract documents requirements.~~

5. ~~All OSHA approved temporary gang ladders, stairs, scaffolding, lifts and any other safety equipment as required to accommodate scope of work.~~

6. ~~Provide concrete mix design from a primary and secondary supplier in case of material shortage.~~

7. ~~Provide all rigging, storing, and hoisting of concrete reinforcement as required for the scope of work. Reinforcement steel and/or mesh to be stockpiled to an area designated by Project Manager.~~

8. ~~All backfilling and compaction of soil and/or base against walls.~~

9. ~~Furnish and install all grouting and dry packing associated to the concrete activities~~

10. ~~All sacking and patching of concrete work, as required.~~

11. ~~All caulking, expansion joints, construction joints, backer rods and joint sealing at flat work and wall joints as indicated on the contract documents.~~

12. ~~All concrete additives as required.~~

13. ~~Provide rebar caps as required by OSHA.~~

~~AA. TEMP FACILITIES / TEMP UTILITIES~~

1. ~~Contractor to provide and pay for the following: temp fencing, temp toilets, dumpsters, hand washing stations, water, electrical, phone, trailer, temp power, job site water, drinking water, data and security for the duration of the project. All temporary utilities required by the Contractor are required to be metered separately. See Exhibit D.~~

BB. GENERAL WORK REQUIRED

1. Any haul routes to be coordinated with Campus operations, Project Manager and any city or agency requirements and ordinances, including permits. .

2. Permits / Fees / Agency Notification / Compliance / Ordinances

3. Any and all other permit and/or service fees, assessments, or bonding required in conjunction with the work of this Contractor shall be the responsibility of the Contractor.

4. All notifications with various agencies required in the performance of the work shall remain the responsibility of the Contractor.

5. Compliance with regulatory agency, organization, and governing body requirements having jurisdiction over Contractors scope of work.

6. Contractor shall provide all necessary safety measures required for each work area including but not limited to: Temporary fencing with privacy screen as required, completely securing, and controlling each work area. Contractor shall move fencing as required to each area of work as required. Submit plan showing the layout of the fencing to the Project Manager for approval prior to installing temporary fencing. Temporary fencing shall be minimum 6' high relocatable fence panels (as appropriate). Fence panel bases shall be located to avoid trip hazards in all paths of travel. Barricades, traffic plates, temporary patching, temporary signage required for safely delineating all detours, road lane and pathway closures and rerouting, traffic control, safety warnings.

7. Contractor shall prepare and submit to the Project Manager for approval a traffic control and pedestrian pathway control plan prior to starting work in any area cover by the scope of work for review. Traffic control plan as required to be approved by the City jurisdiction.

8. There may be other District Contractors involved in the project or working on the Campus. It is the responsibility of this Contractor to be aware of other operations with the coordination of the Project Manager, and be aware of all others working in order to coordinate work accordingly.

9. Prior to use of bobcat or any equipment involving 2nd floor or roof, contractor to provide engineers statement that the weight of the equipment is appropriate to use for the floor design criteria.

10. Contractor shall furnish to the Project Manager at the end of each day, completed daily reports, and safety meeting reports. Reports shall include: name of each worker performing work each day, classification for each worker employed on the project (including any sub-tier subcontractors' workers), a description of work performed, and any equipment used for each day. Contractor forms to be provided by Project Manager. Current daily reports are a condition of release of monthly payment to the Contractor.

11. Responsibility for storage and security of own materials and/or equipment located on and off the jobsite property. Location of staging area to be determined / approved by Project Manager. Own work shed, yard, lighting and security fence, if required for storage.

12. Contractor shall be responsible to provide and maintain adequate dust control and street cleaning all areas of work and public pathways, haul routes and campus streets and walkways throughout the duration of their scopes of work. These measures must be done to the satisfaction of the District and Project Manager.

13. Off-loading, scaffolding, ladders, hoisting and moving of materials and/or equipment for own work.

14. Contractor is responsible for temporary power, portable lighting and extension cords necessary to complete the scope of work. Contractor will be responsible to provide general egress/ingress pedestrian, parking lot, walkway, safety, etc. OSHA required temporary lighting. Contractor shall provide their own task lighting, including any extension cords, generators and light stands as may be required.

15. Provide and maintain dewatering operation as required to eliminate ponding of water immediately after rainfall has occurred in order to allow these areas to dry out as quickly as possible. Dewatering to be done by whatever means necessary, including mechanical pumps, siphons, etc. Any SWPPP measures defeated or removed in the dewatering

process shall be replaced per the posted SWPPP plan by the Contractor. Dewatering for grading operation, trenches, footings, pits, slab areas, etc., shall be done immediately by Contractor.

16. Upon failure by Contractor to provide sufficient cleanup, and after 24-hour Notice, Project Manager will perform the cleanup and assess all costs against the Contractor's Contract, which have failed to perform clean up. If lack of cleanup results in an immediate safety concern to public safety the District and Project Manager shall have right to correct any situation.

17. Contractor is responsible for environmental conditions (i.e. temperature, moisture, etc.) affecting own work.

18. Provide survey, layout and field measurements for own work.

19. Safety requirement for own work, in compliance with most recent OSHA regulations Specification Section 01 4005 and in cooperation with the District's safety requirements. Hardhats, boots, eye protection, long pants and shirts, and 100% tie off are required for all personnel at all times during construction of the Project. Failure to comply with any Safety Regulations will be grounds for removal of personnel from the jobsite. Flammable products must be continually stored per OSHA regulations**.**

20. Job hazard analysis, IIPP, site specific safety plan must be submitted to Project Manager prior to commencement of work.

21. Contractor to comply with all ordinances regarding parking, hours of work and routing of delivery trucks to the project site, and as required by the District and Campus management staff.

22. Contractors and employees will be required to park in designated areas as directed by the Project Manager. No parking will be allowed within Campus student/staff/employee lots. Contractor shall provide provisions as required for own employees, equipment, suppliers and sub-tier contractors.

23. Compliance with specified warranty and guarantee requirements, both standard and special.

24. Provide one qualified Superintendent and one lead foreman for the duration of own work on project, including punch list corrections at completion of project. Superintendent and/or Foreman must be on-site when work is being performed. Superintendent / Foreman may not be changed without Project Manager's approval.

25. Attendance at jobsite coordination, scheduling and safety meetings shall be by the Contractors Project Manager and Superintendent at a minimum.

26. Multiple move-ons to comply with the project's schedule or as required.

27. Provide relocation of staging area as necessary due to construction progress and as directed by Project Manager.

28. Contractor has primary responsibility for locating existing utilities prior to commencing underground work. Contractor must make own notification to required agencies and hold a pre-dig conference prior to starting underground work. Contractor should not rely on any representation made by anyone other than those individuals duly authorized to

survey, locate and stake existing utilities. All utilities slated for removal or cap off must be potholed and exposed prior to removal of cap off. Should location of utilities differ from those shown on the contract documents contractor shall make every effort to locate said at no cost to the District.

29. All welding required for own work. Submit current and valid welder's certifications prior to beginning any welding installation on site for IOR, District or Project Managers review.

30. Additional testing costs as required should initial tests fail as a result of the scope of work.

31. All project record documents as required per plans and specifications. Monthly updates of as-built documents on record plan set, and transfer to project as built set at end of the project as required by specifications. Update as-built drawing on a weekly basis.

32. All project record documents as required per plans and specification.

33. Contractor is responsible for access onto the site for scope of work (i.e. cranes, concrete trucks, etc.)

34. Contractor shall be responsible for coordinating the structural drawings with architectural, mechanical, electrical, plumbing, civil, and general for all aspects and coordination of work.

35. Warranty period starts at Notice of Completion for all systems of the Applied Technology Project. All systems must be operational and accepted by the owner.

CC. **COORDINATED DRAWINGS**

~~1. Submit drawings that indicate routing, locations sizes, types and number of components in concealed spaces where potential conflict may occur between structures, mechanical, electrical, Automatic Fire Sprinkler System (AFSS), communications and ceiling suspension systems.~~

~~2. Indicate locations of ceiling penetrations and surface-mounted items. Provide cross sections at areas to indicate proper support of ceilings and non-interference with work of other Sections of specifications. Cross sections shall indicate coordination required and proposed solutions for routing of elements where potential conflict exists. Reproduction of Architect's reflected ceiling plan is not acceptable~~

~~3. LEAD PAINT: indicate proposed routing of electrical conduit, mechanical piping and ductwork, and miscellaneous framing before demolition or removal of painted surfaces, which may penetrate or disturb existing surfaces so in event of lead paint existence, accurate locations and scope of Work to abate lead paint can be determined by Owner.~~

~~4. Drawings shall be based on field measurements, shop drawings and product data.~~

~~5. Conflicts shall be brought to Architect's attention immediately.~~

~~6. Submit to Architect, in writing, requests for clarification or interpretations that will affect intent and/or scope of Contract Documents.~~

7. ~~Coordinated drawings shall indicate each class of Work in affected area. Drawing or written submittal shall include Contractor's recommendations for solution of any potential~~

conflicts as well as recommendations tendered by any Work of any Section of Specifications which may be affected thereby.

8. Submit coordinated drawings in scale of not less than 1/8" = 1' 0" with necessary sections and profiles at an appropriate, clearly readable enlarged scale. Submit coordinated drawings as one electronic (CD) copy and one bond (hard) copy.

9. Architect will review submittals, make appropriate notations and comments to ensure solution meets intent of Contract Documents and then return to Contractor for implementation.

10. Contractor shall be responsible for proper coordination of Work of Sections of Specifications in execution of coordinated drawings. Installation of materials, components or equipment under one Section of Specifications without full and complete, agreement, knowledge and consent by fabricators of adjacent or otherwise related or affected Work will not be approved.

11. It shall be incumbent upon Contractor that fabricators of Work involved in execution of coordinated drawings be informed, consulted and advised in sufficient advance time to arrive at solutions where no extension of contract time for extra cost to Owner will be approved due to Contractor's negligence in expeditious, timely submittal of coordinated drawings.

EXHIBIT D

PROJECT SPECIFICATIONS

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SECTION INCLUDES

This section specifies administrative and procedural requirements for a certified Application for Payment.

RELATED DOCUMENTS OR SECTIONS

Document – 00 50 00 Owner Contractor Agreement
Document – 00 40 00 General Conditions
Section 01 33 00 – Submittals
Section 01 77 19 – Contract Close-out

1.1.1 This Section specifies administrative and procedural requirements governing the Contractor's Application for Payment.
1.1.2 Submit Applications for Payment to Project Manager in accord with the schedule established by this Section, the Conditions of the contract and agreement between Owner and Contractor.
1.1.3 Related Requirements in other parts of the Project Manual:
1.1.3.1. Contract Sum and Payments: Agreement between Owner and Contractor.
1.1.3.2. Progress Payments, retention and final payment: Conditions of the Contract
1.1.3.3. Contract Close-out: Section 01 7719
1.1.3.4. Project Construction: Section 01 32 16

1.2 FORMAT AND DATA REQUIRED

1.2.1. Format and content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.
1.2.2. Submit itemized applications typed on AIA Document G702/CMA, application and Certificate for Payment and continuation sheets AIA Document G703/CM.
1.2.3. Provide itemized data on continuation sheet:
1.2.3.1. Format, schedules, line items and values: Those of the Schedule of Values accepted by the Project Manager.
1.2.3.2. Obtain signature of Resident Inspector on each application prior to submittal to Project Manager.

1.2.4. SCHEDULE OF VALUES

1.2.4.1 Within 10 days of award of contract, the Contractor shall submit to the Project Manager a schedule of values allocated to the various portions of the work in sufficient detail and supported by such data to substantiate its accuracy as the Project Manager and the Owner may require. This schedule, when approved, shall be used as a basis for the Contractors applications for payment. The Schedule of Values shall be aligned with the Specification Section 01 32 16.

1.2.4.2 Should the Contractor and the Owner not come to agreement on the schedule of values by the expiration date of the "interim Schedule", the Owner shall prepare a schedule of values which shall then be used for the remainder of the Project to determine the compensation payable to the Contractor under the Agreement."

SCHEDULE OF VALUES

Submit type schedule complying with the format established in this section. Contractor's standard form or electronic print out format may be considered, at Project Manager's discretion.

Identification: Include on Schedule of Values the following:

- Project Name and Location
- Contract/Purchase Order #
- Contractor's Name and Address
- Date of Submittal

Format: Type in tabular form with separate columns to indicate the following for each item listed

- Work Task Name, using Project Manual Table of Contents as a content guide.
- Related Specification Section
- Name of Subcontractor
- Description of Work
- Name of manufacturer or fabricator where applicable
- Name of supplier where applicable
- Change Order amounts allocated to the line item
- Total Dollar value of item
- Percentage of contract sum represented by item, rounded to nearest one hundredth percent, adjusted to total 100 percent.
- Correlate line items with terms and identification used in other administrative work items, including schedules, list of subcontractors, list of products and suppliers, and submittal schedule.

Provide schedules as follows:

Provide separate schedule of values for each section of the building I.E. – basement, 1st floor west, 1st floor east, second floor east second floor west, Roof, site work.

Provide separate schedule of values for site work, broken down by phases where applicable- refer to project Schedule Section 01 32 16.

Where an Application for Payment may include requests for equipment, components or materials purchased, stored or fabricated, but not yet installed, provide separate line item on the schedule- activities breakdown for such items. Breakdown such line items to include component, equipment or material cost for each phase or sequence of construction, with associated staging, transport and installation cost- refer to Section 01 32 16.

The total of the amounts of all scheduled line items shall equal the Contract Sum. Refer to Specification Section 01 32 16. Round amounts to the nearest dollar.

Provide separate line item for Contractors overhead and profit. Refer to Specification Section 01 32 16.

Revise schedule to list approved Change Orders and Construction Change Directives, and submit with each Application for Payment.

The amounts shown on Schedule of Values or/and shown on the detailed schedule breakdown for tasks and activities may be used by Owner to determine the true value for additive or deductive change orders.

Temporary facilities and other cost items that are not direct cost of actual work-in-place shall be shown as separate line items. Contractor must clearly identify what is included in each line item. Project Manager will request specific back-up for line items as deemed necessary.

An approved Schedule of Values with the associated cost loaded work activities shall serve as the basis for the monthly certified Application for Payment. All work activities shall be cost loaded and will be the basis for payment during the beginning months of the project. All activities must be assigned cost account(s) to align with the approved Schedule of Values- refer to Section 01 32 16. The Critical Path Method Schedule to be prepared by the Contractor pursuant to this section will be a part of a total system for scheduling, reporting work progress, and preparing the monthly payment application.

If at any time, Owner determines in its reasonable discretion that the Schedule of Values does not approximate the actual cost being incurred by Contractor to perform work, Contractor shall prepare for Project Manager approval, revised Schedule of Values with detailed cost loaded work activities breakdown, which then shall be used as the basis for future progress payments. Without changing the contract amount, Owner reserves the right to require Contractor:

1. To increase or decrease amounts within the line items in the Schedule of Values; and,
2. To conform the price breakdown to Owner accounting practice.

Contractor shall submit five (5) certified copies of a Schedule of Values for review and approval by the project Manager at least (14) days before the first application for Payment.

Any requested revisions shall be corrected and returned within (3) days of receipt.

An approved copy of the Schedule of values shall be transmitted by Project Manager to Contractor and IOR.

1.2.5. APPLICATIONS FOR PAYMENT

1.2.6. Prior to the date for each progress payment review established in the Construction Procedures Manual, the Contractor Shall submit to the Project Manager a copy of the schedule with that show the activities earned values and percentage of completion for physical work proposed by the Contractor that aligned with the overall Schedule of Values, refer to Section 01 32 16. The Official Contract Schedule shall be a CPM schedule. Activity costs shall correlate with the Schedule of Values. The activities of the Contract Schedule shall be from the Schedule of Values line items and shall be the basis for establishing the distribution of costs within the Schedule of Values. Costs relating to each activity shall be distributed evenly over the duration of the activity. The Schedule will be the basis for payment. Refer to Article 9 for general conditions.

Content and Format: Utilize Schedule for activities that align with Schedule of Values for listing items in Application for Payment.

Payment Period: Monthly, scheduled as defined in General Conditions

Submit application on AIA form G702 Application and Certificate for Payment as follows:

Submit initial rough draft of pay application to Project Manager for review- refer to Specification Section 01 32 16.

Project Manager will return initial rough draft of pay application to Contractor following review.

Submit six copies of adjusted pay application to Project Manager, consisting of 3 complete copies with all back-up and justification, 2 partial copies (cover sheet, schedule of values, schedule showing the percentage of completion for activities and releases) and pencil copy showing corrections required by Project Manager on initial rough draft.

Submit conditional lien releases for work covered by current application warranting that title to all work, labor, materials and equipment covered by the application is free and clear of all liens, claims, security interests or encumbrances, and notarized unconditional releases for work covered by previous month's billings.

Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Contractor. Incomplete applications will be returned without action.

Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Project Manager.

Include a current fully executed Demographics Monthly Summary Reporting Form located in specification section 01 2614 with the monthly payment application, submitted in hard copy and electronic format (excel).

Entries shall match data on the Schedule of Values and Contractor's Construction Schedule per Section 01 32 16. Use updated schedules if revisions have been made. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

The initial Application for Payment and final Application for Payment involve additional requirements.

Initial Application for payment within 60 days of NTP: Administrative actions and submittals that must precede with submittal for first verified Application for Payment include, but are not limited to:

1. Certified Schedule of Values
2. Performance and payment Bonds
3. List of principle suppliers and fabricators
4. Workers compensation certificates, if applicable
5. Auto Insurance , if applicable
6. Hazard Material Insurance certificate, if applicable
7. Construction Schedule (refer to Section 01 32 16)
8. Submittal Schedule
9. Emergency Contact list
10. Emergency Contact List of repair vendors such as fiber optics, gas, electric, sewer, etc.
11. Copy of licenses from governing authorities for performance of work
12. Certified payroll
13. Storm Water Pollution Prevention plan (SWPPP), if applicable
14. Certificate of Compliance with CEQA Mitigations, if applicable

1.2.7. At a meeting held on or before the ***23rd*** of each month, the Project Manager, Inspector, and Contractor will review the contractors proposed percentages of completion and agree on a final percentage to be paid for the month.

1.2.8. Release of Liens: Following agreement on percentage of completion, Contractor shall submit a conditional lien release warranting that title to all work, labor, materials and equipment covered by the invoice is free and clear of all liens, claims, security interests or encumbrances. With each subsequent application, Contractor shall submit a notarized unconditional lien release for the previous applications, and conditional lien release for the current application.

- In addition to releases from the contractor, each pay application shall include lien releases from every subcontractor listed at the time of the bid and every vendor who has filed a prelim notice for the project.
- An unconditional progress payment release which covers the period previously submitted by the contractor and paid for by the District and a conditional progress payment release for the current pay period being submitted.
- A conditional final upon final payment will be required for the retention pay app to be processed.
- No pay app will be processed until all releases have been received.

1.2.9. The Signing of a certificate for payment will constitute a representation by the Project Manager and Inspector to the Owner that, based on their observations at the site, and the data comprising the application for payment, the work has progressed to the point indicated and that, to the best of their knowledge, information and belief, the quality of work is in accordance with the Contract Documents and that the contractors are entitled to payment in the amount certified. However, by signing a certificate for payment, the Project Manager shall not thereby be deemed to represent that the Project Manager either has made exhaustive or continuous on site inspections to check the quality or quantity of the work, that either has reviewed the construction means, methods, techniques, sequences or procedures, or that either has made an examination to ascertain how or for what purpose the Contractors has used the previous payments paid on account of the contract sum.

1.2.10 Payments may be made by the Owner, in its sole discretion, on account of materials or equipment not incorporated into the work but delivered to the site and suitably stored and insured by the Contractor, Payments for materials or equipment stored shall only be considered upon submission by the Contractor of satisfactory evidence that it has acquired title to such material, that it will be utilized on the work under this contract and that it is satisfactorily stored, protected and insured, or such other procedures satisfactory to the Project Manager and Inspector, to protect the Owner's interests.

1.2.11 RETENTION

1.2.12 Subject to the requirements of state law, each Application for Payment shall be subject to all payments to the Contractor shall be subject to the requirements therein contained for the retention in the amount of from the monies earned by the Contractor on the contract during the progress of the work. There shall be reserved from the monies earned by the Contractor a sum equal to (5%) five percent. It is understood that, if payment requests are made in accordance with the established time schedule, payment requests received by Owner will be processed within sixty (60) days. Payment for additional work or extras, if any, under this contract shall be made in like manner. The amounts so reserved will be subject to claims of liens provided by applicable state laws in the manner and within the time now or hereafter provided by such statutes.

1.2.13 Pursuant to Section 22300 of the Public Contract Code of the State of California, the contract will contain provisions permitting the Contractor successful bidder to substitute securities for any moneys withheld by the Owner to ensure performance under the contract.

1.2.14 The Contractor warrants and guarantees herewith that title to all work, materials and equipment covered by an application for payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contract, whichever occurs first, free and clear of all liens, claims, security interest or encumbrances, referred to in this article as "liens", claims, security interest or encumbrances, referred to in this

article as “liens”, and that no work materials or equipment covered by an application for payment will have been acquired by the Contractor, or by any other person performing work at the site or furnishing materials and equipment for the project, subject to an agreement under which an interest of an encumbrance is retained by the seller otherwise imposed by the Contractor or such other person.

1.2.15 PROGRESS PAYMENTS

1.2.16 After a certificate of payment has been issued, the Owner shall make payment in the manner and within the time provided in the Contract Documents.

1.2.17 The contractor shall promptly pay each subcontractor (including suppliers, laborers and material men) performing labor or furnishing material for the work upon receipt of payment from the Owner out of the amount paid to the Contractor on account of the work of such subcontractor, supplier, laborer or material man, the amount of which said subcontractor, supplier, laborer or material man, the amount o which said subcontractor entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such work. The contractor shall, by an appropriate agreement with each subcontractor, also require each subcontractor to make payments to his subcontractors in a similar manner.

1.2.18 The Owner my on request, furnish to any subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for the Contractor and the action taken by the Project Manager on account of the work done by such subcontractor.

1.2.19 Neither the Owner nor the Project Manager shall have any obligation to pay nor to see to the payment of any monies to a subcontractor except as may otherwise be required by law.

1.2.20 No certificate for a progress payment nor any progress payment nor any partial or entire use or occupancy of the project by the Owner shall constitute an acceptance of any work which is not in accordance with the Contract Documents.

1.2.21 The Contractor agrees to keep the work and the site on which work is to be performed free and clear of a liens and claims of liens on materials furnished pursuant to the Contract Documents. Notwithstanding anything to the contract contained in the Contract Documents, if any such lien is filed or there is any reason to believe that any lien may be filed at any time during the progress of the work or the duration this contract, the Owner may refuse to make any payment otherwise due the Contractor or withhold from any payment due to the Contractor a sum sufficient in the opinion of the Owner to pay all obligations and expenses necessary to satisfy such lien or claim and completely indemnity the Owner against any such lien or claim unless and until the Contractor shall furnish satisfactory evidence that the indebtedness and the lien in respect thereof, if any, has been satisfied, discharged and released of record if and as provided by law pending the resolution of any dispute between the Contractor and the person filing such lien; and if such evidence is not furnished by the Contractor to the Owner within a period of five days after demand to do so, the Owner may discharge such indebtness and deduct the amount required therefore,, together with any and all losses, costs, damages and attorneys’ fees suffered or incurred by the Owner from any sum payable to the Contractor under the Contract Documents. Final payment to the Contractor may be withheld until the work and the site on which the work is to be performed are free and clear of any and all liens or rights thereto arising because of the work performed or materials furnished under the Contract Documents.

1.2.22 PAYMENTS WITHHELD

The Project Manager may decline to certify payment and may withhold their certificate in whole or in part, to the extent necessary to protect the Owner, if in their opinion they are unable to make representations to the Owner as provided in subparagraph 1.02D in this section.

If the Project Manager are unable to make representations to the Owner as provided in subparagraph 1.2.4 and to certify payment in the amount of the application, the Project Manager will notify the contractor as soon as possible, if the Contractor and the Project Manager cannot agree on a revised amount, the Project Manager will promptly

issue a certificate for payment in the amount for which the Project Manager is able to make such representations to the Owner.

The Project Manager may also decline to certify payment or any part thereof or, because of subsequent observations, they may nullify the whole or any part of any certificate for payment previously issued, to such extent as may be necessary in their opinion to protect the Owner from loss because of the following conditions.

Defective work not remedied;

Third Party claims filed or reasonable evidence indicating probable filing of such claims;

Failure of the Contractor to make payments properly to subcontractors or for labor, materials or equipment;

Reasonable evidence that the work cannot be completed for the unpaid balance of the contract sum;

Damage to the Owner or another contractor;

Failure to execute the work in accordance with the Construction schedule;

Failure to provide, maintain, and update record drawings;

Reasonable evidence that the work will not be or had not been completed within the contract time;

Failure to carry out the work in accordance with the Contract Documents;

Liens filed, or reason to believe it is probable a lien will be filed for any portion of the work;

Failure or refusal of the Contractor to fully comply with Division 1

1.2.34 UNIT PRICES

1.2.35 Unless otherwise specified, all unit prices quoted in the Bid Form for additions to or deductions from the work are the installed costs of products, including overhead and profit, taxes and other costs, so that they are the complete price to the Owner. These unit prices shall not apply to work which the contractor may elect to do or not to do, for the sake of his own convenience, nor shall they apply to work required to be performed in order to correct errors committed by the Contractor.

1.2.36 All unit prices shall be valid and in force during the life of the contract and shall be reconciled with the Contract Sum, in accordance with the General Conditions, before filing of the Notice of Completion.

1.2.37 FINAL COMPLETION AND FINAL PAYMENT

1.2.38 Upon receipt of written notice from the Contractor as required in Section 01 77 19 that the work is ready for final inspection and acceptance and upon receipt of final application for payment, the Project Manager will promptly make such inspection, and when they find the work acceptable under the Contract Documents and the Contract fully performed, the Project Manager will jointly issue a final Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their observations and inspections, the work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final certificate, is due and payable. The final certificate for payment will constitute a further representation that the conditions precedent, to the Contractors being entitled to final payment as set forth in subparagraph 1.4.1, have been fulfilled.

1.2.39 Retention of funds withheld will be released to the Contractor within 60 days of the date of completion of a work of improvement. Completion, is defined as occurring when a Owner begins occupancy, beneficial use, and enjoyment of work of improvement (excluding an operation for testing, startup, or commissioning) accompanied by

a cessation of labor on the work of improvement. It is also considered to occur when the work is accepted by the District or its agent if a cessation of work occurs for a continuous period of 100 days or more after work on a job began and is due to factors beyond the control of the contractor; or if a cessation of work occurs for a continuous period of 30 days or more and the Owner files for a notice of cessation or a notice of completion, then the project is considered to have reached completion for the purposes of payment.

1.2.40 Neither final payment nor the remaining retention percentage shall become due until the work is free and clear of any and all liens and the Contractor submits to the Owner (1) an Affidavit that all payrolls, bills for materials and equipment and other indebtedness connected with the work for which the Owner or his property might in any way be responsible, have been paid or otherwise satisfied; (2) consent of surety, if any, to final payment; and, (3) if required by the Project Manager, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the contractor, to the extent and in such form as may be designated by the Project Manager. If any subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond, satisfactory to the Owner, to indemnify him against any loss. If any such lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the Owner may be compelled to pay in discharging such lien or any sum that the Owner has reason to believe may be needed to satisfy any lien, claim or threat of lien arising out of the work. The Owner may deduct from final payment an amount equal to any costs, expenses and attorneys' fees incurred by the owner in removing or discharging any liens arising out of the work.

1.2.41 If, after substantial completion of the work, final completion thereof is materially delayed through no fault of the Contractor or by the issuance of change orders affecting final completion, and the Owner so confirms, the Owner shall, upon application by the Contractor and certification by the Project Manager, and without terminating the contract, make payment of the balance due for that portion of the work fully completed and accepted. If the remaining balance for the work not fully completed or corrected is less than the retention stipulated in the Contract Documents, the written consent of the surety to the payment due for that portion of the work fully completed and accepted shall be submitted by the contractor to the Project Manager prior to the certifications of such payment. Such payment shall be made under the terms and conditions governing final payment except that it shall not constitute a waiver of claims.

1.2.42 The making of final payment shall constitute a waiver of all claims by the Owner against the Contractor except those arising from:

1.2.43 Unsettled liens and claims against the Owner, the Project Manager, or their employees, agents or representatives;

1.2.44 Faulty or defective work appearing after substantial completion;

1.2.45 Failure of the work to comply with the requirements of the Contract Documents;

1.2.46 Failure to provide fully updated and completes record drawings

1.2.47 Any warranties contained in or required by the Contract Documents; or

1.2.48 Damages incurred by the Owner resulting from lawsuits brought against the Owner, the Project Manager, or their agents, employees or representatives because of failures or actions on the part of the Contractor, his subcontractors or sub subcontractors, or any of their employees, agents or representatives.

1.2.49 The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final application for payment.

1.2.50 All provisions of this Agreement, including, without limitation, those establishing obligations and procedures, shall remain in full force and effect notwithstanding the making or acceptance of final payment prior to the Date of Substantial Completion of the Project.

1.2.51 PREPARATION OF APPLICATION FOR FINAL PAYMENT

1.2.52 Fill in application form as specified for progress payments.

1.2.53 Use continuation sheet for presenting the final statement of accounting.

1.2.54 Administrative actions and submittals, which must precede or coincide with submittal of the final payment Application for Payment include the following:

1.2.55 Occupancy permits and similar

1.2.56 Warranties (guarantees) and maintenance agreements

1.2.57 Test/adjust/balance records

1.2.58 Maintenance instructions

1.2.59 Meter readings

1.2.60 Startup performance reports

1.2.61 Change over information related to

1.2.62 Owner's occupancy, use, operation and maintenance

1.2.63 Final cleaning

1.2.64 Completion of Project Close-Out requirements

1.2.65 Completion of items specified for completion after Substantial Completion

1.2.66 Assurance that unsettled claims will be settled

1.2.67 Assurance that work not complete and accepted will be completed without undue delay

1.2.68 Transmittal of required Project construction records to Owner

1.2.69 Proof that taxes, fees and similar obligations have been paid

1.2.70 Removal of temporary facilities and services

1.2.71 Removal of surplus materials, rubbish and similar elements,

1.2.72 Change of door locks to Owner's access

1.2.73 SUBMITTAL PROCEDURE

- Submit Applications for Payment to Project Manager at the time stipulated in the agreement
- Number: 1 copies of each application
- ~~Demographics Monthly Summary Reporting Form~~

1.2.74 UNIT PRICES

Unless otherwise specified, all unit prices quoted in the Bid Form for additions to or deductions from the Work are the installed costs of products, including overhead and profit, taxes and other costs, so that they are the complete price to the Owner. These unit prices shall not apply to work which the Contractor may elect to do or not to do, for the sake of its own convenience, nor shall they apply to work required to be performed in order to correct errors committed by the Contractor.

Part 2 – Products

(NOT USED)

PART 3 – EXECUTION

(NOT USED)

END OF SECTION 01 20 00

SECTION 01 26 00 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Schedule of Values

1.1.2. Application for Payment.

1.1.3. Change procedures.

1.1.4. Request for Information Procedures.

1.2. SCHEDULE OF VALUES

1.2.1. See also General Conditions Article 9 for additional information. Article 9 supercedes information contained within this section.

1.2.2. Submit typed schedule complying with the format established in this Section. Contractor's standard form or electronic print-out format may be considered, at Construction Manager's discretion.

1.2.3. Submit Schedule of Values per schedule defined in General Conditions, modified per Document: Supplementary Conditions and as specified.

1.2.4. Identification: Include on schedule of values the following:

1.2.4.1. Project name and Location.

1.2.4.2. Construction Manager’s Project Numbers.

1.2.4.3. Contractor's Name and Address.

1.2.4.4. Date of Submittal.

1.2.5. Format: Type in tabular form with separate columns to indicate the following for each item listed.

1.2.5.1. Generic Name, using Project Manual table of contents as a content guide.

1.2.5.2. Related Specification Section.

1.2.5.3. Breakdown to include a) Materials and b) Labor separately.

1.2.5.4. Name of Subcontractor.

1.2.5.5. Name of manufacturer or fabricator where applicable.

1.2.5.6. Name of supplier where applicable.

1.2.5.7. Change Order amounts allocated to the line item.

1.2.5.8. Total Dollar value of item.

1.2.5.9. Percentage of Contract sum represented by item, rounded to nearest one hundredth percent, adjusted to total 100 percent.

1.2.6. Correlate line items with terms and identification used in other administrative work items, including schedules, list of subcontractors, list of products and suppliers, and submittal schedule.

1.2.7. Provide schedules as follows.

1.2.7.1. Where an Application for Payment may include requests for equipment, components or materials purchased, stored or fabricated, but not yet installed, provide separate line item on the Schedule of Values for such items. Breakdown such line items to include component, equipment or material cost for each phase or sequence of construction, with associated staging, transport and installation cost.

1.2.8. The total of the amounts of all scheduled line items shall equal the Contract Sum. Round amounts to nearest dollar.

1.2.9. Provide separate line item for Contractor's overhead and profit.

1.2.10. Revise schedule to list approved Change Orders and Construction Change Directives, and submit with each Application for Payment.

1.2.11. The amounts shown on Schedule of Values may be used by Owner to determine the true value for additive or deductive change orders.

1.3. INSPECTOR OF RECORD PAYMENT PROVISIONS

1.3.1. In the event Contractor's performance of the work activities requires the Owner's Inspector of Record to work overtime, holidays or weekends, Inspectors cost shall be reimbursed by Contractor to Owner by deductive contract adjustment.

CHANGE PROCEDURES

1.3.2. General

1.3.2.1. See also General Conditions Article 7 for additional information. Article 7 supercedes information contained within this section.

1.3.2.2. Contractor shall establish measures as needed to assure familiarity of the Contractor’s staff and employees with procedures for processing changes to the Contract Documents.

1.3.2.3. The Contractor shall maintain and coordinate a Register of RFI's, ASI's, Contractor Change Order Requests, CCD's and Change Orders at the job site, accurately reflecting current status of all pertinent data as submitted by the Contractor.

1.3.3. Construction Manager will provide a single copy of all documents issued under this Article for transmission to Contractor. Contractor shall prepare copies as required for distribution to subcontractors, suppliers and others at no cost to Owner.

1.3.4. All changes in contract for construction, regardless of effect on Contract Price or Contract Time, require the approval of DSA in accordance with Section 4-338, Part 1, T-24 CCR, "Addenda and Change Orders".

1.4. PROGRESS PAYMENT COORDINATION

1.4.1. See Section 01 77 19 for requirements and relationship between progress payment and maintenance of record drawings.

1.4.2. See Section 01 33 00 for requirements and relationship between progress payment and construction schedule updates.

1.4.3. See also General Conditions Article 9.4 for additional information. Article 9.4 supercedes information contained within this section.

1.4.4. Submit application on AIA Form G702-Application and Certificate for Payment or on other form approved by the Construction Manager.

1.4.5. Payment Period: as defined in General Conditions.

1.5. PAYMENT FOR CONTRACT MODIFICATIONS

1.5.1. The Contractor shall compensate the Owner, by Owner-Contractor Contract adjustment, for the Construction Manager's reasonable costs to modify Contract Documents required by work not performed in accordance with approved Contract Documents.

1.6. REQUEST FOR INFORMATION

1.6.1. See also General Conditions Article 7.4 for additional information. Article 7.4 supercedes information contained within this section.

1.6.2. The Project Manager will respond to legitimate and bonafide Requests for Information (RFI) initiated by Contractor.

1.6.3. Submit all RFI's on attached form. RFI's submitted by subcontractors or suppliers will not be reviewed.

1.6.4. The Contractor shall compensate the Construction Manager's, by Owner-Contractor Contract adjustment, for the Construction Manager's reasonable costs to respond to RFI's if the P determines:

1.6.4.1. The RFI does not reflect careful study and review of the documents, or;

1.6.4.2. Demonstrates a lack of knowledge or construction competency reasonably expected of a Contractor performing the work.

END OF SECTION 01 2600

Request for Information

PROJECT NAME **RFI No.**

INFORMATION REQUESTED BY DATE SENT DATE DUE

CONTRACTOR RFI NUMBER

Contact: Phone: Fax No.:

TITLE OF ISSUE

DRAWING REFERENCE SPECIFICATION REFERENCE

DESCRIPTION OF PROBLEM / INFORMATION NEEDED: (Be clear and specific.)

POTENTIAL COST IMPACT **POTENTIAL SCHEDULE IMPACT**

REQUESTOR'S SUGGESTIONS

Date Signature of Requestor

SECTION 01 31 13 – PROJECT COORDINATION

PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Coordination.

1.1.2. Preconstruction conference.

1.1.3. Progress meetings.

1.1.4. Preinstallation conferences.

1.2. COORDINATION

1.2.1. Contractor shall comply with the following project start-up and administrative requirements for work under the Contract:

1.2.1.1. **Coordinate the work and work of Subcontractors with the Project Manager as well as Superintendents from other Contractors, as it may affect other construction project or other projects on the Site.**

1.2.1.2. Establish procedures for the orderly progress and prosecution of the work, including, but not limited to, attendance at project meetings, communication and documentation procedures, submittal processing, and control of the site.

1.2.1.3. Coordinate work with all inspection and testing, including compliance with all agency inspection criteria, including DSA inspections.

1.2.1.4. Coordinate and monitor use of temporary utilities, conserving energy where feasible.

1.2.1.5. Prepare detailed schedule for all subcontractors in compliance with Section 01 33 00 and Section 01 32 16. Coordinate scheduling of work, submittals, and inspection/testing to assure the efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later. Monitor schedules for compliance with completion dates, modify and recommend adjustments. Manage subcontractors work, including monitoring of work force, work completed and impact on schedule

1.2.1.6. Coordinate completion and clean up the Work in preparation for Substantial Completion.

1.2.1.7. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.2.2. Contractor shall comply with the following requirements for coordinating the Work:

1.2.2.1. Coordinate all work with the Project Manager as well as Superintendents from other Contractors so that there are no conflicts or delays.

1.2.2.2. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various trades having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

1.2.2.3. Coordinate space requirements and installation of mechanical and electrical work, which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with the line of the building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

1.2.2.4. Unless otherwise indicated, where piping, ducts, and wiring occurs in finished areas, conceal such pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements and the Project Manager.

1.3. PRECONSTRUCTION CONFERENCE

1.3.1. Project Manager will schedule a conference upon execution of the Contract.

1.3.2. Attendance Required: Owner, Owner's Project Inspector, Owner's Testing Service representative, Project Manager, Contractor, including assigned superintendent and foreman. Obtain Project Manager's prior approval of major subcontractor attendance if applicable.

1.3.3. Agenda:

1.3.3.1. Organizational structure of project, schedule overview and other project characteristics.

1.3.3.2. Designation of responsible staff representing the parties required for implementation of the project, including Contractor, Project Manager, and others.

1.3.3.3. Submission of list of Subcontractors, list of Products, draft schedule of values, and progress schedule for review.

1.3.3.4. Procedures and processing of field decisions, submittals, substitutions, proposal request, Change Orders and Contract closeout procedures.

1.3.3.5. Scheduling, including coordination with work of others.

1.3.3.6. Use of premises by Owner, Contractor, Project Manager.

1.3.3.7. Owner's requirements and partial occupancy.

1.3.3.8. Construction facilities and controls provided by Owner.

1.3.3.9. Temporary utilities considerations.

1.3.3.10. Security and housekeeping procedures.

1.3.3.11. Procedures for testing.

1.3.3.12. Procedures for maintaining record documents.

1.3.3.13. Requirements for start-up of equipment.

1.3.3.14. Inspection and acceptance of equipment put into service during construction period.

1.4. PROGRESS MEETINGS

1.4.1. Project Manager will schedule and administer meetings throughout progress of the work at weekly intervals.

1.4.1.1. Contractor shall assign the same staff members to represent and act on behalf of the Contractor at all progress meetings.

1.4.2. Project Manager will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

1.4.3. Attendance Required: Contractor Project Manager, Contractor superintendent, major Subcontractors and suppliers as requested, Owner, Project Manager, or Engineer, Project Inspector and others as appropriate to agenda topics for each meeting.

1.4.4. Agenda:

1.4.4.1. Review minutes of previous meetings.

1.4.4.2. Review of Work progress.

1.4.4.3. Field observations, problems, and decisions.

1.4.4.4. Identification of problems, which impede planned progress.

1.4.4.5. Review of submittals schedule and status of submittals.

1.4.4.6. Review of off-site fabrication and delivery schedules.

1.4.4.7. Maintenance of progress schedule.

1.4.4.8. Corrective measures to regain projected schedules.

1.4.4.9. Planned progress during succeeding work period.

1.4.4.10. Coordination of projected progress.

1.4.4.11. Maintenance of quality and work standards.

1.4.4.12. Effect of proposed changes on progress schedule and coordination.

1.4.4.13. Other business relating to Work.

1.5. PREINSTALLATION CONFERENCES

1.5.1. When required by Project Manager or in individual specification Sections, convene a pre-installation conference at work site prior to commencing work of the Section.

1.5.2. Require attendance of parties directly affecting, or affected by, work of the specific Section.

1.5.3. Notify Project Manager and Inspector of Record a minimum four (4) days in advance of meeting date.

1.5.4. Contractor will prepare agenda, preside at conference, record minutes, and distribute copies within two days after conference to participants, with submittal to Project Manager.

1.5.5. Review conditions of installation, preparation and installation procedures, and coordination with related work.

1.6. MINUTES OF MEETINGS

1.6.1. Project Manager shall compile detailed minutes of the meetings, except pre-installation conferences, and furnish one copy to the Owner, Contractor and Inspector. Minutes shall record discussion, actions taken, and issues assigned to parties responsible for resolution.

1.6.2. Recipients of minutes may make additional copies as they desire.

1.6.3. Published minutes will be accepted as properly stating the activities and decision of the Meeting unless they are challenged in writing prior to the next regularly scheduled Progress Meeting.

1.6.3.1. Persons challenging published minutes are responsible to reproduce and distribute copies of challenge to all recipients of the particular minutes being challenged.

1.6.3.2. Settle challenge as priority item of 'old business' at the next regularly scheduled meeting.

1.6.4. Except for pre-installation conferences, Contractor shall not prepare or distribute meeting minutes. Project Manager will not review or take action on any meeting minutes prepared by Contractor.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01 31 13

SECTION 01 3216 – PROJECT CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The following applies to this section:
1. General provisions of the Contract, including General and Supplementary Conditions.
2. The Drawings.
3. Division 01 Specification Sections and related requirements in other sections of the Project Manual.
4. Related requirements in other Contract Documents listed in the Agreement.

B. Review these documents for coordination with additional requirements and information that apply to work under this Section

1.2 DESCRIPTION

A. Requirements for CPM scheduling are included to insure adequate planning and execution of the Work and to assist the Owner in evaluating progress of the Work economically and chronologically.

B. The Contractor shall be solely responsible for establishing the schedule for the Work and shall be responsible for such schedule to be consistent with meeting the contract milestone, intermediate milestones, and completion dates as established by the Owner.

1. General Contractor shall prepare and submit per the time constraints identified in this section, a project schedule consisting of their scope of work, milestones, and work sequence to be incorporated into the development of the project baseline schedule. The Conditions of the contract and the other sections of Division 1 apply to this section as fully as if repeated herein.
2. The Contractor shall prepare and submit to the Owner a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the salient features of the work (including acquiring materials and equipment).
3. The schedule shall be in the form of a CPM (critical path method) schedule, of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period.
4. The scheduled completion date shall be the same as the contractual completion date, for the initial schedule and subsequent updates. Any proposed early completion date shall show the difference between that date and the contract completion date as Float, which shall belong to both the Owner and Contractor.
5. If, in the opinion of the Owner, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, without additional cost to the Owner. The Contractor shall submit any supplementary schedule or schedules in CPM form as the Owner deems necessary to demonstrate how the approved rate of progress will be regained.
6. All schedule updates must accurately reflect the as-built schedule. There shall be no change to the Critical Path without the Owner’s written consent.
7. Sequencing of the scope of work shall be coordinated with the Owner’s Project Manager and Campus.

1.3 QUALITY ASSURANCE

A. Contractor shall designate a scheduler and present that designee for Owner approval. Scheduler shall be trained and experienced in compiling construction scheduling data, in analyzing scheduling data by use of CPM, and in the preparation and issuance of periodic reports as required herein. The Contractor's Scheduling Representative shall have direct control and complete authority to act on behalf of the Contractor in fulfilling all project schedule requirements.

B. The CPM Progress Schedule shall be prepared based on the principles defined by the latest issue of the Construction Planning & Scheduling Manual published by the Associated General Contractors of America, except where superseded by the contract documents and this specification.

C. Software: This work shall consist of preparing, maintaining and submitting a Progress Schedule using the Critical Path Method on Primavera P6 software, or newer release, which demonstrates complete fulfillment of all work shown in the contract documents. All work to prepare, and maintain the CPM Progress Schedule shall be performed using the scheduling software application provided by the Owner on network servers and accessed through the Internet with Owner provided user accounts.

1.4 OFFICIAL CONTRACT SCHEDULE (Baseline Schedule)

A. The Critical Path Method Schedule to be prepared by the Contractor pursuant to this section will be a part of a total system for scheduling, reporting work progress, and preparing the monthly payment application.

1. Within fifteen (15) calendar days after the Notice to Proceed, the Contractor shall submit the complete project schedule to the Owner's PM for review.

2. The approved Interim Schedule shall be incorporated into the final Contract Schedule and shall represent the initial forty five (45) calendar days of the Contract Schedule.

3. The initial submittal of the Contract Schedule shall not reflect contract changes or delays. These changes shall be added within the first Schedule Revision.

4. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

5. The Official Contract Schedule shall not extend beyond the number of calendar days specified in the Contract. The baseline schedule shall have a data date of the first working day of the contract and not include any completed work to date. The baseline schedule shall not attribute negative float or negative lag to any activity.

6. Schedule review by the Owner and its agents is limited to ensuring the logic of sequencing is reasonable and Contractor has demonstrated ability to meet contractual milestone and completion dates. Acceptance of schedule should not be construed as direction from the Owner to Contractor on how to schedule the work. Construction Manager shall review and return with comments within three (3) working days of receipt of the schedule submittal. The re-submittal must be returned within five (5) calendar days from receipt of the Project Manager 's request for revision to the baseline schedule. This process will continue until the baseline schedule is accepted. With each re-submittal, the contractor shall include a narrative with a brief statement for each review comment that explains how that comment was addressed. Any revisions made as a result of the review comments, shall be made by the Contractor at no additional cost to the Owner. The first progress payment will not be given if the Interim schedule has not been accepted.

7. Should the Contract Schedule not be accepted within sixty (60) calendar days after Notice to Proceed, the Contractor may be due provisional progress payments(s) on work performed, based on the Interim Schedule. It is the responsibility of the Contractor to reconcile such cost information and payments with the Contract Schedule. However, no payment shall be approved after the sixty (60) calendar day period, until the Contract Schedule has been accepted by the Owner.

8. After Completion and Acceptance of the Official Contract Schedule: The Contractor will provide initial computer reports and weekly and monthly reports thereafter.

9. The project schedule shall be computer generated, time scaled, and critical path method (CPM) network utilizing the precedence diagram method of representation. The number of activities shall be sufficient to assure adequate planning of the project, to permit monitoring and evaluation of progress, and to do an analysis of time impacts. Schedule activities shall include the following:
    a. Activity Name – Clearly and uniquely define each activity name with a description of the work that is readily identifiable to inspection staff. Each activity shall have a narrative description consisting at a minimum of a verb or work function (i.e. form, pour , excavate etc.) and object (i.e. slab, footing, wall etc.) and a location (i.e. room number, gridline, column line etc.)
    b. Start and finish dates
    c. Construction activities shall have duration not to exceed Fifteen (15) calendar days. If an activity is greater than Fifteen (15) calendar days, the activity will need be split or phased.
    d. All holidays and non-working days shall be identified by way of calendar designations. Refer to General and Supplementary Conditions for recognized Designated Holidays. The schedule shall clearly indicate any work that is planned to be accomplished on a work schedule other than eight (8) hours per day and forty (40) hours per week.
    e. The schedule shall include an activity for "Owner / Architect punch walk & list distribution" with a Seven (7) calendar day duration for each area.
    f. Punch walk / Correction Activity shall not have duration longer than Fifteen (15) calendar days.
    g. At least one predecessor and one successor is required for each activity, except for the project start and finish milestones.
    h. All required constraints.
    i. Codes for responsibility, stage, work shifts, and location.

10. **Activities:** The initial submittal of the Official Contract Schedule shall include, in addition to construction activities, the following:
    a. The submittal and approval of construction drawings, shop drawings and materials, the procurement, fabrication, delivery, and testing of major materials and equipment, and their installation and testing.
    b. Contract requirement dates of all or parts of the Work will be shown including all activities of the Owner that affect the progress of the work.
    c. Activities of completed work ready for use by next trade, etc.
    d. Activities relating to different areas of responsibility, such as sub-contracted Work which is distinctly separate from that being done by Contractor directly. Each activity shall represent the work of a single subcontractor.
    e. Different categories of Work as distinguished by craft or crew requirements.
    f. Different categories of Work as distinguished by materials.
    g. Distinct and identifiable subdivisions of Work such as structural slabs, beams, or columns. Location of Work within the project that necessitates different times or crew to perform.
    h. Outage schedules of limiting times that existing utility services may be interrupted to construct the Project.
    i. Acquisition and installation of equipment and materials supplied and/or installed by Owner or separate Contractors.
    j. Material stored on site.

11. **Major Equipment/Materials**: For all major equipment and materials fabricated or supplied for Project, Including All items identified as "San Bernardino County Design Submittals", the Construction Schedule shall show a sequence of activities including:
    a. Preparation of shop drawings and sample submissions.
    b. Receiving approval of the design drawings, calculation and specification.
    c. Time required to obtain special inspection certifications and additional permits or certifications that may be required for specific tasks and/or systems (i.e., elevator variance).
    d. Review of shop drawings and samples.
    e. Shop fabrication, delivery, and storage.
    f. Erection or installation.
    g. Test of equipment and materials.
    h. Required dates of completion.

12. **Milestones:**
    a. Standard Work Hours: 24/7
    b. Notice to Proceed Milestones

        i. Construction (66 Calendar Days) - issued after District Board Approval and execution of the contract, shall consist of all general requirements, including but not limited to required surveys, submittals, deferred approvals, design services, permits and approvals, pre-construction meetings and activities, site walks, long lead procurement requirements, hall off, installation, operation, and complete contract scope of work as defined in the project document by July 31, 2020. Liquidated damages are tied to the July 31, 2020 completion date. See Exhibit G Construction Agreement Form for more information related to LD's.

        ii.

    c. Interim Milestones
        i. No interim milestone for this project.
    d. Completion Milestones
        i. Substantial Completion: (1) calendar day, within duration of NTP 1.
        ii. Punch list: (7) calendar days, within duration of NTP 1.
        iii. Final Completion (1) calendar day, within duration of NTP 1.
        iv. Notice of Completion (1) calendar day, within duration of NTP 1.
    e. Phasing of Work
        i. Constraints: See General Requirements Division 1, Section 01 32 16; Project Construction Schedule.

13. **Contract Time and Sequencing:** The Official Contract Schedule shall include the entire scope of work and show how the Contractor plans to complete the work. The CPM schedule shall show the order in which the Contractor proposes to carry out the work with logical links between time-scaled work activities, and calculations made using the critical path method to determine the controlling operation(s). The Contractor is responsible for assuring that all activity sequences are logical and that each schedule shows a coordinated plan for complete performance of the work.
    a. All analysis of time impacts shall be based upon total float. Total float shall be the difference in calendar days between the late finish date and the early finish date of an activity. Float shall be a jointly owned resource. Float shall be consumed by both the Owner and the Contractor on a first come first served basis.
    b. The contract completion milestone shall represent the completion of all construction related work.
    c. The anticipated weather related delays as noted in "Weather Days" 1.8 of this division shall be

taken into consideration and included with the duration of the applicable schedule activity(s).

d. The Contractor shall furnish such manpower, materials, facilities and equipment and shall work such hours, including night shifts, overtime operations, Sundays and holidays as may be necessary to insure the prosecution and completion of the Work in accordance with the Final Baseline schedule.

14. **Relationships:** All activities shall be linked by realistic logical Finish-to-Start relationships only. Other type of relationships shall be permitted but shall be minimized (including start-to-start and finish-to-finish). The Owner's PM will reject any schedule utilizing unrealistic or meaningless logic. Constraints on activities shall be kept to a minimum and subject to the written permission of the Owner's PM. Negative lags will not be used without the prior written permission of the Owner.

15. **Critical Activities:** The schedule shall show the activities that define the critical path. Multiple critical paths will not be accepted. A total of no more than 25 percent of the baseline schedule activities shall be critical or near critical, unless otherwise authorized by the Owner's PM. Near critical is defined as float less than ten (10) days.

1.6 UPDATE SCHEDULES

A. The Contractor shall submit an Update Schedule – hard copy and electronic copy -- and meet with the Owner's PM to review progress, before the first day of each month, beginning one month after the Baseline Schedule is accepted. The Contractor shall allow Seven (7) calendar days for the Owner's PM to review after the update schedule and all supporting data are provided, except that the review period shall not start until the previous month's required schedule is accepted.

1. The Update Schedule shall have a data date of the end of the month or other date established by the Owner's PM. The update schedule shall show the status of work actually completed to date and the work yet to be performed as planned. Actual activity start dates, percentage complete, and finish dates shall be shown. Actual Durations for work that has been completed shall be shown on the Update Schedules for when the work actually occurred, including submittal reviews and contractor re-submittal times. The update submittal scope shall contain the following information:
   i. Actual Start and finish dates
   ii. Percent complete and remaining duration
   iii. A narrative explaining each change to the record schedule
   iv. A tabular listing of all activities including: Activity data, activity identifier, description, remaining duration, total float, and activity.
   v. Narrative of manpower used verses manpower allocated in the schedule
   vi. Daily reports signed daily by the Project Management Representative.
   vii. Copies of confirmation letters from vendors and/or manufactures confirming material orders.
2. The Contractor may include modifications such as adding or deleting activities or changing activity constraints, durations, or logic that do not: (1) alter the critical path(s) or near critical path(s), or (2) extend the schedule completion date compared to that shown on the current accepted schedule. The Contractor shall provide a narrative in writing that states the reasons for any changes to the planned work. If any propose changes in planned work will result in (1) or (2) above, then Contractor shall submit a time impact analysis as described herein.
3. Any request for an adjustment of the Contract Time for completion submitted by Contractor for changes or alleged delays shall be accompanied by a complete Time Impact Analysis, (TIA),

which shall be submitted for review within fifteen (15) days after the initial request for time by Contractor, or the impacting incident, whichever comes first.

4. **Narrative Reports**: Monthly Narrative Reports shall contain the following information for each monthly update:
   a. Description of overall project status
   b. Description of problem areas (referenced to pending change orders as appropriate)
   c. Current and anticipated delays not resolved by approved change order, including:
      1) Cause of the delay
      2) Corrective action and schedule adjustments to correct the delay
      3) Known or potential impact of the delay on other activities and milestones.
      4) Changes in the construction sequence
      5) Pending items and status thereof, including but not limited to:
         a) Pending Change Orders
         b) Time Extension Requests
         c) Other Issues relating to Contract Time

5. Contract Completion Date status:
   a) If ahead of schedule, the number of calendar days ahead
   b) If behind schedule, the number of calendar days behind

6. **Three-week Window**: Weekly, for the progress meeting, the Contractor shall produce a three-week window of the current schedule, indicating activities scheduled for the current and following two week period.

8. Payment Progress Reporting: Owner and Contractor shall select a specified time for updating the Project Schedule at the jobsite each month. (Reference General Conditions Article 9 Progress Payments)

   a. The Owner and Contractor and his/her designated scheduling representatives will attend the meeting to review the project progress.
   b. The schedule shall be the basis for monthly pay requests derived from the joint review of the schedule update.
   c. All progress and status information provided by the Contractor shall clearly define the reporting period for which the status is provided.

9. At the monthly progress review meeting coinciding with the Pencil Draft Date/meeting (see article 9 Progress Payments) the Contractor will provide "actual start" and "actual completion" dates for activities that were started or completed during the reporting period(for purposes of forecasting activities with an agreed upon completion for that period will be counted for payment application purposes only). The Contractor and the Owner's PM will agree upon and assign percent complete values to activities in progress. In the event of a disagreement, the Owner's PM shall make the final decision as to percent completion of each activity.

10. After joint review, Owner's PM will process the Contractor's pay request based on progress from the schedule in conjunction with approved Schedule of Values associated with those progressed activities.

    a. Payment to the Contractor shall be made from the progress reflected by the Interim or the Contract Schedule.

11. Time is of the essence: Whenever it becomes apparent from the current monthly progress review that phases of Work or the Contract Completion Date will not be met, through no fault of the Owner, the Contractor will take the following actions with no change in the contract amount:

    a. Increase construction manpower to eliminate any adverse backlog of work.

    b. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the adverse backlog of Work.

12. The Official Contract Schedule as accepted by the Owner's PM will be an integral part of the Contract, and will establish interim Contract Completion Dates or milestone dates for the various activities.
13. Delays of any non-critical Work shall not be the basis for an extension of Contract Time.

14. **FLOAT TIME**; Float is defined as the time that a non-critical Work activity can be delayed or extended without delaying the scheduled completion of milestones specified in this Section or the scheduled completion date of the Work, or both. **Float time is not for the exclusive use or benefit of either Owner or Contractor. Neither Contractor nor Owner shall have an exclusive right to the use of float. Contractor is to document the effect on the updated Contract Schedule whenever float has been used.**

15. It is expressly understood and agreed that the failure by the Owner to either order the Contractor to expedite an activity or to expedite the activity by other means, pursuant to the two preceding paragraphs, shall not be considered precedent setting with respect to any other activities which may fall behind the Official Contract Schedule approved by the Owner; nor will it relieve the Contractor from completion of the Project Work in accordance with the Official Contract Schedule and the Contract Completion Date.
16. Owner's acceptance of, or its review of, comments about any schedule or scheduling data shall not relieve the Contractor from its sole responsibility to plan for, perform, and complete the Work within the Contract Time. Acceptance of or review of comments about any schedule shall not transfer responsibility for any schedule to Owner nor imply their agreement with (1) any assumption upon which such schedule is based, or (2) any matter underlying or contained in such schedule.
17. Failure of Owner to discover errors or omissions in schedules that it has reviewed, or to inform Contractor that Contractor, Subcontractors, or others are behind schedule, or to direct or enforce procedures for complying with the Contract Schedule shall not relieve Contractor from its sole responsibility to perform and complete the Work within the Contract Time and shall not be a cause for an adjustment of the Contract Time or the Contract Sum.

B. **Schedule Revisions**:

1. **General**: Revisions to accepted Construction Schedule must be approved in writing by the Owner and Contractor.
2. **Contractor**: Submit requests for revision to schedule to the Owner's PM together with a Time Impact Analysis (TIA) and a written rationale for revisions and description of logic for re-sequencing Work and maintaining Specific Contractual Milestone Dates listed in Contract Documents.

3. Proposed revisions acceptable to Owner may then be incorporated into next update of Construction Schedule following the review and acceptance.
4. **Acceptance**: Acceptance of revised schedule by Owner does not relieve Contractor of meeting contractual milestone and completion dates.

1.7 RECOVERY SCHEDULE

A. **General**: Should updated Construction Schedule show Contractor to be Ten (10) s or more calendar days behind schedule at any time during construction, Contractor will prepare Recovery Schedule displayed on CPM schedule, at no additional costs to Owner. Prepare Recovery Schedule to show plan for returning to original schedule as expeditiously as possible, and in a manner that complies with paragraph 1.07 Update Schedules, requirements.

B. **Schedule Preparation**: Within three (3) calendar days after notice from Owner's PM, prepare and submit to Owner's PM a Recovery Schedule, incorporating best available information from Subcontractors and others which will permit return to Construction Schedule at earliest possible time. Prepare Recovery Schedule to same level of detail as Construction Schedule and for maximum duration of one (1) month.

C. **Schedule Review**: Within seven (7) calendar days after notice from Owner, participate in conference with Owner and Owner's PM to review and evaluate Recovery Schedule. Submit revisions necessitated by review for Owner's acceptance within Three (3) calendar days of conference. Use accepted Recovery Schedule for its planned duration as basis for return to Construction Schedule.

D. **Schedule Assessment**: Seven (7) days prior to expiration of Recovery Schedule, confer with Owner's PM to assess effectiveness of Recovery Schedule. As a result of this conference, Owner's PM will direct Contractor as follows:

1. **Behind Schedule**: If Owner's PM determines Contractor is still behind schedule, Owner's PM will direct Contractor to prepare another Recovery Schedule for subsequent pay period.
2. **On Schedule**: If Owner' PM determines Contractor has successfully complied with provisions of Recovery Schedule, Owner's PM will direct Contractor to return to use of Construction Schedule.

1.8 REQUEST FOR TIME EXTENSION

A. In the event the Contractor requests an extension of contract time for unavoidable delay, justification shall be submitted no later than seven (7) calendar days after the initial occurrence of any such delay. When requesting time for proposed change orders, the request(s) must be submitted with the proposed change order with full justification. If the Contractor fails to submit justification he shall waive his right to a time extension at a later date. Justification must be based on the currently accepted contract schedule as updated at the time of occurrence of delay or execution of work related to any change(s) in the scope of work. The justification must include a schedule, including, but not limited to, the following :

B. **Time Impact Analysis (TIA)**:

C. The Contractor shall submit a written impact analysis (TIA) – hard copy and electronic -- to the Owner's Project Manager with each request for adjustment of contract time, or when the Contractor or Owner's Project Manager consider that an approved or anticipated change may impact the critical

path or contract progress.

D. The TIA shall illustrate the impacts of each change or delay on the current schedule completion date or internal milestone, as appropriate. The analysis shall use the accepted schedule that has a data date closest to and prior to the event. If the Owner's PM determines that the accepted schedule used does not appropriately represent the conditions prior to the event, the accepted schedule shall be updated to the day before the event being analyzed. The TIA shall include an impact schedule developed from incorporating the event into the accepted schedule by adding or deleting activities, or by changing durations or logic of existing activities. If the impact schedule shows that incorporating the event modifies the critical path and scheduled completion date of the Official Contract Schedule, the difference between scheduled completion dates of the two schedules shall be equal to the adjustment of contract time. The Owner's PM may construct and utilize an appropriate project schedule or other recognized method to determine adjustments in contract time until the Contractor provides the TIA.

E. The Contractor shall submit a TIA in duplicate within 7 calendar days of receiving a written request for a TIA from the Owner's PM. The Contractor shall allow the Owner's PM 14 calendar days after receipt to accept or reject the submitted TIA. All approved TIA schedule changes shall be shown on the next update schedule.

F. If a TIA submitted by the Contractor is rejected by the Owner's PM, the Contractor shall meet with the Owner's PM to discuss and resolve issues related to the TIA. If agreement is not reached, the Contractor will be allowed 21 calendar days from the meeting to give notice of potential claim, as noted in Section 00 70 10 General Conditions. The Contractor shall only show actual as-built work, not unapproved changes related to the TIA, in subsequent update schedules. If agreement is reached at a later date, approved TIA schedule changes shall be shown on the next update schedule. The Owner's PM will withhold remaining payment on the schedule contract item if a TIA is requested by the Owner's PM and not submitted by the Contractor within 21 calendar days. The schedule item payment will resume on the next payment application after the requested TIA is submitted. No other contract payment will be retained regarding TIA submittals.

G. In the event the Contractor disagrees with the Owner's decision, the Contractor shall be required to submit a claim pursuant to the DISPUTE Resolution process. (See article 4.5 of the General Conditions.)

H. The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

1.9 WEATHER DAY ALLOWANCE

A. The Contractor will only be allowed a time extension for unusually severe weather if it results in precipitation or other conditions, which in the amount, frequency, or duration is in excess of the norm at the location and time of year in question as established by NOAA weather data. No less than 44 calendar days will be allotted for in the Contractor's schedule. The weather days shall be shown on the schedule and if not used will become float for the Project's use. If the weather is unusually severe in excess of the NOAA data norm and prevents the Contractor from beginning work at the usual daily starting time, or prevents the Contractor from proceeding with seventy-five

(75%) of the work force for the critical path activities for a period longer than four hours. Based on the approved baseline schedule contractor shall document workforce, schedule activities, weather report and daily reports, submit to Project Manager for approval. Upon completion of review and approval by the Project Manager/Owner, will designate such time as unavoidable delay and grant one (1) calendar-day extension. Weather delay will only grant time extension, no additional cost.

B. Normal weather conditions shall be considered and included in the planning and scheduling of all work influenced by high or low ambient temperatures and/or precipitation to ensure completion of all work within the Contract Time.

C. Time extensions for unusually severe weather: This provision specifies the procedure for determination of time extensions for unusually severe weather. The listing below defines the monthly anticipated adverse weather in Calendar Days to be used for the Contract Period.

Monthly anticipated adverse weather days:

January	7
February	7
March	7
April	5
May	3
June	1
July	0
August	1
September	1
October	3
November	4
December	5

D. The above schedule of anticipated adverse weather will constitute the base line for monthly weather evaluations. Upon acknowledgment of the Notice to Proceed, and continuing throughout the Contract, actual adverse weather days will be recorded on a work day basis and compared to the monthly anticipated adverse weather days listed above.

E. The number of actual adverse weather delays shall be calculated chronologically from the Notice to Proceed date for 365 calendar days. The Project Manager will convert any qualifying delays to calendar days on an annual basis. If the number of actual adverse weather days, for each year or portion thereof, exceeds the number of anticipated adverse weather days, an equitable adjustment in calendar days to the Contract performance period will be made.

2.0 FINAL UPDATE SCHEDULE

A. The Contractor shall submit a final as-built schedule with actual start and finish dates for the activities, within 30 calendar days after completion of the contract work. The Contractor shall provide a written statement with this submittal signed by the Contractor's Project Manager and an officer of the company stating, "To my knowledge and belief, the enclosed final update schedule reflects the

actual start and finish dates of the actual activities for the project contained herein." An officer of the company may delegate in writing the authority to sign the statement to a responsible manager.

SEC`TION 01 35 17 – ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Products and installation for patching and extending Work.

1.1.2. Transition and adjustments.

1.1.3. Repair of damaged surfaces, finishes, and cleaning.

1.2. QUALITY ASSURANCE

1.2.1. Use only personnel who are thoroughly trained and experienced in the skills required and have installed similar applications of the specified products within one year prior to beginning work of this section.

1.2.2. Use only staff that is completely familiar with the requirements of this work.

1.3. ASBESTOS CONTAINING MATERIALS

1.3.1. Contractor is specifically notified that certain existing materials may contain asbestos, and such materials may be encountered during the course of this work. It is anticipated the underground utilities may contain asbestos. Contractor shall comply with all applicable laws and ordinances regarding such asbestos containing materials.

1.3.2. If Contractor encounters materials believed to contain asbestos containing materials, cease work at such locations and obtain direction from the Owner.

1.4. LEAD BASED PAINT CONTAINING MATERIALS

1.4.1. Contractor is specifically notified that certain existing materials may be coated with paints and coatings containing lead, and such materials may be encountered during the course of this work. Contractor shall comply with all applicable laws and ordinances regarding lead based coatings. The Owner's consultant has prepared an evaluation of such existing materials, and a report regarding this evaluation is available. Reference Spec. 13280.

1.5. PCB CONTAINING COMPONENTS

1.5.1. Work under this contract requires removal of existing oil insulated electrical switches. It is the Owners understanding that such switches do not contain PCB products.

1.5.2. Prior to removal of such components, Contractor shall take samples and deliver to an approved testing agency to determine the presence if any, of PCB containing materials. Contractor shall comply with all licensing and safety regulations concerning PCB containing materials in obtaining samples for testing.

1.5.3. Cost of sample and testing shall be included in the Contract amount and at no further cost to the Owner.

1.5.4. Contractor shall provide test results to Owner. If testing indicates presence of PCB containing materials, Contractor shall obtain dispose of as required

PART 2 - PRODUCTS

1.6. PRODUCTS FOR PATCHING AND EXTENDING WORK

1.6.1. General:

1.6.1.1. See also Section 01 73 29 Cutting and Patching

1.6.1.2. Unless noted otherwise, provide products matching existing finish, color, dimension, and assembly.

1.6.1.3. All products shall be new, unless specifically noted otherwise.

1.6.1.4. Provide asbestos-free materials.

1.6.1.5. Maintain all fire resistance ratings of existing assemblies and materials.

1.6.1.6. Maintain water and weather tight characteristics of assemblies and materials.

1.6.2. Comply with requirements as specified in applicable specification sections for materials used in repairing and extending existing work.

PART 3 - EXECUTION

1.7. SURFACE CONDITIONS

1.7.1. Inspection

1.7.1.1. Prior to work of this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence.

1.7.1.2. Verify that work of this section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

1.7.1.3. In the event of discrepancy, immediately notify the Project Manager.

1.7.1.4. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

1.8. PREPARATION

1.8.1. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

1.8.2. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work or as directed by Project Manager.

1.8.3. Remove debris and abandoned items from area and from concealed spaces.

1.8.4. Prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

1.8.5. If required, protect existing fire alarm sensors and wiring in ceilings and walls from damage.

1.8.5.1. Alert Owner's alarm supervision service prior to work which requires moving or adjusting wiring or sensors

1.8.5.2. Alert service each day prior to work to avoid response to false alarm and advise service each day at end of work to reinstate response to alarms

1.9. INSTALLATION

1.9.1. Coordinate work of alterations and renovations to expedite completion and to accommodate Owner occupancy.

1.9.2. Complete work in all areas in all respects, including maintaining operational mechanical and electrical systems.

1.9.3. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to specified condition.

1.9.4. Refinish visible existing surfaces to remain, located in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

1.9.5. During the course of the work, advise Project Manager of all discovered deficiencies, damage and degradation in existing structure, finishes, and all plumbing, heating, ventilation, air conditioning, and electrical systems.

1.9.6. Install Products as specified in individual Sections or as indicated.

1.10. TRANSITIONS

1.10.1. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patched Work shall match existing adjacent Work in texture and appearance.

1.10.2. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division as approved by Project Manager.

1.11. ADJUSTMENTS

1.11.1. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads by use of specified materials and as approved by Project Manager.

1.11.2. Where a change of plane of 1/4 inch or more occurs, request instructions from Project Manager.

1.11.3. Where permitted by code criteria for rated doors, trim existing doors as necessary to clear new floor finish. Comply with code and door listing requirements for fire rated doors. Refinish doors and trim after trimming.

1.12. REPAIR OF DAMAGED SURFACES

1.12.1. Patch or replace portions of existing surfaces which are currently damaged, lifted, discolored, or showing other imperfections, including those damaged by performance of the Work.

1.12.2. Repair substrate prior to patching finish.

1.13. FINISHES

1.13.1. Finish surfaces as specified in individual Product Sections or as indicated.

1.13.2. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections in all directions.

END OF SECTION 01 35 17

SECTION 01 40 05 – CONTRACTOR SAFETY

1.01 GENERAL

A. HEALTH AND SAFETY POLICY

1. The policy of the District is to promote safety at a level to minimize personal injury and potential property damage.

2. Employees of Contractor working on this project are required to meet or exceed all established and recognized codes and standards for safety and protection of personnel and property. District will require the General Contractor and each Subcontractor to include in their safety programs a 100% tie off policy for all work over 6'.

3. The safety guidelines included here are made available as an extension of the safety clause in your Contract General Conditions.

4. These guidelines are not intended to be complete in every detail, but are merely of a general nature. The contractors are in no way relieved of their responsibilities for safety of persons and property, and compliance with all statutes, rules, regulations and orders applicable to the conduct of the work.

5. The possession, use of and/or sale of any alcoholic beverage or illegal controlled drug substance will not be permitted on or immediately adjacent to the job site by any contractor, contractor employee, subcontractor employer or associate.

6. The abuse of prescribed medication will not be permitted on or immediately adjacent to the job site by any contractor, contractor employee, subcontractor employee or associate.

7. This Contractor, and subcontractors, share the responsibility of monitoring and enforcing, as necessary, A.5 and A.6 above. Any known, (or with due cause believed to be), violator of A.5 or A.6 shall be immediately reported to the Project Manager.

8. The District reserves the right to take corrective action, as deemed in the best interest of the Project and the District, for violation of any health or safety standard. This corrective action may include, but is not limited to; removal (from the job site) any unsafe tools/equipment, temporary work stoppage for any unhealthy or unsafe condition, immediate removal (from the job site) any person that is unwilling or incapable of conducting themselves in a manner that promotes a healthy and safe working atmosphere. Any person found to be repeatedly in violation of health and/or safety standards will be permanently removed for the site.

B. RESPONSIBILITIES

1. The District demands that Contractors perform in a reasonable and safe manner.

2. The contractors working on this project have the ultimate and total responsibility to conduct a sound accident control program, as it pertains to their work and their employees, as well as to ensure safe working conditions for employees of other contractors.

3. The Contractor and their Subcontractors will ensure employees cooperate with and coordinate safety matters to form a joint safety effort.

4. Employees who have been, or will be exposed to excessive (measured against applicable standards) levels of toxic materials or harmful physical agents shall be notified by the General Contractor.

Notice of corrective action being taken shall be provided to the employees. Accurate records must be kept of all exposures which are required to be monitored under the State and Federal Codes.

5. In the event of a defense by the Contractor against unsafe independent employee actions, the Appeals Board requires that you must show evidence of the following:
   a. That the employee was experienced in the job being performed;
   b. That you as the employer have a well devised safety program which includes training employees in safety matters relating to their individual job assignments;
   c. That you effectively enforce your safety program;
   d. That you have and enforce a policy of sanctions against employees who violate your safety program; and
   e. That the employee caused a safety infraction which he or she knew was in violation of your safety requirement.
6. Dedicated full time safety officer to be assigned to the project if more than 50 people on site.

C. SAFETY ACTIVITIES

1. General Contractor to provide a copy of their company IIPP and a copy of the site specific IIPP which will include local hospital location, and any site specific Job Hazard Analysis required.
2. General Contractor superintendent will have a minimum 10 hour OSHA safety certification.
3. General Contractor safety officer shall have a minimum of 30 hour OSHA training and will visit the site a minimum of once a week and provide a report on the site safety.
4. General Contractor and their Subcontractors will conduct or initiate and submit on a weekly basis:
   a. Safety program as required by current State of California requirements.
   b. Weekly “tool box” safety meetings between their supervisors, foremen, employees, and subcontractors working on the project; and
   c. Daily and Weekly safety inspections of your work area and those areas of work under your responsibility or shared responsibility as well as taking any other necessary safety precautions.

D. REPORTS

1. Submit all preliminary, weekly, periodic and special reports to the Project Manager. The Contractor is in no way relieved of the requirements for submission of reports to any agency or authority.
   a. All reports listing deficiencies, accidents, or injuries shall show corrective action taken.
   b. A weekly status and summary report of each “tool box” meeting held and items discussed. Each report shall also contain attendance names, signatures and company affiliation.
   c. A weekly status report of inspection results. The attached status forms are for your convenience only.
   d. A continuing list of deficiencies found, date identified responsible party, corrective action and date corrected.
   e. Accident reports and injury forms. Submit a copy of one of the following to the Project Manager for each case:
      1.) California Division of Labor Statistics and Research Form 5020 (latest rev.), or;
      2.) Federal OSHA Form 101, or;
      3.) Insurance Company form similar to 1 or 2 above.
   f. A copy of CAL/OSHA Form 200 “Log and Summary of Occupational Injuries and Illness”.

2. Special Reports
   a. Notify the Project Manager immediately of any accident involving injury to personnel or property; and complete written reports within 24 hours of a death or injury.
   b. Copies of all toxic or harmful agent reports (See paragraph B.4.)

3. Governmental Reports
   a. Notification of governmental authorities is the responsibility of the General Contractor.

E. SAFETY DEFICIENCY CORRECTION

1. All safety deficiencies will be corrected by the General Contractor in accordance with the following priorities.
   a. Immediate correction of items with any probability of major or minor injury to people
   b. Correction immediately of any accident probability which could involve people and/or equipment.
   c. Correction within one day (or sooner) of potential injury or damage to property.

F. OUTSIDE SAFETY INSPECTIONS

1. Unannounced inspections by city, state or federal safety agencies or insurance companies may occur.
   a. General Contractor is to escort representatives of these agencies or companies directly to the Project Manager and assist him as required or directed.
   b. If the Project Manager is not available, the General Contractor's foreman or representative shall accompany the inspector on the inspection.

G. INVESTIGATING

1. All injuries are to be investigated by the General Contractor and reported.

2. The Project Manager shall be notified prior to proceeding with an investigation.

H. SAFETYSTANDARDS AND CODE

1. Provide job supervision with applicable safety code publications and ensure they are familiar with the contents.
2. Occupation Safety and Health Administration Standards (latest applicable edition) on the designated applicable safety standards.

3. In States with OSHA approved plans, state codes will take precedence unless federal standards are more stringent, in which case federal standards shall apply.

4. On General Services Administration (GSA) projects, applicable sections of the GSA Manual Accident & Fire Prevention on Construction and Alteration Work will apply in addition to all other codes and standards.

5. All code and standard conflicts will be resolved by applying the most restrictive code and/or standard.

6. Suggested references for trade contractors are:
   a. Safety &Health Regulation for Construction, U.S. Department of Labor, OSHA, Volume 37, No. 243.
   b. Construction safety orders, State Standard, CAL/OSHA, State of California, latest edition.
   c. GSA Manual – GSA – PBSP 5900.3.
   d. U.S. Army Engineering Manual – EM 385-1.
   e. Accident Prevention, Associated General Contractors.
   f. A short guide to the California Occupational Safety and Health Act – National Federation Independent Business, 150 West 20th Avenue, San Mateo California 94403.

I. REQUIRED NOTICES: TO BE VISIBLY DISPLAYED

1. Workers' Compensation Insurance Notice.

2. OSHA poster: Safety and Health Protection on the job.

3. State of California Department of Human Resources: Notice to Employees Unemployment Insurance – Disability Insurance.

4. Hard Hat Area Signs.

5. List of ambulances, doctors and hospitals with telephone numbers which can be called during an emergency.

6. Name and title of the safety representative from each trade contractor's organization.

7. Any other safety signs, slogans, etc. that will improve the general awareness of a joint safety program.

J. PERMITS

1. Permits and/or certification from the Division in Industrial Safety are required before contractors may undertake the following kinds of work:
   a. Construction of trenches or excavations which are 5 feet or more deep, into which a person is required to descent;
   b. Construction of any building, structure, false work, or scaffolding more than three stories high.

2. The Division of Industrial Safety may investigate or confer with the employer before the start of work. If a pre-job safety conference between the Division of Industrial Safety personnel and the employer is a requirement specified by the Division of Industrial Safety at the time the permit is issued, employees or their representatives are to be included at the conference.

3. Permits must be posted at or near each place of employment requiring a permit. If posting at the actual job site is not possible, the permit must be available for inspection at all times on the site, or, in the case of a mobile unit, at the employer's head office in the area.

4. Additional permits may be required from the Division of Industrial Safety or other applicable governmental agencies. It is the responsibility of each trade contractor to determine, procure, and pay for their own such permits.

SAFETY STATUS FORMS
(See attached Safety Form)

SAFETY STATUS FORMS

This report is to serve as a minimum standard guideline and does not include job or trade specific items or conditions. Said items or conditions should be added by contractor on the last page entitled "COMMENTS AND REMARKS"

#	QUESTION/CHECK LIST COMMENT:	YES	NO	N/A
A.	**FIRE PROTECTION AND PREVENTION:**			
1	Are all flammable liquid containers clearly identified?			
2	Are all flammable liquid containers UL or FM listed?			
3	Have proper storage practices for flammables been observed?			
4	Have the proper type & adequate number of fire extinguishers been observed at the job site?			
5	Are extinguishers readily accessible and serviced regularly?			
6	Are hydrants clear and accessible for Fire Department personnel?			
B.	**ELECTRICAL**			
1	Are all switch gear, panels, and devices that are energized marked and/or guarded to prevent accidental contact?			
2	Are lockout devices available and used on all circuits and equipment that could become energized while work is being performed?			
3	Are all temporary circuits properly guarded and grounded?			
4	Are all extension cords in continuous lengths without splices or tape?			
5	Are GFCI's being used? If not, is Assured Equipment Grounding Conductor Program being followed?			
6	If temporary lighting is provided, are bulbs protected against accidental breakage?			
7	Are there a sufficient number of temporary outlets on the job site?			
8	Are there any visual signs of outlet overloading?			
C.	**HAZARD COMMUNICATION**			
1	Does the Hazard Communication Program include a list of hazardous chemicals?			
2	Does the Hazard Communication Program include container labeling?			
3	Does the Hazard Communication Program include "Material Safety Data Sheets (MSDS)?			
4	Does the Hazard Communication Program include employee training?			
5	Does the Hazard Communication Program include personal protective equipment (PPE)?			
6	Does the Hazard Communication Program include emergency response procedures, information & phone numbers?			
7	Does the Hazard Communication Program include a list of hazards for non-routine tasks?			
8	Does the Hazard Communication Program include procedures for informing other contractors of hazardous conditions and/or procedures?			
9	Does the Hazard Communication Program include adequate posting of signage & warning labels?			
10	Is a copy of the Hazardous Communication Program at this job site?			

SAFETY STATUS FORMS

This report is to serve as a minimum standard guideline and does not include job or trade specific items or conditions. Said items or conditions should be added by contractor on the last page entitled "COMMENTS AND REMARKS"

#	QUESTION/CHECK LIST COMMENT:	YES	NO	N/A
D.	**EXCAVATION/TRENCHING**			
1	Have utility companies been notified of proposed excavation work (one-call system)?			
2	Are overhead utility lines noted and precautions taken to avoid contact by cranes, backhoes, or other heavy equipment?			
3	Is the excavation inspected daily or more frequently when there is a change in weather or environment that could affect the soil?			
4	If needed, are barricade, stop logs, etc. properly located?			
5	Are excavations five (5) feet or deeper correctly sloped, benched, shored, or is a trench box (shield) used?			
6	Is a ladder or other means of exit (egress) provided in trenches or excavations four (4) feet or deeper?			
7	When ladders are used, do they extend three (3) feet above the surface and are they secured?			
8	Are shoring and shielding systems inspected daily by a competent person?			
E.	**SCAFFOLDING**			
1	Are scaffold components visibly free of any physical damage (no bent supports or cross bracing)?			
2	Is scaffolding properly erected with all pins and braces in place and locked?			
3	Are wheels locked when scaffold is in use?			
4	Is scaffold erected on a firm and substantial surface?			
5	Is planking of a scaffold grade?			
6	Is planking in good condition and properly installed?			
7	Are toe boards and guardrails in place on scaffold work platform?			
8	Are workers on scaffolding protected from falling objects if overhead hazards exist?			
9	Is a ladder provided for access to scaffold work platform?			
F.	**BARRICADING**			
1	Are floor openings planked and secured or barricaded?			
2	Is a flag person provided to direct traffic when needed?			
3	Are open excavation, road drop offs, manholes, & uneven surfaces barricaded?			
G.	**LADDERS**			
1	Is the proper ladder for the job being used?			
2	Are ladders in good condition (no missing or broken rungs, etc.)?			
3	Is there a need for and/or are there safety shoes/cleats on the bottom of ladders?			
4	Are non-conductive ladders available for use around live wiring?			
5	Are ladders tied-off at top or otherwise secured?			
6	Do side rails extend 36 inches above the top of the landing?			
7	Are step ladders fully opened when in use?			

SAFETY STATUS FORMS

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#	QUESTION/CHECK LIST COMMENT:	YES	NO	N/A
H.	**PERSONAL PROTECTIVE EQUIPMENT**			
1	Is hearing protection available for personnel that may be exposed to noisy conditions?			
2	Is respiratory protection available to personnel and is it being used when conditions require same?			
3	Are safety harnesses, belts, lifelines, and lanyards available and being used?			
4	Are personnel using gloves when handling sharp or rough material?			
I.	**MEDICAL**			
1	Are first-aid kits available and properly stocked?			
2	Are all emergency phone numbers posted?			
3	Are all employees aware of the address of the site or capable of giving proper directions to emergency personnel?			
4	Is anyone trained in first-aid CPR?			
J.	**TOOLS: (Hand & Power)**			
1	Are tools free of any obvious physical damage?			
2	Are tools inspected for frayed and damaged cords?			
3	Are tools and cords properly grounded and are ground pins in good condition?			
4	Are the handles on all tools in good condition (not bent, splintered, or broken)?			
5	Are all hoses on air or hydraulic tools in good condition?			
6	Are all shields and guards in place on the tools and in good condition?			
7	Has each tool and/or equipment operator received proper operating and safety instruction for each tool and/or piece of equipment which he or she is using?			
8	Has each user of a power actuated tool been properly certified and are their certifications current?			
K.	**WELDING AND CUTTING**			
1	Are welding goggles, helmet, gloves and clothing being used by each welder?			
2	Inspection for fire hazards after welding stops			
3	Are gas cylinders, hoses, regulators, torches, torch tips, and welding carts in good working order and are same being properly secured?			
L.	**HOIST, CRANES AND DERRICKS**			
1	Are cables and sheaves checked?			
2	Are slings hooks, eyelets and chokes inspected?			
3	Are load capacities posted in cab?			
4	Are power lines at a safe distance?			
5	Are crane inspection logs with crane?			

SAFETY STATUS FORMS

This report is to serve as a minimum standard guideline and does not include job or trade specific items or conditions. Said items or conditions should be added by contractor on the last page entitled "COMMENTS AND REMARKS"

#	QUESTION/CHECK LIST COMMENT:	YES	NO	N/A
M.	**FLOOR, WALL OPENINGS, STAIRWAYS**			
1	Are floor and roof openings guarded by properly constructed guardrails or a properly reinforced and secured cover?			
2	Are open-sided floors and platforms six feet or more above the ground guarded with a properly constructed railing?			
3	Are stairs with four or more risers equipped with standard hand rail construction?			
4	Are runways four feet or more above the ground properly guarded?			

CONTRACTORS SAFETY – "COMMENTS & REMARKS"

END OF SECTION 01 40 05

SECTION 01 45 00 – QUALITY CONTROL

PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Quality assurance and control of installation.

1.1.2. Contractor responsibility for structural tests and special inspections.

1.2. QUALITY ASSURANCE/CONTROL OF INSTALLATION

1.2.1. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

1.2.2. Comply fully with manufacturers' instructions, including each step in sequence. Should manufacturers' instructions conflict with Contract Documents, request clarification from Project Manager before proceeding.

1.2.3. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.2.4. ~~The Owner will retain a project inspector to inspect all work performed by Contractor in compliance with Section 4-333 and 4-342, Part 1, Title 24, CCR.~~

1.2.4.1. ~~The Owner will retain special inspectors, minimum Class 1, for those portions of the work as shown on the drawings and specified in the respective sections in compliance with Section 4-333, Part 1, Title 24, CCR.~~

1.2.5. Perform work by persons qualified to produce workmanship of specified quality.

1.2.6. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.3. CONTRACTOR RESPONSIBILITY

1.3.1. Each Contractor responsible for the construction of a main wind- or seismic-force-resisting system, designated seismic system or a wind- or seismic-resisting-component listed in the statement of special inspections shall submit a statement of responsibility to the building official and the Owner prior to commencement of work on the system or component. The Contractor’s statement of responsibility shall contain the following:

1.3.1.1. Acknowledgment of awareness of the special requirements contained in the statement of special inspections;

1.3.1.2. Acknowledgment that control will be exercised to obtain conformance with the construction documents approved by the building official;

1.3.1.3. Procedures for exercising control within the Contractor's organization, the method and frequency of reporting and the distribution of the reports;

1.3.1.4. Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.

1.4. FIELD SAMPLES

1.4.1. Install field samples or mock-ups for review at the site as required by individual specifications Sections.

1.4.2. Acceptable samples represent a quality level for the Work.

1.4.3. Remove field sample or mock-up when specified in individual Sections.

1.5. MANUFACTURERS' FIELD SERVICES AND REPORTS

1.5.1. When specified in individual specification Sections, require material or Product suppliers or manufacturers provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start - up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.

1.5.2. Report to the Project Manager observations, site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

1.5.3. Submit report in duplicate within 5 days of observation.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01 45 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

a. Products

b. Transportation and handling

c. Storage and protection

1.1.1 PRODUCTS

1.1.2 Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment that may have been used for the preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.

Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

Provide interchangeable components of the same manufacturer, for similar components.

1.1.3 TRANSPORTATION AND HANDLING

a. Transport and handle Products in accordance with manufacturer's instructions.

b. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct, and Products are undamaged.

c. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement or damage.

1.1.4 STORAGE AND PROTECTIONS

1. Store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weather-tight, climate controlled enclosures.

2. Where approved by Project Manager and permitted by General Conditions, provide off-site storage and protection in an insured warehouse when site does not permit on-site storage or protection.

3. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

PART 2 – PRODUCTS

(NOT USED)

PART 3 – EXECUTION

(NOT USED)

END OF SECTION 01 60 00

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Requirements and limitations for cutting and patching of Work.

1.2. QUALITY ASSURANCE

1.2.1. Use only personnel who are thoroughly trained and experienced in the skills required and have installed similar applications of the specified products within one year prior to beginning work of this section.

1.2.2. Use only staff that is completely familiar with the requirements of this work.

1.3. SUBMITTALS

1.3.1. Submit written request and obtain, review, and approved by the Project Manager in advance of cutting or alteration of the following,

1.3.1.1. Structural integrity of any element of Project.

1.3.1.2. Integrity of moisture - resistant element.

1.3.1.3. Efficiency, maintenance, or safety of any operational element.

1.3.1.4. Visual qualities of sight exposed elements.

1.3.1.5. Work of others.

1.3.1.6 Any location or member.

1.3.2. Include in request:

1.3.2.1. Identification of Project.

1.3.2.2. Location and description of affected work.

1.3.2.3. Necessity for cutting or alteration.

1.3.2.4. Description of proposed work, and Products to be used.

1.3.2.5. Alternatives to cutting and patching.

1.3.2.6. Effect on work of others.

1.3.2.7. Date and time work will be executed.

PART 2 - PRODUCTS

1.4. PRODUCTS FOR PATCHING AND EXTENDING WORK

1.4.1. General:

1.4.1.1. Unless noted otherwise, provide products matching existing finish, color, dimension, and assembly.

1.4.1.2. All products shall be new, unless specifically noted otherwise.

1.4.1.3. Provide asbestos-free materials.

1.4.1.4. Maintain all fire resistance ratings of existing assemblies and materials.

1.4.1.5. Maintain water and weather tight characteristics of assemblies and materials.

1.4.2. Comply with requirements as specified in applicable specification sections for materials used in repairing and extending existing work.

1.4.3. Primary Products: Those required for original installation.

1.4.4. Subfloor Filler: Portland cement based, Ardex or equal.

1.4.5. Portland Cement Plaster: Portland cement plaster with wire mesh reinforcing and casing/corner beads per the Plaster and Drywall System Manual of the Information Bureau of Western Lath/Plaster and Drywall Industry Association.

1.4.6. Product Substitution: Submit request for substitution under provisions of Section 01 25 00 for all proposed change in materials.

PART 3 - EXECUTION

1.5. SURFACE CONDITIONS

1.5.1. Inspection

1.5.1.1. Prior to work of this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence.

1.5.1.2. Verify that work of this section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

1.5.1.3. In the event of discrepancy, immediately notify the Project Manager.

1.5.1.4. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

1.5.2. During the course of the work, advise Project Manager of all discovered deficiencies, damage and degradation in existing structure, including finishes, and all plumbing, heating, ventilation, air conditioning, and electrical systems.

1.5.3. All cost caused by defective or ill-timed work shall be borne by General Contractor. General Contractor shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other Contractor except with consent of the Project Manager.

1.6. PREPARATION

1.6.1. Provide temporary supports as required to ensure structural integrity of the Work, including scaffolding, shoring, and underpinning. Provide devices and methods to protect other portions of Project from damage.

1.6.2. Maintain excavations free of water.

1.6.3. Utility and Service Identification and Location

1.6.3.1. Locate and identify existing utility, service and irrigation system components affected by work of this contract. Review existing record drawings, conduct site investigations, contact Underground Service Alert and other qualified on-site cable/pipe/line locator services, and implement all other means necessary to define the location of underground systems.

1.6.3.2. Prior to beginning any cutting or patching affecting identified utilities, properly disconnect all water, gas and electrical power supply at appropriate disconnect locations. Obtain all necessary releases and approvals from serving utility companies.

1.6.3.3. Prior to disconnect, through the Project Manager, obtain Owners approval that such system does not impact facilities or systems beyond the extent of this contract.

1.6.3.4. Mark location of disconnected systems. Identify and indicate stub-out locations on Project Record Documents.

1.6.4. Coordinate the time and duration of all system disconnects with Project Manager.

1.7. CUTTING AND PATCHING

1.7.1. Contractor shall provide all cutting, including excavation and fill, fitting, or patching of Work as required to make its several parts come together properly and fit to receive or be received by work of other Contractors shown upon, or reasonably implied by the contract documents and Specifications for the completed structure, and as the Project Manager may direct.

1.7.2. Fit Products together, to integrate with other work.

1.7.3. Uncover work to install ill timed work.

1.7.4. Remove and replace defective or non-conforming work.

1.7.5. Remove samples of installed work for testing when requested.

1.7.6. Provide openings in the Work for penetration of mechanical and electrical work.

1.7.7 No structural member shall be cut, notched, bored or otherwise altered unless specifically approved.

1.8. PERFORMANCE

1.8.1. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

1.8.2. Employ original installer to perform cutting and patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.

1.8.3. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

1.8.4. Restore work with new Products in accordance with requirements of Contract Documents.

1.8.5. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

1.8.6. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 - Firestopping, to full thickness of the penetrated element.

1.8.7. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION 01 73 29

SECTION 01 75 00 – STARTING AND ADJUSTING

PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Starting systems.

1.1.2. Demonstration and instructions.

1.1.3. Testing, adjusting and balancing.

1.2. STARTING SYSTEMS

1.2.1. Coordinate schedule for start-up of various equipment and systems.

1.2.2. Notify Inspector and Project Manager 48 hours prior to start-up of each item.

1.2.3. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence or other conditions which may cause damage.

1.2.4. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

1.2.5. Verify wiring and support components for equipment are complete and tested.

1.2.6. Execute start-up under supervision of responsible manufacturer's representative and/or Contractor personnel in accordance with manufacturers' instructions.

1.2.7. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, and check equipment or system installation prior to start-up and to supervise placing equipment or system operation.

1.2.8. Submit a written report to the Project Manager that equipment or system has been properly installed and is functioning correctly.

1.2.9. Provide advance notice to Project Manager and Inspector of Record regarding all coordination for utility and service systems hook-ups.

1.3. DEMONSTRATION AND INSTRUCTIONS

1.3.1. Demonstrate operation and maintenance of Products to Owner's personnel within seven (7) calendar days of Substantial Completion, prior to occupancy.

1.3.2. Demonstrate Project equipment by a qualified manufacturers' representative who is knowledgeable about the Project.

1.3.3. For equipment or systems requiring seasonal operation, perform demonstration for other seasons within six months.

1.3.4. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

1.3.5. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance and shutdown of each item of equipment at agreed-upon times at equipment location.

1.3.6. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

1.3.7. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01 75 00

SECTION 01 77 19 – CLOSEOUT REQUIREMENTS

1. PART 1 - GENERAL

1.1. SECTION INCLUDES

1.1.1. Closeout Procedures.

1.1.2. Final Cleaning.

1.1.3. Adjusting.

1.1.4. Project Record Documents.

1.1.5. Operation and Maintenance Data.

1.1.6. Warranties.

1.1.7. Spare Parts, Turn-Over and Maintenance Materials.

1.1.8 Training

1.2. SUBSTANTIAL COMPLETION AND PUNCH LIST PROCEDURES

1.2.1. See General Conditions Article 9.9.1 for additional closeout procedures. General Conditions shall supercede any language in this section.

1.2.2. At such time as each Contractor believes project is substantially complete, notify Project Manager and request Punch List Inspection.

1.2.3. Project Manager and District's consultants will conduct an inspection in order to determine acceptance of work and identify items remaining to complete. The Project Manager will prepare a Punch List of such items and transmit to Contractor.

1.2.4. If Project Manager determines that punch list items remaining are sufficiently minor, and that Owner can occupy work and use it for its intended purpose, then Project Manager will prepare a Notice of Substantial Completion for Owner's signature.

1.2.4.1. If work is not substantially complete, Contractor shall continue construction until such time as project status justifies subsequent inspection. Project Manager and District's consultant costs incurred in such subsequent inspections will be paid by Contractor by Owner-Contractor contract adjustment.

1.2.4.2. Contractor shall complete all items on Punch List within 30 days, or as stated on Notice of Substantial Completion.

1.2.5. Provide submittals to Project Manager as required by governing or other authorities, including all required forms and approvals.

1.2.6. ***Contractor to provide a progress cleaning of the entire building once substantial completion is achieved.***

1.3. FINAL COMPLETION PROCEDURES

1.3.1. At such time as Contractor believes project is complete and following completion of Punch List items, notify Project Manager and request Final Inspection

1.3.1.1. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Project Manager's Final inspection.

1.3.1.2. Upon receipt of request for final inspection, Project Manager will perform a Final Inspection and recommend actions as defined by the General Conditions.

1.3.1.3. If Project Manager determine work is acceptable under the Contract Documents, Contractor shall submit Final Application for Payment and close out documents.

1.3.2. Final Application for Payment -

1.3.2.1.1. See General Conditions Article 9

1.4. FINAL CLEANING

1.4.1. Contactor shall conduct all final cleaning required to comply with requirements of this Section prior to final inspection.

1.4.2. Use cleaning materials which do not create hazards to health or property and which will not damage surfaces. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

1.4.3. Employ experienced workers or professional cleaners for final cleaning. Comply with instructions of manufacturer for surface being cleaned.

1.4.4. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner

1.4.5. Contractor shall clean all completed interior work, including but not necessarily limited to, surfaces exposed to view in final construction, all cabinet/casework interiors and surfaces, and all equipment and fixtures.

1.4.6. Clean all completed building exterior surfaces and site work, including but not necessarily limited to, surfaces exposed to view in final construction, all roof surfaces, all site paving surfaces, and all equipment and fixtures.

1.4.6.1. Remove temporary labels, stains and foreign substances from exterior surfaces.

1.4.6.2. Polish exterior signage components and similar glossy surfaces.

1.4.6.3. Remove dirt and dust from all exterior surfaces by approved means. Clean all sealant joints and similar applications.

1.4.6.4. Remove debris, construction products, fasteners, and trash from all roof surfaces.

1.4.6.5. Rake grounds that are neither paved nor planted to a smooth even-textured surface.

1.4.6.6. Clean all paving surfaces as necessary to remove construction dust and dirt, including debris from joints using approved methods. Remove all construction stains by approved means. Remove asphalt and seal coat splatter from curb faces.

1.4.7. Remove waste and surplus materials, rubbish, and construction facilities from the site and legally dispose of.

1.4.8. **If there is a delay to the schedule due to the contractor, and the contractor does not achieve final completion prior to the District occupying the building, the contractor is responsible for providing the final cleaning just prior to the occupancy.**

1.5. ADJUSTING

1.5.1. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.5.2. Contractor to adjust the door hardware prior to punch list, again before Notice of Completion, and again at the 11 month warranty walk review.

1.6. RECORD DOCUMENTS: RECORD SET

1.6.1. Upon completion of the Work, update record set supplied by Project Manager. Complete update of record set is required for submittal of final payment. Project Manager shall be sole judge of completeness of record set.

1.6.1.1. Update record set at regular intervals as directed by Project Manager.

1.6.2. Provide one (1) half size color set of as-builts for the project with color electronic (PDF) version for the District/Campus.

1.6.3. Provide a separate copy of the Field Superintendent’s as-builts, which were used to create the office set.

1.7. OPERATION AND MAINTENANCE DATA

1.7.1. Submit four sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three ring binders with durable plastic covers.

1.7.2. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.

1.7.3. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

1.7.4. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified type on 24-pound white paper.

1.7.5. Part 1: Directory, listing names, addresses, and telephone numbers of Engineers, Contractor, Subcontractors, and major equipment suppliers.

1.7.6. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:

1.7.6.1. Significant design criteria.

1.7.6.2. List of equipment.

1.7.6.3. Parts list for each component.

1.7.6.4. Operating instructions.

1.7.6.5. Maintenance instructions for equipment and systems.

1.7.6.6. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

1.7.7. Part 3: Project documents and certificates, including the following:

1.7.7.1. Shop drawings and product data.

1.7.7.2. Certificates.

1.7.7.3. Photocopies of warranties.

1.7.8. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with Project Manager comments. Revise content of documents as required prior to final submittal.

1.7.9. Submit final volumes revised, within 15 days after final inspection.

1.8. WARRANTIES

1.8.1. Provide duplicate notarized copies.

1.8.2. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.

1.8.3. Provide Table of Contents and assemble in three ring binders with durable plastic cover.

1.8.4. Submit prior to final Application for Payment.

1.8.5. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

1.8.6. CONTRACTOR to participate in an 11 month warranty walk prior to warranty period end.

1.8.7. WARRANTY CALLS:

1.8.7.1. CONTRACTOR to provide a Warranty log that includes, but limited to the following information: Warranty #, Request Date, and Completion Date.

1.8.7.2. Warranty request form is to have a sign-off line for the Requestor and the Contractor at the time the work is complete.

1.8.7.3. The CONTRACTOR is to coordinate with the District/Campus when they will be on site for warranty work calls.

1.9 TRAINING

1.9.1 All training requirements are to include the manufacturer's representative for initial start-up training and an additional day of follow-up training with M&O (Maintenance & Operations) upon their request after use of the system/equipment before the Notice of Completion is filed.

1.9.2 M&O shall have a copy of all training manuals (regardless of training) prior to project completion.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

Not used

END OF SECTION 01 77 19

EXHIBIT E

SCOPE DESCRIPTION

Scope Description

General Notes

1. Clean all existing & new ductwork in each building included in the bid documents.
2. Units not included: only existing ductwork / new ductwork for all HVAC systems.
3. This is a prevailing wage project. Price should include Prevailing wage
4. All work to be done in accordance with DIR regulations and Certified Payroll requirements
5. Cleaning all the ductwork in the building, including all supply, return, plenums.
6. All labor cost is included for after hours and working on weekends / holidays.
7. All work should be supervised by a competent with years of experience in this type of work.
8. All cleaning shall be done in compliance with Standards and Regulations (NADCA, SMACNA, EPA Regulations, and OSHA Regulations)
9. Appropriate personnel protective equipment (PPE) shall be worn at all times.
10. Permit-required Confined Space regulations shall be followed at all times.
11. Chemical products used in the cleaning or sealing process should be in compliance with Standards and Regulations mentioned above
12. Upon request, an SDS (Safety Data Sheet) should be available for any product that is used.
13. Reports including (before and after photos) should be submitted for each building upon completion of the project. Any problems or damages found during the cleaning process should be reported
14. One-year guarantee on all work is required

Ductwork Cleaning

1. Openings could be cut into the metal ductwork as needed to permit thorough cleaning. After cleaning, these openings will be covered with sheet metal panels of the same or heavier thickness as the ducts, per NADCA standards. Non-metal ductwork to be disconnected at the joints, cleaned and reconnected, where this is possible and/or needed.
2. All accessible return and supply ductwork should be cleaned using the method necessary to do a thorough job. This might include hand-vacuuming and brushing, the use of a powered rotating brush on a cable, or the use of compressed air. Any inaccessible ductwork shall be cleaned as effectively as possible at the time of service.

3. All dirt will be removed from the ductwork with vacuums. All vacuums used within the building should be high efficiency filtered vacuums to keep dust from escaping into the building. Ductwork shall be kept under negative pressure during cleaning to prevent any contaminants from entering occupied areas.
4. All accessible parts within the ductwork (such as fire dampers and turning vanes) should be brushed and vacuumed clean. Dampers should be returned to their original positions.
5. All accessible parts of VAV/Mixing boxes shall be thoroughly cleaned.
6. All removable return and supply registers will be taken down, washed, and re-installed.
7. Desks, chairs, equipment, etc. in work areas to be covered with clean drop cloths. All work areas shall be left neat and tidy after work is completed. All debris shall be removed from site.

EXHIBIT F

AGREEMENT FORMS

CONSTRUCTION AGREEMENT

THIS CONSTRUCTION AGREEMENT ("Agreement"), is entered into this …. day of …., 2021 in the County of San Bernardino of the State of California, by and between the San Bernardino Community College District ("DISTRICT") and _____ ("CONTRACTOR").

WITNESSETH that the DISTRICT and the CONTRACTOR for the consideration stated herein agree as follows:

ARTICLE 1 - SCOPE OF WORK: The CONTRACTOR shall furnish all labor, materials, supplies, products, design and engineering services, equipment, tools, utility and transportation services, apparatus, and the like, and perform and complete all work required in connection with the project commonly referred to as **DUCT CLEANING FOR HVAC AT SBVC Project (NIB# 01-2122-01) ("Project")** in strict accordance with the Contract Documents enumerated in Article 8 below. The CONTRACTOR shall be liable to the DISTRICT for any damages arising as a result of a failure to comply with all of these obligations, and the CONTRACTOR shall not be excused with respect to any failure to so comply by an act or omission of the Inspector of Record, the San Bernardino County ("Planning Department"), or representative of any of them, unless such act or omission actually prevents the CONTRACTOR from fully complying with the contract documents and the CONTRACTOR protests, in accordance with the Contract Documents, that the act or omission is preventing the CONTRACTOR from fully complying with the Contract Documents. Such protest shall not be effective unless reduced to writing and filed with the DISTRICT within seven days of the date of occurrence of such act or omission preventing the CONTRACTOR from fully complying with the Contract Documents. Everything called for by the Agreement is sometimes also referred to as the "Work."

ARTICLE 2 - TIME OF COMPLETION: Once the CONTRACTOR has received the Notice to Proceed from the DISTRICT, the CONTRACTOR shall proceed as identified therein as well as required by the Project Schedule, and shall diligently schedule, execute, and fully complete the required Work in accordance with the current Project Schedule and within the time period specified in the Notice to Proceed. The Project duration shall be 93 calendar days. Construction must start on November 24, 2021 and must be completed no later than February 25th, 2022 including punch list and cleanup works.

It is expected that the DISTRICT will issue the Notice to Proceed to the CONTRACTOR ~~within 90 days~~ of the CONTRACTOR's execution of this Agreement. But it is expressly understood that with reasonable notice to the CONTRACTOR, the DISTRICT may postpone issuing the Notice to Proceed. It is further expressly understood that the CONTRACTOR shall not be entitled to any claim of additional compensation as a result of the DISTRICT's postponement of the issuance of the Notice to Proceed.

ARTICLE 3 –LIQUIDATED DAMAGES: The CONTRACTOR shall pay the DISTRICT $1,000.00 per day as liquidated damages for each calendar day of unexcused delay that the Work remains unfinished beyond the completion date as set forth in the Project Schedule that is caused by the CONTRACTOR or by those for whom the Contractor is legally responsible for to the District. The DISTRICT may deduct such liquidated damages from any payments due or to become due to CONTRACTOR. This provision shall not limit any rights or remedies of the DISTRICT in the event any other default of the CONTRACTOR other than failing to complete the Work by the completion date.

ARTICLE 4 - CONTRACT PRICE: The DISTRICT shall pay to the CONTRACTOR as full consideration for the faithful performance of this Agreement, subject to any additions or deductions as provided in the Contract Documents, the sum of _____ DOLLARS ($_____), said sum being the total amount stipulated in the CONTRACTOR's proposal. Payment shall be made as set forth in the General Conditions.

Should any Change Order, Partial Change Order, Construction Directive, or Compromise result in an increase or decrease in the Contract Price, the cost of such Change Order, Partial Change Order, Construction Directive, or Compromise, shall be agreed to in advance by the CONTRACTOR and the DISTRICT, subject to the limitations set forth in the applicable Public Contract Code sections. In the event that the CONTRACTOR proceeds with a change in the Work without an agreement between the DISTRICT and CONTRACTOR regarding the cost of a Change Order, Partial Change Order, Construction Directive, or Compromise, the CONTRACTOR waives any claim of additional compensation for such additional work. The DISTRICT's Vice Chancellor has received delegated authority from the DISTRICT's Governing Board to approve additive and deductive Change Orders, Partial Change Orders, Construction Directives, and Compromises, and to bind the DISTRICT thereto, in the amount of the monetary limitations set forth in the applicable Public Contract Code sections. See General Conditions, Article 7, for further details.

ARTICLE 5 – DEFENSE – INDEMNIFICATION – HOLD HARMLESS OBLIGATIONS: CONTRACTOR shall defend, indemnify, and hold harmless the DISTRICT, the Architect, the Inspector of Record, Project Manager, and the State of California, and their respective officers, trustees, employees, agents, and independent contractors, from all liabilities, claims, actions, liens, judgments, demands, damages, losses, costs, and expenses, of any kind, arising from death, personal injury, property damage, or other cause, based or asserted upon any act, omission, or breach connected with or arising from the Work or performance of service under this Agreement or the Contract Documents. As part of this indemnity, CONTRACTOR shall protect and defend, at its own expense, the DISTRICT, the Architect, the Inspector of Record, the State of California, and their respective officers, trustees, employees, agents, and independent contractors, from any such legal action, including attorneys' fees and legal costs.

Furthermore, CONTRACTOR hereby agrees to defend, indemnify, and hold harmless the DISTRICT, the Architect, the Inspector of Record, the Project Manager, and the State of California, and their respective officers, trustees, employees, agents, and independent contractors from every claim or demand made, and every liability, loss, damage, expense, or attorney's fees and legal costs, of any nature whatsoever, which may be incurred by reason of:

(a) Liability for: (1) death or bodily injury to persons; (2) damage or injury to, loss (including theft), or loss of use of, any property; (3) any failure or alleged failure to comply with any provision of law or the Contract Documents; or (4) any other loss, damage, or expense, sustained by any person, firm, or corporation in connection with the Work called for in this Agreement or the Contract Documents, except to the extent resulting from the sole negligence or the sole willful misconduct of the DISTRICT.

(b) Any bodily injury to or death of persons, or damage to property, caused by any act, omission, or breach of the CONTRACTOR, or by any person, firm, or corporation employed or retained by the CONTRACTOR, either directly or by independent contract, including all damages or injury to, loss (including theft), or loss of use of, any property, sustained by any person, firm, or corporation, including the DISTRICT, arising out of or in any way connected with the Work

covered by this Agreement or the Contract Documents, but not for any loss, injury, death, or damages caused by the sole negligence or sole willful misconduct of the DISTRICT.

(c) Any dispute between the CONTRACTOR and the CONTRACTOR's subcontractors, suppliers, agents, or sureties, including, but not limited to, any failure or alleged failure of the CONTRACTOR (or any person hired or retained directly or indirectly by the CONTRACTOR) to pay any subcontractor of any tier, or any other person employed in connection with the Work, or in connection with the filing of any stop notice or mechanic's lien claims.

(d) Any breach of the Agreement by the CONTRACTOR.

CONTRACTOR, at its own expense, cost, and risk, shall defend any and all claims, actions, suits, and other proceedings that may be brought or instituted against the DISTRICT, its officers, trustees, agents, or employees, on any such claim or liability, and shall pay or satisfy any judgment that may be rendered against the DISTRICT, or its officers, trustees, agents, or employees, in any action, suit, or other proceedings as a result thereof.

The Parties agree to comply with the dispute resolution procedures set forth in Public Contract Code Section 9204, as applicable.

ARTICLE 6 - CONTRACTOR'S INSURANCE:

6.1 **Insurance Requirements.** Before the commencement of Work on the Project, the CONTRACTOR shall purchase from and maintain in a company or companies lawfully authorized to do business in California, with a financial rating of at least A+ status as rated in the most recent edition of Best's Insurance Reports, such insurance as will protect the DISTRICT from claims set forth below, which may arise out of or result from the CONTRACTOR's operations under this Agreement and for which the CONTRACTOR may be legally liable, whether such operations are by the CONTRACTOR, or by anyone directly or indirectly employed or retained by CONTRACTOR, or by anyone for whose acts CONTRACTOR may be liable, including insurance coverage for the following:

(a) Claims for damages because of bodily injury, sickness, disease, or death of any person, including employees, contractors, and agents of the DISTRICT;

(b) Claims for damages insured by usual personal injury liability coverage which are sustained by a person as a result of an offense directly or indirectly related to employment of such person by the CONTRACTOR or by a subcontractor or agent of the CONTRACTOR;

(c) Claims for damages because of injury or destruction of tangible property, including loss of use resulting therefrom, arising from acts or omissions under this Agreement or the Contract Documents;

(d) Claims for damages because of bodily injury, death of a person, or property damage arising out of the ownership, maintenance, or use of a motor vehicle, all mobile equipment, and vehicles moving under their own power and engaged in the Work for the Project;

(e) Claims involving contractual liability applicable to the CONTRACTOR's obligations under this Agreement and the Contract Documents, including liability assumed by and the indemnity and defense obligations of the CONTRACTOR and its subcontractors;

(f) Claims involving completed operations, independent contractors' coverage, and Broad Form property damage, without any exclusions for collapse, explosion, demolition, underground coverage, or excavating; and

(g) Claims involving sudden or accidental discharge of contaminants or pollutants.

6.2 **Additional Insured Endorsement Requirements**. The CONTRACTOR shall name, on any policy of insurance required under Article 6.1 above, the DISTRICT, the Architect, the Inspector of Record, the State of California, and their respective officers, trustees, employees, agents, and independent contractors as additional insureds. The CONTRACTOR also shall ensure that all of the CONTRACTOR's subcontractors name the same additional insureds. The Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The insurance provided by the CONTRACTOR pursuant to this Article must be designated in the policy as primary to any insurance obtained by the DISTRICT. The amount of the insurer's liability shall not be reduced by the existence of such other insurance.

6.3 **Specific Insurance Requirements**. The CONTRACTOR shall take out and maintain and shall require all of its subcontractors, if any, whether primary or secondary, to take out and maintain:

(a) **General Liability Insurance**. Comprehensive General Liability Insurance with a combined single limit per occurrence of not less than $1,000,000.00 or Commercial General Liability Insurance (including automobile insurance) which provides limits of not less than:

i. Per occurrence (combined single limit)….....$1,000,000.00

ii. Project Specific Aggregate (for this project only) … $1,000,000.00

iii. Products and Completed Operations…….....$500,000.00

iv. Personal and Advertising Injury Limit…….……$500,000.00

6.4 **Workers' Compensation Insurance.** During the term of this Agreement, the CONTRACTOR shall provide workers' compensation insurance for all of the CONTRACTOR's employees working on the Project under this Agreement and, in case any of the CONTRACTOR's work is subcontracted, the CONTRACTOR shall require the subcontractor to provide workers' compensation insurance for all the subcontractor's employees working on the Project. Any class of employee not covered by a subcontractor's insurance shall be covered by the CONTRACTOR's insurance. In case any class of employee working on the Project under this Agreement on the Project is not protected under the workers' compensation laws, the CONTRACTOR shall provide or cause a subcontractor to provide adequate insurance coverage for the protection of those

employees not otherwise protected. The CONTRACTOR shall file with the DISTRICT certificates of insurance in accordance with Labor Code § 3700.

6.5 **Other Insurance.** The CONTRACTOR shall provide all other insurance required to be maintained under applicable laws, ordinances, rules, and regulations.

6.6 **Proof of Insurance.** The CONTRACTOR shall not commence work on the Project, nor shall it allow any subcontractor to commence work on the Project until all required insurance and certificates have been obtained and delivered in duplicate to the DISTRICT for approval subject to the following requirements:

(a) Certificates and insurance policies shall include the following clause: "This policy shall not be non-renewed, canceled, or reduced in required limits of liability or amounts of insurance until notice has been mailed to the DISTRICT."

(b) Certificates of insurance shall state in particular those insured, the extent of insurance, location, and operation to which the insurance applies, the expiration date, and cancellation and reduction notices.

(c) Certificates of insurance shall clearly state that the DISTRICT and the Architect are named as additional insureds under the policy described, and that such insurance policy shall be primary to any insurance or self-insurance maintained by the DISTRICT.

(d) The CONTRACTOR and its subcontractors shall produce a certified copy of any insurance policy required under this Section upon written request of the DISTRICT.

6.7 **Compliance.** In the event that the CONTRACTOR fails to furnish and maintain any insurance required by this Article, the CONTRACTOR shall be in default under the Contract. Compliance by CONTRACTOR with the requirement to carry insurance and furnish certificates or policies evidencing the same shall not relieve the CONTRACTOR from liability assumed under any provision of the Contract Documents, including, without limitation, the obligation to defend and indemnify the DISTRICT.

ARTICLE 7 - PROVISIONS REQUIRED BY LAW: Each and every provision of law and clause required to be inserted in this Agreement shall be deemed to be inserted herein, and this Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted or is not inserted correctly, then upon application of either party, this Agreement shall forthwith be physically amended to make such insertion or correction.

ARTICLE 8 - COMPONENT PARTS OF THIS AGREEMENT: This Agreement consists of the following Contract Documents, all of which are component parts of the Agreement as if herein set out in full or attached hereto:

Notice Inviting Bids
Bid Proposal Form
Bid Guarantee Form
Bid Bond ***(Notarized)***
Designation of Subcontractors
Non-Collusion Declaration ***(Notarized)***

Contractor's Certificate Regarding Worker's Compensation
Acknowledgment of Bidding Practices
Bidder's Acknowledgement of Project Duration
Site Visit Certification (*Notarized)*
Substitution Request Form
General Conditions
RFQ/RFP Documents
Agreement Form **(*Notarized)***
Payment Bond **(*Notarized)***
Performance Bond **(*Notarized)***
Contractor's Guarantee
Insurance Endorsements
Contractor's Certificate Regarding Drug-Free Workplace
Contractor's Certificate Regarding Tobacco & Alcoholic Beverage Use
Recycled Content Certification
Asbestos-Free Materials Certificate **(*Notarized)***
Lead Base Paint Requirements **(*Notarized)***
Project Schedule
All Addenda as Issued
All Change Orders and/or Partial Change Orders

All of the Contract Documents are intended to be complementary. Terms used in this Agreement are as used herein or in the General Conditions. Work required by one of the Contract Documents and not by others shall be done as if required by all. In case of a conflict between this Agreement and any other of the Contract Documents, the terms of this Agreement shall prevail.

ARTICLE 9 - PREVAILING WAGES: Wage rates for this Project shall be in accordance with the general prevailing rate of holiday and overtime work in the locality in which the work is to be performed for each craft, classification, or type of work needed to execute the contract as determined by the Director of the Department of Industrial Relations ("DIR"). Copies of schedules of rates so determined by the Director of the DIR are available from the DIR.

The following are hereby referenced and made a part of this Agreement and the CONTRACTOR agrees to the provisions contained therein.

1. Chapter 1 of Part 7 of Division 2 of the Labor Code (Sections 1720 et seq.);

2. California Code of Regulations, Title 8, Chapter 8, Subchapters 3 & 4 (Sections 16000 et seq.); and

ARTICLE 10 - RECORD AUDIT: In accordance with Government Code Section 8546.7, records of both the DISTRICT and the CONTRACTOR shall be subject to examination and audit by the Auditor General for a period of three years after final payment. Separate and apart from the foregoing, the CONTRACTOR shall keep all of its, and require by contract that each of its subcontractors, sub-subcontractors, and suppliers keep all of their, Project and Project-related records, for a period of four years from the Project's completion, and the DISTRICT has the right to copy, review, inspect, and audit all such records at DISTRICT's cost and expense upon 48 hours' notice. Upon receipt of such notice, the CONTRACTOR shall make said records available as required herein.

ARTICLE 11 - CONTRACTOR'S LICENSE AND REGISTRATION: The CONTRACTOR must possess throughout the PROJECT a **C-20**, and keep in good standing at all times during the performance of this Agreement, all required licenses and certifications. In addition, the CONTRACTOR shall comply with the registration requirements set forth in Labor Code Section 1725.5.

ARTICLE 12 – PROJECT MANAGER STATUS: DISTRICT staff or a designated consultant will serve as Project Manager. The Project Manager will assist the DISTRICT with the administration of the Agreement, in accordance with the terms of those General Conditions and the Construction Management Agreement, if any, between the DISTRICT and the Project Manager. The Project Manager has been appointed as the DISTRICT's agent with the power to carry out the Project Manager's duties and activities on behalf of the DISTRICT. The Project Manager has no payment obligation under this Agreement and cannot authorize any changes to the Agreement, the Work, or the Project.

IN WITNESS WHEREOF, this Agreement has been duly executed by the parties, on the day and year first above written.

San Bernardino Community College District:	CONTRACTOR:
_____	_____
Typed or Printed Name	Typed or Printed Name
_____	_____
Signature	Signature
_____	_____
Title	Title
Dated:_____	Dated:_____
	(CORPORATE SEAL)

SECTION 00 50 01 – PAYMENT BOND (CALIFORNIA PUBLIC WORKS)

Required Action By Contractor – Posting of the Payment Bond:

Contractor shall post at the jobsite a complete copy of the actual payment bond issued. The copy of the payment bond shall be posted outside, but protected from the elements, so that all the information contained in the payment bond issued shall be legible and available to all those persons who the law permits to make a claim against said bond.

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, San Bernardino Community College District (sometimes referred to hereinafter as "Obligee") has awarded to _____ (hereinafter designated as the "CONTRACTOR"), an agreement for the work described as follows: _____ (hereinafter referred to as the "Public Work"); and

WHEREAS, said CONTRACTOR is required to furnish a bond in connection with said Contract, and pursuant to, without limitation, California Civil Code section 9550, and/or other applicable laws;

NOW, THEREFORE, We, _____, the undersigned CONTRACTOR, as Principal; and _____, a corporation organized and existing under the laws of the State of, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto San Bernardino Community College District and to any and all persons, companies, or corporations entitled by law to file stop notices under California Civil Code section 9100, or any person, company, or corporation entitled to make a claim on this bond, in the sum of _____ Dollars ($_____), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code section 9100; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code section 13020 with respect to work and labor thereon of any kind, then said Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys' fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code sections 9550 et. seq., and/or other applicable laws.

This bond shall inure to the benefit of any person named in Civil Code section 9100 giving such person or his/her assigns a right of action in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, or specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefore; nor by any change or modification of any terms of payment or extension of time for payment pertaining or relating to any scheme or work of improvement herein above described; nor by any rescission or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given; and under no circumstances shall the Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the DISTRICT and the CONTRACTOR or on the part of any obligee named in such bond; that

the sole condition of recovery shall be that the claimant is a person described in California Civil Code sections 8400 and 8402, and who has not been paid the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20_____.

PRINCIPAL/CONTRACTOR:

_____

By: _____

SURETY:

_____

By: _____

Attorney-in-Fact

IMPORTANT: THIS IS A REQUIRED FORM AND MAY NOT BE ALTERED OR CHANGED

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or Project is financed, in whole or in part, with federal, grant or loan funds, Surety's name must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)	(Name and Address of agent or representative for service for service of process in California)
_____	_____
_____	_____
Telephone:_____	Telephone: _____

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On this _____ day of _____, in the year _____, before me, _____, a Notary Public in and for said State, personally appeared _____, known to me to be the person whose name is subscribed within the instrument as the Attorney-in-Fact of the _____ (Surety) and acknowledged to me that he subscribed the name of the _____ (Surety) thereto and his own name as Attorney-in-Fact.

_____ (SEAL)
Notary Public in and for said State

Commission expires:_____

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.

END OF SECTION

SECTION 00 50 02 – PERFORMANCE BOND (CALIFORNIA PUBLIC WORKS)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, San Bernardino Community College District (sometimes referred to hereinafter as "Obligee") has awarded to _____ (hereinafter designated as the "CONTRACTOR"), an agreement for the **DUCT CLEANING FOR HVAC AT SBVC Project** located at 701 S Mt Vernon Ave, San Bernardino, CA 92410 ("Contract"); and

WHEREAS, the terms, conditions, covenants, provisions and obligations to be performed by the CONTRACTOR are more particularly set forth in that Contract, which is incorporated in full herein by this reference; and

WHEREAS, the CONTRACTOR is required by said Contract to competently, completely and promptly perform all of the terms, conditions, provisions, covenants, and obligations thereof and to provide a bond guaranteeing the competent, complete and prompt performance thereof.

NOW, THEREFORE, we, _____, the undersigned CONTRACTOR, as Principal, and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto San Bernardino Community College District in the sum of _____ Dollars ($_____), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the CONTRACTOR, his or her heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform all of the terms, conditions, provisions, covenants, and obligations in said Contract, and any alteration thereof made as therein provided, on his or her part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all guarantees of all materials and workmanship; and indemnify, defend and save harmless the Obligee, its officers and agents, as stipulated in said Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

For value received, the Surety hereby stipulates and agrees that no change, extension of time, alteration, addition, or deletion, to the terms, conditions, provisions, covenants, and obligations of the Contract, or to the work to be performed thereunder, or the Specifications accompanying same, shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, addition, and deletion, to the terms, conditions, provisions, covenants, and obligations of said Contract, or to the Work, or to the Specifications.

No final settlement between the Obligee and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

CONTRACTOR and Surety agree that if the Obligee is required to engage the services of an attorney in connection with enforcement of the bond, CONTRACTOR and Surety shall pay Obligee's reasonable attorneys' fees incurred, with or without suit, in addition to the above sum.

In the event suit is brought upon this bond by the DISTRICT and judgment is recovered, the Surety shall pay all costs incurred by the DISTRICT in such suit, including reasonable attorneys' fees to be fixed by the Court regardless of whether such fees and costs exceed the penal sum of this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20____.

PRINCIPAL/CONTRACTOR:

_____

By: _____

SURETY:

_____

By: _____

Attorney-in-Fact

The rate of premium on this bond is _____ per thousand.

The total amount of premium charged: $_____ (This must be filled in by a corporate surety).

IMPORTANT: THIS IS A REQUIRED FORM AND MAY NOT BE ALTERED AND/OR CHANGED

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or Project is financed, in whole or in part, with federal, grant or loan funds, Surety's name must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)	(Name and Address of agent or representative for service for service of process in California)
_____	_____
_____	_____
Telephone:_____	Telephone: _____

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On this _____ day of _____, in the year _____, before me, _____, a Notary Public in and for said State, personally appeared _____, known to me to be the person whose name is subscribed within the instrument as the Attorney-in-Fact of the _____ (Surety) and acknowledged to me that he subscribed the name of the _____ (Surety) thereto and his own name as Attorney-in-Fact.

_____ (SEAL)
Notary Public in and for said State

Commission expires:_____

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.

THIS FORM IS MANDATORY AND NO CHANGE, MODIFICATION AND/OR ALTERATION THEREOF WILL BE ACCEPTED BY THE OWNER.

END OF SECTION

SECTION 00 50 03 – CONTRACTOR'S **GUARANTEE**

Guarantee for **DUCT CLEANING FOR HVAC AT SBVC**

We hereby guarantee that all the services we, and/or our subcontractors, suppliers, materialmen, laborers, and the like, will perform, and all the work, labor, materials, equipment, supplies, apparatus, products, and the like, that we will furnish to and/or install in the Project will be done in accordance with the Contract Documents, including without limitation, the drawings and specifications, and that the services performed, and all the work, labor, materials, equipment, supplies, apparatus, products, and the like, that we will furnish to and/or install in the Project will fulfill the requirements included in the bid documents. The undersigned agrees to repair or replace any or all such work, materials, equipment, supplies, apparatus, and the like, together with any other adjacent work, which may be displaced in connection with such replacement, that may prove to be defective in workmanship or material within a period of one (1) years from the date of the Notice of Completion of the above-mentioned structure by San Bernardino Community College District, ordinary wear and tear and unusual abuse or neglect excepted.

In the event the undersigned fails to comply with the above-mentioned conditions within a reasonable period of time, as determined by the DISTRICT, but not later than ten (10) days after being notified in writing by the DISTRICT, the undersigned authorizes the DISTRICT to proceed to have said defects repaired and made good at the expense of the undersigned and/or its performance bond surety, who will pay the costs and charges therefore upon demand.

The time period set forth herein shall not diminish, impair, modify, alter, change or replace any obligations of the CONTRACTOR and its sureties required elsewhere in the Contract Documents and/or as stated under applicable law.

	Countersigned
_____	_____
(Proper Name)	(Proper Name)
By: _____	By: _____
_____	_____
(Signature of Subcontract or CONTRACTOR)	(Signature of General Contractor if for Subcontractor)

Representatives to be contacted for service:

Name: _____

Address: _____

_____

Phone Number: _____

END OF SECTION

SECTION 00 50 04 – CONTRACTOR'S CERTIFICATE REGARDING DRUG-FREE WORKPLACE

This Drug-Free Workplace Certification form is required from all successful bidders pursuant to the requirements mandated by Government Code sections 8350 et. seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for the procurement of any property or service from any State agency must certify that it will provide a drug-free workplace by performing certain specified acts. In addition, the Act provides that each contract or grant awarded by a State agency may be subject to suspension of payments or termination of the contract or grant, and the CONTRACTOR or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

Pursuant to Government Code section 8355, every person or organization awarded a contract or grant from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

a) Publishing a statement, notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace, and specifying actions which will be taken against employees for violations of the prohibition;

b) Establishing a drug-free awareness program to inform employees about all of the following:
   1) The dangers of drug abuse in the workplace;
   2) The person's or organization's policy of maintaining a drug-free workplace;
   3) The availability of drug counseling, rehabilitation and employee-assistance programs;
   4) The penalties that may be imposed upon employees for drug abuse violations;

c) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code section 8355 listed above and will (a) publish a statement notifying employees concerning the prohibition of controlled substance at the workplace, (b) establish a drug-free awareness program, and (c) require each employee engaged in the performance of the contact be given a copy of the statement required by section 8355(a) and require such employee agree to abide by the terms of that statement.

I also understand that if the DISTRICT determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of section 8355, that the contract awarded herein is subject to termination, suspension of payments, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of sections 8350 et. seq.

I acknowledge that I am aware of the provisions of Government Code sections 8350 et. seq. and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

DATE:_____

_____
CONTRACTOR

By:_____
SIGNATURE

SECTION 00 50 04 – INSURANCE ENDORSEMENT

The following insurance endorsements and documents must be provided to the District within five (5) calendar days after receipt of notification of award. If the apparent low bidder fails to provide the documents required below, the District may award the contract to the next lowest responsible and responsive bidder or release all bidders, and the bidder's bid security will be forfeited. All insurance provided by the bidder shall fully comply with the requirements set forth in Article 11 of the General Conditions.

1. General Liability Insurance: Certificate of Insurance with all specific insurance coverages set forth in Article 11 of the General Conditions, proper Project description, designation of the District as the Certificate Holder, a statement that the insurance provided is primary to any insurance obtained by the District and minimum of 30 days' cancellation notice. Bidder shall also provide required additional insured endorsement(s) designating all parties required in Article 11 of the General Conditions. The additional insured endorsement shall be an ISO CG 20 10 (11/85) or ISO CG 20 10 (10/93) or their equivalent as determined by the District.

Incidents and claims are to be reported to the insurer at:

Attn: _____
(Title) (Department)

_____
(Company)

_____
(Street Address)

_____
(City) (State) (Zip Code)

(_____) _____
(Telephone Number)

2. Workers' Compensation/ Employer's Liability Insurance: Certificate of Workers' Compensation Insurance meeting the coverages and requirements set forth in Article 11 of the General Conditions, minimum of 30 days' cancellation notice, proper Project description, waiver of subrogation and any applicable endorsements.

3. Automobile Liability Insurance: Certificate of Automobile Insurance meeting the coverages and requirements set forth in Article 11 of the General Conditions, minimum 30 days' cancellation notice, any applicable endorsements and a statement that the insurance provided is primary to any insurance obtained by the District.

Incidents and claims are to be reported to the insurer at:

Attn: _____
(Title) (Department)

_____
(Company)

_____
(Street Address)

_____
(City) (State) (Zip Code)

(_____) _____
(Telephone Number)

DATE:_____ _____
CONTRACTOR

By:_____
Signature

END OF SECTION

SECTION 00 50 05 – CONTRACTOR'S CERTIFICATE REGARDING TOBACCO & ALCOHOLIC BEVERAGES

The CONTRACTOR agrees that it will abide by and implement the DISTRICT'S Tobacco & Alcoholic Beverage-Free Campus Policy, which prohibits the use of alcoholic beverages and tobacco products, at any time, on and/or in DISTRICT-owned or leased buildings, on DISTRICT property, and in DISTRICT vehicles.

The CONTRACTOR shall procure signs stating "**TOBACCO & ALCOHOLIC BEVERAGE USE IS PROHIBITED**" and shall ensure that these signs are prominently displayed in all entrances to school property at all times.

DATE:_____ _____
CONTRACTOR

By:_____
Signature

END OF SECTION

SECTION 00 50 06 – RECYCLED CONTENT CERTIFICATION

The undersigned declares that he or she is the person who executed the bid for the **DUCT CLEANING FOR HVAC AT SBVC** (hereinafter referred to as the "Project"), and submitted it to the San Bernardino Community College District (hereinafter referred to as the "Owner") on behalf of _____ ____(hereinafter referred to as the "Contractor").

Pursuant to Public Contract Code Section 12205, all contractors are required to certify in writing under penalty of perjury the minimum (if not exact) percentage of recycled content in materials, goods, or supplies offered or products used in the performance of their contract, regardless of whether the product meets the required recycled product percentage as defined in Sections 12161 and 12200. The recycled content shall include both post-consumer material and secondary material as defined in Public Contract Code Sections 12200. The contractor may certify that the product contains zero recycled content. For purposes of this Certification, the definitions found in Public Contract Code Sections 12200 shall apply.

I declare under penalty of perjury under the laws of the State of California that the following percentages of Post-consumer Material and Secondary Material is in the materials, goods or supplies offered for, or products used in, the performance of the Contract for the Project:

_____% Post Consumer Material _____% Secondary Material

Executed on this _____ day of _____, 20__

at _____

_____
Name of Contractor (Print or Type)

By: _____
Signature

_____
Print Name

_____
Title

Subscribed and sworn before me this _____ day of _____, 20__

Notary Public in and for the State of California

My Commission Expires: _____

END OF SECTION

SECTION 00 50 07 – ASBESTOS-FREE MATERIALS CERTIFICATION

The undersigned declares that he or she is the person who executed the bid for the **DUCT CLEANING FOR HVAC AT SBVC** (hereinafter referred to as the "Project"), and submitted it to the San Bernardino Community College District (hereinafter referred to as the "Owner") on behalf of_____(hereinafter referred to as the "Contractor").

To the best of my knowledge, information and belief, in completing the Contractor's Work (Bid Category Number(s) _____) for the Project, no material furnished, installed or incorporated into the Project will contain, or in itself be composed of, any materials listed by the federal or state EPA or federal or state health agencies as a hazardous material.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this _____ day of _____, 20__

at _____

_____
Name of Contractor (Print or Type)

By: _____
Signature

_____
Print Name

_____
Title

Subscribed and sworn before me this day of , 20

_____
Notary Public in and for the State of California

My Commission Expires: _____

END OF SECTION

SECTION 00 50 08 – LEAD BASED PAINT REQUIREMENTS

In recent years, lead-based paint and other materials have come to the forefront of the regulatory process. Regulatory agencies such as the California Occupational Safety and Health Administration (Cal OSHA), Environmental Protection Agency (EPA), California Department of Health Services (DHS), California Department of Education (CDE), and the Consumer Product Safety Commission (CPSC) have all regulated, in some manner, lead-containing paint and lead products.

Because the Contractor and its employees will be providing services for the San Bernardino Community College District ("Owner"), and because the Contractor's work may disturb lead containing building materials, **CONTRACTOR IS HEREBY NOTIFIED** of the potential presence of lead containing materials located within certain buildings utilized by the Owner. Lead was used extensively in paint because it rendered the paint more durable. All school buildings built prior to 1993 are presumed to contain some lead-based paint until sampling proves otherwise.

Although the regulatory process is not yet complete, there are several regulations currently in place that affect school districts. The CDE mandates that school districts utilize DHS lead-certified personnel when a lead-based hazard is identified. Examples of lead-certified personnel include: project designers, inspectors and abatement workers. The California Education Code also prohibits the use of lead-containing paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or in the modernization or renovation of any existing school facility.

FURTHERMORE, SINCE IT IS ASSUMED BY THE OWNER THAT ALL PAINTED SURFACES (INTERIOR AS WELL AS EXTERIOR) WITHIN THE DISTRICT CONTAIN SOME LEVEL OF LEAD, IT IS IMPERATIVE THAT THE CONTRACTOR, ITS WORKERS AND SUBCONTRACTORS FULLY AND ADEQUATELY COMPLY WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING LEAD-BASED MATERIALS **(INCLUDING TITLE 8, CALIFORNIA CODE OF REGULATIONS, SECTION 1532.1)**.

If failure to comply with these laws, rules and regulations results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify and hold harmless the Owner, pursuant to the indemnification provisions of the Contract Documents, for all damages and other claims arising there from. If lead disturbance is anticipated in your scope of work, only persons with appropriate accreditation, registrations, licenses and training shall conduct this work. Please note that, unless otherwise specifically required in the contract documents, the Owner will require full lead abatement by licensed abatement contractors only if required by Cal-OSHA or any other state or federal agency with jurisdiction to impose such a requirement.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Owner shall require the Contractor to provide any sample results prior to beginning work, during the work, and after the completion of each job. Along with these records, the Owner will request to examine, prior to the commencement of work, the lead training records of each employee of the contractor.

Any and all work that may result in the disturbance of lead containing building materials must be coordinated through the Owner's Maintenance & Operations Department. A signed copy of this correspondence must be on file prior to beginning work, along with all current insurance certificates.

THE UNDERSIGNED HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT HE OR SHE HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD BASED MATERIALS ON THE OWNER'S PROPERTY, AS WELL AS THE EXISTENCE OF APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL OF, SUCH MATERIALS WITH WHICH IT MUST COMPLY.

THE UNDERSIGNED ALSO WARRANTS THAT HE OR SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE OWNER MAY REQUIRE PROOF OF SUCH AUTHORITY.

_____
Contractor's Name

_____
Street Address

_____
Telephone Number License Number

_____
Typed or Printed Name of Signatory Title

_____
Signature

_____
REM of Company (If Applicable)

Subscribed and sworn before me

This ____ day of _____20

_____
Notary Public in and for the State of California

My Commission Expires: _____

(SEAL)

END OF SECTION

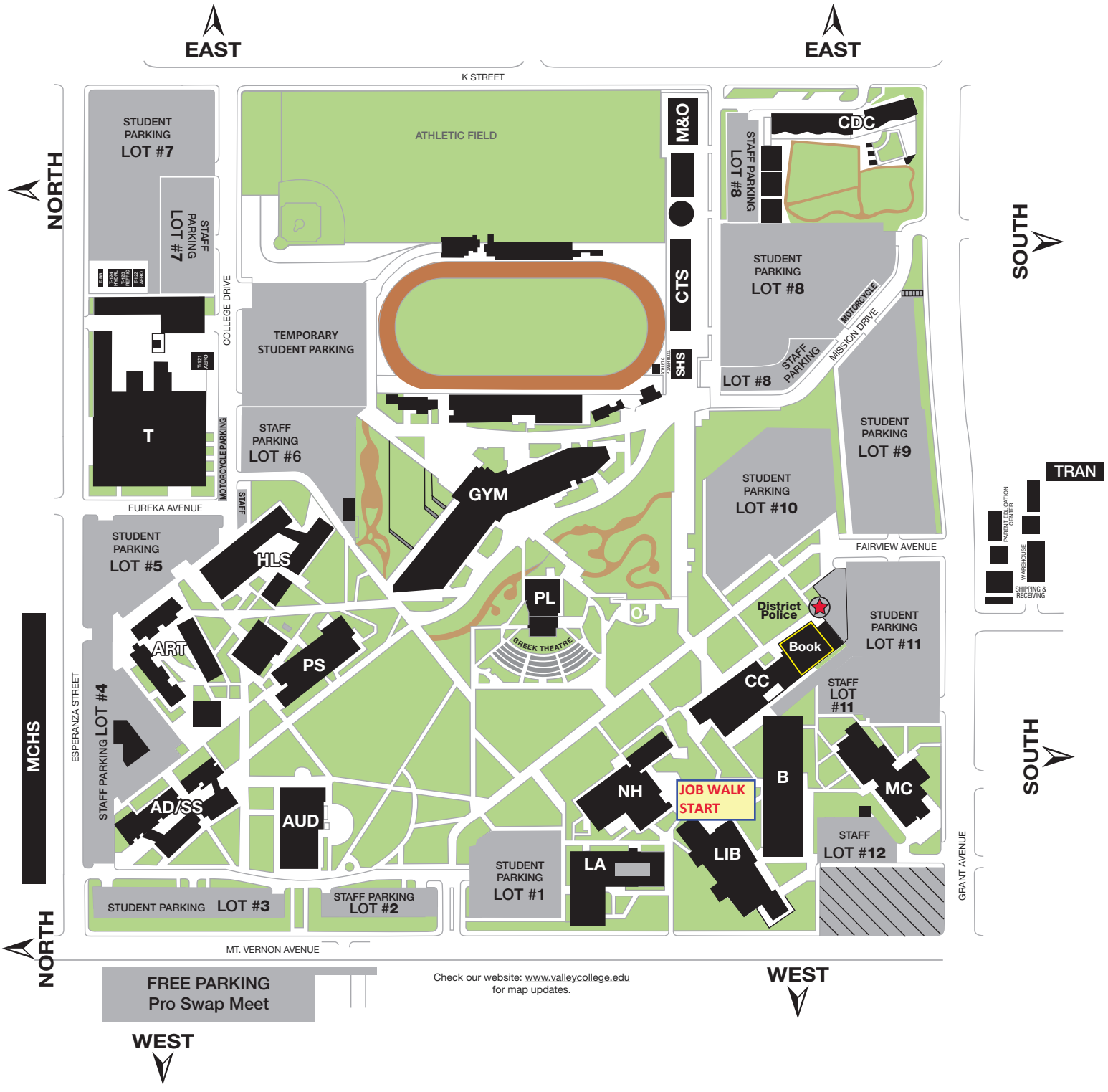
EXHIBIT G

JOB WALK INFORMATION

EXHIBIT G

San Bernardino Valley College

701 South Mount Vernon • San Bernardino, CA 92410 • (909) 384-4400



Check our website: www.valleycollege.edu
for map updates.

BUILDING SYMBOLS

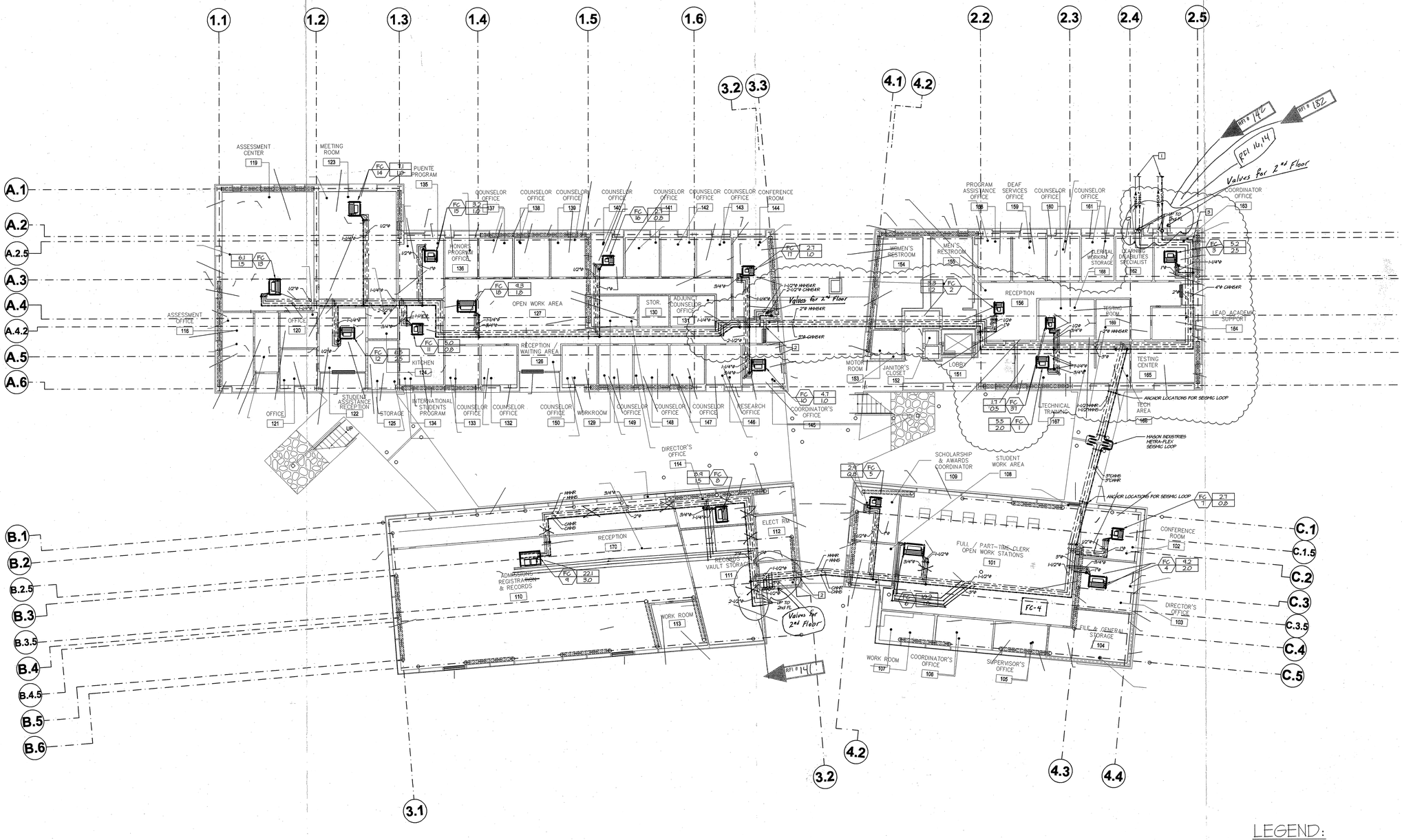
AD/SS..... Administration/Student Services
(Note: AD rooms are located in AD/SS)
ART.....Art Center
AUD..... Auditorium
B..... Business
BOOK..... Bookstore
CC.....Campus Center
CDC.....Child Development Center
CTS.....Computer Technology Services
GYM..... Gym
HLS.....Health & Life Science
LA.....Liberal Arts
LIB.....Library
MC.....Media/Communications
MCHS..... Middle College High School
M&O..... Maintenance & Operations
MP..... Motor Cycle Parking
NH.....North Hall
O..... Observatory
PL.....Planetarium
PS.....Physical Sciences
SHS..... Student Health Services
T.....Technical
TRAN.....Transportation Center

District Police • Campus Center Rm. 100 • (909) 384-4491

SBVC BASE MAP Revised 1-4-19

NOTES THIS SHEET:

1. SEE M2.00 FOR CONTINUATION.
2. PROVIDE AND INSTALL HILTI FSI FIRE STOP, U.L. LISTING WL-1054, 2hr RATING. TYP WHERE OCCOURS
3. ROUTE HYDRONIC PIPING BENEATH THE MECHANICAL DUCT WORK. (TYP)



LEGEND:

XX GPM CHWS & R
XX GPM HHWS & R

PROJECT NORTH
TRUE NORTH

RECEIVED
JAN 27 2004

Per Bulletin #49

BBCM

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REGISTERED PROFESSIONAL ENGINEER
PAUL D FUNDAMENTAL
No. 24311
Exp. 9-30-06
MECHANICAL
STATE OF CALIFORNIA

LICENSED ARCHITECT
THOMAS H. BLUROCK
NO. C009332
5-31-03
RENEWAL DATE
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-104575
AC ____ FLS ____ SS ____
DATE ____

SUBMITTALS

SBVC
ADMINISTRATION STUDENT SERVICES

SAN BERNARDINO
COMMUNITY COLLEGE
DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

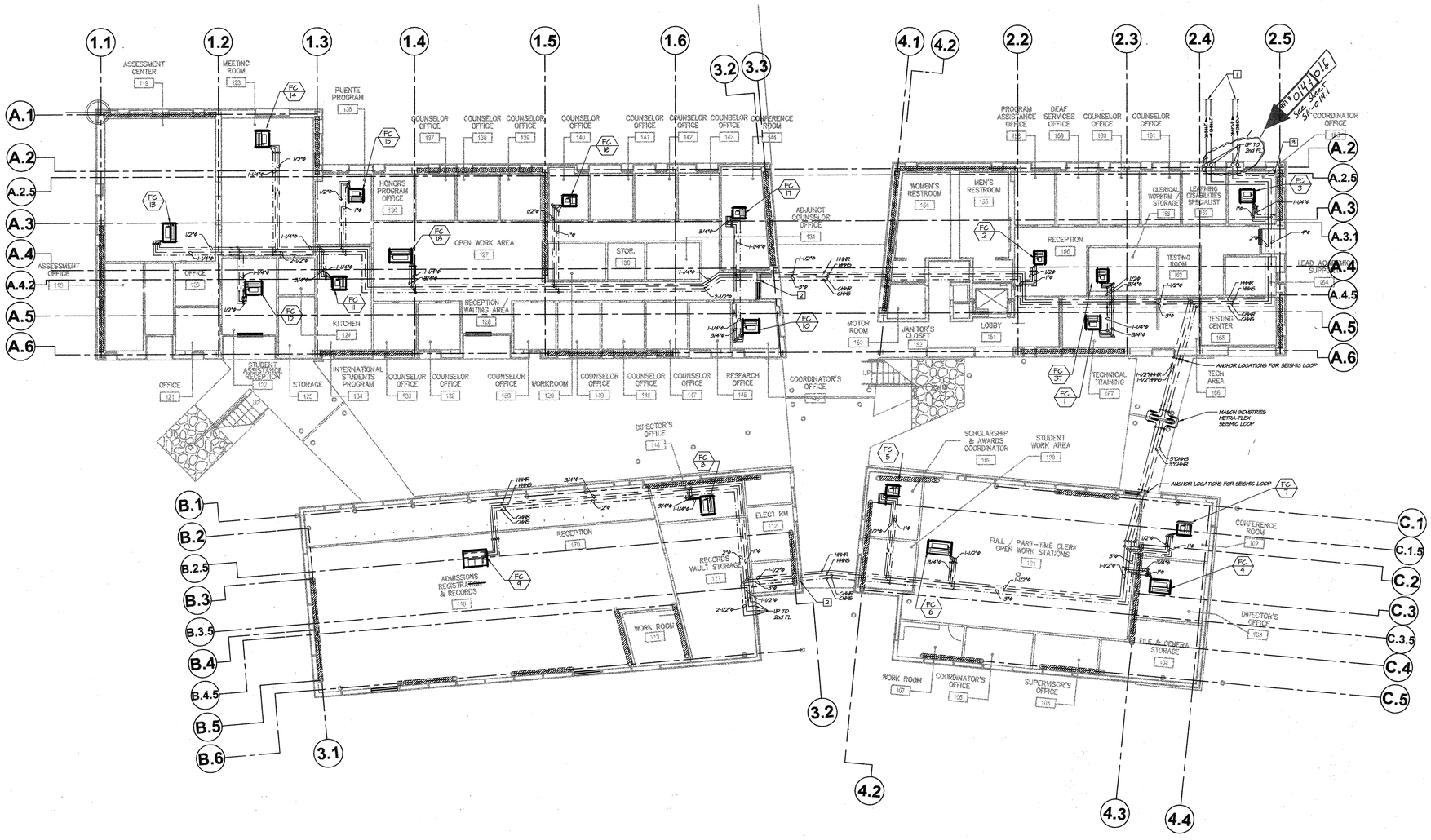
FIRST FLOOR HYDRONIC PIPING PLAN

PROJECT NO.: 98-20
SCALE: 3/32" = 1'-0"
DATE: FEB. 7, 2003

M4.01

NOTES THIS SHEET:

1. SEE M2.00 FOR CONTINUATION.
2. PROVIDE AND INSTALL HILTI FSI FIRE STOP, UL. LISTING WL-1054, 2hr RATING. TYP WHERE OCCOURS
3. ROUTE HYDRONIC PIPING BENEATH THE MECHANICAL DUCT WORK. (TYP)



BULL# 49 - See New Sheets

See New sheet M4.01 per Bulletin 49

PROJECT NORTH

TRUE NORTH

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fax: 949.650.1262

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STEVEN EHRLICH Architects

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REGISTERED PROFESSIONAL ENGINEER MECHANICAL No. 24901 EXP. 6-30-04 STATE OF CALIFORNIA

LICENSED ARCHITECT JOSEPH H. BLUROCK NO. C009332 EXP. 12-31-04 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL 04-104575
AC. RS SS MK
DATE FEB 2 5 2003

SUBMITTALS

SBVC
ADMINISTRATION STUDENT SERVICES

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

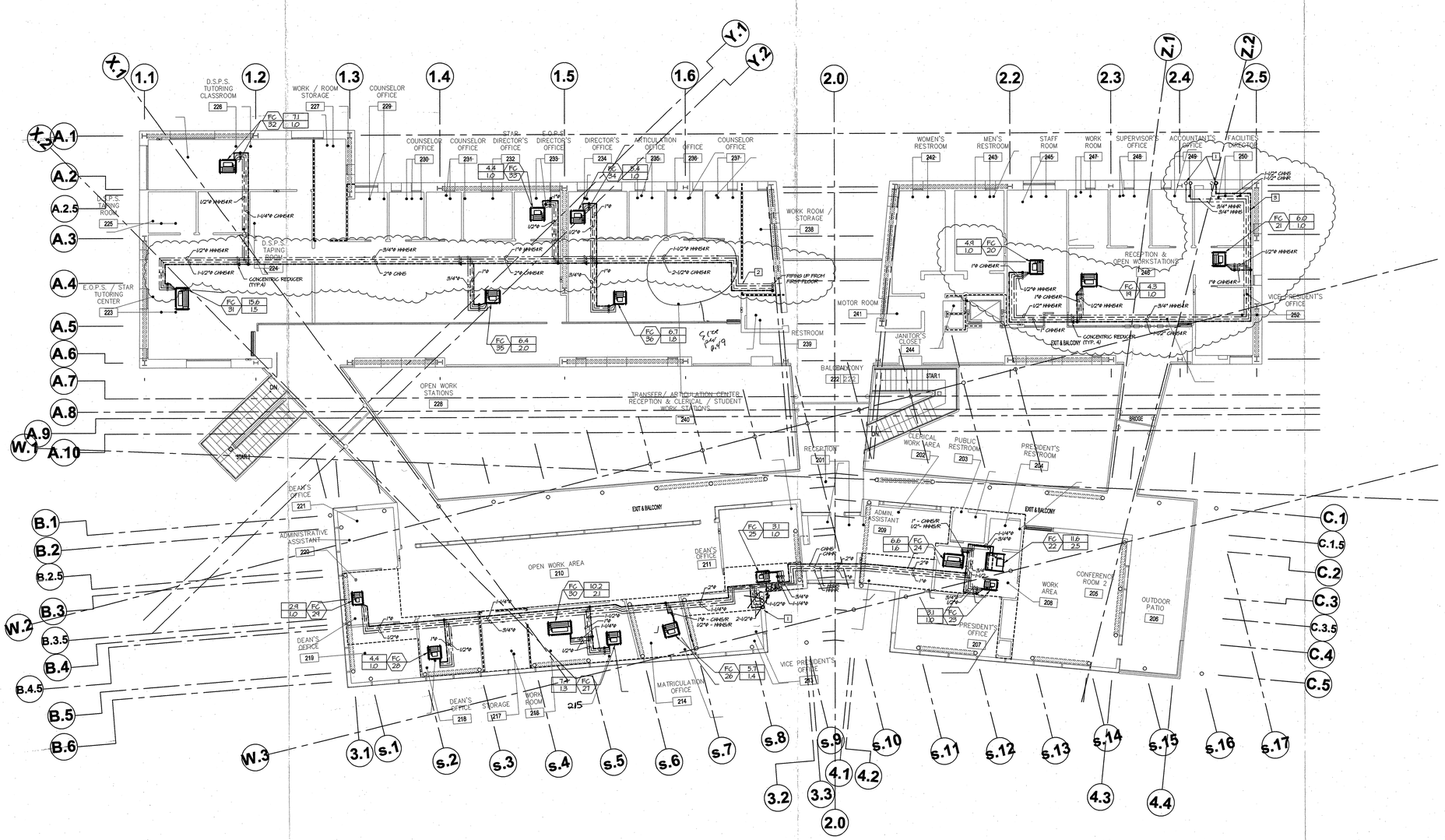
FIRST FLOOR HYDRONIC PIPING PLAN

PROJECT NO.: 98-20
SCALE: 3/32" = 1'-0"
DATE: FEB. 7, 2003

M4.01

NOTES THIS SHEET:

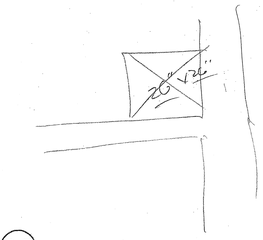
1. HYDRONIC PIPE RISE FROM 1st FLOOR.
2. PROVIDE AND INSTALL HILTI FSI FIRE STOP, U.L. LISTING HL-1054, 2hr RATING. TYP WHERE OCCOURS
3. ROUTE HYDRONIC PIPING BENEATH THE MECHANICAL DUCT WORK. (TYP)

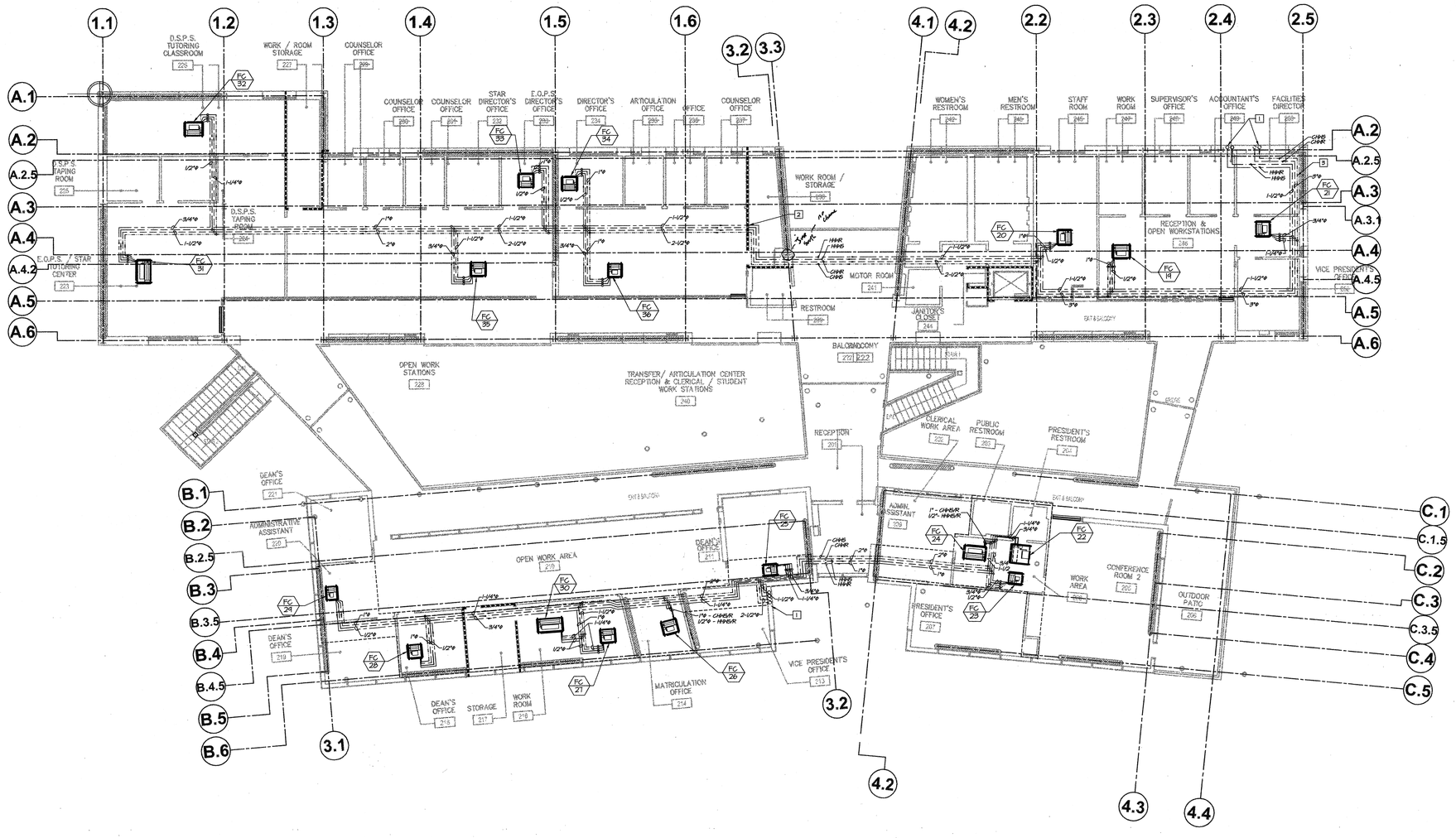

D.S.P.S. TUTORING CLASSROOM 226
WORK / ROOM STORAGE 227
COUNSELOR OFFICE 229
COUNSELOR OFFICE 230
COUNSELOR OFFICE 231
STAR DIRECTOR'S OFFICE 232
E.O.P.S. DIRECTOR'S OFFICE 233
DIRECTOR'S OFFICE 234
ARTICULATION OFFICE 235
COUNSELOR OFFICE 236
COUNSELOR OFFICE 237
WORK ROOM / STORAGE 238
RESTROOM 239
OPEN WORK STATIONS 228
TRANSFER / ARTICULATION CENTER RECEPTION & CLERICAL / STUDENT WORK STATIONS 240
BALCONY 222 / 232
MOTOR ROOM 241
JANITOR'S CLOSET 244
WOMEN'S RESTROOM 242
MEN'S RESTROOM 243
STAFF ROOM 245
WORK ROOM 247
SUPERVISOR'S OFFICE 248
ACCOUNTANT'S OFFICE 249
FACILITIES DIRECTOR 250
RECEPTION & OPEN WORKSTATIONS 246
VICE PRESIDENT'S OFFICE 252
CLERICAL WORK AREA 202
PUBLIC RESTROOM 203
PRESIDENT'S RESTROOM 204
RECEPTION 201
BRIDGE
E.O.P.S. TUTORING ROOM 225
D.S.P.S. TAPING ROOM 224
E.O.P.S. / STAR TUTORING CENTER 223
DEAN'S OFFICE 221
ADMINISTRATIVE ASSISTANT 220
OPEN WORK AREA 210
DEAN'S OFFICE 211
DEAN'S OFFICE 219
DEAN'S OFFICE 218
STORAGE 217
WORK ROOM 216
MATRICULATION OFFICE 214
VICE PRESIDENT'S OFFICE 213
ADMIN. ASSISTANT 208
PRESIDENT'S OFFICE 207
WORK AREA 208
CONFERENCE ROOM 2 205
OUTDOOR PATIO 206
EXIT & BALCONY
STAIR 1
STAIR 2
PIPING UP FROM FIRST FLOOR
CONCENTRIC REDUCER (TYP.4)
EXIT & BALCONY (TYP. 4)
1/2" CAB6, 1/2" CAB6R
3/4" HW6R, 3/4" HW6
1-1/2"6 CAB6R
1-1/4"6 CAB6R
2"6 CAB6
1-1/2"6 HW6R
1"6 HW6R
1"6 CAB6R
1/2"6 HW6R
1"6 CAB6
2-1/2"6 CAB6R
1-1/2"6 CAB6R
1"6 CAB6R
1/2"6 CAB6R
1"6 HW6R
1/2"6 CAB6
1"6 CAB6
1-1/4"6 CAB6
1-1/2"6 HW6R
1"6 CAB6
1-1/4"6 HW6R
1"6 HW6R
1-1/2"6 CAB6R
1"6 CAB6R
1/2"6 HW6R
1"6 CAB6R
1/2"6 HW6R
1"6 CAB6R
1/2"6 HW

NOTES THIS SHEET:

1. HYDRONIC PIPE RISE FROM 1st FLOOR.
2. PROVIDE AND INSTALL HILTI FSI FIRE STOP, U.L. LISTING WL-1054, 2hr RATING, TYP WHERE OCCOURS
3. ROUTE HYDRONIC PIPING BENEATH THE MECHANICAL DUCT WORK. (TYP)

He says Plot he shows 22"x 26" space in wall.





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REGISTERED PROFESSIONAL ENGINEER — RAJ FUNDAMENT — No. M 24436 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — THOMAS H. BLUROCK — NO. C009332 — 5-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-104575
AC ☐ PD ☐ FLS ☐ SS ☐ M.K.
DATE FEB 25 2003

SUBMITTALS

SBVC
ADMINISTRATION STUDENT SERVICES

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

SECOND FLOOR HYDRONIC PIPING PLAN

BULL# 49
See New Sheets

see New Sheet M4.01 per Bulletin 49

PROJECT NORTH
TRUE NORTH

PROJECT NO.:	98-20
SCALE:	3/32" = 1'-0"
DATE:	FEB. 7, 2003

M4.02

FAN COIL UNIT SCHEDULE

SYMBOL	AREA SERVED	MFR & MODEL	E.S.P.	OUTSIDE AIR CFM	SUPPLY AIR CFM	ELECTRICAL					COOLING									HEATING						APPROX. SHIPPING WT (LBS)	DIMENSIONS (LxWxH)	REMARKS/ACCESSORIES	SYMBOL
						V/ø/Hz	AMPS	WATTS	MOTOR SPEED	MOTOR HP	MAIN COOLING (TOTAL MBH)	NET COOLING (SENSIBLE BTUH)	COIL CONFIGURATION	GPM	EWT	LWT	W.P.D. FT.WG	E.A.D.B. (F°)	E.A.W.B.	L.A.T. D.B.	L.A.T. W.B.	HEATING CAPACITY (MBH)	COIL CONFIGURATION	GPM	EWT	W.P.D. FT.WG	E.A.D.B. (F°)	L.A.T. D.B.			
FC 1	RM. 164,165 166,167	CARRIER 42DE-10	0.25	100	925	115V 1ø 60HZ	5.2	350	HIGH	1/4	39.2	24.0	6-ROW	5.5	45.0	59.4	14.4	81.0	69.0	56.8	55.7	30.9	1-ROW	2.0	180	2.5	65	95.9	165	32x40x18		FC 1
FC 2	RM. 156	CARRIER 42DE-06	0.25	10	515	115V 1ø 60HZ	2.8	310	HIGH	1/8	19.3	13.6	6-ROW	3.3	45.0	56.8	2.0	81.0	69.0	55.1	54.6	16.3	1-ROW	1.2	180	0.6	65	99.3	135	32x31x18		FC 2
FC 3	RM. 158,159 160,161,162,163	CARRIER 42DE-10	0.29	100	935	115V 1ø 60HZ	5.4	510	HIGH	1/8	29.6	24.7	4-ROW	5.2	45.0	56.5	3.1	81.0	67.0	58.3	56.5	37.2	1-ROW	2.5	180	4.3	65	99.7	165	32x40x18		FC 3
FC 4	RM. 103,104 105,106,107	CARRIER 42DE-16	0.30	150	1,505	115V 1ø 60HZ	9.1	830	HIGH	1/4	65.3	38.6	6-ROW	9.2	45.0	59.4	4.0	81.0	69.0	56.3	55.2	45.8	1-ROW	2.0	180	4.2	65	93.9	215	32x55x18		FC 4
FC 5	RM. 108, 109	CARRIER 42DC-12	0.20	45	570	115V 1ø 60HZ	2.8	310	HIGH	1/8	15.2	12.1	4-ROW	2.9	45.0	55.5	1.3	81.0	69.0	59.8	58.2	13.5	1-ROW	0.8	180	0.1	65	86.5	184	32x45x18		FC 5
FC 6	RM. 101	CARRIER 42DE-20	0.40	210	1,560	115V 1ø 60HZ	10.0	1000	HIGH	1/4	81.3	46.9	6-ROW	10.2	45.0	61.2	5.7	81.0	69.0	54.4	53.1	46.7	1-ROW	1.8	180	4.1	65	93.5	243	32x64x18		FC 6
FC 7	RM. 102	CARRIER 42DE-08	0.20	100	770	115V 1ø 60HZ	3.4	340	HIGH	1/5	18.0	15.6	4-ROW	2.7	45.0	58.2	1.7	81.0	69.0	61.4	59.7	16.5	1-ROW	0.8	180	0.2	65	83.7	155	32x50x18		FC 7
FC 8	RM. 111, 112 113, 114	CARRIER 42DE-12	0.36	200	1,270	115V 1ø 60HZ	6.9	720	HIGH	1/5	54.2	32.5	6-ROW	8.9	45.0	57.2	9.2	81.0	69.0	54.4	53.0	35.1	1-ROW	1.5	180	2.2	65	95.5	184	32x45x18		FC 8
FC 9	RM. 110	CARRIER 42BH-40	0.5	380	3,550	460V 3ø 60HZ	N/A	N/A	N/A	1-1/2	124.6	87.0	4-ROW	22.1	45.0	56.3	5.9	81.0	69.0	57.6	55.7	127.5	1-ROW	3.0	180	7.1	65	96.8	583	39x62x29	DUCT MOUNTED SMOKE DETECTOR REQUIRED.	FC 9
FC 10	RM. 145,146, 147,148,149,150	CARRIER 42DE-12	0.29	90	1,170	115V 1ø 60HZ	8.1	785	HIGH	1/8	32.0	25.1	4-ROW	4.7	45.0	58.7	2.7	81.0	69.0	60.2	58.3	30.0	1-ROW	1.0	180	0.9	65	87.7	184	32x45x18		FC 10
FC 11	RM. 126,134, 132,133	CARRIER 42DE-8	0.26	70	765	115V 1ø 60HZ	3.4	340	HIGH	1/5	34.7	22.0	6-ROW	5.0	45.0	58.9	3.9	81.0	69.0	59.1	57.6	19.4	1-ROW	0.8	180	0.4	65	87.5	155	32x36x18		FC 11
FC 12	RM.115,116,117,120 121,122,124,125	CARRIER 42DE-12	0.35	145	1,020	115V 1ø 60HZ	5.4	510	HIGH	1/8	38.6	27.4	6-ROW	6.5	45.0	56.9	6.0	81.0	69.0	53.2	51.9	33.8	1-ROW	2.5	180	4.3	65	100.6	184	32x45x18		FC 12
FC 13	RM. 118, 119	CARRIER 42DE-14	0.35	165	1,300	115V 1ø 60HZ	6.9	720	HIGH	1/5	40.2	27.7	4-ROW	6.1	45.0	58.8	3.9	81.0	69.0	60.0	59.0	35.1	1-ROW	1.5	180	3.9	65	95.5	199	32x50x18		FC 13
FC 14	RM. 123	CARRIER 42DE-12	0.35	310	1,100	115V 1ø 60HZ	5.4	510	HIGH	1/8	36.0	26.1	4-ROW	7.1	45.0	58.1	5.1	81.0	69.0	57.9	56.2	28.4	1-ROW	1.0	180	0.9	65	88.1	184	32x45x18		FC 14
FC 15	RM. 135,136, 137,138,139	CARRIER 42DE-10	0.28	85	955	115V 1ø 60HZ	5.2	350	HIGH	1/4	22.9	22.9	4-ROW	3.2	45.0	56.3	1.3	81.0	69.0	61.4	59.4	26.0	1-ROW	1.0	180	0.8	65	89.3	165	32x40x18		FC 15
FC 16	RM. 140,141, 142,143	CARRIER 42DE-06	0.23	60	540	115V 1ø 60HZ	2.8	310	HIGH	1/8	17.9	13.7	6-ROW	2.7	45.0	58.5	1.5	81.0	69.0	56.4	55.7	15.1	1-ROW	0.8	180	0.3	65	90.8	135	32x31x18		FC 16
FC 17	RM. 144	CARRIER 42DE-06	0.25	110	420	115V 1ø 60HZ	2.8	310	MED	1/8	18.1	11.6	6-ROW	2.7	45.0	58.3	1.6	81.0	69.0	55.2	54.0	11.9	1-ROW	1.0	180	2.0	65	96.6	135	32x31x18		FC 17
FC 18	RM. 127,128 129,130,131	CARRIER 42DE-18	0.40	220	1,445	115V 1ø 60HZ	9.3	900	HIGH	1/4	63.4	37.0	6-ROW	9.3	45.0	58.8	4.5	81.0	69.0	54.3	53.2	65.0	1-ROW	1.8	180	3.8	65	93.3	232	32x60x18		FC 18
FC 19	RM. 246, 251,252	CARRIER 42DE-12	0.28	120	1,140	115V 1ø 60HZ	5.4	510	HIGH	1/8	30.0	23.5	4-ROW	4.3	45.0	59.1	2.3	81.0	69.0	60.1	58.2	28.4	1-ROW	1.0	180	0.9	65	88.1	184	32x45x18		FC 19
FC 20	RM. 245	CARRIER 42DE-12	0.32	210	915	115V 1ø 60HZ	5.2	350	HIGH	1/4	27.0	20.6	4-ROW	4.9	45.0	56.0	2.5	81.0	69.0	59.4	57.6	25.5	1-ROW	1.0	180	0.8	65	89.5	184	32x45x18		FC 20
FC 21	RM. 247,248, 249,250	CARRIER 42DE-10	0.29	90	920	115V 1ø 60HZ	5.2	350	HIGH	1/4	32.6	22.2	4-ROW	6.0	45.0	55.8	3.5	81.0	69.0	59.0	58.0	25.1	1-ROW	1.0	180	0.8	65	93.8	165	32x40x18		FC 21
FC 22	RM. 205	CARRIER 42BH-30	0.5	370	2,010	460V 3ø 60HZ	13.8	–	HIGH	3/4	63.9	48.8	4-ROW	11.6	45.0	56.0	7.5	81.0	69.0	58.5	57.2	60.3	1-ROW	2.5	180	7.4	65	90.6	325	32x48x22	DUCT MOUNTED SMOKE DETECTOR REQUIRED.	FC 22
FC 23	RM. 207	CARRIER 42DE-06	0.25	55	550	115V 1ø 60HZ	3.4	340	HIGH	1/5	17.3	12.0	4-ROW	3.1	45.0	56.3	1.4	81.0	69.0	61.0	59.7	17.8	1-ROW	1.0	180	0.5	65	94.7	135	32x31x18		FC 23
FC 24	RM. 201,202 204,208,209	CARRIER 42DE-16	0.30	120	1,505	115V 1ø 60HZ	9.1	830	HIGH	1/4	46.9	32.0	4-ROW	6.6	45.0	59.4	2.3	81.0	69.0	60.0	59.0	42.9	1-ROW	1.6	180	3.0	65	92.1	215	32x55x18		FC 24
FC 25	RM. 211, 212	CARRIER 42DE-06	0.20	50	545	115V 1ø 60HZ	2.8	310	HIGH	1/8	17.2	12.0	4-ROW	3.1	45.0	56.3	1.4	81.0	69.0	61.0	59.7	17.8	1-ROW	1.0	180	0.5	65	94.7	135	32x31x18		FC 25
FC 26	RM. 213, 214	CARRIER 42DE-10	0.22	60	970	115V 1ø 60HZ	5.2	350	HIGH	1/4	39.9	24.0	6-ROW	5.7	45.0	58.0	5.0	81.0	69.0	59.2	57.4	27.6	1-ROW	1.4	180	1.3	65	94.0	165	32x40x18		FC 26
FC 27	RM. 215, 216,217	CARRIER 42DE-10	0.25	70	880	115V 1ø 60HZ	5.2	350	HIGH	1/4	42.3	25.0	6-ROW	7.4	45.0	56.5	6.6	81.0	69.0	54..8	53.8	26.4	1-ROW	1.3	180	1.1	65	93.2	165	32x40x18		FC 27
FC 28	RM. 218, 219	CARRIER 42DE-08	0.23	65	995	115V 1ø 60HZ	5.2	350	HIGH	1/4	22.4	18.3	4-ROW	4.4	45.0	55.1	3.5	81.0	69.0	60.3	58.3	26.8	1-ROW	1.0	180	0.8	65	95.3	165	32x40x18		FC 28
FC 29	RM. 220, 221	CARRIER 42DE-06	0.22	50	575	115V 1ø 60HZ	2.8	310	HIGH	1/8	20.3	13.0	6-ROW	2.9	45.0	59.3	1.7	81.0	69.0	57.2	56.2	16.6	1-ROW	1.0	180	0.5	65	95.4	135	32x31x18		FC 29
FC 30	RM. 210	CARRIER 42BH-20	0.5	230	3,200	460V 3ø 60HZ	2.6	1,000	HIGH	1-1/2	72.6	62.3	4-ROW	10.2	45.0	59.3	1.3	81.0	69.0	62.0	59.8	67.7	1-ROW	2.1	180	8.4	65	94.3	413	44x48x29	DUCT MOUNTED SMOKE DETECTOR REQUIRED.	FC 30
FC 31	RM. 223, 224,225	CARRIER 42DE-20	0.52	185	1,690	115V 1ø 60HZ	10.0	1,000	HIGH	1/4	63.0	43.8	4-ROW	15.6	45.0	53.1	10.2	81.0	69.0	55.7	54.5	49.0	1-ROW	2.0	180	5.2	65	91.2	243	32x64x18		FC 31
FC 32	RM. 226, 227	CARRIER 42DE-10	0.24	115	870	115V 1ø 60HZ	8.1	785	HIGH	1/8	41.5	24.6	6-ROW	7..1	45.0	56.8	6.2	81.0	69.0	54.9	53.9	28.3	1-ROW	1.5	180	1.5	65	95.1	165	32x40x18		FC 32
FC 33	RM. 229,230, 231,232,233	CARRIER 42DE-10	0.26	80	970	115V 1ø 60HZ	5.2	350	HIGH	1/4	26.6	20.9	4-ROW	4.4	45.0	57.1	2.2	81.0	69.0	60.3	58.4	26.6	1-ROW	1.0	180	0.8	65	89.0	165	32x40x18		FC 33
FC 34	RM. 234,235, 236,237,238	CARRIER 42DE-10	0.24	75	980	115V 1ø 60HZ	5.2	350	HIGH	1/4	28.7	21.8	4-ROW	5.4	45.0	55.5	3.0	81.0	69.0	59.5	57.6	26.6	1-ROW	1.0	180	0.8	65	89.0	165	32x40x18		FC 34
FC 35	RM. 228	CARRIER 42DE-18	0.35	160	1,680	115V 1ø 60HZ	9.3	900	HIGH	1/4	45.5	31.0	4-ROW	6.4	45.0	59.4	2.1	81.0	69.0	60.0	59.0	44.5	1-ROW	2.0	180	4.2	65	94.3	232	32x44x18		FC 35
FC 36	RM. 239, 240	CARRIER 42DE-12	0.24	125	1,230	115V 1ø 60HZ	5.4	510	HIGH	1/8	42.7	28.0	4-ROW	6.7	45.0	57.8	4.6	81.0	69.0	60.2	58.6	39.1	1-ROW	1.8	180	3.0	65	94.1	184	32x45x18		FC 36
FC 37	RM. 157, 168,169	CARRIER 42DE-06	0.24	70	550	115V 1ø 60HZ	2.8	310	HIGH	1/8	12.0	10.8	4-ROW	1.7	45.0	59.1	0.6	81.0	69.0	62.2	60.3	13.6	1-ROW	0.5	180	0.1	65	86.4	135	32x31x18		FC 37

NOTES: MANUFACTURER TO PROVIDE 12" WIDE PLENUM BOX ON THE BACK OF EACH FAN COIL. BOX SHALL MATCH FAN COIL HEIGHT AND LENGTH DIMENSIONS EXACTLY AND SHALL HAVE THE APPREANCE OF BEING A PART OF THE FAN COIL INCLUDING BUT NOT LIMITED TO COLOR.
SEE SHEET M4.1 FOR ANCHORAGE.

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REGISTERED PROFESSIONAL ENGINEER DONALD FUNDAMENTAL No. 24380 MECHANICAL STATE OF CALIFORNIA

LICENSED ARCHITECT THOMAS H. BLUROCK NO. C009332 EXP. 3-31-05 RENEWAL DATE STATE OF CALIFORNIA

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SUBMITTALS

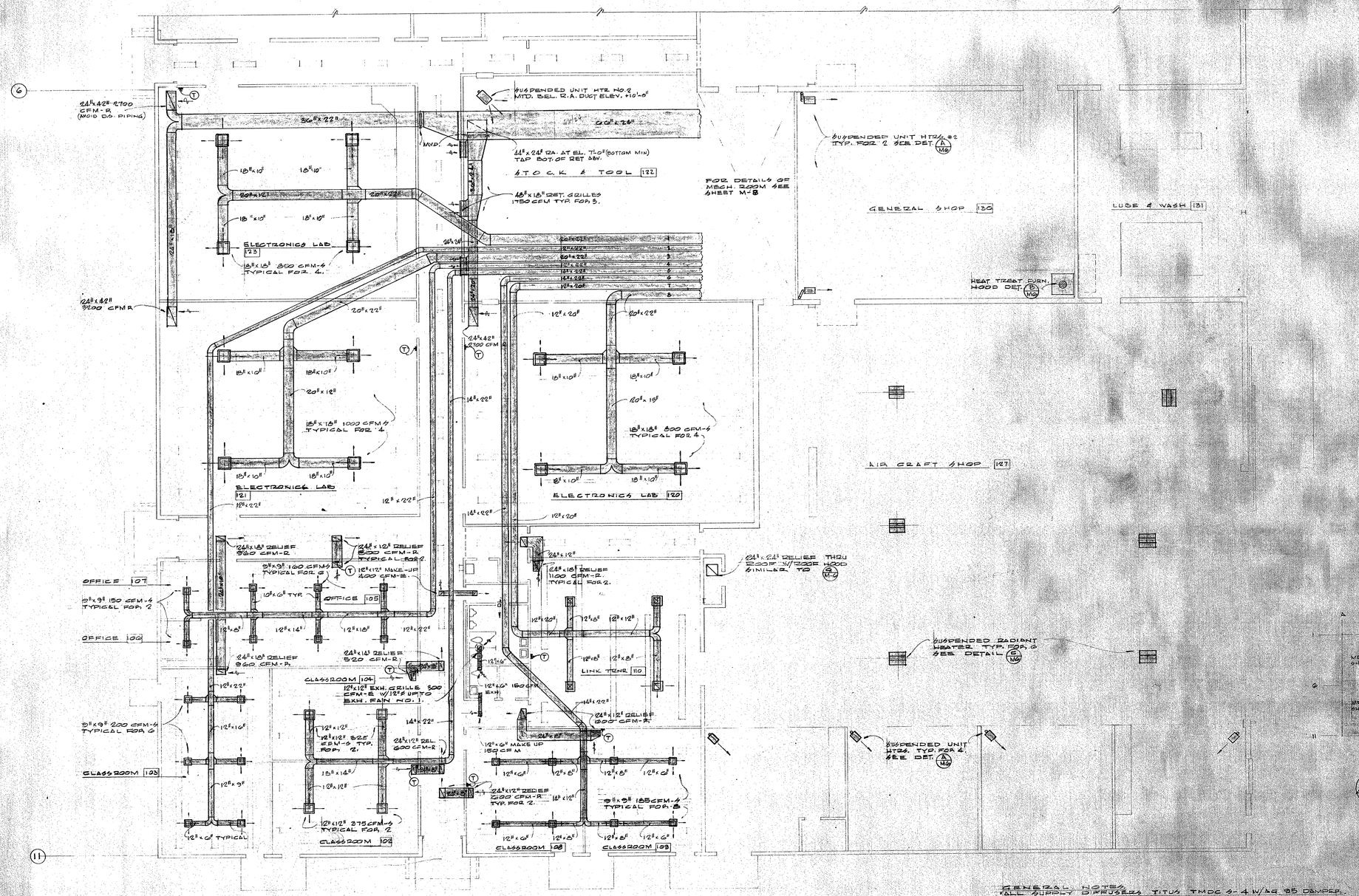
SBVC
ADMINISTRATION
STUDENT
SERVICES

SAN BERNARDINO
COMMUNITY COLLEGE
DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL
SCHEDULES

PROJECT NO.: 98-20
SCALE: N/A
DATE: FEB. 7, 2003

M1.03



MECHANICAL PART PLAN

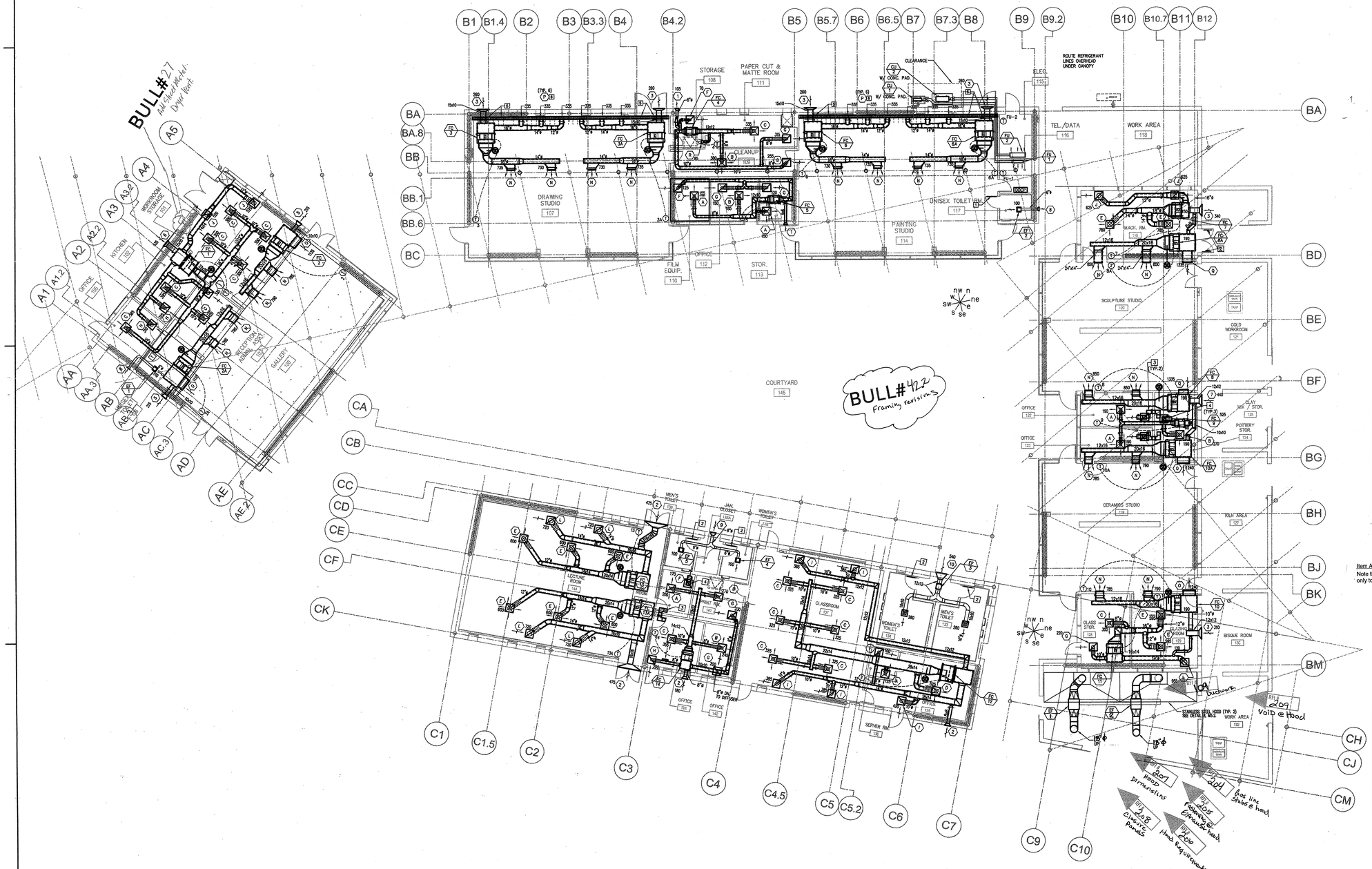
1/4" = 1'-0"

A1

GENERAL NOTES
ALL SUPPLY DIFFUSERS TITUS TMDC 4-4 W/RG 85 DAMPER.
ALL RETURN, RELIEF, EXHAUST GRILLES TITUS PL 250.

MECHANICAL PART PLAN

PRESIDENT / BUSINESS MGR.	ARCHITECTS / ENGINEER	SAN BERNARDINO VALLEY JOINT UNION COLLEGE SAN BERNARDINO CALIFORNIA	DRAWN BY: K.A.A. / JOB NO.
		JESS J. JONES, A.I.A. R. L. POPER, A.I.A. J. G. ARMSTRONG ASSOCIATED ARCHITECTS LONG BEACH, CALIF. SAN BERNARDINO, CALIF.	DALE WILSON STRUCTURAL ENGINEER K. G. ANDERSON MECHANICAL ENGINEER W. E. MANCE ELECTRICAL ENGINEER	CHECKED BY: K.G.A. / DATE: 2-6-62
			REVISED / SHEET NO. M 4



KEYED NOTES THIS SHEET:

1. UNDERCUT DOOR 1". (TYP.)
2. PROVIDE TITUS T700L DOOR LOUVER 24"x18" AT 10" A.F.F. TO BOTTOM OF LOUVER. PROVIDE WITH AUXILIARY FRAME OPTION. (TYP.)
3. PROVIDE TRANSFER AIR BOOT ABOVE CEILING. SEE DETAIL 1, SHEET M5.6 FOR ADDITIONAL INFORMATION. (TYP.)
4. SEE DETAIL 6, SHEET M5.2 FOR ADDITIONAL INFORMATION REGARDING RETURN AIR DIFFUSERS INSTALLED IN CEILING PLENUMS. (TYP.)
5. BLOCK OFF DUCT ATTACHMENT ON UNUSED LINEAR DIFFUSERS WITH SHEET METAL PAINTED FLAT BLACK.
6. [redacted] REMOVE ADJUSTABLE PATTERN CONTROLLERS FROM SCHEDULED RETURN AIR LINEAR DIFFUSERS.

GENERAL NOTES THIS SHEET:

1. ALL DUCT DIMENSIONS SHOWN ARE NET CLEAR INSIDE DIMENSIONS. DIMENSIONS INDICATED ON THESE DRAWINGS SHALL BE MAINTAINED CLEAR AFTER INSTALLATION OF INTERNAL DUCT LINING AS REQUIRED. (TYP.)
2. ALL MANUAL VOLUME DAMPERS SHALL BE INSTALLED SO AS TO NOT INTERFERE, DAMAGE, AND OR DETERIORATE INTERNAL DUCT LINING. (TYP.)
3. PROVIDE AND INSTALL MANUAL VOLUME DAMPERS AT ALL DUCT BRANCHES OFF OF THE MAIN DUCT TRUNKS. DUCTWORK INSTALLED IN INACCESSIBLE AREAS SUCH AS LOCATIONS ABOVE GYPBOARD OR RIGID PLASTER CEILINGS, SHALL HAVE OPPOSED BLADE DAMPERS INSTALLED AT THE DIFFUSER TO ALLOW FOR PROPER BALANCING. (TYP.)
4. THERMOSTAT LOCATIONS SHOWN ARE SCHEMATIC. VERIFY ALL T-STAT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

Item AD2-2.16 **Sheet M2.1 MECHANICAL FLOOR PLAN**
Revise duct connections at FC13 and FC13A as shown on page AD2-M2 of this Addendum.

Item AD1-2.16 **Sheets A5.03 through A5.11 ENLARGED PLANS & INTERIOR ELEVATIONS**
Note that there are two keynotes designated as 35. The keynote 35 that refers to a wood wall panel is used only to the wood wall panels shown on Sheet A5.08.

SUBMITTALS

MECHANICAL FIRST FLOOR PLAN

SCALE 3/32"=1'-0" 1

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REGISTERED PROFESSIONAL ENGINEER — DAVID C. TURNBULL — No. 24409 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — DAVID C. TURNBULL — No. C26932 — 5-31-05 RENEWAL DATE — STATE OF CALIFORNIA

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SBVC
ART CENTER & GALLERY

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

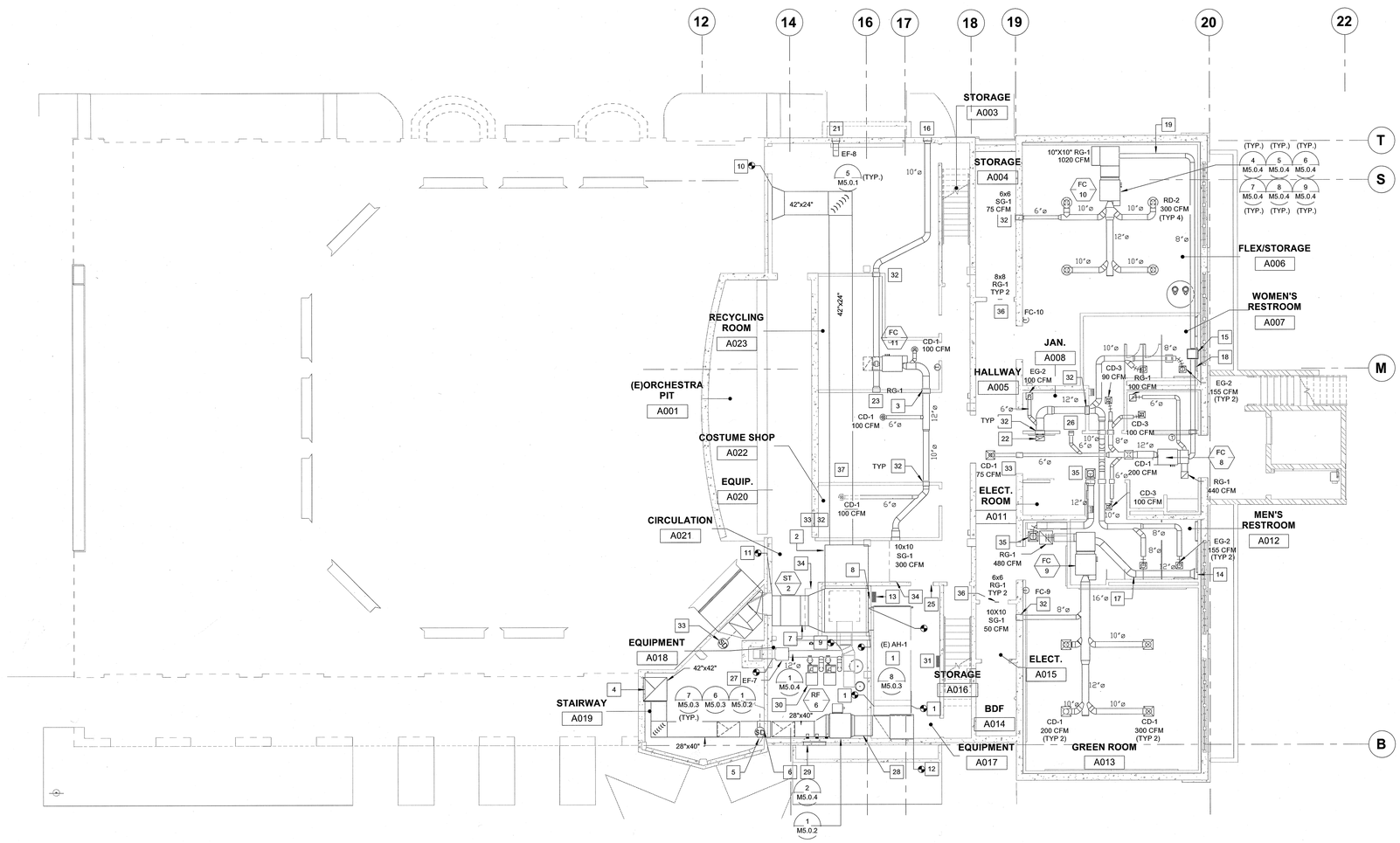
MECHANICAL FLOOR PLAN

PROJECT NO.: 98-23
SCALE: 3/32=1'-0"
DATE: 02.24.2004

M2.1

FA #0429

AS-BUILTS



0 8'

Scale: 1/8"=1'-0"

KEYNOTES #

1 INSTALL NEW HOT WATER COILS AND INSTALL INSIDE (E) AH-1 AND ASSEMBLE IT'S SECTIONS BACK TOGETHER. RECONNECT CHILLED WATER AND CONDENSATE PIPING AS WELL AS THE SHEET METAL CONNECTION ON TO (E) AH-1. SEE DETAIL #8 ON M5.0.3 FOR ADDITIONAL INFORMATION AH-1 MODIFICATIONS.

2 PROVIDE 42"X24"(L) SUPPLY AIR MAIN UP TO P.O.C. TO EXISTING RISER TO AUDITORIUM DECORATIVE SUPPLY DIFFUSER.

3 PROVIDE 12" DIA. FIRE SMOKE DAMPER IN SUPPLY AIR DUCT.

4 PROVIDE 42X42 (L) RETURN AIR RISER UP TO FIRST FLOOR. PROVIDE IN DRYWALL SHAFT.

5 PROVIDE 28X48 (L) RETURN AIR DUCT UNDER STAIRS TO EQUIPMENT ROOM A018. PROVIDE WALL OPENING.

6 PROVIDE FIRE/SMOKE DAMPER AT 28X48 RA DUCT.

7 PROVIDE (L) 54"X24" SUPPLY AIR DUCT MAIN TO P.O.C. TO EXISTING RISER TO AUDITORIUM DECORATIVE SUPPLY DIFFUSER.

8 PROVIDE 78"X72"(L) SUPPLY AIR PLENUM IN EQUIPMENT CHASE A020. CONNECT PLENUM TO EXISTING 38"X48" DUCT CONNECTION FROM AH-1 AND FLEX CONNECTOR, AND EXISTING 28"X20" SUPPLY AIR DUCT RISER TO DRESSING ROOMS ON 1ST, 2ND AND 3RD FLOORS. NEW 78"X72"(L) PLENUM TO ALSO CONNECT TO NEW 54"X24" AND 42"X24" SUPPLY AIR MAINS SERVING AUDITORIUM. PROVIDE DUCT SMOKE DETECTOR AT SUPPLY AIR DUCT.

9 EXISTING 28"X20" SUPPLY AIR RISER TO 1ST, 2ND AND 3RD FLOOR DRESSING ROOMS TO REMAIN IN USE.

10 POINT OF CONNECTION TO EXISTING 60" X 24" DUCT TO TRAPEZOIDAL DUCT RISER SUPPLYING THE EXISTING EAST DECORATIVE GRILLE IN THE AUDITORIUM.

11 POINT OF CONNECTION TO EXISTING 52" X 24" DUCT TO TRAPEZOIDAL DUCT RISER SUPPLYING THE EXISTING WEST DECORATIVE GRILLE IN THE AUDITORIUM.

12 PROVIDE TRANSITION OSA MAXIMUM DUCT FROM EXISTING 48"X54" OSA LOUVER TO REAR OF 78"X66" OPENING ON AH-1. PROVIDE TRANSITION OSA MINIMUM DUCT FROM EXISTING 30"X20" OSA LOUVER TO 24"X24" MINIMUM OSA DAMPER ON REAR OF AH-1. SEE SHEET M5.0.3, DETAIL #8 FOR ADDITIONAL INFORMATION.

13 EXISTING AH-1 VFD TO REMAIN.

14 PROVIDE 18" X 18" (MIN 2.0 SF FA) ARCHITECTURAL LOUVER IN UPPER PORTION OF WINDOW FOR OSA. PROVIDE 18" X 18" OSA PLENUM.

15 PROVIDE 16" X 10" (MIN 1.2 SF FA) ARCHITECTURAL LOUVER IN UPPER PORTION OF WINDOW FOR OSA. PROVIDE 16" X 10" OSA PLENUM.

16 PROVIDE 13" X 13" SAW CUT IN WALL FOR OSA LOUVER. PROVIDE NEW 12" X 12" (MIN 1.0 SF FA) ARCHITECTURAL LOUVER IN WALL. PROVIDE OSA PLENUM.

17 12" DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-9. BALANCE TO 520 CFM.

18 8" DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-8. BALANCE TO 160 CFM.

19 8"DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-10. BALANCE TO 120 CFM.

20 10" DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-11. BALANCE TO 270 CFM.

21 16" X 12" (MIN 1.2 SF FA) ARCHITECTURAL LOUVER IN EXISTING METAL DOOR. PROVIDE EXHAUST AIR DISCHARGE PLENUM FROM EF-8.

22 16" X 12" EXHAUST DUCT UP THRU 12" X 13" OPENING TO 1ST FLOOR. SAW CUT OPENING PER STRUCTURAL ENGINEER. SEE DETAIL #16 ON STRUCTURAL SHEET S4.1 FOR ADDITIONAL INFORMATION.

23 PROVIDE 10" DIA. FIRE SMOKE DAMPER TO RETURN AIR DUCT AND DUCT BACK TO RETURN AIR PLENUM ON FC-11.

24 PROVIDE DOOR LOUVER, DL-1, 24"X12" ON EQUIPMENT ROOM A002.

25 PROVIDE NEW MECHANICAL ROOM DOOR AIR TIGHT. COORDINATE WITH ARCHITECT.

26 6X6 SG-1, BALANCE TO 60 CFM.

27 IN-LINE DRAFT INDUCER, EF-7 FOR 12" DIA. FLUE FROM BOILERS. SEE DETAIL #6 & 7 ON M5.0.3. INSTALL 12" DIA. FLUE TO POINT OF CONNECTION IN BASEMENT EXISTING 12" DIA. FLUE, RISER AND TERMINATION ON ROOF LEVEL TO REMAIN AND BE REUSED.

28 PROVIDE 37"X25" OPENING IN VERTICAL WALL FOR 36"X24" RETURN AIR DUCT.

29 EXISTING 54"X60" OUTSIDE AIR LOUVER.

30 BOILERS, B-1 & B-2, ON NEW HOUSEKEEPING PADS.

31 (E) DDC CONTROL PANEL.

32 PROVIDE FIRE SMOKE DAMPER. PROVIDE CORE THROUGH CONCRETE WALL WHERE REQUIRED.

33 DUCT MOUNTED SMOKE DETECTOR. SEE FIRE ALARM DRAWINGS FOR CONNECTION TO FIRE ALARM SYSTEM. INSTALL DUCT SMOKE DETECTOR FOR WEST DECORATIVE GRILLE IN AUDITORIUM IN SUPPLY AIR RISER.

34 OPPOSED BLADE BALANCING DAMPER TO ADJUST MAIN SUPPLY AIR DECORATIVE GRILLES IN AUDITORIUM. (TYP. 2)

35 12"X12" TRANSFER GRILLE TO 12" DIA. TRANSFER DUCT WITH (2) TWO ELBOWS TO 12" DIA. RG-2, 510 CFM, IN CEILING.

36 PROVIDE CORE THROUGH WALL, TYP.

37 PROVIDE SOUND TRAP ST-1 AND REFER TO DETAIL 3/M5.0.1 FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES

1. PROVIDE 24"X24" ACCESS DOOR TO ACCESS ANY FAN COILS EXHAUST AND FANS UPDATED ABOVE A HARD LID CEILING.

2. LINED ALL RETURN DUCTS WITHN 10 FEET OF FAN COILS.

3. CONTRACTOR TO PROVIDE CLEANING AND SANITIZING OF ALL AH-1 EXISTING SUPPLY DUCTS REUSED PER

4. SEAL ALL OPENINGS IN MECHANICAL ROOM WALLS AND ALL OPENINGS AROUND DUCTS WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.

AIR DESIGN SOLUTIONS
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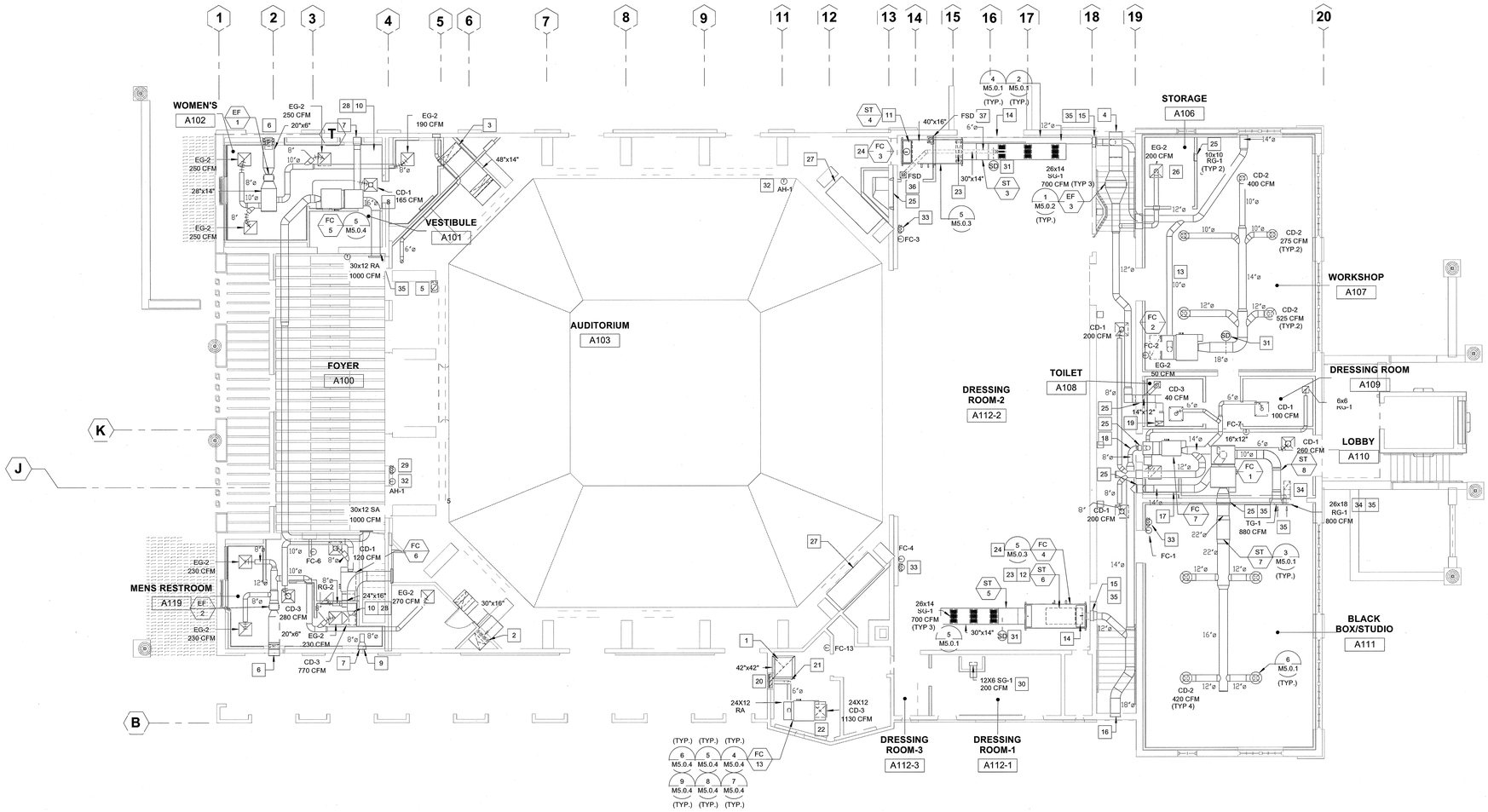
NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME:
SAN BERNARDINO VALLEY COLLEGE
AUDITORIUM RENOVATION
ADDRESS:

SHEET TITLE:
MECH. BASEMENT RENOVATION FLOOR PLAN

PROJ. NO.
DATE 10/3/14
SHEET NO. M2.0.2



KEYNOTES #

1. PROVIDE 42X42 RETURN AIR RISER IN DRYWALL SHAFT UP TO SECOND FLOOR AND DOWN TO FIRST FLOOR.
2. PROVIDE 30"X24" RG-1 2,000CFM TO REPLACE EXISTING WALL GRATE. PROVIDE LINED CUSTOM PLENUM FROM GRILLE UP EXISTING SHAFT AND TRANSITION TO 30"X16" ON SECOND FLOOR.
3. PROVIDE 48"X24" RG-1 3,170CFM TO REPLACE EXISTING WALL GRATE. PROVIDE LINED CUSTOM PLENUM FROM GRILLE UP EXISTING SHAFT AND TRANSITION TO 48"X14" ON SECOND FLOOR.
4. PROVIDE LINED EXHAUST DISCHARGE DUCT FROM EF-3 TO 24"X24" (MIN. 1.9 SF FA) ARCHITECTURAL LOUVER TO REPLACE THE EXISTING 24"X24" DECORATIVE WINDOW UP HIGH. PROVIDE 24"X24" PLENUM ON GRATE.
5. PROVIDE 18X12 (L) TRANSFER AIR DUCT AND CEILING GRILLE FROM SECOND FLOOR. SEE M2.2.1 FOR CONTINUATION 770 CFM TRANSFER EACH.
6. EF-1 AND EF-2 TO DISCHARGE TO14X24 EXHAUST PLENUM ATTACHED TO EXISTING DECORATIVE 24X36 WALL GRATES. (TYP 2) INSTALL ON FURTHEST NORTH PORTION OF GRATE TO BE A MINIMUM OF 12 FEET FROM OUTSIDE AIR INTAKE. PAINT INSIDE OF EXHAUST PLENUM FLAT BLACK.
7. 14X24 OUTSIDE AIR INTAKE PLENUM ATTACHED TO EXISTING 24X36 DECORATIVE WALL GRATES. (TYP 2) INSTALL PLENUM ON FURTHEST SOUTH PORTION OF GRATE TO BE A MINIMUM OF 10 FEET FROM EF-1 OR EF-2 EXHAUST TERMINATION. PAINT INSIDE OF OSA INTAKE PLENUM FLAT BLACK.
8. ROUTE 12" DIA. OSA DUCT FROM 10X24 OSA PLENUM TO RETURN AIR PLENUM ON FC-5 WITH BALANCING DAMPER. BALANCE TO 610 CFM.
9. ROUTE 8" DIA. OSA DUCT FROM 10X24 OSA PLENUM TO RETURN AIR PLENUM ON FC-6 WITH BALANCING DAMPER. BALANCE TO 280 CFM
10. FOR CONTINUATION OF 18X12 TRANSFER DUCT SEE M2.2.1.
11. PROVIDE 30X12(L) ELBOW ON BOTTOM OF FAN COIL WITH ST-4.
12. PROVIDE ST-6 ON 30X12(L) RETURN AIR DUCT FROM ELBOW ON BOTTOM OF FAN COIL RETURN.
13. 10"DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-2, BALANCE OSA TO 330 CFM. PROVIDE EBTRON "ELF" OSA MEASURING. (TYP.)
14. 12" DIA. OSA DUCT TO RETURN AIR PLENUM ON STAGE FAN COIL. BALANCE OSA TO 610 CFM. (TYP. FC-3 & 4)
15. PROVIDE 13" DIA. CORE IN WALL FOR OSA DUCT WITH FIRE SMOKE DAMPER.
16. PROVIDE 24"X42" OSA PLENUM ON TO NEW 24"X42" (MIN. 3.3 SF FA) ARCHITECTURAL LOUVER TO REPLACE THE EXISTING 24"X42" DECORATIVE WINDOW ABOVE DOORWAY.
17. 14" DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-1. BALANCE OSA TO 880 CFM.
18. 8" DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-7. BALANCE OSA TO 160 CFM.
19. PROVIDE 17"X13" SAW CUT OF FLOOR FOR 16"X8" EXHAUST DUCT DOWN TO BASEMENT IN DRYWALL SHAFT. SEE DETAIL #16 ON STRUCTURAL SHEET S4.1 FOR ADDITIONAL INFORMATION.
20. PROVIDE 12"X12" (MIN 0.2 SF FA) ARCHITECTURAL LOUVER IN UPPER PORTION OF WINDOW FOR OSA.
21. 6" DIA. OSA DUCT TO RETURN AIR PLENUM ON FC-13. BALANCE OSA TO 50 CFM.
22. PROVIDE LINED SUPPLY AIR PLENUM ON THE DISCHARGE OF FC-13 WITH S.A. DIFFUSERS IN THE BOTTOM OF PLENUM.
23. PROVIDE TRANSITION ON SOUND TRAP INLET TO 48"X16".
24. FC-3 & 4 TO BE ENCLOSED IN DRYWALL; INCLUDING ALL SUPPLY AND RETURN DUCTWORK UP TO CEILING DIFFUSERS/GRILLES. SEE DETAIL #5 ON M5.0.3 FOR ADDITIONAL INFORMATION.
25. PROVIDE FIRE SMOKE DAMPER.
26. PROVIDE 8" DIA. GENERAL EXHAUST 200 CFM FROM EF-3 FOR TOOL ROOM.
27. SUPPLY AIR INTO AUDITORIUM FROM AH-1 THROUGH EXISTING 9'-0"X4'-6" DECORATIVE GRATE. CLEAN EXISTING BLADES, DAMPER AND RISER AND HORIZONTAL DUCTWORK. CLEAN AND REINSULATE HORIZONTAL PORTION OF DUCT EXTERNALLY.
28. 770 CFM TRANSFER AIR WITH BDD FROM AUDITORIUM. SEE M2.2.1 FOR CONTINUATION.
29. CARBON DIOXIDE SENSOR FOR AH-1, LOCATE AT 4'-0" A.F.F.
30. 12X6 SIDE WALL SUPPLY TO 1ST FLOOR DRESSING ROOM, 200 CFM, FROM AH-1. PROVIDE WITH OBD.
31. DUCT MOUNTED SMOKE DETECTOR. SEE FIRE ALARM DRAWINGS FOR CONNECTION TO FIRE ALARM SYSTEM.
32. AVERAGING TEMPERATURE SPACE SENSORS FOR AUDITORIUM AND AH-1.
33. CARBON DIOXIDE SPACE SENSOR.
34. 26"X18" TRANSFER GRILLE TO 16"X12" (L) TRANSFER DUCT WITH TWO (2) 90-DEGREE ELBOWS TO 22"X22" IN CEILING GRILLE (RG-1).
35. PROVIDE ACCOUSTICALLY RESILIENT SEALANT/CAULKING AROUND ALL DUCT WALL PENETRATIONS AT SOUND SENSITIVE AREAS/ROOMS.
36. PROVIDE 6" DIA. SUPPLY AIR DUCT FOR WHEELCHAIR LIFT VESTIBULE. PROVIDE CONICAL TAP IN TOP OF 30"X14" AS SHOWN AND ROUTE OVER FC-3. PROVIDE 6"X6" SUPPLY DIFFUSER, (TF-1, 60 CFM) W/ HORIZONTAL FSD IN HARD LID CEILING.
37. PROVIDE 8"x8" RETURN GRILLE, (RG-1, 60 CFM) W/ HORIZONTAL FSD IN HARD LID CEILING AND 1" LINED SOUND BOOT.

1. ALL SUPPLY, RETURN, AND OUTSIDE (BRANCH) DUCTS ON FC-1, GENERAL NOTES
2. ALL EXPOSED DUCTS ON FC-3, 4 & 1 ARE TO BE PAINTED BLACK.
3. LINE ALL EXHAUST DUCTS TO PLENUMS AND DECORATIVE GRATES.
4. LINE ALL FAN COIL RETURN AIR AND SUPPLY AIR PLENUMS.
5. CONTRACTOR TO PROVIDE CLEANING AND SANITIZING OF ALL AH-1 EXISTING SUPPLY DUCTS REUSED PER
6. SEAL ALL OPENINGS IN WALLS AND ALL OPENINGS AROUND DUCTS WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.

AS-BUILT

0 8'

Scale: 1/8"=1'-0"

AIR DESIGN SOLUTIONS
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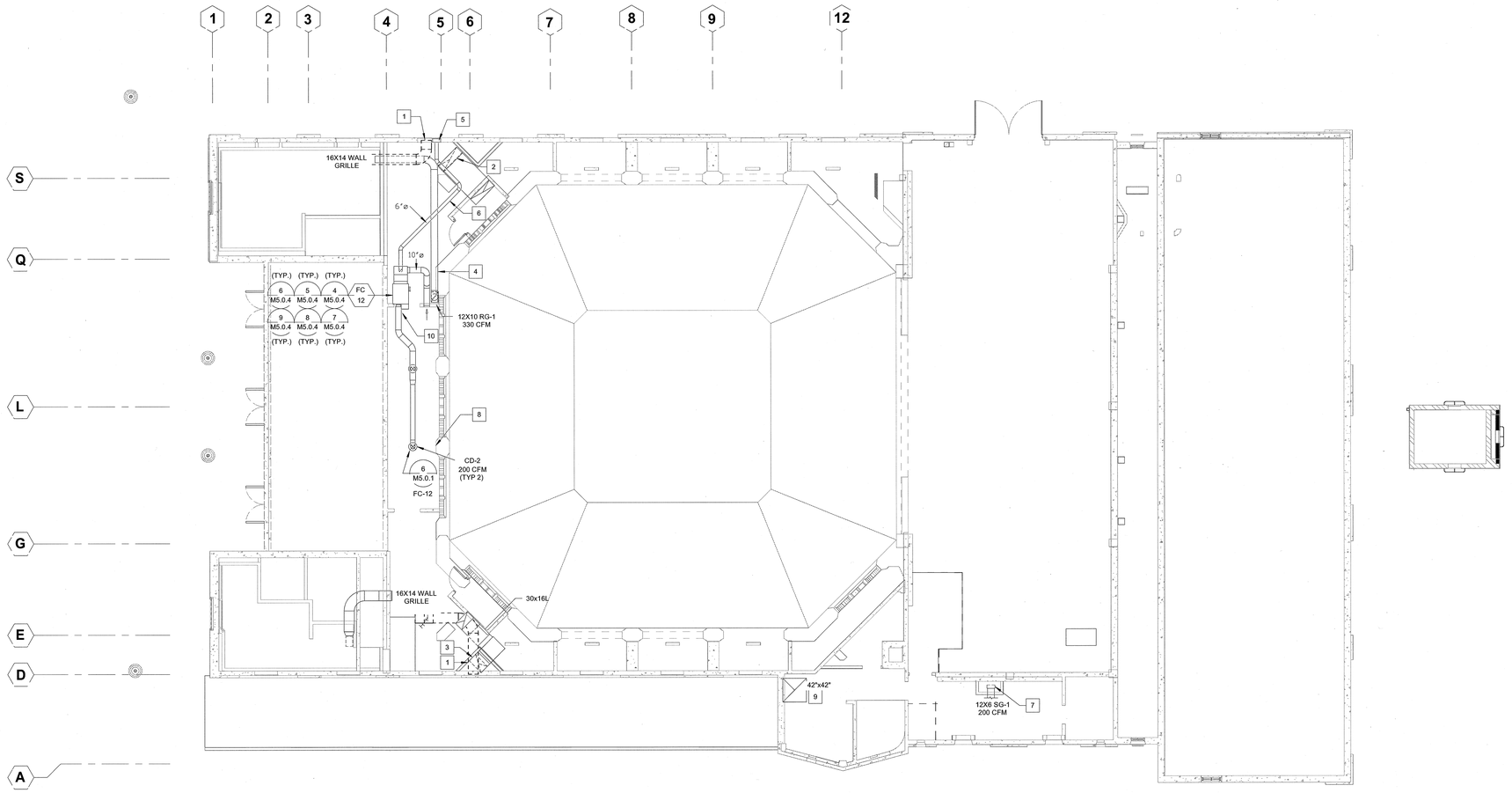
NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME: SAN BERNARDINO VALLEY COLLEGE
AUDITORIUM RENOVATION
ADDRESS:

SHEET TITLE:
MECH. FIRST FLOOR RENOVATION FLOOR PLAN

PROJ. NO.
DATE 10/3/14
SHEET NO. M2.1.1



KEYNOTES #

1 DISCONNECT AND REMOVE EXHAUST DUCT IN ITS ENTIRETY INCLUDING ALL GRILLES AND FANS, BACK TO THE 3'-4"X2'-4" DECORATIVE ARCHITECTURAL GRATE. PATCH, SEAL AND PAINT TO MATCH EXISTING CONDITIONS.
2 PROVIDE 48X14 (L) EA/RA DUCT UP FROM 1ST FLOOR. PROVIDE 48X14 GRILLE ON NEW WALL. PROVIDE NEW OPENING IN WALL.
3 PROVIDE 30X16 (L) EA/RA DUCT UP FROM 1ST FLOOR. PROVIDE 30X16 GRILLE ON NEW WALL. PROVIDE NEW OPENING IN WALL.
4 PROVIDE 18X12 (L) TRANSFER DUCT TO MENS AND WOMENS RESTROOM FROM AUDITORIUM GRILLES. (770 CFM EA.)
5 12X12 OUTSIDE AIR INTAKE PLENUM ATTACHED TO EXISTING 36X24 DECORATIVE WALL GRATES. PAINT INSIDE OF OSA PLENUM FLAT BLACK.
6 6" OSA DUCT TO RETURN AIR PLENUM ON FC-12. BALANCE OSA TO 70 CFM.
7 12X6 SIDE WALL SUPPLY TO SECOND FLOOR DRESSING ROOM, 200 CFM FROM AH-1 WITH OBD.
8 DISCONNECT AND REMOVE VFD-1 CONTROL REOSTAT WALL SWITCH. COORDINATE WITH DDC CONTRACTOR FOR REMOVAL OF WIRING AND CONDUIT.
9 42"X22" RETURN AIR DUCT RISER IN DRYWALL SHAFT UP TO THIRD FLOOR AND DOWN TO FIRST FLOOR.
10 PROVIDE ACCOUSTICALLY RESILIENT SEALANT/CAULKING AROUND ALL PIPE WALL PENETRATIONS AT SOUND SENSITIVE AREAS/ROOMS.

GENERAL NOTE:

1. ALL DUCTWORK ON SECOND FLOOR ATTIC ABOVE AUDITORIUM SHALL BE LINED.
2. SEAL ALL OPENINGS IN WALLS AND ALL OPENINGS AROUND DUCTS WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.

Scale: 1/8"=1'-0"

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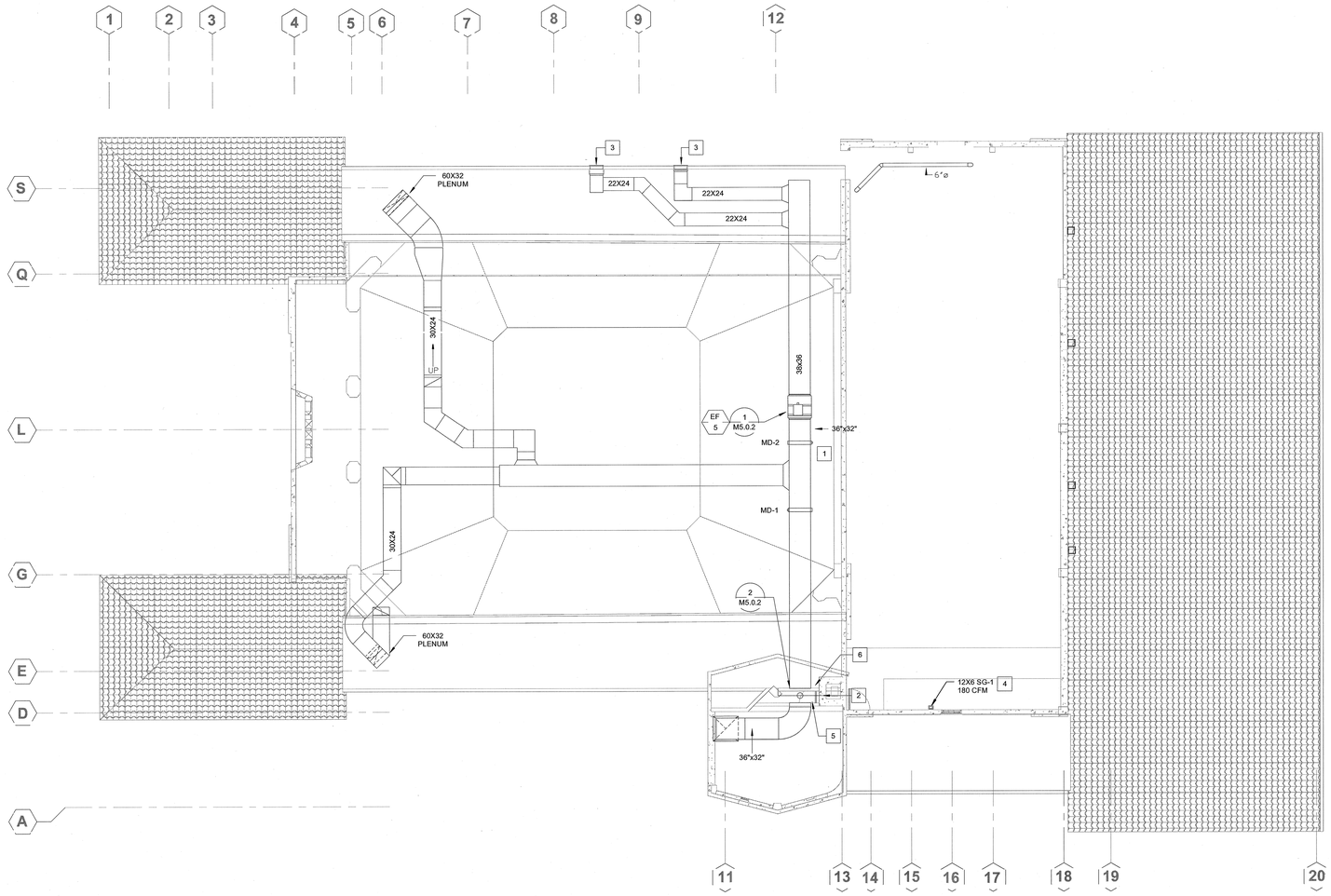
NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME: SAN BERNARDINO VALLEY COLLEGE
AUDITORIUM RENOVATION
ADDRESS:

SHEET TITLE:
MECH SECOND FLR. RENOVATION FLOOR PLAN

PROJ. NO.
DATE 10/3/14
SHEET NO. M2.2.1



KEYNOTES [#]

1. PROVIDE MOTORIZED DAMPER MD-1 AND MD-2 AT LOCATION SHOWN. PROVIDE ALL NECESSARY FITTINGS, OFFSETS, TRANSITIONS FOR AN OPERATIONAL SYSTEM. SEE M7.0.1, DIAGRAM #3 FOR ADDITIONAL INFORMATION.
2. PROVIDE FIRE/SMOKE DAMPER AT 36X32 RA DUCT.
3. PROVIDE 24"X48" LINED PLENUM ATTACHED ONTO EXISTING DECORATIVE 24"X48" WALL GRATE. (TYP 2.) PROVIDE BALANCING DAMPERS TO EXHAUST 2,585 CFM EACH.
4. 12X6 SIDE WALL SUPPLY TO THIRD FLOOR DRESSING ROOM, 180 CFM FROM AH-1 WITH OBD.
5. PROVIDE 37"X33" OPENING IN VERTICAL WALL FOR NEW 36"X32" RETURN AIR DUCT. SEE STRUCTURAL DRAWINGS FOR OPENING DETAIL.
6. PROVIDE ACCOUSTICALLY RESILIENT SEALANT/CAULKING AROUND ALL PIPE WALL PENETRATIONS AT SOUND SENSITIVE AREAS/ROOMS.

GENERAL NOTE:

1. ALL DUCTWORK ON THIRD FLOOR ATTIC ABOVE AUDITORIUM SHALL BE LINED.
2. SEAL ALL OPENINGS IN WALLS AND ALL OPENINGS AROUND DUCTS WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.

Scale: 1/8"=1'-0"

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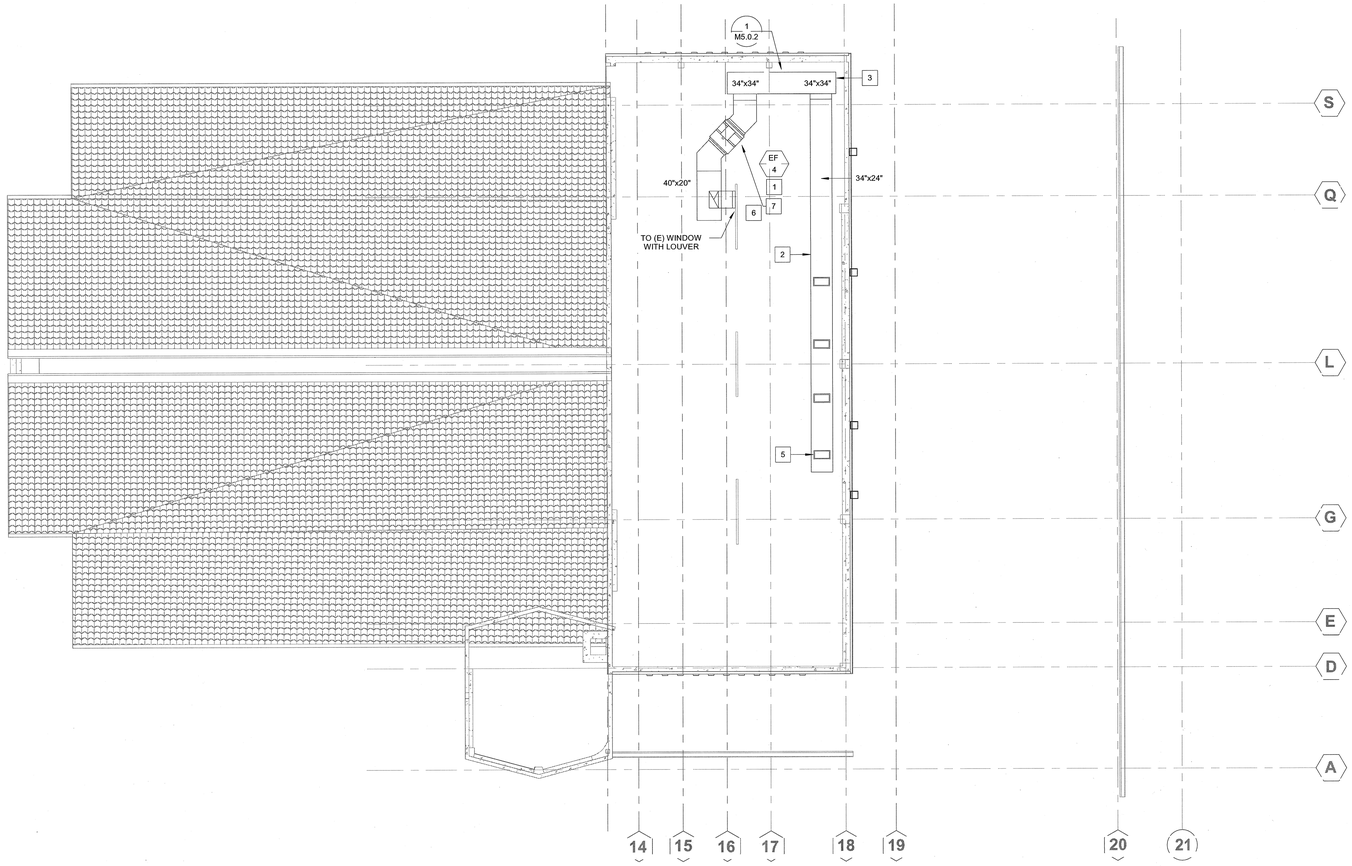
NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME: SAN BERNARDINO VALLEY COLLEGE
AUDITORIUM RENOVATION
ADDRESS:

SHEET TITLE:
MECH THIRD FLOOR RENOVATION FLOOR PLAN

PROJ. NO.
DATE 10/3/14
SHEET NO. M2.3.1



KEYNOTES [#]

1 NEW IN LINE EXHAUST FAN.
2 ROUTE 34"X24" (L) EXHAUST DUCT UNDERNEATH GRIDIRON FLOOR AND ATTACH/SUPPORT FROM GRIDIRON FLOOR.
3 ROUTE 34"X24" EXHAUST RISER UP TO JUST ABOVE GRIDIRON FLOOR AND ROUTE ACROSS TO EF-4. SUPPORT EF-4 FROM STRUCTURE ABOVE.
4 DISCHARGE STAGE LIGHT HEAT EXHAUST THROUGH SIDEWALL NEXT TO CLERESTORY GLAZING WITH 50% FREE AREA LOUVER.
5 STAGE LIGHT EXHAUST AIR OPENING, 24X12, 912 CFM TYP 5 IN BOTTOM OF 34"X24" EXHAUST DUCT.
6 PROVIDE ACCOUSTICALLY RESILIENT SEALANT/CAULKING AROUND ALL DUCT IN WALL PENETRATIONS AT SOUND SENSITIVE AREAS/ROOMS.
7 PROVIDE 45-DEGREE LEADING EDGE CONNECTION FROM 34"X24" DUCT TO 34"X34" INLET PLENUM TO EF-4.

GENERAL NOTES

1. ALL EXHAUST DUCTWORK SHALL BE LINED.

2. SEAL ALL OPENINGS IN WALLS AND ALL OPENINGS AROUND DUCTS WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.

AS-BUILT

0 8'
Scale: 1/8"=1'-0"

AIR DESIGN SOLUTIONS
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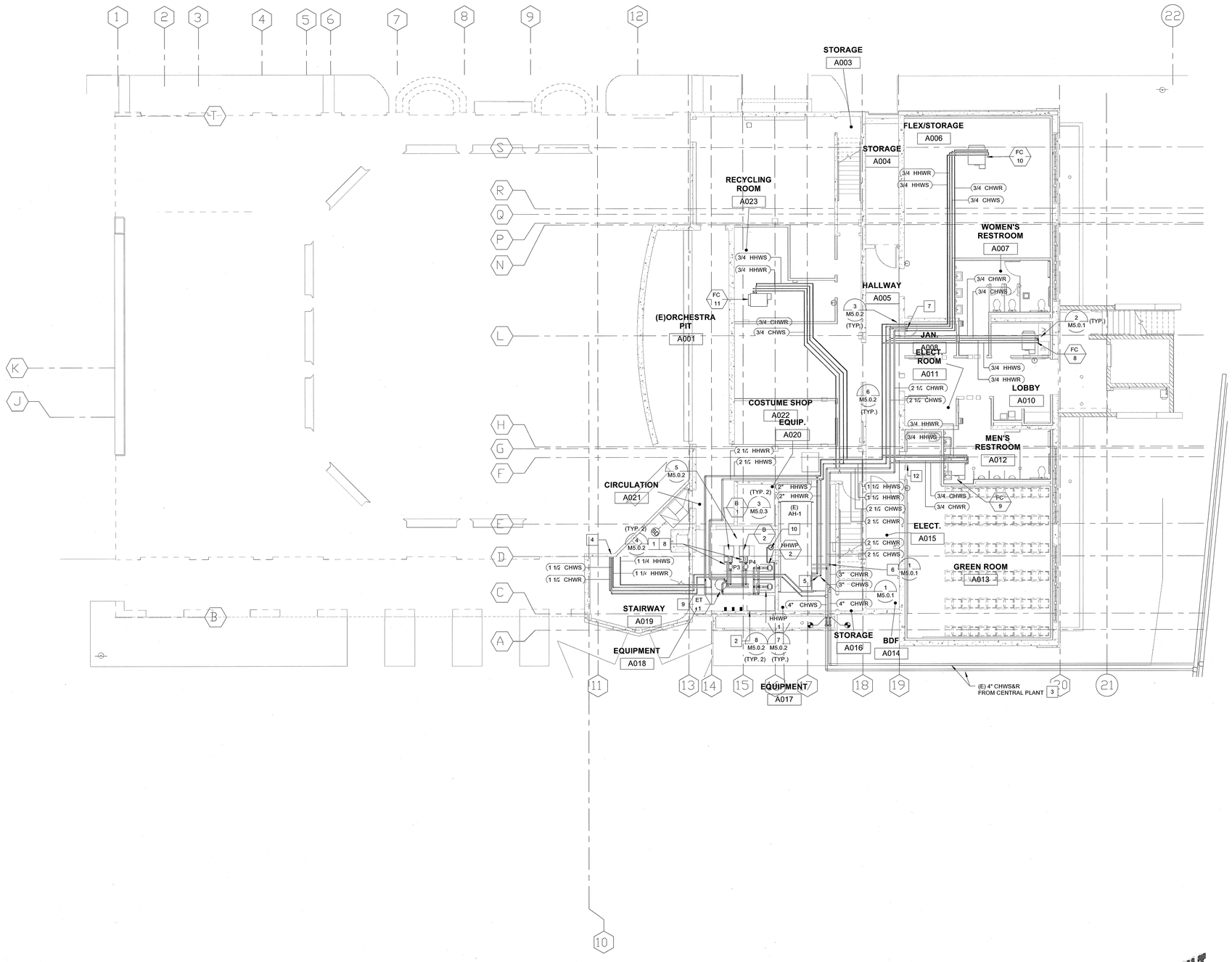
NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME:
SAN BERNARDINO VALLEY COLLEGE
AUDITORIUM RENOVATION
ADDRESS:

SHEET TITLE:
MECH FIFTH FLOOR RENOVATION FLOOR PLAN

PROJ. NO.
DATE 10/3/14
SHEET NO. M2.4.1



KEYNOTES #

1. PROVIDE HOUSEKEEPING PADS FOR BOILERS, B-1 & B-2. DEDICATED PRIMARY IN-LINE PUMPS, HHWP-3 & 4, TO BE SUPPORTED FROM STRUCTURE ABOVE, SEE DETAIL #4 ON M5.0.2.
2. PROVIDE HOUSEKEEPING PADS FOR PUMPS, HWP-1 & 2.
3. EXISTING UNDERGROUND 4" CHWS&R PIPING FROM SBVC CENTRAL PLANT.
4. 1-1/2" CHWS&R AND 1-1/4" HHWS&R PIPING RISERS UP TO FIRST FLOOR, PROVIDE (2) 5" PIPING CORES FOR CHWS&R PIPING AND (2) 6" PIPING CORES FOR HHWS&R. LAYOUT AND ROUTE PIPING RISERS IN ROWS OR SIDE BY SIDE IN THE 20" EXISTING SPACE IN BETWEEN THE EXISTING CONCRETE BEAMS.
5. 2" HHWS&R PIPING TO NEW HEATING COIL IN AH-1.
6. 2-1/2" CHWS&R PIPING TO REINSTALLED TO EXISTING COOLING COIL.
7. 2" CHWS&R PIPING AND 1-1/4" HHWS&R PIPING RISERS UP TO FIRST FLOOR, PROVIDE (2) 6" PIPING CORES FOR CHWS&R PIPING AND (2) 6" PIPING CORES FOR HHWS&R. SEE DETAIL #16 ON STRUCTURAL SHEET S4.1 FOR ADDITIONAL INFORMATION. LAYOUT AND ROUTE PIPING RISERS IN ROWS OR SIDE BY SIDE IN THE 20" EXISTING SPACE IN BETWEEN THE EXISTING CONCRETE BEAMS.
8. DEDICATED PRIMARY HHW BOILER PUMP. SEE M8.0.1 FOR FURTHER INFORMATION
9. BUFFER TANK (BT-1). SEE DETAIL 3/M5.0.4 FOR FURTHER INFORMATION.
10. EXPANSION TANK (ET-1). SEE DETAIL 2/M5.0.3 FOR FURTHER INFORMATION.
11. AIR SEPARATOR (AS-1). SEE DETAIL 1/M5.0.3 FOR FURTHER INFORMATION.
12. PROVIDE ACCOUSTICALLY RESILIENT SEALANT/CAULKING AROUND ALL PIPE WALL PENETRATIONS AT SOUND SENSITIVE AREAS/ROOMS.

GENERAL NOTES

1. SEE PIPE SUPPORT SCHEDULE DETAIL #4/M5.0.3 (TYPICAL FOR ALL PIPING SHEETS).
2. SEAL ALL OPENINGS IN MECHANICAL ROOM WALLS AND ALL OPENINGS AROUND PIPING WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.

AS-BUILT

Scale: 1/8"=1'-0"

ATR DESIGN SOLUTIONS
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NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME: SAN BERNARDINO VALLEY COLLEGE AUDITORIUM RENOVATION

ADDRESS:

SHEET TITLE: MECH BASEMENT FLOOR RENOVATION PIPING PLAN

PROJ. NO.

DATE 10/3/14

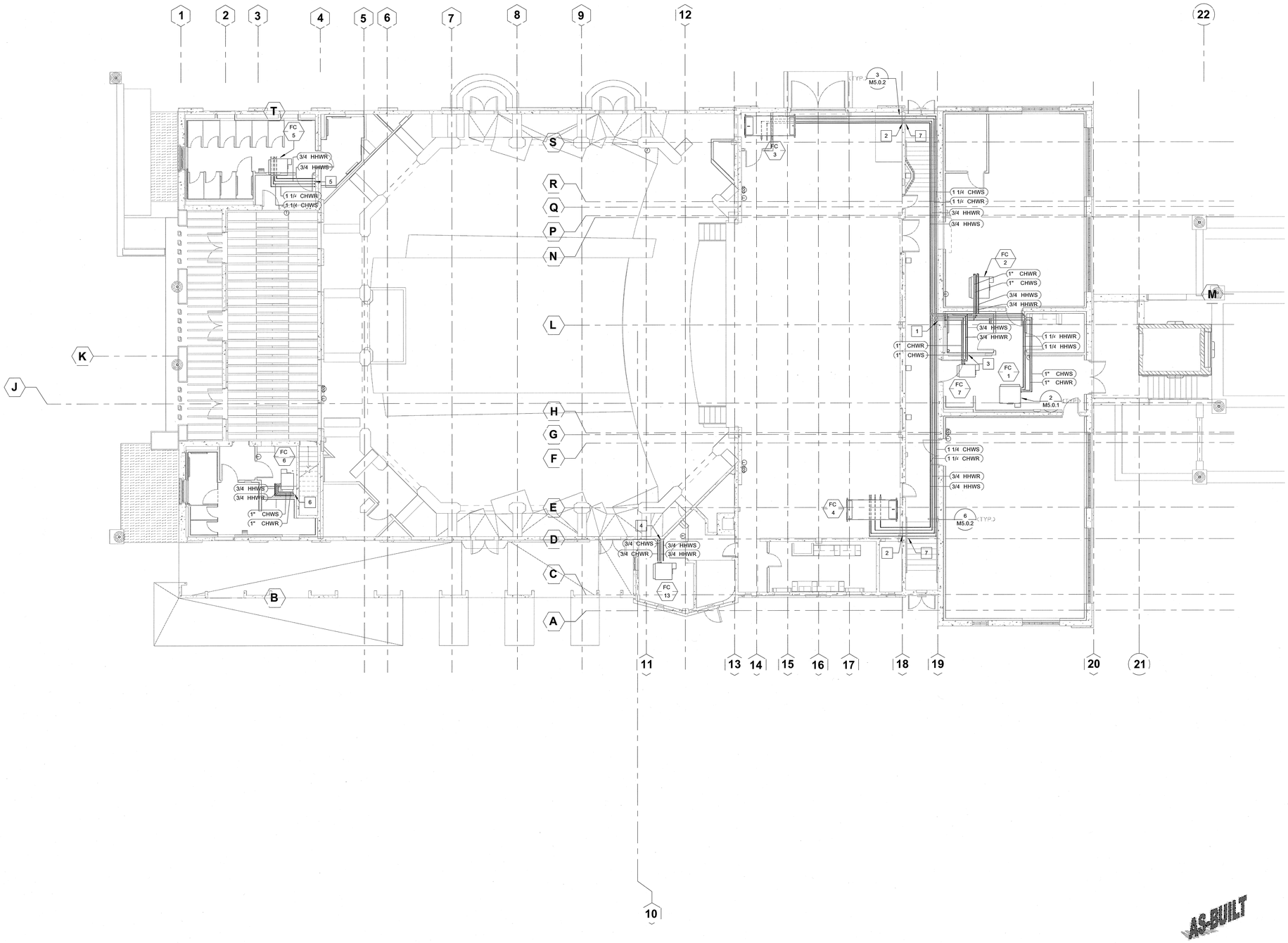
SHEET NO. M3.0.0

KEYNOTES #

1 2" CHWS & R AND 1-1/4" HHWS & R PIPING UP FROM BASEMENT.
2 PROVIDE (2) 5" CORES FOR 1-1/4" CHWS & R AND (2) 5" CORES FOR 3/4" HHWS & R PIPING THROUGH VERTICAL WALL.
3 PROVIDE 3/4" CHWS & R AND 3/4" HHWS & R PIPING TO FC-7.
4 1-1/2" CHWS & R AND 1-1/4" HHWS & R UP FROM BASEMENT AND UP TO 2ND FLOOR. PROVIDE (2) 5" CORES FOR CHWS & R PIPING AND (E) 6" CORES FOR HHWS & R PIPING.
5 1-1/4" CHWS & R AND 3/4" HHWS & R PIPING UP TO 2ND FLOOR.
6 1" CHWS & R AND 3/4" HHWS & R PIPING UP TO 2ND FLOOR.
7 PROVIDE ACOUSTICAL RESILIENT SEALANT/CAULKING THROUGH ALL PIPE WALL PENETRATIONS AT SOUND SENSITIVE AREAS/ROOMS.

GENERAL NOTES

1. SEAL ALL OPENINGS IN WALLS AND ALL OPENINGS AROUND PIPING WITH ACOUSTICALLY RESILIENT SEALANT/ CAULKING.



AS-BUILT

0 8'
Scale: 1/8"=1'-0"

AIR DESIGN SOLUTIONS
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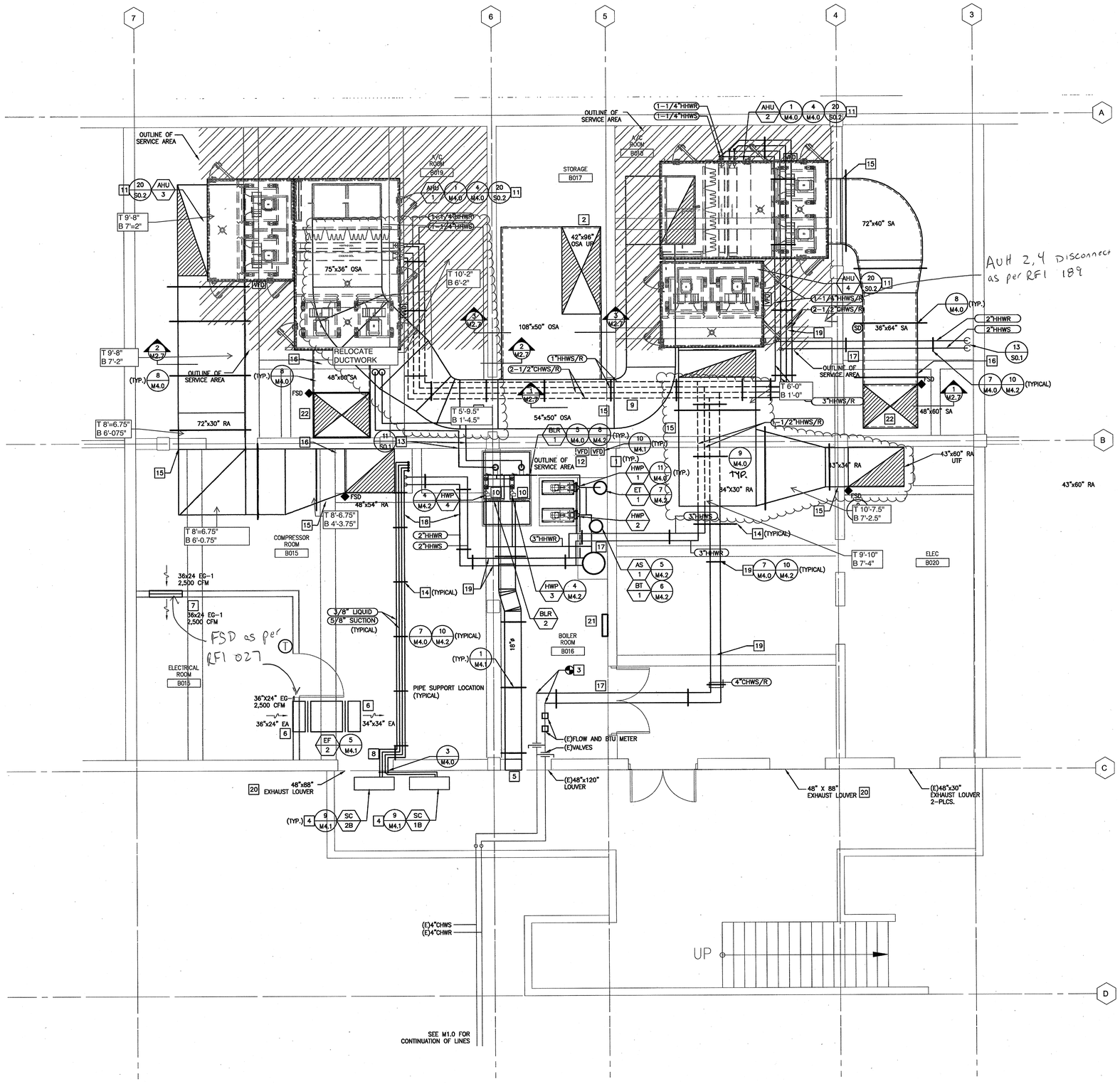
NO.	DATE	DESCRIPTION
1	10/3/14	AS-BUILT

PROJECT NAME: SAN BERNARDINO VALLEY COLLEGE
AUDITORIUM RENOVATION
ADDRESS:

SHEET TITLE:
MECH FIRST FLOOR RENOVATION PIPING PLAN

PROJ. NO.
DATE 10/3/14
SHEET NO. M3.0.1



NOTES

1. PROVIDE DIRECT VENT BOILERS ON 6" HIGH HOUSE KEEPING PAD. CONNECT TO DIRECT VENT DUCT PER MANUFACTURER'S INSTRUCTIONS. PROVIDE ALL MATERALS FOR VENTING AND INLET AIR DUCT CONNECTIONS. MAINTAIN SERVICE CLEARANCE PER MANUFACTURER'S REQUIREMENTS, AND IN ACCORDANCE W/ CMC 2010 802.2.5.
2. FRESH AIR DUCT UP THRU DECK TO 1ST FLOOR. SAW CUT CONCRETE FLOOR AND SHEAR WALL BY GENERAL CONTRACTOR PER STRUCTURAL DETALS. CONNECT TO FRESH AIR PLENUM. LINE INTAKE PLENUM, SEE SPECIFICATION 23 31 13 FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE 4" TYPE "K" COPPER CHILLED WATER SUPPLY AND RETURN PIPING FROM POINT OF CONNECTION AT EXISTING CHILLED WATER PIPING FROM CENTRAL PLANT IN THE BASEMENT. ROUTE HIGH AS POSSIBLE OVER THE OPEN AREA AND THROUGH THE MECHANICAL ROOM TO THE AHU'S.
4. CONDENSING UNIT FOR IDF ROOM AC UNITS. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES FROM WALLS.
5. DIRECT VENT INTAKE DUCT FROM (E) LOUVER TO BOILERS. ROUTE HIGH AS POSSIBLE ACROSS MECHANICAL ROOM, AND IN ACCORDANCE W/ CMC 2010 701.1.1, EXCEPTION (1).
6. PROVIDE EXHAUST AIR DUCT AND TERMINATE DUCT OPENINGS WITH 1/2x1/2 TYPE 304 STAINLESS STEEL MESH SCREEN. PROVIDE EXHAUST FAN WITH FLEX CONNECTION. SEE DETAIL 6/M4.1.
7. PROVIDE TRANSFER GRILLES WITH DIMENSIONS SHOWN ON THE DRAWING. MOUNT BOTTOM OF GRILLE 5FT AFF.
8. PASS REFRIGERATION LINES THROUGH (E) LOUVER OPENING. PROVIDE SLEEVE TO PROTECT REFRIGERATION LINES. ROUTE REFRIGERATION LINES HIGH AS POSSIBLE ACROSS MECHANICAL ROOM.
9. ROUTE CHWS/R AND HHWS/R LINES UNDER DUCTWORK
10. BOILER PRIMARY PUMPS
11. PROVIDED AHU ON HOUSEKEEPING PADS. CONNECT TO CHWS/R AND HHWS/R LINES. VFD'S FOR FANS ARE FACTORY MOUNTED ON AHU'S. PROVIDE CONDENSATE DRAIN LINES TO FLOOR SINKS, SEE PLUMBING DRAWINGS FOR EXACT LOCATIONS. SEE 4/M4.0 FOR CONDENSATE DRAIN TRAP DETAIL.
12. PROVIDE HHW PUMP VFD'S ON CONCRETE WALL. SEE DETAIL 11/M4.1. COORDINATE INSTALLATION W/ ELECTRICAL CONTRACTOR.
13. ROUTE BOILER FLUES UP THROUGH (E) CHASE TO ROOF. USE 6" SCH 40 CPVC ANSI/ASTM F441 PIPE. SUPPORT FLUE ALONG CHASE WALL PER DETAILS 3 & 6/M4.0. PROVIDE CONDENSATE TRAP AT BASE OF VERTICAL RUN, ROUTE CONDENSATE TO NEAREST FLOOR SINK IN MECHANICAL ROOM, REFER TO PLUMBING DRAWINGS FOR LOCATION. INSTALL FLUE VENT PER MANUFACTURER'S INSTRUCTIONS. ROUTE FLUE VENT WITH 1/4" FALL TOWARDS BOILER. CORE HOLES THRU STRUCTURAL WALL PER STRUCTURAL DETAILS.
14. PIPE SUPPORT SPACING SHALL FOLLOW REQUIREMENTS PER 10/M4.2. PIPE SUPPORT CONSTRUCTION SHALL BE PER MECHANICAL AND STRUCTURAL DETAILS ON THE DRAWINGS. SEE STRUCTURAL DRAWINGS FOR JOIST DESIGN. NO BRACING TO SLABS.
15. PASSAGE OF DUCTWORK THROUGH EXISTING OPENING. SAW CUTTING OF STRUCTURAL WALLS IS NOT REQUIRED. DUCT TO PASS BELOW (N) WX BEAM, SEE SHEET S1.1.
16. PASSAGE OF DUCTWORK THROUGH NON-STRUCTURAL WALL. PROVIDE SMOKE/FIRE SEAL IN PENETRATION.
17. PASSAGE OF PIPEWORK THROUGH CONCRETE STRUCTURAL WALL, BEAM, OR JOIST. CORE DRILL HOLES PER REQUIREMENTS OF STRUCTURAL DRAWINGS
18. PASSAGE OF PIPEWORK THROUGH NON-STRUCTURAL WALL. PROVIDE SMOKE/FIRE SEAL IN PENETRATION.
19. PASSAGE OF PIPEWORK BELOW (E) BEAM OR JOIST
20. INCREASE THE SIZE OF EXHAUST LOUVERS. SEE STRUCTURAL DRAWINGS.
21. BUILDING AUTOMATION CABINET
22. USE TURNING VANES FOR SQUARE ELBOWS.

Mechanical Basement Plan

Scale 1/4"=1'-0" (1)

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SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
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WWCOT Project № 75-10605-00

MECHANICAL BASEMENT PLAN

Drawing Date: 03/14/2012
Drawn By: JPV/MDR
Checked By: MYA

M2.0
Sheet №

J5941

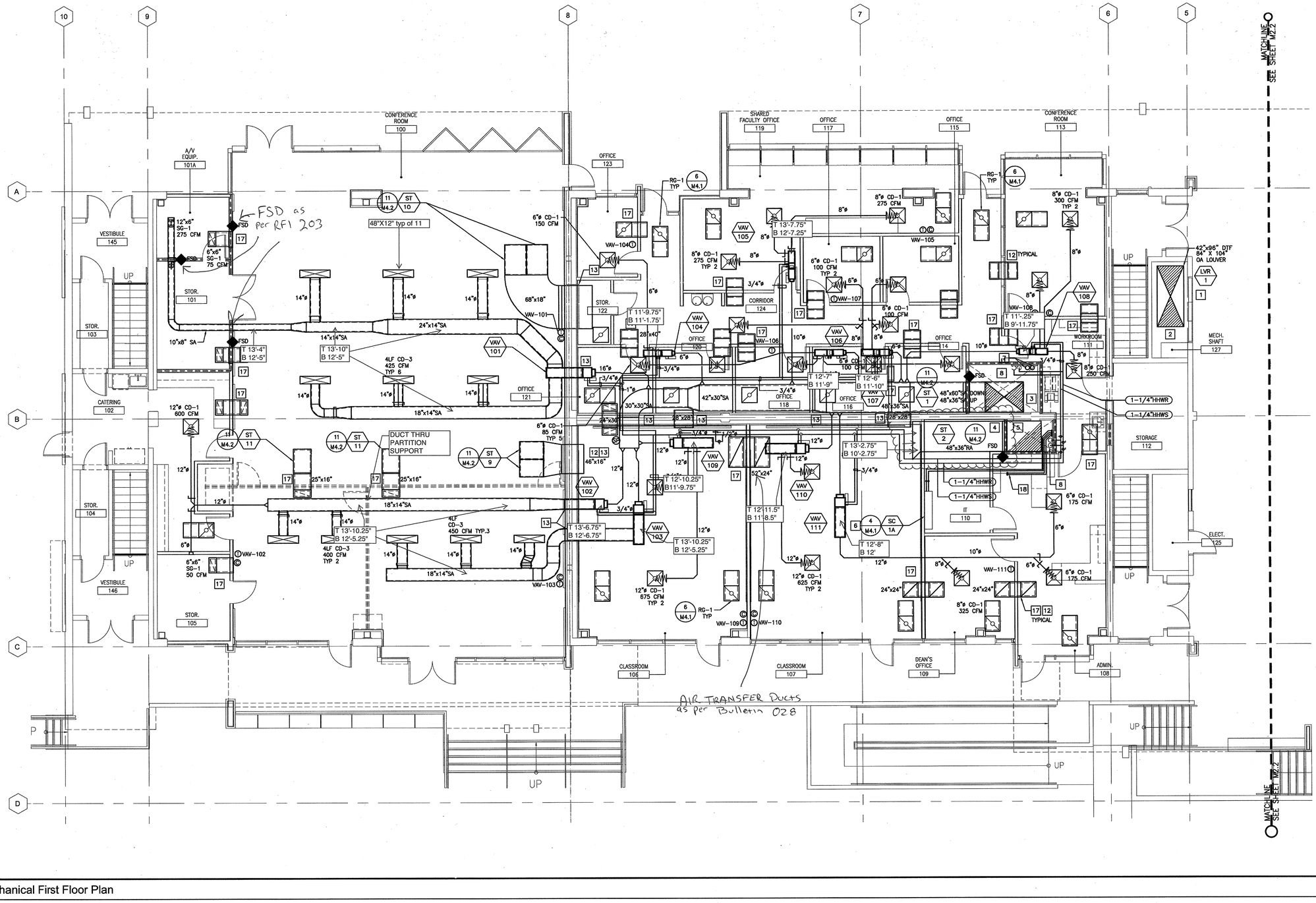
File Path: R:\Active Projects\J5941\CAD\J5941_M2D.DWG
Plotted: 5/23/2012 2:46:47 PM

NOTES

1. PROVIDE FRESH AIR INTAKE 57% OF FREE AREA LOUVER IN WALL. REFER TO ARCHITECTURAL DRAWINGS. REMOVAL OF (E) DOORS BY GENERAL CONTRACTOR.
2. FRESH AIR DUCT DOWN THRU FLOOR. CUT CONCRETE BY GENERAL CONTRACTOR. SEE STRUCTURAL DRAWINGS.
3. SUPPLY AIR PLENUM UP FROM BASEMENT MECHANICAL ROOM. ROUTE IN (E) DUCT SHAFT. PROVIDE FIRE SMOKE DAMPERS AS SHOWN.
4. ROUTE RETURN AIR DUCT TO (E) RETURN AIR SHAFT. PROVIDE FIRE SMOKE DAMPER AS SHOWN
5. REFRIGERATION LINES FOR IDF AC UNITS.
6. WALL MOUNTED AC UNIT FOR COOLING ONLY OF IDF ROOM. CONDENSATE TO DRAIN TO FLOOR SINK IN IDF ROOM, REFER TO PLUMBING DRAWINGS FOR LOCATION. PROVIDE 3/4"ø TYPE "L" COPPER CONDENSATE DRAIN LINE.
7. 6"ø BOILER FLUE VENTS UP TO ROOF.
8. HHWS/R RISER LINES. PROVIDE ISOLATION BALL VALVES FOR EACH BRANCH LINE.
9. SUPPLY AIR PLENUM UP FROM BASEMENT MECHANICAL ROOM. ROUTE IN (E) DUCT SHAFT AND PROVIDE FIRE SMOKE DAMPERS AS SHOWN.

NOTES

10. ROUTE RETURN AIR DUCT TO (E) RETURN AIR SHAFT AND PROVIDE FIRE SMOKE DAMPER AT WALL AS SHOWN.
11. HHWS/R RISER LINES
12. TRANSFER AIR DUCT W/ LINER. SEE 1/M4.2. 12" x 24" UNLESS OTHERWISE NOTED.
13. PASSAGE OF DUCTWORK AND/OR PIPES THROUGH (E) OPENING IN CONCRETE WALL.
14. NOT USED
15. PASSAGE OF PIPES THRU NEW OPENING IN STRUCTURAL WALL. REFER TO STRUCTURAL DRAWINGS FOR OPENING DETAILS.
16. ALL PIPING TO EACH VAV BOX SHALL BE 3/4", TYP. ALL VAV BOXES. PROVIDE REDUCERS AS NECESSARY.
17. PASSAGE OF DUCTWORK THRU NON-STRUCTURAL WALL. SEAL AROUND DUCT TO MAINTAIN ACOUSTICAL PERFORMANCE OF THE SPACES.
18. ROUTE REFRIGERATION LINES ABOVE THE CEILING AND UP THRU THE FLOOR INTO THE 2ND FLOOR IDF ROOM.



Mechanical First Floor Plan

Scale 3/16"=1'-0" (1)

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WWCOT Project № 75-10605-00

MECHANICAL FIRST FLOOR PLAN

Drawing Date: 03/14/2012
Drawn By: JPV/MDR
Checked By: MYA

M2.1
Sheet №

J5941

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Printed: 5/23/2012 4:45:13 PM

NOTES

1. PROVIDE FRESH AIR INTAKE 57% OF FREE AREA LOUVER IN WALL. REFER TO ARCHITECTURAL DRAWINGS. REMOVAL OF (E) DOORS BY GENERAL CONTRACTOR.
2. FRESH AIR DUCT DOWN THRU FLOOR. CUT CONCRETE BY GENERAL CONTRACTOR. SEE STRUCTURAL DRAWINGS.
3. SUPPLY AIR PLENUM UP FROM BASEMENT MECHANICAL ROOM. ROUTE IN (E) DUCT SHAFT. PROVIDE FIRE SMOKE DAMPERS AS SHOWN.
4. SEE M2.1
5. REFRIGERATION LINES FOR IDF AC UNITS.
6. SEE M2.1
7. 6"ø BOILER FLUE VENTS UP TO ROOF.
8. HHWS/R RISER LINES
9. SUPPLY AIR PLENUM UP FROM BASEMENT MECHANICAL ROOM. ROUTE IN (E) DUCT SHAFT AND PROVIDE FIRE SMOKE DAMPERS AS SHOWN.

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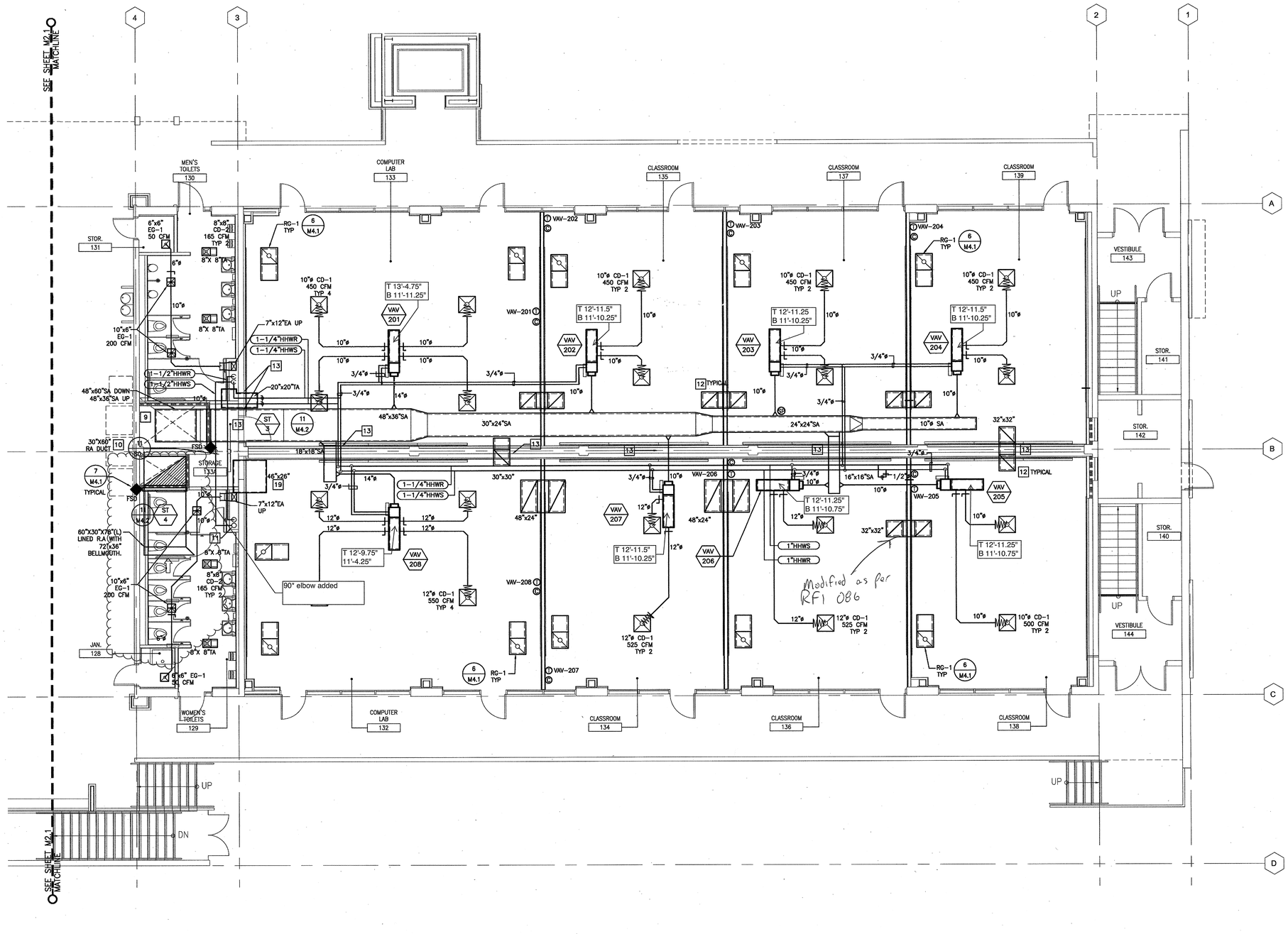
19. NEW OPENING IN STRUCTURAL WALL FOR RETURN AIR PATH. REFER TO STRUCTURAL DRAWINGS FOR OPENING DETAILS.



Mechanical First Floor Plan

Scale 3/16"=1'-0" (1)

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WWCOT Project № 75-10605-00

MECHANICAL
FIRST FLOOR PLAN

Drawing Date: 03/14/2012
Drawn By: JPV/MDR
Checked By: MYA

M2.2
Sheet №

J5941

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NOTES

1. PROVIDE INLINE EXHAUST FAN FOR RESTROOMS. MOUNT ABOVE CEILING AND PROVIDE 36" SQUARE ACCESS DOOR. ROUTE EXHAUST DUCT THROUGH ROOF TO LOCATION SHOWN ON ROOF PLAN.
2. WALL MOUNTED AC UNIT FOR COOLING ONLY OF IDF ROOM. CONDENSATE TO DRAIN TO FLOOR SINK IN IDF ROOM, REFER TO PLUMBING DRAWINGS FOR LOCATION. PROVIDE 3/4"ø TYPE "L" COPPER CONDENSATE DRAIN LINE.
3. ROUTE RETURN AIR DUCT TO (E) RETURN AIR SHAFT. PROVIDE FIRE SMOKE DAMPER AS SHOWN
4. SUPPLY AIR PLENUM UP FROM BASEMENT MECHANICAL ROOM. ROUTE IN (E) DUCT SHAFT. PROVIDE FIRE SMOKE DAMPERS AS SHOWN.
5. HHWS/R LINES FROM BELOW. PROVIDE BALL VALVE ISOLATION VALVES FOR BRANCH LINES.
6. 6" BOILER FLUE VENTS
7. TRANSFER AIR DUCT W/ LINER. SEE 1/M4.2

NOTES

8. PASSAGE OF DUCTWORK THROUGH (E) OPENING IN CONCRETE WALL..
9. PASSAGE OF DUCTWORK THRU NEW OPENING IN STRUCTURAL WALL. REFER TO STRUCTURAL DRAWINGS FOR OPENING DETAILS.
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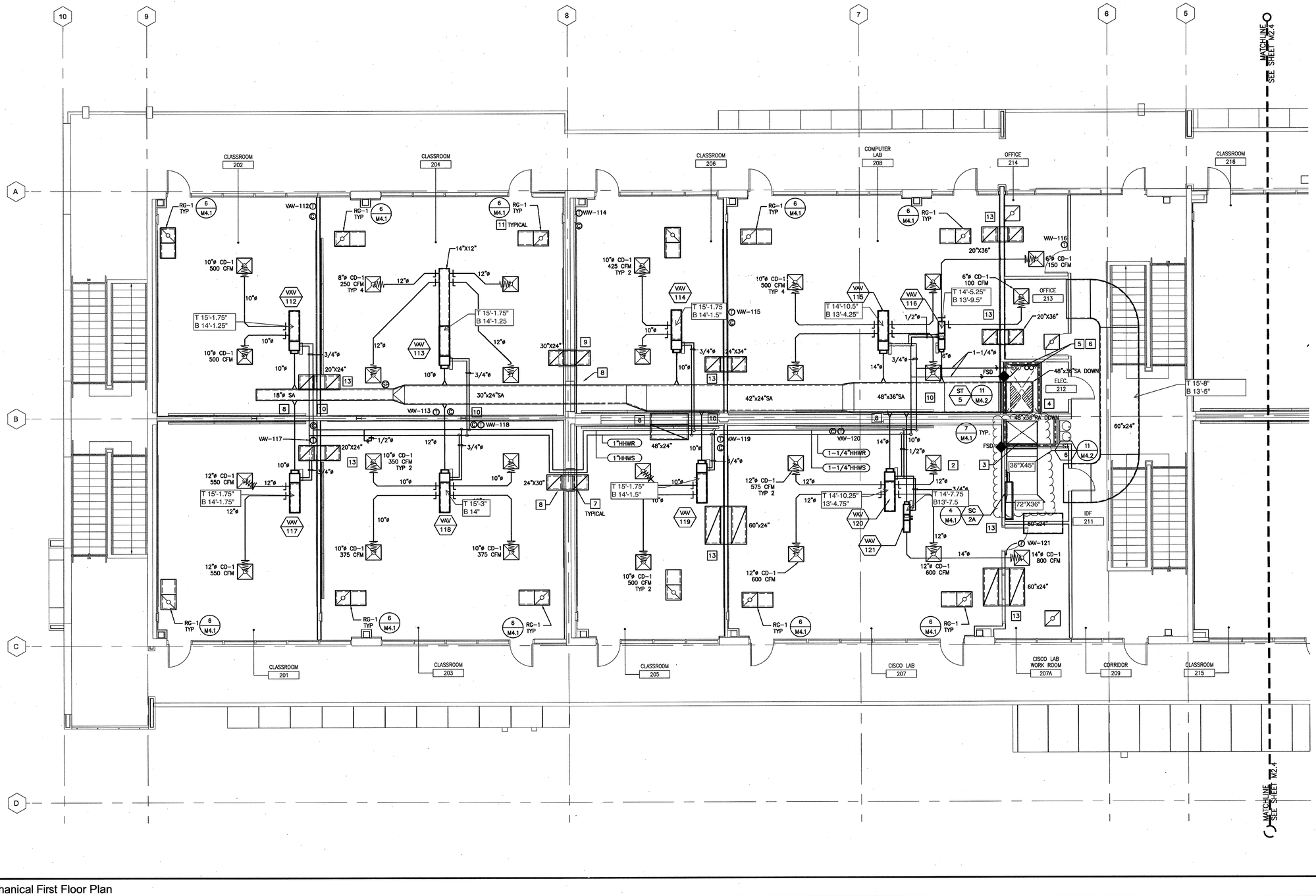
11. ALL PIPING TO EACH VAV BOX SHALL BE 3/4", TYP. ALL VAV BOXES. PROVIDE REDUCERS AS NECESSARY.
12. (E) 4FT X 4FT OPENING THRU STRUCTURAL WALL. USE FOR PASSAGE OF PIPE WORK, DUCTWORK AND FOR RETURN AIR PATH.
13. PASSAGE OF DUCTWORK THRU NON-STRUCTURAL WALL. SEAL AROUND DUCT TO MAINTAIN ACOUSTICAL PERFORMANCE OF THE SPACES.
14. NEW OPENING IN STRUCTURAL WALL FOR RETURN AIR PATH. REFER TO STRUCTURAL DRAWINGS FOR OPENING DETAILS.
15. PROVIDE 42" 24" TRANSFER AIR BOOT. LOCATE ABOVE PIPES AND 18"ø DUCT. NOT SHOWN FOR CLARITY.



Mechanical First Floor Plan

Scale 3/16"=1'-0" 1

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MECHANICAL SECOND FLOOR PLAN

Drawing Date: 03/14/2012
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Checked By: MYA

M2.3
Sheet №

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NOTES

1. PROVIDE INLINE EXHAUST FAN FOR RESTROOMS. MOUNT ABOVE CEILING AND PROVIDE 36" SQUARE ACCESS DOOR. ROUTE EXHAUST DUCT THROUGH ROOF TO LOCATION SHOWN ON ROOF PLAN.
2. SEE M2.3
3. ROUTE RETURN AIR DUCT TO (E) RETURN AIR SHAFT. PROVIDE FIRE SMOKE DAMPER AS SHOWN
4. SUPPLY AIR PLENUM UP FROM BASEMENT MECHANICAL ROOM. ROUTE IN (E) DUCT SHAFT. PROVIDE FIRE SMOKE DAMPERS AS SHOWN.
5. HHWS/R LINES FROM BELOW
6. REFRIGERATION LINES FROM BASEMENT MECHANICAL ROOM
7. TRANSFER AIR DUCT W/ LINER. SEE 1/M4.2

NOTES

8. PASSAGE OF DUCTWORK THROUGH (E) OPENING IN CONCRETE WALL.
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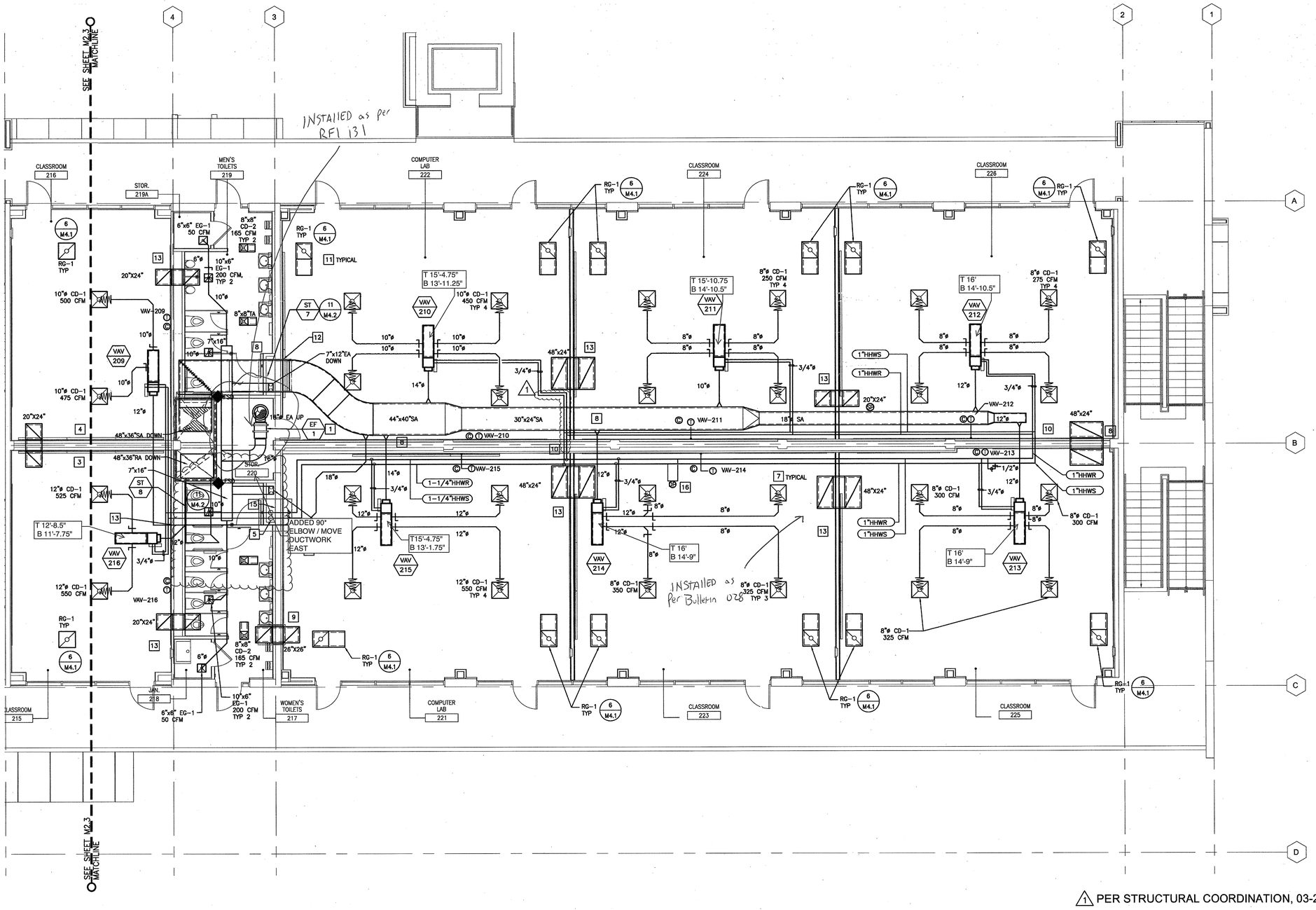
12. (E) 4FT X 4FT OPENING THRU STRUCTURAL WALL. USE FOR PASSAGE OF PIPE WORK, DUCTWORK AND FOR RETURN AIR PATH.
13. PASSAGE OF DUCTWORK THRU NON-STRUCTURAL WALL. SEAL AROUND DUCT TO MAINTAIN ACOUSTICAL PERFORMANCE OF THE SPACES.
14. NEW OPENING IN STRUCTURAL WALL FOR RETURN AIR PATH. REFER TO STRUCTURAL DRAWINGS FOR OPENING DETAILS.
15. PROVIDE 42" X 24" TRANSFER AIR BOOT. LOCATE ABOVE PIPES AND 18"ø DUCT. NOT SHOWN FOR CLARITY.
16. HHW DIFFERENTIAL PRESSURE SENSOR. REFER TO M3.1



Mechanical First Floor Plan

Scale 3/16"=1'-0"

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MECHANICAL SECOND FLOOR PLAN

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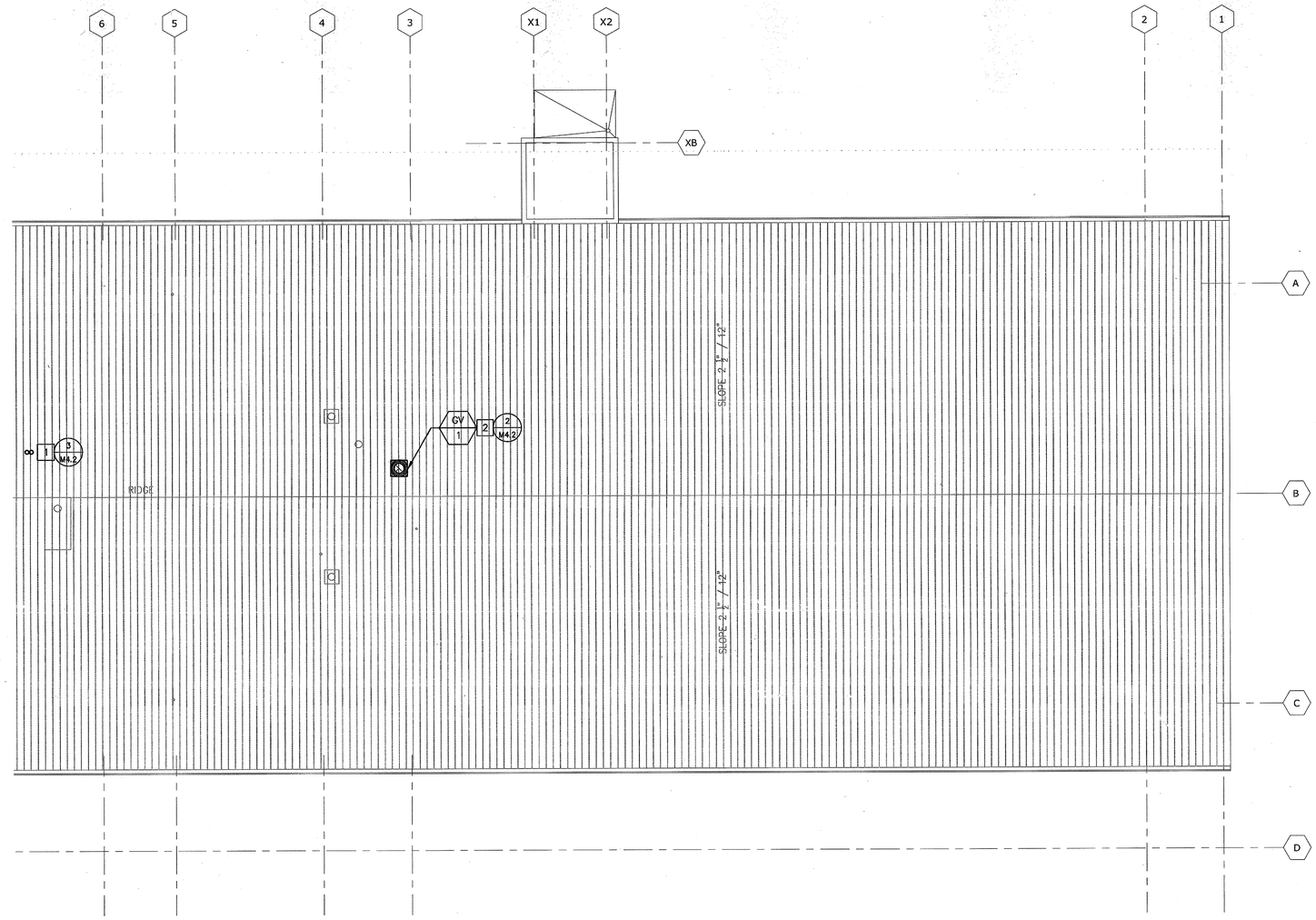
NOTES

1. BOILER FLUE VENTS THROUGH ROOF
2. PROVIDE GRAVITY VENTILATOR FOR RESTROOM EXHAUST ON ROOF CURB.



Mechanical Roof Plan

Scale 1/8"=1'-0" (1)

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MECHANICAL ROOF PLAN

Drawing Date: 03/14/2012
Drawn By: JPV/MDR
Checked By: MYA

M2.6

Sheet №

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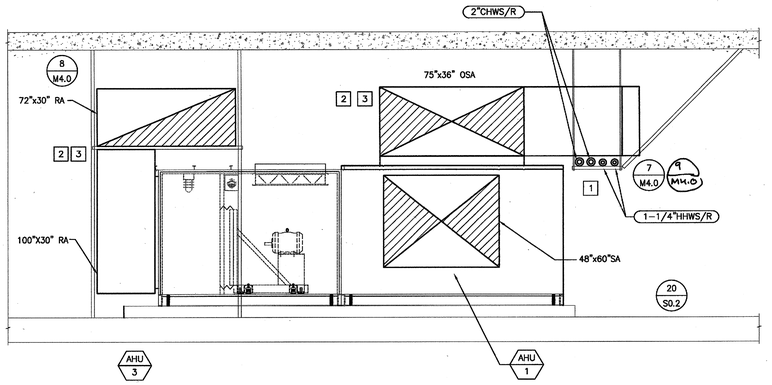
NOTES

1. PIPE SUPPORT LOCATIONS PER STRUCTURAL DRAWINGS. PROVIDE SUPPORTS PER DETAILS ON STRUCTURAL AND MECHANICAL DRAWINGS.
2. DUCT SUPPORT LOCATIONS SHALL FOLLOW SMACNA REQUIREMENTS. PROVIDE SUPPORTS PER DETAILS ON STRUCTURAL AND MECHANICAL DRAWINGS.
3. ROUTE DUCTWORK AS HIGH AS POSSIBLE AND UP TO THE UNDERSIDE OF THE CONCRETE BEAMS.



SECTION 2

2

NOTES

1. PIPE SUPPORT LOCATIONS PER STRUCTURAL DRAWINGS. PROVIDE SUPPORTS PER DETAILS ON STRUCTURAL AND MECHANICAL DRAWINGS.
2. DUCT SUPPORT LOCATIONS SHALL FOLLOW SMACNA REQUIREMENTS. PROVIDE SUPPORTS PER DETAILS ON STRUCTURAL AND MECHANICAL DRAWINGS.
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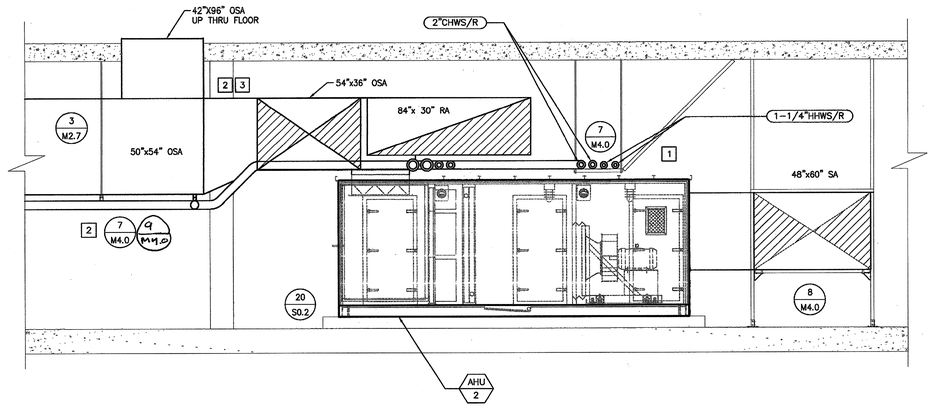

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SECTION 1

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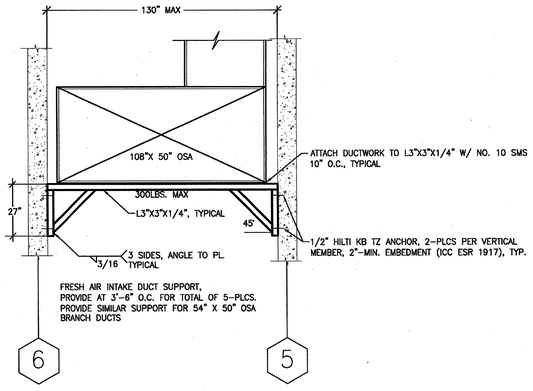

SECTION 3

3

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SECTIONS

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Sheet №

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SYMBOLS LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S.A.	SUPPLY AIR
	R.A.	RETURN AIR
	E.A.	EXHAUST AIR
		FLEX DUCT
		DUCT RISE/ DUCT DROP
		DUCT SOUND INSULATION (ALL DUCTWORK WITH INTERNAL LINING SHALL BE OF DOUBLE WALL CONSTRUCTION).
		TRANSITION FROM SQUARE TO ROUND
		ACCESS DOOR/HATCH
R		DUCT RISE
D		DUCT DROP
	SD	SMOKE DETECTOR, DUCT TYPE SYSTEM
T		THERMOSTAT
	M.V.D.	MANUAL VOLUME DAMPER
	P.O.C. / P.O.R.	POINT OF CONNECTION / POINT OF REMOVAL
	HTWS	HIGH TEMPERATURE WATER SUPPLY
	HTWR	HIGH TEMPERTATURE WATER RETURN
	LPCWS	LABORATORY PROCESS COOLING WATER SUPPLY
	LPCWR	LABORATORY PROCESS COOLING WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	HHWS	HEATING HOT WATER SUPPLY
	HHWR	HEATING HOT WATER RETURN
	BV	BALANCING VALVE/CIRCUIT SETTER
	SOV	SHUT OFF VALVE (GATE VALVE)
XX-XX		EQUIPMENT IDENTIFICATION EQUIPMENT NUMBER
	FD	FIRE DAMPER
	SFD	SMOKE FIRE DAMPER
	SV, EV, FV	LAB CONTROLS SUPPLY AIR VALVE (SV), GENERAL LAB EXHAUST VALVE (EV), FUME HOOD EXHAUST VALVE (FV)
	VAV	VAV TERMINAL BOX WITH REHEAT COIL
		TURNING VANES
		BALL VALVE
		BUTTERFLY VALVE
		GATE VALVE
		GATE VALVE, ANGLE
		GLOBE VALVE
		GLOBE VALVE ANGLE
		THREE WAY VALVE
		SWING GATE CHECK VALVE
PRV-1		PRESSURE REDUCING VALVE (INDICATE NUMBER AND SPECIFY TYPE)
		THERMAL EXPANSION BELLOWS
		PIPE ANCHOR
		EXPANSION JOINT
		EXPANSION LOOP
		FLEXIBLE CONNECTOR
FS		FLOW SWITCH
		PRESSURE GAUGE AND COCK
PS		PRESSURE SWITCH
		PUMP
		FLANGED SPOOL PIECE
		STRAINER
		BLOW OFF STRAINER
		THERMOMETER
		THERMOMETER WELL ONLY
		ELECTRIC MOTOR
		PLATE & FRAME HEAT EXCHANGER
		LABORATORY EQUIPMENT SNORKEL REFER TO NOTE 6 ON THIS SHEET
DDCP		DIRECT DIGITAL CONTROL PANEL

NOTE: NOT ALL SYMBOLS OR ABBREVIATONS MAY BE USED THIS PROJECT.

ABBREVIATIONS

DDC	DIRECT DIGITAL CONTROL
CD	CEILING DIFFUSER
R.A.	RETURN AIR
S.A.	SUPPLY AIR
E.A.	EXHAUST AIR
NTS	NOT TO SCALE
EXP. JOINT	EXPANSION JOINT
ABV.	ABOVE
AC, A/C	AIR CONDITIONING
A.F.F.	ABOVE FINISHED FLOOR
BEL	BELOW
CEIL	CEILING
DN	DOWN
EF	EXHAUST FAN
FLR	FLOOR
W/, W/O	WITH, WITHOUT
N.I.C.	NOT IN CONTRACT
U/C	UNDER CUT
U.T.R.	UP THROUGH ROOF
V.T.R.	VENT THROUGH ROOF
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
HHWS	HEATING HOT WATER SUPPLY (180°F)
HHWR	HEATING HOT WATER RETURN (140°F)
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY (350°F)
HTHWR	HIGH TEMPERATURE HOT WATER RETURN (250°F)
COND	CONDENSATE
VSD	VARIABLE SPEED DRIVE
MCC	MOTOR CONTROL CENTER
OSA	OUTISDE AIR
–	–
–	–

NOTE: NOT ALL SYMBOLS OR ABBREVIATONS MAY BE USED THIS PROJECT.

DDC SYMBOLS LEGEND

SYMBOL	ABBR.	DESCRIPTION
AI	AI	ANALOG IN
AO	AO	ANALOG OUT
ASC	ASC	APPLICATION SPECIFIC CONTROLLER
COM	COM	COMMUNICATIONS PORT
CPA	CPA	CONTROL POINT ADJUST
CSR	CSR	CURRENT SENSING RELAY
DDCP	DDCP	DIRECT DIGITAL CONTROL PANEL
DI	DI	DIGITAL IN
DO	DO	DIGITAL OUT
DPS	DPS	DIFFERENTIAL PRESSURE SWITCH
FS	FS	FLOW SWITCH
FT	FT	FLOW TRANSMITTER
H/L	H/L	HIGH/LOW SPEED
MCC	MCC	MOTOR CONTROL CENTER
PT	PT	PRESSURE TRANSMITTER
S	S	STATUS SIGNAL
S/S	S/S	START/STOP
STR	STR	MOTOR STARTER
TT	TT	TEMPERATURE TRANSMITTER
VSD	VSD	VARIABLE SPEED DRIVE
I/P	IP	CURRENT PRESSURE TRANSDUCER
DPT	DPT	DIFFERENTIAL PRESSURE TRANSMITTER
SD	SD	SMOKE DTECTOR
OVR	OVR	OVERRIDE

SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION	SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION
X" x Y" D"ø	RECTANGULAR DUCT; X" x Y"; ROUND DUCT D"ø; DOVETAIL FLANGED OR SPIN-IN FITTING	X" x Y" D"ø	10"; X" x Y"; RECTANGULAR TO ROUND TRANSITION; D"ø
D"1 ø D"2 ø D"3 ø	D"1 ø; D"2 ø; 45° LATERAL & REDUCING FITTING; D"3 ø; 45° LATERAL FITTING; D"2 ø	D"1 ø D"2 ø	D"1 ø; D1"; ROUND TO ROUND TRANSITION; D"2 ø
D"1 ø D"2 ø D"3 ø	45° LAT. FITTING; D"2 ø; THIS PORTION FOR CONTINUING DUCT RUN; 6" MIN.; 6" MIN.; D"1 ø; 45° LATERAL FITTING; D"3 ø	D"1 ø D"2 ø D"3 ø	D"2 ø; 45° LATERAL & REDUCING FITTING; D"1 ø; 90° ELBOW; D"3 ø

SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION	SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION
	R=W		5; 1 1/2; 1 1/2; 5
T	T	T	T
C.D.	C.D.; D; D/2		45°; W/2; W

APPLICABLE CODES

2001 California Building Standards Administrative Code (Part 1, Title 24, CCR)

2001 California Building Code, Volumes 1, 2, and 3 (Part 2, Title 24, CCR)
(1997 Edition Uniform Building Code with 2001 California amendments)

2001 California Electrical Code (Part 3, Title 24, CCR)
(1999 Edition National Electrical Code with 2001 California amendments)

2001 California Mechanical Code (Part 4, Title 24, CCR)
(2000 Edition IAPMO Uniform Mechanical Code with 2001 California amendments)

2001 California Plumbing Code (Part 5, Title 24, CCR)
(2000 Edition IAPMO Uniform Plumbing Code with 2001 California amendments)

2001 California Energy Code (Part 6, Title 24, CCR)

2001 California Elevator Safety Construction Code (Part 7, Title 24, CCR)

2001 California Fire Code (Part 9, Title 24, CCR)

2001 California Referenced Standards Code (Part 12, Title 24, CCR)

NFPA 13, 1999 Edition, The Installation of Automatic Fire Sprinkler Systems, as amended

NFPA 14, 2000 Edition, Installation of Standpipe, Private Hydrant and Hose Systems

NFPA 24, 1995 Edition, Installation of Private Fire Service Mains and Their Appurtenances

NFPA 72, 1999 Edition, National Fire Alarm Code, as amended

THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 2001 CBC SECTION 1632A AND TABLE 16A–O. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR CHANGE ORDER APPROVED BY THE OFFICE OF STATE ARCHITECT, AS REQUIRED BY SECTION 4–338, PART 1, TITLE 24, CCR.

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE OFFICE OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4–342, PART 1, TITLE 24, CCR.

UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

ROUTING OF M.E.P. AND FIRE PROTECTION

1. ATTENTION TO DETAIL AND CLOSE COORDINATION BETWEEN MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE PROTECTION TRADES SHALL BE REQUIRED DURING ALL PHASES OF CONSTRUCTION.
2. DIVISION 11, 13, 15, AND 16 TRADES SHALL REVIEW AND REFERENCE DRAWINGS AND DOCUMENTS RELATED TO THESE DIVISIONS AS WELL AS ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO GENERATION OF SHOP DRAWINGS AND SUBMITTALS.
3. PIPING, CONDUIT, DUCTWORK AND MISCELLANEOUS SYSTEM COMPONENTS ARE JUXTAPOSED IN VERY CLOSE PROXIMITY TO EACH OTHER. EACH TRADE SHALL PRODUCE SUBMITTAL AND SHOP DRAWINGS CONFIRMING THE ROUTING OF EACH SYSTEM AND COMPONENTS RESPECTIVE TO ITS TRADE AS WELL AS SPACE ALLOCATED TO OTHER TRADES.
4. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY FITTINGS, TRANSITIONS, ELBOWS, AND MATERIALS AS REQUIRED TO AVOID OBSTACLES CREATED BY OTHER TRADES. PIPING, CONDUIT, DUCTWORK AND ASSOCIATED EQUIPMENT ELEVATIONS MAY VARY DUE TO FIELD CONDITIONS.
5. ORDERING, FABRICATION, OR INSTALLATION OF MATERIALS SHALL NOT TAKE PLACE WITHOUT APPROVED SUBMITTAL DRAWINGS CONFIRMING DETAILED INSTALLATION ROUTING AND COORDINATION BETWEEN TRADES.
6. CONFLICTS BETWEEN TRADES AND PROPOSED RESOLUTION SHALL BE IDENTIFIED IN SUBMITTALS AND SHOP DRAWINGS.
7. ANY WORK FOUND TO BE IN CONFLICT WITH OTHER TRADES, NOT DETAILED IN COORDINATION PROCESS DESCRIBED ABOVE, SHALL BE DEMOLISHED AND PROPERLY RE–INSTALLED AT NO ADDITIONAL COST TO THE OWNER.

282 @ 1st
Backing for the Register Boxes

283 @ 1st
Insulation @ dampers

...nical

...n No. AD-3.2.10 Revised Mechanical Drawings

...efer to the attached listing of Mechanical Drawings revisions and revise contract requirements accordingly. The Drawings containing revisions are Sheets M1.01, M1.02, M2.01, M4.03 and M5.01. There are eleven (11) revision items described (2 pages) and eleven (11) corresponding Drawings attached, AD3-MSK-01 through AD3-MSK-11 (11 pages).

As Builts

GENERAL NOTES:

1. THESE DRAWINGS AND SPECIFICATIONS ARE DIAGRAMMATIC TO THE EXTENT THAT SOME ITEMS SHOWN ON PLANS ARE IN A MANNER TO TO PROVIDE CLARITY ONLY. ACTUAL FIELD ROUTING AND INSTALLATION SHALL BE PROVIDED IN COORDINATION WITH OTHER TRADES AND ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL PROPERLY INTERFACE WITH STRUCTURE AND ALL OTHER SYSTEMS TO ACCOMPLISH THE INTENT OF THIS DESIGN. LOCATIONS OF HVAC EQUIPMENT AND DUCTING MAY VARY DUE TO ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL NOT SCALE OFF OF THESE DRAWINGS TO PLACE OR OTHERWISE LOCATE EQUIPMENT HANGERS, ANCHORS OR ANY OTHER SUPPORT SYSTEM. VERIFY ALL DIMENSIONS, EQUIPMENT WEIGHTS, LOCATIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND ORDERING MATERIALS. MAKE ALL NECESSARY ACCOMMODATIONS TO PROVIDE FOR A COMPLETE AND OPERATING SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
2. CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES PRIOR TO START OF WORK.
3. WHEN CONFLICTS OCCUR BETWEEN TRADES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT.
4. INSTALL ALL THERMOSTATS AT 4'–0" ABOVE FINISHED FLOOR WHERE INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ARCHITECT. INSTALL WIRING IN CONDUIT. (TYP)
5. INSTALL ALL DUCTWORK & PIPING AS HIGH AS POSSIBLE. WHERE DUCTWORK & PIPING ARE TO BE LOCATED IN SAME AREA, PIPING SHALL BE INSTALLED BELOW DUCTWORK.
6. ALL DUCT WORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN SMACNA DESIGN GUIDE FOR SEISMIC RESTRAINTS, 2000 SUPPLEMENT LEVEL AA.
7. ALL FIXTURES AND EQUIPMENT PROVIDED SHALL BE IN COMPLIANCE WITH CALIFORNIA ENERGY COMMISSION REQUIREMENTS AND CERTIFICATIONS.
8. THE CONTRACTOR SHALL INCLUDE STATEMENTS INDICATING THAT THE INSTALLED DEVICES CONFORM TO THE STATE OF CALIFORNIA APPLIANCE STANDARDS, OF TITLE 24, AND THESE PLANS AND SPECIFICATIONS.
9. THE AIR DISTRIBUTION DUCTS SHALL BE CONSTRUCTED, INSTALLED, SEALED, AND INSULATED AS PROVIDED IN SMACNA DESIGN GUIDE FOR DUCTWORK CONSTRUCTION LATEST EDITION. DUCTWORK SHALL BE PRESSURE TESTED FOR 1.5 TIMES THE RATED STATIC PRESSURE. (TYP.)
10. ALL FAN SYSTEMS EXHAUSTING AIR FROM THE BUILDING SHALL BE PROVIDED WITH BACK DRAFT DAMPERS.
11. CLEARANCES TO BE PER MANUFACTURER'S LISTINGS ON ALL MECHANICAL AND ELECTRICAL EQUIPMENT.
12. SYSTEMS PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR–MOVING EQUIPMENT UPON DETECTION OF SMOKE IN THE MAIN SUPPLY AIR DUCT SERVED BY SUCH EQUIPMENT. SMOKE DETECTORS SHALL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT AND SHALL COMPLY WITH THE CALIFORNIA BUILDING CODE. AND SHALL BE LABELED BY AN APPROVED AGENCY FOR AIR DUCT INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES, AND HUMIDITIES OF THE SYSTEM. THE SMOKE DETECTORS REQUIRED SHALL BE SUPERVISED BY THE FIRE ALARM SYSTEM AND SHALL ACTIVATE THE FIRE ALARM SYSTEM. (SECTION 609, CMC)
13. SMOKE DETECTION REQUIRED BY SECTION 609 CMC SHALL BE BY A SMOKE DETECTOR COMPLYING WITH NFPA 72 WHICH WILL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT, INSTALLED IN THE MAIN SUPPLY AIR DUCT. ACTIVATION OF DETECTOR SHALL CAUSE THE AIR MOVING EQUIPMENT TO AUTOMATICALLY SHUT DOWN AND ACTIVATE THE FIRE ALARM SYSTEM. (S38)
14. ALL MECHANICAL WORK SHALL COMPLY WITH T24 PART 4 CCR.
15. PROVIDE AND INSTALL OPPOSED BLADE BALANCING DAMPERS FOR ALL DIFFUSERS, GRILLES, AND REGISTERS INSTALLED IN RIGID CEILINGS. ALL OTHER INSTALLATIONS SHALL HAVE MANUAL VOLUME DAMPERS INSTALLED.
16. ALL MAIN SUPPLY AND RETURN AIR DUCT, EQUAL TO OR GREATER THAN 12", LOCATED IN THE ADMINISTRATION WING, BOTH UPSTAIRS AND DOWNSTAIRS, SHALL BE EXTERNALLY WRAPPED WITH ASTRO–FOIL REFLECTIVE INSULATION. ASTRO–FOIL SHALL BE OF 5/16" THICKNESS, 1–1/4 OUNCE PER SQUARE FOOT, HAVE A FLAME SPREAD VALUE OF 20, AND A SMOKE DEVELOPMENT RATING OF 30. (EXCEPTIONS: AC–4 SERVING THE TEACHERS LOUNGE, SUPPLY AND RETURN DUCTS INSIDE THE SHAFT FROM FIRST TO SECOND FLOOR.)
17. ANY PANELS OR ENCLOSURES INTENDED FOR OUTSIDE APPLICATIONS SHALL BE GASKETED NEMA CLASS 3R
18. ALL HVAC EQUIPMENT CURBS SHALL BE INSTALLED TO MATCH ROOF SLOPE TO PROVIDE FOR A COMPLETELY LEVEL INSTALLATION. ALL SUCH CURBS SHALL ALSO BE ORDERED AT THE VERY MINIMUM HEIGHT REQUIRED TO ACCOMPLISH A COMPLETELY LEVEL INSTALLATION.
19. COORDINATE ALL CEILING DIFFUSER, SIDEWALL REGISTER, AND OTHER DEVICE EDGE CONDITIONS WITH CEILING CONDITIONS AND LIGHTING.
20. LOCATE ALL CEILING DIFFUSERS AND SIDEWALL REGISTERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS AS SHOWN. WHERE NOT SHOW, IMMEDIATELY NOTIFY THE ARCHITECT. COORDINATE WITH ELECTRICAL, CEILING AND ALL OTHER AFFECTED CONTRACTORS FOR ALIGNMENT WITH CEILING GRIDS, LIGHT FIXTURES AND ANY OTHER OBSTACLES SO AS TO PROVIDE FOR A PROPER INSTALLATION.
21. ALL DUCT MOUNTED SMOKE DETECTORS SHALL BE LOCATED WITHIN THE BUILDING ENVELOPE PER CODE. PROVIDE AND INSTALL ACCESS DOOR AS REQUIRED TO PROVIDE FOR PROPER SERVICE AND MAINTENANCE OF DETECTORS & DAMPERS. (TYP.)
22. PROVIDE FIRE/SMOKE DAMPERS AS REQUIRED PER CBC SECTION 713.10. COORDINATE LOCATION WITH FIRE ALARM PLANS.
23. PROVIDE AND INSTALL ACCESS DOORS FOR ALL SMOKE FIRE DAMPERS, BYPASS DAMPERS, ZONE DAMPERS, AND DUCT MOUNTED SMOKE DETECTORS MINIMUM SIZE OF 24" X 24". COORDINATE SELECTION AND COLORS WITH ARCHITECT. COORDINATE MASKING AND PAINTING WITH PAINTING CONTRACTOR.
24. ALL HVAC UNITS SHALL BE PROVIDED WITH ALL REQUIRED COMPONENTS AND SYSTEM CONTROLS SO AS TO INTEGRATE INTO EXISTING CAMPUS DDC COMMUNICATIONS. CONTROLS CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY HARDWARE, SOFTWARE, WIRING AND CONDUIT TO ALL REQUIRED COMPONENTS TO PROVIDE FOR A COMPLETE AND FUNCTIONING ENERGY MANAGEMENT SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
25. ALL HVAC EQUIPMENT DIMENSIONS AND MODEL NUMBERS SHALL BE VERIFIED WITH MANUFACTURER PRIOR TO ORDERING OF ANY EQUIPMENT, EQUIPMENT CURBS OR ASSOCIATED MATERIALS.
26. INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS SHALL HAVE A FLAME–SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE–DENSITY RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE ASSEMBLE INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED (SEC. 604.3, CMC).
27. AIR FILTERS SHALL BE A STATE FIRE MARSHALL APPROVED AND LISTED TYPE. PREFORMED FILTERS HAVING COMBUSTIBLE FANNING SHALL BE TESTED AS A COMPLETED ASSEMBLY. AIR FILTERS IN ALL OCCUPANCIES SHALL BE CLASS 2 OR BETTER (AS SHOWN IN STATE FIRE MARSHALL LISTING). ALL FILTERS SHALL BE ACCESSIBLE TO CLEANING OR REPLACEMENT, AND BE OF A STANDARD SIZE.
28. ALL DUCTWORK SHALL BE A MINIMUM OF 26 GAUGE. NO EXCEPTION. (TYP.)
29. ALL DIFFUSERS, GRILLS, REGISTERS, BYPASS AND ZONE DAMPERS SHALL BE MANUFACTURED BY TITUS OR APPROVED EQUAL. ALL CONTROLS FOR BYPASS AND ZONE DAMPERS SHALL BE PROVIDED, INSTALLED, AND CALIBRATED BY THE DAMPER MANUFACTURER. FINAL PROGRAMMING BY CONTROLS CONTRACTOR. (TYP.)
30. ALL ZONE AND BYPASS DAMPERS SHALL BE ORDERED AND INSTALLED FOR THE CFM RANGE THEY ARE INTENDED, PER MANUFACTURERS RECOMMENDATIONS.
31. PROVIDE ACCESS PANELS IN HARD–LID GYPSUM OR PLASTER CEILINGS AS REQUIRED TO ALLOW FOR ACCESS TO MANUAL VOLUME DAMPERS, EXHAUST FANS, SMOKE/FIRE DAMPERS, OR OTHER EQUIPMENT CONCEALED ABOVE INACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL SPECIFICATIONS FOR ADDITIONAL INFORMATION. (TYP.)
32. WHERE MULTIPLE OR CONFLICTING REQUIREMENTS ARE WRITTEN OR SPECIFIED IN THESE CONTRACT DRAWINGS AND SPECIFICATIONS, THE MOST STRINGENT SHALL APPLY. ALL ITEMS FOUND IN CONFLICT SHALL BE SUBMITTED AS AN RFI (REQUEST FOR INFORMATION) TO THE ARCHITECT FOR CLARIFICATION PRIOR TO SUBMISSION OF BID. ALL ITEMS FOUND IN CONFLICT AND NOT RECEIVING A FORMAL REQUEST FOR CLARIFICATION SHALL BE ASSUMED TO BE CONSIDERED THE MOST STRINGENT REQUIREMENT AND SHALL BE PROVIDED AS SUCH AT NO ADDITIONAL COST TO THE PROJECT. (TYP.)

SHEET INDEX

M1.01	GENERAL NOTES, SYMBOL LIST AND ABBREVIATIONS
M1.02	SCHEDULES
M2.01	MECHANICAL 1st FLOOR PLAN
M2.02	MECHANICAL 2nd FLOOR PLAN
M3.01	MECHANICAL ROOF PLAN
M4.01–M4.04	MECHANICAL DETAILS
M5.01–M5.02	DDC SCHEMATICS

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REGISTERED PROFESSIONAL ENGINEER — No. 24391 — 01-31-05 RENEWAL DATE — MECHANICAL — STATE OF CALIFORNIA

REGISTERED ARCHITECT — No. C009332 — 01-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-105114
AC. BY: SS 24.5
DATE OCT 11 2005

SUBMITTALS

SBVC
CAMPUS CENTER
SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

RECEIVED
JAN 0 6 2004
BERNARD BROS., INC.

MECHANICAL GENERAL NOTES, AND LEGENDS

AS-BUILTS

PROJECT NO.: 00-04
SCALE: NO SCALE
DATE: JAN. 31, 2003

M1.01

ROOFTOP PACKAGED UNIT SCHEDULE

EQUIP.	MANUFACTURER & MODEL NUMBER	AREA SERVED	NOMINAL SA FAN CFM	MIN. O.S.A. CFM	COOLING CAPACITY (ARI STD. 210) NOMINAL TONS	MBH	SHC	AMBIENT AIR TEMP	EDB	EWB	ESP IN. WG.	HEATING IN/OUT MBTU/HR INPUT	OUTPUT	AFUE (%)	ELECTRICAL MCA	MOCP	V/PH/HZ	EER	FILTER SIZE [IN] NO. & SIZE	EQUIPMENT DIMENSIONS LxWxH (IN)	APPROXIMATE OPERATING WEIGHT (LBS.)	APPROXIMATE CURB WEIGHT (LBS.)	ACCESSORIES/ REMARKS
AC-1	TRANE YCD151C4L	MAIN DINNING RM 171	4,852	1050	12.5	158	132	85	80	67	–	100	81	81	31	40	460/3#/60	11.3	2–20"x20"x2" 4–20"x25"x2"	107"x 71"x 50"	1,788	205	CONFIGURE UNIT FOR DOWNFLOW SUPPLY AIR & HORZONTAL RETURN AIR. SMOKE DETECTOR REQUIRED. SEE DETAIL 6, M4.02 FOR ANCHORAGE.
AC-2	TRANE YCD121C4L	SUN ROOM DINNING RM 170	3,600	1050	10	131	93.6	85	80	67	–	100	81	81	30	35	460/3#/60	11.3	2–20"x20"x2" 4–20"x25"x2"	107"x 71"x 50"	1,648	205	CONFIGURE UNIT FOR DOWNFLOW SUPPLY AIR & HORZONTAL RETURN AIR. SMOKE DETECTOR REQUIRED. SEE DETAIL 6, M4.02 FOR ANCHORAGE.
AC-3	TRANE YHC092A4RL	STUDENT LOUNGE RM 169	2,720	600	7.5	92.3	65.5	85	80	67	–	120	97	81	19.4	25	460/3#/60	11.4	4–20"x25"x2"	88"x 53"x 49"	1,085	115	SMOKE DETECTOR REQUIRED. SEE DETAIL 5, M4.02 FOR ANCHORAGE.
AC-4	TRANE YCD151C4L	GRILL RM 164	4,000	500	10	131	93.6	85	80	67	–	100	81	81	30	35	460/3#/60	11.3	2–20"x20"x2" 4–20"x25"x2"	107"x 71"x 50"	1,648	205	SMOKE DETECTOR REQUIRED. SEE DETAIL 5, M4.02 FOR ANCHORAGE.
AC-5	TRANE YHC036A4RL	CLUB ROOM RM 142	1,200	450	3	40.3	34.3	85	80	67	–	60	48	81	8.3	15	460/3#/60	12.5	2–20"x20"x1"	70"x44"x32"	500	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-6	TRANE YHC048A4RL	GAME ROOM RM 140	1,440	450	4	52.0	38.4	85	80	67	–	60	48	81	11.0	15	460/3#/60	11.9	2–20"x20"x1"	70"x44"x32"	600	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-7	TRANE YHC048A4RL	S.A. OFFICES RM128–129, RM135–138	1,440	450	4	52.0	38.4	85	80	67	–	60	48	81	11.0	15	460/3#/60	11.9	2–20"x20"x1"	70"x44"x32"	600	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-8	TRANE YHC092A4RL	SENATOR'S OFFICES RM130–133 RM125–125A	2,300	400	7.5	92.3	65.5	85	80	67	–	120	97	81	19.4	25	460/3#/60	11.9	4–20"x25"x2"	88"x 53"x 49"	1,085	115	SMOKE DETECTOR REQUIRED. SEE DETAIL 5, M4.02 FOR ANCHORAGE.
AC-9	TRANE YCD241C4LG	BOOKSTORE & RECEIVING RM 113 & RM 119	9,410	1,650	20	280	250	85	80	67	–	175	142	81	53	60	460/3#/60	11.3	2–20"x20"x2" 4–20"x25"x2"	121"x 84"x 54"	2,200	235	SMOKE DETECTOR REQUIRED. SEE DETAIL 7, M4.02 FOR ANCHORAGE.
AC-10	TRANE YHC092A4RL	CAMPUS POLICE RM 101–110	2,720	500	7.5	92.3	65.5	85	80	67	–	120	97	81	19.4	25	460/3#/60	11.4	4–20"x25"x2"	88"x 53"x 49"	1,085	115	SMOKE DETECTOR REQUIRED. SEE DETAIL 5, M4.02 FOR ANCHORAGE.
AC-11	TRANE YHC036A4RL	DEAN'S OFFICES RM 216–219	960	120	3	40.3	34.3	85	80	67	–	60	48	81	8.3	15	460/3#/60	12.5	2–20"x20"x1"	70"x44"x32"	500	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-12	TRANE YHC121A4RL	CLERICAL WORK AREA RM 215	4,400	450	10	131	93.6	85	80	67	–	100	81	81	30	35	460/3#/60	11.4	2–20"x20"x2" 4–20"x25"x2"	107"x 71"x 50"	1,648	205	SMOKE DETECTOR REQUIRED. SEE DETAIL 6, M4.02 FOR ANCHORAGE.
AC-13	TRANE YHC048A4RL	STAFF & CONF. OFFICES RM 221–226	1,720	250	4	52.0	38.4	85	80	67	–	60	48	81	11.0	15	460/3#/60	11.9	2–20"x20"x1"	70"x44"x32"	700	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-14	TRANE YHC048A4RL	OCORD'S OFFICES RM 208	1,720	250	4	52.0	38.4	85	80	67	–	60	48	81	11.0	15	460/3#/60	11.9	2–20"x20"x1"	70"x44"x32"	700	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-15	TRANE YHC060A4RL	COMPUTER CENTER RM 208	3,960	450	5	65.6	48.8	85	80	67	–	60	48	81	13.9	20	460/3#/60	11.9	2–20"x20"x1"	70"x44"x36"	700	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.
AC-16	TRANE YHC036A4RL	CAREER OFFICES RM 204–207	1,870	450	3	40.3	34.3	85	80	67	–	60	48	81	8.3	15	460/3#/60	12.5	2–20"x20"x1"	70"x44"x32"	500	70	SEE DETAIL 4, M4.02 FOR ANCHORAGE.

NOTES: CONFIGURE ALL UNITS FOR DOWNFLOW SUPPLY & RETURN AIR UNLESS OTHERWISE NOTED. ALL UNITS SHALL BE PROVIDED WITH 100% BAROMETRIC RELIEF OUTSIDE AIR ECONOMIZER W/ BIRDSCREEN, MOTORIZED AIR DAMPER, HE MOTORS, HINGED DOORS, POWER CONV. OUTLET, VIBRATION ISOLATION, SEISMIC RESTRAINTS, AND BELT DRIVE. .

MAKE–UP AIR UNIT SCHEDULE

EQUIPMENT NUMBER	MANUFACTURER MODEL #	DESCRIPTION	LOCATION	EXHAUST HOOD No.	MAKE–UP ESP	EXHAUST ESP	MAKE–UP CFM	MAKE–UP TOTAL STATIC PRESSURE	MOTOR HP	V/PH/HZ	EXHAUST CFM	EXHAUST EXTERNAL STATIC PRESSURE	EXHAUST MOTOR HP	V/PH/HZ	INDIRECT HEATING INPUT	OUTPUT	APPROXIMATE OPERATING WEIGHT LBS.	ACCESSORIES/REMARKS
MUA-1	LOGIC AIR LMU–3–B–7440–80–IDG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	40	0.15	1.33	3305	.5	3	460/3/60	4133	1.5	3	460/3/60	200,000 BTU	160,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.
MUA-2	LOGIC AIR LMU–3–B–7440–80–IDG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	41	0.15	1.33	3305	.5	3	460/3/60	4133	1.5	3	460/3/60	200,000 BTU	160,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.
MUA-3	LOGIC AIR LMU–2–B–5715–80–IDG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	57	0.15	1.33	2984	.5	3	460/3/60	3730	1.5	3	460/3/60	150,000 BTU	120,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.
MUA-4	LOGIC AIR LMU–2–K–4437–80–IDG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	58	0.15	1.33	1972	.5	2	460/3/60	2465	2.0	2	460/3/60	200,000 BTU	160,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.
MUA-5	LOGIC AIR LMU–2–K–6525–80–IDG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	103	0.15	1.65	2900	.5	3	460/3/60	3625	2.15	3	460/3/60	150,000 BTU	120,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.
MUA-6	LOGIC AIR LMU–2–K–4140–80–1DG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	87	N/A	1.65	1840	.5	3	208/1/60	2300	2.15	3	208/1/60	100,000 BTU	80,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.
MUA-7	LOGIC AIR LMU–2–K–4140–80–1DG–EVC–1–MSD	MAKE–UP AIR UNIT WITH EXHAUST, EVAP. CLG., AND INDIRECT HEATING	KITCHEN ROOF	134	0.15	1.65	1840	.5	3	208/1/60	2300	2.15	3	208/1/60	100,000 BTU	80,000 BTU	2,000	2" WASHABLE ALUMINUM MESH FILTERS, PRE–WIRED CONTROL CENTER W/ DISCONNECT, STARTER, FUSE BOX ENAMEL PAINT, BIRDSCREEN, 45° RAINHOOD, 2" INTERNAL INSULATION, GLASDEK EVAP SECTION W/ STAINLESS STEEL DRAIN PAN, PRE WIRED AND PIPED PUMP, ROOF CURB WITH NAILER & GASKET.

NOTE: PROVIDE WITH 30 % FLAT FILTER, EVAPORATIVE COOLER W/ 12" CELDEK, RAIN HOOD, BIRD SCREEN, . SEE DETAIL 8, M4.02

BUILT #35 revised Mech and Arc

EXHAUST FAN SCHEDULE

EQUIP. NO.	MANUFACTURER MODEL NUMBER	AREA (S) SERVED	TYPE	CFM	STATIC PRESSURE	MOTOR RPM	DRIVE	SONES	MOTOR ELECTRICAL WATTS/HP	MOTOR ELECTRICAL VOLTS/HZ/PH	APPROX. OPER. WEIGHT (LBS.)	REMARKS
EF-1	GREENHECK CUBE–100–4	TOILET ROOMS RM 165 &166	ROOF MOUNTED UPBLAST	500	.25	1,725	BELT	5.3	1/4 HP	115/60/1	52	FAN START/STOP CONTROL BY EMS. PROVIDE BACK DRAFT DAMPER, MFR.'S MIN. 12" CURB SEE SHEET M4.02 DETAIL 9 FOR ANCHORAGE
EF-2	GREENHECK CUBE–100–4	LOCKER & TOILET ROOMS RM 144,144A & 145,145A	ROOF MOUNTED UPBLAST	600	.5	1,725	BELT	6.2	1/4 HP	115/60/1	52	FAN START/STOP CONTROL BY EMS. PROVIDE BACK DRAFT DAMPER, MFR.'S MIN. 12" CURB SEE SHEET M4.02 DETAIL 9 FOR ANCHORAGE
EF-3	GREENHECK CUBE–120–4	TOILET RM'S:126,127,202,203 ELECT & JANIT: 125,125A	ROOF MOUNTED UPBLAST	1,165	.65	1,725	BELT	11.9	1/4 HP	115/60/1	56	FAN START/STOP CONTROL BY EMS. PROVIDE BACK DRAFT DAMPER, MFR.'S MIN. 12" CURB SEE SHEET M4.02 DETAIL 9 FOR ANCHORAGE
EF-4	GREENHECK CUBE–98–4	ELECT & TOILET ROOMS RM 115, 116A, & 117	ROOF MOUNTED UPBLAST	385	.35	1,725	BELT	8.3	1/4 HP	115/60/1	52	FAN START/STOP CONTROL BY EMS. PROVIDE BACK DRAFT DAMPER, MFR.'S MIN. 12" CURB SEE SHEET M4.02 DETAIL 9 FOR ANCHORAGE
EF-5	GREENHECK CUBE–98–4	LOCKER & TOILET ROOMS RM 104,104A & 107,107A	ROOF MOUNTED UPBLAST	480	.35	1,725	BELT	9.2	1/4 HP	115/60/1	52	FAN START/STOP CONTROL BY EMS. PROVIDE BACK DRAFT DAMPER, MFR.'S MIN. 12" CURB SEE SHEET M4.02 DETAIL 9 FOR ANCHORAGE

GRAVITY INTAKE VENTILATOR

EQUIP. NO.	MANUFACTURER & MODEL NUMBER	FAN–COIL SERVED	AREA SERVED	THROAT SIZE (INCH)	CURB OPENING SIZE (INCH)	OPER. WT. (LBS)	ACCESSORIES/REMARKS
GI-1	GREENHECK GRS–8	FC–2	MGR'S OFFICE RM 160	8 1/4	19	7	PROVIDE BIRDSCREEN AND MFR'S ROOF CURB. CURB TO MATCH ROOF SLOPE

NOTE: SEE M4.02, DETAIL 7 FOR ANCHORAGE.

SPLIT SYSTEM CONDENSING UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NO.	FAN COIL SERVED	COOLING NOMINAL TONS	ELECTRICAL COMPRESSOR R.L.A.	COMPRESSOR L.R.A.	OUTDOOR FAN F.L.A.	OUTDOOR FAN RPM	MCA	MOCP	VOLTAGE V/PH/HZ	OPER. WT. LBS	ACCESSORIES/REMARKS
CU-1	CARRIER 38HDL–024	FC–1	2.0	13.2	59.0	0.70	850	17.2	30	208–230/1–60	136	INSTALL SYSTEM PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH ELECTRICAL CONTRACTOR. PROVIDE LINE–VOLTAGE T–STAT SET TO 85°. SEE SHEET M4.02, DETAIL 1 FOR ANCHORAGE.
CU-2	CARRIER 38QRC–018	FC–2	1.5	9.8	49.0	0.70	850	13.0	20	208–230/1/60	154	INSTALL SYSTEM PER MANUFACTURERS RECOMMENDATIONS. SEE SHEET M4.02, DETAIL 1 FOR ANCHORAGE.

SPLIT SYSTEM FAN COIL UNIT SCHEDULE

SYMBOL	MFR & MODEL	LOCATION AREA SERVICED	FAN COIL TYPE	CFM SPEED	ELECTRICAL V/PH/HZ	FAN FLA	MCA	MOCP	FLA	COOLING NET COOLING (BTUH)	HEATING HIGH HEAT CAP(BTUH)	HEATING LOW HEAT CAP(BTUH)	SEER	OPERATING WT. (LBS)	REMARKS
FC-1	CARRIER 40QNB–024	SIGNAL ROOM RM 146	HIGH WALL	550 STANDARD	208–230/1/60	0.53	0.66	15	0.53	22,600	N/A	N/A	10.0	42.9	INSTALL SYSTEM PER MANUFACTURERS RECOMMENDATIONS, MFR S.CONDENSATE PUMP, COORDINATE LOCATION WITH ELEC. CONTRACTOR
FC-2	CARRIER 40QKE–024	MGR'S OFFICE RM 160	IN CEILING CASSETTE	525 HIGH	208–230/1/60	0.50	7.5	15	0.44	18,000	17,600	11,000	10.0	66	INSTALL SYSTEM PER MANUFACTURERS RECOMMENDATIONS, MFR S.CONDENSATE PUMP, POWER VENTILATION AIR KIT. SEE DETAIL 1–5 SHEET M4.04 FOR ANCHORAGE.

VVT TERMINAL ZONE DAMPER UNIT SCHEDULE – FIRST FLOOR

EQUIP. NO.	MANUFACTURER & MODEL NO.	DESIGN CFM	MAXIMUM CFM	MINIMUM CFM	SIZE	REMARKS
ZD-1	TITUS DECV–6	180	500	80	6"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2	TITUS DECV–8	510	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-3	TITUS DECV–8	540	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-4	TITUS DECV–6	275	500	80	6"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-5	TITUS DECV–6	200	500	80	6"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-6	TITUS DECV–6	405	500	80	6"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-7	TITUS DECV–8	615	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-8	TITUS DOCV–K	2800	3800	1800	24"x14"	DUCT SIZE SHALL MATCH ZONE DAMPER SIZE PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-9	TITUS DECV–5	320	350	65	5"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-10	TITUS DECV–4	150	225	45	4"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-11	TITUS DECV–4	130	225	45	4"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-12	TITUS DECV–12	1500	2000	325	12"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-13	TITUS DECV–5	340	350	65	5"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-14	TITUS DECV–4	170	225	45	4"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-15	TITUS DECV–5	300	350	65	5"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-16	TITUS DECV–8	795	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-17	TITUS DECV–6	405	500	80	6"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-18	TITUS DECV–12	1200	2000	325	12"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER SERVES RM 169, SUNROOM DINNING–2
ZD-19	TITUS DECV–12	1200	2000	325	12"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER SERVES RM 170, SUNROOM DINNING–1
ZD-20	TITUS DECV–12	1200	2000	325	12"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER SERVES RM 171, EXPANSION DINNING
ZD-21	TITUS DECV–7	560	650	275	7"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER SERVES RM 171, EXPANSION DINNING

VVT TERMINAL UNIT SCHEDULE – SECOND FLOOR

EQUIP. NO.	MANUFACTURER & MODEL NO.	DESIGN CFM	MAXIMUM CFM	MINIMUM CFM	SIZE	REMARKS
ZD-2-1	TITUS DECV–8	410	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-2	TITUS DECV–8	460	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-3	TITUS DECV–8	860	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-4	TITUS DECV–8	740	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-5	TITUS DECV–8	630	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-6	TITUS DECV–8	720	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-7	TITUS DECV–6	170	500	80	6"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-8	TITUS DECV–8	430	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER
ZD-2-9	TITUS DECV–8	460	900	145	8"ø	PROVIDE DUCT TRANSITIONS AS REQUIRED PROVIDE 24V TRANSFORMER AND CONTROLLER

VVT TERMINAL BYPASS DAMPER UNIT SCHEDULE – FIRST FLOOR

EQUIP. NO.	MANUFACTURER & MODEL NO.	DESIGN CFM	MAXIMUM CFM	MINIMUM CFM	SIZE	REMARKS
BD-1-1	TITUS DOCV–H	1360	1900	435	20"x10"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE
BD-1-2	TITUS DOCV–R	7520	6850	2750	52"x18"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE
BD-1-3	TITUS DOCV–J	1955	2300	300	22"x14"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE
BD-1-4	TITUS DOCV–H	1275	1500	435	14"x14"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE

VVT TERMINAL BYPASS DAMPER UNIT SCHEDULE – SECOND FLOOR

EQUIP. NO.	MANUFACTURER & MODEL NO.	DESIGN CFM	MAXIMUM CFM	MINIMUM CFM	SIZE	REMARKS
BD-2-1	TITUS DOCV–E	740	870	260	14"x12"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE
BD-2-2	TITUS DOCV–H	1360	1600	435	18"x14"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE
BD-2-3	TITUS DOCV–H	1290	1520	435	18"x14"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE
BD-2-4	TITUS DOCV–E	755	890	260	14"x12"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE

VVT TERMINAL BYPASS DAMPER UNIT SCHEDULE – ROOF

EQUIP. NO.	MANUFACTURER & MODEL NO.	DESIGN CFM	MAXIMUM CFM	MINIMUM CFM	SIZE	REMARKS
BD-R-1	TITUS DOCV–K	2880	3800	725	18"x18"	DUCT SIZE SHALL MATCH BYPASS DAMPER SIZE ENCLOSE IN A WEATHER PROOF ENCLOSURE REF AC–2

DIFFUSER & DOOR LOUVER SCHEDULE

TAG	DIFFUSER MODEL	CFM RANGE	FACE SIZE	NECK SIZE	THROW	REMARKS & OPTIONS
	DROP IN T–BAR, PERFORATED FACE, MODULAR CORE, SUPPLY DIFFUSERS					
A	TITUS PMC	0–125	24"x24"	6x6	4–WY, ADJ.	EARTHQUAKE TABS
B	TITUS PMC	130–225	24"x24"	8x8	4–WY ADJ.	EARTHQUAKE TABS
C	TITUS PMC	230–350	24"x24"	10x10	4–WY ADJ.	EARTHQUAKE TABS
D	TITUS PMC	355–550	24"x24"	12x12	4–WY ADJ.	EARTHQUAKE TABS
E	TITUS PMC	555–900	24"x24"	15x15	4–WY ADJ.	EARTHQUAKE TABS
	DROP IN T–BAR, PERFORATED FACE, RETURN DIFFUSERS					
1	TITUS PMR	0–125	24"x24"	6x6	–	EARTHQUAKE TABS
2	TITUS PMR	130–225	24"x24"	8x8	–	EARTHQUAKE TABS
3	TITUS PMR	230–350	24"x24"	10x10	–	EARTHQUAKE TABS
4	TITUS PMR	355–550	24"x24"	12x12	–	EARTHQUAKE TABS
5	TITUS PMR	555–930	24"x24"	15x15	–	EARTHQUAKE TABS
6	TITUS PMR	935–1150	24"x24"	18x18	–	EARTHQUAKE TABS
	MODULAR CORE EXHAUST DIFFUSER					
AA	TITUS MCD	0–460	12"x12"	8"x8"	–	SURFACE MOUNT
	BORDER TYPE 1 SIDEWALL REGISTERS					
F	TITUS 300RS	1885–4700	36"x20"	36"x20"	DOUBLE 41–89 FT	3/4" BLADE SPACING, STEEL DUCT MOUNTED
G	TITUS 300RS	730–1820	24"x12"	24"x12"	DOUBLE 36–66 FT	3/4" BLADE SPACING, STEEL DUCT MOUNTED
H	TITUS 300RS	440–1110	18"x10"	18"x10"	DOUBLE 24–47 FT	3/4" BLADE SPACING, STEEL DUCT MOUNTED
J	TITUS 300RS	120–410	12"x8"	12"x8"	SINGLE 6–12 FT	3/4" BLADE SPACING, STEEL PROVIDE DUCT TRANSITIONS
	EGGCRATE TYPE RETURN GRILLES					
7	TITUS 50F	1976–6900	42"x18"	40"x20"	–	PROVIDE DUCT TRANSITIONS
R	TITUS 50F	1668–5000	36"x18"	20"x15"	–	PROVIDE DUCT TRANSITIONS
9	TITUS 50F	333–1554	22"x10"	20"x10"	–	PROVIDE DUCT TRANSITIONS
10	TITUS 50F	171–570	12"x8"	12"x8"	–	PROVIDE DUCT TRANSITIONS
11	TITUS 50F	2530–5060	36"x18"	36"x18"	–	PROVIDE DUCT TRANSITIONS
12	TITUS 50F	1500–2570	24"x14"	24"x14"	–	DUCT MOUNTED
	ADJUSTABLE ROUND CEILING SUPPLY DIFFUSERS					
K	TITUS TMRA	218–436	22–1/2"ø	10"ø	360°	ADJUSTMENT STYLE TYPE 3
L	TITUS TMRA	425–850	31–1/2"ø	14"ø	360°	ADJUSTMENT STYLE TYPE 3
	DOOR LOUVERS					
VL	TITUS T700L	AS NOTED	24x18	24x16	–	–

RFI #160 VAV Substitute

RFI #140 Temperature Control Panels

RFI #340 Return Air Grille Boot

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Kitchen Consultant
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Walnut, CA 91789
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REGISTERED PROFESSIONAL ENGINEER — RYAN FUNGHONG — No. 24360 — M

NOTES THIS SHEET:

1. SUPPLY AIR DUCT INTERNALLY LINED.
2. MUA-1 & 2: MAKE-UP AIR-TRANSITION FROM 30"x10" OPENING ON EXHAUST HOOD TO 20"x15" DUCT. (TYP 2)
3. MUA-1 & 2: EXHAUST AIR-TRANSITION FROM 33"x10" OPENING ON EXHAUST HOOD TO 22"x22" DUCT UP TO ROOF. USE GREASE DUCT ONLY.
4. MUA-1 & 2: MAKE-UP AIR- 25"x20" DUCT UP TO ROOF. PLENUM INTERNALLY LINED.
5. MUA-3: MAKE-UP AIR-TRANSITION FROM 24"x10" OPENING ON EXHAUST HOOD TO 15"x15" DUCT. (TYP 2)
6. MUA-3: EXHAUST AIR-TRANSITION FROM 30"x10" OPENING ON EXHAUST HOOD TO 22"x22" DUCT UP TO ROOF. USE GREASE DUCT ONLY.
7. MUA-3: MAKE-UP AIR- 25"x20" DUCT UP TO ROOF. PLENUM INTERNALLY LINED.
8. MUA-4: MAKE-UP AIR-TRANSITION FROM 18"x10" OPENING ON EXHAUST HOOD TO 15"x10" DUCT. (TYP 2)
9. MUA-4: EXHAUST AIR-TRANSITION FROM 20"x10" OPENING ON EXHAUST HOOD TO 22"x22" DUCT UP TO ROOF. USE GREASE DUCT ONLY.
10. MUA-4: MAKE-UP AIR- 25"x20" DUCT UP TO ROOF.
11. MUA-4: MAKE-UP AIR- ROUTE 15x10 BELOW 20x10 EXHAUST DUCT AS SHOWN.
12. MUA-5: MAKE-UP AIR- TRANSITION FROM 15"x15" DUCT TO 25"x20" DUCT UP TO ROOF.
13. MUA-5: EXHAUST AIR- 22"x22" DUCT UP TO ROOF. USE GREESE DUCT FOR E.A DUCTS AND PLENUM .
14. MUA-6: MAKE-UP AIR- 18"x18" DUCT UP TO ROOF.
15. MUA-6: EXHAUST AIR-TRANSITION FROM 10"x9" OPENING ON EXHAUST HOOD TO 10"x10" DUCT . USE GREASE DUCT ONLY.
16. MUA-6: EXHAUST AIR-15"x15" DUCT UP TO ROOF. USE GREESE DUCT ONLY.
17. MUA-7: MAKE-UP AIR- TRANSITION FROM 15"x15" DUCT TO 25"x20" DUCT UP TO ROOF.
18. MUA-7: EXHAUST AIR- 22"x22" DUCT UP TO ROOF. USE GREESE DUCT FOR E.A DUCTS AND PLENUM .
19. AC-1: SUPPLY AIR- 56"x26" DUCT UP TO ROOF. INTERNALLY LINED PLENUM .
20. AC-2: SUPPLY AIR- 20"x20" DUCT UP TO ROOF.
21. AC-3: SUPPLY/ RETURN AIR- 33"x18" DUCTS UP TO ROOF. INTERNALLY LINE PLENUMS
22. SUPPLY AIR DUCT 9'-6" A.F.F.
23. RETURN AIR GRILLE 14'-9" A.F.F.
24. RETURN AIR GRILLE 9'-6" A.F.F. ALIGN VERTICALLY WITH SUPPLY AIR DUCT PENETRATION.
25. 10"x10" EXHAUST AIR DUCT UP TO ROOF.
26. DOOR UNDERCUT 1-1/2".
27. 12"x12" EXHAUST AIR DUCT UP TO 2nd FLOOR.
28. 6"x6" EXHAUST AIR DUCT . ROUTE AS SHOWN.
29. ADJUST FOR 3-WAY HORZONTAL THROW PATTERN.
30. PROVIDE 14"ø DUCT DROP. DIFFUSER SHALL BE APROXMITELY 9'-6" A.F.F.
31. AC-9: SUPPLY AIR PLENUM 56"x24"x24" INTERNALY LINED.

Mechanical

Item No. AD-2.2.31 Sheet M2.01 First Floor Mechanical Plan
Reference also corresponding Reflected Ceiling Plan A7.01: Mechanical ductwork in the General Bookstore 113: The contractor shall revise seismic bracing in the horizontal plane to be similar to Lateral Bracing Detail 6/X3.03 connected all 4 sides to the perimeter partitions. The contractor shall add straps with integral eyeholes to receive the stainless steel cabling at horizontal centerline of duct, each side typical. The architect shall assist the contractor with the layout during the shop drawing phase.

2-24-06 Costs

BULL# 46.1

BULL# 73

BULL# 46.1 Additional smoke/gas dampers

MAIN DINING ROOM 171 · SUNROOM DINING ROOM – 1 170 · SUNROOM DINING ROOM – 2 169 · STUDENT LOUNGE 139 · LOBBY 112 · PATIO 141 · GAME ROOM 140 · CLUB ROOM 142 · MEN'S LOCKER Relocated 144 · DIRECTOR'S OFFICE 137 · STUDENT WORK STATIONS 136 · RECEPTION 135 · SECRETARY 138 · SENATOR'S WORKROOM 133 · A.S. V.P.'S OFFICE 131 · A.S. PRESIDENT'S OFFICE 132 · WOMEN'S RESTROOM 126 · MEN'S RESTROOM 127 · ENTRY 128 · WINDOW DISPLAY AREA · ENTRY 123 · TEXT INFO DESK 123 · BUY BACK WINDOW 124 · TEXT BUYER'S OFFICE 122 · MANAGER'S OFFICE 121 · ACCT.'S OFFICE 120 · GENERAL BOOKSTORE 113 · GENERAL WORK AREA 111 · ASSISTANT MANAGER'S OFFICE 104 · SUPERVISOR'S OFFICE 106 · HALL 105 · RECEIVING 119 · ELEC. ROOM 112 · TRAINING ROOM 116 · WOMEN'S LOCKER 104 · WOMEN'S RESTROOM 104A · MEN'S LOCKER 107 · MEN'S RESTROOM 107A · RECEPTION 101 · CLERK WORK STATION 102 · SARGENT'S OFFICE 103 · CORPORAL'S OFFICE 110 · INTERROGATION ROOM 109 · ENTRY 100 · KITCHEN 164 · PREP AREA 143 · LOADING 157 · JANITOR'S CLOSET 147 · EQUIPMENT STORAGE 148 · MANAGER'S BUSINESS DIRECTOR'S OFFICE 160 · FOOD SERVICE DRY STORAGE 159 · CULINARY ARTS DRY STORAGE 158 · FOOD SERVICE GENERAL STORAGE 156 · CULINARY ARTS GEN. STORAGE 155 · FOOD SERVICE FREEZER 152 · CULINARY ARTS FREEZER 151 · FOOD SERVICE FREEZER 150 · CULINARY ARTS FREEZER 149

1 2 3 4 5 5.5 6 6.1 6.2 6.3 7 8 9 10 10.1 11 12 13 14 14.2 15

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REGISTERED PROFESSIONAL ENGINEER TIMOTHY E. FUGATE No. 17346 MECHANICAL STATE OF CALIFORNIA

LICENSED ARCHITECT THOMAS A. BLUROCK No. C-24032 03/31/05 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL. 04-105114
AC 05-2XX-05 SHT# 5
DATE OCT 11 2005

SUBMITTALS

SBVC
CAMPUS CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

JAN 06 2004

BERNARD BROS., INC.

FIRST FLOOR MECHANICAL PLAN

AS-BUILTS

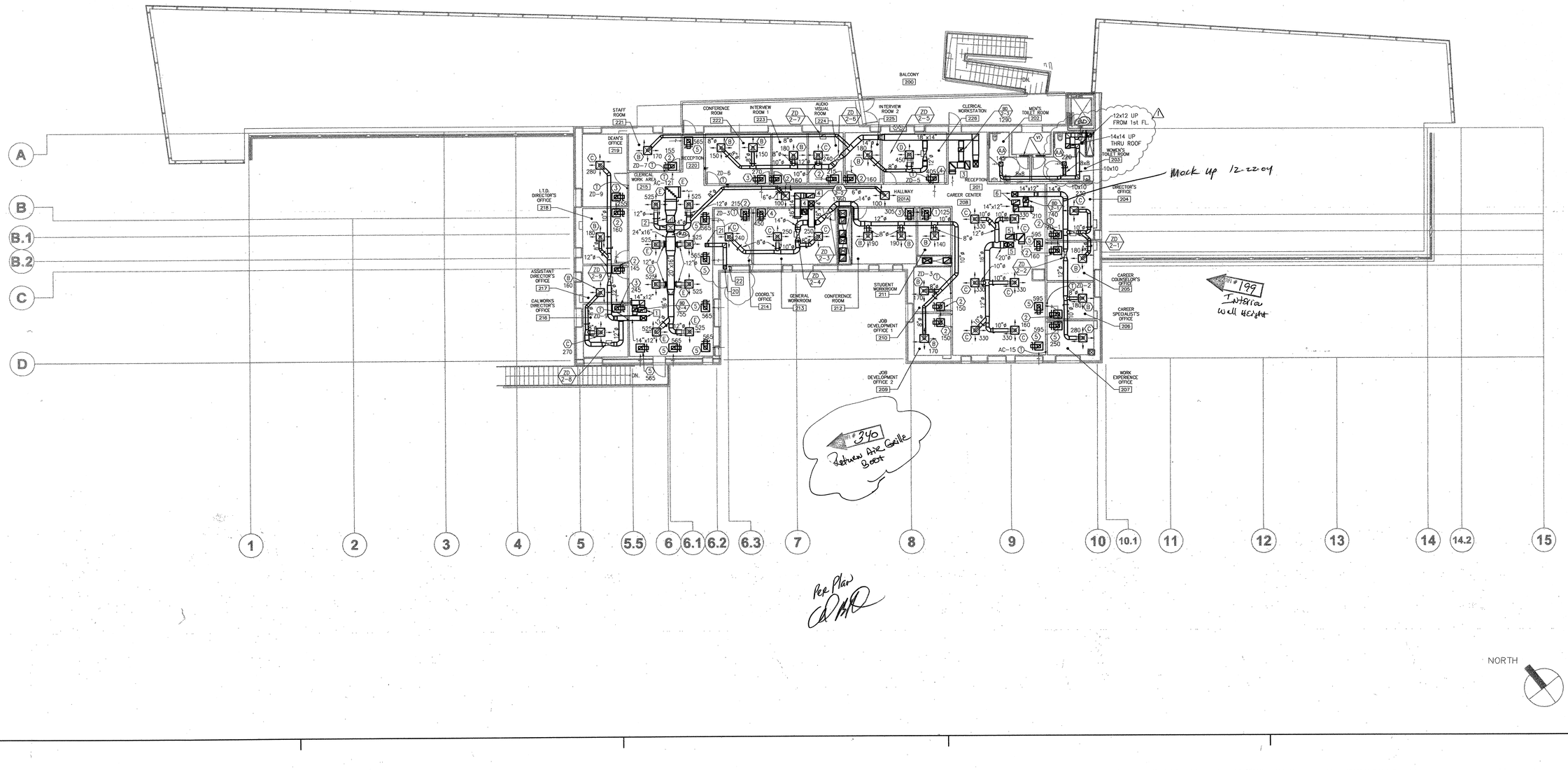
PROJECT NO.: 00-04
SCALE: 3/32" = 1'-0"
DATE: JAN. 31, 2003

M2.01

NOTES THIS SHEET:

1. AC-11: SUPPLY AIR- 14"x14" DUCT UP TO ROOF.
   RETURN AIR- 14"x12" DUCT UP TO ROOF.
2. AC-12: SUPPLY AIR- 20"x20" DUCT UP TO ROOF.
   RETURN AIR- 20"x20" DUCT UP TO ROOF.
3. AC-13: SUPPLY AIR- 18"x16" DUCT UP TO ROOF.
   RETURN AIR- 16"x16" DUCT UP TO ROOF.
4. AC-14: SUPPLY AIR- 22"x16" DUCT UP TO ROOF.
   RETURN AIR- 18"x16" DUCT UP TO ROOF.
5. AC-15: SUPPLY AIR- 18"x16" DUCT UP TO ROOF.
   RETURN AIR- 16"x16" DUCT UP TO ROOF.
6. AC-16: SUPPLY AIR- 17"x17" DUCT UP TO ROOF.
   RETURN AIR- 17"x15" DUCT UP TO ROOF.

2-24-06
Courts



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REGISTERED PROFESSIONAL ENGINEER PAULO FUNDAMENTAL No. 24311 Exp. 9-30-06 MECHANICAL STATE OF CALIFORNIA

LICENSED ARCHITECT THOMAS H. BLUROCK NO. C009332 01-31-05 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-105114
AC ____ FLS ____ SS ____
DATE ____

△ APPEND. #1 11-03-05
SUBMITTALS

SBVC
CAMPUS CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

RECEIVED
JAN 06 2004
BERNARD BROS. INC.

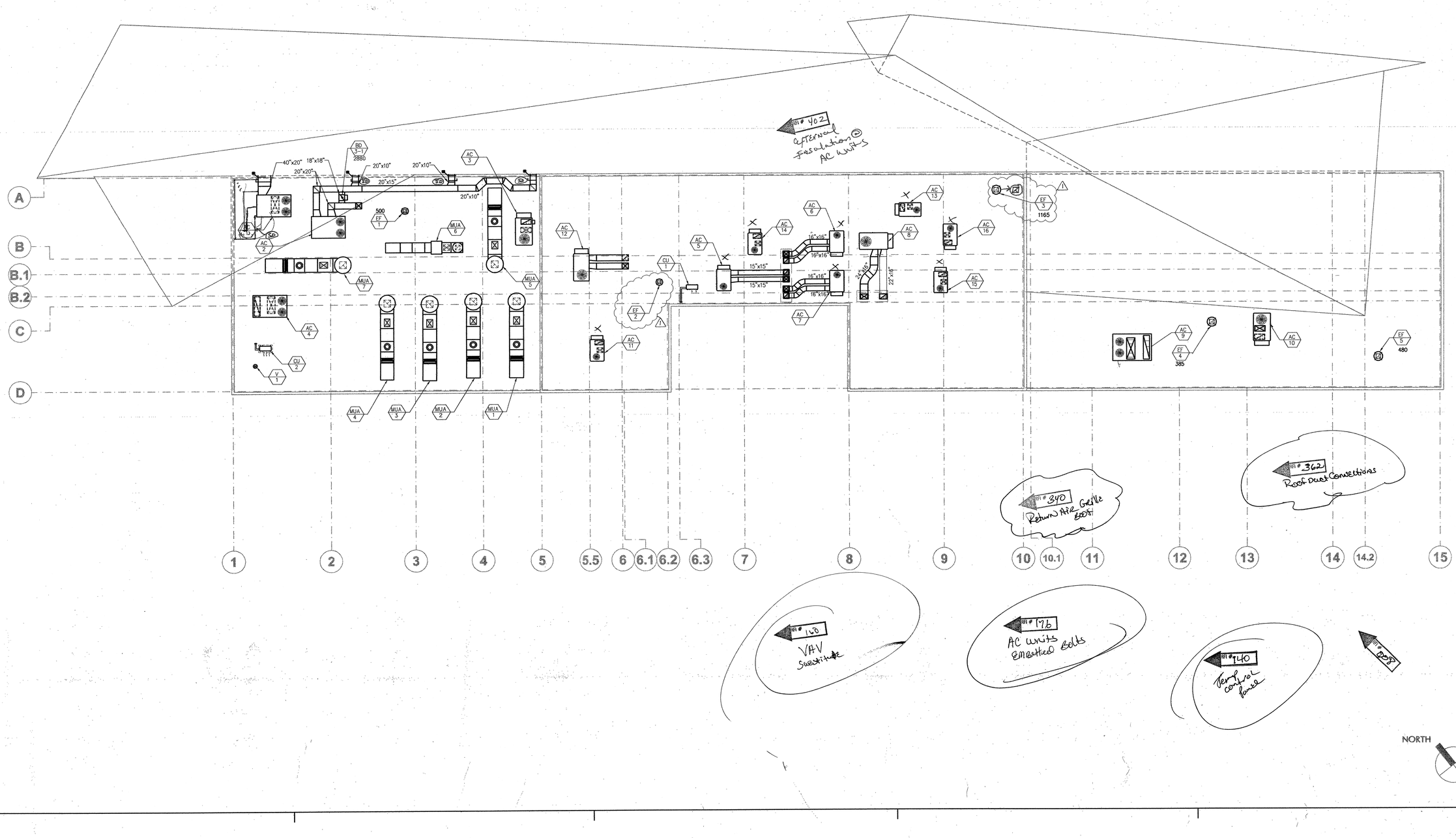
SECOND FLOOR MECHANICAL PLAN

AS-BUILTS

PROJECT NO.: 00-04
SCALE: 3/32" = 1'-0"
DATE: OCT. 01, 2003

M2.02

2-24-06
Couts



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DESIGN ARCHITECT:

STEVEN EHRLICH
Architects

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REGISTERED PROFESSIONAL ENGINEER
PAUL FUNDAMENTAL
No. 24311
Exp. 8-30-06
MECHANICAL
STATE OF CALIFORNIA

LICENSED ARCHITECT
THOMAS H. BLUROCK
NO. C009332
03-31-05
RENEWAL DATE
STATE OF CALIFORNIA

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DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-105114
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DATE ____

△ APPEND. #1 11-23-05
SUBMITTALS

SBVC
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SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
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SAN BERNARDINO, CA 92409

RECEIVED
JAN 06 2006
BERNARD BROS., INC.

ROOF PLAN

AS-BUILTS

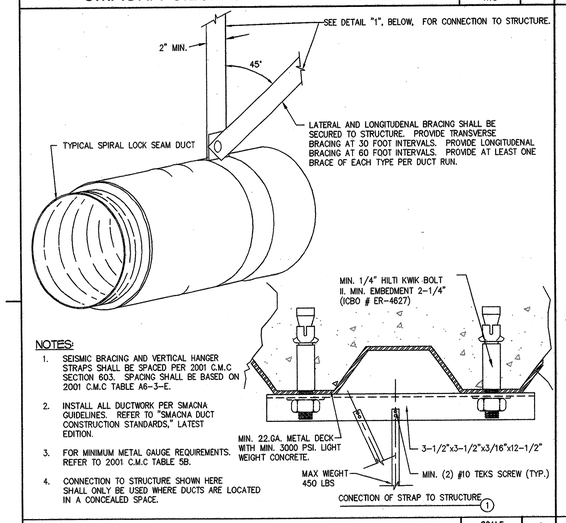
PROJECT NO.: 00-04
SCALE: 3/32" = 1'-0"
DATE: OCT. 01, 2003

M3.01

ALL SIEISMIC RESTRAINT FOR DUCTWORK PIPING AND CONDUIT SHALL BE PER SMACNA LEVEL "A" REQUIREMENTS, 2000 SUPPLEMENTAL.

SMACNA SIESMIC BRACING NOTE

SCALE: NTS — 1

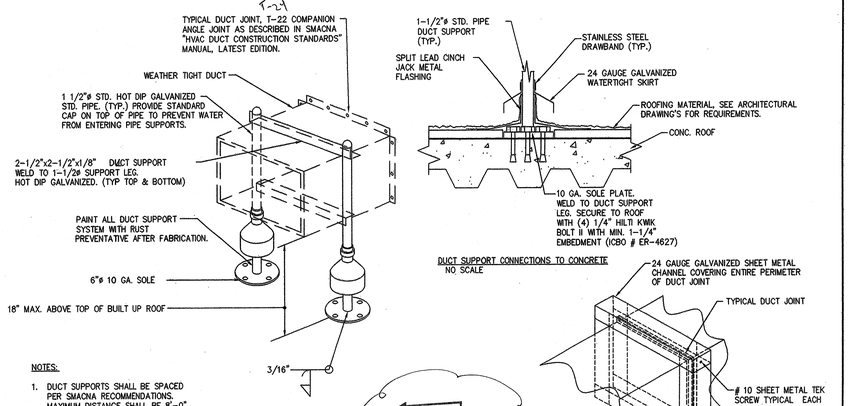


NOTES:

1. SEISMIC BRACING AND VERTICAL HANGER STRAPS SHALL BE SPACED PER 2001 C.M.C SECTION 603. SPACING SHALL BE BASED ON 2001 C.M.C TABLE A6-3-E.
2. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. FOR MINIMUM METAL GAUGE REQUIREMENTS. REFER TO 2001 C.M.C TABLE 5B.
4. CONNECTION TO STRUCTURE SHOWN HERE SHALL ONLY BE USED WHERE DUCTS ARE LOCATED IN A CONCEALED SPACE.

TYPICAL 6"-23" DIA. ROUND DUCT SUPPORT

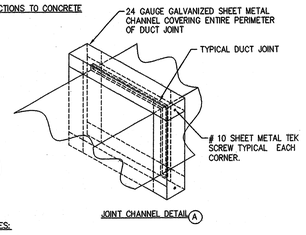
SCALE: NTS — 4



NOTES:

1. DUCT SUPPORTS SHALL BE SPACED PER SMACNA RECOMMENDATIONS. MAXIMUM DISTANCE SHALL BE 8'-0".
2. ALL DUCTS ON ROOF SHALL BE INSTALLED WITH CROSS BREAKS SO AS TO PROVIDE FOR WATER RUN OFF.
3. NO PITCH POCKETS ON THIS PROJECT.
4. DUCT JOINTS ON ROOF SHALL BE COVERED WITH 24 GAUGE CHANNEL, SEE DETAIL A

DUCT SUPPORT CONNECTIONS TO CONCRETE
NO SCALE



JOINT CHANNEL DETAIL A

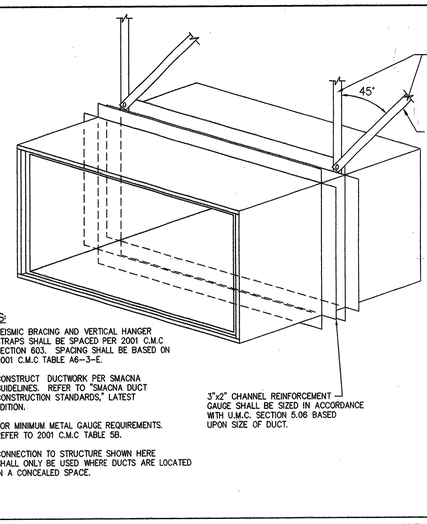
CHANNEL NOTES:

1. SECURE CHANNEL TO ONE ANOTHER WITH 1-#10 TEK SCREW AT EACH CORNER. NO SCREW'S SECURING CHANNEL SHALL PENETRATE DUCT'S.

SI #276 Exposed Roof Ducts

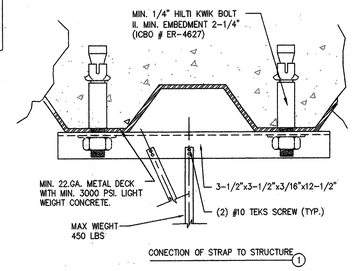
TYPICAL DUCT ACCROSS ROOF SUPPORT

SCALE: NTS — 2



NOTES:

1. SEISMIC BRACING AND VERTICAL HANGER STRAPS SHALL BE SPACED PER 2001 C.M.C SECTION 603. SPACING SHALL BE BASED ON 2001 C.M.C TABLE A6-3-E.
2. CONSTRUCT DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. FOR MINIMUM METAL GAUGE REQUIREMENTS. REFER TO 2001 C.M.C TABLE 5B.
4. CONNECTION TO STRUCTURE SHOWN HERE SHALL ONLY BE USED WHERE DUCTS ARE LOCATED IN A CONCEALED SPACE.



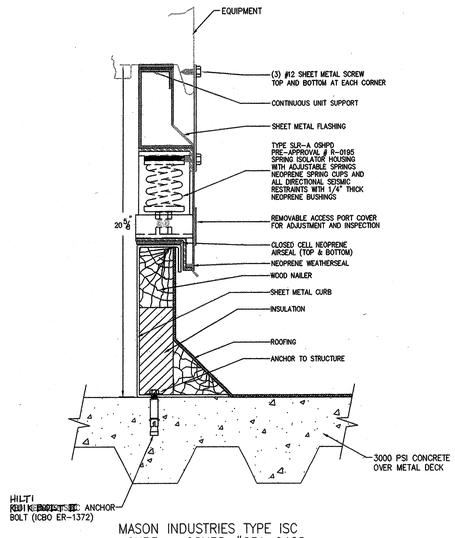
SI #362 Roof Duct Penetrations

TYPICAL RECTANGULAR DUCT SUPPORT FOR SIZES UP TO 29x29

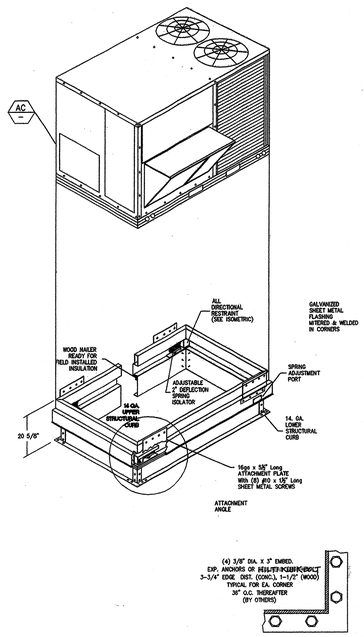
SCALE: NTS — 5

NOTES:

1. CURB HEIGHT SHALL VARY WITH THE ROOF PITCH SO AS TO PROVIDE FOR A LEVEL INSTALLATION OF HVAC EQUIPMENT. MINIMUM HEIGHT ABOVE ROOF TO TOP OF BASE FRAME SHALL BE 8".
2. VIBRATION ISOLATOR/SEISMIC RESTRAINTS SHALL BE OSHPD PRE-APPROVED #OPA-0468
3. VERIFY BOLT SIZE(S) AND SEISMIC STRAP GAUGE(S) WITH SHOP DRAWINGS/CALCULATIONS PROVIDED BY CURB MANUFACTURER. CALCULATIONS SHALL BE SIGNED AND STAMPED BY A REGISTERED ENGINEER QUALIFIED TO PERFORM CALCULATIONS. SEE SHEET M4.02 FOR MORE SPECIFIC INFORMATION FOR EACH EQUIPMENT SIZE.
4. COPY OF THE OSHPD PRE-APPROVED DOCUMENTS MUST BE AVAILABLE AT THE JOB SITE AT ALL TIMES. INSTALLATION OF THIS ITEM MUST BE DONE IN STRICT ACCORDANCE WITH THE PRE-APPROVED DOCUMENTS.



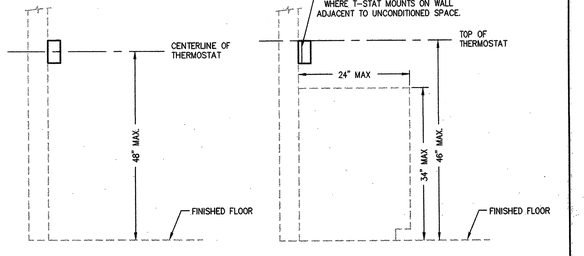
MASON INDUSTRIES TYPE ISC CURB – OSHPD #OPA-0468



OSHPD PRE-APPROVAL #OPA-0468 FOR REFERENCE ONLY

TYPICAL TYPE ISC CURB / ROOF TOP MOUNTED A/C PACKAGE UNIT DETAIL

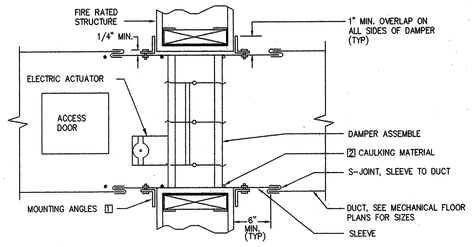
SCALE: NTS — 3



NOTES: REFER TO ARCHITECTURAL FOR ADDITIOAL INFORMATION.

TYPICAL THERMOSTAT MOUNTING DETAIL

SCALE: NTS — 6



ELEVATION

NOTES:

[1] MOUNTING ANGLES SHALL BE 1 1/2"X 1 1/2"X 16 GAGE MIN. FASTENED WITH NO. 10 SCREWS 8" ON CENTER. DO NOT ATTACH ANGLE TO ENVELOPE STRUCTURE.

[2] BOTH INSIDE & OUTSIDE OF FIRE DAMPER SLEEVE SHALL BE COATED WITH INTUMESCENT MASTIC TO THE CENTERLINE OF THE FIRE DAMPER.

[3] USE ONLY STATE OF CALIFORNIA FIRE MARSHALL LISTED FIRE DAMPERS & INSTALL IN ACCORDANCE WITH STATE FIRE MARSHALL LISTING NO.3225-245.005 & U.L. STANDARD 555S. (U.L. LISTING R1344?)

[4] CONTRACTOR SHALL COORDINATE CEILING ACCESS DOORS AND DAMPER ACCESS DOORS AS REQUIRED FOR ACCESS TO DAMPERS.

[5] ACCESS DOOR SHALL BE PROVIDED IN DUCT AND SHALL BE OF ADEQUATE SIZE AND LOCATION TO PERMIT MAINTENANCE & RESETTING OF DAMPER.

[6] SMOKE/FIRE DAMPER TO BE GREENHECK, MODEL FSD-22 OR EQUAL AND, CODE APPROVED FOR HORIZONTAL OR VERTICAL INSTALLATION.

[7] FIRE DAMPER ASSEMBLIES INCLUDING SLEEVES AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION .

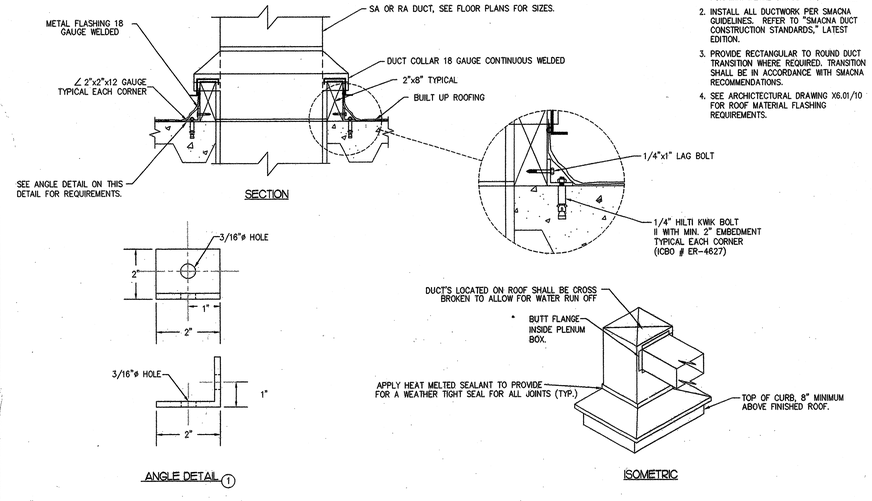
[8] FIRE DAMPERS SHALL BE STATE FIRE MARSHALL APPROVED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. MANUFACTURER'S INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITY. DETAILS SHOWN ARE FOR REFERENCE ONLY.

VERTICAL COMBINATION SMOKE/FIRE DAMPER DETAIL

SCALE: NONE — 7

NOTES:

1. REFER TO 2001 C.M.C TABLE 5B AND 5C FOR MIN. METAL GAUGE REQUIREMENTS.
2. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. PROVIDE RECTANGULAR TO ROUND DUCT TRANSITION WHERE REQUIRED. TRANSITION SHALL BE IN ACCORDANCE WITH SMACNA RECOMMENDATIONS.
4. SEE ARCHICTECTURAL DRAWING X6.01/10 FOR ROOF MATERIAL FLASHING REQUIREMENTS.



TYPICAL DUCT PENETRATION THRU ROOF DETAIL

SCALE: NTS — 8

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Kitchen Consultant
Mace Murphy Design Group
616 Crystal Water Lane
Walnut, CA 91789
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REGISTERED PROFESSIONAL ENGINEER — No. 24361 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — No. C-26332 — 07-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP ONLY, OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL 04-105114
AC BY DATE OCT 11 2005

SUBMITTALS

SBVC
CAMPUS CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

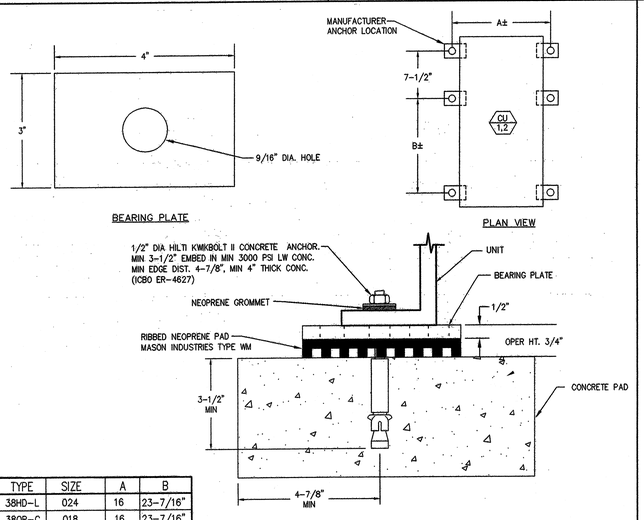
RECEIVED
JAN 06 2004
BERNARD BROS., INC.

MECHANICAL DETAILS

AS-BUILTS

PROJECT NO.: 00-04
SCALE: NONE
DATE: JAN. 31, 2003

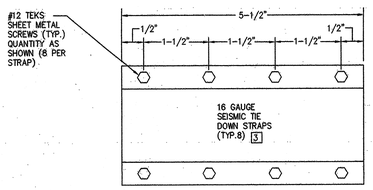
M4.01



ID	MAKE	TYPE	SIZE	A	B
CU-1	CARRIER	38HD-L	024	16	23-7/16"
CU-2		38QR-C	018	16	23-7/16"

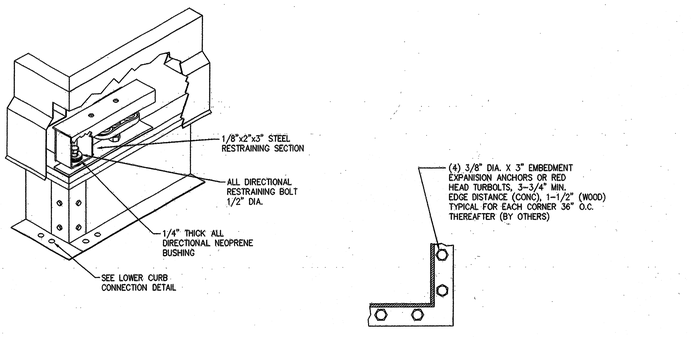
TYPICAL SPLIT SYSTEM CONDENSOR ANCHORAGE DETAIL

SCALE: NTS | 1



TYPICAL SEISMIC SHEAR STRAP

SCALE: NTS | 2



LOWER CURB CONNECTION REQUIREMENTS

TYPICAL MAKEUP AIR CURB CORNER DETAIL

SCALE: NTS | 3

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REGISTERED PROFESSIONAL ENGINEER — RALPH M. MURPHY — No. M 24000 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — STEVEN ALAN EHRLICH — No. C-20932 — 05-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES — APPL 04-105114 — AC — DATE OCT 11 2005

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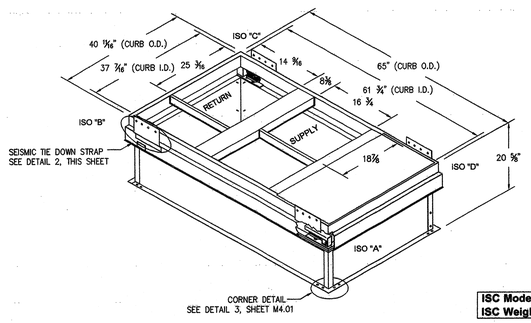
SCALE: NONE
DATE: JAN. 31, 2003

M4.02

AC 5 | AC 6 | AC 7 | AC 11 | AC 13 | AC 14 | AC 15 | AC 16



ISC Model No.: T42-2
ISC Weight: 190 lbs.

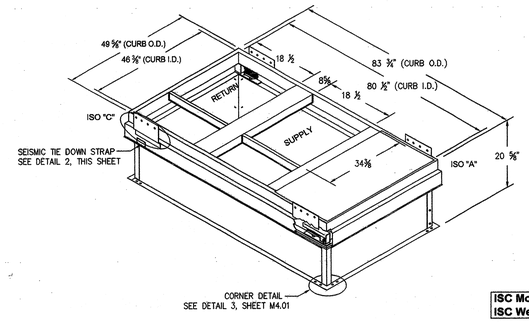
TRANE MODEL	MAX. WT. (lbs)	ISOLATOR SELECTIONS ISO "A" SLF	ISO "B" SLF	ISO "C" SLF	ISO "D" SLF
YHC 036, 048, 060	574	B2-290	B2-290	B2-290	B2-290

OSHPD PRE-APPROVAL #R-0468

TRANE YHC 036-060 ISC CURB DETAIL

SCALE: NTS | 4

AC 3 | AC 8 | AC 10



ISC Model No.: T43-2
ISC Weight: 250 lbs.

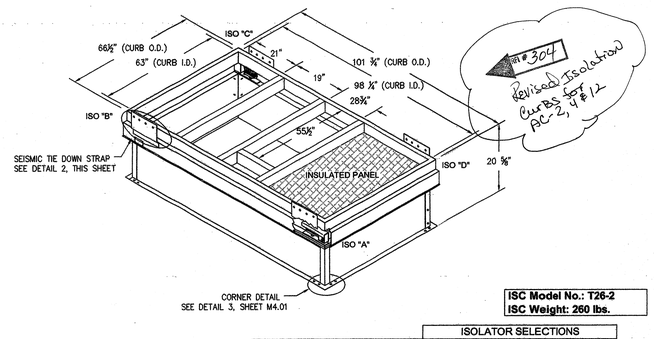
TRANE MODEL	MAX. WT. (lbs)	ISOLATOR SELECTIONS ISO "A" SLF	ISO "B" SLF	ISO "C" SLF	ISO "D" SLF
YHC 092	957	B2-625	B2-450	B2-290	B2-450

OSHPD PRE-APPROVAL #R-0468

TRANE YHC 092C ISC CURB DETAIL

SCALE: NTS | 5

AC 1 | AC 2 | AC 4 | AC 12



ISC Model No.: T26-2
ISC Weight: 260 lbs.

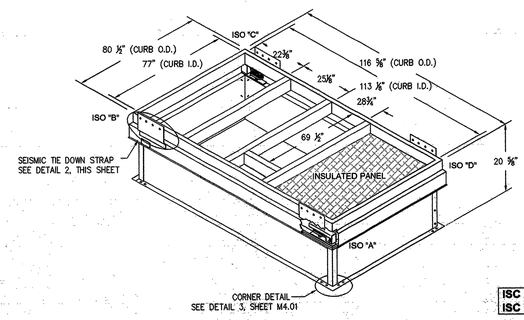
TRANE MODEL	MAX. WT. (lbs)	ISOLATOR SELECTIONS ISO "A" SLF	ISO "B" SLF	ISO "C" SLF	ISO "D" SLF
YCD 121C, 151C	1523	B2-950	B2-680	B2-450	B2-680

OSHPD PRE-APPROVAL #R-0468

TRANE YCD 121C & 151C ISC CURB DETAIL

SCALE: NTS | 6

AC 9



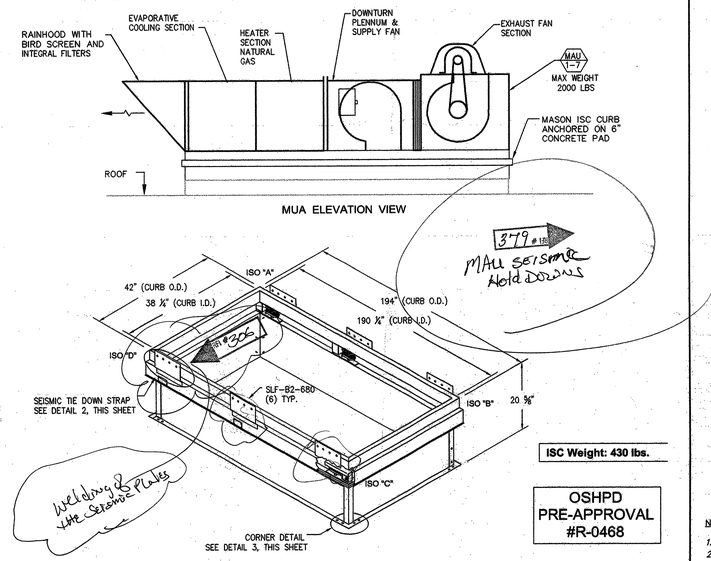
ISC Model No.: T27-2
ISC Weight: 350 lbs.

TRANE MODEL	MAX. WT. (lbs)	ISOLATOR SELECTIONS ISO "A" SLF	ISO "B" SLF	ISO "C" SLF	ISO "D" SLF
YCD 241C	2162	B2-950	B2-950	B2-680	B2-950

OSHPD PRE-APPROVAL #R-0468

TRANE YCD 241C ISC CURB DETAIL

SCALE: NTS | 7

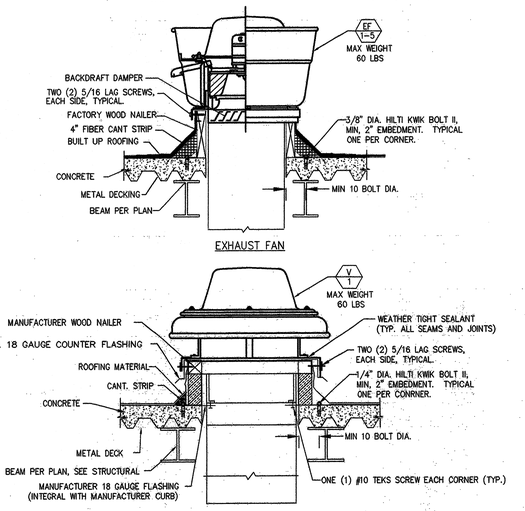


ISC Weight: 430 lbs.

OSHPD PRE-APPROVAL #R-0468

TYPICAL MAKE-UP AIR UNIT ISC CURB DETAIL

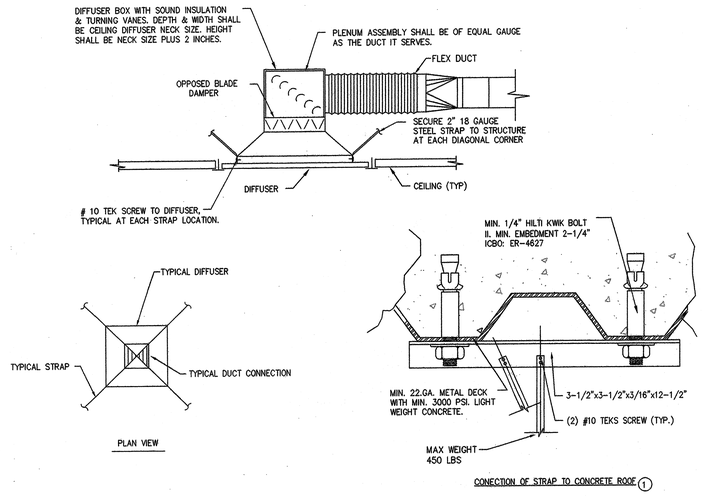
SCALE: NTS | 8



NOTES:
1. SEE ARCHITECTURAL DRAWING FOR ROOF ROOF FLASHING REQUIREMENTS.
2. SEE MECHANICAL FLOOR PLANS FOR DUCT SIZES.

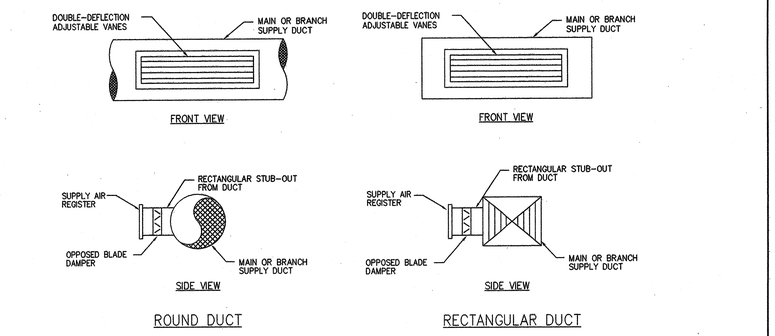
TYPICAL ROOF MOUNTED EXHAUST FAN AND INTAKE VENTILATOR

SCALE: NTS | 9



CEILING DIFFUSER PLENUM ASSEMBLY

SCALE: NTS | 1

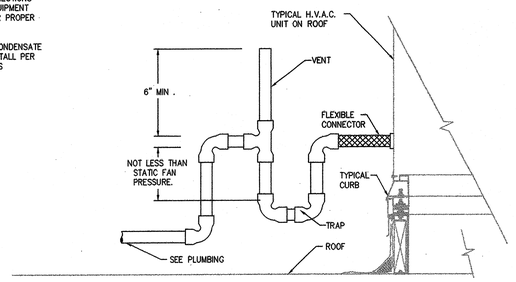


TYPICAL SIDEWALL DIFUSSER DETAIL

SCALE: NTS | 2

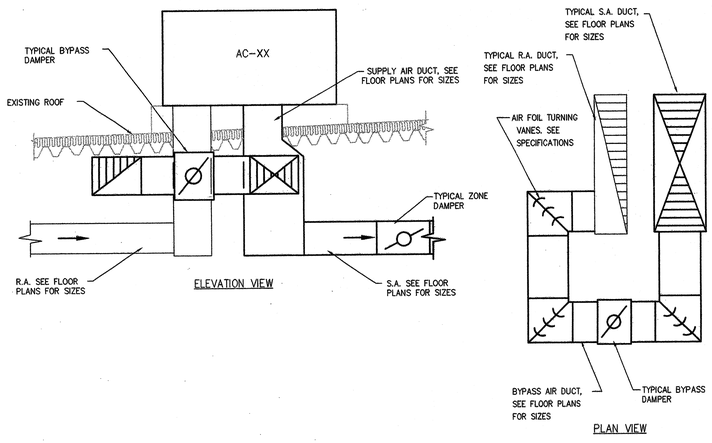
NOTES:

1. ALL INTERIOR CONDENSATE DRAINS ABOVE CEILING SHALL BE INSULATED .
2. IF HORIZONTAL RUN IS GREATER THAN 15 FT., INSTALL UNION THE SAME SIZE AS DRAIN.
3. IF CONDENSATE DRAIN RUNS TO FLOOR SINK, ALLOW A MINIMUM 2" AIR GAP AT FLOOR SINK.
4. ALL CONDENSATE DRAIN CONNECTIONS SHALL OCCUR ABOVE ALL EQUIPMENT FRAMING & SHALL ALLOW FOR PROPER P-TRAP INSTALLATION.
5. VERIFY WITH MANUFACTURE CONDENSATE TRAP REQUIREMENTS AND INSTALL PER MANUFACTURES INSTALLATIONS INSTRUCTIONS.



TYPICAL CONDENSATE DRAIN DETAIL

SCALE: NTS | 3



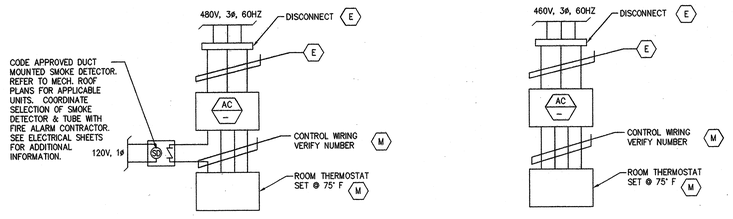
TYPICAL BYPASS DAMPER DETAIL

SCALE: NTS | 4

LEGEND

(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.

(E) FURNISHED AND INSTALLED BY

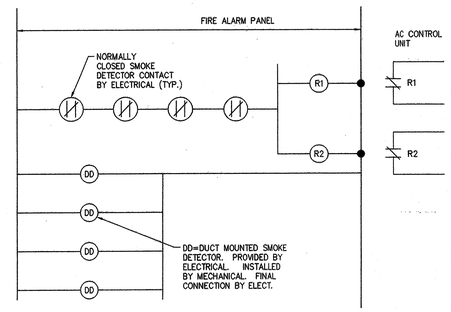


TYPICAL AC UNIT WIRING DIAGRAM DETAIL

SCALE: NTS | 5

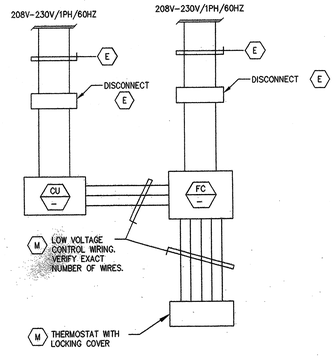
NOTES THIS DETAIL:

1. SYSTEMS PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN THE BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BE INTERRUPTING THE POWER SOURCE OF THE AIR MOVING EQUIPMENT. SMOKE DETECTORS SHALL DETECT PRODUCT OF COMBUSTION OTHER THAN HEAT AND SHALL COMPLY WITH CALIFORNIA BUILDING CODE. DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES, AND HUMIDITIES OF THE SYSTEM. THE SMOKE DETECTORS SHALL ACTIVATE THE FIRE ALARM SYSTEM. (SECTION 608, C.M.C)
2. SEE FIRE ALARM DRAWINGS FOR ADDITONAL INFORMATION.
3. COORDINATE QUANTITY OF RELAYS AND SWITCHING REQUIREMENTS WITH FIRE ALARM CONTRACTOR.



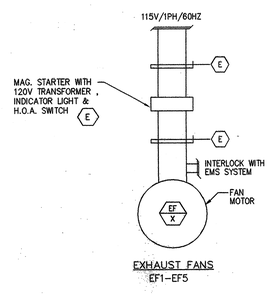
TYPICAL DUCT DETECTOR DIAGRAM DETAIL

SCALE: NTS | 6



TYPICAL SPLIT SYSTEM WIRING DIAGRAM

SCALE: NTS | 7



EXHAUST FANS
EF1-EF5

TYPICAL EXHAUST FAN WIRING DETAIL

SCALE: NTS | 8

SCALE: NTS | 9

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REGISTERED PROFESSIONAL ENGINEER — RAYMOND B. LUBOW — No. 17400 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — RAYMOND B. LUBOW — No. C009332 — 01-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT — OFFICE OF REGULATION SERVICES — APPL. 04-105114 — AC RS PS SS T&S — DATE OCT 11 2005

SUBMITTALS

SBVC
CAMPUS CENTER

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114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

RECEIVED
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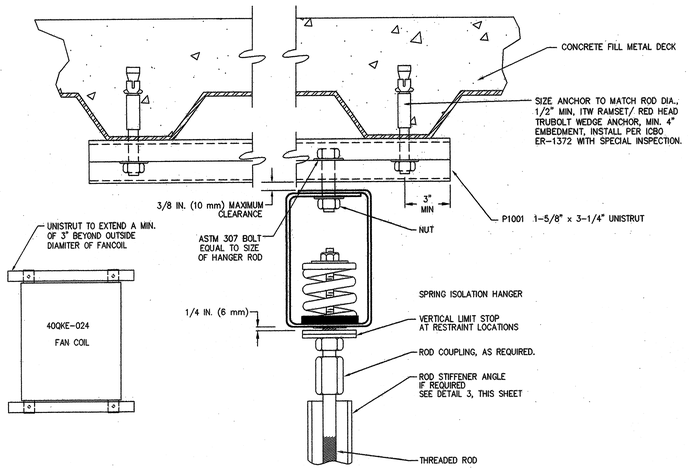
BERNARD BROS. INC.

MECHANICAL DETAILS

AS-BUILTS

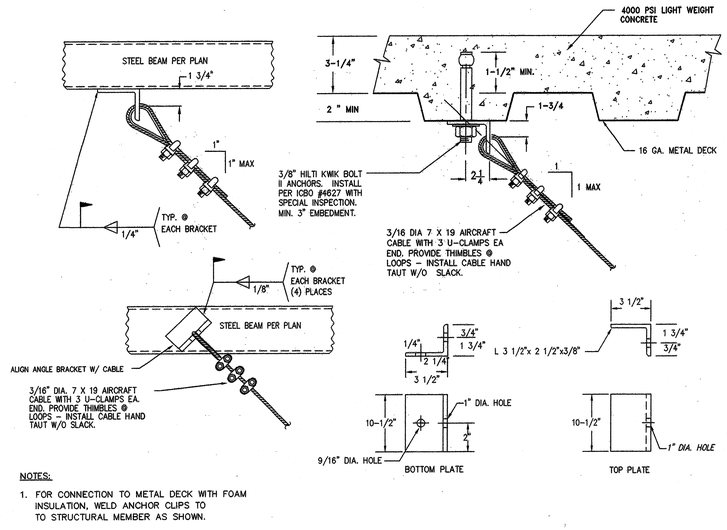
PROJECT NO.: 00-04
SCALE: NONE
DATE: JAN. 31, 2003

M4.03



TYPICAL SPRING ISOLATION HANGER TO CONCRETE DECK DETAIL

SCALE: NTS | 1



NOTES:

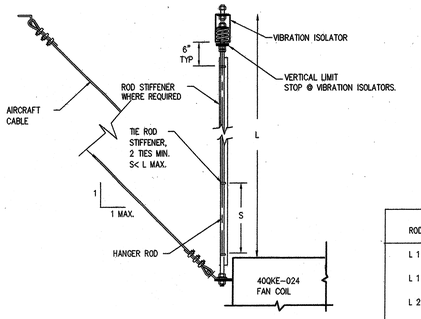
1. FOR CONNECTION TO METAL DECK WITH FOAM INSULATION, WELD ANCHOR CLIPS TO TO STRUCTURAL MEMBER AS SHOWN.

TYPICAL FAN COIL CABLE RESTRAINT ANCHORAGE DETAIL

SCALE: NTS | 2

NOTES:

1. FOR SEISMIC CONNECTION TO STRUCTURE SEE DETAIL 2 THIS SHEET.
2. FOR ACHORAGE CONNECTION TO STRUCTURE SEE DETAIL 1 THIS SHEET.
3. MIN. HANGER DIA. SHALL BE 1/2"ø.



ROD DIA. (INCH)	L MAX (INCH)
1/2	28
5/8	31
3/4	37
7/8	43
1	50

NOTE:
IF LENGTH OF HANGER ROD EXCEED L MAX, SELECT ROD STIFFENER FROM TABLE BELOW. DESIGN OF ANCHORAGE IS REQUIRED PER CBC 1632A.1

ROD STIFFENER	L limit (W/ROD STIFFENER)
L 1 X 1 X 1/8	39 IN.
L 1 1/2 X 1 1/2 X 3/16	59
L 2 X 2 X 1/8	80
1 5/8 X 1 5/8 X 12 GA	116

TYPICAL ROD STIFFENER REQUIREMENTS FOR FAN COIL DETAIL

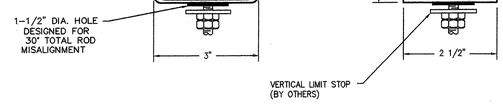
SCALE: NTS | 3

NOTES:

CONTRACTOR MAY CHOOSE ANY METHOD SHOWN.

TYPICAL FAN COIL ROD STIFFENER METHODS DETAIL

SCALE: NTS | 4



NOTES:

1. FOR CONNECTION TO UNISTRUT, REF DETAILS 1,THIS SHEET.
2. USE 3/8" THREADED ROD, 18" UNBRACED LENGTH MAX.

TYPICAL FAN COIL VIBRATION ISOLATORS SPRINGS DETAIL

SCALE: NTS | 5

-

SCALE: NTS | 6

-

SCALE: NTS | 7

-

SCALE: NTS | 8

-

SCALE: NTS | 9

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REGISTERED PROFESSIONAL ENGINEER — No. 24310 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — No. C-26332 — 01-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL 04-105714
AC ___ FLS ___ GS ___
DATE OCT 19 2005

SUBMITTALS

SBVC
CAMPUS CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

AS-BUILTS

MECHANICAL DETAILS

RECEIVED
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BERNARD BROS., INC.

PROJECT NO.: 00-04
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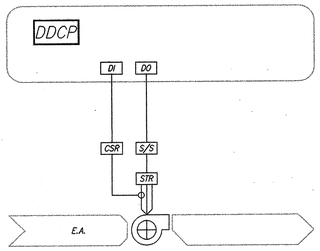
M4.04



GENERAL EXHAUST FANS
DDC SCHEMATIC DETAIL

DDC INPUT/OUTPUT POINTS CHART

CAMPUS CENTER

FACILITY: SAN BERNARDINO COMMUNITY COLLEGE

SYSTEM: GENERAL EXHAUST FANS:

	POINT NAME	HARDWARE OUTPUT DIGITAL: START/STOP	HARDWARE OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	HARDWARE OUTPUT DIGITAL: LOCAL ALARM ANNUNCIATOR	HARDWARE OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	HARDWARE INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	HARDWARE INPUT DIGITAL: FLOW SWITCH	HARDWARE INPUT DIGITAL: AUXILIARY CONTACT/STATUS	HARDWARE INPUT DIGITAL: CURRENT SENSING RELAY	HARDWARE INPUT DIGITAL: SMOKE DETECTOR	HARDWARE INPUT DIGITAL: HEAT DETECTOR	HARDWARE INPUT DIGITAL: CONTACT CLOSURE	HARDWARE INPUT DIGITAL: PULSE METER	HARDWARE INPUT DIGITAL: LOCAL ZONE OVERRIDE	HARDWARE INPUT ANALOG: TEMPERATURE INPUT	HARDWARE INPUT ANALOG: RELATIVE HUMIDITY INPUT	HARDWARE INPUT ANALOG: PRESSURE INPUT	HARDWARE INPUT ANALOG: FLOW INPUT	HARDWARE INPUT ANALOG: POSITION INPUT	HARDWARE INPUT ANALOG: POWER INPUT	HARDWARE INPUT ANALOG: CURRENT INPUT	HARDWARE INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	EXHAUST FAN START/STOP	5																					1	
2	EXHAUST FAN PROOF								5															
	POINTS SUBTOTAL:	5			–				5									–					TOTAL EMS POINTS:	10

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

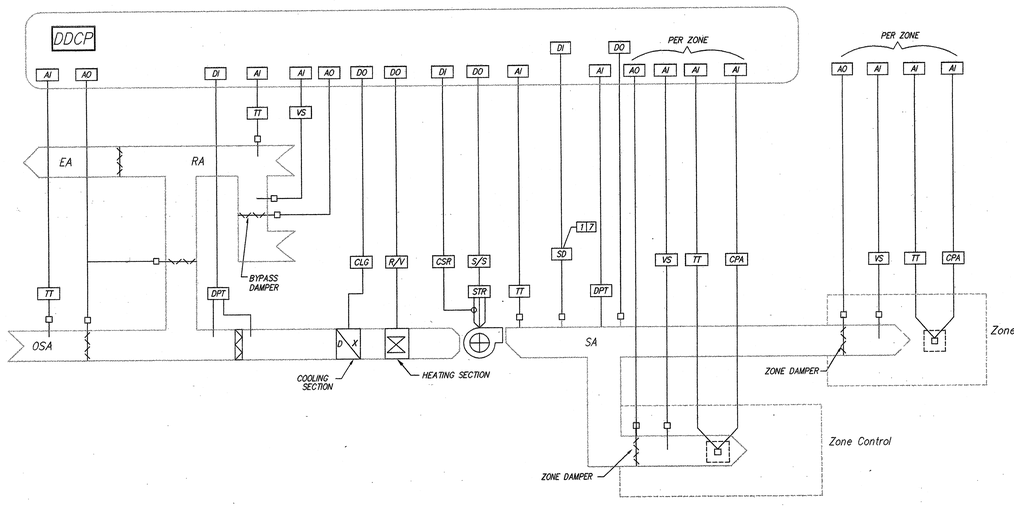
APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

NOTES THIS SHEET:

1. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING AND CONDUIT SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED ELECTRAL CONTRACTOR.
2. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.
3. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.
4. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.
5. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.
6. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.
7. CONTROLS CONTRACTOR SHALL PROVIDE AND INSTALL TRANSFORMERS FOR BYPASS & ZONE DAMPERS, AND ALL LOW VOLTAGE WIRING AND CONDUIT.
8. ZONE DAMPERS SHALL BE PRESSURE INDEPENDENT WITH FLOW SENSOR. PROVIDE AND INSTALL A FLOW SENSOR AT EACH BYPASS DAMPER TO MONITOR BYPASS CFM.

EXHAUST FAN DDC DIAGRAM

SCALE NTS 1



DDC INPUT/OUTPUT POINTS CHART

CAMPUS CENTER

FACILITY: SAN BERNARDINO COMMUNITY COLEGE

SYSTEM: MULTI– ZONE ROOFTOP PACKAGE UNITS

	POINT NAME	HARDWARE OUTPUT DIGITAL: START/STOP	HARDWARE OUTPUT DIGITAL: COOLING COMPRESSOR	HARDWARE OUTPUT DIGITAL: HEATING STAGE 1/2	HARDWARE OUTPUT DIGITAL: REVERSING VALVE	HARDWARE OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	HARDWARE INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	HARDWARE INPUT DIGITAL: FLOW SWITCH	HARDWARE INPUT DIGITAL: AUXILIARY CONTACT/STATUS	HARDWARE INPUT DIGITAL: CURRENT SENSING RELAY	HARDWARE INPUT DIGITAL: SMOKE DETECTOR	HARDWARE INPUT DIGITAL: HEAT DETECTOR	HARDWARE INPUT DIGITAL: CONTACT CLOSURE	HARDWARE INPUT DIGITAL: PULSE METER	HARDWARE INPUT DIGITAL: LOCAL ZONE OVERRIDE	HARDWARE INPUT ANALOG: TEMPERATURE INPUT	HARDWARE INPUT ANALOG: RELATIVE HUMIDITY INPUT	HARDWARE INPUT ANALOG: PRESSURE INPUT	HARDWARE INPUT ANALOG: FLOW INPUT	HARDWARE INPUT ANALOG: POSITION INPUT	HARDWARE INPUT ANALOG: POWER INPUT	HARDWARE INPUT ANALOG: CURRENT INPUT	HARDWARE INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	OUTSIDE AIR TEMPERATURE TRANSMITTER															9								
2	OSA ECONOMIZER				9																			12
3	FILTER ALARM						9																5	
4	RETURN AIR TEMPERATURE TRANSMITTER															9							5	
5	BYPASS DAMPER				10														10				5	
6	COOLING START/STOP		9																				2	10
7	SUPPLY AIR FAN STATUS									9													1	
8	SUPPLY AIR FAN START/STOP	9																					1	
9	SUPPLY AIR TEMPERATURE TRANSMITTER															9							5	
10	STATIC PRESSURE TRANSMITTER																9						5	
11	ZONE DAMPER				29													29					5,6	
12	ZONE THERMOSTAT															29								
13	CONTROL POINT ADJUST																					29		
14	HEATING START/ STOP			9																			2	10
15	SMOKE DETECTOR												4										4	
	POINTS SUBTOTAL:	27			27		22									132							TOTAL EMS POINTS:	208

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2. SMOKE DETECTOR REQUIRED FOR AC–2, AC–8, AC–9, & AC–10.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM
9. CHILLER ALARM
10. EMERGENCY GENERATOR ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

NOTES THIS SHEET:

[1] ALL SYSTEMS PROVIDING AIR IN EXCESS OF 2000 CFM SHALL BE PROVIDED WITH DUCT MOUNTED SMOKE DETECTORS. SMOKE DETECTORS SHALL BE HARD WIRED TO SCHOOL FIRE ALARM SYSTEM AND SHALL AUTOMATICALLY SHUT DOWN THE AIR MOVING EQUIPMENT WHEN PRODUCTS OF COMBUSTION ARE DETECTED.

2. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.

3. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.

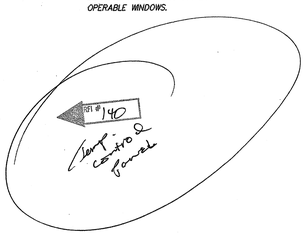
4. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.

5. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.

6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.

[7] DUCT MOUNTED TYPE SMOKE DETECTORS APPLICABLE TO A/C UNITS :AC–2, AC–8, AC–9, & AC–10

8. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.



MULTI-ZONE AC UNITS DDC SCHEMATIC

SCALE NTS 2

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F: 949.660.1046

Kitchen Consultant
Mace Murphy Design Group
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REGISTERED PROFESSIONAL ENGINEER — RONALD FUNG — No. 24311 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KENNETH BLUROCK — No. C009332 — 01-31-05 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-105114
AC ELS SS
DATE OCT 11 2005

SUBMITTALS

SBVC
CAMPUS CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

JAN 06 2006

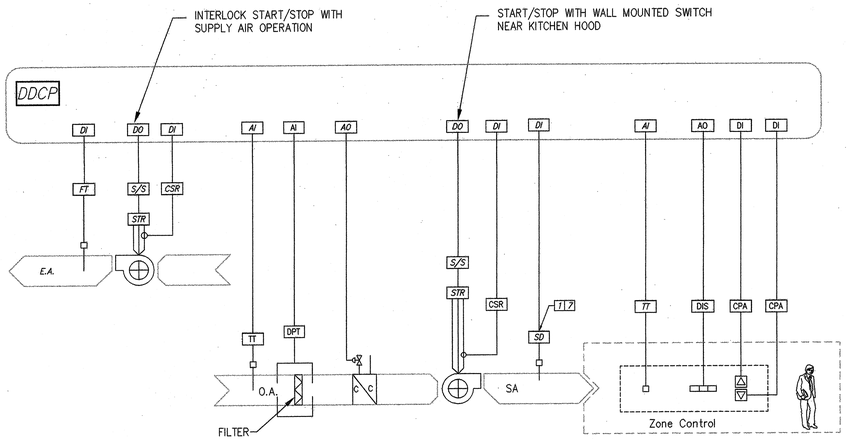
BERNARD BROS., INC.

MECHANICAL DDC SCHEMATIC DIAGRAM

AS-BUILTS

PROJECT NO.: 00-04
SCALE: NONE
DATE: JAN. 31, 2003

M5.01



DDC INPUT/OUTPUT POINTS CHART

CAMPUS CENTER

FACILITY: SAN BERNARDINO COMMUNITY COLLEGE

SYSTEM: MAKE-UP AIR UNIT WITH EXHAUST FAN

	POINT NAME	OUTPUT DIGITAL: START/STOP	OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	OUTPUT DIGITAL: COOLING COMPRESSOR	OUTPUT DIGITAL: HEATING STAGE 1	OUTPUT DIGITAL: HEATING STAGE 2	OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	INPUT DIGITAL: FLOW SWITCH	INPUT DIGITAL: AUXILIARY CONTACT/STATUS	INPUT DIGITAL: CURRENT SENSING RELAY	INPUT DIGITAL: SMOKE DETECTOR	INPUT DIGITAL: HEAT DETECTOR	INPUT DIGITAL: CONTACT CLOSURE	INPUT DIGITAL: PULSE METER	INPUT DIGITAL: LOCAL ZONE OVERRIDE	INPUT ANALOG: TEMPERATURE INPUT	INPUT ANALOG: RELATIVE HUMIDITY INPUT	INPUT ANALOG: PRESSURE INPUT	INPUT ANALOG: FLOW INPUT	INPUT ANALOG: POSITION INPUT	INPUT ANALOG: POWER INPUT	INPUT ANALOG: CURRENT INPUT	INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	OSA TEMPERATURE TRANSMITTER																7									
2	OSA ECONOMIZER MODE						7																			
3	FILTER STATUS							7																	7	
4	NOT USED																									
5	NOT USED																									
6	MAKE UP WATER CONTROL VALVE																									
7	EXHAUST FAN START/STOP			7																						
8	EXHAUST FAN PROOF							7		7																
9	SUPPLY AIR FAN PROOF										7														1	
10	SUPPLY AIR FAN START/STOP	7																								9,10
11	SUPPLY AIR STATIC PRESSURE																			7						
12	DUCT MOUNTED SMOKE DETECTOR												4												4	
13	SUPPLY AIR TEMPERATURE TRANSMITTER																	7								
14	NOT USED																									
15	SPACE TEMPERATURE SENSOR																	7								
16	CONTROL POINT ADJUST																							7		
	POINTS SUBTOTAL:		14			7			32									28							TOTAL EMS POINTS:	81

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2. SMOKE DETECTOR REQUIRED FOR MUA-1, MUA-2, MUA-3, MUA-5.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

NOTES THIS SHEET:

[1] ALL SYSTEMS PROVIDING AIR IN EXCESS OF 2000 CFM SHALL BE PROVIDED WITH DUCT MOUNTED SMOKE DETECTORS. SMOKE DETECTORS SHALL BE HARD WIRED TO SCHOOL FIRE ALARM SYSTEM AND SHALL AUTOMATICALLY SHUT DOWN THE AIR MOVING EQUIPMENT WHEN PRODUCTS OF COMBUSTION ARE DETECTED.

2. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.

3. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.

4. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.

5. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.

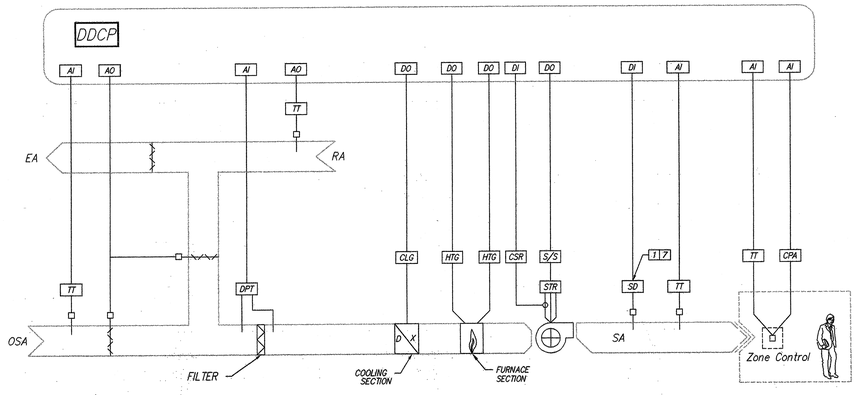
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.

[7] DUCT MOUNTED TYPE SMOKE DETECTORS APPLICABLE TO MUA UNITS : MUA-1, MUA-2, MUA-3, MUA-5.

8. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.

KITCHEN MAKE-UP AIR UNIT DDC SCHEMATIC DETAIL

SCALE NONE | 1



DDC INPUT/OUTPUT POINTS CHART

CAMPUS CENTER

FACILITY: SAN BERNARDINO COMMUNITY COLLEGE

SYSTEM: SINGLE ZONE ROOFTOP PACAKAGE UNITS

	POINT NAME	OUTPUT DIGITAL: START/STOP	OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	OUTPUT DIGITAL: COOLING COMPRESSOR	OUTPUT DIGITAL: HEATING STAGE 1	OUTPUT DIGITAL: HEATING STAGE 2	OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	INPUT DIGITAL: FLOW SWITCH	INPUT DIGITAL: AUXILIARY CONTACT/STATUS	INPUT DIGITAL: CURRENT SENSING RELAY	INPUT DIGITAL: SMOKE DETECTOR	INPUT DIGITAL: HEAT DETECTOR	INPUT DIGITAL: CONTACT CLOSURE	INPUT DIGITAL: PULSE METER	INPUT DIGITAL: LOCAL ZONE OVERRIDE	INPUT ANALOG: TEMPERATURE INPUT	INPUT ANALOG: RELATIVE HUMIDITY INPUT	INPUT ANALOG: PRESSURE INPUT	INPUT ANALOG: FLOW INPUT	INPUT ANALOG: POSITION INPUT	INPUT ANALOG: POWER INPUT	INPUT ANALOG: CURRENT INPUT	INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	OSA TEMPERATURE TRANSMITTER																7									
2	OSA ECONOMIZER MODE						7																			
3	FILTER STATUS							7																	7	
4	RETURN AIR TEMPERATURE TRANSMITTER																7									
5	NOT USED																									
6	COMPRESSOR START/STOP			7																						
7	1st STAGE HEATING START/STOP				7																					
8	2nd STAGE HEATING START/ STOP					7																				
9	SUPPLY AIR FAN PROOF												7												1	
10	SUPPLY AIR FAN START/STOP	7																								9,10
11	SUPPLY AIR STATIC PRESSURE																			7						
12	DUCT MOUNTED SMOKE DETECTOR												3												4	
13	SUPPLY AIR TEMPERATURE TRANSMITTER																	7								
14	NOT USED																									
15	SPACE TEMPERATURE SENSOR																	7								
16	CONTROL POINT ADJUST																							7		
	POINTS SUBTOTAL:		28			7			17									42							TOTAL EMS POINTS:	94

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2. SMOKE DETECTOR REQUIRED FOR AC-1, AC-4, AC-12.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

NOTES THIS SHEET:

[1] ALL SYSTEMS PROVIDING AIR IN EXCESS OF 2000 CFM SHALL BE PROVIDED WITH DUCT MOUNTED SMOKE DETECTORS. SMOKE DETECTORS SHALL BE HARD WIRED TO SCHOOL FIRE ALARM SYSTEM AND SHALL AUTOMATICALLY SHUT DOWN THE AIR MOVING EQUIPMENT WHEN PRODUCTS OF COMBUSTION ARE DETECTED.

2. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.

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4. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.

5. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.

6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.

[7] DUCT MOUNTED TYPE SMOKE DETECTORS APPLICABLE TO A/C UNITS : AC-1- AC-4, AC-12.

8. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.

SINGLE ZONE PACKAGED UNIT DDC SCHEMTAIC DETAIL

SCALE NONE | 2

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REGISTERED PROFESSIONAL ENGINEER — DONALD FUNDAMENTAL — No. M 24681 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — STEVEN ROBERT EHRLICH — No. C-20933 — 01-31-05 RENEWAL DATE — STATE OF CALIFORNIA

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APPL. 04-105114
AC RLS PS
DATE OCT 18 01 2005

SUBMITTALS

SBVC
CAMPUS CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

RECEIVED
JAN 06 2004
BERNARD BROS., INC.

MECHANICAL DDC SCHEMATIC DIAGRAM

AS-BUILTS

PROJECT NO.: 00-04
SCALE: NONE
DATE: JAN. 31, 2003

M5.02

ROOFTOP PACKAGED UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NO.	SA FAN CFM	MIN. O.S.A. CFM	COOLING CAPACITY (ARI) NOMINAL TOTAL TONS	SENSIBLE MBTU/HR	COND. °F EDB	EVAP. °F EWB	ESP IN. WG.	HEATING INPUT/ OUTPUT MBTU/HR 1st STAGE	2nd STAGE	AFUE (%)	ELECTRICAL MCA	MOCP	V/PH/HZ	EER	FILTER SIZE [IN] NO. & SIZE	APPROX. OPERATING WEIGHT	EQUIPMENT DIMENSIONS L X W X H	DISCHARGE PATTERN	APPROX. CURB WEIGHT (LBS)	POWER EXHAUST/ECONOMIZER WEIGHT (LBS.)	V/PH/HZ	FL AMPS	HP	REMARKS	EQUIP. NO.
AC 1	CARRIER 48HJD006	1840	485	5	43.8	95	67	0.70	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 1
AC 2	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 2
AC 3	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 3
AC 4	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 4
AC 5	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 5
AC 6	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 6
AC 7	CARRIER 48HJD005	1395	120	4	33.6	85	67	0.72	50/41	72/59	82	22.5	30	208/3ø/60	11.0	2 16x25x2	540	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 7
AC 8	CARRIER 48HJD007	2100	655	6	55.3	95	67	0.65	50/41	72/59	82	32.8	40	208/3ø/60	11.0	2 16x25x2	615	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 8
AC 9	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 9
AC 10	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 10
AC 11	CARRIER 48HJD006	1800	485	5	43.8	95	67	0.65	50/41	72/59	82	28.9	35	208/3ø/60	11.0	2 16x25x2	560	73" X 45" X 34"	VERTICAL	174	185	208/3/60	2.3	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION, ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 1, M5.1.	AC 11

NOTES: ALL UNITS SHALL BE PROVIDED WITH FACTORY EQUIPMENT RAIL, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS AND CANFAB CF4850HJO- COASTAL DUTY BAROMETRIC RELIEF ECONOMIZER..* N/A = NOT APPLICABLE ** MIN. O.S.A. REQUIREMENT AT FULL OCCUPANCY

MAKE-UP AIR UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NUMBER	AREA SERVED (ROOM NUMBER)	SUPPLY AIR SIDE S.A. FAN CFM	ESP IN. WG.	MOTOR HP	V/PH/HZ	EXHAUST AIR SIDE E.A. FAN CFM	ESP IN. WG.	MOTOR HP	V/PH/HZ	HEATING INPUT/ OUTPUT MBTU/HR INPUT	OUTPUT	AFUE (%)	COOLING EWB	EDB	LEAVING AIR TEMP	EQUIPMENT DIMENSIONS L x W x H	APPROXIMATE OPERATING WEIGHT (LBS.)
MUA 1	LOGIC AIR LMU-2-A-3600-80-1DG-EVC-1-MSD	KITCHEN A109	1600	1.0	1.5	208/1/60	2000	2.25	1.5	208/1/60	100	80	80	73	98	75	253"x44"x54"	1,900

NOTE: PROVIDE WITH 30 % FLAT FILTER, EVAPORATIVE COOLER W/ 12" CELDEK, INDIRRECT HEATING, RAIN HOOD, BIRD SCREEN, MFR'S VENTILATED ROOF CURB ON EXHAUST SECTION, MW SAUSEE SPRING ISOLATION CURB FOR SUPPLY SECTION, WALL SWITCH. SEE 2/M5.1 FOR ANCHORAGE. ~~SUPPLY SECTION WALL SWICH SEE DETAIL 2 M5.1 FOR ANCHORAGE~~

EXHAUST FAN SCHEDULE

EQUIP. NO.	MANUFACTURER MODEL NUMBER	AREA (S) SERVED	TYPE	CFM	EXTERNAL STATIC PRESSURE (E.S.P.)	MOTOR RPM	DRIVE	SONES	MOTOR WATTS	MOTOR (V/PH/HZ)	APPROX. OPER. WEIGHT (LBS.)	ACCESSORIES/REMARKS
EF 1, EF 4, EF 5	GREENHECK SP-9	ROOMS A110, B128, B127	CEILING HUNG CABINET	150	0.45	1,050	DIRECT	3.5	204	115/1/60	10	INSTALL PER MANUFACTURES INSTRUCTIONS. PROVIDE WITH GRS-10 VENTILATOR WITH CURB, AND BACKDRAFT DAMPERB. SEE DETAIL 5, M5.4 FOR ANCHORAGE
EF 2	GREENHECK SP-9	WOMENS RM. A113	CEILING HUNG CABINET	150	0.25	1,050	DIRECT	3.5	204	115/1/60	10	INSTALL PER MANUFACTURES INSTRUCTIONS. PROVIDE WITH GRS-10 VENTILATOR WITH CURB, AND BACKDRAFT DAMPERB. SEE DETAIL 5, M5.4 FOR ANCHORAGE
EF 3	GREENHECK SP-9	DIAPER DUMP RM. 134	CEILING HUNG CABINET	150	0.25	1,050	DIRECT	3.5	204	115/1/60	10	INSTALL PER MANUFACTURES INSTRUCTIONS. PROVIDE WITH GRS-10 VENTILATOR WITH CURB, AND BACKDRAFT DAMPERB. SEE DETAIL 5, M5.4 FOR ANCHORAGE
EF 6	GREENHECK CUBE-098A	KITCHEN RM A108	ROOF MOUNTED UPBLAST	600	0.50	1,725	BELT	9.5	1/4	115/1/60	52	PROVIDE AND INSTALL MANUFACTURES 40" NFPA APPROVED ROOF CURB, GREASE CONTAINER, & HINGE KIT. SEE DETAIL 3, M5.4 FOR ANCHORAGE.
EF 7, EF 8, EF 9, EF 10	GREENHECK SP-9	TOILET RM A101, 102, 103, & 104	CEILING HUNG CABINET	150	0.45	1,050	DIRECT	3.5	204	115/1/60	10	INSTALL PER MANUFACTURES INSTRUCTIONS. PROVIDE WITH GRS-10 VENTILATOR WITH CURB, AND BACKDRAFT DAMPERB. SEE DETAIL 5, M5.4 FOR ANCHORAGE
EF 11, EF 12, EF 13, EF 14	GREENHECK SP-9	TOILET RM A105, 106, B128, & 129	CEILING HUNG CABINET	150	0.45	1,050	DIRECT	3.5	204	115/1/60	10	INSTALL PER MANUFACTURES INSTRUCTIONS. PROVIDE WITH GRS-10 VENTILATOR WITH CURB, AND BACKDRAFT DAMPERB. SEE DETAIL 5, M5.4 FOR ANCHORAGE

SYMBOLS LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S.A.	SUPPLY AIR
	R.A.	RETURN AIR
	E.A.	EXHAUST AIR
		FLEX DUCT
		DUCT RISE/ DUCT DROP
		DUCT SOUND INSULATION (ALL DUCTWORK WITH INTERNAL LINING SHALL BE OF DOUBLE WALL CONSTRUCTION).
		TRANSITION FROM SQUARE TO ROUND
		ACCESS DOOR/HATCH
R		DUCT RISE
D		DUCT DROP
SD	SD	SMOKE DETECTOR, DUCT TYPE SYSTEM
T		THERMOSTAT
	M.V.D.	MANUAL VOLUME DAMPER
	P.O.C. / P.O.R.	POINT OF CONNECTION / POINT OF REMOVAL
S	S	WALL SWITCH, SPST
XX/XX		EQUIPMENT IDENTIFICATION / EQUIPMENT NUMBER
	FD	FIRE DAMPER
	SFD	SMOKE FIRE DAMPER
	VAV	VAV TERMINAL BOX WITH REHEAT COIL
		TURNING VANES

NOTE: NOT ALL SYMBOLS OR ABBREVIATONS MAY BE USED THIS PROJECT.

SCHOOL EQUIPMENT ANCHORAGE SEISMIC BRACING REQUIREMENTS

ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT SHOWN ON DRAWINGS ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND DSA'S DISTRICT STRUCTURAL ENGINEER PRIOR TO INSTALLATION AND INSPECTION BY THE THE PROJECT INSPECTOR.

THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 1998 CBC SECTION 1632A AND TABLE 16A-O OF THE VOL. 2, TITLE 14, 1998 CBC.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR CHANGE ORDER APPROVED BY THE OFFICE OF STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE OFFICE OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.

UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

DDC SYMBOLS LEGEND

SYMBOL	ABBR.	DESCRIPTION	SYMBOL	ABBR.	DESCRIPTION
AI	AI	ANALOG IN	H/L	H/L	HIGH/LOW SPEED
AO	AO	ANALOG OUT	MCC	MCC	MOTOR CONTROL CENTER
ASC	ASC	APPLICATION SPECIFIC CONTROLLER	PT	PT	PRESSURE TRANSMITTER
COM	COM	COMMUNICATIONS PORT	S	S	STATUS SIGNAL
CPA	CPA	CONTROL POINT ADJUST	S/S	S/S	START/STOP
CSR	CSR	CURRENT SENSING RELAY	STR	STR	MOTOR STARTER
DDCP	DDCP	DIRECT DIGITAL CONTROL PANEL	TT	TT	TEMPERATURE TRANSMITTER
DI	DI	DIGITAL IN	VSD	VSD	VARIABLE SPEED DRIVE
DO	DO	DIGITAL OUT	I/P	IP	CURRENT PRESSURE TRANSDUCER
DPS	DPS	DIFFERENTIAL PRESSURE SWITCH	DPT	DPT	DIFFERENTIAL PRESSURE TRANSMITTER
FS	FS	FLOW SWITCH	SD	SD	SMOKE DTECTOR
FT	FT	FLOW TRANSMITTER	OVR	OVR	OVERRIDE

GENERAL NOTES

1. THESE DRAWINGS AND SPECIFICATIONS ARE DIAGRAMMATIC TO THE EXTENT THAT SOME ITEMS SHOWN ON PLANS ARE IN A MANNER TO PROVIDE CLARITY ONLY. ACTUAL FIELD ROUTING AND INSTALLATION SHALL BE PROVIDED IN COORDINATION WITH OTHER TRADES AND ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL PROPERLY INTERFACE WITH STRUCTURE AND ALL OTHER SYSTEMS TO ACCOMPLISH THE INTENT OF THIS DESIGN. LOCATIONS OF HVAC EQUIPMENT AND DUCTING MAY VARY DUE TO ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL NOT SCALE OFF OF THESE DRAWINGS TO PLACE OR OTHERWISE LOCATE EQUIPMENT HANGERS, ANCHORS OR ANY OTHER SUPPORT SYSTEM. VERIFY ALL DIMENSIONS, EQUIPMENT WEIGHTS, LOCATIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND ORDERING MATERIALS. MAKE ALL NECESSARY ACCOMMODATIONS TO PROVIDE FOR A COMPLETE AND OPERATING SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
2. COORDINATE WORK WITH ALL TRADES PRIOR TO START OF WORK.
3. WHEN CONFLICTS OCCUR BETWEEN TRADES, IMMEDIATELY NOTIFY THE ARCHITECT.
4. INSTALL ALL THERMOSTATS AT 4'-0" ABOVE FINISHED FLOOR WHERE INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ARCHITECT. SEE DETAIL 4, M5.3.
5. INSTALL DUCTWORK & PIPING AS HIGH AS POSSIBLE. WHERE DUCTWORK & PIPING ARE TO BE LOCATED IN SAME AREA, PIPING SHALL BE INSTALLED BELOW DUCTWORK.
6. DUCT WORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN SMACNA DESIGN GUIDE FOR SEISMIC RESTRAINTS, 2000 SUPPLEMENT LEVEL "AA".
7. FIXTURES AND EQUIPMENT PROVIDED SHALL BE IN COMPLIANCE WITH CALIFORNIA ENERGY COMMISSION REQUIREMENTS AND CERTIFICATIONS.
8. INCLUDE STATEMENTS INDICATING THAT THE INSTALLED DEVICES CONFORM TO THE STATE OF CALIFORNIA APPLIANCE STANDARDS, OF TITLE 24, AND THESE PLANS AND SPECIFICATIONS.
9. THE AIR DISTRIBUTION DUCTS SHALL BE CONSTRUCTED, INSTALLED AND SEALED AS PROVIDED IN SMACNA DESIGN GUIDE FOR DUCTWORK CONSTRUCTION AND SEISMIC RESTRAINTS, LATEST EDITION. INSULATION SHALL BE PER TITLE 24, 2001 A3970
10. FAN SYSTEMS EXHAUSTING AIR FROM THE BUILDING SHALL BE PROVIDED WITH BACK DRAFT DAMPERS.
11. CLEARANCES SHALL BE PER MANUFACTURER'S LISTINGS ON ALL MECHANICAL AND ELECTRICAL EQUIPMENT. FIELD COORDINATE DIMENSIONS PRIOR TO COMMENCEMENT OF WORK.
12. SYSTEMS PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR-MOVING EQUIPMENT UPON DETECTION OF SMOKE IN THE MAIN SUPPLY AIR DUCT SERVED BY SUCH EQUIPMENT. SMOKE DETECTORS SHALL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT AND SHALL COMPLY WITH THE CALIFORNIA BUILDING CODE. AND SHALL BE LABELED BY AN APPROVED AGENCY FOR AIR DUCT INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES, AND HUMIDITIES OF THE SYSTEM. THE SMOKE DETECTORS REQUIRED SHALL BE SUPERVISED BY THE FIRE ALARM SYSTEM AND SHALL ACTIVATE THE FIRE ALARM SYSTEM. (SECTION 608, CMC)
13. SMOKE DETECTION REQUIRED BY SECTION 608 CMC SHALL BE BY A SMOKE DETECTOR COMPLYING WITH NFPA 72 WHICH WILL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT, INSTALLED IN THE MAIN SUPPLY AIR DUCT. ACTIVATION OF DETECTOR SHALL CAUSE THE AIR MOVING EQUIPMENT TO AUTOMATICALLY SHUT DOWN AND ACTIVATE THE FIRE ALARM SYSTEM. (S38)
14. MECHANICAL WORK SHALL COMPLY WITH T24 PART 4 CCR.
15. PROVIDE AND INSTALL OPPOSED BLADE BALANCING DAMPERS FOR ALL DIFFUSERS, GRILLES, AND REGISTERS INSTALLED IN RIGID CEILINGS. ALL OTHER INSTALLATIONS SHALL HAVE MANUAL VOLUME DAMPERS INSTALLED.
16. PANELS OR ENCLOSURES INTENDED FOR OUTSIDE APPLICATIONS SHALL BE GASKETED NEMA CLASS 3R.
17. HVAC EQUIPMENT CURBS SHALL BE INSTALLED TO MATCH ROOF SLOPE TO PROVIDE FOR A COMPLETELY LEVEL INSTALLATION. ALL SUCH CURBS SHALL ALSO BE ORDERED AT THE VERY MINIMUM HEIGHT REQUIRED TO ACCOMPLISH A COMPLETELY LEVEL INSTALLATION. TOP OF CURB SHALL BE NO LESS THAN 8" ABOVE FINISHED ROOF.
18. COORDINATE CEILING DIFFUSER, SIDE WALL REGISTER, AND OTHER DEVICE EDGE CONDITIONS WITH CEILING CONDITIONS AND LIGHTING.
19. LOCATE CEILING DIFFUSERS AND SIDE WALL REGISTERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS. WHERE NOT SHOWN IMMEDIATELY NOTIFY THE ARCHITECT. COORDINATE WITH ELECTRICAL, CEILING AND ALL OTHER AFFECTED CONTRACTORS FOR ALIGNMENT WITH CEILING GRIDS, LIGHT FIXTURES AND OTHER OBSTACLES SO AS TO PROVIDE FOR A PROPER INSTALLATION.
20. DUCT MOUNTED SMOKE DETECTORS SHALL BE LOCATED WITHIN THE BUILDING ENVELOPE PER CODE. PROVIDE AND INSTALL ACCESS DOORS FOR ALL SMOKE FIRE DAMPERS AND DUCT MOUNTED SMOKE DETECTORS MINIMUM SIZE OF 24" X 24". COORDINATE SELECTION AND COLORS WITH ARCHITECT. COORDINATE MASKING AND PAINTING WITH PAINTING CONTRACTOR.
21. HVAC UNITS SHALL BE PROVIDED WITH ALL REQUIRED COMPONENTS AND SYSTEM CONTROLS SO AS TO INTEGRATE INTO EXISTING CAMPUS DDC COMMUNICATIONS. SEE SPECIFICATIONS.
22. HVAC EQUIPMENT DIMENSIONS AND MODEL NUMBERS SHALL BE VERIFIED WITH MANUFACTURER PRIOR TO ORDERING OF ANY EQUIPMENT, EQUIPMENT CURBS OR ASSOCIATED MATERIALS.
23. INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS SHALL HAVE A FLAME-SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE-DENSITY RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE ASSEMBLY INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED (SEC. 604.3, CMC).
24. AIR FILTERS SHALL BE A STATE FIRE MARSHALL APPROVED AND LISTED TYPE. PERFORMED FILTERS HAVING COMBUSTIBLE FANNING SHALL BE TESTED AS A COMPLETED ASSEMBLY. AIR FILTERS IN ALL OCCUPANCIES SHALL BE CLASS 2 OR BETTER (AS SHOWN IN STATE FIRE MARSHALL LISTING). FILTERS SHALL BE ACCESSIBLE TO CLEANING OR REPLACEMENT, AND BE OF A STANDARD SIZE.
25. CONTROLS CONTRACTOR SHALL PROVIDE AND INSTALL NECESSARY HARDWARE, SOFTWARE, WIRING AND CONDUIT TO REQUIRED COMPONENTS TO PROVIDE FOR A COMPLETE AND FUNCTIONING ENERGY MANAGEMENT SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
26. UNDER NO CIRCUMSTANCE SHALL THE DUCT GAUGE BE LESS THAN 26 GAUGE.
27. DIFFUSERS, GRILLS AND REGISTERS SHALL BE MANUFACTURED BY TITUS OR APPROVED EQUAL.
28. THERMOSTAT AND TEMPERATURE SENSOR WIRING SHALL BE INSTALL IN CONDUIT THROUGH OUT PROJECT. THERMOSTATS AND TEMPERATURE SENSORS LOCATED ON EXTERIOR WALLS OR ADJACENT TO UNCONDITIONED SPACES SHALL BE MOUNTED ON 1" THICK FIBERGLASS OR CORK PAD.
29. LOW VOLTAGE CONTROL WIRING AND CONDUIT FOR ROOFTOP UNITS SHALL BE PROVIDED AND INSTALLED BY MECHANICAL. HIGH VOLTAGE SHALL BE BY ELECTRICAL.
30. ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT APPROVED DURING PLAN REVIEW ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND DSA'S DISTRICT STRUCTURAL ENGINEER PRIOR TO INSTALLATION AND INSPECTION BY THE PROJECT INSPECTOR.
31. UNLESS SPECIFICALLY SHOWN ON PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED, NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER OF RECORD AND DSA. PRIOR TO INSTALLATION.

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LICENSED ARCHITECT THOMAS M. BLUROCK NO. C009332 13105 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL #04-104292
AC FLS SS M.K
DATE 2/4/03

REGISTERED PROFESSIONAL ENGINEER MICHAEL J. KOLLER No. 17868 CIVIL STATE OF CALIFORNIA

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submittals

SAN BERNARDINO VALLEY COLLEGE CHILD DEVELOPMENT CENTER

701 S. MT. VERNON AVE. SAN BERNARDINO, CA 92410

Project No: 97-18

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

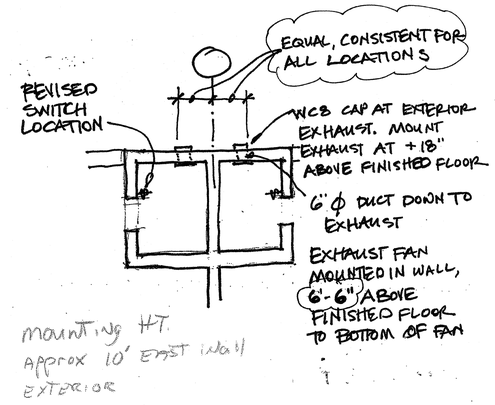
114 SOUTH DEL ROSA DRIVE SAN BERNARDINO, CA 92408

SMENA CONSTRUCTION & DESIGN, INC.
AS-BUILTS
Subcontractor:
Date received:
Approved by:

SYMBOLS LEGENDS AND NOTES

Designed: JWC
Checked: FFF
Drawn: B.K
Date: 01-27-03
Scale: NONE

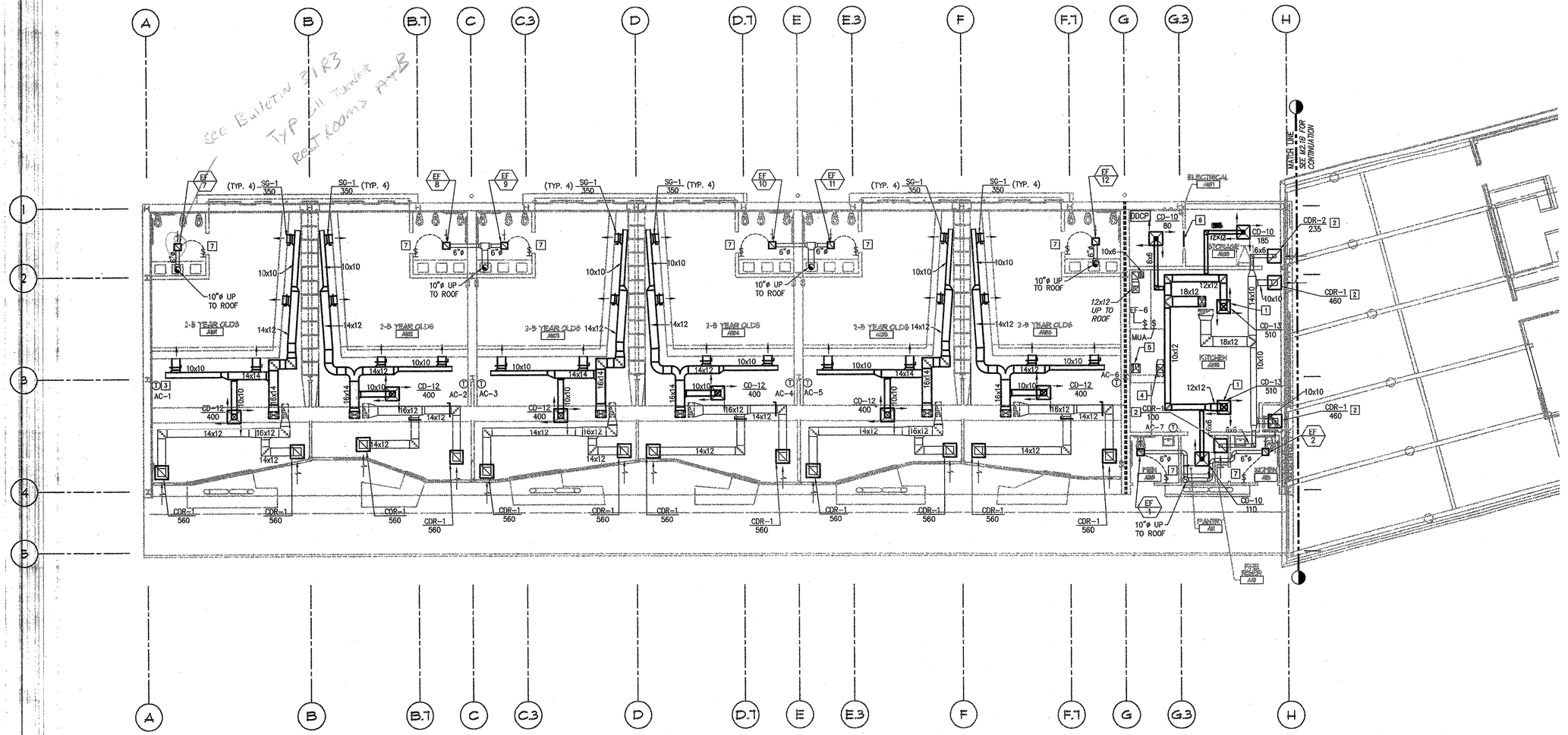
M1.0



TYPICAL CLASSROOM TOILET EXHAUST FAN LOCATION N.T.S.

SBVC CHILD DEVELOPMENT CENTER
BULLETIN 31.R3 12-22-05
PAGE B31.R3-1 04-104292

AS-BUILTS

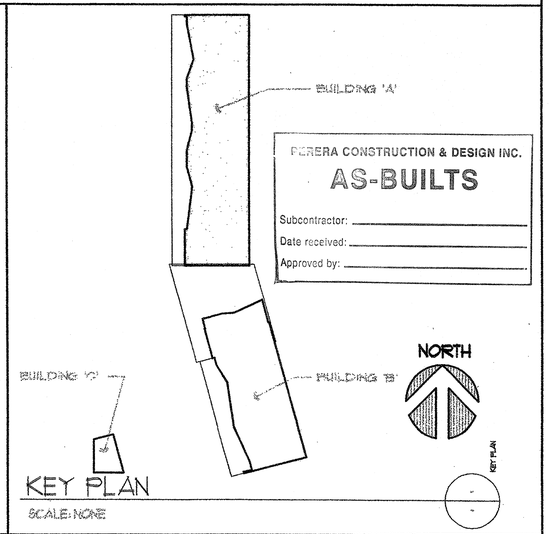


KEYNOTES

1. ADJUST 4-WAY THROW PATTERN TO 3-WAY AS SHOWN. DO NOT DIRECT AIR TOWARDS HOOD.
2. PROVIDE TRANSITION AS REQUIRED FROM DUCT TO RETURN GRILLE AS SHOWN. TYPICAL
3. MOUNTED ON A 1" THICK FIBERGLASS INSULATING BOARD.
4. M.U.A. 30"x10" DUCT TRANSITION TO 15x15" DUCT.
5. E.A. 16"x10" DUCT TRANSITION TO 15x15" DUCT. SEE "K" DWG's FOR ADDITIONAL INFOMATION.
6. PROVIDE AND INSTALL 10"x10" TITUS T-700 DOOR LOUVER. BOTTOM OF LOUVER SHALL BE WITHIN 10" OF THE BOTTOM OF THE DOOR.
7. INTERLOCK FAN WITH WALL MOUNTED LIGHT SWITCH. COORDINATE LOCATION WITH ARCHITECT AND ELECTRICAL DWGS.

DIFFUSER, GRILLE, AND REGISTER SCHEDULE

CALLOUT	DESCRIPTION	AIRFLOW RANGE (CFM)	FACE SIZE (IN)	INLET SIZE (IN)	THROW (FT) @ MIN/MAX CFM	NOISE CRITERIA @ MAX CFM	MODEL	NOTES
CD-1	4-WAY	0 - 175	24x24	6x6	0 - 6	22	TITUS PMC	
CD-2	4-WAY, T-BAR LAYIN	176 - 267	24x24	8x8	5 - 7	22	TITUS PMC	
CD-3	4-WAY T-BAR LAYIN	268 - 350	24x24	10x10	6 - 8	22	TITUS PMC	
CD-4	4-WAY T-BAR LAYIN	351 - 500	24x24	12x12	7 - 9	24	TITUS PMC	
CD-5	4-WAY T-BAR LAYIN	501 - 625	24x24	15x15	7 - 9	22	TITUS PMC	
CD-6	3-WAY T-BAR LAYIN	0 - 175	24x24	6x6	0 - 11	22	TITUS PMC	
CD-7	3-WAY T-BAR LAYIN	176 - 267	24x24	8x8	8 - 12	22	TITUS PMC	
CD-8	2-WAY T-BAR LAYIN	0 - 175	24x24	6x6	0 - 21	22	TITUS PMC	
CD-9	360°, T-BAR LAYIN	390 - 475	24x24	12 ø	11 - 14	16	TITUS TMS	
CD-10	4-WAY, RIGID CIELING	75 - 275	24x24	6x6	8 - 15	28	TITUS MCD	
CD-11	4-WAY, RIGID CIELING	276 - 400	24x24	8x8	15 - 18	28	TITUS MCD	
CD-12	4-WAY, RIGID CIELING	350 - 490	24x24	10x10	17 - 20	28	TITUS MCD	
CD-13	4-WAY, RIGID CIELING	491 - 600	24x24	12x12	18 - 22	25	TITUS MCD	
CDR-1	BAR TYPE RETURN	0 - 800	24x24	22x22	0 - 0	22	TITUS 355RL	1/2" SPACING, 35° DEFLECTION
CDR-2	BAR TYPE RETURN	0 - 600	18x18	16x16	0 - 0	21	TITUS 355RL	1/2" SPACING, 35° DEFLECTION
SG-1	SIDEWALL SUPPLY	225 - 440	14x12	12x10	5 - 31	16	TITUS 300RL	
SG-2	SIDEWALL SUPPLY	445 - 665	20x12	18x10	15 - 21	23	TITUS 300RL	
RG-1	SIDEWALL RETURN	0 - 500	20x12	18x10	0 - 0	25	TITUS 355RL	1/2" SPACING, 35° DEFLECTION
RG-2	SIDEWALL RETURN	0 - 1200	38x20	36x18	0 - 0	20	TITUS 355RL	1/2" SPACING, 35° DEFLECTION



KEY PLAN
SCALE: NONE

PERERA CONSTRUCTION & DESIGN INC.
AS-BUILTS
Subcontractor:
Date received:
Approved by:

THOMAS BLUROCK
ARCHITECTS
720 West 17th St,"C"
Costa Mesa, CA
92627

ph: 949.646.9373
fax: 949.650.1262

LICENSED ARCHITECT THOMAS H. BLUROCK NO. C009332 1-31-05 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL #04-104292
AC. FLS SS M.K
DATE 2/4/03

PROFESSIONAL ENGINEER STATE OF CALIFORNIA

STRUCTURAL ENGINEER
OVE ARUP & PARTNERS
2440 S. Sepulveda Blvd, Ste. 180
Los Angeles, CA 90064
phone: 310.312.1040
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KITCHEN CONSULTANT
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WALNUT, CA 91789
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fax: 909.595.8119

submittals

SAN BERNARDINO VALLEY COLLEGE CHILD DEVELOPMENT CENTER

701 S. MT. VERNON AVE
SAN BERNARDINO, CA 92410

Project No: 97-18

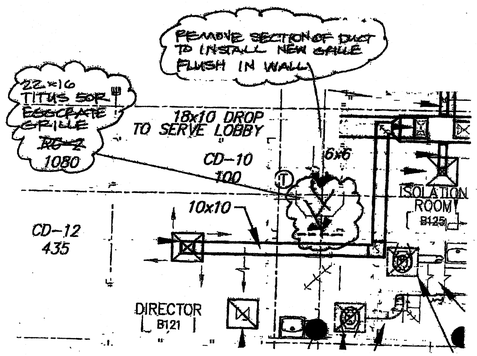
SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

114 SOUTH DEL ROSA DRIVE
SAN BERNARDINO, CA 92408

MECHANICAL FLOOR PLAN BUILDING A

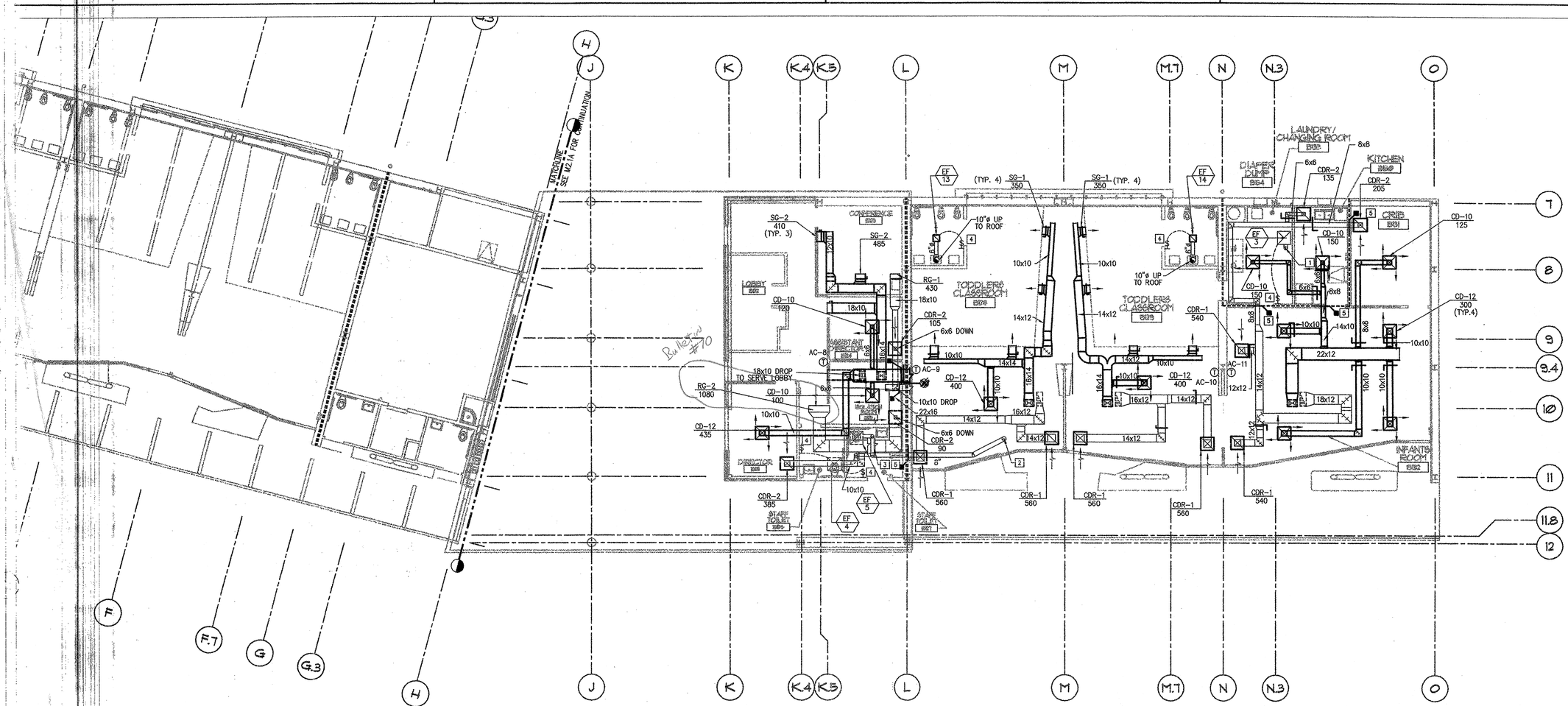
Designed: JWC Checked: PFF
Drawn: BK Date: 01-27-03
Scale: 1/8"=1'-0"

M2.1A



SBNC CHILD DEVELOPMENT CENTER
BULLETIN 70 PAGE B70-1
6.1.06 ADA 104292

AS-BUILTS



KEYNOTES

1. 6" DIA. E.A. UP TO ROOF.
2. 8" DIA. E.A. DUCT TO ROOF.
3. 6" DIA. E.A. DUCT, TYPICAL FOR EF-4 AND 5.
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5. PROVIDE AND INSTALL NEW SMOKE FIRE DAMPER AS REQUIRED WHERE DUCT PENETRATES FIRE RATED WALL. PROVIDE AND INSTALL ALL NECESSARY DUCT FITTINGS AND TRANSITIONS AS REQUIRED TO CONNECT DUCTWORK TO SMOKE/FIRE DAMPER SLEEVE. (TYP.)

DIFFUSER, GRILLE, AND REGISTER SCHEDULE

CALLOUT	DESCRIPTION	AIRFLOW RANGE (CFM)	FACE SIZE (IN)	INLET SIZE (IN)	THROW (FT) @ MIN/MAX CFM	NOISE CRITERIA @ MAX CFM	MODEL	NOTES
CD-1	4-WAY	0 - 175	24x24	6x6	0 - 6	22	TITUS PMC	
CD-2	4-WAY, T-BAR LAYIN	176 - 267	24x24	8x8	5 - 7	22	TITUS PMC	
CD-3	4-WAY T-BAR LAYIN	268 - 350	24x24	10x10	6 - 8	22	TITUS PMC	
CD-4	4-WAY T-BAR LAYIN	351 - 500	24x24	12x12	7 - 9	24	TITUS PMC	
CD-5	4-WAY T-BAR LAYIN	501 - 625	24x24	15x15	7 - 9	22	TITUS PMC	
CD-6	3-WAY T-BAR LAYIN	0 - 175	24x24	6x6	0 - 11	22	TITUS PMC	
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CD-8	2-WAY T-BAR LAYIN	0 - 175	24x24	6x6	0 - 21	22	TITUS PMC	
CD-9	360°, T-BAR LAYIN	390 - 475	24x24	12 ø	11 - 14	16	TITUS TMS	
CD-10	4-WAY, RIGID CIELING	75 - 275	24x24	6x6	8 - 15	28	TITUS MCD	
CD-11	4-WAY, RIGID CIELING	276 - 400	24x24	8x8	15 - 18	28	TITUS MCD	
CD-12	4-WAY, RIGID CIELING	350 - 490	24x24	10x10	17 - 20	28	TITUS MCD	
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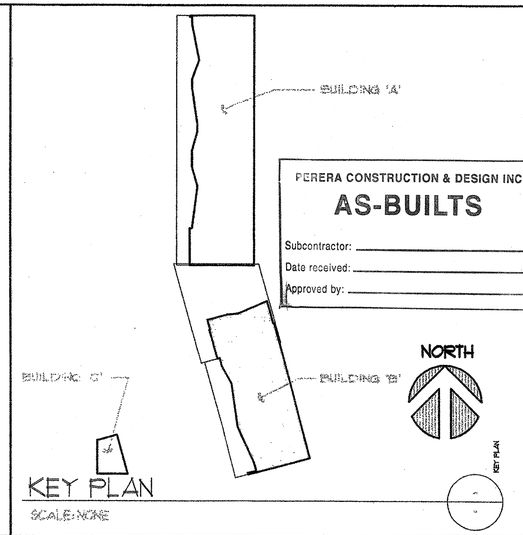

THOMAS BLUROCK
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LICENSED ARCHITECT THOMAS H. BLUROCK No. C008932 31-08 RENEWAL DATE STATE OF CALIFORNIA

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AC FLS VT SS N.V.
DATE 2/4/03

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submittals

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SAN BERNARDINO, CA 92410

Project No: 97-18

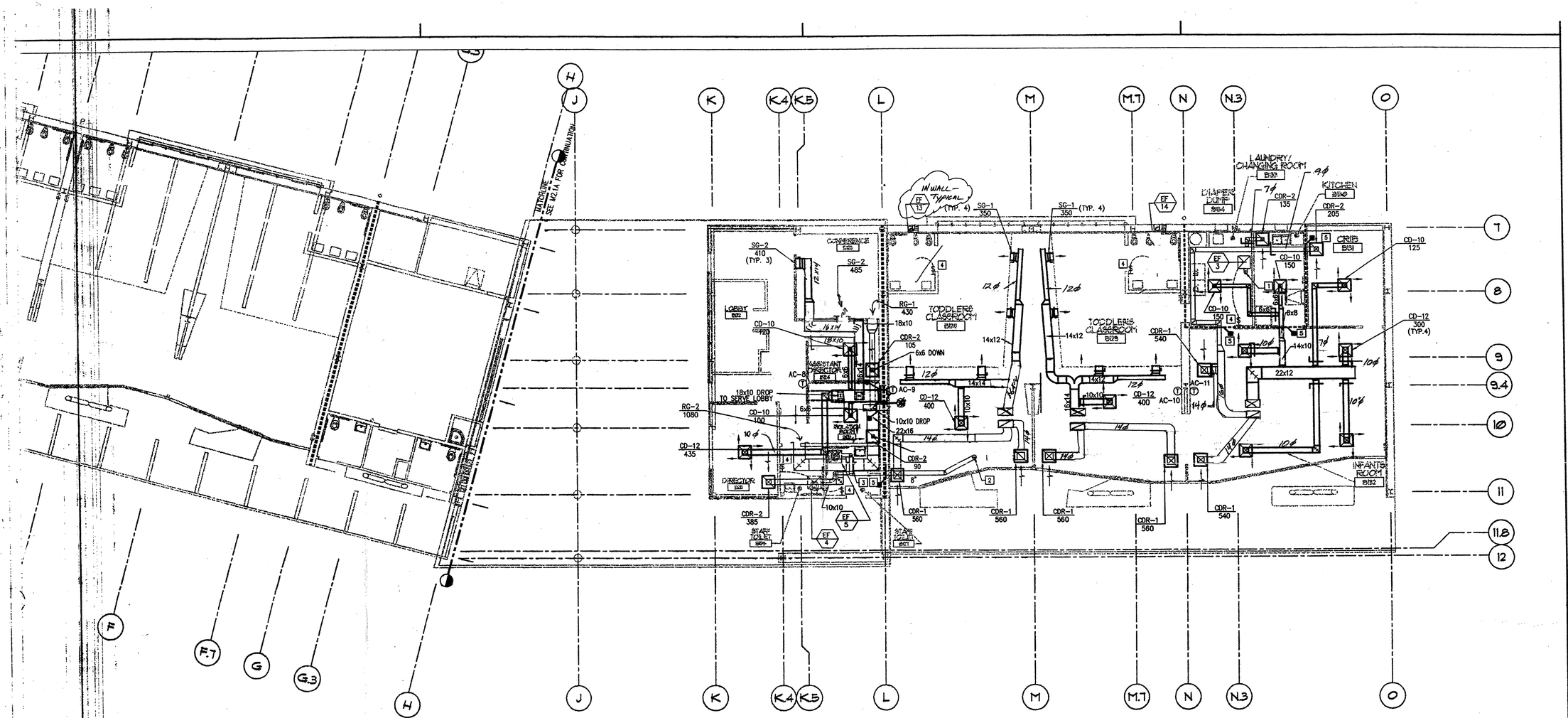
SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

114 SOUTH DEL ROSA DRIVE
SAN BERNARDINO, CA 92408

MECHANICAL FLOOR PLAN BUILDING B

Designed: JWC
Checked: FFF
Drawn: BK
Date: 01-27-03
Scale: 1/8"=1'-0"

M2.1B



ACH MECHANICAL CONTRACTORS, INC.
BY: _____

KEYNOTES

1. 6" DIA. E.A. UP TO ROOF.
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CD-10	4-WAY, RIGID CIELING	75 - 275	24x24	6x6	8 - 15	28	TITUS MCD	
CD-11	4-WAY, RIGID CIELING	276 - 400	24x24	8x8	15 - 18	28	TITUS MCD	
CD-12	4-WAY, RIGID CIELING	350 - 490	24x24	10x10	17 - 20	28	TITUS MCD	
CD-13	4-WAY, RIGID CIELING	491 - 600	24x24	12x12	18 - 22	25	TITUS MCD	
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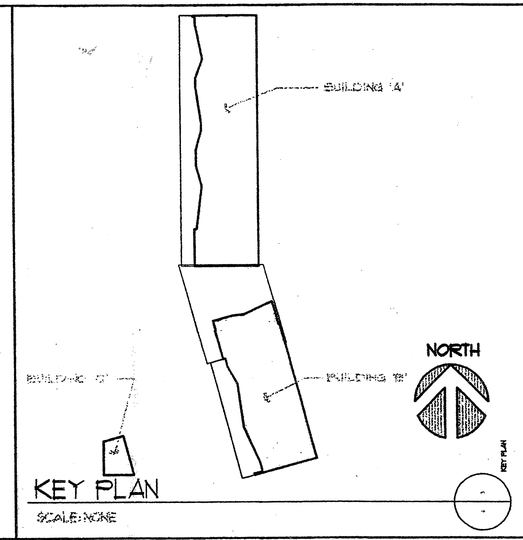


SCALE: NONE

ACH Mechanical Contractors, Inc.
521 11th Street
Redlands, CA. 92374-3520
Phone: (909) 307-2850
Fax: (909) 307-2853
SCL# 780560

PERERA CONSTRUCTION & DESIGN INC.
AS-BUILTS
Subcontractor: ACH - Mechanical
Date received: 10/15/09
Approved by:

AS BUILT DRAWINGS

ACH MECHANICAL CONTRACTORS, INC.
BY:

SAN BERNARDINO VALLEY COLLEGE CHILD DEVELOPMENT CENTER

701 S. MT. VERNON AVE.
SAN BERNARDINO, CA. 92410

Project No: 97-18

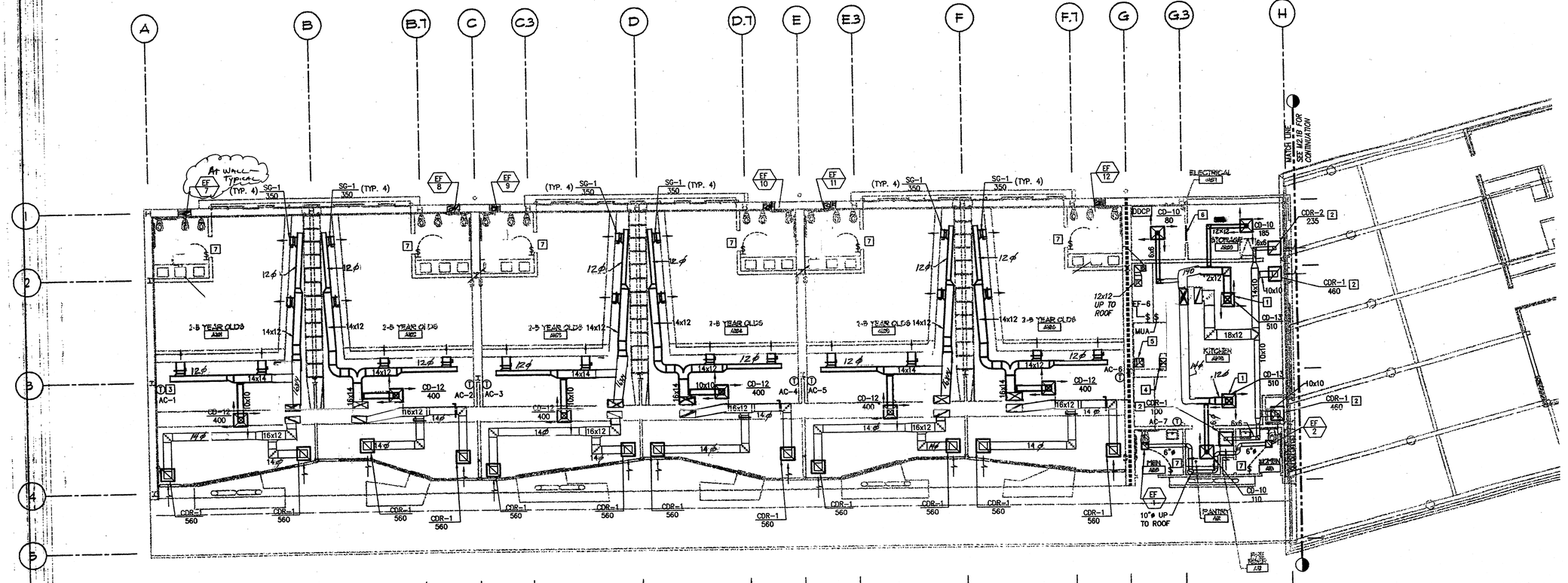
SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

114 SOUTH DEL ROSA DRIVE
SAN BERNARDINO, CA. 92408

MECHANICAL FLOOR PLAN BUILDING B

PERERA CONSTRUCTION & DESIGN INC.
OCT 13 2009
RECEIVED

AS-BUILTS



AS BUILT DRAWINGS

ACH MECHANICAL CONTRACTORS, INC.
BY:

KEYNOTES

1. ADJUST 4-WAY THROW PATTERN TO 3-WAY AS SHOWN. DO NOT DIRECT AIR TOWARDS HOOD.
2. PROVIDE TRANSITION AS REQUIRED FROM DUCT TO RETURN GRILLE AS SHOWN. TYPICAL
3. MOUNTED ON A 1" THICK FIBERGLASS INSULATING BOARD.
4. M.U.A. 30"x10" DUCT TRANSITION TO 15x15" DUCT.
5. E.A. 16"x10" DUCT TRANSITION TO 15x15" DUCT. SEE "K" DWG's FOR ADDITIONAL INFOMATION.
6. PROVIDE AND INSTALL 10"x10" TITUS T-700 DOOR LOUVER. BOTTOM OF LOUVER SHALL BE WITHIN 10" OF THE BOTTOM OF THE DOOR.
7. INTERLOCK FAN WITH WALL MOUNTED LIGHT SWITCH. COORDINATE LOCATION WITH ARCHITECT AND ELECTRICAL DWGS.

DIFFUSER, GRILLE, AND REGISTER SCHEDULE

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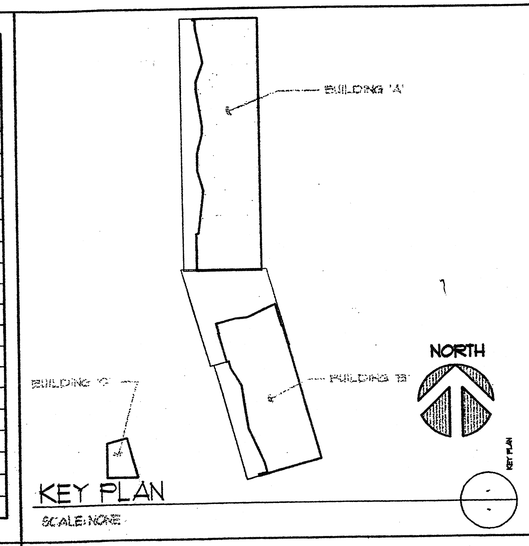

KEY PLAN
SCALE: NONE

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AS-BUILTS
Subcontractor: ACH Mechanical
Date received: 10/5/04
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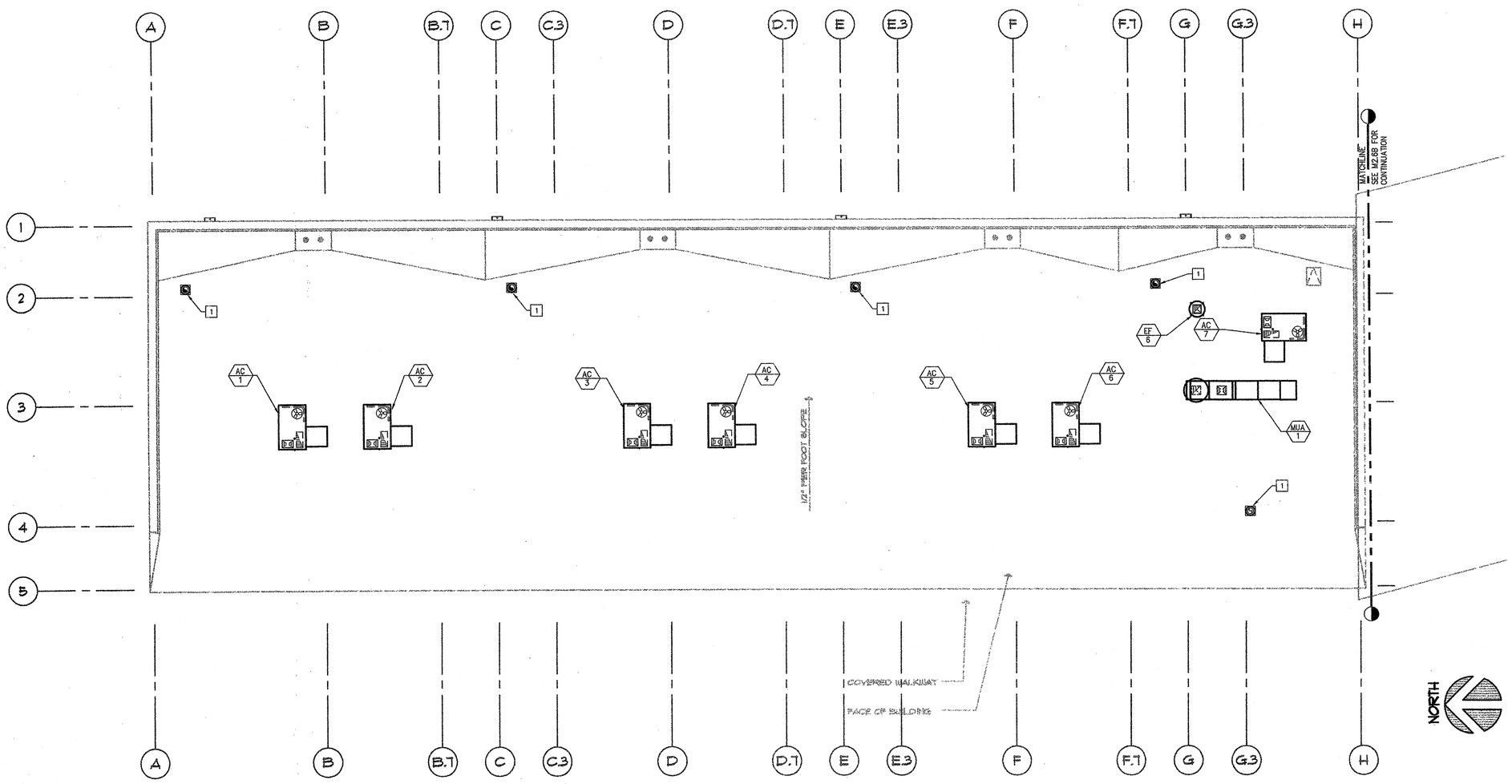
SAN BERNARDINO, CA 92410

Project No: 97-18

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

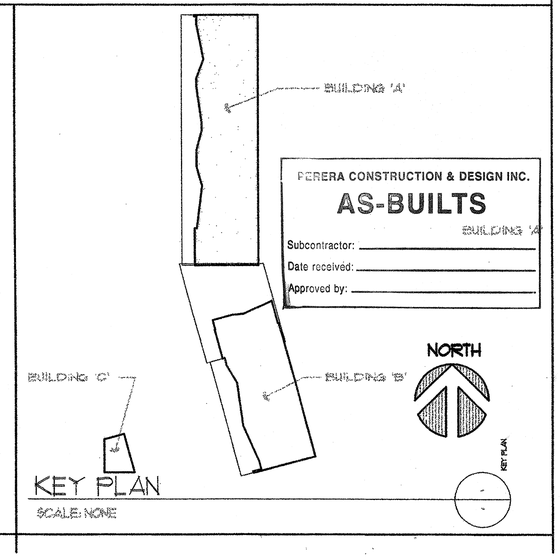
714 SOUTH DEL ROSA DRIVE
SAN BERNARDINO, CA 92408

MECHANICAL FLOOR PLAN BUILDING A



KEYNOTES

1 PROVIDE AND INSTALL GREENHECK GRS-10 VENTILATOR WITH MANUFACTURER'S 10" CURB.



KEY PLAN
SCALE: NONE

PERERA CONSTRUCTION & DESIGN INC.

AS-BUILTS

BUILDING 'A'

Subcontractor: _____

Date received: _____

Approved by: _____

THOMAS BLUROCK
ARCHITECTS
720 West 17th St., "C"
Costa Mesa, CA
92627

ph: 949.646.9373
fax: 949.650.1262

LICENSED ARCHITECT THOMAS S.H. BLUROCK
NO. C009332
1-31-05
RENEWAL DATE
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL #04-104292
AC ___ FLS ___ SS M.K
DATE 2/4/03

PROFESSIONAL ENGINEER MECHANICAL STATE OF CALIFORNIA

STRUCTURAL ENGINEER

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2440 S. Sepulveda Blvd., Ste. 180
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submittals

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Project No: 97-18

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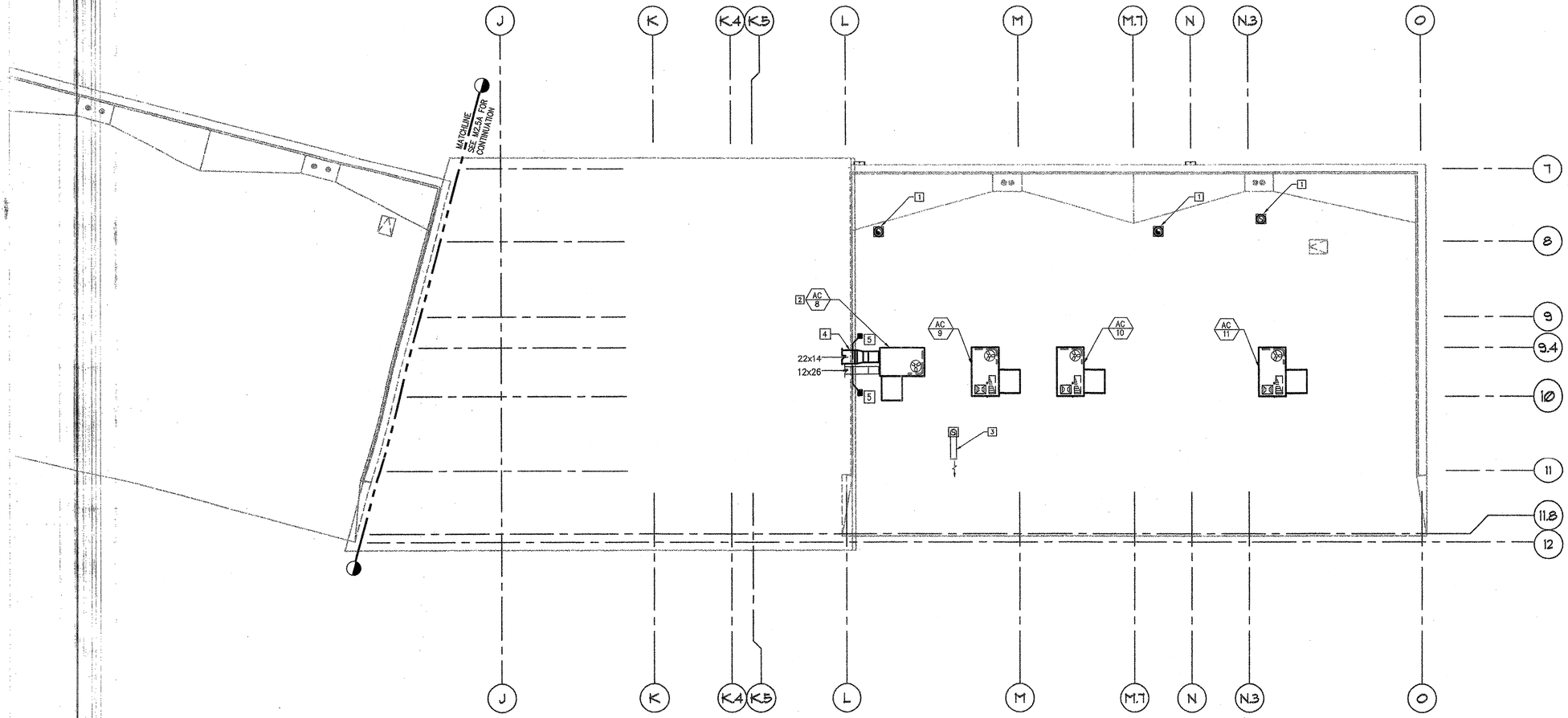
SAN BERNARDINO, CA. 92408

MECHANICAL ROOF PLAN BUILDING A

Designed:	Checked:
JWC	PFF
Drawn:	Date:
BK	01-27-03

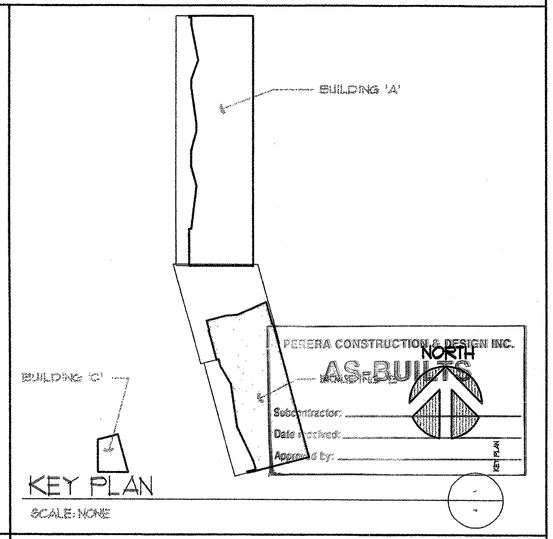
Scale: 1/8"=1'-0"

M2.5A



KEYNOTES

1. PROVIDE AND INSTALL GREENHECK GRS-10 VENTILATOR WITH MANUFACTURER'S CURB.
2. SEE M2.1B FOR SMOKE DETECTOR LOCATION.
3. EXTEND EXHAUST AIR DUCT OPENING MIN. 10'-0" AWAY FROM ANY AIR INTAKE. COORDINATE WITH ARCHITECT TO LOCATE EXHAUST AIR DUCT BEHIND EQUIPMENT SCREEN
4. FLASH WALL PENETRATIONS. (TYP)
5. PROVIDE AND INSTALL NEW SMOKE FIRE DAMPER AS REQUIRED WHERE DUCT PENETRATES FIRE RATED WALL. PROVIDE AND INSTALL ALL NECESSARY DUCT FITTINGS AND TRANSITIONS AS REQUIRED TO CONNECT DUCTWORK TO SMOKE/FIRE DAMPER SLEEVE. (TYP.)



KEY PLAN

SCALE: NONE

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REGISTERED PROFESSIONAL ENGINEER
JEFFREY W. CHANEY
STATE OF CALIFORNIA

STRUCTURAL ENGINEER

OVE ARUP & PARTNERS
2440 S. Sepulveda Blvd, Ste. 180
Los Angeles, CA 90064
phone: 310.312.0040
fax: 310.312.5788

MECHANICAL, ELECTRICAL, & PLUMBING ENGINEER

FUNDAMENT & ASSOCIATES
16755 Von Karman Ave., Suite 250
Irvine, CA 92606
phone: 949.251.1131
fax: 949.251.9434

CIVIL ENGINEER

SNIPES-DYE ASSOCIATES
8348 Center Dr, Suite "G"
La Mesa, CA 92942
phone: 619.697.9234
fax: 619.460.2033

KITCHEN CONSULTANT

MACE MURPHY DESIGN GROUP
816 CRYSTAL WATER LANE
WALNUT, CA 91789
phone: 909.595.0930
fax: 909.595.8919

submittals

SAN BERNARDINO VALLEY COLLEGE CHILD DEVELOPMENT CENTER

701 S. MT. VERNON AVE
SAN BERNARDINO, CA 92410

Project No: 97-18

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

114 SOUTH DEL ROSA DRIVE
SAN BERNARDINO, CA 92408

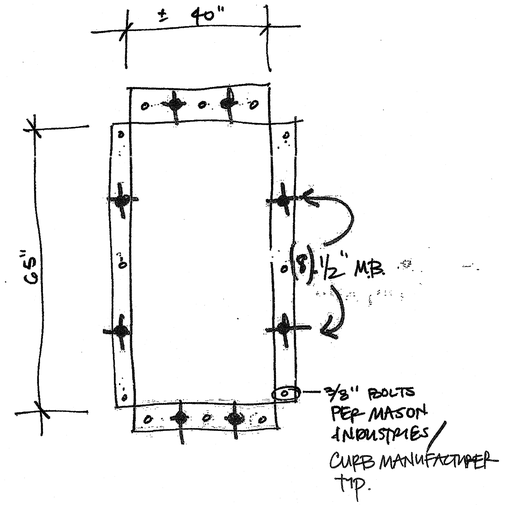
MECHANICAL ROOF PLAN BUILDING B

Designed:	Checked:
JWC	FFF
Drawn:	Date:
B.K	01-27-03

Scale: 1/8"=1'-0"

M2.6B

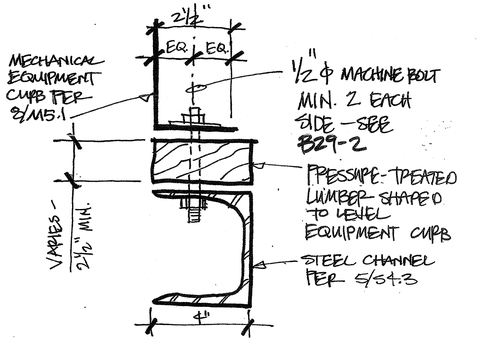
Bulletin #29



SBJC CHILD DEVELOPMENT CENTER

SHIM AT CURB
11.17.05
BULLETIN 29
B29-2

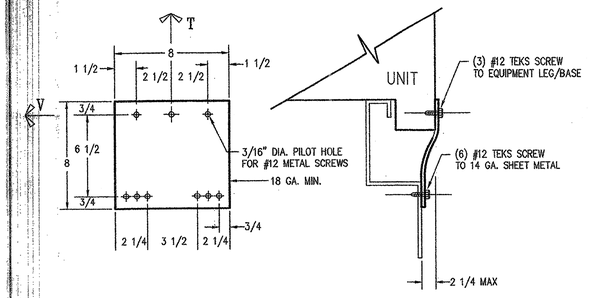
Bulletin #29



SBJC CHILD DEVELOPMENT CENTER

SHIM AT CURB
11.17.05
BULLETIN 29
B29-1

AS-BUILTS

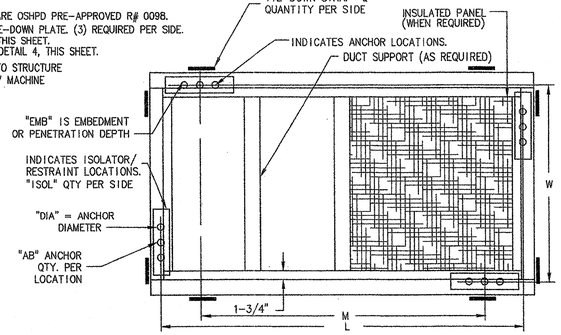


NOTES
1. THE SEISMIC CAPACITY OF TIE-DOWN PLATES IS DEPENDENT ON PROPER FIELD INSTALLATION AS SHOWN ABOVE.

SEISMIC TIE-DOWN PLATE (TYPICAL)

SCALE NONE | 3

1) L and W DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) VIBREX SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) NOT USED
5) VIBREX SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
6) ▬▬ INDICATES SEISMIC TIE-DOWN PLATE. (3) REQUIRED PER SIDE. FOR DETAIL, SEE DETAIL 3 THIS SHEET.
7) FOR ISOLATOR DETAIL, SEE DETAIL 4, THIS SHEET.
8) FOR ANCHORAGE OF CURB TO STRUCTURE USE (3) 3/8" DIA ASTM 307 MACHINE BOLTS PER CORNER.



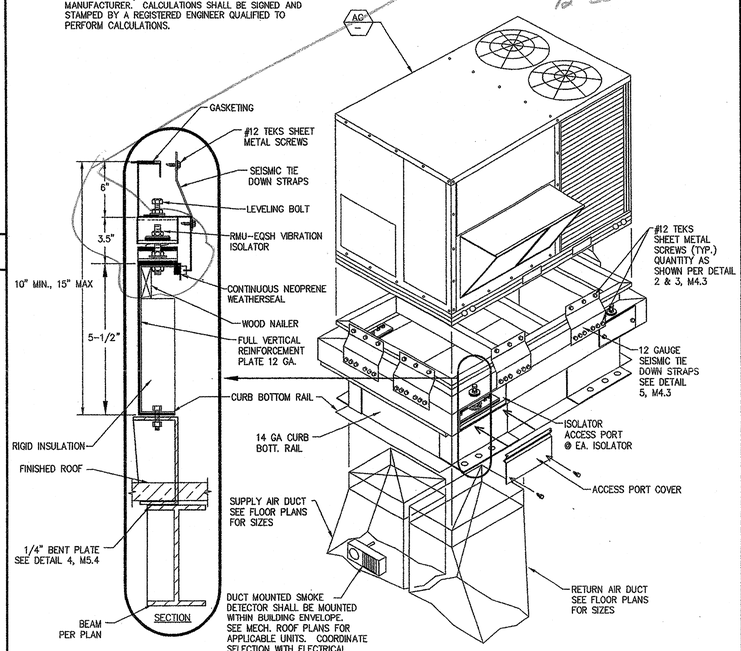
MARK	MAKE	TYPE	SIZE	L	M	W	ISOL	Q	AB	DIA	CURB #	EMB
	CARRIER	48HJD	005	71 1/4	54 3/8	40 5/8	1	2	3	3/8	242	---
	CARRIER	48HJD	006	71 1/4	54 3/8	40 5/8	1	2	3	3/8	242	---
	CARRIER	48HJD	007	71 1/4	54 3/8	40 5/8	2	2	3	3/8	242	---
	GAYLORD	LMU-2	A-3600	198 1/2	182	46	3	3	3	3/8	530	---

CARRIER & LOGIC AIR ROOF CURB

SCALE NONE | 2

NOTES:
1. VIBRATION ISOLATOR/SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED #R-0098.
2. CURBS SHALL BE ORDERED TO MATCH ROOF SLOPE AND MAINTAIN THE LOWEST POSSIBLE EQUIPMENT HEIGHT. ALL HVAC EQUIPMENT SHALL BE INSTALLED COMPLETELY LEVEL.
3. VERIFY BOLT SIZE(S) AND SEISMIC STRAP GAUGE(S) WITH SHOP DRAWINGS/CALCULATIONS PROVIDED BY CURB MANUFACTURER. CALCULATIONS SHALL BE SIGNED AND STAMPED BY A REGISTERED ENGINEER QUALIFIED TO PERFORM CALCULATIONS.

Bulletin #29 Add 4X P.T. wood stock to make slope Level add 1/2 Bolts



ALL DUCTS ON ROOF SHALL BE INSTALLED WITH CROSS BREAKS SO AS TO PROVIDE FOR WATER RUN OFF.

DUCT JOINTS ON ROOF SHALL BE COVERED WITH 24 GAUGE CHANNEL, SEE DETAIL A

JOINT CHANNEL DETAIL (A)

CHANNEL NOTES:
1. SECURE CHANNEL TO ONE ANOTHER WITH 1-#10 TEK SCREW AT EACH CORNER. NO SCREWS SECURING CHANNEL SHALL PENETRATE DUCT'S.

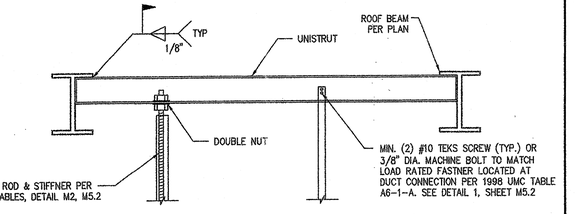
TYPICAL DUCT ACROSS ROOF DETAIL

SCALE NONE | 5

1) ALL DIMENSIONS IN INCHES
2) SPRING DEFLECTION = 2"
3) MAX. ALLOW. LOADS: HORIZ. 1100 LBS. VERT. (UP) 1400 LBS.
4) ISOLATORS ARE O.S.H.P.D. PRE-APPROVED No. R-0098.

TYPICAL VIBRATION CURB SPRING ISOLATOR DETAIL

SCALE NONE | 4



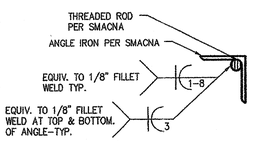
UNISTRUT LOAD CHART		
SPAN	TOTAL LOAD P1000	TOTAL LOAD P1001
≤ 8'-0"	150 LBS	450 LBS
≤ 10'-0"	130 LBS	350 LBS

ER TO DETAIL 1, M5.2 FOR GAUGE OF TERIALS.

EN HANGER LENGHT EXCEEDS 12" IN NGTH, ROD STIFFNERS MAY BE REQUIRED. ER TO SMACNA SEISMIC RESTRAINT 000 SUPPLEMENT LEVEL "AA" OR NON SEISMIC BRACING ER TO DETAIL 1, M5.2 OR GUAGE OF MATERIAL.

EISMIC BRACING SHALL BE SIZED AND SPACED PER SMACNA DUCT CONSTRUCTION STANDARDS," AND "EISMIC RESTRANT MANUAL" 2000 SUPPLEMENT LEVEL "AA".

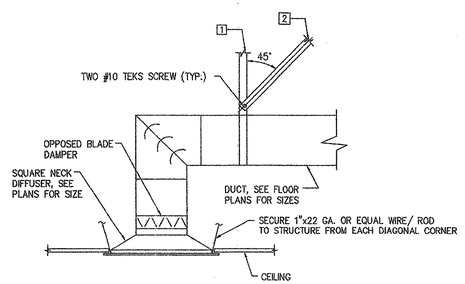
SE THREADED ROD CONNECTION OR TRAPING AS REQUIRED BY SIZE OF CT PER 1998 CMC.



TYPICAL ROD STIFFNER DETAIL

TYPICAL DUCT ATTACHMENT TO STRUCTURE

SCALE NONE | 8

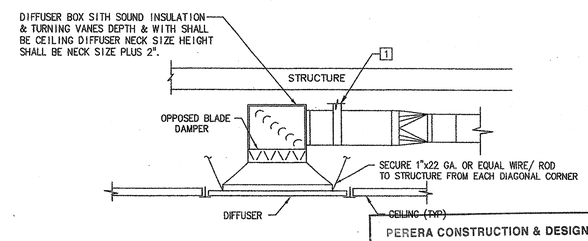


NOTES:
1 ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M5.2.

2 SEISMIC BRACING SHALL BE SIZED AND SPACED PER "SMACNA DUCT CONSTRUCTION STANDARDS," AND "SEISMIC RESTRANT MANUAL" 2000 SUPPLEMENT LEVEL "AA".

TYPICAL SQUARE NECK CEILING DIFFUSER CONNECTION

SCALE NONE | 7



NOTES:
1 ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M5.2.

2. SEISMIC BRACING SHALL BE SIZED AND SPACED PER "SMACNA DUCT CONSTRUCTION STANDARDS," AND "SEISMIC RESTRANT MANUAL" 2000 SUPPLEMENT LEVEL "AA".

PERERA CONSTRUCTION & DESIGN INC.
AS-BUILTS
Subcontractor: _____
Date received: _____
Approved by: _____

TYPICAL CEILING DIFFUSSER PLENUM ASSEMBLY DETAIL

SCALE NONE | 6

THOMAS BLUROCK ARCHITECTS
720 West 17th St,"C"
Costa Mesa, CA 92627
ph: 949.646.9373
fax: 949.650.1262

LICENSED ARCHITECT THOMAS R. BLUROCK No. C009332 31/05 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL #04-104292
AC ✓ FLS ✓ SS M.K
DATE 2/4/03

REGISTERED PROFESSIONAL ENGINEER MECHANICAL STATE OF CALIFORNIA

STRUCTURAL ENGINEER
OVE ARUP & PARTNERS
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Los Angeles, CA 90064
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8348 Center Dr, Suite "G"
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phone: 619.667.9234
fax: 619.460.2033

KITCHEN CONSULTANT
MACE MURPHY DESIGN GROUP
816 CRYSTAL WATER LANE
WALNUT, CA 91789
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fax: 909.595.8119

submittals

SAN BERNARDINO VALLEY COLLEGE CHILD DEVELOPMENT CENTER

701 S. MT. VERNON AVE.
SAN BERNARDINO, CA. 92410

Project No: 97-18

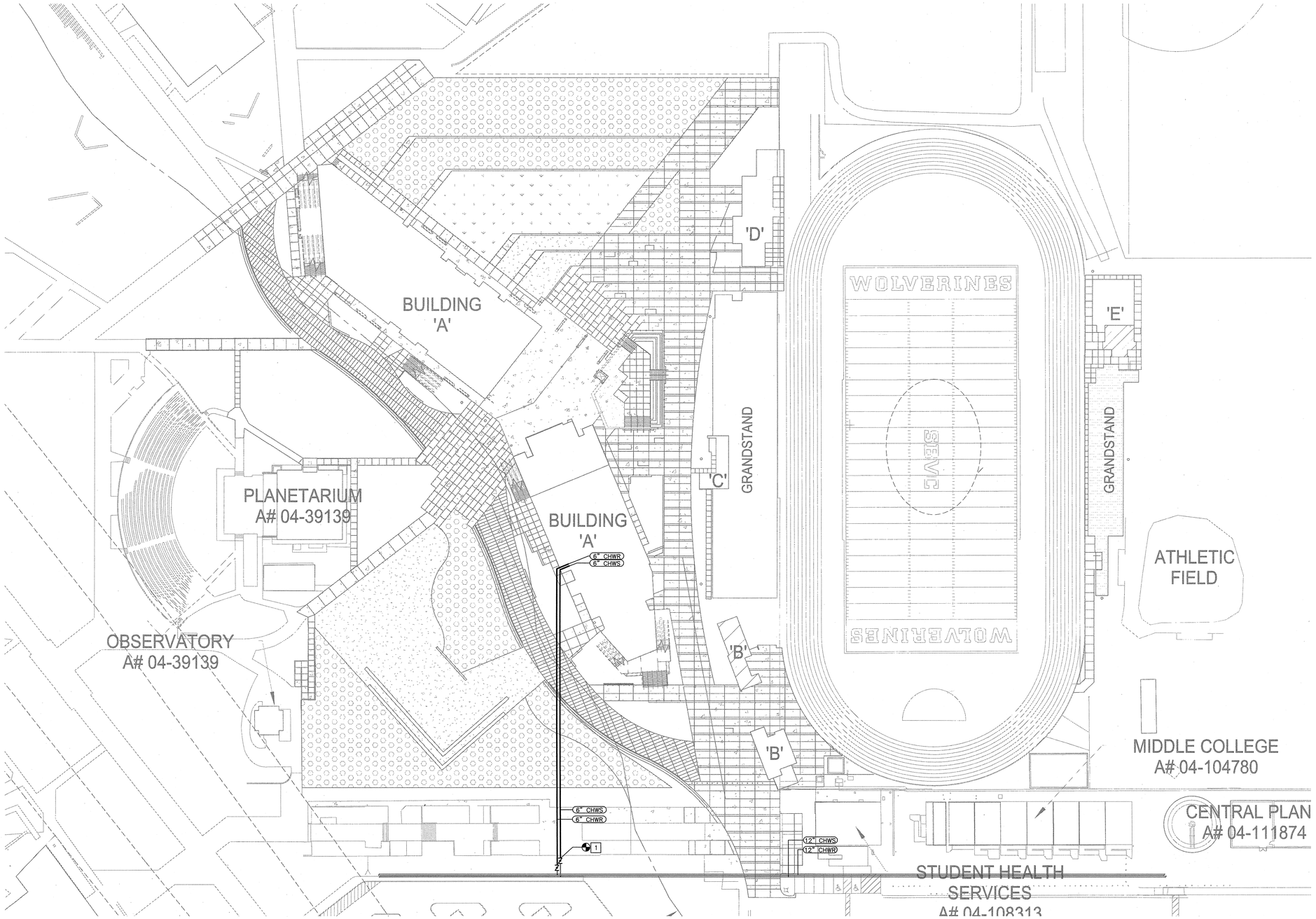
SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

114 SOUTH DEL ROSA DRIVE
SAN BERNARDINO, CA. 92408

MECANICAL DETAILS

Designed: JWC | Checked: PFF
Drawn: BK | Date: 01-27-03
Scale: NONE

M5.1



MECHANICAL SITE PLAN | M1

1" = 40'-0"

NOTES

KEY NOTES

1 CONNECT CHWS/R FROM CENTRAL PLANT

p2s

P2S Engineering, Inc.

5000 East Spring Street, 8th Floor
Long Beach, CA 90815-5218
T 562.497.2999 F 562.497.2990

www.p2seng.com

Agency Approval — FILE NO: 36-C2

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OFFICE OF REGULATION SERVICES

APPL. 04-112810

AC ___ FLS 11 SS ___

DATE APR 2 9 2014

Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

Key Plan

A B C

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

No.	Description	Date

Drawing Title: MECHANICAL SITE PLAN

HMC ARCHITECTS

3546 CONCOURS STREET
ONTARIO, CA 91764

PHONE: 909.989.9979 FAX: 909.483.1400
WWW.HMCARCHITECTS.COM

Architecture . Planning . Interior Design

Architect's Seal

Designed:	JDM	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.00
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

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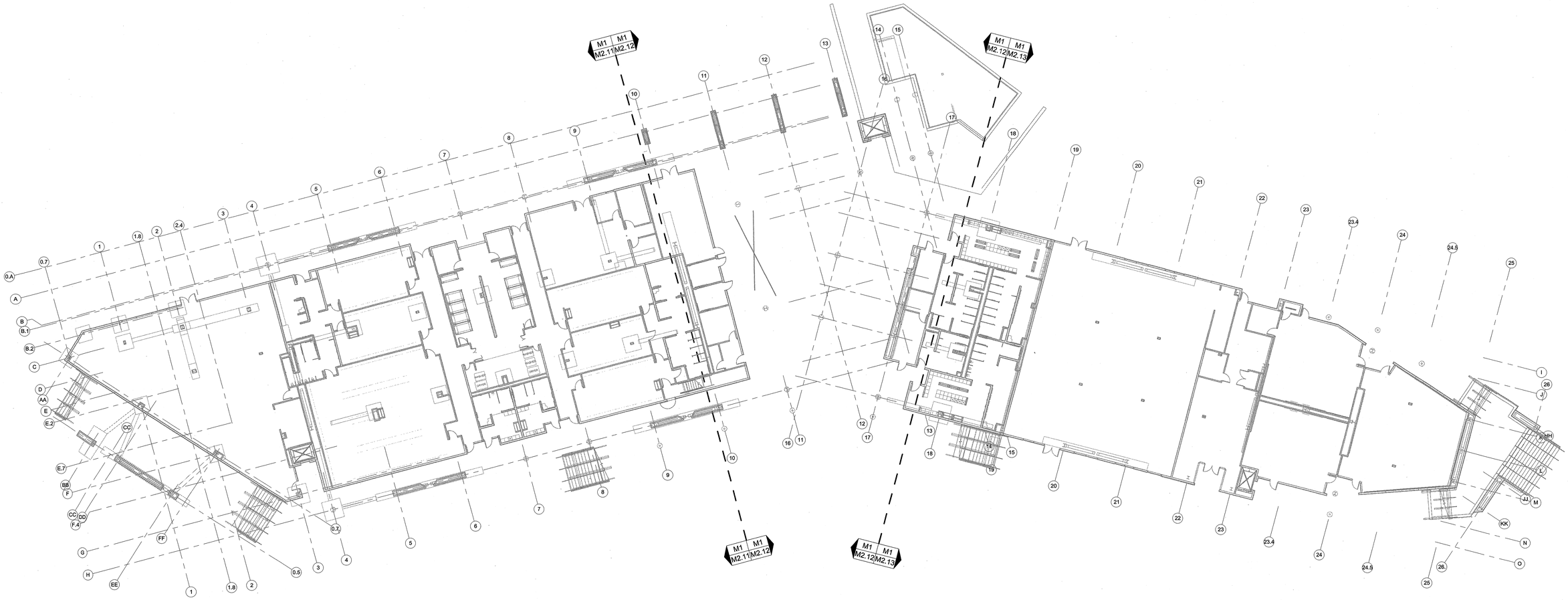

MECHANICAL FIRST FLOOR KEY PLAN | M1

1/16"=1'-0"

NOTES

KEY NOTES

P2S Engineering, Inc.

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Long Beach, CA 90815-5218
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OFFICE OF REGULATION SERVICES

APPL. 04-112810

AC — FLS 14 SS

DATE APR 2 9 2014

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
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PHONE: 909.989.9979 FAX: 909.483.1400
WWW.HMCARCHITECTS.COM
Architecture . Planning . Interior Design

Consultant's Seal

Key Plan

No.	Description	Date

Drawing Title: MECHANICAL FIRST FLOOR KEY PLAN

Architect's Seal

Designed:	EB	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.10
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

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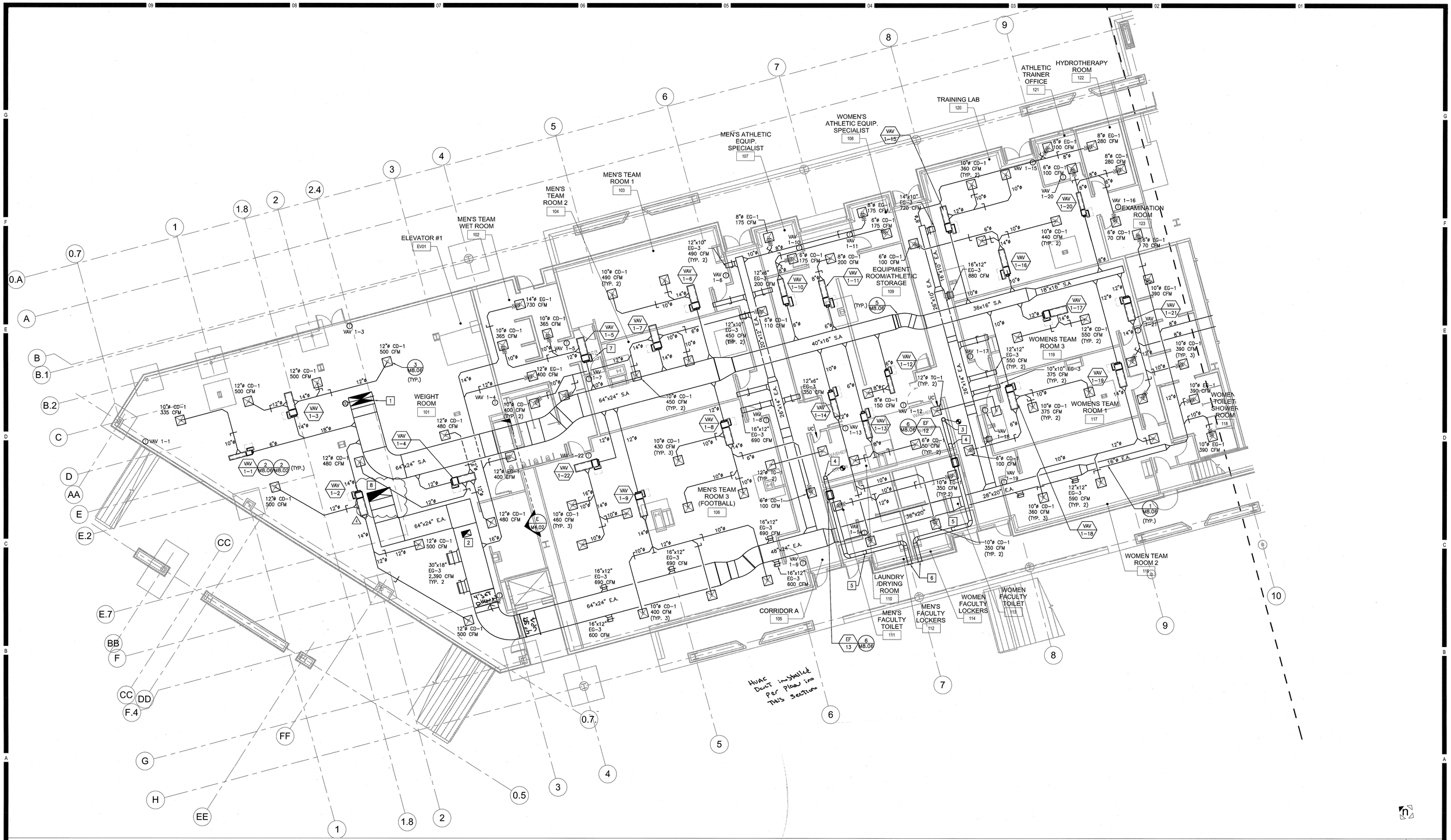

MECHANICAL FIRST FLOOR PLAN - SEGMENT A | M1 | 1/8"=1'-0"

NOTES

KEY NOTES

1. 64"x24" S.A. DUCT UP TO AHU-1 IN SECOND LEVEL MECHANICAL ROOM.
2. 24"x16" E.A. DUCT UP TO SECOND FLOOR
3. PROVIDE 10"ø DRYER EXHAUST DUCT. ROUTE DUCT ABOVE CEILING
4. PROVIDE 10"ø DRYER EXHAUST DUCT. ROUTE DUCT UP TO BEAM POCKET ABOVE.
5. PROVIDE 10"ø DRYER EXHAUST DUCT. ROUTE DUCT DOWN TO ABOVE CEILING.
6. 10" DRYER EXHAUST DUCT TO TERMINATE USING DAMPERED WALL CAP TO PREVENT BACKDRAFT, BIRD NESTING, ETC.
7. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
8. 64"x24" EA DUCT UP TO AHU-1 IN SECOND LEVEL MECHANICAL ROOM.

p2s

P2S Engineering, Inc.

5000 East Spring Street, 8th Floor
Long Beach, CA 90815-5218
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Consultant's Seal — REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

No.	Description	Date
1	Addendum #4	5/16/14

Drawing Title: MECHANICAL FIRST FLOOR PLAN SEGMENT A

HMC ARCHITECTS
3546 CONCOURS STREET
ONTARIO, CA 91764
PHONE: 909.989.9979 FAX: 909.483.1400
WWW.HMCARCHITECTS.COM
Architecture . Planning . Interior Design

Architect's Seal

Designed:	JDM	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.11
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

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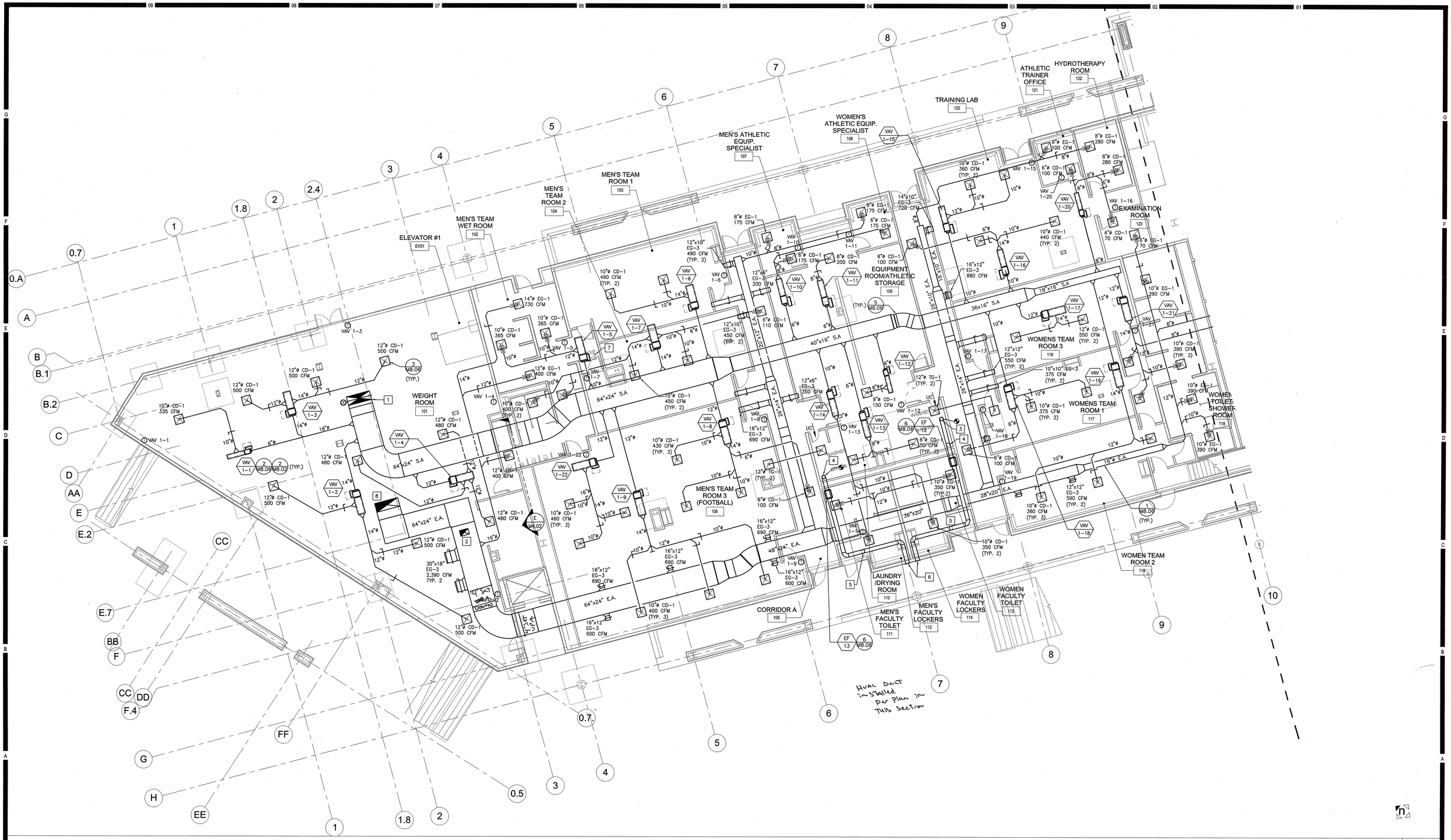

MECHANICAL FIRST FLOOR PLAN - SEGMENT A | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. 64"x24" S.A. DUCT UP TO AHU-1 IN SECOND LEVEL MECHANICAL ROOM.
2. 24"x16" E.A. DUCT UP TO SECOND FLOOR
3. PROVIDE 10"ø DRYER EXHAUST DUCT. ROUTE DUCT ABOVE CEILING
4. PROVIDE 10"ø DRYER EXHAUST DUCT. ROUTE DUCT UP TO BEAM POCKET ABOVE.
5. PROVIDE 10"ø DRYER EXHAUST DUCT. ROUTE DUCT DOWN TO ABOVE CEILING.
6. 10" DRYER EXHAUST DUCT TO TERMINATE USING DAMPERED WALL CAP TO PREVENT BACKDRAFT, BIRD NESTING, ETC.
7. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
8. 64"x24" EA DUCT UP TO AHU-1 IN SECOND LEVEL MECHANICAL ROOM.

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Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
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No.	Description	Date

Drawing Title

MECHANICAL FIRST FLOOR PLAN SEGMENT A

Architect's Seal

M2.11 REVISED PER ADD #4

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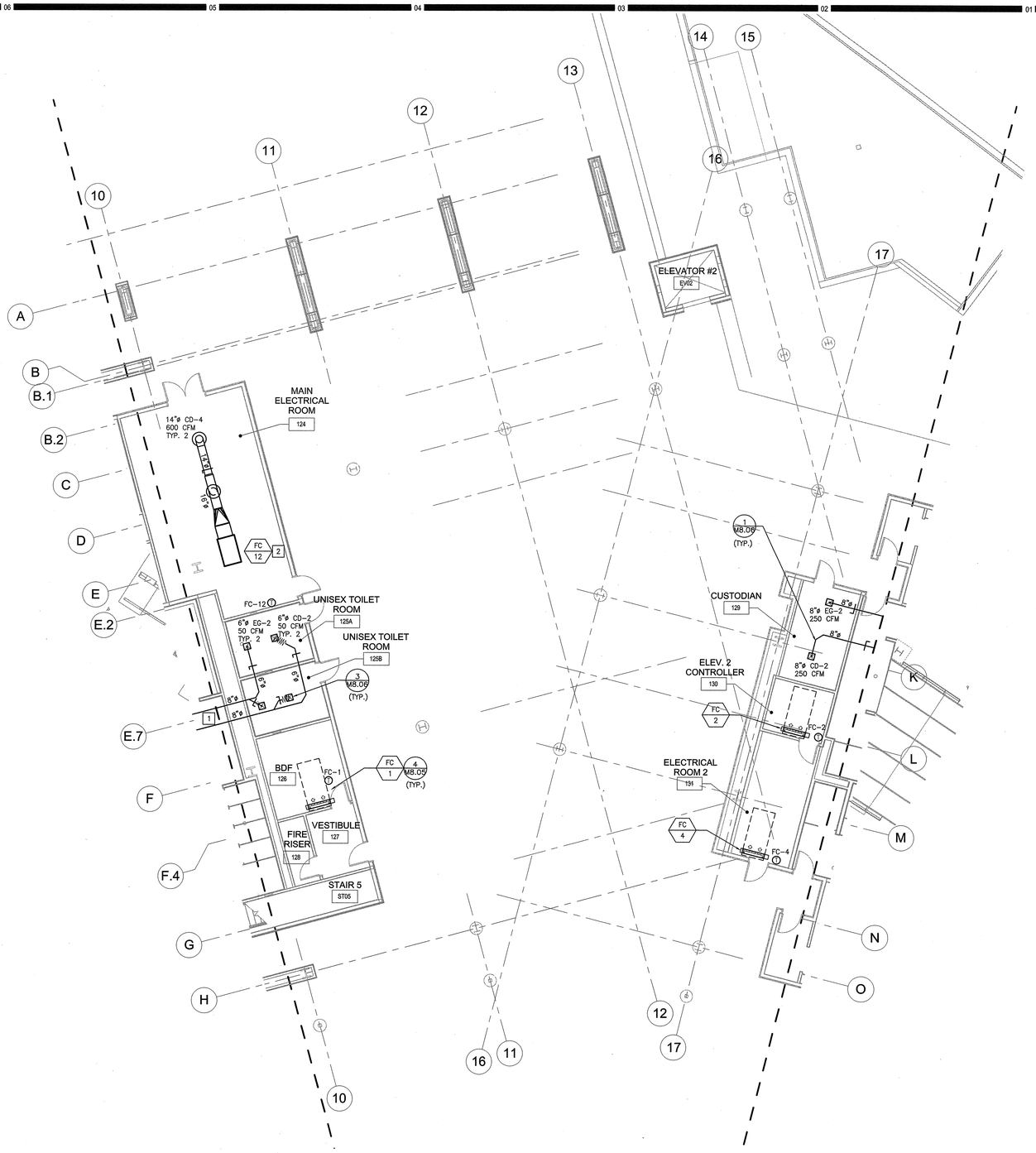

MECHANICAL FIRST FLOOR PLAN - SEGMENT B | M1

1/8"=1'-0"

NOTES

KEY NOTES

1 SEE SHEET M2.11 FOR CONTINUATION.

2 RECIRCULATING FAN COIL, NO OSA REQUIRED.

p2s

P2S Engineering, Inc.

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FILE NO: 36-C2

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OFFICE OF REGULATION SERVICES

APPL. 04-112810

AC — FLS 14 SS

DATE APR 29 2014

Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

No.	Description	Date

Drawing Title
MECHANICAL FIRST FLOOR PLAN
SEGMENT B

HMC ARCHITECTS

3546 CONCOURS STREET
ONTARIO, CA 91764
PHONE: 909.989.9979 FAX: 909.483.1400
WWW.HMCARCHITECTS.COM

Architecture . Planning . Interior Design

Architect's Seal

Designed:	JDM	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.12
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

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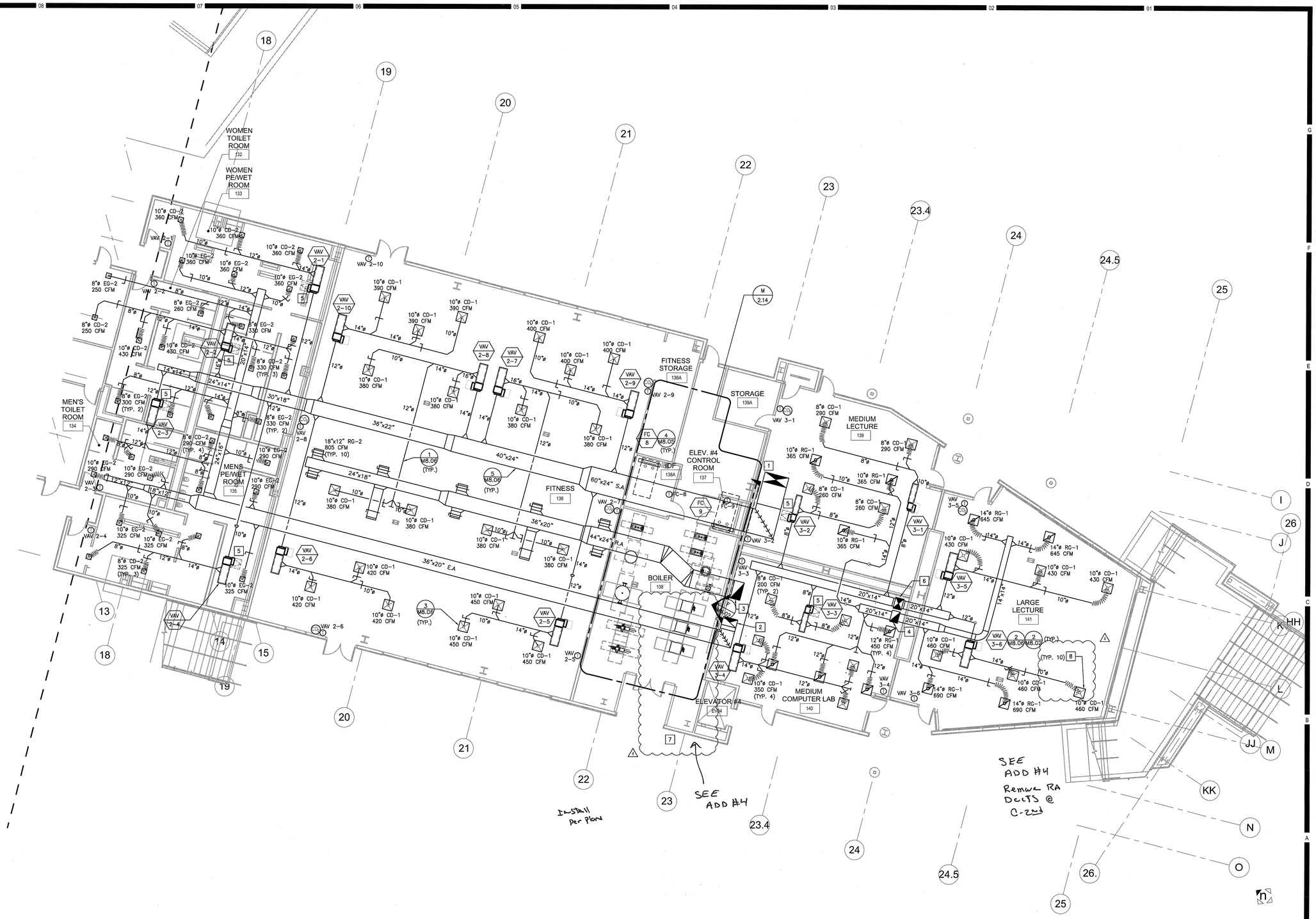

MECHANICAL FIRST FLOOR PLAN - SEGMENT C | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. 60"x24" S.A. DUCT UP TO SECOND FLOOR
2. 36"x20" E.A. DUCT UP TO SECOND FLOOR
3. 44"x24" R.A. DUCT UP TO SECOND FLOOR
4. 28"x20" R.A. DUCTS UP TO SECOND FLOOR
5. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
6. 28"X20" S.A. DUCT UP TO SECOND FLOOR.
7. SEE SHEET M2.14 FOR BOILER FLUE ROUTING. (1)
8. AT ALL ACOUSTIC CEILING PENETRATIONS FOR DIFFUSERS IN LARGE LECTURE 141, PROVIDE ACOUSTIC SEAL FOR SOUNDPROOFING.

p2s

P2S Engineering, Inc.

5000 East Spring Street, 8th Floor
Long Beach, CA 90815-5218
T 562.497.2999 F 562.497.2990

www.p2seng.com

Agency Approval — FILE NO: 36-C2

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-112810
AC ____ FLS ____ SS ____
DATE ____

Consultant's Seal — REGISTERED PROFESSIONAL ENGINEER — JAMES D. MECHLENBURG — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
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951.788.7554

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Architecture . Planning . Interior Design

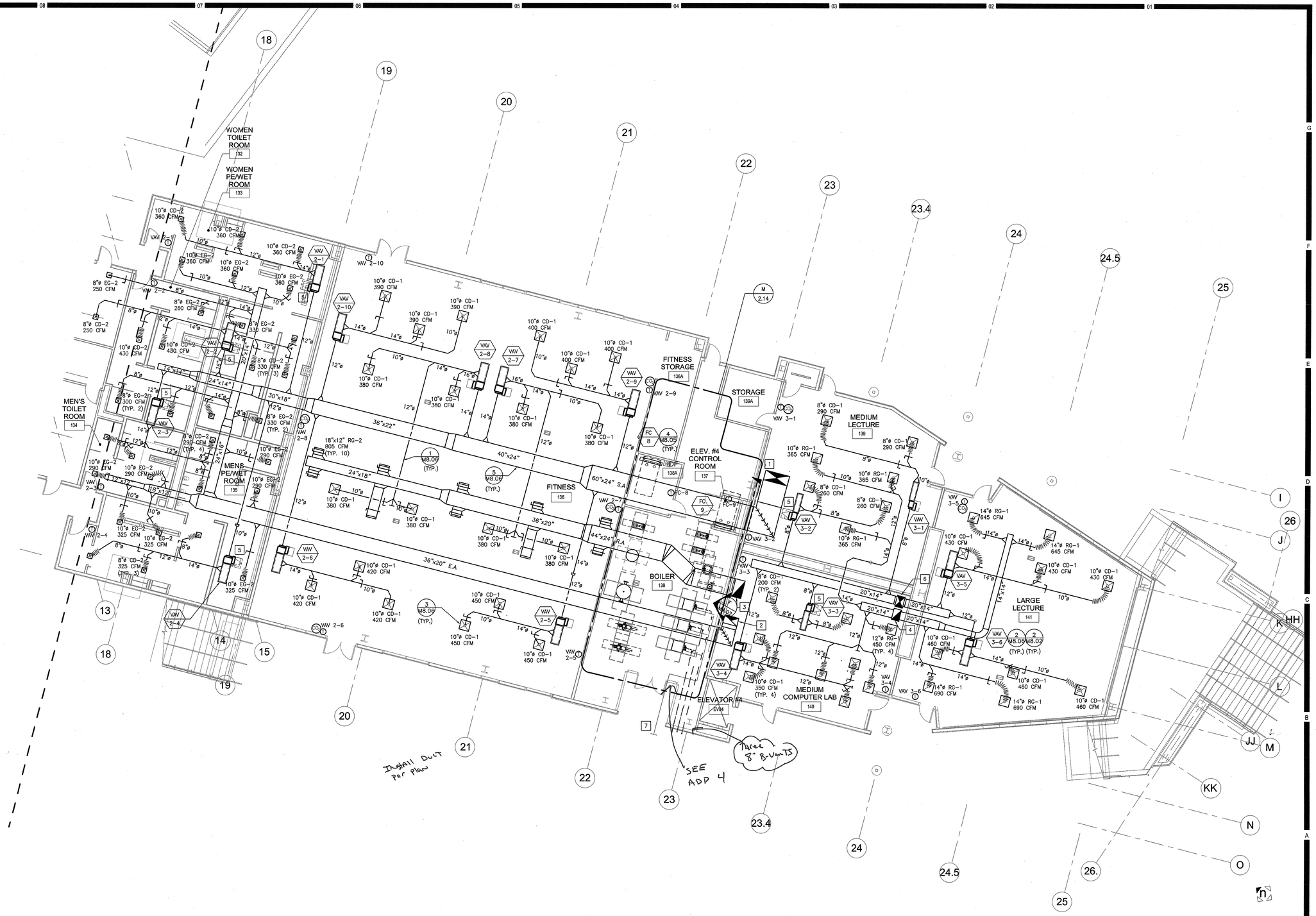
No.	Description	Date
1	Addendum #4	5/16/14

Drawing Title: MECHANICAL FIRST FLOOR PLAN SEGMENT C

Architect's Seal

Designed:	JDM	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.13
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

PLEASE RECYCLE



MECHANICAL FIRST FLOOR PLAN - SEGMENT C | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. 60"x24" S.A. DUCT UP TO SECOND FLOOR
2. 36"x20" E.A. DUCT UP TO SECOND FLOOR
3. 44"x24" R.A. DUCT UP TO SECOND FLOOR
4. 28"x20" R.A. DUCTS UP TO SECOND FLOOR
5. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
6. 28"X20" S.A. DUCT UP TO SECOND FLOOR.
7. SEE SHEET M2.14 FOR BOILER FLUE ROUTING.

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P2S Engineering, Inc.

5000 East Spring Street, 8th Floor
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www.p2seng.com

Agency Approval — FILE NO: 36-C2

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-112810
AC — FLS 14 SS
DATE APR 2 9 2014

Consultant's Seal — Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

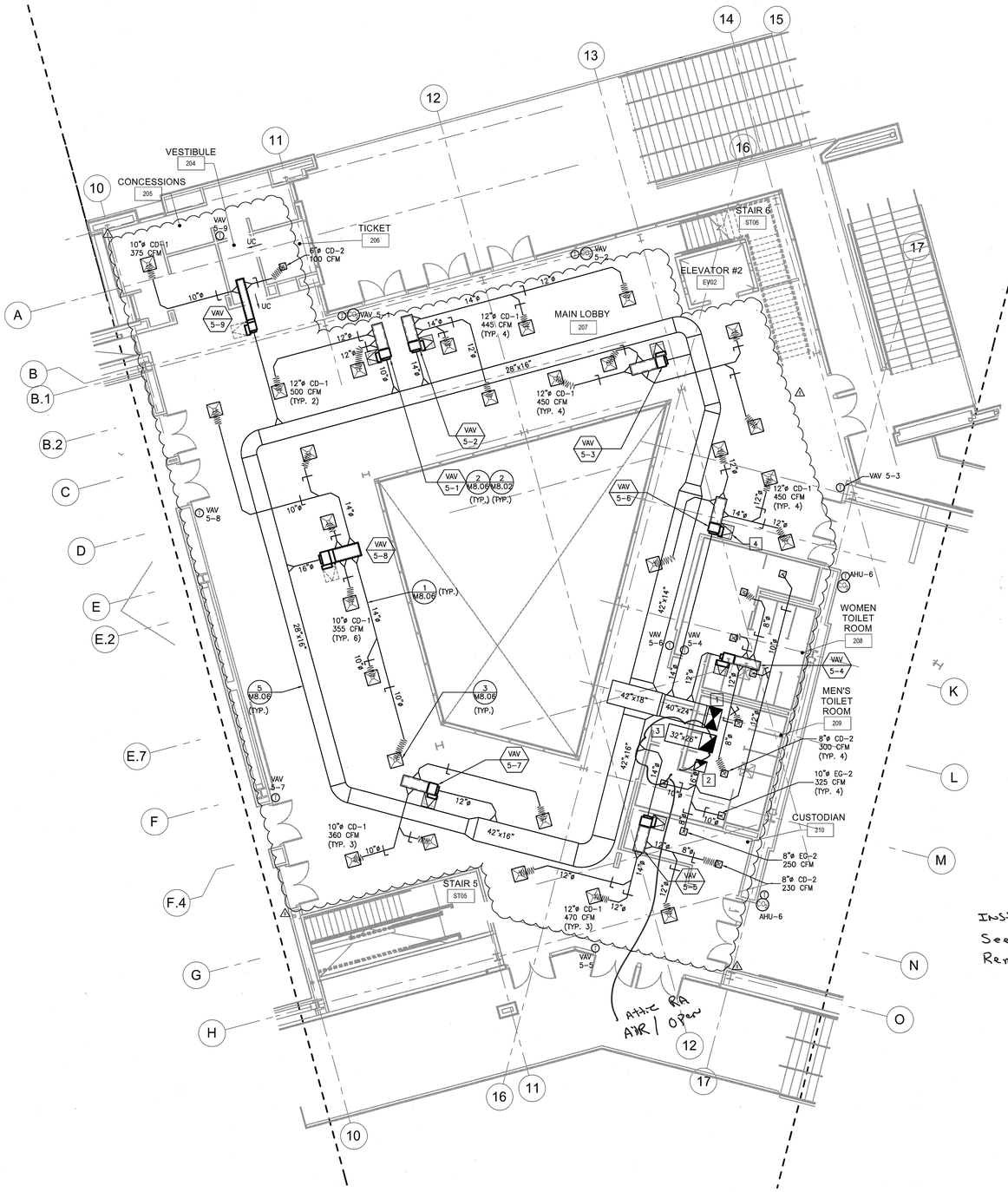
No.	Description	Date

Drawing Title: MECHANICAL FIRST FLOOR PLAN SEGMENT C

Architect's Seal

M2.13 REVISED PER ADD #4

PLEASE RECYCLE



MECHANICAL SECOND FLOOR PLAN - SEGMENT B | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. 40"x24" S.A. AND 32"x26" R.A. DUCTS TO AHU-5
2. 20"x20" E.A. DUCT UP TO THIRD FLOOR
3. RETURN DUCT TERMINATES ABOVE CEILING LEVEL WITH WIRE MESH SCREEN. ALIGN TERMINATION WITH SEGMENT OF WALL ABOVE CEILING LEVEL (NOT VISIBLE ON PLANS, COORDINATE IN FIELD.)
4. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS. (TYPICAL)

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Agency Approval — FILE NO: 36-C2

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

APPL 04-112810

AC _____ FLS _____ SS _____

DATE _____

Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER — SCOTT BOYD — Exp. 12-31-2014 — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
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No.	Description	Date
1	CCD-3	8/15/14
2	CCD-8	9/24/14

Drawing Title
MECHANICAL SECOND FLOOR PLAN
SEGMENT B

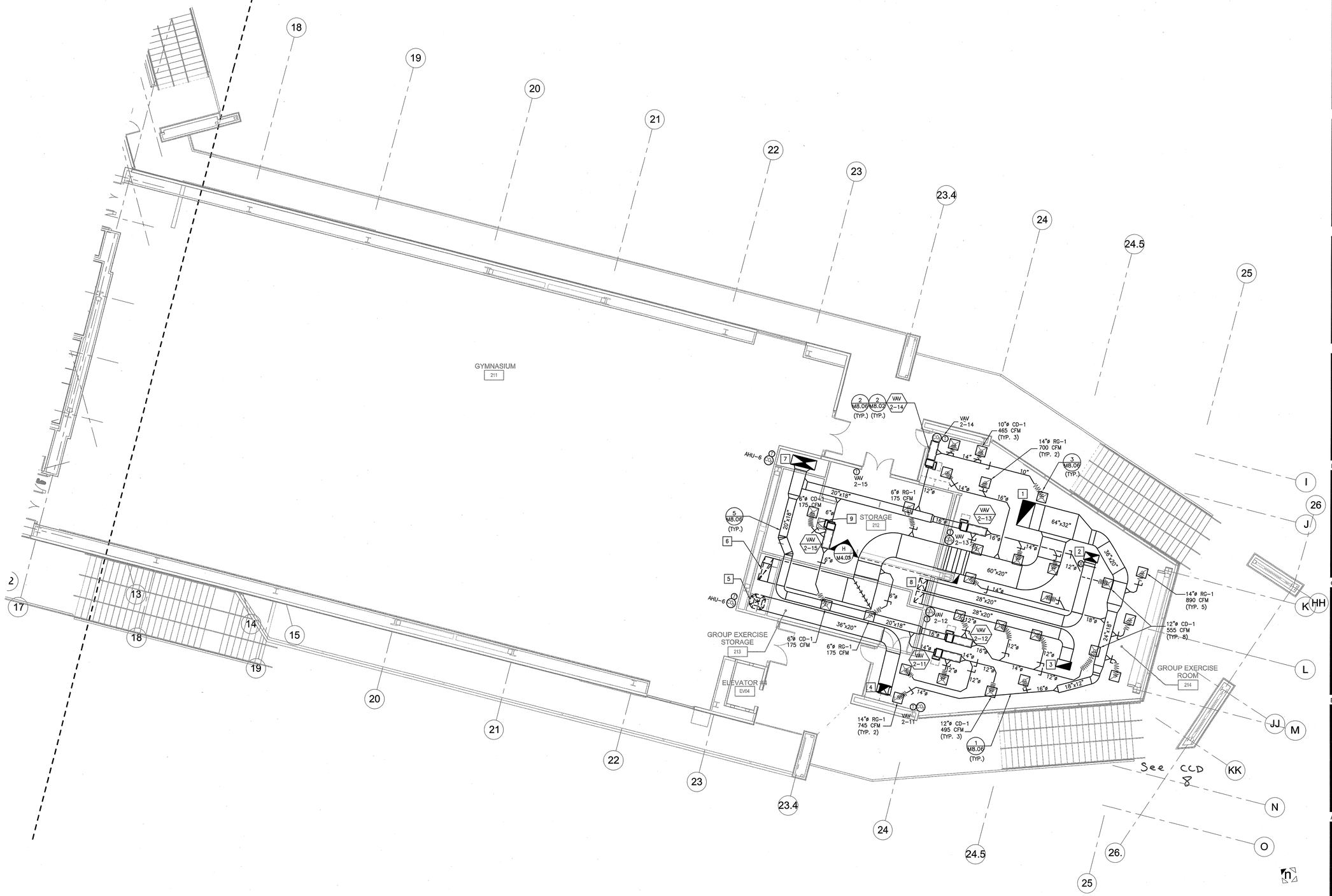
HMC ARCHITECTS
3546 CONCOURS STREET
ONTARIO, CA 91764
PHONE: 909.989.9979 FAX: 909.483.1400
WWW.HMCARCHITECTS.COM
Architecture . Planning . Interior Design

Architect's Seal

Designed:	JDM	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.22
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

PLEASE RECYCLE

CD-100



MECHANICAL SECOND FLOOR PLAN - SEGMENT C | M1

1/8"=1'-0"

NOTES

1. –

KEY NOTES

1. 64"x32" R.A. DUCT UP TO AHU-2 ON ROOF.
2. 36"x20" LINED S.A. DUCT UP TO AHU-3 ON ROOF.
3. 36"x20" LINED R.A. DUCT UP TO AHU-3 ON ROOF.
4. 36"x20" TRANSITIONS TO 24"X24" EXH. DUCT UP TO EF-2 ON ROOF.
5. 20"x36" EXH. DUCT DOWN TO FIRST FLOOR WITH TRANSITION TO 36"x20".
6. 60"x20" R.A. DUCT DOWN TO FIRST FLOOR, TRANSITIONS TO 44"x24".
7. 60"x24" LINED S.A. DUCT UP TO AHU-2 ON ROOF. TRANSITIONS TO 40"x34" DUCT BEFORE EMERGING ONTO ROOF.
8. 28"x20" S.A. AND R.A. DUCTS DOWN TO FIRST FLOOR.
9. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.

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OFFICE OF REGULATION SERVICES

APPL. 04-112810

AC — FLS — SS

DATE APR 29 2014

Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

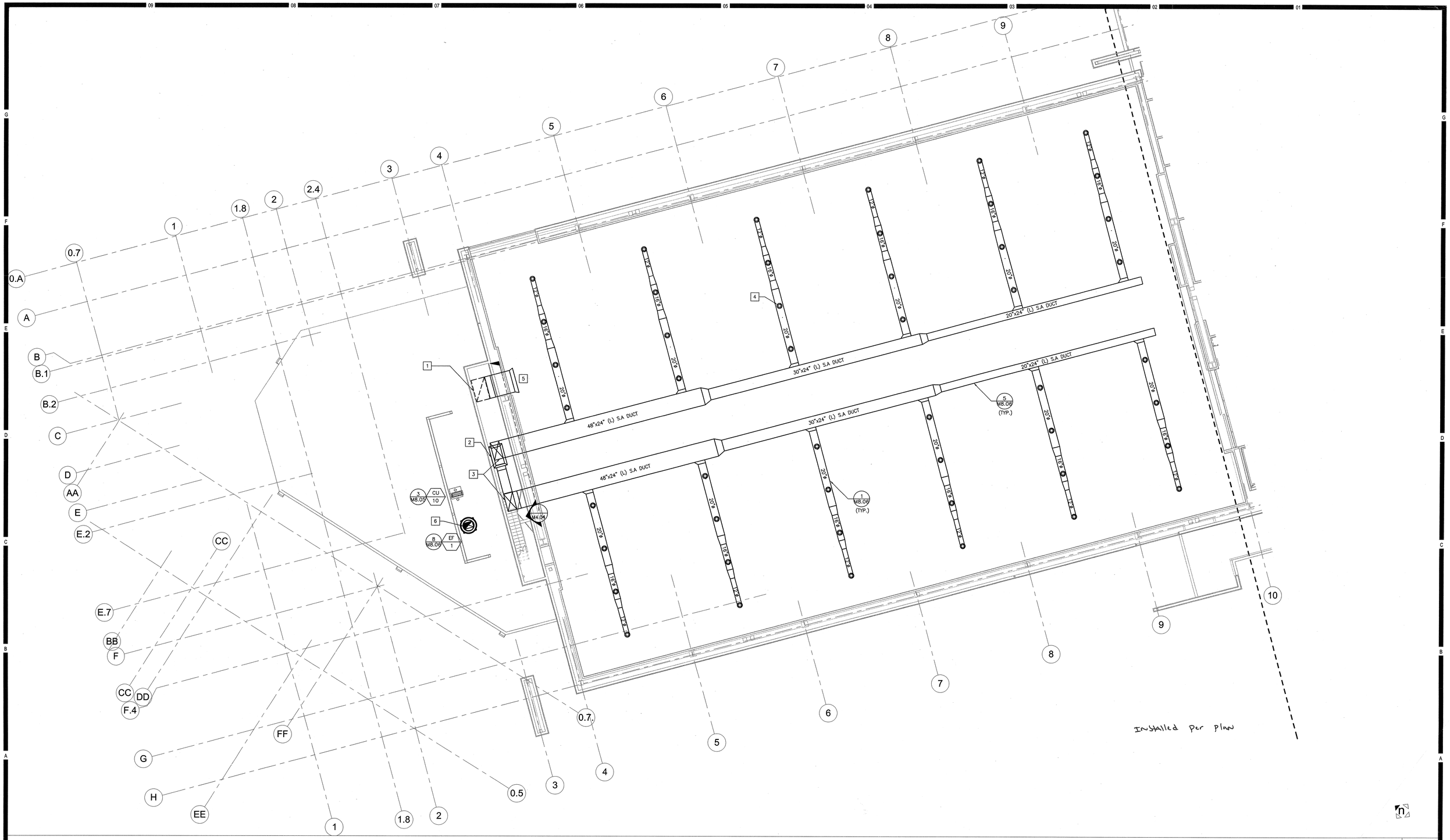
No.	Description	Date

Drawing Title: MECHANICAL SECOND FLOOR PLAN SEGMENT C

Architect's Seal

M2-23
REVISED PER
CD-101
9/25/15
JL

PLEASE RECYCLE



MECHANICAL THIRD FLOOR PLAN - SEGMENT A | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. 60"x36" LINED R.A. DUCT DOWN TO AHU-4 ON 2ND LEVEL
2. 64"x36" LINED S.A. DUCT TRANSITIONS TO TWO (2) 48"x24" LINED S.A. DUCTS OUT TO GYMNASIUM
3. 48"X24" LINED S.A. DUCTS
4. CD-3, 415 CFM, SEIHO MODEL NT-12, TYP. 48
5. 60"x36" R.A. OPENING WITH WMS.
6. 24"x16" E.A. DUCT DOWN TO SECOND LEVEL.

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Agency Approval — FILE NO: 36-C2

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DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-112810
AC ____ FLS 14 SS
DATE APR 29 2014

Consultant's Seal — REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
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SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

No.	Description	Date

Drawing Title: MECHANICAL THIRD FLOOR PLAN SEGMENT A

Architect's Seal — SM

M2.31 REVISED PER ADD #4

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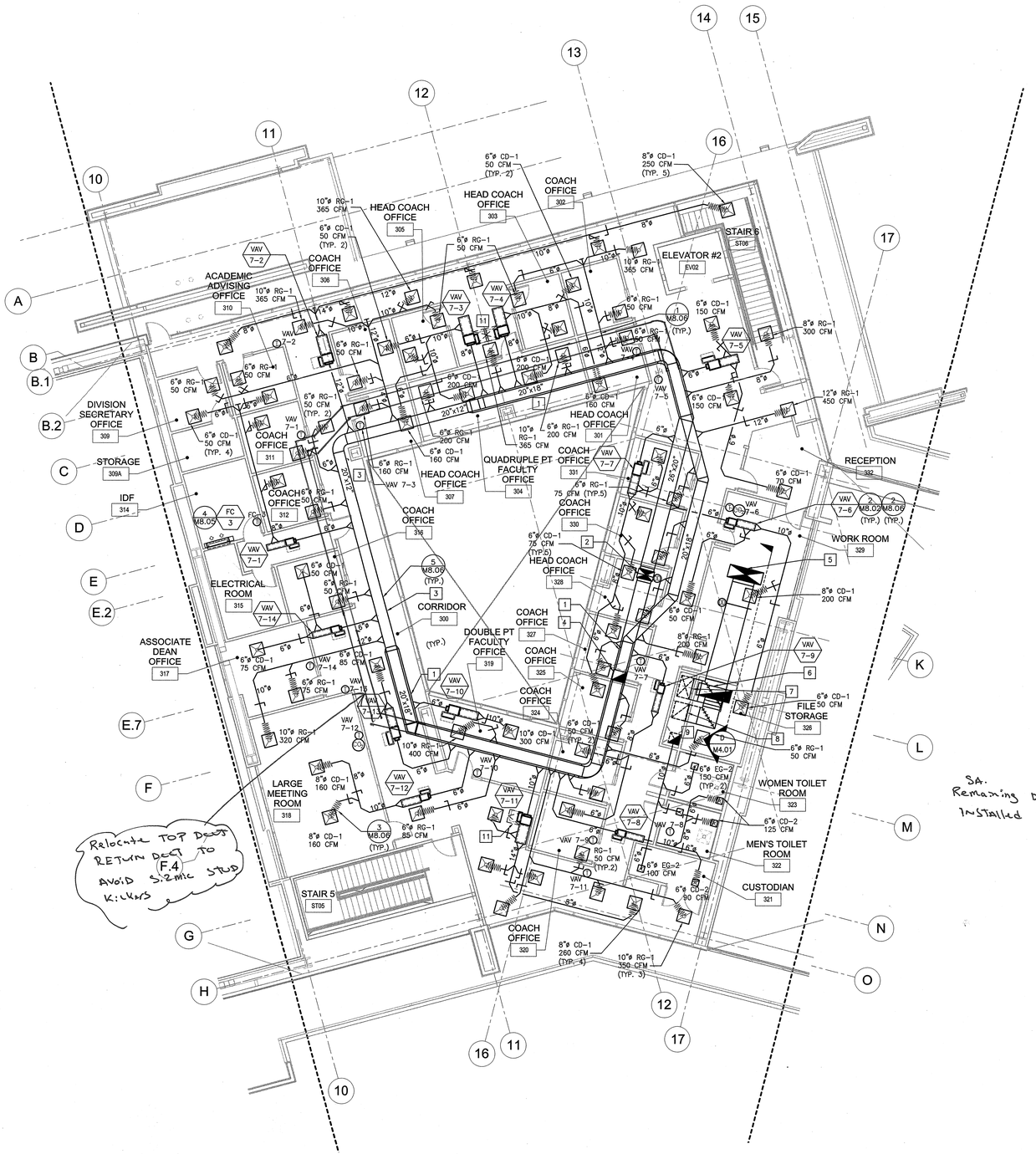

MECHANICAL THIRD FLOOR PLAN - SEGMENT B | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. 20"X18" R.A. DUCT ABOVE 26"x20" S.A. DUCT
2. 30"x18" TRANSITIONING TO 40"x20" LINED S.A. DUCT UP TO AHU-7 ON ROOF
3. 20"x12" R.A. DUCT ABOVE 20"x12" S.A. DUCT
4. 20"x24" TRANSITIONING TO 40"x20" LINED R.A. DUCT UP TO AHU-7 ON ROOF
5. 64"x24" S.A. DUCT UP TO AHU-5 ON ROOF
6. 64"x24" R.A. DUCT UP TO AHU-5 ON ROOF
7. 40"x24" S.A. DUCT DOWN TO SECOND FLOOR
8. 32"x26" R.A. DUCT DOWN TO SECOND FLOOR
9. 20"x20" E.A. DUCT DOWN TO SECOND FLOOR AND UP TO EF-5 ON ROOF.
10. NOT USED.
11. 24"x24" ACCESS HATCH PROVIDED BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.

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Agency Approval
FILE NO: 36-C2
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-112810
AC — FLS 14 SS
DATE APR 29 2014

Consultant's Seal

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
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No.	Description	Date

Drawing Title
MECHANICAL THIRD FLOOR PLAN
SEGMENT B

HMC ARCHITECTS
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WWW.HMCARCHITECTS.COM
Architecture . Planning . Interior Design

Architect's Seal

Designed:	JDM
Drawn:	JL
Checked:	SB
Reviewed:	SB
Date:	04/15/2014
Project No.	5007002
Scale:	AS NOTED
Drawing No.	M2.32
Sheet	of

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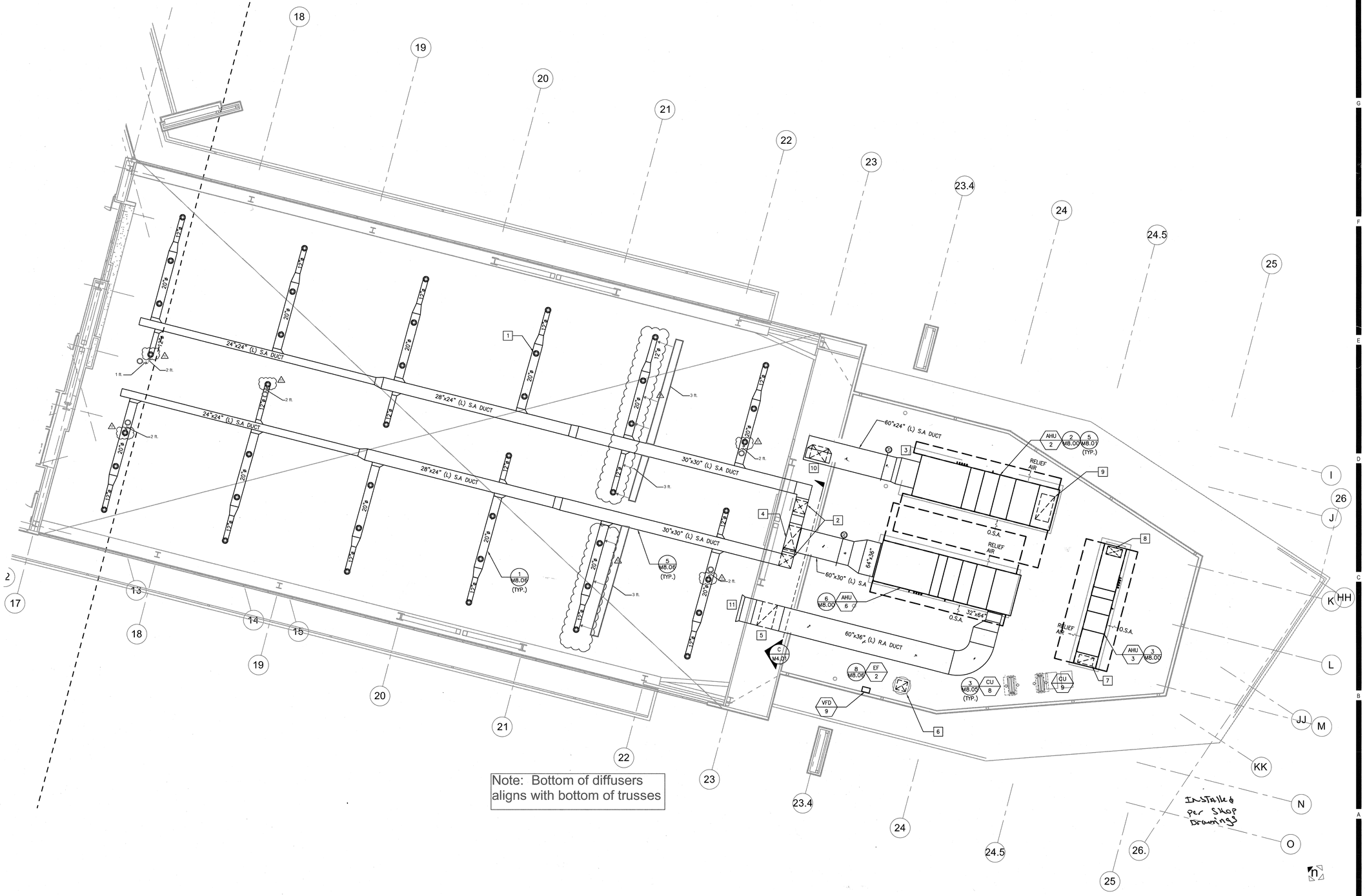

MECHANICAL THIRD FLOOR PLAN - SEGMENT C | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. CD-3, 450 CFM, SEIHO MODEL NT-12, TYP. 42
2. 30"x30" LINED S.A. DUCTS (TYP. 2)
3. 64"x32" LINED S.A. DUCT FROM AHU-2
4. 60"x30"(L) TRANSITIONS TO TWO (2) 30"x30"(L) OUT TO GYMNASIUM
5. 60"X36" R.A. DUCT SERVING GYM, DOWN TO AHU-6 ON SECOND FLOOR ROOF
6. 24"X24" E.A. DUCT UP FROM SECOND FLOOR.
7. 36"x20" R.A. DUCT DOWN TO SECOND FLOOR
8. 36"x20" S.A. DUCT DOWN TO SECOND FLOOR
9. 72"x28 RA CONNECTION TO AHU-2, TRANSITIONS TO 32"x48" LINED RA DUCT AFTER PENETRATING ROOF.
10. 40"x34" S.A. DUCT TRANSITIONING TO 60"x24" DOWN TO SECOND FLOOR.
11. 60"x36" R.A. OPENING WITH WMS.

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Agency Approval — FILE NO: 36-C2

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OFFICE OF REGULATION SERVICES

APPL. 04-112810

AC _____ FLS _____ SS _____

DATE _____

Consultant's Seal — REGISTERED PROFESSIONAL ENGINEER — JOSEPH M. LOCHAN — 18317/2016 — STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

No.	Description	Date
1	EHS RESUBMITAL	10/30/14
2	RFI-317	04/22/15

Drawing Title
MECHANICAL THIRD FLOOR PLAN
SEGMENT C

3546 CONCOURS STREET
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ARCHITECTS

Architecture . Planning . Interior Design

Architect's Seal — SM

Designed: JDM	Project No. 5007002
Drawn: JL	Scale: AS NOTED
Checked: SB	Drawing No. M2.33
Reviewed: SB	
Date: 03/09/2015	Sheet of

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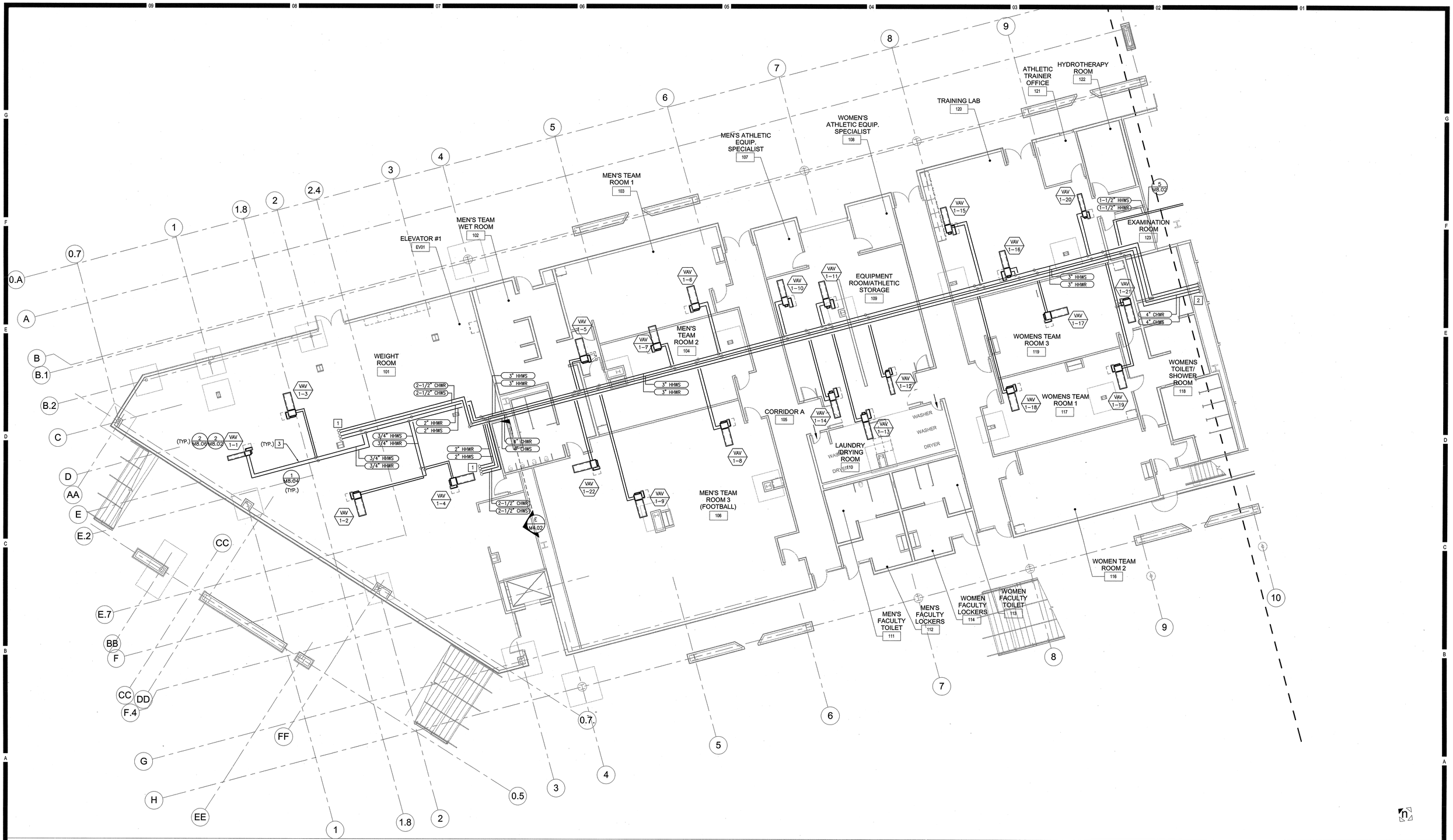
CD-202



MECHANICAL FIRST FLOOR PIPING PLAN - SEGMENT A | M1 | 1/8"=1'-0"

NOTES

KEY NOTES

1. 2-1/2" CHWS/R AND 2" HHWS/R UP TO SECOND FLOOR.
2. 4" CHWS/R AND 3" HHWS/R DOWN TO BELOW GRADE.
3. ALL VAV BOX BRANCH PIPING IS 3/4" DIAMETER. TYPICAL ALL BOXES.

p2s

P2S Engineering, Inc.

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Agency Approval FILE NO: 36-C2

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-112810
AC ____ FLS 11 SS ____
DATE APR 29 2014
APR 29 2014

Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER JAMES D. LEE No. 19 MECHANICAL STATE OF CALIFORNIA

Key Plan

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
951.788.7554

SAN BERNARDINO VALLEY COLLEGE
www.valleycollege.edu

No.	Description	Date

Drawing Title
MECHANICAL FIRST FLOOR PIPING PLAN SEGMENT A

HMC ARCHITECTS
3546 CONCOURS STREET
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Architect's Seal

Designed:	JDM	Project No.	5007002
Drawn:	JL	Scale:	AS NOTED
Checked:	SB	Drawing No.	M2.41
Reviewed:	SB		
Date:	04/15/2014	Sheet	of

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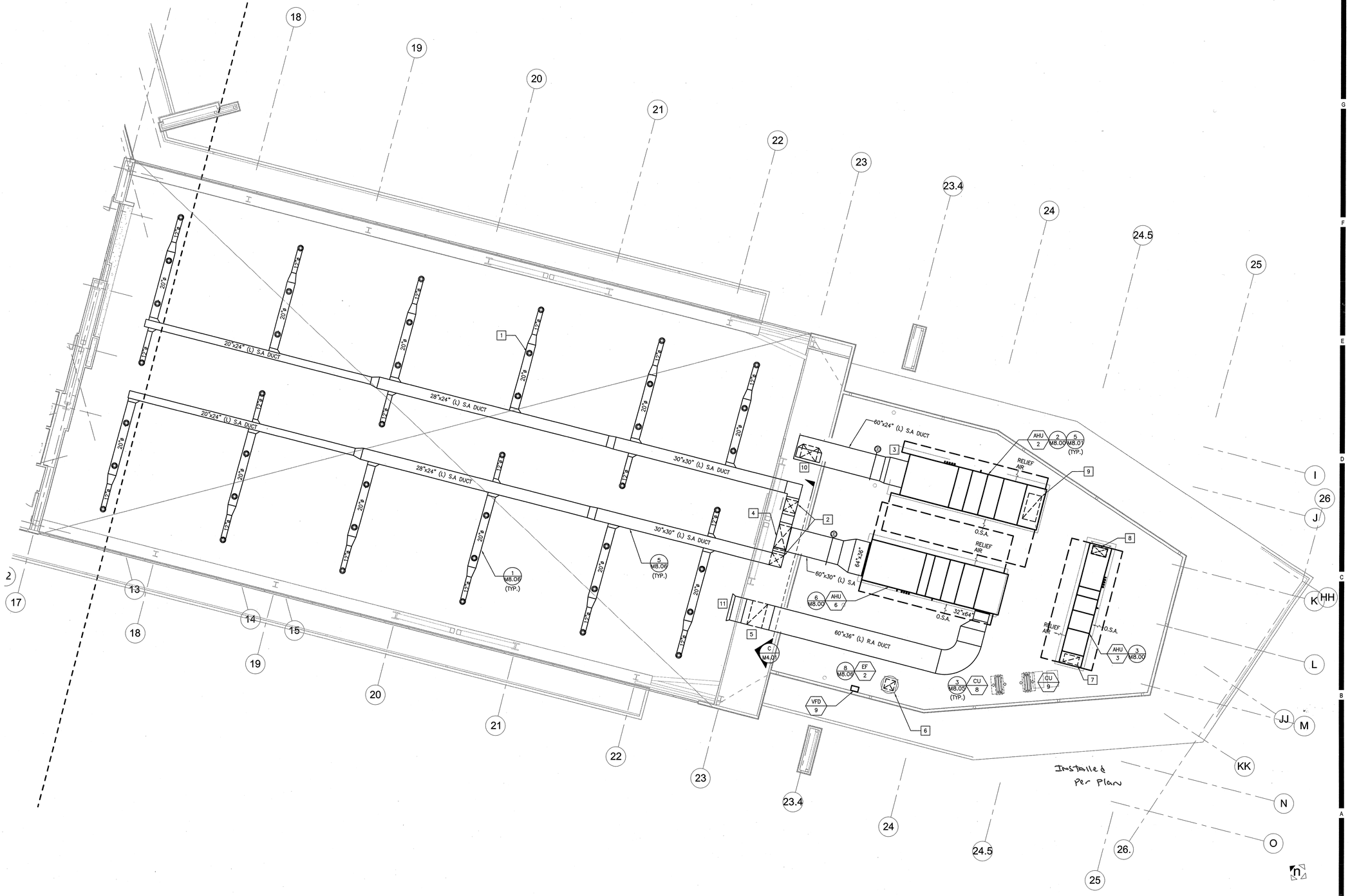

MECHANICAL THIRD FLOOR PLAN - SEGMENT C | M1

1/8"=1'-0"

NOTES

KEY NOTES

1. CD-3, 450 CFM, SEIHO MODEL NT-12, TYP. 42
2. 30"x30" LINED S.A. DUCTS (TYP. 2)
3. 64"x32" LINED S.A. DUCT FROM AHU-2
4. 60"x30"(L) TRANSITIONS TO TWO (2) 30"x30"(L) OUT TO GYMNASIUM
5. 60"X36" R.A. DUCT SERVING GYM, DOWN TO AHU-6 ON SECOND FLOOR ROOF
6. 24"X24" E.A. DUCT UP FROM SECOND FLOOR.
7. 36"x20" R.A. DUCT DOWN TO SECOND FLOOR
8. 36"x20" S.A. DUCT DOWN TO SECOND FLOOR
9. 64"x32" LINED R.A. DUCT FROM AHU-2
10. 40"x34" S.A. DUCT TRANSITIONING TO 60"x24" DOWN TO SECOND FLOOR.
11. 60"x36" R.A. OPENING WITH WMS.

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Agency Approval — FILE NO: 36-C2

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-112810
AC ____ FLS 11 SS ____
DATE APR 29 2014

Project Title: NEW GYMNASIUM & FIELD BUILDINGS

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO, CA 92410
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Consultant's Seal

REGISTERED PROFESSIONAL ENGINEER — JAMES E. POTTS — No. 18555 — MECHANICAL — STATE OF CALIFORNIA

Key Plan

No.	Description	Date

Drawing Title
MECHANICAL THIRD FLOOR PLAN
SEGMENT C

Architect's Seal

M2.33 REVISED PER RFI 317 CD-202

PLEASE RECYCLE

MECHANICAL ABBREVIATIONS

— A —	
ABV	ABOVE
A/C	AIR CONDITIONER
AFF	ABOVE FINISH FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AI	ANALOG INPUT
AO	ANALOG OUTPUT
AP	ACCESS PANEL
— B —	
BEL	BELOW
BDD	BACKDRAFT DAMPER
BTUH	BRITISH THERMAL UNITS PER HOUR
BLDG	BUILDING
— C —	
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
COMP.	COMPRESSOR
CO	CARBON MONOXIDE
CSFD	COMBINATION SMOKE/FIRE DAMPER
— D —	
DN	DOWN
DWG	DRAWING
DX	DIRECT EXPANSION
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DPR	DAMPER
DDC	DIRECT DIGITAL CONTROL
— E —	
(E)	EXISTING
EAT	ENTERING AIR TEMPERATURE
EA	EXHAUST AIR
EAD	EXHAUST AIR DUCT
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EMS	EMERGENCY MANAGEMENT SYSTEM
EWT	ENTERING WATER TEMPERATURE
— F —	
FLR	FLOOR
FPI	FINS PER INCH
FT	FOOT, FEET
— G —	
GPM	GALLONS PER MINUTE
GI	GALVANIZED IRON
— H —	
HP	HORSEPOWER
HR	HOUR
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HZ	HERTZ
— I —	
IN.	INCHES
— K —	
KW	KILOWATT
— L —	
(L)	LINED DUCT
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
LWT	LEAVING WATER TEMPERATURE
— M —	
MA	MIXED AIR
MANUF.	MANUFACTURER
MAX.	MAXIMUM
MB	MACHINE BOLT
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MFR	MANUFACTURER
MIN.	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MS	MOTOR STARTER
MTD	MOUNTED
— N —	
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NC	NOISE CRITERIA
NTS	NOT TO SCALE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
— O —	
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
ODP	OUTDOOR DRIP PROOF
OPER.	OPERATING
OSA	OUTSIDE AIR
— P —	
P.D.	PRESSURE DROP
PH.	PHASE
PSI	POUNDS PER SQUARE INCH
— Q —	
QTY.	QUANTITY
— R —	
RA	RETURN AIR
RAD	RETURN AIR DUCT
RG	RETURN GRILLE
RPM	REVOLUTIONS PER MINUTE
— S —	
SA	SUPPLY AIR
SAD	SUPPLY AIR DUCT
SENS.	SENSIBLE
SF	SUPPLY FAN
SMS	SHEET METAL SCREW
S.P.	STATIC PRESSURE
SQ	SQUARE
S/S	STAINLESS STEEL
SWR	SIDEWALL RETURN GRILLE
SWS	SIDEWALL SUPPLY GRILLE
SYM	SYMBOL
— T —	
TDH	TOTAL DYNAMIC HEAD
TYP	TYPICAL
TG	TRANSFER GRILLE
— U —	
UTR	UP THRU ROOF
— V —	
VAC	VOLTS ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
— W —	
WT	WEIGHT
W/	WITH

MECHANICAL SYMBOLS

	CD	CEILING DIFFUSER – SUPPLY	PRESSURE REDUCING VALVE
	SAD	SUPPLY AIR DUCT – RISER	ISOLATION VALVE (BALL)
	SAD	SUPPLY AIR DUCT – DROP	ISOLATION VALVE (BUTTERFLY)
	RAG	RETURN AIR GRILLE	MOTORIZED CONTROL VALVE
	RAD	RETURN AIR DUCT – RISER	CHECK VALVE
	RAD	RETURN AIR DUCT – DROP	THERMOMETER
	EAG	EXHAUST AIR GRILLE	PRESSURE GAUGE
	EAD	EXHAUST AIR DUCT – RISER	SMACNA DUCT STATIC PRESSURE CLASS
	EAD	EXHAUST AIR DUCT – DROP	POD POINT OF DEMOLITION
	SWS	SIDE WALL SUPPLY GRILLE	POC POINT OF CONNECTION
	SWR	SIDE WALL RETURN/EXHAUST GRILLE	THERMOSTAT / SENSOR. MOUNT @ +48" AFF. (IF MOUNTED OVER CASEWORK OR OTHER OBSTRUCTION 48" TO TOP OF DEVICE).
UP		DUCT OFFSET UP	TSTAT
		DUCT OR EQUIPMENT TO BE REMOVED	TC TIME CLOCK
		EXISTING DUCT TO REMAIN	DD DUCT SMOKE DETECTOR (MOUNT BELOW ROOF)
		DUCT	CO_2 CARBON DIOXIDE SENSOR FOR OUTSIDE AIR MODULATION
		DUCT TRANSITION	$\frac{D}{L}$ DL DOOR LOUVER W/ MINIMUM FREE AREA (SQ. FT.)
	MVD	MANUAL VOLUME DAMPER	$\frac{U}{C}$ UC UNDER CUT DOOR
	AFD	AUTOMATIC FIRE DAMPER	DETAIL NUMBER / DETAIL DESIGNATION (M-X) / DRAWING NUMBER
	CSFD	COMBINATION FIRE/SMOKE DAMPER	EQUIPMENT DESCRIPTION / EQUIPMENT DESIGNATION (V-1) / EQUIPMENT NUMBER
CHWS		CHILLED WATER SUPPLY PIPE	
CHWR		CHILLED WATER RETURN PIPE	
HWS		HOT WATER SUPPLY PIPE	
HWR		HOT WATER RETURN PIPE	
CWS		CONDENSER WATER SUPPLY PIPE	
CWR		CONDENSER WATER RETURN PIPE	

MECHANICAL MANDATORY MEASURES

EQUIPMENT AND SYSTEMS EFFICIENCY

ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY STANDARDS SHALL COMPLY WITH THAT STANDARD.

PIPING, EXCEPT THOSE CONVEYING FLUIDS AT TEMPERATURES BETWEEN 60°F AND 105°F, OR WITHIN HVAC EQUIPMENT, SHALL BE INSULATED IN ACCORDANCE WITH STANDARDS 5312.

AIR HANDLING DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED, SEALED, AND INSULATED AS PROVIDED IN CHAPTER 6 OF THE CALIFORNIA MECHANICAL CODE.

VENTILATION

CONTROLS SHALL BE PROVIDED TO ALLOW OUTSIDE AIR DAMPERS OR DEVICES TO BE OPERATED AT THE VENTILATION RATES AS SPECIFIED IN THESE PLANS.

ALL GRAVITY VENTILATING SYSTEMS SHALL BE PROVIDED WITH AUTOMATIC OR READILY ACCESSIBLE MANUALLY OPERATED DAMPERS IN ALL OPENINGS TO THE OUTSIDE.

AIR BALANCING: ALL SPACE CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THESE PLANS, IN ACCORDANCE WITH THE ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS.

GRAVITY OR AUTOMATIC DAMPERS INTERLOCKED AND CLOSED ON FAN SHUTDOWN SHALL BE PROVIDED ON THE OUTSIDE AIR INTAKES AND DISCHARGES OF ALL SPACE CONDITIONING AND EXHAUST SYSTEMS.

FANS USED FOR VENTILATION SHALL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.

THE MINIMUM OUTDOOR AIR LISTED OR THREE COMPLETE AIR CHANGES SHALL BE SUPPLIED TO THE ENTIRE BLDG. DURING THE ONE HOUR PERIOD IMMEDIATELY BEFORE THE BLDG. IS NORMALLY OCCUPIED.

CONTROLS

EACH SPACE CONDITIONING ZONE SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE WHERE USED TO CONTROL HEATING, THE CONTROL SHALL BE ADJUSTABLE DOWN TO 55°F OR LOWER, FOR COOLING, THE CONTROL SHALL BE ADJUSTABLE UP TO 85°F OR HIGHER, WHERE USED TO CONTROL BOTH HEATING AND COOLING, THE CONTROL SHALL BE CAPABLE OF PROVIDING A DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING IS SHUT OFF OR REDUCED TO MINIMUM.

EACH SPACE CONDITIONING SYSTEM SERVING BUILDING TYPES SUCH AS OFFICES AND MANUFACTURING FACILITIES (AND ALL OTHERS NOT EXPLICITLY EXEMPT FROM THE REQUIREMENTS OF SECTION 112 (D)) SHALL BE INSTALLED WITH AN AUTOMATIC TIME SWITCH WITH AN ACCESSIBLE MANUAL OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM DURING OFF-HOURS FOR UP TO 4 HOURS. THE TIME SWITCH SHALL BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULES FOR WEEKDAYS OR WEEKENDS, INCORPORATE AN AUTOMATIC HOLIDAY "SHUTOFF" FEATURE THAT TURNS OFF ALL LOADS FOR AT LEAST 24 HOURS, THEN RESUMES THE NORMALLY SCHEDULED OPERATION, AND HAS PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF THE DEVICES PROGRAM AND TIME SETTING FOR AT LEAST 10 HOURS IF POWER IS INTERRUPTED.

EACH SPACE CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT TEMPORARILY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN SETBACK HEATING AND/OR A SETUP COOLING THERMOSTAT SETPOINT.

THERMOSTATS SHALL HAVE NUMERIC SETPOINTS IN DEGREES FAHRENHEIT (F) AND ADJUSTABLE STOPS ACCESSIBLE ONLY BY AUTHORIZED PERSONNEL.

SEISMIC NOTES

A) THE SEISMIC ANCHORAGE FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE DESIGNED TO WITHSTAND A LATERAL FORCE:

1. THE SEISMIC ANCHORAGE OF MECHANICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 2001 CBC, 1632A, AND TABLE 16A-O, ANCHORAGE DETAILS NOT SHOWN ON THE APPROVED PLANS OR OTHERWISE APPROVED BY DSA ARE SUBJECT TO FIELD APPROVAL BY THE ARCHITECT OR STRUCTURAL ENGINEER OF RECORD AND FIELD APPROVAL BY DSA.

B) THE CAPACITY OF THE ANCHORAGE CONNECTORS IN SHEAR AND/OR TENSION SHALL BE CLEARLY INDICATED IN THE CALCULATIONS, WHICH INDICATE, ICBO REPORT NO. (IF APPLICABLE) THEIR TOTAL NUMBER, SIZE, GRADE, EMBEDMENT, EDGE DISTANCES, AND OTHER FACTORS WHICH AFFECT THE CAPACITY IN SHEAR AND TENSION.

C) ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT APPROVED DURING PLAN REVIEW ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND DSA'S DISTRICT STRUCTURAL ENGINEER PRIOR TO INSTALLATION AND INSPECTION BY THE PROJECT INSPECTOR.

ACCEPTANCE TESTING

MANDATORY ACCEPTANCE TESTING PER TITLE 24, PART 6 SECTION 125 SHALL BE AS FOLLOWS:

AN AABC AGENCY SHALL ACT AS THE ACCEPTANCE AGENT AND PERFORM WORK REQUIRED IN THE FOLLOWING ACCEPTANCE TESTS AS DESCRIBED IN CHAPTER 8 OF THE 2005 NONRESIDENTIAL COMPLIANCE MANUAL. THIS SHALL INCLUDE FILLING OUT, SIGNING, AND SUBMITTING MECH-1-A FORM AND OTHER APPLICABLE FORMS LISTED HERDIN.

1. MECH-2-A-VENTILATION SYSTEM
2. MECH-3-A-PACKAGED HVAC SYSTEM
3. MECH-4-A-AIRSIDE ECONOMIZER
4. MECH-5-A-AIR DISTRIBUTION
5. MECH-6-A-DEMAND CONTROL VENTILATION
6. MECH-7-A-SUPPLY FAN VARIABLE FLOW CONTROLS
7. MECH-8-A-HYDRONIC SYSTEM CONTROL

SPECIFIC REQUIREMENTS AND ACCEPTANCE TESTING FORMS ARE AVAILABLE IN THE 2005 NONRESIDENTIAL COMPLIANCE MANUAL WHICH CAN BE DOWNLOADED FROM www.energy.co.gov/title24/2005standards/.

GENERAL NOTES

1. ENTIRE INSTALLATION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES: 2001 CALIFORNIA MECHANICAL CODE, CALIFORNIA BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS,
2. EXACT LOCATIONS OF ALL CEILING DIFFUSERS,REGISTERS AND GRILLES ARE DETAILED ON THE ARCHITECTURAL REFLECTED CEILING PLANS AND INTERIOR ELEVATIONS.
3. EXACT LOCATION OF ALL ROOF OPENINGS TO BE COORDINATED WITH CONSTRUCTION WORK, AND ARCHITECTURAL/STRUCTURAL DRAWINGS.
4. PLATFORMS AND CURBS FOR MECHANICAL EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL PLANS. COORDINATE EXACT SIZES OF REQUIRED OPENING AND SUPPORTS FOR FURNISHED EQUIPMENT. SEE ARCHITECTURAL PLANS FOR ROOFING AND FLASHING.
5. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO PROVIDE ALL FITTINGS, TRANSITIONS,DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
6. FLEXIBLE DUCTS SHALL CONSIST OF AN EXTERIOR REINFORCED LAMINATED VAPOR BARRIER, 3" FIBERGLASS INSULATION (R-8.0), ENCAPSULATED SPRING STEEL WIRE HELIX AND IMPERVIOUS, SMOOTH NON-PERFORATED INTERIOR VINYL LINER. INDIVIDUAL LENGTHS OF FLEXIBLE DUCTS SHALL CONTAIN FACTORY FABRICATED STEEL CONNECTION COLLARS. DUCTS SHALL HAVE FLAME SPREAD RATING NOT EXCEEDING 25, AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84, NFPA 255 AND U.L. 723.
7. DUCTWORK SHALL BE INSULATED PER SPECIFICATIONS OR AS NOTED ON DRAWINGS. ALL DUCT SIZES ARE INTERNAL DUCT SIZES. ALL DUCT JOINTS AND SEAMS SHALL BE SEALED PER SPECIFICATIONS.
8. MANUAL DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES TO INDIVIDUAL DIFFUSERS,GRILLES AND REGISTERS.
9. ALL EQUIPMENT, DUCTS PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHERPROOFED.
10. FIXED MECHANICAL EQUIPMENT,PIPING, AND DUCTWORK SHALL BE SECURELY FASTENED IN PLACE AND SEISMICALLY RESTRAINED.
11. PROVIDE FIRE DAMPERS/SMOKE FIRE DAMPERS AT ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOOR/CEILING AS REQUIRED BY, AND TO COMPLY WITH, U.B.C. SECTION 713.10. DAMPERS SHALL BE INSTALLED STRICTLY PER MANUFACTURERS INSTRUCTIONS.
12. ALL APPLIANCES AND PLUMBING VENTS SHALL TERMINATE AT LEAST TEN (10) FEET IN A HORIZONTAL DIRECTION, OR THREE (3) FEET ABOVE THE OUTSIDE AIR INTAKES FOR HVAC UNITS.
13. FLEXIBLE DUCTS SHALL BE SUPPORTED AT OR NEAR MID-LENGTH WITH 2" WIDE 28 GA. STEEL HANGER COLLAR ATTACHED TO THE STRUCTURE WITH AN APPROVED DUCT HANGER. INSTALLATION SHALL MINIMIZE SHARP RADIUS TURNS OR OFFSETS. 7' MAXIMUM LENGTH CONNECTING TO TERMINAL OUTLETS.
14. NO RANGE HOOD VENTS, DRYER VENTS, COMBUSTION VENTS, OR HEATING DUCTS ARE PERMITTED IN AREA SEPARATION WALLS.
15. ALL SMOKE FIRE DAMPERS SHALL BE LINKED TO THE FIRE ALARM SYSTEM.
16. DUCT CONSTRUCTION SHALL BE GALVANIZED STEEL IN ACCORDANCE W/ CHAPTER 6 OF THE C.M.C. GAGES SHALL CONFORM TO 1995 SMACNA STANDARDS. ALL DUCTS AND PIPES SHALL BE BRACED PER MASON SEISMIC RESTRAINT GUIDELINES FOR THE SEISMIC RESTRAINT OF MECHANICAL SYSTEMS. A COPY OF THE SEISMIC GUIDELINES SHALL BE KEPT ON THE JOB AT ALL TIMES. SEAL ALL SEAMS AND JOINTS WATERTIGHT. FLEXIBLE ALUMINUM DUCTWORK IS NOT ALLOWED. DUCT TAPE IS NOT ALLOWED.
17. PENETRATIONS OF PIPES, CONDUITS, ETC. IN WALLS REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED. FIRE STOP MATERIAL SHALL BE A TESTED ASSEMBLY APPROVED BY THE FIRE MARSHALL.
18. MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
19. LINE VOLTAGE WIRING AND CONDUIT, UNDERGROUND LOW VOLTAGE CONDUIT, DISCONNECT SWITCHES AND FINAL CONNECTION BY ELECTRICAL CONTRACTOR. LOW VOLTAGE WIRING ABOVE GROUND LOW VOLTAGE CONDUIT, & FINAL CONNECTION BY CONTROLS CONTRACTOR. ALL CONDUIT SHALL BE INSTALLED PER DIVISION 26 REQUIREMENTS.
20. INSULATION OR LINING APPLIED TO THE INTERIOR OR EXTERIOR OF DUCTWORK LOCATED IN THE BUILDING SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND SMOKE DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE INSTALLATION INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED.
21. PROVIDE AND MAINTAIN ACCESS AND WORKING SPACE NEAR MECHANICAL, ELECTRICAL AND CONTROL EQUIPMENT TO PERMIT READY AND SAFE OPERATION, EXAMINATION AND MAINTENANCE.
22. DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS ELBOWS OR OTHER ELEMENTS WHICH MAY BE REQUIRED. CONTRACTOR OR SHALL PROVIDE ALL ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION, WITH NO ADDITIONAL COST TO THE OWNER.
23. CONTRACTOR SHALL REFER TO ALL OTHER DRAWINGS FOR REFERENCE DATA AND VERIFICATION PURPOSES.
24. COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT WORK AND EQUIPMENT COORDINATE WORK WITH OTHER TRADES AND ALL JOB CONDITIONS.
25. EACH PIECE OF EQUIPMENT COMPRISING PART OF MECHANICAL SYSTEM SHALL BE CHECKED FOR PROPER LUBRICATION, DRIVE ROTATION, BELT TENSION, PROPER CONTROL SEQUENCE AND ANY OTHER CONDITION WHICH MAY CAUSE IMPROPER EQUIPMENT OPERATION, DAMAGE TO EQUIPMENT OR ENDANGER PERSONNEL.
26. ALL SPACE CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THE PLANS, IN ACCORDANCE WITH ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS.
27. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBERS SHALL BE CUT, DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.
28. PROVIDE PERMANENT LABEL ON EACH A/C UNIT IDENTIFYING AREA/SPACE SERVED PER CMC 304.5. COORDINATE ROOM NUMBERS WITH OWNER. SEE 15075 FOR ADDITIONAL REQUIREMENTS.
29. ALL OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL INCORPORATE DAMPERS THAT AUTOMATICALLY CLOSE DURING PERIODS OF NON-USE. THE DAMPERS SHALL BE EITHER MOTORIZED OR OF THE GRAVITY TYPE.
30. PROVIDE FLEXIBLE CONNECTIONS TO ALL HVAC EQUIPMENT (A/C UNIT, FANS, ETC.)
31. CONTRACTOR SHALL PROVIDE AS-BUILTS, CAD GENERATED AND DRAWN TO 1/8" = 1'-0" SCALE. SUBMIT 3 SETS OF HARD COPIES AND 1 ELECTRONIC COPY ON CD-ROM. CAD DRAWINGS SHALL BE THE LATEST VERSION OF AUTOCAD. COORDINATE REQUIREMENTS WITH OWNER.

DELETE ALL MANUAL VOLUME DAMPERS THAT ARE NOT YET INSTALLED (UPSTREAM DAMPERS ONLY) 1

EQUIPMENT, DUCTING, AND PIPING ANCHORAGE NOTES

THE STRUCTURAL FRAMING IS AS INDICATED IN THE STRUCTURAL DRAWINGS. ALL OTHER ADDITIONAL/MISCELLANEOUS FRAMING REQUIRED FOR THE ANCHORAGE OF ALL FIXED EQUIPMENT SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

THE BELOW LISTED REQUIREMENTS SHALL BE COMPLIED WITH:

1. ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH MASON SEISMIC RESTRAINT GUIDELINES FOR SEISMIC RESTRAINT OF MECHANICAL SYSTEMS. OSHPD PRE-APPROVAL : OPA-0349. SEISMIC HAZARD LEVEL AA.
2. WHERE ANCHORAGE & BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER AND THE INSPECTOR.
3. A COPY OF THE GUIDELINES PUBLISHED BY MASON SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB SITE AT ALL TIMES.
4. THE SUB-CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE EQUIPMENT AND SHALL PROVIDE DETAILS AND SUBSTANTIATING CALCULATIONS FOR THE SUPPORT AND ANCHORAGE OF FIXED EQUIPMENT (MECHANICAL, ELECTRICAL, PLUMBING AND MISCELLANEOUS) IF:
   A. THE EQUIPMENT HAS AN OPERATING WEIGHT OVER 400 POUNDS AND IS MOUNTED DIRECTLY ON THE FLOOR OR ROOF, OR
   B. THE EQUIPMENT HAS AN OPERATING WEIGHT OVER 20 POUNDS AND IS SUSPENDED FROM THE ROOF, FLOOR, OR WALL OR IS SUPPORTED BY VIBRATION ISOLATION DEVICES.
5. THW CALCULATIONS AND DETAILS SUBMITTED TO THE ENGINEER OF RECORD SHALL BE SEALED AND SIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.

CLIENT:

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Valley Colle
701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO - CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER
JEFFREY N. ANDERSON
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STATE OF CALIFORNIA

DCGR ENGINEERS
Consulting Mechanical and Electrical E

ARCHITECT STAMP:

LICENSED ARCHITECT
JEFFREY N. ANDERSON
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REN. 11-30-08
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IDENTIFICATION
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APPL # 4-1
FILE # 36
AC / F/LS: NBZ
DATE: APR 2 4 2

REVISION HISTORY - THIS
1 PD # 060

KEY PLAN

RECORD DRAWING
RECORD INFORMATION
INFORMATION ADDED BY THE CONTRACTOR
AS CERTIFIED BY THE ARCHITECT
FEB 02 2010

SAN BERNARDINO CAMPUS PROJECT

MECH. GENERAL NOT
SYMBOLS & ABBREV.
NORTH HALL
REPLACEMENT BUIL

SCALE
DATE
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P:\San Bernadino Valley College\North Hall Repl #20-07070\Dwgs\M\20L_07070_MHN_001.dwg 04/14/08 8:38:42pm J. Aldaz

SYMBOLS LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S.A.	SUPPLY AIR
	R.A.	RETURN AIR
	E.A.	EXHAUST AIR
		FLEX DUCT
		DUCT RISE/ DUCT DROP
		DUCT SOUND INSULATION (ALL DUCTWORK WITH INTERNAL LINING SHALL BE OF DOUBLE WALL CONSTRUCTION).
		TRANSITION FROM SQUARE TO ROUND
		ACCESS DOOR/HATCH
R		DUCT RISE
D		DUCT DROP
	SD	SMOKE DETECTOR, DUCT TYPE SYSTEM
T		THERMOSTAT
L	M.V.D.	MANUAL VOLUME DAMPER
	P.O.C. / P.O.R.	POINT OF CONNECTION / POINT OF REMOVAL
	HTWS	HIGH TEMPERATURE WATER SUPPLY
	HTWR	HIGH TEMPERTATURE WATER RETURN
	LPCWS	LABORATORY PROCESS COOLING WATER SUPPLY
	LPCWR	LABORATORY PROCESS COOLING WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	HHWS	HEATING HOT WATER SUPPLY
	HHWR	HEATING HOT WATER RETURN
	BV	BALANCING VALVE/CIRCUIT SETTER
	SOV	SHUT OFF VALVE (GATE VALVE)
XX/YY		EQUIPMENT IDENTIFICATION / EQUIPMENT NUMBER
	FD	FIRE DAMPER
	SFD	SMOKE FIRE DAMPER
	SV, EV, FV	LAB CONTROLS SUPPLY AIR VALVE (SV), GENERAL LAB EXHAUST VALVE (EV), FUME HOOD EXHAUST VALVE (FV)
	VAV	VAV TERMINAL BOX WITH REHEAT COIL
		TURNING VANES
		BALL VALVE
		BUTTERFLY VALVE
		GATE VALVE
		GATE VALVE, ANGLE
		GLOBE VALVE
		GLOBE VALVE ANGLE
		THREE WAY VALVE
		SWING GATE CHECK VALVE
PRV-1		PRESSURE REDUCING VALVE (INDICATE NUMBER AND SPECIFY TYPE)
		THERMAL EXPANSION BELLOWS
		PIPE ANCHOR
		EXPANSION JOINT
		EXPANSION LOOP
		FLEXIBLE CONNECTOR
FS		FLOW SWITCH
PG		PRESSURE GAUGE AND COCK
PS		PRESSURE SWITCH
		PUMP
		FLANGED SPOOL PIECE
		STRAINER
		BLOW OFF STRAINER
		THERMOMETER
		THERMOMETER WELL ONLY
		ELECTRIC MOTOR
		PLATE & FRAME HEAT EXCHANGER
		LABORATORY EQUIPMENT SNORKEL REFER TO NOTE 6 ON THIS SHEET
X / X		TOP OF DUCT / BOTTOM OF DUCT
		316 STAINLESS STEEL FUME HOOD EXHAUST DUCT

NOTE: NOT ALL SYMBOLS OR ABBREVIATONS MAY BE USED THIS PROJECT.

ABBREVIATIONS

DDC	DIRECT DIGITAL CONTROL
CD	CEILING DIFFUSER
R.A.	RETURN AIR
S.A.	SUPPLY AIR
E.A.	EXHAUST AIR
NTS	NOT TO SCALE
EXP. JOINT	EXPANSION JOINT
ABV.	ABOVE
AC, A/C	AIR CONDITIONING
A.F.F.	ABOVE FINISHED FLOOR
BEL	BELOW
CEIL	CEILING
DN	DOWN
EF	EXHAUST FAN
FLR	FLOOR
W/, W/O	WITH, WITHOUT
N.I.C.	NOT IN CONTRACT
U/C	UNDER CUT
U.T.R.	UP THROUGH ROOF
V.T.R.	VENT THROUGH ROOF
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
HHWS	HEATING HOT WATER SUPPLY (180°F)
HHWR	HEATING HOT WATER RETURN (140°F)
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY (350°F)
HTHWR	HIGH TEMPERATURE HOT WATER RETURN (250°F)
COND	CONDENSATE
VSD	VARIABLE SPEED DRIVE
MCC	MOTOR CONTROL CENTER
OSA	OUTISDE AIR
	BRACED FRAME WALL
	1 HOUR FIRE RATED WALL

NOTE: NOT ALL SYMBOLS OR ABBREVIATONS MAY BE USED THIS PROJECT.

DDC SYMBOLS LEGEND

SYMBOL	ABBR.	DESCRIPTION
AI	AI	ANALOG IN
ALM	ALM	ALARM HORN
AO	AO	ANALOG OUT
ASC	ASC	APPLICATION SPECIFIC CONTROLLER
CPA	CPA	CONTROL POINT ADJUST
CSR	CSR	CURRENT SENSING RELAY
C/T	C/T	CURRENT TRANSFORMER
DDCP	DDCP	DIRECT DIGITAL CONTROL PANEL
DI	DI	DIGITAL IN
DO	DO	DIGITAL OUT
DPT	DPT	DIFFERENTIAL PRESSURE TRANSMITTER
EMS	EMS	SIGNAL TRANSMITTED TO/FROM EMS
FS	FS	FLOW SWITCH
I/P	I/P	CURRENT/PRESSURE TRANSDUCER
R/V	RV	REVERSING VALVE
S/S	S/S	START/STOP
STR	STR	MOTOR STARTER
TC	TC	TEMPERATURE CONTROLLER
TT	TT	TEMPERATURE TRANSMITTER
SD	SD	SMOKE DETECTOR (DUCT TYPE)
NC – ⋈	NC	NORMALLY CLOSED CONTACT
NO – | |	NO	NORMALLY OPEN CONTACT
	OSA	OUTSIDE AIR
	NTS	NOT TO SCALE
	MA	MIXED AIR
	RA	RETURN AIR
	SA	SUPPLY AIR
	BCMS	BUILDING CONTROL MANAGEMENT SYSTEM

NOTE: NOT ALL SYMBOLS OR ABBREVIATONS MAY BE USED THIS PROJECT.

APPLICABLE CODES

LIST OF 1998 CALIFORNIA CODE OF REGULATIONS (C.C.R.):
APPLICABLE CODE AS OF JULY 1, 1999:

PART 1 – 1998 CALIFORNIA STANDARDS ADMINISTRATIVE CODE, TITLE 24 C.C.R.

PART 2 – 1998 CALIFORNIA BUILDING CODE (CBC), TITLE 24, C.C.R. VOLUMES 1,2, AND 2B.
(WITH 1997 U.B.C. FOR VOL. 1 AND 2 AND 1994 U.B.C. FOR VOL. 2B)

PART 3 – 1998 CALIFORNIA ELECTRICAL CODE, TITLE 24, C.C.R.
(WITH 1996 NATIONAL ELECTRICAL CODE OF NATIONAL FIRE PROTECTION ASSOCIATION)

PART 4 – 1998 CALIFORNIA MECHANICAL CODE (CMC). TITLE 24, C.C.R.
(WITH 1997 UNIFORM MECHANICAL CODE OF INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS)

PART 5 – 1998 CALIFORNIA PLUMBING CODE, TITLE 24, C.C.R.
(WITH 1997 UNIFORM PLUMBING CODE OF INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS)

PART 6 – 1998 CALIFORNIA ENERGY CODE, TITLE 24, C.C.R.

PART 7 – 1998 CALIFORNIA ELEVATOR SAFETY CONSTRUCTION CODE, TITLE 24, C.C.R.

PART 8 – 1998 CALIFORNIA HISTORICAL BUILDING CODE, TITLE 24, C.C.R.

PART 9 – 1998 CALIFORNIA FIRE CODE, TITLE 24, C.C.R.
(WITH 1997 UNIFORM FIRE CODE OF INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS AND THE WESTERN FIRE CHIEFS ASSOCIATION)

PART 10 – 1998 CALIFORNIA CODE FOR BUILDING CONSERVATION, TITLE 24, C.C.R.
(WITH 1997 UNIFORM CODE FOR BUILDING CONSERVATION OF THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS)

PART 11 – 1998 CALIFORNIA REFERENCE STANDARDS CODE, TITLE 24, C.C.R.

PARTIAL LIST OF APPLICABLE NFPA STANDARDS:
1998 CALIFORNIA BUILDING CODE (FOR SFM) NATIONAL STANDARDS SECTION 3504.1.3.

NFPA 13 – AUTOMATIC SPRINKLER SYSTEMS, 1996 EDITION
NFPA 14 – STANDPIPE SYSTEMS, 1996 EDITION
NFPA 17A – WET CHEMICAL SYSTEMS, 1994 EDITION
NFPA 24 – PRIVATE FIRE MAINS, 1995 EDITION
NFPA 72 – (CALIFORNIA AMENDED) NATIONAL FIRE ALARM CODES, 1996 EDITION

THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 1998 CBC SECTION 16.32A AND TABLE 16A–O. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR CHANGE ORDER APPROVED BY THE OFFICE OF STATE ARCHITECT, AS REQUIRED BY SECTION 4–338, PART 1, TITLE 24, CCR.

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE OFFICE OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4–342, PART 1, TITLE 24, CCR.

UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT DEFINED AS APPROVED ON THE "DSA APPROVED BID SET" ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA'S DISTRICT STRUCTURAL ENGINEER PRIOR TO INSTALLATION BY THE CONTRACTOR AND INSPECTION BY THE PROJECT INSPECTOR.

GENERAL NOTES:

1. THESE DRAWINGS AND SPECIFICATIONS ARE DIAGRAMMATIC TO THE EXTENT THAT SOME ITEMS SHOWN ON PLANS ARE IN A MANNER TO TO PROVIDE CLARITY ONLY. ACTUAL FIELD ROUTING AND INSTALLATION SHALL BE PROVIDED IN COORDINATION WITH OTHER TRADES AND ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL PROPERLY INTERFACE WITH STRUCTURE AND ALL OTHER SYSTEMS TO ACCOMPLISH THE INTENT OF THIS DESIGN. LOCATIONS OF HVAC EQUIPMENT AND DUCTING MAY VARY DUE TO ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL NOT SCALE OFF OF THESE DRAWINGS TO PLACE OR OTHERWISE LOCATE EQUIPMENT HANGERS, ANCHORS OR ANY OTHER SUPPORT SYSTEM. VERIFY ALL DIMENSIONS, EQUIPMENT WEIGHTS, LOCATIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND ORDERING MATERIALS. MAKE ALL NECESSARY ACCOMMODATIONS TO PROVIDE FOR A COMPLETE AND OPERATING SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
2. COORDINATE WORK WITH ALL TRADES PRIOR TO START OF WORK.
3. WHEN CONFLICTS OCCUR BETWEEN TRADES, IMMEDIATELY NOTIFY THE ARCHITECT.
4. INSTALL ALL THERMOSTATS AT 4'–0" ABOVE FINISHED FLOOR WHERE INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ARCHITECT.
5. INSTALL DUCTWORK & PIPING AS HIGH AS POSSIBLE. WHERE DUCTWORK & PIPING ARE TO BE LOCATED IN SAME AREA, PIPING SHALL BE INSTALLED BELOW DUCTWORK.
6. DUCT WORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE 1988 CMC, SEISMIC RESTRAINT SHALL BE PER "SMACNA DESIGN GUIDE FOR SEISMIC RESTRAINTS", LATEST EDITION. SMACNA SEISMIC RESTRAINT DETAILS SHALL CONFORM TO SHL AA UNLESS OTHERWISE NOTED.
7. FIXTURES AND EQUIPMENT SHALL BE IN COMPLIANCE WITH CALIFORNIA ENERGY COMMISSION REQUIREMENTS AND CERTIFICATIONS.
8. INCLUDE STATEMENTS INDICATING THAT THE INSTALLED DEVICES CONFORM TO THE STATE OF CALIFORNIA APPLIANCE STANDARDS, OF TITLE 24, PLANS, AND SPECIFICATIONS.
9. THE AIR DISTRIBUTION DUCTS SHALL BE CONSTRUCTED, INSTALLED, AND, SEALED AS PROVIDED IN SMACNA DESIGN GUIDE FOR "HVAC DUCTWORK. CONSTRUCTION STANDARDS, METAL, AND FLEXIBLE", LATEST EDITION. INSULATION SHALL BE SECTION 604, CMC 1998.
10. FAN SYSTEMS EXHAUSTING AIR FROM THE BUILDING SHALL BE PROVIDED WITH BACK DRAFT DAMPERS.
11. CLEARANCES SHALL BE PER MANUFACTURER'S LISTINGS ON MECHANICAL AND ELECTRICAL EQUIPMENT.
12. SYSTEMS PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR–MOVING EQUIPMENT UPON DETECTION OF SMOKE IN THE MAIN SUPPLY AIR DUCT SERVED BY SUCH EQUIPMENT. SMOKE DETECTORS SHALL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT AND SHALL COMPLY WITH THE CALIFORNIA BUILDING CODE. AND SHALL BE LABELED BY AN APPROVED AGENCY FOR AIR DUCT INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES, AND HUMIDITIES OF THE SYSTEM. THE SMOKE DETECTORS REQUIRED SHALL BE SUPERVISED BY THE FIRE ALARM SYSTEM AND SHALL ACTIVATE THE FIRE ALARM SYSTEM. IN ACCORDANCE WITH SECTION 608, CMC 1998.
13. SMOKE DETECTION REQUIRED BY SECTION 608 CMC SHALL BE BY A SMOKE DETECTOR COMPLYING WITH NFPA 72 WHICH WILL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT, INSTALLED IN THE MAIN SUPPLY AIR DUCT. ACTIVATION OF DETECTOR SHALL CAUSE THE AIR MOVING EQUIPMENT TO AUTOMATICALLY SHUT DOWN AND ACTIVATE THE FIRE ALARM SYSTEM. (S38)
14. LOCATE CEILING DIFFUSERS AND SIDEWALL REGISTERS IN ACCORDANCE WITH ARCHITECTURAL/ELECTRICAL REFLECTED CEILING PLANS AS SHOWN. WHERE NOT SHOW, IMMEDIATELY NOTIFY THE ARCHITECT. COORDINATE WITH ELECTRICAL, AND OTHER AFFECTED CONTRACTORS FOR ALIGNMENT WITH CEILING GRIDS, LIGHT FIXTURES AND OTHER OBSTACLES SO AS TO PROVIDE FOR A PROPER INSTALLATION.
15. DUCT MOUNTED SMOKE DETECTORS SHALL BE LOCATED WITHIN THE BUILDING ENVELOPE PER CODE. PROVIDE AND INSTALL ACCESS DOOR AS REQUIRED TO PROVIDE FOR SERVICE AND MAINTENANCE OF DETECTORS.
16. MECHANICAL WORK SHALL COMPLY WITH T24 PART 4 CCR.
17. PIPES, AND CONDUIT'S SHALL BE SUPPORTED AND BRACED PER SMACNA GUIDELINES AS SHOWN IN SMACNA "SEISMIC RESTRAINT MANUAL GUIDLINES FOR MECHANICAL SYSTEMS", LATEST EDDITION;INCLUDING APPENDICIES. SUPPORT SHALL BE PER SHL–AA UNLESS OTHER WISE NOTED.
18. PROVIDE AND INSTALL OPPOSED BLADE BALANCING DAMPERS FOR DIFFUSERS, GRILLES, AND REGISTERS.
19. EXPOSED SUPPLY AND RETURN AIR DUCTS SHALL BE INTERNALLY LINED. COORDINATE WITH ARCHITECTURAL FINISH PLANS FOR LOCATIONS.
20. PANELS OR ENCLOSURES INTENDED FOR OUTSIDE APPLICATIONS SHALL BE GASKETED NEMA CLASS 4.
21. HVAC EQUIPMENT CURBS SHALL BE INSTALLED TO MATCH ROOF SLOPE TO PROVIDE FOR A COMPLETELY LEVEL INSTALLATION. SUCH CURBS SHALL ALSO BE ORDERED AT THE VERY MINIMUM HEIGHT REQUIRED TO ACCOMPLISH A COMPLETELY LEVEL INSTALLATION. TOP OF CURB SHALL BE NO LESS THAN 8" ABOVE FINISHED ROOF AT ANY LOCATION. COORDINATE WITH ROOFING CONTRACTOR PRIOR TO ODERING CURBS.
22. PROVIDE AND INSTALL ACCESS DOORS FOR SMOKE FIRE DAMPERS, BYPASS DAMPERS, ZONE DAMPERS, AND DUCT MOUNTED SMOKE DETECTORS MINIMUM SIZE OF 24" X 24". COORDINATE SELECTION AND COLORS WITH ARCHITECT. COORDINATE MASKING AND PAINTING WITH PAINTING CONTRACTOR. PROVIDE AND INSTALL ACCESS DOORS IN DUCT FOR SERVICE & MAINTENANCE OF SMOKE/FIRE DAMPERS IN ACCORDANCE WITH SECTION 605, CMC 1998.
23. HVAC UNITS SHALL BE PROVIDED WITH ALL REQUIRED COMPONENTS AND SYSTEM CONTROLS SO AS TO INTEGRATE INTO EXISTING CAMPUS DDC COMMUNICATIONS.
24. HVAC EQUIPMENT DIMENSIONS AND MODEL NUMBERS SHALL BE VERIFIED WITH MANUFACTURER PRIOR TO ORDERING OF EQUIPMENT, EQUIPMENT CURBS OR ASSOCIATED MATERIALS.
25. INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS SHALL HAVE A FLAME–SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE–DENSITY RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE INSTALLATION INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED. IN ACCORDANCE WITH SECTION 604.3, CMC 1998.
26. AIR FILTERS SHALL BE A STATE FIRE MARSHALL APPROVED AND LISTED TYPE. PREFORMED FILTERS HAVING COMBUSTIBLE FANNING SHALL BE TESTED AS A COMPLETED ASSEMBLY. AIR FILTERS IN ALL OCCUPANCIES SHALL BE CLASS 2 OR BETTER (AS SHOWN IN STATE FIRE MARSHALL LISTING). ALL FILTERS SHALL BE ACCESSIBLE TO CLEANING OR REPLACEMENT, AND BE OF A STANDARD SIZE.
27. CONTROLS CONTRACTOR SHALL PROVIDE AND INSTALL NECESSARY HARDWARE, SOFTWARE, WIRING AND CONDUIT TO REQUIRED COMPONENTS TO PROVIDE FOR A COMPLETE AND FUNCTIONING ENERGY MANAGEMENT SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
28. SUPPLY, RETURN, AND EXHAUST AIR DISTRIBUTION DUCTS SHALL BE GAUGED, INCLUDING JOINT REINFORCEMENT & BRACING, IN ACCORDANCE WITH "SMACNA DESIGN GUIDE FOR HVAC DUCTWORK CONSTRUCTION STANDARDS FOR METAL, & FLEXIBLE", LATEST EDITION. UNDER NO CIRCUMSTANCE SHALL THE DUCT GAUGE BE LESS THAN 26 GAUGE.
29. DIFFUSERS, GRILLS, REGISTERS, BYPASS AND ZONE DAMPERS SHALL BE MANUFACTURED BY TITUS OR APPROVED EQUAL. CONTROLS FOR BYPASS AND ZONE DAMPERS SHALL BE PROVIDED, INSTALLED, AND CALIBRATED BY CONTROLS CONTROLS CONTRACTOR, AUTOMATED LOGIC.
30. ZONE AND BYPASS DAMPERS SHALL BE ORDERED AND INSTALLED FOR THE CFM RANGE THEY ARE INTENDED, PER MANUFACTURERS RECOMMENDATIONS.
31. PROVIDE AND INSTALL DUCT TRANSITIONS AT ZONE AND BYPASS DAMPERS AS REQUIRED. SEE FLOOR PLANS FOR SIZE OF DUCTS, REFER TO SCHEDULES ON M1.03 FOR DAMPER CONNECTION SIZES.
32. THERMOSTATS AND TEMPERATURE SENSORS LOCATED ON EXTERIOR WALLS OR ADJACENT TO UNCONDITIONED SPACES SHALL BE MOUNTED ON 1" THICK FIBERGLASS OR CORK PAD.
33. LOW VOLTAGE CONTROL WIRING AND CONDUIT FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE CONTROLS CONTRACTOR. HIGH VOLTAGE WIRE AND CONDUIT SHALL BE BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO TEMPERATURE SENSORS, CONTROL ACTUATORS AND DDC PANELS CONCEALLED IN WALLS SHALL BE RUN IN CONDUIT, BY CONTROLS CONTRACTOR. SEE SPECIFICATION 15905 FOR FURHTER INFORMATION. FOR CONDUIT EXTERIOR TO BUILDING AND BACK TO SHOP SEE ELECTRICAL SITE PLAN. CONDUIT BY ELECTRICAL, WIRE/ CABLE BY CONTROLS CONTRACTOR.
34. ROUND DUCTS SHALL BE PRE–MANUFACTURED SPIRAL LOCKSEAM CONSTRUCTED TO SMACNA STANDARDS.
35. CONTRACTOR SHALL NEITHER CUT, NOTCH, OR DAMAGE ANY STRUCTURAL MEMBER NOT SPECIFICALLY DETAILED ON THE DRAWINGS.
36. IN CASE OF DISCREPANCIES BETWEEN PLANS AND SPECIFICATION, THE MOST STRINGANT REQUIREMENT SHALL APPLY.
37. AT TIME OF SUBMITTAL, PROVIDE MOCKUPS FOR THE FOLLOWING ITEMS FOR ARCHITECTURAL & MECHANICAL REVIEW; (1) SAMPLE OF EACH TYPE OF GRILLE AND DIFFUSER INTENDED FOR USE; (1) WALL MOUNTED THERMOSTAT/SENSOR; (1) OF EACH TYPE OF ZONE/ BYPASS DAMPER (1 ROUND, & 1 RECTANGULAR); (1) BUILDING STATIC PRESSURE TRANSMITTER WALL MOUNTED BOX & WALL PLATE; (1) 24"x24" SAMPLE OF EXTERNAL, FOIL FACED INSULATION INTENDED FOR EXPOSED DUCTS. WHEN SUBMITTING MOCKUPS, SUBMIT WITH COLORS INTENDED. COORDINATE COLOR SELECTIONS WITH ARCHITECT PRIOR TO SUBMITTAL. SEE SPECIFICATIONS FOR OTHER MOCKUP REQUIREMENTS.

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LICENSED ARCHITECT – MARK L. BLUROCK – NO. C009332 – 12/31/03 RENEWAL DATE – STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-103726
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DATE JUN 26 2002

SUBMITTALS

SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL SYMBOLS AND GENERAL NOTES

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M1.01

ROOFTOP PACKAGED UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NO.	SA FAN CFM	MIN. O.S.A. CFM	COOLING CAPACITY: NOMINAL TOTAL TONS	SENSIBLE MBTU/HR	COND. °F EDB	EVAP. °F EWB	ESP IN. WG.	HEATING INPUT/ OUTPUT MBTU/HR: 1st STAGE	2nd STAGE	AFUE (%)	ELECTRICAL: MCA	MOCP	V/PH/HZ	EER	FILTER SIZE [IN] NO. & SIZE	APPROX. OPERATING WEIGHT (LBS)	APPROX. CURB WEIGHT (LBS)	EQUIPMENT DIMENSIONS L X W X H	DISCHARGE PATTERN	POWER EXHAUST/ECONOMIZER: WEIGHT (LBS.)	V/PH/HZ	FL AMPS	HP	REMARKS/ ACCESSORIES	EQUIP. NO.
AC 1	CARRIER 48HJD015	4170	1350	12	108	95	67	1.5	172/139	225/182.5	81	29	35	460/3#/60	10.5	(4) 20x20x2	1,725	236	86"x83"x45"	HORIZONTAL	500	460/3/60	5.6	2	PROVIDE WITH OUTSIDE MICROMETAL 4080-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 5, M4.05. SMOKE DETCTOR REQUIRED	AC 1
AC 2	CARRIER 48HJD015	4500	1730	12	108	95	67	1.5	172/139	225/182.5	81	29	35	460/3#/60	10.5	(4) 20x20x2	1,725	236	86"x83"x45"	HORIZONTAL	500	460/3/60	5.6	2	PROVIDE WITH OUTSIDE MICROMETAL 4080-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 5, M4.05. SMOKE DETCTOR REQUIRED	AC 2
AC 3	CARRIER 48HJD009	3015	1110	8.5	68.9	95	67	0.85	90/72.9	125/102.5	82	23.3	30	460/3#/60	11.0	(4) 16x20x2	880	213	87"x58"x41"	HORIZONTAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED	AC 3
AC 4	CARRIER 48HJD009	3360	1115	8.5	68.9	95	67	0.93	90/72.9	125/102.5	82	23.3	30	460/3#/60	11.0	(4) 16x20x2	880	213	87"x58"x41"	HORIZONTAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED	AC 4
AC 5	CARRIER 48HJE006	1965	165	8.5	43.8	95	67	0.95	50/41	72/59	82	14.7	20	460/3#/60	11.0	(2) 16x25x2	560	174	73"x45"x33"	HORIZONTAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 5
AC 6	CARRIER 48HJD008	3615	436	7.5	67.2	95	67	0.99	90/72.9	125/102.5	82	19.2	25	460/3#/60	11.0	(4) 16x20x2	870	174	87"x58"x41"	HORIZONTAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED	AC 6
AC 7	CARRIER 48HJE004	1180	165	3	27.2	95	67	0.72	50/41	72/59	82	9	15	460/3#/60	11.2	(2) 16x25x2	530	213	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 7
AC 8	CARRIER 48HJE017	6800	1530	15	95	95	67	1.50	206/166.8	270/218.7	81	41	50	460/3#/60	10.5	(4) 20x20x2 (4) 16x20x2	1,725	236	86"x83"x47"	HORIZONTAL	500	460/3/60	5.6	2	PROVIDE WITH OUTSIDE MICROMETAL 4080-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 5, M4.05. SMOKE DETCTOR REQUIRED	AC 8
AC 9	CARRIER 48HJD007	2100	655	6	55.3	95	67	0.88	50/41	72/59	82	11.9	15	460/3#/60	11.0	(2) 16x25x2	615	174	73"x45"x33"	HORIZONTAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 9
AC 10	CARRIER 48HJD005	1605	450	5	43.8	95	67	0.86	50/41	72/59	82	14.7	20	460/3#/60	11.0	(2) 16x25x2	560	174	73"x45"x33"	HORIZONTAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 10
AC 11	CARRIER 48HJE006	1720	570	5	43.8	95	67	0.86	50/41	72/59	82	14.7	20	460/3#/60	11.0	(2) 16x25x2	560	174	73"x45"x33"	HORIZONTAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 11
AC 12	CARRIER 48HJD007	2400	675	6	55.3	95	67	0.85	50/41	72/59	82	15.2	20	460/3#/60	11.0	(2) 16x25x2	615	174	73"x45"x33"	HORIZONTAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05., SMOKE DETCTOR REQUIRED	AC 12
AC 13	CARRIER 48HJE006	1500	1500	5	43.8	95	67	0.61	82/66.4	115/93.1	82	14.7	20	460/3#/60	11.0	(2) 16x25x2	560	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 13
AC 14	CARRIER 48HJD007	2400	705	6	55.3	95	67	0.75	50/41	72/59	82	15.2	20	460/3#/60	11.0	(2) 16x25x2	615	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05., SMOKE DETCTOR REQUIRED	AC 14
AC 15	CARRIER 48HJE009	2560	2560	8.5	68.9	95	67	0.75	120/98.4	180/147.6	82	23.3	30	460/3#/60	11.0	(4) 16x20x2	880	213	87"x58"x41"	VERTICAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED & LOW STATIC DRIVE.	AC 15
AC 16	CARRIER 48HJE004	1325	120	3	27.2	95	67	0.69	50/41	72/59	82	9	15	460/3#/60	11.2	(2) 16x25x2	530	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 16
AC 17	CARRIER 48HJE009	3000	3000	8.5	68.9	95	67	0.76	120/98.4	180/147.6	82	23.3	30	460/3#/60	11.0	(4) 16x20x2	870	213	87"x58"x41"	VERTICAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED.	AC 17
AC 18	CARRIER 48HJE009	2560	2560	8.5	68.9	95	67	0.75	120/98.4	180/147.6	82	23.3	30	460/3#/60	11.0	(4) 16x20x2	880	213	87"x58"x41"	VERTICAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED & LOW STATIC DRIVE.	AC 18
AC 19	CARRIER 48GX024	750	185	2	16.1	95	67	0.76	40/32	N/A	82	15.7	25	208/1#/60	12.0 SEER	(1) 20x20x1	290	174	31"x48"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05.	AC 19
AC 20	CARRIER 48HJE008	2200	2200	7.5	67.2	95	67	0.75	120/98.4	180/147.6	82	19.2	25	460/3#/60	11.0	(4) 16x20x2	870	213	87"x58"x41"	VERTICAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED.	AC 20
AC 21	CARRIER 48HJE009	2560	2560	8.5	68.9	95	67	0.75	120/98.4	180/147.6	82	23.3	30	460/3#/60	11.0	(4) 16x20x2	880	213	87"x58"x41"	VERTICAL	272	460/3/60	1.7	1	PROVIDE WITH MICROMETAL 4682-0200 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05. SMOKE DETCTOR REQUIRED & LOW STATIC DRIVE.	AC 21
AC 22	CARRIER 48HJD006	1680	555	5	43.8	95	67	0.72	50/41	72/59	82	14.7	20	460/3#/60	11.0	(2) 16x25x2	560	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 22
AC 23	CARRIER 48HJD005	1500	510	4	33.6	95	67	0.70	50/41	72/59	82	11.9	15	460/3#/60	11.0	(2) 16x25x2	540	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 23
AC 24	CARRIER 48HJD007	2460	600	6	55.3	95	67	0.84	50/41	72/59	82	15.2	20	460/3#/60	11.0	(1) 20x20x1	615	174	73"x45"x33"	HORIZONTAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 24
AC 25	CARRIER 48GX024	900	90	2	16.1	95	67	0.72	40/32	115/92	82	15.7	20	460/3#/60	11.0	(2) 16x25x2	290	174	31"x48"x35"	VERTICAL	65	460/3/60	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05.	AC 25
AC 26	CARRIER 48HJE007	2420	555	6	55.3	95	67	0.73	50/41	72/59	82	15.2	20	460/3#/60	11.0	(2) 16x25x2	615	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05., SMOKE DETCTOR REQUIRED	AC 26
AC 27	CARRIER 48HJE004	900	900	3	27.2	95	67	0.3	50/41	72/59	82	9	15	460/3#/60	11.0	(2) 16x25x2	530	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05.	AC 27
AC 28	CARRIER 48GX024	760	760	2	16.5	95	67	0.3	40/32	NA	82	15.7	25	208/230/1#	11.0	(1) 20x20x2	290	174	48"x32"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05. INTERLOCK WITH FUME HOOD EXHAUST.	AC 28
AC 29	CARRIER 48GX024	760	60	2	16.5	95	67	0.48	40/32	NA	82	15.7	25	208/230/1#	11.0	(1) 20x20x2	290	174	48"x32"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05. INTERLOCK WITH FUME HOOD EXHAUST.	AC 29
AC 30	CARRIER 48HJE005	1520	1520	4	33.6	95	67	0.42	82/66.4	115/93.1	82	11.9	15	460/3#/60	11.0	(2) 16x25x2	540	174	73"x45"x33"	VERTICAL	185	460/3/60	1.1	1/2	PROVIDE WITH MICROMETAL 4682-0100 POWER EXHAUST WITH MODULATING FAN OPTION, VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 2, M4.05. INTERLOCK WITH FUME HOOD EXHAUST.	AC 30
AC 31	CARRIER 48GX024	760	180	2	16.5	95	67	0.39	40/32	NA	82	15.7	25	208/230/1#	11.0	(1) 20x20x2	290	174	48"x32"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05.	AC 31
AC 32	CARRIER 48GX024	760	760	2	16.5	95	67	0.3	40/32	NA	82	15.7	25	208/230/1#	11.0	(1) 20x20x2	290	174	48"x32"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05.	AC 32
AC 33	CARRIER 48GX024	760	760	2	16.5	95	67	0.3	40/32	NA	82	15.7	25	208/230/1#	11.0	(1) 20x20x2	290	174	48"x32"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05.	AC 33
AC 34	CARRIER 48GX024	760	760	2	16.5	95	67	0.3	40/32	NA	82	15.7	25	208/230/1#	11.0	(1) 20x20x2	290	174	48"x32"x35"	VERTICAL	65	NA	NA	NA	PROVIDE WITH MICROMETAL 0637-0111 OUTSIDE AIR ECONOMIZER , VIBRATION ISOLATION, AND SEISMIC RESTRAINTS. SEE DETAIL 3, M4.05.	AC 34

NOTES: (1.) ALL UNITS WITH 100% POWER EXHAUST SHALL BE PROVIDED W/ BIRDSCREEN, VIBRATION ISOLATION, SEISMIC RESTRAINTS, AND BELT DRIVES ON SUPPLY FANS.
(2.) PROVIDE BUILDING STATIC PRESSURE TRANSMITTERS AND ASSOCIATED PLENUM RATED TUBING, MFR'S WALL MOUNTED BOX & COVER PANEL FOR UNITS WITH VARIABLE SPEED ECONOMIZER. SEE REMARKS/ ACCESSORIES FOR APPLICABLE UNITS. COORDINATE TUBING SIZE WITH MFR'S RECOMENDATIONS. 1st FL. BST WILL REQUIRE OVERSIZED TUBING.

EXHAUST FAN SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NUMBER	AREA (S) SERVED	TYPE	CFM	EXTERNAL STATIC PRESSURE (E.S.P.)	MOTOR RPM	DRIVE	SONES	MOTOR: HP	MOTOR: ELECTRICAL (V/PH/HZ)	APPROX. OPER. WEIGHT (LBS.)	ACCESSORIES/REMARKS
EF 1	GREENHECK BCF-107	RESTROOMS RM 109 ,110, 126, & 127	CEILING HUNG CABINET	900	0.5	1,725	BELT	8.5	1/3	115/1/60	100	FAN START/STOP CONTROL BY EMS. SEE DETAIL 2, M4.07. PROVIDE MFR. NEOPRENE ISLOATORS.
EF 2	GREENHECK BCF-106	MOTOR ROOM RM 147	CEILING HUNG CABINET	380	0.25	1,725	BELT	6.0	1/4	115/1/60	80	FAN START/STOP CONTROL BY LINE VOLTAGE WALL MOUNTED T-STAT. PROVIDE MFR. NEOPRENE ISLOATORS. SEE DETAIL 2, M4.07.
EF 3	GREENHECK BCF-106-112	ELECTRICAL ROOM RM 148	CEILING HUNG CABINET	415 2530	0.25 .139	1,725	BELT	6.4	1/4 1	115/1/60 460/3/60	80 325	FAN START/STOP CONTROL BY LINE VOLTAGE WALL MOUNTED T-STAT. PROVIDE MFR. NEOPRENE ISLOATORS. SEE DETAIL 2, M4.07. AP - 5, 2, 18
EF 4	GREENHECK BISW-41-07	TISSUE CULTURE ROOM RM 231	UTILITY FAN	525	1.79	3,600	BELT	N/A	1	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 5	GREENHECK BISW-41-07	MICROBIOLOGY LAB RM 226	UTILITY FAN	760	2.19	3,600	BELT	N/A	2	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 6	GREENHECK BISW-41-07	MICROBIOLOGY ROOM RM 235	UTILITY FAN	525	2.5	1,725	BELT	N/A	1-1/2	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 7	GREENHECK BISW-41-07	PSYSOLOGY RM 207	UTILITY FAN	760	2.5	3,600	BELT	N/A	2	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 8	GREENHECK BCF-108	RESTROOMS RM 204 & 205	CEILING HUNG CABINET	1,200	0.65	1,725	BELT	8.4	1/2	115/1/60	120	FAN START/STOP CONTROL BY EMS. SEE DETAIL 2, M4.07. PROVIDE MFR. NEOPRENE ISLOATORS.
EF 9	GREENHECK BISW-41-07	A & P RM 220	UTILITY FAN	525	1.33	3,600	BELT	N/A	1	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 10	GREENHECK SP-6	INCUBATOR ROOM RM 223	CEILING HUNG CABINET	75	0.25	1,725	DIRECT	3.6	90 WATTS	115/1/60	6	FAN START STOP BY WALL MOUNTED LINE-VOLTAGE T-STAT. SEE DETAIL 2, M4.07.
EF 11	GREENHECK SP-216	CAT MORGUE RM 217	CEILING HUNG CABINET	200	0.5	1,725	DIRECT	3.4	113 WATTS	115/1/60	15	FAN START STOP BY WALL MOUNTED SWITCH. FAN SHALL RUN 24 HOURS. SEE DETAIL 2, M4.07.
EF 12	GREENHECK BISW-41-07	CHEMICAL STORAGE RM 244	UTILITY FAN	525	1.15	3,600	BELT	N/A	1	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 13	GREENHECK BISW-41-07	CHEMICAL STORAGE RM 244	UTILITY FAN	200	0.5	1,725	BELT	N/A	1/4	115/1/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. FAN TO OPERATE 24-7. SEE DETAIL 1, M4.01.
EF 14	GREENHECK BISW-41-07	MICROBIOLOGY LAB RM 226	UTILITY FAN	760	2.80	3,600	BELT	N/A	2	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 15	GREENHECK SP-6	WET PREP 237	CEILING HUNG CABINET	75	0.25	1,725	DIRECT	3.6	90 WATTS	115/1/60	6	FAN START STOP BY WALL MOUNTED SWITCH. FAN SHALL RUN 24 HOURS. SEE DETAIL 2, M4.07.
EF 16	GREENHECK BISW-41-07	GENERAL BIOLOGY RM 245	UTILITY FAN	525	1.25	3,600	BELT	N/A	1	460/3/60	116	BAKED PHENOLIC COATING ON ENTIRE FAN ASSEMBLY, FLANGED INLET & OUTLET, STAINLESS STEEL BACKDRAFT DAMPER, WEATHERHOOD, & EXTENDED LUBE LINES. SEE DETAIL 1, M4.01.
EF 17	GREENHEICK CUBE-98-4	GREENHOUSE RM 246	CUBE FAN	750	.25	1,725	BELT	11.3	1	115/1/60	52	FAN START STOP BY WALL MOUNTED SWITCH. FAN IS NOT MONITORED BY E.M.S. PROVIDE MFR'S CURB.

FAN COIL UNIT SCHEDULE

SYMBOL	AREA SERVED	MFR & MODEL	FAN COIL TYPE	STANDARD CFM	ELECTRICAL: V/PH/HZ	FAN FLA	MCA	MOCP	FLA	COOLING: NET COOLING (BTUH)	HEATING: HIGH HEAT CAP(BTUH)	LOW HEAT CAP(BTUH)	SEER	OPERATING WT (LBS)	REMARKS
FC 1	SERVER ROOM RM 146	CARRIER 40-QNB-018	HIGH WALL	950 LOW SPEED	208-230/1/60	0.53	0.66	15	0.53	18,000	N/A	N/A	12.0	38.5	INSTALL PER MANUFACTURERS RECOMMENDATIONS. COORDINATE LOCATION WITH ELEC. CONTRACTOR
FC 2	OFFICE RM 225	CARRIER 40-QKE-024	CEILING CASSETTE	525	208-230/1/60	0.44	0.60	15	7.94	18,000	17,600	11,00	10.0	66.1	INSTALL PER MANUFACTURERS RECOMMENDATIONS. COORDINATE LOCATION WITH ELEC. CONTRACTOR
FC 3	SERVER ROOM 202	CARRIER 40-QNB-018	HIGH WALL	950 LOW SPEED	208-230/1/60	0.53	0.66	15	0.53	18,000	N/A	N/A	12.0	38.5	INSTALL PER MANUFACTURERS RECOMMENDATIONS. COORDINATE LOCATION WITH ELEC. CONTRACTOR

CONDENSING UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NO.	AREA SERVED	COOLING: NOMINAL TOTAL TONS	ELECTRICAL: COMPRESSOR R.L.A.	COMPRESSOR L.R.A.	OUTDOOR FAN F.L.A.	MCA	MOCP	VOLTAGE V/PH/HZ	OPER. WT. LBS	ACCESSORIES/REMARKS
CU 1	CARRIER 38HDS024	FC-1	1.5	12.9	62.5	0.70	16.8	25	208-230/1-60	159	INSTALL SYSTEM PER MANUFACTURERS RECOMENDATIONS, MFR S.CONDENSATE PUMP.
CU 2	CARRIER 30QR-C018	FC-2	1.5	9.8	49.0	0.70	13.0	20	208-230/1/60	154	INSTALL SYSTEM PER MANUFACTURERS RECOMENDATIONS, MFR S.CONDENSATE PUMP, FRESH AIR KIT.
CU 3	CARRIER 38HDS024	FC-3	1.5	12.9	62.5	0.70	16.8	25	208-230/1/60	154	INSTALL SYSTEM PER MANUFACTURERS RECOMENDATIONS, MFR S.CONDENSATE PUMP, FRESH AIR KIT.

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REGISTERED PROFESSIONAL ENGINEER — No. 24611 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — No. C009332 — 12/31/03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL 04-103726
AC FLS SS
DATE JUN 26 2002

SUBMITTALS

SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL SCHEDULES

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M1.02

AC-1 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 141	TITUS ZQCV-H	18x12	1900	1680	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 142	TITUS ZQCV-H	18x12	1900	1515	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 143	TITUS ZQCV-H	18x12	1900	1515	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
BD 1	TITUS ZQCV-L	30x16	5400	4710	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

AC-2 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 138	TITUS ZQCV-H	18x12	1900	1590	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 139	TITUS ZQCV-H	18x12	1900	1590	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 140	TITUS ZQCV-H	18x12	1900	1770	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
BD 2	TITUS ZQCV-L	30x16	5400	4950	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

AC-3 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 144	TITUS ZQCV-H	18x12	1900	1515	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 145	TITUS ZQCV-H	18x12	1900	1680	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
BD 3	TITUS ZQCV-K	26x14	3800	3195	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

AC-4 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 136	TITUS ZECV-H	18x12	1,900	1,770	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 137	TITUS ZECV-H	18x12	1,900	1,590	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
BD 4	TITUS ZECV-K	24x14	3,800	3,360	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

AC-5 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 111	TITUS ZECV	8"ø	850	165	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 114	TITUS ZECV	8"ø	850	450	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 117	TITUS ZECV	8"ø	850	450	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 120	TITUS ZECV	8"ø	850	465	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 121	TITUS ZECV	8"ø	850	150	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
BD 5	TITUS ZECV-J	22x12	2,400	1,965	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

AC-6 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 100	TITUS ZECV	8"ø	850	440	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 101	TITUS ZECV	8"ø	850	570	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 102	TITUS ZECV	8"ø	850	205	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 103	TITUS ZECV	8"ø	850	175	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 104	TITUS ZECV	8"ø	850	175	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 107	TITUS ZECV	8"ø	850	555	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 122	TITUS ZECV	8"ø	850	240	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 125	TITUS ZQCV-E	14x8	1,000	745	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
ZD 128	TITUS ZQCV-D	10x10	700	540	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.
BD 6	TITUS ZQCV-K	26x14	3,800	3,715	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

AC-7 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 236	TITUS ZECV	8"ø	850	100	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 238	TITUS ZECV	8"ø	850	190	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 239	TITUS ZECV	10"ø	1350	700	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 240	TITUS ZECV	8"ø	850	190	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
BD 7	TITUS ZECV	14"ø	3200	1180	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.

AC-8 ZONE AND BYPASS DAMPER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	DUCT SIZE	TERMINAL UNIT		REMARKS/ ACCESSORIES
			MAXIMUM TERMINAL CFM	MAXIMUM DESIGN CFM	
ZD 134	TITUS ZECV	16"ø	4000	3400	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
ZD 135	TITUS ZECV	16"ø	4000	3400	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps.
BD 8	TITUS ZQCV-N	30x20	6700	6700	CASTING SHALL BE A MINIUM 22 GAUGE. DAMPER BLADE BEARINGS SHALL BE DERLIN OR BRONZE SELF LUBRICATING. MAX LEAK RATE 4 CFM@ 1.5"±Ps. (+)TERMINAL SHALL SLIDE INTO DUCT OPENING 10"MAX LENGTH.

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REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

REGISTERED ARCHITECT — STEVEN H. BLUROCK — No. C009332 — 12-31-03 RENEWAL DATE — STATE OF CALIFORNIA

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DATE JUN-9 6 2002

SUBMITTALS

SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL SCHEDULES

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M1.03

KEY NOTES

1. TRANSITION TO 36"x14" R.A.
2. 22"x22" TRANSITION TO 38"x14".
3. PROVIDE & INSTALL SMACNA APPROVED TRANSION FROM 14" TALL MAIN RETURN TO 16" DIA. SUB BRANCH. (TYPICAL WHERE OCCURS)
4. RETURN AIR GRILLS AND DUCTS SHALL BE RUN AT A HIGHER ELEVATION THAN THE SUPPLY AIR OUTLETS TO PREVENT SHORT CYCLING OF THE AIR SUPPLY.
5. INTERNALLY LINE WITH 2" THICK SOUND ABSORBENT INSULATION. TYPICAL FOR EXPOSED S.A./R.A. DUCTS.
6. MINIMUM EXTENSION 18" (TYPICAL WHERE OCCURS).
7. PAR, 255 CFM, 8"ø NECK.
8. PAR, 295 CFM, 10"ø NECK.
9. PROVIDE AND INSTALL CEILING DIFUSSER PLENUM. SEE DETAIL 6, M4.01.
10. PROVIDE TRANSITION FROM 15x8 AT FAN OUTLET TO 36x18 AT LOUVER THRU WALL.
11. SEE DETAIL 5, M5.01.
12. MIN. 24x24 ACCESS HATCH REQUIRED FOR SERVICE AND MAINTENANCE. COORDINATE WITH ALL EFFECTED TRADES.
13. TRANSITION FROM 12x6 AT FAN TO 36x12 LOUVER THRU WALL.
14. TRANSITION FROM 12x6 AT FAN TO 36x18 LOUVER THRU WALL. Ad. 5.2.19
15. (2) 18x12 DOOR LOUVERS. ONE WITHIN THE BOTTOM 12" OF THE DOOR, THE OTHER WITHIN THE TOP 12" OF THE DOOR.
16. PROVIDE DUCT TRANSITION TO/FROM DAMPER BOX TO THE DUCT SIZE AS SHOWN.
17. S.A. 18x12 DUCT TO ZONE DAMPER BOX.
18. (LxH) WITH EXTENDED SILL. COORDINATE COLOR WITH ARCHITECT.
19. DENOTES FIRE RATED WALL, TYPICAL WHERE OCCURS.
20. BST, BUILDING STATIC PRESSURE TRANSMITTER FOR MODULATING POWER EXHAUST. WHERE MULTIPLE BSTS SERVE ONE FAN, SYSTEM SHALL PERFORM AVERAGING CALCULATIONS TO DETERMINE FAN SPEED. SENSOR SHALL HAVE MAX OPERATING RANGE OF 0.5" W.G. AND MAINTAIN MAX BUILDING PRESSURE OF 0.02
21. MOUNTED ON 1" THICK FIBERGLASS OR CORK INSULATING PAD.
22. DUCT RISE/ DROP AS REQUIRED.
23. REFRIGERANT LINES TO ROOF.
24. PROVIDE & INSTALL RECESSED DIRECT DIGITAL CONTROL PANEL (DDCP) FOR EMS OPERATIONS. LOW VOLTAGE WIRING AND CONDUIT AND WIRING WITHIN BUILDING ENVELOPE BY CONTROLS CONTRACTOR. LOW VOLTAGE CONDUIT FROM EXTERIOR OF BUILDING AND BACK TO CONTROL STATION AT MAINTENANCE SHOP BY ELECTRICAL, WIRE BY CONTROLS CONTRACTOR.
25. 24"x16" FIRE RATED DOOR LOUVERS.

OUTDOOR COURTYARD

BULL 44 - Hunter Regis Lites @ wood ceilings Rm- 134 & 135

BULL#84 seismic connection of exposed mechanical ducts

RFI #268 FOR ELEVATION OF SUPPLY & RETURNS SEE WOOD CEILING SHOP DWGS RMS - 134 & 135

NORTH

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REGISTERED PROFESSIONAL ENGINEER — No. 24310 — MECHANICAL — STATE OF CALIFORNIA

REGISTERED ARCHITECTURAL TECHNICAL BUREAU — NO. C009932 — 1-31-03 RENEWAL DATE — STATE OF CALIFORNIA

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SUBMITTALS

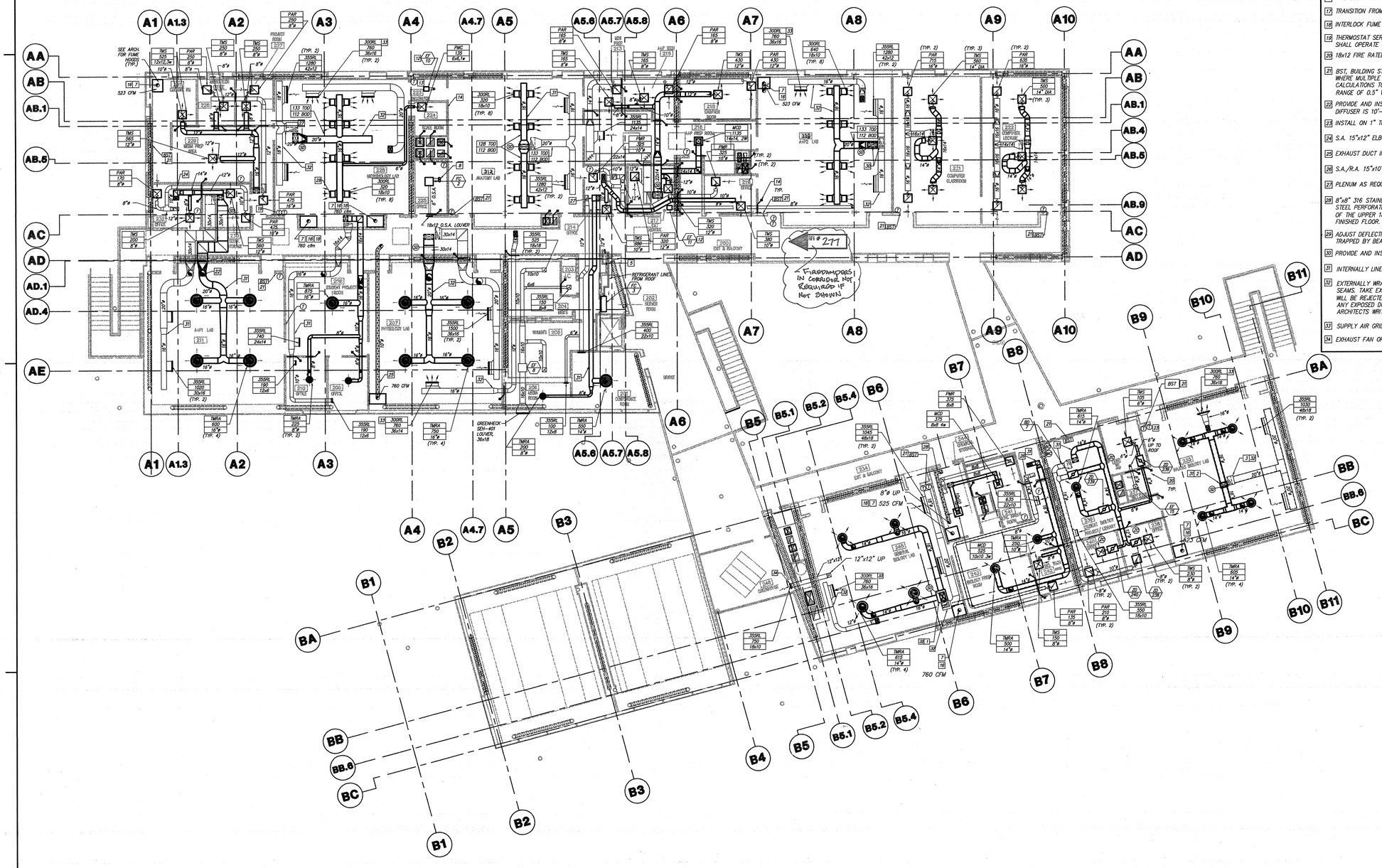
SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL FIRST FLOOR PLAN

PROJECT NO.: 98-22
SCALE: 3/32=1'-0"
DATE: 10. 11. 2001

M2.01



KEY NOTES

1. 20"x25" S.A. PLENUM.
2. 30"x18" S.A. PLENUM
3. 35"x18" R.A. PLENUM
4. PROVIDE TRANSITION TO R.A.G.
5. REFRIGERATION LINES FROM FC-1 BELOW.
6. MINIMUM 24x24 ACCESS PANEL FOR SERVICE, MAINTENACE AND REPLACEMENT OF ZONE DAMPER. (TYPICAL)
7. 10" DIAMETER 316 STAINLESS STEEL FUME HOOD EXHAUST DUCT TO ROOF.
8. REFRIGERANT LINES FROM FC-2 TO ROOF.
9. 14" DIAMETER FUME HOOD EXHAUST DUCT UP TO ROOF.
10. MINIMUM 24x24 ACCESS PANEL FOR SERVICE, MAINTENANCE, AND REPLACEMENT OF SMOKE DETECTOR. (TYPICAL)
11. 6" DIAMETER EXHAUST DUCT UP TO ROOF.
12. ATTACH A 2x2x12 GAUGE ANGLE CLIP TO EACH CORNER OF FAN HOUSING WITH 2 NUMBER 10 TEK'S SCREWS. HANG FAN FROM ANGLE CLIPS WITH 1/4" HANGER ROD, MAXIMUM LENGTH 10". REFER TO DETAIL 1 SHEET M4.02 FOR CONNECTION TO STRUCTURE.
13. LINE VOLTAGE THERMOSTAT, HONEYWELL T651A2028, SET POINT= 35°-95°.
14. DENOTES FIRE RATED WALL, TYPICAL WHERE OCCURS. SEE A2.01 AND A2.02.
15. 18x12 DOOR LOUVER.
16. INTERLOCK FUME HOOD WITH MAKE UP AIR ROOFTOP UNIT SERVING SAME SPACE.
17. TRANSITION FROM MAKE UP AIR UNIT TO DUCT SIZE SHOWN.
18. INTERLOCK FUME HOODS IN SAME ROOM WITH ONE ON/OFF SWITCH. SWITCH SHALL TURN ON BOTH HOODS.
19. THERMOSTAT SERVING AC UNIT INTERLOCKED WITH FUME HOODS SHALL. AC UNIT AND FUME HOOD (S) SHALL OPERATE CONCURRENTLY.
20. 18x12 FIRE RATED DOOR LOUVER, MODEL 1900 ASG BY AIR LOUVERS INC.
21. BST, BUILDING STATIC PRESSURE TRANSMITTER FOR MODULATING POWER EXAUST. WHERE MULTIPLE BSTS SERVE ONE FAN, SYSTEM SHALL PERFORM AVERAGING CALCULATIONS TO DETERMINE FAN SPEED. SENSOR SHALL HAVE MAX OPERATING RANGE OF 0.5" W.G. AND MAINTAIN MAX BUILDING PRESSURE OF 0.02
22. PROVIDE AND INSTALL RISE AS REQUIRED SUCH THAT BOTTOM OF EXPOSED DIFFUSER IS 10'-0" ABOVE FINISHED FLOOR. (TYPICAL)
23. INSTALL ON 1" THICK FIBERGLASS OR CORK INSULATING PAD.
24. S.A. 15"x12" ELBOW WITH TURNING VANES.
25. EXHAUST DUCT IN 1hr SHAFT.
26. S.A./R.A. 15"x10" ELBOW WITH TURNING VANES.
27. PLENUM AS REQUIRED FOR DUCT CONNECTION AS SHOWN.
28. 8"x8" 316 STAINLESS EXHAUST AIR DUCT WITH 2 OPENINGS. EACH OPENING SHALL BE 6"x6" WITH STAINLESS STEEL PERFORATED FACE & BALANCE DAMPER SET TO 100 CFM. TOP OPENING SHALL BE WITHIN THE TOP OF THE UPPER 18" OF THE ROOM. THE BOTTOM OF THE LOWER OPENING SHALL BE WITHIN 12" OF THE FINISHED FLOOR.
29. ADJUST DEFLECTION SUCH THAT AIR FLOW DOES NOT INTERFERE WITH FUME HOOD OPERATIONS NOR IS AIR TRAPPED BY BEAMS.
30. PROVIDE AND INSTALL TURNING VANES IN ELBOW/ TEE FITTING. TYPICAL FOR EVERY DROP.
31. INTERNALLY LINE WITH 2" THICK SOUND ABSORBENT INSULATION. TYPICAL FOR EXPOSED S.A./R.A. DUCTS.
32. EXTERNALLY WRAP WITH 2" THICK INSULATION, WITH FOIL DUCTS ARE EXPOSED. INSTALL WITH FOIL TAPE AT SEAMS. TAKE EXTRA CARE WHEN INSTALLING SO INSULATION IS TIGHT AGAINST DUCTS. POOR WORKMANSHIP WILL BE REJECTED AND WILL REQUIRE RE-WORK. PROVIDE A 10' MOCKUP FOR REVIEW PRIOR TO INSTALLING ANY EXPOSED DUCTS THAT ARE EXTERNALLY WRAPED. DO NOT PROCEED WITH INSTALLATION WITHOUT ARCHITECTS WRITTEN APPROVAL.
33. SUPPLY AIR GRILLES POINTED TOWARD CEILING AT 30°- 45°.
34. EXHAUST FAN OPERATES WITH ON/OFF SWITCH LOCATED IN GREEN HOUSE. SEE ELECT. DRAWINGS.

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REGISTERED PROFESSIONAL ENGINEER MECHANICAL STATE OF CALIFORNIA No. 24521

LICENSED ARCHITECT STEVEN EHRLICH NO. C009332 RENEWAL 5/31/03 DATE STATE OF CALIFORNIA

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SUBMITTALS

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LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL SECOND FLOOR PLAN

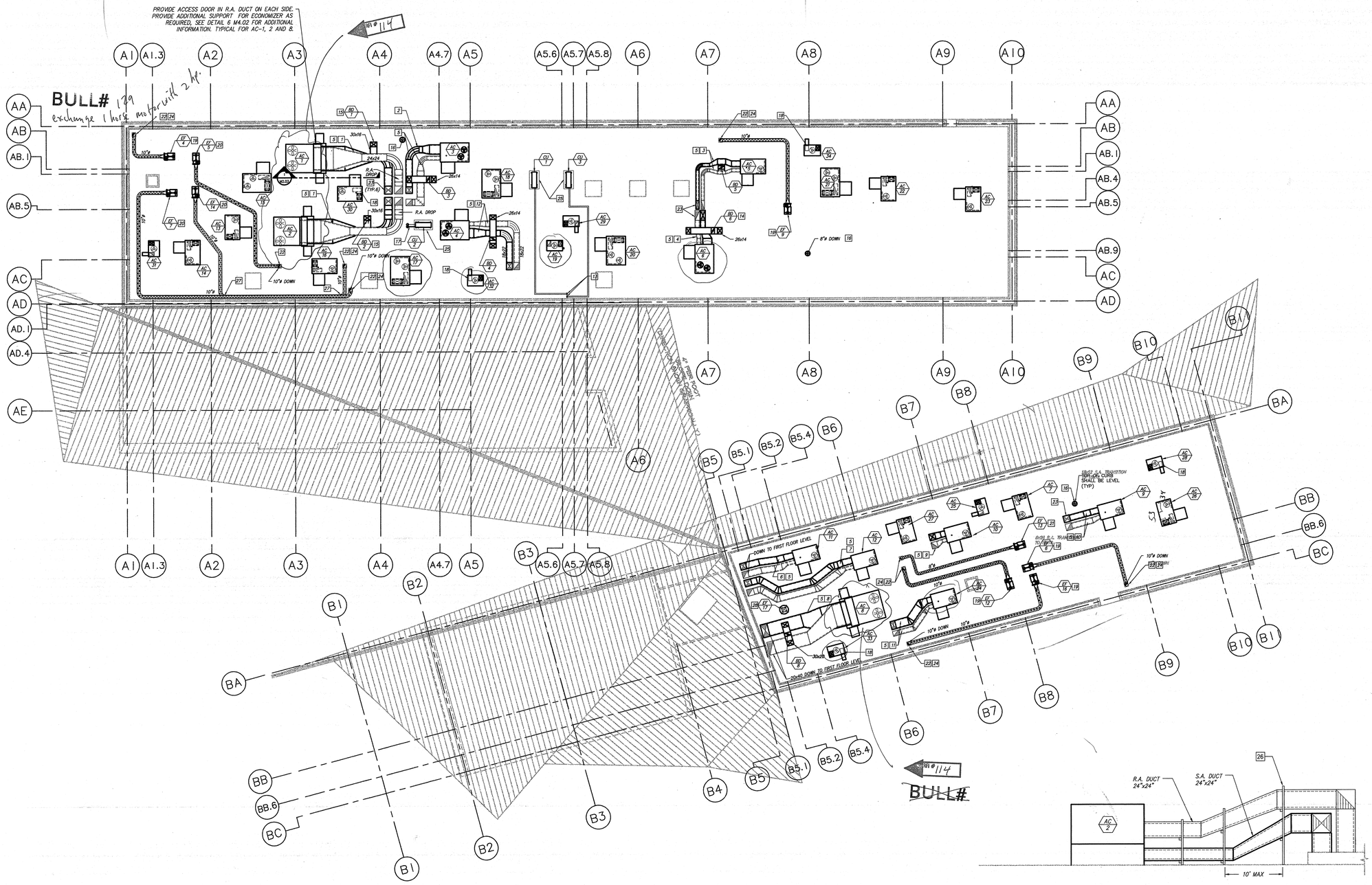
PROJECT NO.: 98-22
SCALE: 3/32=1'-0"
DATE: 10.11.2001

M2.02

NORTH

PROVIDE ACCESS DOOR IN R.A. DUCT ON EACH SIDE. PROVIDE ADDITIONAL SUPPORT FOR ECONOMIZER AS REQUIRED. SEE DETAIL 6 M4.02 FOR ADDITIONAL INFORMATION. TYPICAL FOR AC-1, 2 AND 8.

BULL# 139
exchange 1 horse motor with 2 hp



ELEVATION VIEW: AC-2 (1)
1/4"=1'-0"

KEY NOTES

1. 66x18 R.A. TRANSITION TO 24x24. 74x14 TRANSITION TO 24x24.
2. 13x34 R.A TRANSITION TO 20x20. 29x14 S.A. TRANSITION TO 20x20.
3. 8x26 R.A TRANSITION TO 10x26. 18x12 S.A. TRANSITION TO 12x26.
4. 12x34 R.A. TRANSITION TO 15X30. 30x14 S.A. TRANSITION TO 15x30
5. SUPPLY & RETURN DUCTS ON ROOF SHALL BE INTERNALLY LINED WITH 1" THICK ACOUSTICAL LINER, TYPICAL.
6. 8x26 R.A TRANSITION TO 20x14. 18x12 S.A. TRANSITION TO 20x14.
7. 8x26 R.A. TRANSITION TO 20x20. S.A. 18x12 TRANSITION TO 20x20.
8. 66x18 R.A TRANSITION TO 40x20. 74x14 S.A. TRANSITION TO 40x20.
9. 8x26 R.A TRANSITION TO 20x18. 18x14 S.A. TRANSITION TO 20x18.
10. 8x26 R.A. TRANSITION TO 20x18. 18x12 S.A. TRANSITION TO 20x18
11. 11x26 R.A TRANSITION TO 20x16. 18x12 S.A. TRANSITION TO 26x16
12. 12x34 R.A TRANSITION TO 18x22. 29x14 S.A. TRANSITION TO 18x22
13. REFRIGERANT SUPPLY & RETURN DOWN TO FIRST AND SECOND FLOOR FAN COIL. PROVIDE & INSTALL STONEMAN 910/915 MULTI-FLASHING.
14. BYPASS DAMPERS AND ASSOCIATED CONTROLS SHALL BE LOCATED WITHIN A FIELD FABRICATED WEATHERTIGHT GASKETED DUCT ENCLOURE TO PREVENT ANY WATER DAMAGE TO THE CIRCUIT BOARD AND ASSORTED DEVICES. TYPICAL FOR ROOF MOUNTED BYPASS DAMPERS.
15. BYPASS DAMPER LOCATED VERTICALLY BETWEEN R.A. DUCT ABOVE S.A. DUCT.
16. PROVIDE MFR'S 8x8x10(WxLxH) CURB AND INSTALL ROOF JACK FOR FAN BELOW. PROVIDE FLASH & COUNTER FLASHING AS REQUIRED TO PROVIDE FOR A LEAK FREE INSTALLATION. COORDINATE WITH ROOFING MANUFACTURE.
17. REFRIGERANT LINES DOWN TO FAN COIL BELOW. PROVIDE & INSTALL STONEMAN 910/915 MULTI-FLASHING.
18. MFR'S VERTICAL RETURN AIR PANEL TO REMAIN IN PLACE.
19. 5"ø 316 STAINLESS OUTLET DUCT. SEE DETAIL 1, M4.01.
20. 6"ø 316 STAINLESS OUTLET DUCT. SEE DETAIL 1, M4.01.
21. 3"ø 316 STAINLESS OUTLET DUCT. SEE DETAIL 1, M4.01.
22. SEE DETAIL 5 M4.02.
23. SEE DETAIL 5, M4.02.
24. PROVIDE GREENHECK GPI ROOF CURB, 12x12 OPENING.
25. PROVIDE 55x30 (LxW) CONCRETE PAD. 4" MIN ABOVE FINISHED ROOF.
26. DUCT SUPPORTS PER SMACNA, SEE DETAIL 6, M4.02 & DETAIL 2, M4.04
27. EXHAUST DUCT FOR EF-14 BELOW DUCT FOR EF-7. SEE DETAIL 8, M4.07.
28. PROVIDE MFR'S CURB . PROVIDE FLASH & COUNTER FLASHING AS REQUIRED TO PROVIDE FOR A LEAK FREE INSTALLATION. COORDINATE WITH ROOFING MANUFACTURE.

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REGISTERED PROFESSIONAL ENGINEER — FUNDAMENT & ASSOCIATES — EXP. 8-30-02 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — M. BLUROCK — NO. C009332 — 12/31/03 RENEWAL DATE — STATE OF CALIFORNIA

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SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

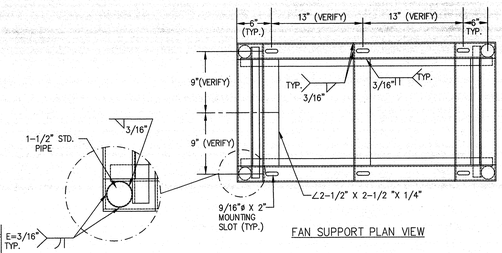
MECHANICAL ROOF PLAN

PROJECT NO.: 98-22
SCALE: 3/32"=1'-0"
DATE: 10.11.2001

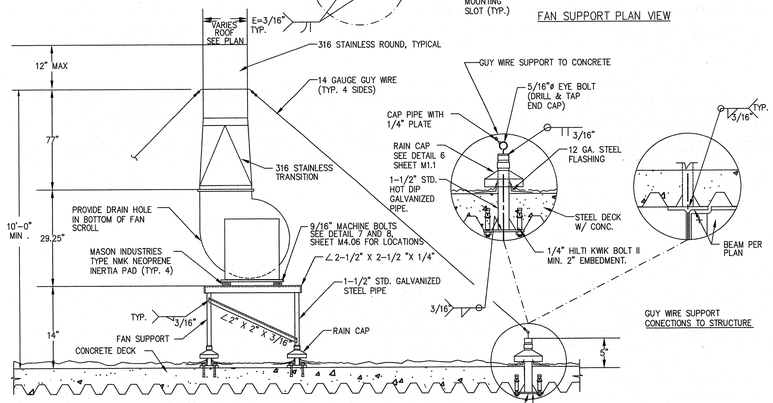
M2.03

NOTES:

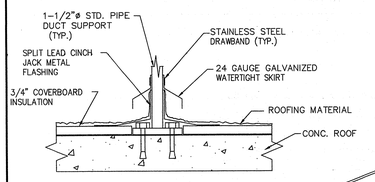
1. 12x12x12 GAUGE GALVANIZED STEEL CURB. SEE DETAIL 5, M4.02 FOR CURB DETAIL.
2. ALL FUME HOOD DUCT SHALL BE 316 STAINLESS STEEL.
3. ATTACH 14 GAUGE GUY WIRE TO SPLIT CINCH JACK WITH TWO (2) THIMBLES AT EACH END.
4. REFER TO DETAILS 7 AND 8, SHEET M4.06 FOR REQUIRED SPACING BETWEEN BOLT LOCATIONS ON FAN HOUSING.
5. SEE M2.03 FOR OUTLET DIAMETER REQUIREMENTS.
6. SEE DETAIL 3 M4.02 FOR ANCHOR BOLT SPECIFICAITONS.



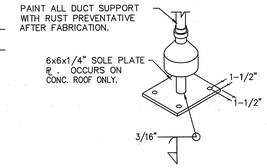
FAN SUPPORT PLAN VIEW



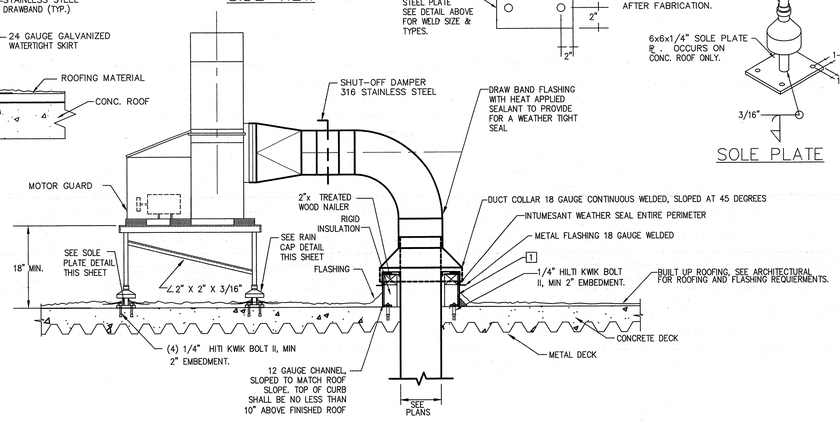
SIDE VIEW



RAIN CAP



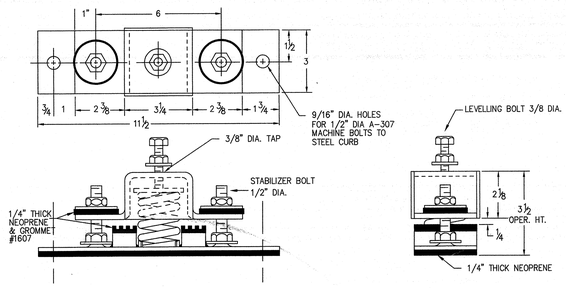
SOLE PLATE



TYPICAL ROOF MOUNTED FUME HOOD EXHAUST FAN

SCALE NONE | 1

1. ALL DIMENSIONS IN INCHES
2. SPRING DEFLECTION = 2"
3. MAX. ALLOW. LOADS: HORIZ. 1100 LBS. VERT. (UP) 1400 LBS.
4. SPRING ISOLATOR, VIBREX RMU-EQ-SH1

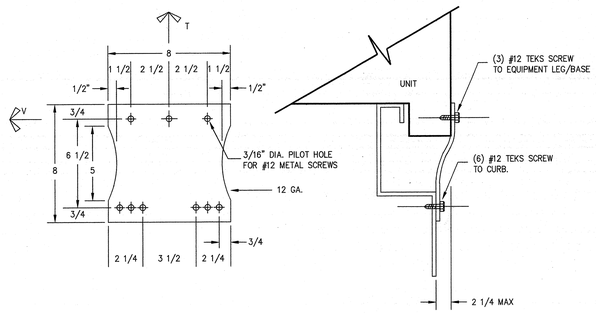


TYPICAL VIBRATION CURB SPRING ISOLATOR DETAIL

SCALE NONE | 2

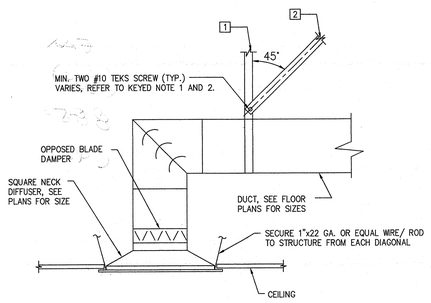
1. THE SEISMIC CAPACITY OF TIE-DOWN PLATES IS DEPENDENT ON PROPER FIELD INSTALLATION AS SHOWN ABOVE. THE ALLOWABLE LOADS SHOWN BELOW WERE CALCULATED BASED ON SHEAR (V) AND TENSION (T) ACTING SIMULTANEOUSLY.

Vallow = 400 LBS Tallow = 300 LBS



TYPICAL ROOFTOP PACKAGE UNIT SEISMIC TIEDOWNS STRAP DETAIL

SCALE NONE | 3

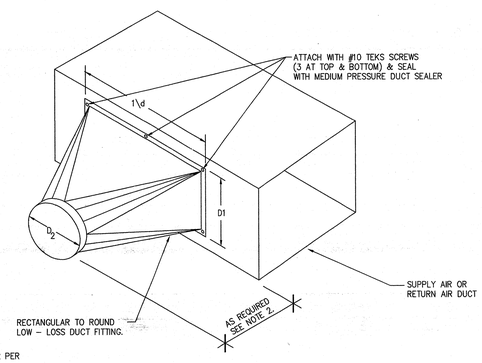


NOTES:

1. ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M4.04.
2. SEISMIC BRACING SHALL BE SIZED PER DETAIL 5 AND 6, M4.03 REFFER TO DETAIL 2, M4.04 FOR SMACNA TABLES.
3. SEE DETAIL 1 & 2 M4.02 FOR CONNECTION TO STRUCTURE.

TYPICAL SQUARE NECK CEILING DIFFUSER CONNECTION DETAIL

SCALE NONE | 4

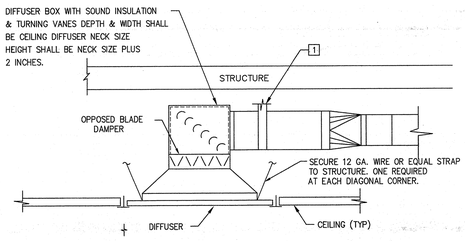


NOTES:

1. D1 SHALL NOT BE LESS THAN D2 PER SMACNA RECOMMENDATIONS.
2. SEE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION.

TYPICAL RECTANGULAR TO ROUND LOW LOSS FITTING DETAIL

SCALE NONE | 5



NOTES:

1. ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M4.04.
2. SEISMIC BRACING SHALL BE SIZED PER DETAIL 5 AND 6, M4.03 REFFER TO DETAIL 2, M4.04 FOR SMACNA TABLES.
3. SEE DETAIL 1 & 2 M4.02 FOR CONNECTION TO STRUCTURE.

TYPICAL CEILING DIFUSSER PLENUM ASSEMBLY DETAIL

SCALE NONE | 6

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LICENSED ARCHITECT — STEVEN E. BLUROCK — NO. C009332 — 12/31/03 RENEWAL DATE — STATE OF CALIFORNIA

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APPL 04 – 103726
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DATE JUN 2 6 2002

SUBMITTALS

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LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
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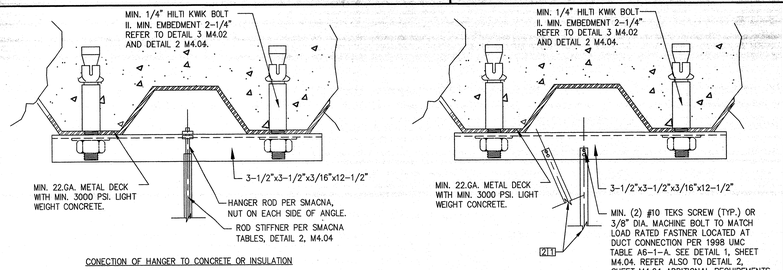
As-Built

MECHANICAL DETAILS

PROJECT NO.: 98-22
SCALE: 3/32=1'-0"
DATE: 10. 11. 2001

M4.01



CONECTION OF HANGER TO CONCRETE OR INSULATION

CONECTION OF STRAP TO CONCRETE

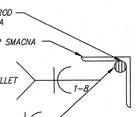
NOTES:

[1] REFER TO DETAIL 1, M4.04 FOR GAUGE OF MATERIALS.

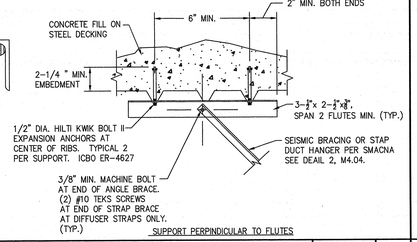
2. WHEN HANGER LENGHT EXCEEDS 12" IN LENGTH, ROD STIFFNERS ARE REQUIRED. REFER TO SMACNA TABLES ON SHEET M4.04.

3. FOR NON SEISMIC BRACING REFER TO DETAIL 1, M4.04 FOR GUAGE OF MATERIAL.

4. FOR SEISMIC BRACING REFER TO DETAIL 2, M4.04 FOR GUAGE OF MATERIAL.



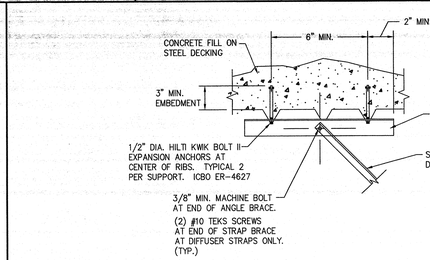
TYPICAL ROD STIFFNER DETAIL



SUPPORT PERPINDICULAR TO FLUTES

TYPICAL DUCT ATTACHMENT TO STRUCTURE WHERE RECTANGULAR DUCT CROSS-SECTIONAL AREA IS LESS THAN 6 SQ. FEET, AND ROUND DUCTS 27" DIAMETERS AND LESS

SCALE NONE | 1



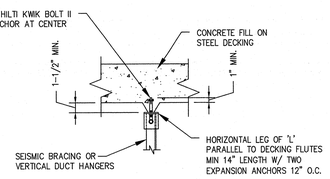
DETAIL A - SUPPORT PERPINDICULAR TO FLUTES

NOTES:

1. REFER TO SMACNA SEISMIC RESTRAINT MANUAL TABLE 8-1 FOR ADDITIONAL REQUIREMENTS.

2. MAX LOAD CAPACITY FOR DETAIL SHOWN IN IS 1040LBS. FOR LOADS GREATER REFER TO SMACNA SEISMIC RESTRAINT MANUAL TABLE 8-1.

3. TYPICAL CONNECTIONS FOR LARGE DUCTS (30x30 AND GREATER)



DETAIL B - SUPPORT PARALELL TO FLUTES

TYPICAL DUCT ATTACHMENT TO STRUCTURE WHERE RECTANGULAR DUCT CROSS-SECTIONAL AREA IS GREATER THAN 6 SQ. FEET, AND ROUND DUCTS 28" DIAMETERS AND LARGER

SCALE NONE | 2

HILTI KWIK BOLT II ICBO # 4627

f'c = 4000 PSI MIN., NORMAL WEIGHT CONCRETE

ANCHOR DIAMETER (in.)	SETTING TORQUE (FT-LBS.)	SPECIAL INSPECTION EMBED DEPTH(in.)	SPECIAL INSPECTION TENSION TEST LOAD (LBS)	SPECIAL INSPECTION EMBED DEPTH(in.)	SPECIAL INSPECTION TENSION TEST LOAD (LBS)	MIN. EDGE DISTANCE (in.)
1/4"	7	2"	940	3 3/4"	1000	2"
3/8"	25	2 1/2"	2060	4 1/4"	2056	2 1/2"
1/2"	45	3 1/2"	3600	6"	3800	3 1/2"
5/8"	95	4"	4940	7"	5600	4 1/8"
3/4"	225	4 3/4"	7200	8"	8800	4 7/8"
1"	325	6"	10,600	9"	12,888	6 3/4"

HILTI KWIK BOLT II ICBO # 4627

f'c = 4000 PSI, LIGHT WEIGHT CONCRETE WITH SPECIAL INSPECTION

ANCHOR DIAMETER	SETTING TORQUE (FT-LBS.)	EMBED DEPTH (IN.)	TENSION TEST LOAD (LBS)	MIN. EDGE DISTANCE (in.)
1/4"	5	2"	720	2"
3/8"	15	2 1/2"	1560	2 1/2"
1/2"	30	3 1/2"	2560	3 1/2"
5/8"	75	4"	3680	4 1/8"
3/4"	150	4 3/4"	5200	4 7/8"

HILTI HSL-HEAVY DUTY SLEEVE ANCHOR (ICBO #3987)

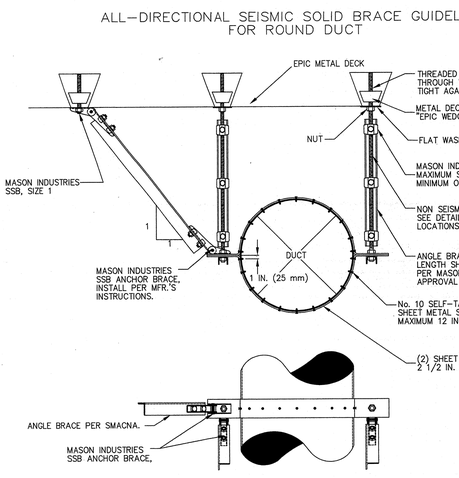
f'c = 4000 PSI MIN., NORMAL WEIGHT CONCRETE

ANCHOR DIAMETER (in.)	SETTING TORQUE (FT-LBS.)	SPECIAL INSPECTION EMBED DEPTH(in.)	SPECIAL INSPECTION TENSION TEST LOAD (LBS)	SPECIAL INSPECTION MIN. EDGE DISTANCE (in.)
1/4" (M8)	20	2.65" (65 MM.)	2770	2.65" (65 MM.)
3/8"(M10)	40	3.06" (75 MM.)	3960	3.06" (75 MM.)
1/2" (M12)	60	3.27" (80 MM.)	4650	3.27" (80 MM.)
1-1/2" (I-M12)	-	3.27" (80 MM.)	4650	3.27" (80 MM.)
5/8" (M16)	150	4.29" (105 MM.)	8100	4.29" (105 MM.)
3/4" (M20)	300	5.31" (130 MM.)	12,450	5.31" (130 MM.)
1" (M24)	525	6.33" (155 MM.)	16,280	6.33" (155 MM.)

1. ALL EXPANSION ANCHORS, HILTI KWIK BOLT II ICBO # 4627 OR EQUAL, AND SHALL HAVE A CURRENT ICBO EVALUATION REPORT.
2. ALL EXPANSION ANCHORS (LOADED IN PULLOUT OR SHEAR) SHALL CONFORM TO AND BE TESTED IN ACCORDANCE WITH IR 19-1, INTERPRETATION OF REGULATIONS - TITLE 24, PARTS 1 & 2, CCR. THE FOLLOWING TABLE INDICATES TEST VALUES FOR HARDROCK OR LIGHTWEIGHT CONCRETE. ALLOWABLE ANCHOR CAPACITY SHALL NOT EXCEED 80% OF THE ALLOWABLE CAPACITY LISTED IN THE ICBO REPORT.
3. FOR ADDITIONAL INFORMATION REFER TO IR 19-1, INTERPRETATION OF REGULATIONS - TITLE 24, PART 2, CCR.
4. CONCRETE SHALL ATTAIN MINIMUM DESIGN STRENGTH PRIOR TO INSTALLATION OF THE ANCHORS.
5. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS LISTED IN THE ICBO REPORT.
6. PRIOR TO ALL EXPANSION ANCHOR DRILLING OPERATIONS IN CONCRETE, THE CONTRACTOR SHALL LOCATE REINFORCEMENT BY NON-DESTRUCTIVE METHODS. NO REINFORCEMENT SHALL BE DAMAGED BY DRILLING OPERATIONS.
7. EXPANSION ANCHORS USED FOR EQUIPMENT ANCHORAGE: 50 PERCENT OR ALTERNATE BOLTS IN A GROUP SHALL BE TENSION TESTED.
8. ALL EXPANSION ANCHORS EXPOSED TO VIEW IN THE FINAL FINISHED STRUCTURE SHALL BE STAINLESS STEEL TYPE. ALL OTHER EXPANSION BOLTS SHALL BE CARBON STEEL TYPE.
9. REFER TO ICBO REPORT FOR OTHER LOAD VALUES OF BOLTS INSTALLED WITH DIFFERENT EMBED DEPTHS THAN THOSE LISTED IN ABOVE TABLES. THE TENSION TEST LOAD FOR THE BOLTS SHALL BE 2 TIMES 80% OF THE ALLOWABLE TENSION LOADS LISTED IN THE ICBO.

TYPICAL DRILLED-IN EXPANSION BOLTS RATING DETAIL

SCALE NONE | 3

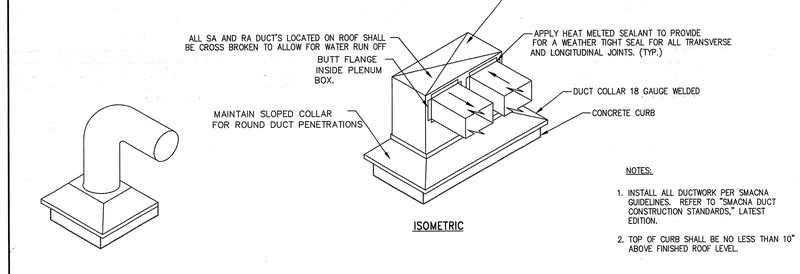


NOTE:

1. *TRANSVERSE BRACING SHALL BE SPACED AT 30 FT AND LONGITUDINAL BRACING SHALL BE AT 60 FT. A MINIMUM OF AT LEAST ONE BRACE OF EACH TYPE SHALL OCCUR PER DUCT RUN.*
2. *ALL BOLTS SHALL CONFORM TO ASTM A307.*
3. *REFER TO SMACNA SEISMIC RESTRAINT MANUAL FOR ADDITIONAL INFORMATION. CONNECTIONS AND FABRICATION REQUIREMENTS SHALL BE IN STRICT ACCORDANCE WITH SMACNA TABLES SHL A, CONNECTION LEVEL 3.*
4. *REFER TO SPECIFICATION SECTION 05300 FOR ADDITIONAL INFORMATION ON EPIC DECKING.*
5. *HANGER RODS AND SEISMIC ANGLES SHALL BE CLEANED, PAINTED AND FREE OF GREASE AND OTHER FOREIGN MATTER. COORDINATE COLOR WITH ARCHITECT.*
6. *NON-SEISMIC HANGER RODS AND BRACING SHALL ADHERE TO THE SAME AESTHETIC STANDARDS AS SEISMIC BRACING, INLCUDING BUT NOT LIMITED TO PAINTING REQUIREMENTS.*
7. *HANGER RODS AND BRACING SHALL BE SQUARE IN ALL PLANES WHEN TESTED WITH A LEVEL OR PLUMBOB.*
8. *HANGER RODS, BRACING AND WEDGE NUTS SHALL BE INSTALLED IN STRICT ACCCORDANCE WITH ROOFING MANUFACTUERS INSTALLATION INSTRUCTIONS.*

TYPICAL ROUND DUCT TO EPIC METAL DECK HANGER DETAIL

SCALE NONE | 4

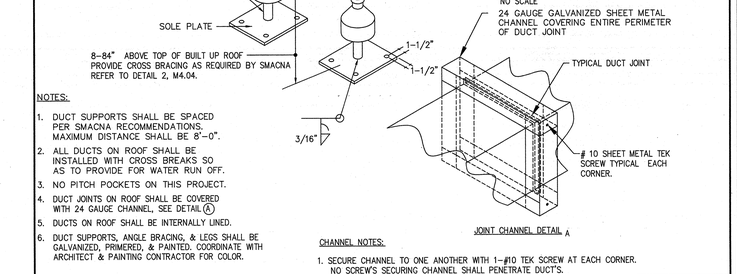


NOTES:

1. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
2. TOP OF CURB SHALL BE NO LESS THAN 10" ABOVE FINISHED ROOF LEVEL.

TYPICAL DUCT PENETRATION THRU ROOF DETAIL

SCALE NONE | 5



NOTES:

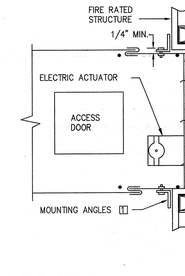
1. DUCT SUPPORTS SHALL BE SPACED PER SMACNA RECOMMENDATIONS. MAXIMUM DISTANCE SHALL BE 8'-0".
2. ALL DUCTS ON ROOF SHALL BE INSTALLED WITH CROSS BREAKS SO AS TO PROVIDE FOR WATER RUN OFF.
3. NO PITCH POCKETS ON THIS PROJECT.
4. DUCT JOINTS ON ROOF SHALL BE COVERED WITH 24 GAUGE CHANNEL, SEE DETAIL A
5. DUCTS ON ROOF SHALL BE INTERNALLY LINED.
6. DUCT SUPPORTS, ANGLE BRACING, & LEGS SHALL BE GALVANIZED, PRIMERED, & PAINTED. COORDINATE WITH ARCHITECT & PAINTING CONTRACTOR FOR COLOR.

CHANNEL NOTES:

1. SECURE CHANNEL TO ONE ANOTHER WITH 1-ø10 TEK SCREW AT EACH CORNER. NO SCREW'S SECURING CHANNEL SHALL PENETRATE DUCT'S.

TYPICAL DUCT SUPPORT ACROSS ROOF DETAIL

SCALE NONE | 6



ELEVATION

NOTES:

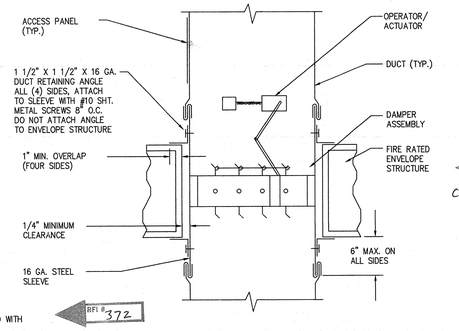
[1] MOUNTING ANGLES SHALL BE 1 1/2"X 1 1/2"X 16 GAGE MIN. FASTENED WITH NO. 10 SCREWS 8" ON CENTER. DO NOT ATTACH ANGLE TO ENVELOPE STRUCTURE.

[2] BOTH INSIDE & OUTSIDE OF FIRE DAMPER SLEEVE SHALL BE COATED WITH INTUMESCENT MASTIC TO THE CENTERLINE OF THE FIRE DAMPER.

3. USE ONLY STATE OF CALIFORNIA FIRE MARSHALL LISTED FIRE DAMPERS & INSTALL IN ACCORDANCE WITH STATE FIRE MARSHALL LISTING NO.3225-245.005 & U.L. STANDARD 555S. (U.L. LISTING R13447)
4. CONTRACTOR SHALL COORDINATE CEILING ACCESS DOORS AND DAMPER ACCESS DOORS AS REQUIRED FOR ACCESS TO DAMPERS.
5. ACCESS DOOR SHALL BE PROVIDED IN DUCT AND SHALL BE OF ADEQUATE SIZE AND LOCATION TO PERMIT MAINTENANCE & RESETTING OF DAMPER.
6. SMOKE/FIRE DAMPER TO BE GREENHECK, MODEL FSD-22 OR EQUAL AND, CODE APPROVED FOR HORIZONTAL OR VERTICAL INSTALLATION.
7. FIRE DAMPER ASSEMBLIES INCLUDING SLEEVES AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION .
8. FIRE DAMPERS SHALL BE STATE FIRE MARSHALL APPROVED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. MANUFACTURER'S INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITY. DETAILS SHOWN ARE FOR REFERENCE ONLY.

TYPICAL VERTICAL SMOKE/FIRE DAMPER DETAIL

SCALE NONE | 7



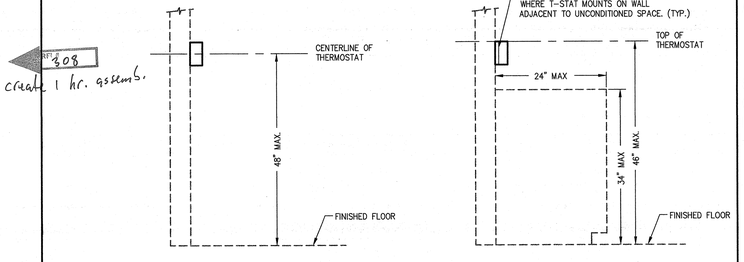
ELEVATION

NOTES:

1. BOTH INSIDE & OUTSIDE OF FIRE DAMPER SLEEVE SHALL BE COATED WITH INTUMESCENT MASTIC TO THE CENTERLINE OF THE FIRE DAMPER .
2. USE ONLY STATE OF CALIFORNIA FIRE MARSHAL LISTED FIRE DAMPERS & INSTALL IN ACCORDANCE WITH STATE FIRE MARSHAL LISTING NO. 3225 & U. L. STANDARD 555S . (U.L. LISTINGS - R15439, R13317, R13447, R13448)
3. CONTRACTOR SHALL COORDINATE CEILING ACCESS DOORS AND DAMPER ACCESS DOORS AS REQUIRED FOR ACCESS TO DAMPERS.
4. FIRE DAMPER ASSEMBLIES INCLUDING SLEEVES AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION AND BEFORE BEING ENCLOSED BY DRYWALL.
5. FIRE DAMPERS SHALL BE STATE FIRE MARSHALL APPROVED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. MANUFACTURER'S INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITY. DETAILS SHOWN ARE FOR REFERENCE ONLY.
6. FLOOR/CEILING SMOKE/FIRE DAMPER TO BE GREENHECK, MODEL CFSD-22 OR EQUAL AND, CODE APPROVED FOR HORIZONTAL OR VERTICAL INSTALLATION.

TYPICAL FLOOR/CEILING HORIZONTAL SMOKE/FIRE DAMPER

SCALE NONE | 8



NOTES: REFER TO ARCHITECTURAL FOR ADDITIOAL INFORMATION.

TYPICAL THERMOSTAT MOUNTING DETAIL

SCALE NONE | 9

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REGISTERED PROFESSIONAL ENGINEER — No. 24411 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — THOMAS E. BLUROCK — NO. C009332 — 1-31-03 RENEWAL DATE — STATE OF CALIFORNIA

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OFFICE OF REGULATION SERVICES
APPL 04-103726
AC RLS SS
DATE JUN 26 2002

SUBMITTALS

SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
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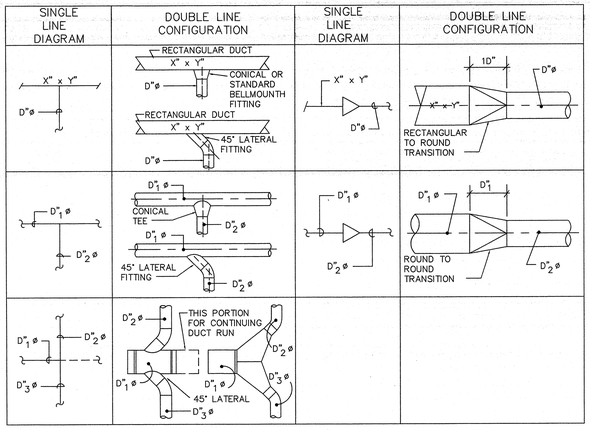
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL DETAILS

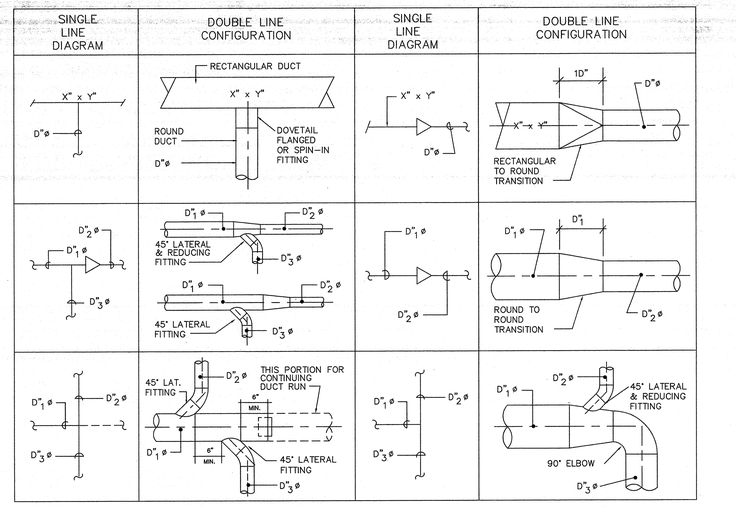
PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M4.02



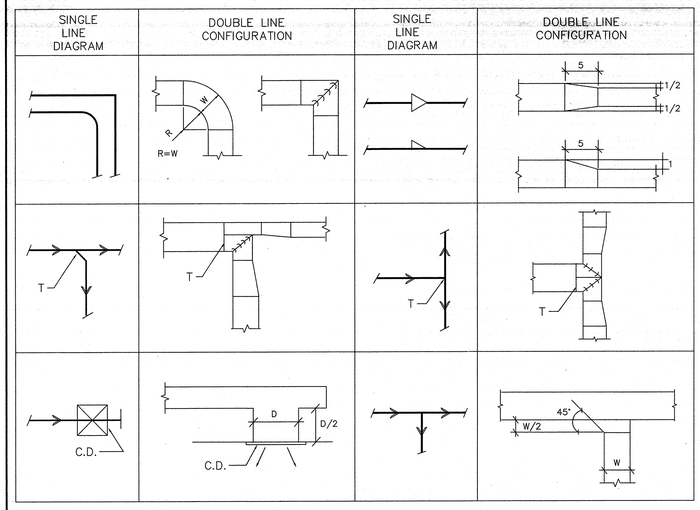
TYPICAL ROUND MEDIUM PRESSURE DUCTWORK DETAIL

SCALE NONE | 1



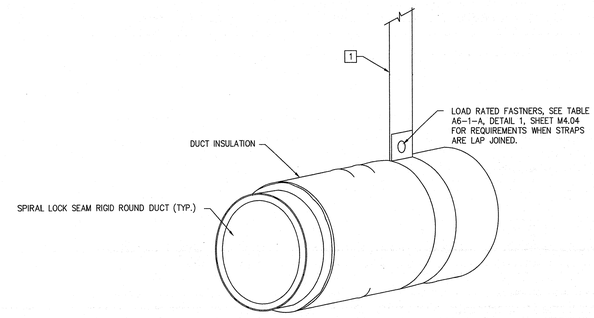
TYPICAL ROUND LOW PRESSURE DUCTWORK DETAIL

SCALE NONE | 2



TYPICAL RECTANGULAR DUCTWORK DETAIL

SCALE NONE | 3

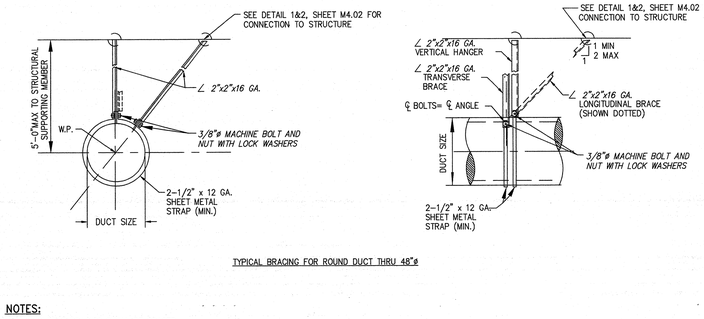


NOTES:

1. ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M4.04.
2. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. PROVIDE AND INSTALL VERTICAL NON-SEISMIC HANGERS AT ALL FITTINGS.
4. REFER TO DETAIL 1, M4.02 FOR CONNECTION OF STRAP TO STRUCTURE. (TYP.)

TYPICAL RIGID ROUND DUCT NON-SEISMIC HANGER DETAIL

SCALE NONE | 4



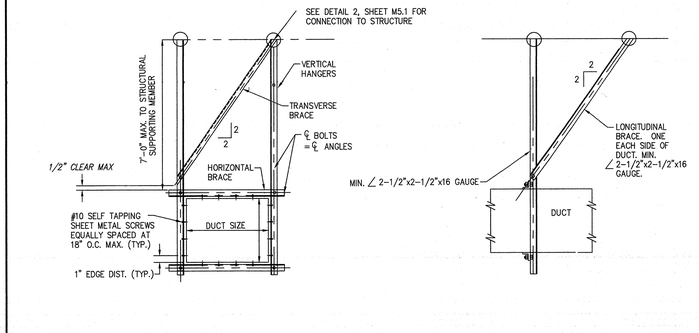
TYPICAL BRACING FOR ROUND DUCT THRU 48"ø

NOTES:

1. TRANSVERSE BRACING SHALL BE SPACED AT 30 FT AND LONGITUDINAL BRACING SHALL BE AT 60 FT. A MINIMUM OF AT LEAST ONE BRACE OF EACH TYPE SHALL OCCUR PER DUCT RUN.
2. SEE DETAIL 2, M4.04 FOR SMACNA TABLES.

TYPICAL ROUND DUCT SEISMIC BRACING DETAIL THROUGH 48"

SCALE NONE | 5

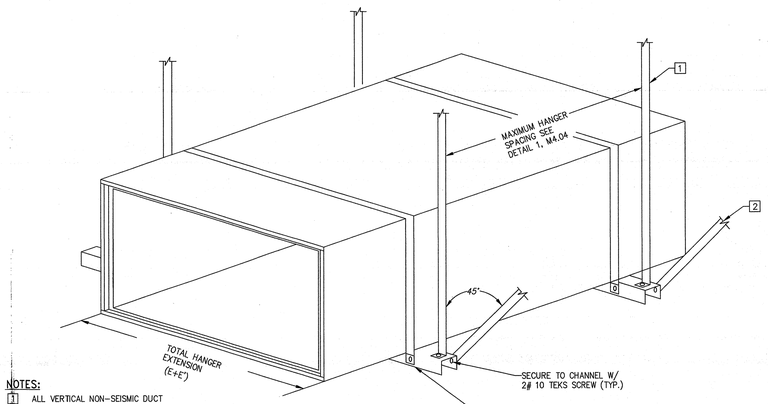


NOTES:

1. THIS DETAIL REFERS TO MIN. REQUIREMENTS FOR RECTANGULAR DUCTS WHERE W"xD" EQUALS 30"x30" MINIMUM. SEE SMACNA TABLE 5-1 FOR ADDITIONAL REQUIREMENTS.
2. THE MAXIMUM DIMENSION OF DUCT SHALL GOVERN WHAT BRACING IS REQUIRED PER SMACNA TABLE 5-1.
3. USE SMACNA CONNECTION LEVEL 3 FOR ALL CONNECTIONS.
4. PROVIDE TRANSVERSE BRACING AT 30'-0" AND LONGITUDINAL BRACING AT 60'-0".
5. SEE DETAIL 1&2, SHEET M4.02 FOR CONNECTION TO STRUCTURE.
6. SEE DETAIL 2, M4.04 FOR SMACNA TABLES.

TYPICAL RECTANGULAR DUCT SEISMIC BRACING DETAIL

SCALE NONE | 6



NOTES:

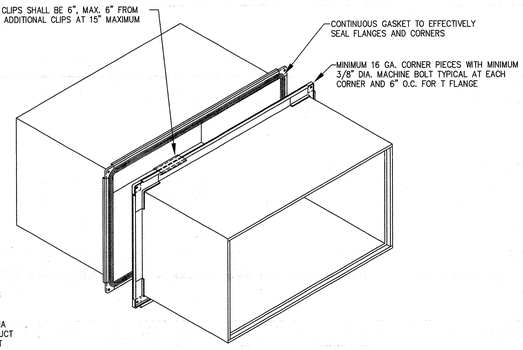
1. ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M4.04.
2. SEISMIC BRACING SHALL BE SIZED AND SPACED PER DETAIL 6, M4.03 REFFER TO DETAIL 2, M4.04 FOR SMACNA TABLES.

TABLE A6-3-F CHANNEL SELECTION

IF TOTAL EXT. IS NOT GREATER THAN: (INCHES) x25.4 FOR MM	MINIMUM CHANNEL GAGE	MINIMUM CHANNEL PROFILE (INCHES) x25.4 FOR MM
6	24	3 x 1.5
18	22	3 x 2
30	18	3 x 2

TYPICAL RECTANGULAR DUCT CHANNNEL EXTENSION HANGER DETAIL

SCALE NONE | 7

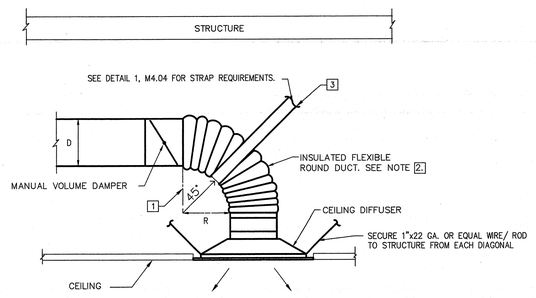


NOTES:

1. ALL VERTICAL NON-SEISMIC DUCT HANGER STRAPS SHALL BE SIZED AND SPACED PER CHAPTER 6, 1998 CMC. (TYP.) SEE DETAIL 1, M4.04.
2. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. ALL SEISMIC BRACING SHALL BE SIZED AND SPACED PER DETAIL 6, M4.03. REFER TO DETAIL 2, M4.04 FOR SMACNA TABLES.

TYPICAL SMACNA FLANGE DETAIL

SCALE NONE | 8



1. (R=D) CONNECTION TO DIFFUSER SHALL BE MADE AS SHOWN.
2. FLEXIBLE DUCTS 5'-0" MAXIMUM IN LENGTH. ALL FLEXIBLE DUCT SHALL HAVE A FLAMESPREAD OF 25 OR LESS, AND A SMOKE-DEVELOPED RATING OF 50 OR LESS.
3. SEE DETAIL-- FOR CONNECTION TO STRUCTURE.
4. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS", LATEST EDITION.

TYPICAL FLEX DUCT TO CEILING DIFFUSER DETAIL

SCALE NONE | 9

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LICENSED ARCHITECT — T. M. BLUROCK — NO. C009332 — 1-31-03 RENEWAL DATE — STATE OF CALIFORNIA

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114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL DETIALS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10. 11. 2001

M4.03

1998 CMC TABLE A6-1-A RECTANGULAR DUCT HANGERS, MINIMUM SIZE

MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10FT. SPACING		PAIR AT 8FT. SPACING		PAIR AT 5FT. SPACING		PAIR AT 4FT. SPACING	
	STRAP (INCH)	WIRE/ROD	STRAP (INCH)	WIRE/ROD	STRAP (INCH)	WIRE/ROD	STRAP (INCH)	WIRE/ROD
x 25.4 FOR MM.								
P/2=39"	1"x0.030 (1x22 GA.)	10 GA. (0.135")	1"x0.030 (1x22 GA.)	10 GA. (0.135")	1"x0.030 (1x22 GA.)	12 GA. (0.106")	1"x0.030 (1x22 GA.)	12 GA. (0.106")
P/2=72"	1"x0.047(1x18 GA.)	3/8"	1"x0.036(1x20 GA.)	1/4"	1"x0.030(1x22GA.)	1/4"	1"x0.030(1x22GA.)	1/4"
P/2=96"	1"x0.058(1x16 GA.)	3/8"	1"x0.047(1x18 GA.)	3/8"	1"x0.036(1x20 GA.)	3/8"	1"x0.030(1x22GA.)	1/4"
P/2=120"	1-1/2"x0.058(1-1/2x16 GA.)	1/2"	1"x0.058(1x16 GA.)	3/8"	1"x0.047(1x18GA.)	3/8"	1"x0.036(1x20GA.)	1/4"
P/2=168"	1-1/2"x0.058(1-1/2x16 GA.)	1/2"	1-1/2"x0.058(1-1/2x16 GA.)	1/2"	1"x0.058(1x16 GA.)	3/8"	1"x0.047(1x18 GA.)	3/8"
P/2=192"	--	1/2"	1-1/2"x0.058(1-1/2x16 GA.)	1/2"	1"x0.058(1x16 GA.)	3/8"	1"x0.058(1x16 GA.)	3/8"
P/2=193" UP	SPECIAL ANALYSIS REQUIRED							

WHEN STRAPS ARE LAP JOINED USE THESE MINIMUM FASTNERS x 25.4 FOR MM.	SINGLE HANGER MAXIMUM ALLOWABLE LOAD STRAP	WIRE OR ROD (DIAMETER)
1" x 0.047", 0.036", 0.030--TWO NO. 10 TEK SCREW OR ONE 1/4" BOLT.	1"x0.030"--260 LBS	0.106"--80 LBS.
	1"x0.036"--320LBS	0.135"--120 LBS
	1"x0.047"--420LBS	0.162"--160 LBS
1" x0.058"--TWO 1/4" DIA BOLT.	1"x0.058"--700LBS	1/4"--270 LBS
	1-1/2"x0.058"--1,100LBS	3/8"--680 LBS
1-1/2" x0.058"--TWO 3/8" DIA. BOLT --		1/2"--1,250 LBS
		5/8"--2,000 LBS
PLACE FASTNERS IN SERIES, NOT SIDE BY SIDE.		3/4"--3,000 LBS

GENERAL NOTES

1. DIMENSIONS OTHER THAN GAGE ARE IN INCHES.
2. TABLES ALLOW FOR DUCT WEIGHT 1 POUND PER SQUARE FOOT INSULATION WEIGHT NORMAL REINFORCEMENT AND TRAPEEZE WEIGHT, BUT NO EXTERNAL LOADS.
3. STRAPS ARE GALVANIZED STEEL; OTHER MATERIALS ARE UNCOATED STEEL.
4. ALLOWABLE LOADS FOR P/2 ASSUME THAT DUCTS ARE 0.058 (16 GA.) MAXIMUM, EXCEPT THAT WHEN MAXIMUM DUCT DIMENSION (W) IS OVER 60 INCHES, THEN P/2 MAXIMUM IS 1.25W.
5. FOR TRAPEEZE SIZES, SEE 1997 CMC TABLE A6-1-B.
6. TWELVE, TEN OR EIGHT GAGE WIRE IS STEEL OF BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED TYPE.

1998 CMC TABLE A6-1-C ROUND DUCT HANGERS, MINIMUM SIZE

DUCT DIAMETER	MAXIMUM SPACING (FEET)	WIRE DIAMETER	ROD (INCH)	STRAP
x 25.4 FOR MM.	x 304.8 FOR MM.		x 25.4 FOR MM.	
10" DIA.	12	ONE 12 GAUGE	1/4"	1"x0.030 (22 GA.)
11-18"	12	TWO 12 GA. OR ONE 8 GA.	1/4"	1"x0.030 (22 GA.)
19-24"	12	TWO 10 GAUGE	1/4"	1"x0.030 (22 GA.)
25-36"	12	TWO 10 GAUGE	3/8"	1"x0.036 (20GA.)
37-50"	12	USE ROD'S	TWO 3/8"	TWO 1"x0.036 (20GA.)
51-80"	12	USE ROD'S	TWO 3/8"	TWO 1"x0.047(18 GA.)
81-94"	12	USE ROD'S	TWO 3/8"	TWO 1"x0.058(16 GA.)

NOTES:

1. LATERAL AND LONGITUDENAL BRACING IS REQUIRED ON ALL DUCT WHERE HANGER LENGTH EXCEEDS 10" OR WHEN DUCT MOVEMENT MAY CAUSE DAMAGE TOO OR OTHERWISE BUMP ANY ADJACENT OBJECT.

TYPICAL RIGID ROUND DUCT AND RECTANGULAR DUCT NON SEISMIC HANGER SPACING AND HANGER GAUGE DETAIL

SCALE NONE | 1

TABLE 5-1. SIDE BRACING FOR RECTANGULAR DUCTS, SHL A

DUCT SIZE WxD (3)	VERTICAL HANGERS	DIAGONAL BRACES (CABLE SIZE) (5)	HORIZONTAL BRACES	BOLT SIZE (IN.)	CONNECTION TYPE TO STRUCTURAL MEMBER (1) CONNECTION LEVEL (4) 1	2	3	MAX. WT. PER FT. (LBS) (2)
30x30	2-1/2x2-1/2x16ga	∠2-1/2x2-1/2x16ga (1/4" CABLE)	∠ 2x2x16ga	3/8	A	A	C	17
42x42	∠ 4x4x16ga	∠ 3x3x16ga (1/4" CABLE)	2-1/2x2-1/2x16ga	3/8	B	C	D	29
54x54	∠ 4x4x16ga	∠ 4x4x14ga (1/4" CABLE)	2-1/2x2-1/2x16ga	3/8	C	D	E	46
60x60	∠ 4x4x16ga	∠ 4x4x14ga (1/4" CABLE)	∠ 3x3x16ga	3/8	C	D	E	54
84x84	∠4x4x1/4	2-1/2" PIPE (1/4" CABLE)	∠ 4x4x16ga	1/2	E	F	G	103
96x96	∠4x4x1/4	2-1/2" PIPE (3/8" CABLE)	∠ 4x4x12ga	1/2	F	F	G	129
54x28	∠ 4x4x16ga	∠2-1/2x2-1/2x16ga (1/4" CABLE)	2-1/2x2-1/2x16ga	3/8	C	C	C	34
60x30	∠ 4x4x12ga	∠2-1/2x2-1/2x16ga (1/4" CABLE)	∠ 3x3x16ga	3/8	C	C	E	39
84x42	∠3x3x1/4	∠ 3x3x12ga (1/4" CABLE)	∠ 4x4x14ga	1/2	D	E	F	74
96x48	∠4x4x1/4	∠ 3x3x12ga (1/4" CABLE)	∠ 4x4x12ga	1/2	E	F	G	91
108x54	∠4x4x1/4	∠ 4x4x12ga (1/4" CABLE)	∠ 3x3x1/4	1/2	F	F	H	110
120x60	∠4x4x1/4	∠ 4x4x12ga (3/8" CABLE)	∠ 3x3x1/4	5/8	F	F	H	121

1. SEE TABLE 8-1 FOR "CONNECTION TYPE" TO STRUCTURAL SUPPORTING MEMBERS.
2. MAXIMUM WEIGHT OF DUCT OR COMBINATIONS OF DUCTS PER LINEAR FOOT. FOR DUCTS WEIGHING MORE THAN THE MAXIMUM WEIGHT PER FOOT, USE THE NEXT HIGHER DUCT SIZE.
3. THE DUCTS' MAXIMUM DIMENSIONS SHALL GOVERN WHAT BRACING IS REQUIRED. EXAMPLE: A 72"x30" DUCT SHALL BE BRACED LIKE A 84"x42" DUCT. IF EXACT SIZE IS NOT LISTED, USE NEXT HIGHER SIZE.
4. CONNECTION LEVEL 1, USED ANYWHERE EXCEPT WHEN CONNECTING INTO CONCRETE IN CALIFORNIA SCHOOLS AND HOSPITALS.
   CONNECTION LEVEL 2, REQUIRED FOR USE IN CALIFORNIA SCHOOLS AND HOSPITALS IN CONCRETE FILL IN METAL DECKS, CONCRETE WALLS AND CONCRETE SLABS ON GRADE.
   CONNECTION LEVEL 3, REQUIRED FOR USE IN CALIFORNIA SHCOOLS AND HOSPITALS IN CONCRETE TENSION ZONES. THIS MAY BE USED FOR CONNECTION INTO ALL CONCRETE.
5. PROVIDE TRANSVERSE BRACING AT 30 FT AND LONGITUDINAL BRACING AT 60 FT.

TABLE 5-2a. CENTER BRACING FOR RECTANGULAR DUCTS, SHL A L=10'

DUCT SIZE WxD (3)	VERTICAL HANGERS	DIAGONAL BRACES (CABLE SIZE) (5)	HORIZONTAL BRACES	LONGITUDINAL BRACES (CABLE SIZE)	BOLT SIZE (IN.)	CONNECTION TYPE TO STRUCTURAL MEMBER (1) CONNECTION LEVEL (4) 1	2	3	MAX. WT. PER FT. (LBS) (2)
30x30	∠ 4x4x12ga	∠ 4x4x14ga (1/4" CABLE)	∠ 2x2x16ga	2-1/2" PIPE (1/4" CABLE)	3/8	C	C	D	17
42x42	∠ 4x4x12ga	∠ 4x4x14ga (1/4" CABLE)	2-1/2x2-1/2x16ga	2-1/2" PIPE (1/4" CABLE)	3/8	C	D	E	29
54x54	∠3x3x1/4	∠ 4x4x12ga (1/4" CABLE)	2-1/2x2-1/2x16ga	2-1/2" PIPE (1/4" CABLE)	1/2	C	E	F	46
60x60	∠3x3x1/4	∠ 4x4x12ga (1/4" CABLE)	∠ 3x3x16ga	2-1/2" PIPE (1/4" CABLE)	1/2	D	E	F	54
84x84	∠5x3x1/4	∠ 4x4x12ga (3/8" CABLE)	∠ 4x4x16ga	2-1/2" PIPE (3/8" CABLE)	5/8	E	F	H	103
96x96	∠5x3x3/8	∠ 4x4x12ga (3/8" CABLE)	∠ 4x4x12ga	2-1/2" PIPE (3/8" CABLE)	5/8	F	G	H	129
54x28	∠ 4x4x12ga	∠ 4x4x12ga (1/4" CABLE)	2-1/2x2-1/2x16ga	2-1/2" PIPE (1/4" CABLE)	1/2	F	E	F	34
60x30	∠ 4x4x12ga	∠ 4x4x12ga (1/4" CABLE)	∠ 3x3x16ga	2-1/2" PIPE (1/4" CABLE)	1/2	E	F	G	39
84x42	∠3x3x1/4	2" PIPE (3/8" CABLE)	∠ 4x4x14ga	2-1/2" PIPE (3/8" CABLE)	5/8	E	H	H	74
96x48	∠4x4x1/4	2" PIPE (3/8" CABLE)	∠ 4x4x12ga	2-1/2" PIPE (3/8" CABLE)	3/4	F	H	H	97
108x54	∠4x4x1/4	2-1/2" PIPE (1/2" CABLE)	∠3x3x1/4	2-1/2" PIPE (1/2" CABLE)	3/4	G	H	(6)	110
120x60	∠5x3x1/4	2-1/2" PIPE (1/2" CABLE)	∠3x3x1/4	2-1/2" PIPE (1/2" CABLE)	7/8	H	H	(6)	121

1. SEE TABLE 8-1 FOR "CONNECTION TYPE" TO STRUCTURAL SUPPORTING MEMBERS.
2. MAXIMUM WEIGHT OF DUCT OR COMBINATIONS OF DUCTS PER LINEAR FOOT. FOR DUCTS WEIGHING MORE THAN THE MAXIMUM WEIGHT PER FOOT, USE THE NEXT HIGHER DUCT SIZE.
3. THE DUCTS' MAXIMUM DIMENSIONS SHALL GOVERN WHAT BRACING IS REQUIRED. EXAMPLE: A 72"x30" DUCT SHALL BE BRACED LIKE A 84"x42" DUCT. IF EXACT SIZE IS NOT LISTED, USE NEXT HIGHER SIZE.
4. CONNECTION LEVEL 1, USED ANYWHERE EXCEPT WHEN CONNECTING INTO CONCRETE IN CALIFORNIA SCHOOLS AND HOSPITALS.
   CONNECTION LEVEL 2, REQUIRED FOR USE IN CALIFORNIA SCHOOLS AND HOSPITALS IN CONCRETE FILL IN METAL DECKS, CONCRETE WALLS AND CONCRETE SLABS ON GRADE.
   CONNECTION LEVEL 3, REQUIRED FOR USE IN CALIFORNIA SHCOOLS AND HOSPITALS IN CONCRETE TENSION ZONES. THIS MAY BE USED FOR CONNECTION INTO ALL CONCRETE.
5. PROVIDE TRANSVERSE BRACING AT 30 FT AND LONGITUDINAL BRACING AT 60 FT.
6. CONNECTION DESIGN REQUIRED

TABLE 5-2b. CENTER BRACING FOR RECTANGULAR DUCTS, SHL A L=7'

DUCT SIZE WxD (3)	VERTICAL HANGERS	DIAGONAL BRACES (CABLE SIZE) (5)	HORIZONTAL BRACES	LONGITUDINAL BRACES (CABLE SIZE)	BOLT SIZE (IN.)	CONNECTION TYPE TO STRUCTURAL MEMBER (1) CONNECTION LEVEL (4) 1	2	3	MAX. WT. PER FT. (LBS) (2)
30x30	∠ 4x4x16ga	∠2-1/2x2-1/2x16ga (1/4" CABLE)	∠ 2x2x16ga	∠ 3x3x16ga (1/4" CABLE)	3/8	B	C	D	17
42x42	∠ 4x4x12ga	∠2-1/2x2-1/2x16ga (1/4" CABLE)	2-1/2x2-1/2x16ga	∠ 3x3x12ga (1/4" CABLE)	3/8	C	D	E	29
54x54	∠3x3x1/4	∠2-1/2x2-1/2x16ga (1/4" CABLE)	2-1/2x2-1/2x16ga	∠ 3x3x12ga (1/4" CABLE)	3/8	D	D	F	46
60x60	∠3x3x1/4	∠ 3x3x12ga (1/4" CABLE)	∠ 3x3x16ga	∠ 3x3x12ga (1/4" CABLE)	1/2	D	E	F	54
84x84	∠5x3x1/4	∠ 3x3x12ga (3/8" CABLE)	∠ 4x4x16ga	∠ 3x3x12ga (3/8" CABLE)	5/8	F	F	G	103
96x96	∠5x3x3/8	∠ 4x4x12ga (3/8" CABLE)	∠ 4x4x12ga	∠ 4x4x12ga (3/8" CABLE)	5/8	F	G	H	129
54x28	∠ 4x4x12ga	∠2-1/2x2-1/2x16ga (1/4" CABLE)	2-1/2x2-1/2x16ga	∠ 3x3x12ga (1/4" CABLE)	1/2	E	E	F	34
60x30	∠ 4x4x12ga	∠ 3x3x12ga (1/4" CABLE)	∠ 3x3x16ga	∠ 3x3x12ga (1/4" CABLE)	1/2	E	F	G	39
84x42	∠3x3x1/4	∠3x3x1/4 (3/8" CABLE)	∠ 4x4x14ga	∠3x3x1/4 (3/8" CABLE)	5/8	G	G	H	74
96x48	∠4x4x1/4	2" PIPE (3/8" CABLE)	∠ 4x4x12ga	∠3x3x1/4 (3/8" CABLE)	3/4	H	H	H	97
108x54	∠4x4x1/4	2-1/2" PIPE (1/2" CABLE)	∠3x3x1/4	∠3x3x1/4 (1/2" CABLE)	3/4	H	H	(6)	110
120x60	∠5x3x1/4	2-1/2" PIPE (1/2" CABLE)	∠3x3x1/4	∠3x3x1/4 (1/2" CABLE)	7/8	H	H	(6)	121

1. SEE TABLE 8-1 FOR "CONNECTION TYPE" TO STRUCTURAL SUPPORTING MEMBERS.
2. MAXIMUM WEIGHT OF DUCT OR COMBINATIONS OF DUCTS PER LINEAR FOOT. FOR DUCTS WEIGHING MORE THAN THE MAXIMUM WEIGHT PER FOOT, USE THE NEXT HIGHER DUCT SIZE.
3. THE DUCTS' MAXIMUM DIMENSIONS SHALL GOVERN WHAT BRACING IS REQUIRED. EXAMPLE: A 72"x30" DUCT SHALL BE BRACED LIKE A 84"x42" DUCT. IF EXACT SIZE IS NOT LISTED, USE NEXT HIGHER SIZE.
4. CONNECTION LEVEL 1, USED ANYWHERE EXCEPT WHEN CONNECTING INTO CONCRETE IN CALIFORNIA SCHOOLS AND HOSPITALS.
   CONNECTION LEVEL 2, REQUIRED FOR USE IN CALIFORNIA SCHOOLS AND HOSPITALS IN CONCRETE FILL IN METAL DECKS, CONCRETE WALLS AND CONCRETE SLABS ON GRADE.
   CONNECTION LEVEL 3, REQUIRED FOR USE IN CALIFORNIA SHCOOLS AND HOSPITALS IN CONCRETE TENSION ZONES. THIS MAY BE USED FOR CONNECTION INTO ALL CONCRETE.
5. PROVIDE TRANSVERSE BRACING AT 30 FT AND LONGITUDINAL BRACING AT 60 FT.
6. CONNECTION DESIGN REQUIRED

TABLE 5-3. BRACING FOR ROUND DUCTS, SHL A

DUCT SIZE DIAM. (3)	VERTICAL HANGERS	DIAGONAL BRACES (CABLE SIZE) (5)	BOLT SIZE (IN.)	CONNECTION TYPE TO STRUCTURAL MEMBER (1) CONNECTION LEVEL (4) 1	2	3	MAX. WT. PER FT. (LBS) (2)	REMARKS
THROUGH 28	∠ 2x2x16ga	∠ 2x2x16ga (1/4" CABLE)	3/8	A	A	B	12	SINGLE HANGER
36	∠ 2x2x16ga	∠ 2x2x16ga (1/4" CABLE)	3/8	A	B	C	16	SINGLE HANGER
48	∠ 2x2x16ga	∠ 2x2x16ga (1/4" CABLE)	3/8	B	C	D	21	SINGLE HANGER
60	∠ 3x3x16ga	∠ 4x4x14ga (1/4" CABLE)	3/8	D	D	E	34	DOUBLE HANGER
84	∠ 3x3x16ga	∠ 4x4x14ga (1/4" CABLE)	1/2	F	F	G	69	DOUBLE HANGER

1. SEE TABLE 8-1 FOR "CONNECTION TYPE TO STRUCTURAL SUPPORTING MEMBERS.
2. MAXIMUM WEIGHT OF DUCT OR COMBINATIONS OF DUCTS PER LINEAR FOOT. FOR DUCTS WEIGHING MORE THAN THE MAXIMUM WEIGHT PER FOOT, USE THE NEXT HIGHER DUCT SIZE.
3. THE DUCTS' MAXIMUM DIMENSIONS SHALL GOVERN WHAT BRACING IS REQUIRED. EXAMPLE: A 52" DUCT SHALL BE BRACED LIKE A 60" DUCT. IF EXACT SIZE IS NOT LISTED, USE NEXT HIGHER SIZE.
4. CONNECTION LEVEL 1, USED ANYWHERE EXCEPT WHEN CONNECTING INTO CONCRETE IN CALIFORNIA SCHOOLS AND HOSPITALS.
   CONNECTION LEVEL 2, REQUIRED FOR USE IN CALIFORNIA SCHOOLS AND HOSPITALS IN CONCRETE FILL IN METAL DECKS, CONCRETE WALLS AND CONCRETE SLABS ON GRADE.
   CONNECTION LEVEL 3, REQUIRED FOR USE IN CALIFORNIA SHCOOLS AND HOSPITALS IN CONCRETE TENSION ZONES. THIS MAY BE USED FOR CONNECTION INTO ALL CONCRETE.
5. PROVIDE TRANSVERSE BRACING AT 30 FT AND LONGITUDINAL BRACING AT 60 FT.

TABLE 8-1. CONNECTIONS TO STRUCTURE (1)

TYPE	MAX. LOAD CAPACITY (LBS) (4)	EXPANSION ANCHORS TO CONCRETE (1,2)	MACHINE BOLT END OF BRACE	SPREADER SIZE	MACHINE BOLT AT WOOD (5)	HOLLOW CORE PLANK ROD	ANGLE TO SUPPORTING STRUCT. MEMBER (3)
A	1040	1/2"	3/8"	C4x5.4	1/2"	3/8"	∠3-1/2"x2-1/2"x3/8"x0'-3" LLH
B	1415	5/8"	3/8"	C4x5.4	5/8"	3/8"	∠ 5"x3"x3/8"x0'-3" LLH
C	1586	(2) - 1/2"	1/2"	C5x6.7	3/4"	3/8"	2- ∠ 4"x3"x3/8"x0'-4" LLH
D	2020	(2) - 5/8"	1/2"	C8x8.5	(6)	1/2"	2- ∠ 5"x3"x3/8"x0'-4" LLH
E	2870	(2) - 3/4"	5/8"	C8x11.5	(6)	1/2"	2- ∠ 6"x3-1/2"x3/8"x0'-4" LLH
F	4600	(4) - 5/8"	3/4"	C9x13.4	(6)	(6)	2- ∠ 5"x3"x3/8"x0'-10" LLH
G	7040	(4) - 3/4"	7/8"	C10x15.3	(6)	(6)	2- ∠6"x3-1/2"x1/2"x0'-11-1/2" LLH
H	9240	(4) - 7/8"	1"	C12x20.7	(6)	(6)	2- ∠8"x4"x3/4"x1'-1-1/2" LLH

1. EXPANSION ANCHORS SHALL BE INSTALLED PER THE REQUIREMENTS GIVEN IN THE LATEST GOVERNING AUTHORITY RESEARCH REPORT FOR THE SPECIFIC ANCHOR. REFER TO THE REQUIREMENTS IN CHAPTER 3, OF THE LATEST SMACNA GUIDELINE FOR SEISMIC RESTRAINT.
2. FOR ESSENTIAL FACILITIES, 50 PERCENT OF THE EXPANSION TYPE ANCHORS (ALTERNATE ANCHORS IN ANY GROUP ARRANGEMENT) SHALL BE PROOF TESTED TO TWICE THE ALLOWABLE LOAD WITH NO EROSION. IF ANY ANCHOR FAILS, THE IMMEDIATELY ADJACENT ACHORS MUST THEN ALSO BE TESTED.
3. LLH = LONG LEG HORIZONTAL. LENGHT AS REQUIRED TO SPAN A MINIMUM OF 2 ROOF FLUTES.
4. MAXIMUM LOAD CAPACITY IS FOR GENERAL INFORMATION ONLY AND THE MAXIMUM MEMBER FORCE IN THE BRACING SYSTEM USED IN THIS MANUAL. A DESIGNER MAY USE THIS FORCE TO DESIGN A SPECIAL CONNECTION IF REQUIRED.
5. MACHINE BOLTS INTO 6x WOOD MEMEBERS UNLESS SHWON OTHERWISE ON THE DETAILS.
6. MUST BE ENGINEERED INDIVIDUALLY.

NOTES:

1. LATERAL AND LONGITUDENAL BRACING IS REQUIRED ON ALL DUCT WHERE HANGER LENGTH EXCEEDS 10" OR WHEN DUCT MOVEMENT MAY CAUSE DAMAGE TOO OR OTHERWISE BUMP ANY ADJACENT OBJECT.

TYPICAL SMACNA DUCT SEISMIC RESTRAINT TABLE (S) DETAIL

SCALE NONE | 2

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REGISTERED PROFESSIONAL ENGINEER TROY FUNDERBURK No. 24811 MECHANICAL STATE OF CALIFORNIA

REGISTERED ARCHITECT STEVEN D. BLUROCK C009332 3.31.03 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES APPL. 04 - 103726 ACCTS RS SS DATE JUN 26 2002

SUBMITTALS

SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

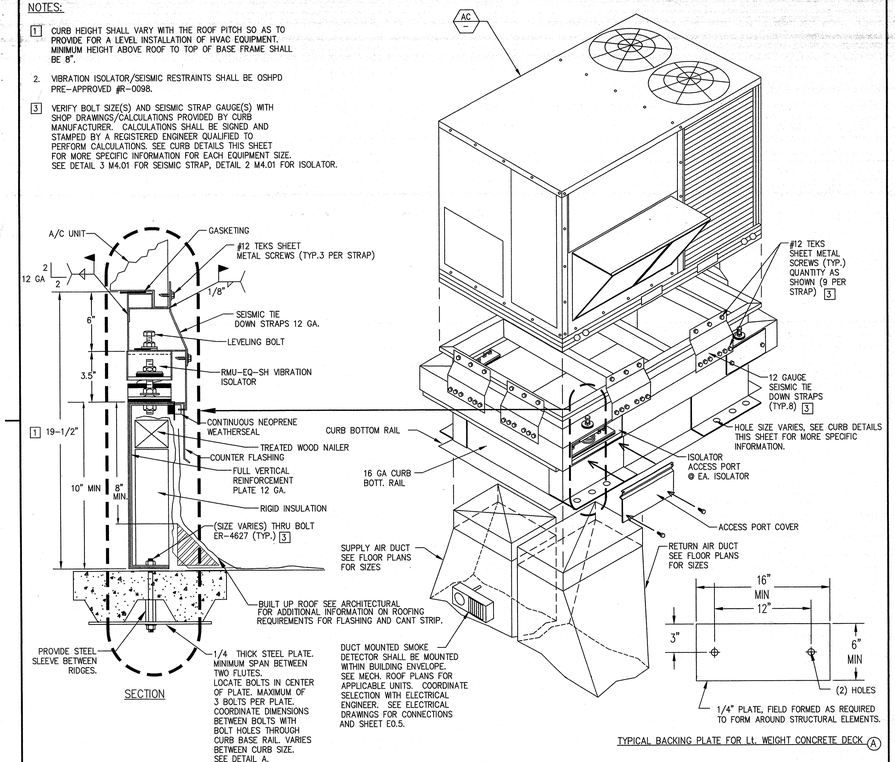
MECHANICAL DETIALS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M4.04

NOTES:

1. CURB HEIGHT SHALL VARY WITH THE ROOF PITCH SO AS TO PROVIDE FOR A LEVEL INSTALLATION OF HVAC EQUIPMENT. MINIMUM HEIGHT ABOVE ROOF TO TOP OF BASE FRAME SHALL BE 8".
2. VIBRATION ISOLATOR/SEISMIC RESTRAINTS SHALL BE OSHPD PRE-APPROVED #R-0098.
3. VERIFY BOLT SIZE(S) AND SEISMIC STRAP GAUGE(S) WITH SHOP DRAWINGS/CALCULATIONS PROVIDED BY CURB MANUFACTURER. CALCULATIONS SHALL BE SIGNED AND STAMPED BY A REGISTERED ENGINEER QUALIFIED TO PERFORM CALCULATIONS. SEE CURB DETAILS THIS SHEET FOR MORE SPECIFIC INFORMATION FOR EACH EQUIPMENT SIZE. SEE DETAIL 3 M4.01 FOR SEISMIC STRAP, DETAIL 2 M4.01 FOR ISOLATOR.

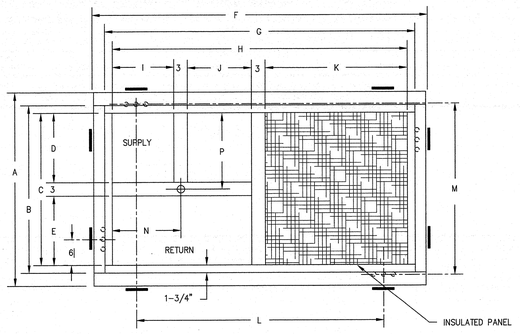


SECTION

TYPICAL BACKING PLATE FOR Lt. WEIGHT CONCRETE DECK (A)

TYPCAL CARRIER 48HJ VERTICAL DISCHARGE ROOF CURB

SCALE NONE | 1



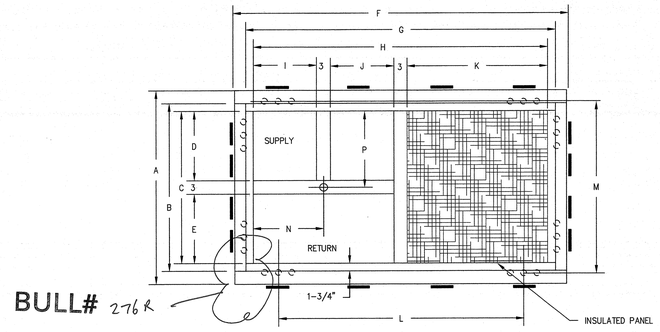
MARK	MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
--	CARRIER	48HJ	004	500	44 15/16	40 3/16	36 15/16	20 1/4	13 15/16	75 1/4	70 3/4	67 1/4
--			006	590								
--			007	610								
					I	J	K	L	M	N	P	
--					13 3/8	15 3/16	32 1/16	48 1/8	39 15/16	16	21 11/16	

1) L and M DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" ASTM MACHINE BOLTS THROUGH BACKING PLATE. SEE DETAIL (A) M4.05.
5) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
6) ▬▬ INDICATES SEISMIC TIE-DOWN PLATE. (2) REQUIRED PER SIDE. FOR DETAIL, SEE DETAIL 3, M4.01.
7) FOR ISOLATOR DETAIL, SEE DETAIL 2, M4.01.
8) VIBREX CURB VIC-EQ WEIGHT = 174 lbs.
9) VIBREX CURB VIC-EQ FOOTPRINT = 39-15/16" X 70-1/8"

RFI # 276 AC UNIT CURB INSTALLATION

TYPICAL CARRIER 48HJ 004-007 CURB DETAIL

SCALE NONE | 2



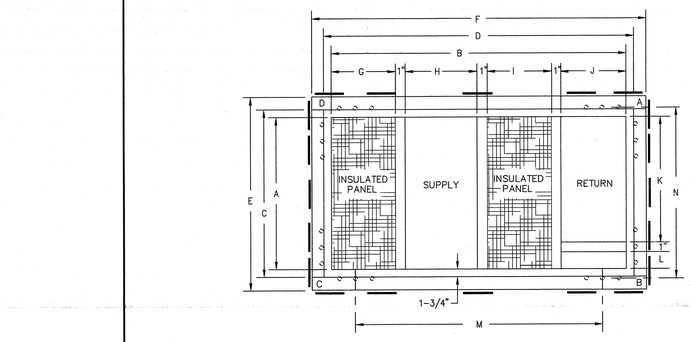
BULL# 276 R

MARK	MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
	CARRIER	48HJ	008	870	57-3/4	53-1/4	49-3/4	31-3/8	15-3/8	86	81-1/2	78
		48HJ	009	956								
					I	J	K	L	M	N	P	
					15-11/16	21-3/8	34-15/16	65-1/2	51-3/4	22-15/16	32-7/16	

1) L and M DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" ASTM 307 MACHINE BOLTS THROUGH BACKING PLATE. SEE DETAIL (A) M4.05.
5) SPRING ISOLATORS SHALL BE OSHPD PRE-APPROVED R# 0098.
6) ▬▬ INDICATES SEISMIC TIE-DOWN PLATE. (1) REQUIRED PER SIDE. FOR DETAIL 3 M4.01.
7) FOR ISOLATOR DETAIL, SEE DETAIL 2, M4.01
8) VIC-EQ WEIGHT = 213 lbs.
9) VIC-EQ FOOTPRINT = 52-3/4" X 81"

TYPICAL CARRIER 48HJ 008-009 CURB DETAIL

SCALE NONE | 3



MARK	MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
	CARRIER	48GX	024	290	28-3/4	44-5/16	29-3/4	45-5/16	36-3/4	52-5/16	16-1/2	44-5/16
					I	J	K	L	M	N	P	Q
					28-3/4	44-5/16	44-5/16					

1) N and P DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION =2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" ASTM MACHINE BOLTS THROUGH BACKING PLATE. SEE DETAIL (A) M4.05.
5) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
6) ▬▬ INDICATES SEISMIC TIE-DOWN PLATE. (2) REQUIRED PER SIDE. FOR DETAIL, SEE ADDITIONAL DRAWINGS
7) FOR ISOLATOR DETAIL, SEE ADDITIONAL DRAWINGS
8) VIC-EQ WEIGHT = 137 LBS.
9) VIC-EQ FOOTPRINT = 57-1/2" X 79-1/8"

TYPCAL CARRIER 48GX-024 CURB DETAIL

SCALE NONE | 4

MARK	MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
	CARRIER	48HJD	015	2049	74-1/4	67-1/16	77-3/4	70-9/16	82-1/4	75-1/16	11-5/16	19-13/16
			--	--								
					I	J	K	L	M	N		
					10-3/16	22-3/4	69	4-1/4	54-9/16	76-1/4		

1) M and N DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS SHALL BE OSHPD PRE-APPROVED R# 0098.
4) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" ASTM MACHINE BOLTS THROUGH BACKING PLATE. SEE DETAIL 6, M4.05.
5) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
6) ▬▬ INDICATES SEISMIC TIE-DOWN PLATE. (4) REQUIRED PER SIDE. FOR DETAIL, SEE DETAIL 3, M4.01.
7) FOR ISOLATOR DETAIL, SEE DETAIL 2, M4.01.
8) VIBREX CURB VIC-EQ WEIGHT = 236 lbs.
9) VIBREX CURB VIC-EQ FOOTPRINT = 77-1/4" X 70-1/16"

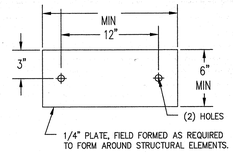
TYPICAL CARRIER 48HJ 015-017 CURB DETAIL

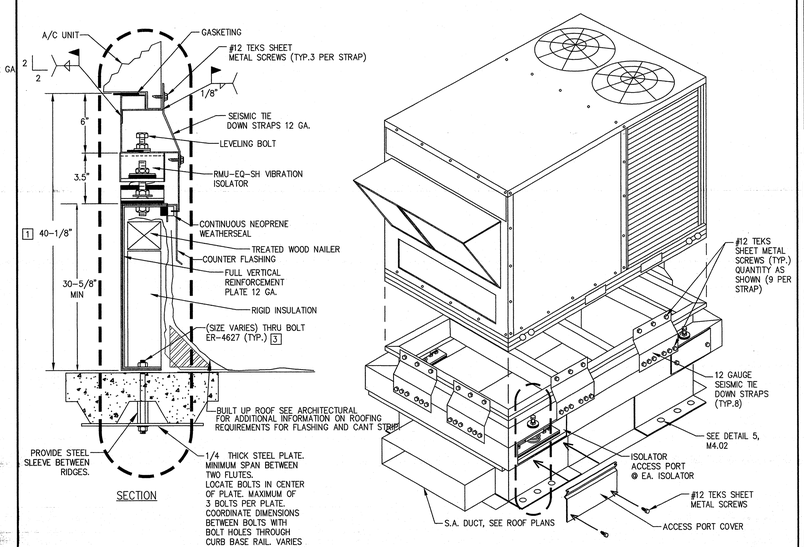
SCALE NONE | 5

1 CURB HEIGHT SHALL VARY WITH THE ROOF PITCH SO AS TO PROVIDE FOR A LEVEL INSTALLATION OF HVAC EQUIPMENT.

2. VIBRATION ISOLATOR/SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED #R-0098.

3 VERIFY BOLT SIZE(S) AND SEISMIC STRAP GAUGE(S) WITH SHOP DRAWINGS/CALCULATIONS PROVIDED BY CURB MANUFACTURER. CALCULATIONS SHALL BE SIGNED AND STAMPED BY A REGISTERED ENGINEER QUALIFIED TO PERFORM CALCULATIONS.





SECTION

TYPICAL CARRIER 48HJ 015-017 HORIZONATL DISCHARGE DETAIL

SCALE NONE | 6

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REGISTERED PROFESSIONAL ENGINEER — RICHARD D. FUNDAMENT — No. M 24301 — MECHANICAL — STATE OF CALIFORNIA

REGISTERED ARCHITECT — STEVEN M. EHRLICH — NO. C009332 — 5-31-03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04 - 103726
AC RS SS
DATE JUN 26 2002

SUBMITTALS

SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

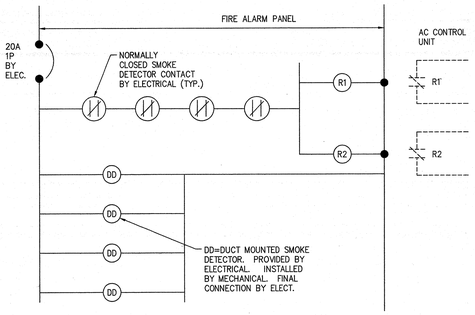
MECHANICAL DETAILS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10. 11. 2001

M4.05

NOTES

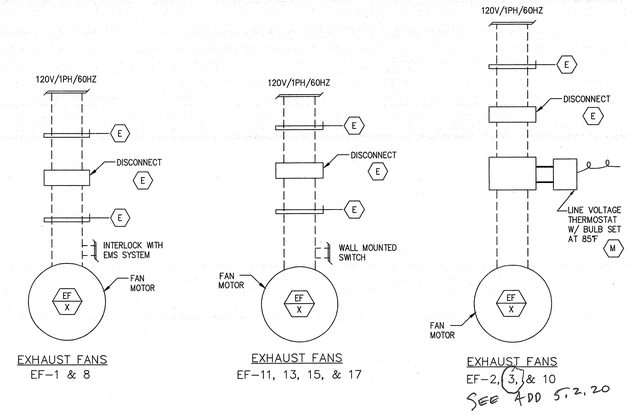
1. SYSTEMS PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN THE BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BE INTERRUPTING THE POWER SOURCE OF THE AIR MOVING EQUIPMENT. SMOKE DETECTORS SHALL DETECT PRODUCT OF COMBUSTION OTHER THAN HEAT AND SHALL COMPLY WITH CALIFORNIA BUILDING CODE. DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES, AND HUMIDITIES OF THE SYSTEM. THE SMOKE DETECTORS SHALL ACTIVATE THE FIRE ALARM SYSTEM. (SECTION 608, C.M.C)
2. SEE FIRE ALARM DRAWINGS FOR ADDITONAL INFORMATION.
3. COORDINATE QUANTITY OF RELAYS AND SWITCHING REQUIREMENTS WITH FIRE ALARM CONTRACTOR.



TYPICAL DUCT DETECTOR DIAGRAM DETAIL

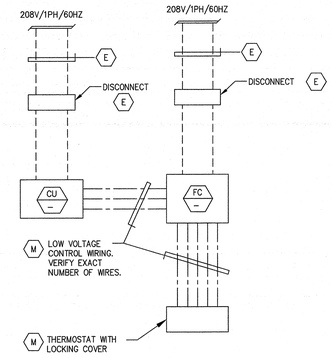
SCALE NONE | 1

1. SYMBOL (E) DENOTES "BY ELECTRICAL".
2. SYMBOL (M) DENOTES "BY MECHANICAL".



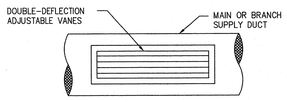
TYPICAL EXHAUST FAN WIRING

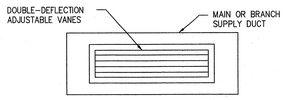
SCALE NONE | 2

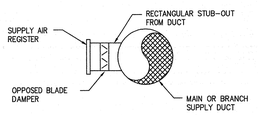


TYPICAL SPLIT SYSTEM WIRING DIAGRAM

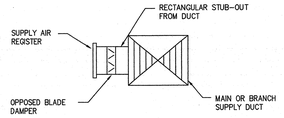
SCALE NONE | 3







ROUND DUCT



RECTANGULAR DUCT

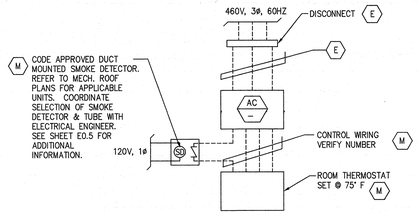
TYPICAL SIDEWALL DIFUSSER DETAIL

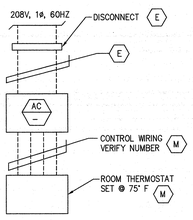
SCALE NONE | 4

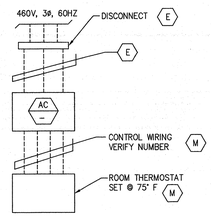
LEGEND

(E) FURNISHED AND INSTALLED BY

(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.

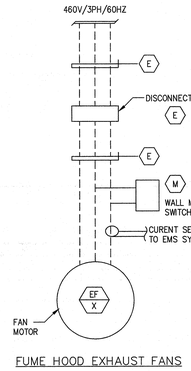




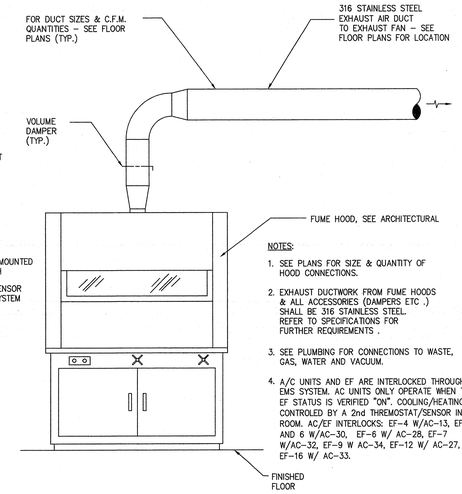


TYPICAL ROOF TOP PACKAGE UNIT WIRING DIAGRAMS

SCALE NONE | 5



FUME HOOD EXHAUST FANS
EF-4,5,6,7,9,12,14,16

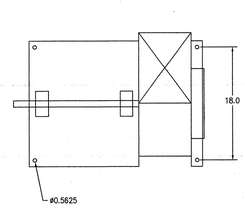


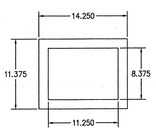
NOTES:

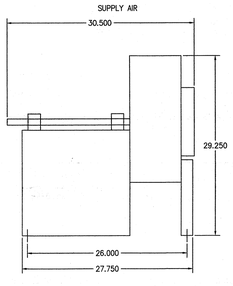
1. SEE PLANS FOR SIZE & QUANTITY OF HOOD CONNECTIONS.
2. EXHAUST DUCTWORK FROM FUME HOODS & ALL ACCESSORIES (DAMPERS ETC .) SHALL BE 316 STAINLESS STEEL. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS .
3. SEE PLUMBING FOR CONNECTIONS TO WASTE, GAS, WATER AND VACUUM.
4. A/C UNITS AND EF ARE INTERLOCKED THROUGH THE EMS SYSTEM. AC UNITS ONLY OPERATE WHEN THE EF STATUS IS VERIFIED "ON". COOLING/HEATING IS CONTROLED BY A 2nd THREMOSTAT/SENSOR IN THE ROOM. AC/EF INTERLOCKS: EF-4 W/AC-13, EF-5 AND 6 W/AC-30, EF-6 W/ AC-28, EF-7 W/AC-32, EF-9 W AC-34, EF-12 W/ AC-27, EF-16 W/ AC-33.

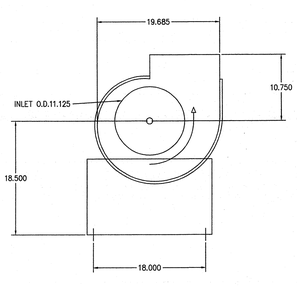
TYPICAL FUME HOOD EXHAUST WIRING

SCALE NONE | 6



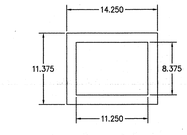


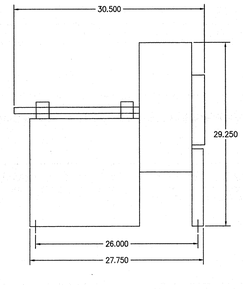


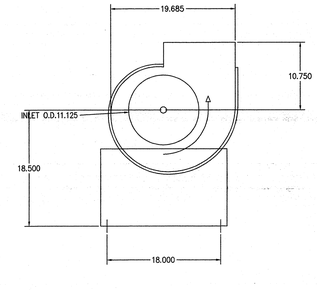


TYPICAL GREENHECK BISW SIZE 7 EXHAUST FAN DIMENSIONS

SCALE NONE | 7

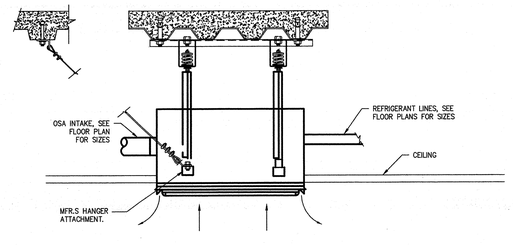






TYPICAL GREENHECK BISW SIZE 8 EXHAUST FAN DIMENSIONS

SCALE NONE | 8



NOTES:

1. SEE DETAIL 3, M4.07 FOR ANCHORAGE REQUIREMENTS.

TYPICAL CARRIER CASSETTE FAN COIL UNIT ANCHORAGE

SCALE NONE | 9

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REGISTERED PROFESSIONAL ENGINEER — RICHARD D. FUNDAMENTAL — NO. M 21881 — MECHANICAL — STATE OF CALIFORNIA

REGISTERED ARCHITECT — THOMAS BLUROCK — NO. C009332 — 1-31-03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-103726
AC FLS SS
DATE JUN 26 2002

SUBMITTALS

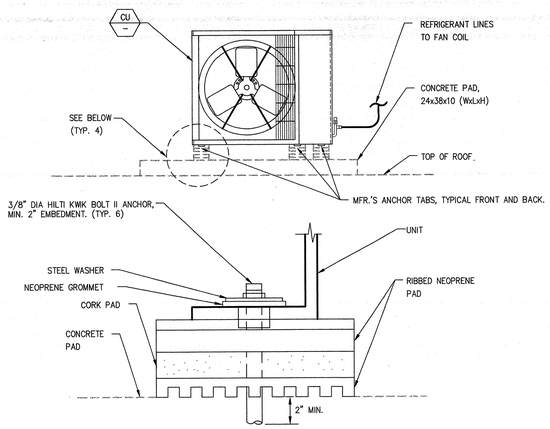
SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL DETAILS

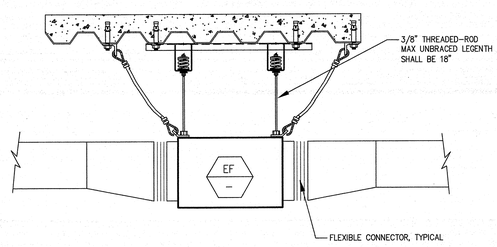
PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M4.06



TYPICAL CONDENSOR ON ROOF DETAIL

SCALE: NONE | 1

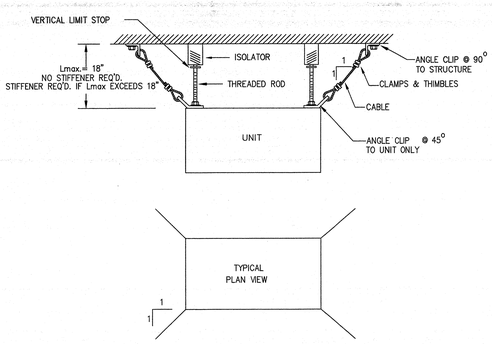


NOTES:

1) SEE DETAIL 4 THIS SHEET FOR ANCHORAGE.
2) FOR CABLE AND UNIT ANCHORAGE SIZES SEE DETAIL 4 THIS SHEET.
3) CABLE SHALL BE 7 X 19 AIRCRAFT CABLE.
4) CABLES TO BE INSTALLED HAND TAUT W/O SLACK.

TYPICAL CEILING HUNG FAN

SCALE: NONE | 2

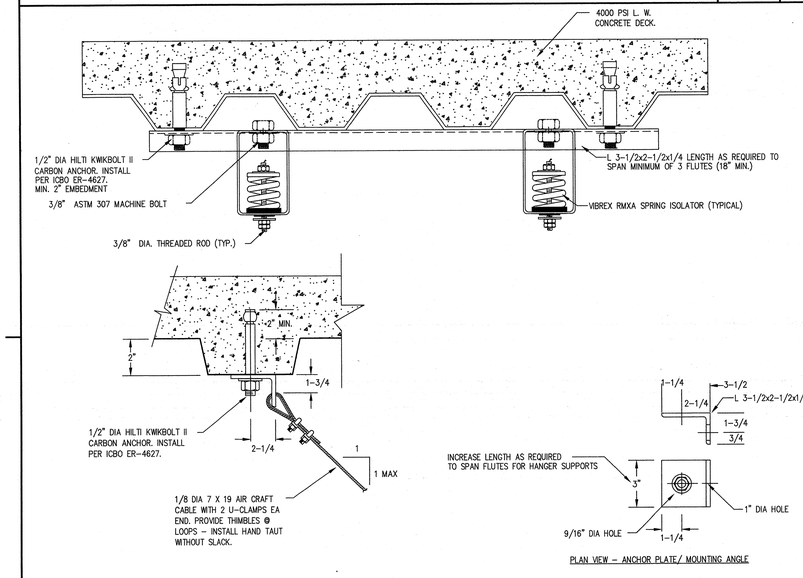


NOTES:

1) ROD STIFFENER MAY BE REQUIRED. SEE DETAIL 6 & 7 THIS SHEET.
2) FOR CABLE AND UNIT ANCHORAGE SIZES SEE DETAIL 4 THIS SHEET.
3) CABLE SHALL BE 7 X 19 AIRCRAFT CABLE.
4) CABLES TO BE INSTALLED HAND TAUT W/O SLACK.

TYPICAL FAN COIL AND BC F FAN CABLE RESTRAINT SYSTEM

SCALE: NONE | 3



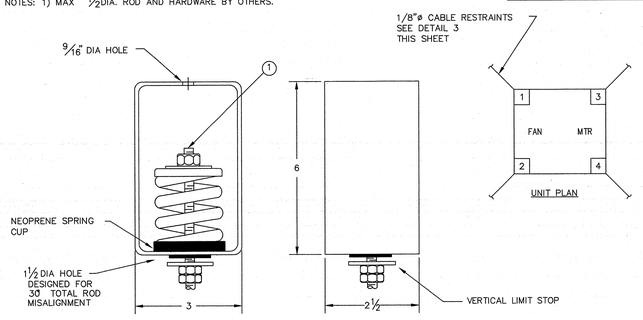
TYPICAL BCF FAN AND FAN COIL CONNECTION TO STRUCTURE

SCALE: NONE | 4

MARK	MAKE	TYPE	SIZE	1	2	3	4	5	6	7	8
	GREENHECK	BCF	106								
	GREENHECK	BCF	107								
	GREENHECK	BCF	108								
	CARRIER	40-QKE	024								

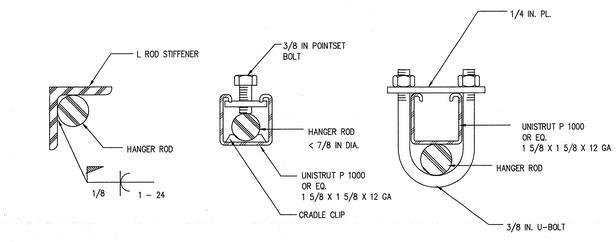
NOTES: 1) MAX 1/2DIA. ROD AND HARDWARE BY OTHERS.

SPRING	O.D.	DEFL	LOAD
	2.0"	1"	



TYPICAL VIBREX RMXA SPRING ISOLATOR FOR BCF FAN AND FAN COIL

SCALE: NONE | 5

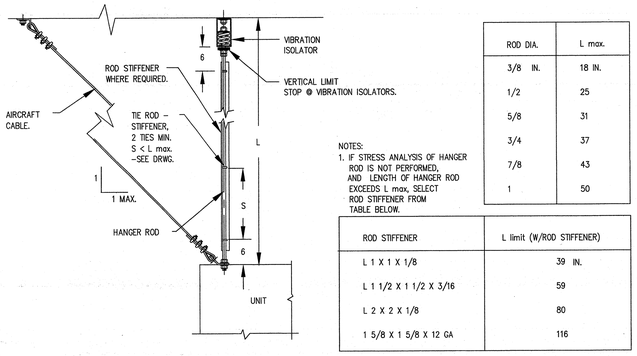


NOTES:

1) THESE METHODS WILL NOT BE ACCEPTABLE FOR EXPOSED DUCTS ATTACHED TO EPIC DECK. FOR EXPOSED DUCTS TO EPIC DECK USE MASON INDUSTRIES ROD STIFFNERS ONLY.

TYPICAL ROD STIFFNER METHODS

SCALE: NONE | 6



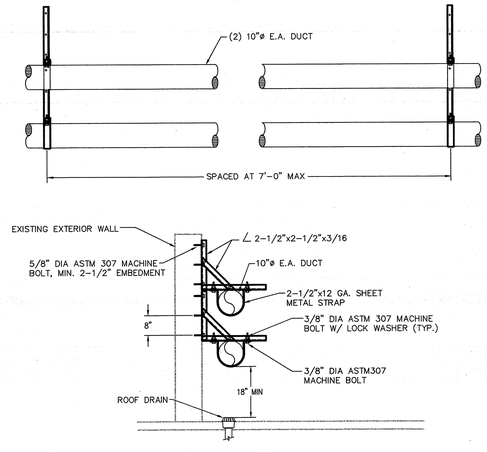
NOTES:
1. IF STRESS ANALYSIS OF HANGER ROD IS NOT PERFORMED, AND LENGTH OF HANGER ROD EXCEEDS L max, SELECT ROD STIFFENER FROM TABLE BELOW.

ROD DIA.	L max.
3/8 IN.	18 IN.
1/2	25
5/8	31
3/4	37
7/8	43
1	50

ROD STIFFENER	L limit (W/ROD STIFFENER)
L 1 X 1 X 1/8	39 IN.
L 1 1/2 X 1 1/2 X 3/16	59
L 2 X 2 X 1/8	80
1 5/8 X 1 5/8 X 12 GA	116

TYPICAL BCF FAN AND FAN COIL ROD STIFFNER REQUIRMENTS

SCALE: NONE | 7



AD 5.2.21

WALL MOUNTED EXHAUST DUCT SUPPORT DETAIL

SCALE: NONE | 8

-

SCALE: NONE | 9

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REGISTERED PROFESSIONAL ENGINEER — DAVID FUNDAMENT — No. 24908 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — STEVEN EHRLICH — No. C009332 — 5-31-03 RENEWAL DATE — STATE OF CALIFORNIA

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DIV. OF THE STATE ARCHITECT
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AS FLS SS
DATE JUN 2 6 2002

SUBMITTALS

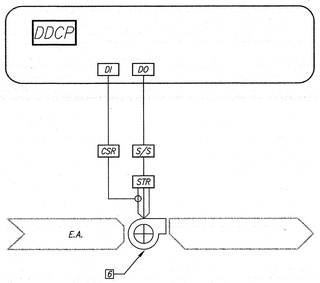
SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL DETAILS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M4.07



GENERAL EXHAUST FANS
DDC SCHEMATIC DETAIL

DDC INPUT/OUTPUT POINTS CHART

SAN BERNARDINO VALLEY COLLEGE

FACILITY: LIFE SCIENCE BUILDING

SYSTEM: GENERAL EXHAUST FANS:

	POINT NAME	HARDWARE: OUTPUT DIGITAL: START/STOP	HARDWARE: OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	HARDWARE: OUTPUT DIGITAL: LOCAL ALARM ANNUNCIATOR	HARDWARE: OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	HARDWARE: INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	HARDWARE: INPUT DIGITAL: FLOW SWITCH	HARDWARE: INPUT DIGITAL: AUXILIARY CONTACT/STATUS	HARDWARE: INPUT DIGITAL: CURRENT SENSING RELAY	HARDWARE: INPUT DIGITAL: SMOKE DETECTOR	HARDWARE: INPUT DIGITAL: HEAT DETECTOR	HARDWARE: INPUT DIGITAL: CONTACT CLOSURE	HARDWARE: INPUT DIGITAL: PULSE METER	HARDWARE: INPUT DIGITAL: LOCAL ZONE OVERRIDE	HARDWARE: INPUT ANALOG: TEMPERATURE INPUT	HARDWARE: INPUT ANALOG: RELATIVE HUMIDITY INPUT	HARDWARE: INPUT ANALOG: PRESSURE INPUT	HARDWARE: INPUT ANALOG: FLOW INPUT	HARDWARE: INPUT ANALOG: POSITION INPUT	HARDWARE: INPUT ANALOG: POWER INPUT	HARDWARE: INPUT ANALOG: CURRENT INPUT	HARDWARE: INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	EXHAUST FAN START/STOP	2																						–
2	EXHAUST FAN PROOF							2																4
	POINTS SUBTOTAL:	2				2																		TOTAL EMS POINTS: 4

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2. THIS CHART DOES NOT INCLUDE THE EXHAUST FANS THAT ARE INTERLOCKED WITH THE ROOFTOP AC UNITS.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

BULL# 103, 1.

NOTES THIS SHEET:

1. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.
2. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.
3. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.
4. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.
5. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.
6. EXHAUST FANS: EF-1, EF-2, EF-3, EF-4, EF-8, EF-10, EF-11, EF-13, & EF-15 ONLY.
7. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE.

NOTES THIS SHEET:

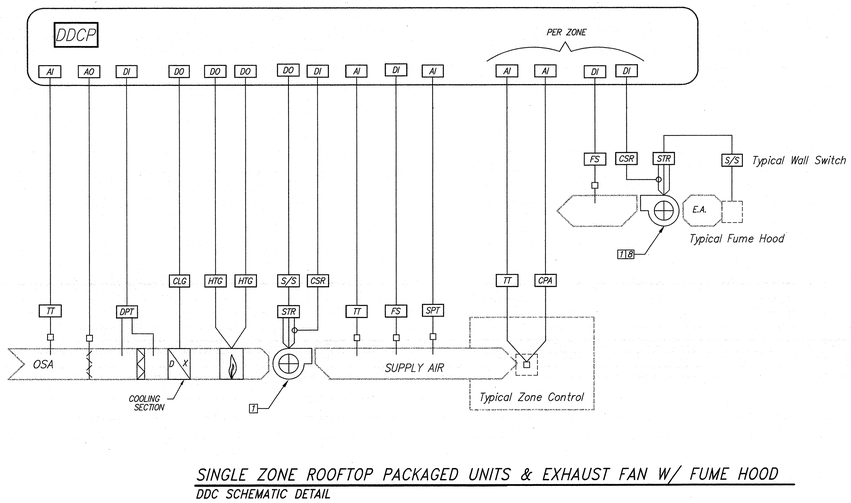
1. AC UNITS PROVIDE AIR ONLY WHEN EXHAUST FUME HOOD FAN IS IN OPERATION. AC UNITS & EXHAUST FANS ARE INTERLOCKED THROUGH EMS AS FOLLOWS:

AC UNITS	EXHAUST FANS
AC-13	EF-4
AC-27	EF-12
AC-28	EF-6
AC-30	EF-5 & EF-14 (MUST RUN CONCURRENTLY)
AC-32	EF-7
AC-33	EF-16

2. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.
3. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.
4. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.
5. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.
7. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.
8. PROVIDE LOCAL ANNUNCIATION ALARM IN EACH CLASSROOM WHEN EXHAUST FUME HOOD FAN "FAIL" CONDITION OCCURS.

EXHAUST FAN DDC DIAGRAM

SCALE: NTS — 1



SINGLE ZONE ROOFTOP PACKAGED UNITS & EXHAUST FAN W/ FUME HOOD
DDC SCHEMATIC DETAIL

DDC INPUT/OUTPUT POINTS CHART

SAN BERNARDINO VALLEY COLLEGE

FACILITY: LIFE SCIENCE BUILDING

SYSTEM: INTERLOCKED SINGLE ZONE ROOFTOP PACAKAGE UNITS

	POINT NAME	HARDWARE: OUTPUT DIGITAL: START/STOP	HARDWARE: OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	HARDWARE: OUTPUT DIGITAL: COOLING COMPRESSOR	HARDWARE: OUTPUT DIGITAL: HEATING STAGE 1	HARDWARE: OUTPUT DIGITAL: HEATING STAGE 2	HARDWARE: OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	HARDWARE: INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	HARDWARE: INPUT DIGITAL: FLOW SWITCH	HARDWARE: INPUT DIGITAL: AUXILIARY CONTACT/STATUS	HARDWARE: INPUT DIGITAL: CURRENT SENSING RELAY	HARDWARE: INPUT DIGITAL: SMOKE DETECTOR	HARDWARE: INPUT DIGITAL: HEAT DETECTOR	HARDWARE: INPUT DIGITAL: CONTACT CLOSURE	HARDWARE: INPUT DIGITAL: PULSE METER	HARDWARE: INPUT DIGITAL: LOCAL ZONE OVERRIDE	HARDWARE: INPUT ANALOG: TEMPERATURE INPUT	HARDWARE: INPUT ANALOG: RELATIVE HUMIDITY INPUT	HARDWARE: INPUT ANALOG: PRESSURE INPUT	HARDWARE: INPUT ANALOG: FLOW INPUT	HARDWARE: INPUT ANALOG: POSITION INPUT	HARDWARE: INPUT ANALOG: POWER INPUT	HARDWARE: INPUT ANALOG: CURRENT INPUT	HARDWARE: INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	OSA TEMPERATURE TRANSMITTER																6							
2	OSA ECONOMIZER MODE				6																			
7	FILTER STATUS							6															6	
4	RETURN AIR TEMPERATURE TRANSMITTER																							
5	BYPASS DAMPER																							
6	COMPRESSOR START/STOP		6																					
7	1st STAGE HEATING START/STOP			6																				
8	2nd STAGE HEATING START/ STOP				6																			
9	SUPPLY AIR FAN PROOF								6		6												1	
10	SUPPLY AIR FAN START/STOP	6																						
11	SUPPLY AIR STATIC PRESSURE																		6					
12	DUCT MOUNTED SMOKE DETECTOR																							
13	SUPPLY AIR TEMPERATURE TRANSMITTER																6							
14	ZONE DAMPER ACTUATOR																							
15	SPACE TEMPERATURE SENSOR																6							
16	CONTROL POINT ADJUST																					6		
	POINTS SUBTOTAL:	24		6		18											30						TOTAL EMS POINTS:	78

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

DDC INPUT/OUTPUT POINTS CHART

SAN BERNARDINO VALLEY COLLEGE

FACILITY: LIFE SCIENCE BUILDING

SYSTEM: FUME HOOD EXHAUST FANS:

	POINT NAME	HARDWARE: OUTPUT DIGITAL: START/STOP	HARDWARE: OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	HARDWARE: OUTPUT DIGITAL: LOCAL ALARM ANNUNCIATOR	HARDWARE: OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	HARDWARE: INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	HARDWARE: INPUT DIGITAL: FLOW SWITCH	HARDWARE: INPUT DIGITAL: AUXILIARY CONTACT/STATUS	HARDWARE: INPUT DIGITAL: CURRENT SENSING RELAY	HARDWARE: INPUT DIGITAL: SMOKE DETECTOR	HARDWARE: INPUT DIGITAL: HEAT DETECTOR	HARDWARE: INPUT DIGITAL: CONTACT CLOSURE	HARDWARE: INPUT DIGITAL: PULSE METER	HARDWARE: INPUT DIGITAL: LOCAL ZONE OVERRIDE	HARDWARE: INPUT ANALOG: TEMPERATURE INPUT	HARDWARE: INPUT ANALOG: RELATIVE HUMIDITY INPUT	HARDWARE: INPUT ANALOG: PRESSURE INPUT	HARDWARE: INPUT ANALOG: FLOW INPUT	HARDWARE: INPUT ANALOG: POSITION INPUT	HARDWARE: INPUT ANALOG: POWER INPUT	HARDWARE: INPUT ANALOG: CURRENT INPUT	HARDWARE: INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	EXHAUST FAN START/STOP																							–
2	EXHAUST FAN PROOF		7					7	7															1
	POINTS SUBTOTAL:		7					7							14								TOTAL EMS POINTS:	21

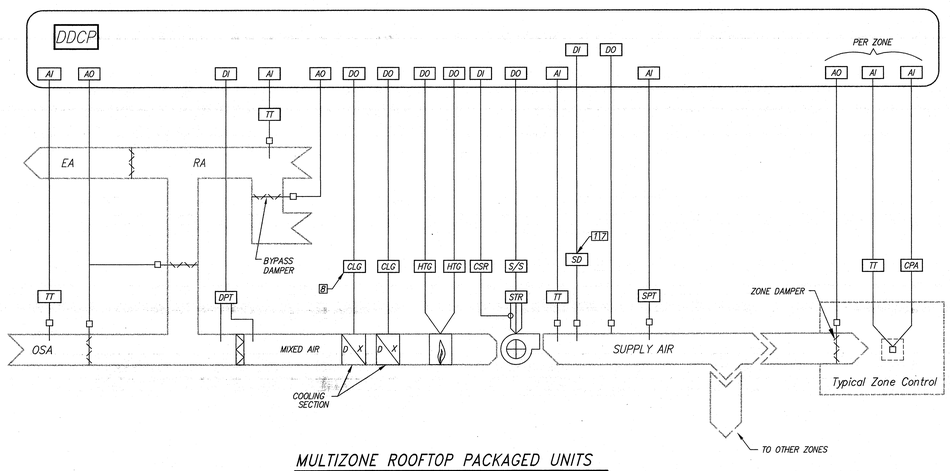
NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2. THIS CHART ONLY INCLUDE THE EXHAUST FANS THAT ARE INTERLOCKED WITH THE ROOFTOP AC UNITS.
3. EF-5 & EF-14 MUST RUN CONCURRENTLY.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

SINGLE ZONE AC UNITS & EXHAUST FUME HOOD DDC SCHEMATIC

SCALE: NTS — 2



MULTIZONE ROOFTOP PACKAGED UNITS
DDC SCHEMATIC DETAIL

DDC INPUT/OUTPUT POINTS CHART

SAN BERNARDINO VALLEY COLLEGE

FACILITY: LIFE SCIENCE BUILDING

SYSTEM: MULTI ZONE ROOFTOP PACAKAGE UNITS

	POINT NAME	HARDWARE: OUTPUT DIGITAL: START/STOP	HARDWARE: OUTPUT DIGITAL: HIGH/LOW SPEED SELECT	HARDWARE: OUTPUT DIGITAL: COOLING COMPRESSOR 1 & 2	HARDWARE: OUTPUT DIGITAL: HEATING STAGE 1	HARDWARE: OUTPUT DIGITAL: HEATING STAGE 2	HARDWARE: OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	HARDWARE: INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	HARDWARE: INPUT DIGITAL: FLOW SWITCH	HARDWARE: INPUT DIGITAL: AUXILIARY CONTACT/STATUS	HARDWARE: INPUT DIGITAL: CURRENT SENSING RELAY	HARDWARE: INPUT DIGITAL: SMOKE DETECTOR	HARDWARE: INPUT DIGITAL: HEAT DETECTOR	HARDWARE: INPUT DIGITAL: CONTACT CLOSURE	HARDWARE: INPUT DIGITAL: PULSE METER	HARDWARE: INPUT DIGITAL: LOCAL ZONE OVERRIDE	HARDWARE: INPUT ANALOG: TEMPERATURE INPUT	HARDWARE: INPUT ANALOG: RELATIVE HUMIDITY INPUT	HARDWARE: INPUT ANALOG: PRESSURE INPUT	HARDWARE: INPUT ANALOG: FLOW INPUT	HARDWARE: INPUT ANALOG: POSITION INPUT	HARDWARE: INPUT ANALOG: POWER INPUT	HARDWARE: INPUT ANALOG: CURRENT INPUT	HARDWARE: INPUT ANALOG: CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	SOFTWARE: APPLICATIONS PROGRAMS
1	OSA TEMPERATURE TRANSMITTER																16							
2	OSA ECONOMIZER MODE					8																		
3	FILTER STATUS							8															7	
4	RETURN AIR TEMPERATURE TRANSMITTER																8							
5	BYPASS DAMPER					8																		
6	COMPRESSOR START/STOP			14																				
7	1st STAGE HEATING START/STOP				8																			
8	2nd STAGE HEATING START/ STOP					8																		
9	SUPPLY AIR FAN PROOF									8													1	
10	SUPPLY AIR FAN START/STOP	8																						9,10
11	SUPPLY AIR STATIC PRESSURE																		8					
12	DUCT MOUNTED SMOKE DETECTOR										6												4	
13	SUPPLY AIR TEMPERATURE TRANSMITTER																8							
14	ZONE DAMPER ACTUATOR						30																	
15	SPACE TEMPERATURE SENSOR																30							
16	CONTROL POINT ADJUST																					42		
	POINTS SUBTOTAL:	38				46				22							104						TOTAL EMS POINTS:	210

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2. ZONE DAMPERS SERVING ROOM'S WITH FUME HOODS SHALL GO TO FULL OPEN POSITION WHENEVER FUME HOOD EXHAUST IS OPERATING, REGIARDLESS OF SPACE TEMPERATURE/ROOF TOP CONDITIONING MODE.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

BULL# 103

NOTES THIS SHEET:

1. ALL SYSTEMS PROVIDING AIR IN EXCESS OF 2000 CFM SHALL BE PROVIDED WITH DUCT MOUNTED SMOKE DETECTORS. SMOKE DETECTORS SHALL BE HARD WIRED TO SCHOOL FIRE ALARM SYSTEM AND SHALL AUTOMATICALLY SHUT DOWN THE AIR MOVING EQUIPMENT WHEN PRODUCTS OTHER THAN HEAT ARE DETECTED.
2. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.
3. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.
4. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.
5. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.
7. DUCT MOUNTED TYPE SMOKE DETECTORS APPLICABLE TO A/C UNITS :AC-1, AC-2, AC-3, AC-4, & AC-6.
8. 2 INDEPENDENT COMPRESSOR CIRCUITS APPLICABLE TO A/C UNITS :AC-1, AC-2, AC-3, AC-4, AC-5, & AC-6.
9. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.
10. ZONE DAMPERS SHALL BE PRESSURE INDEPENDENT WITH FLOW SENSOR. PROVIDE AND INSTALL A FLOW SENSOR AT EACH BYPASS DAMPER TO MONITOR BYPASS CFM.

MECHANICAL DDC SCHEMATIC

SCALE: NTS — 3

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F A X 310.838.9737
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REGISTERED PROFESSIONAL ENGINEER — PAUL G. FUNDAMENT — No. M 24307 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — No. C009332 — 5-31-03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
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APPL 04 – 103726
AC RS SS
DATE JUN-2 6 2002

SUBMITTALS

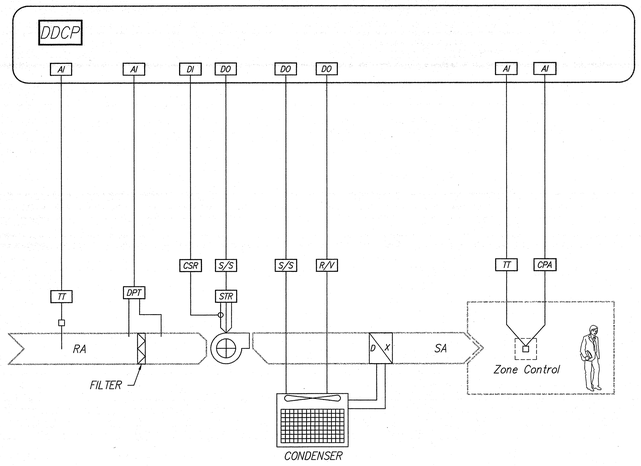
SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL DDC DIAGRAMS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M5.01



SPLIT SYSTEM UNIT
DDC SCHEMATIC DETAIL

DDC INPUT/OUTPUT POINTS CHART

SAN BERNARDINO VALLEY COLLEGE

FACILITY: LIFE SCIENCE BUILDING

SYSTEM: SPLIT SYSTEM UNITS

	POINT NAME	OUTPUT DIGITAL: START/STOP	HIGH/LOW SPEED SELECT	LOCAL ALARM ANNUNCIATOR	COMPRESSOR STAGING	REVERSING VALVE RELAY	OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	CHILLER CAPACITY	INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	FLOW SWITCH	AUXILIARY CONTACT/STATUS	CURRENT SENSING RELAY	SMOKE DETECTOR	HEAT DETECTOR	CONTACT CLOSURE	PULSE METER	LOCAL ZONE OVERRIDE	INPUT ANALOG: TEMPERATURE INPUT	RELATIVE HUMIDITY INPUT	PRESSURE INPUT	FLOW INPUT	POSITION INPUT	POWER INPUT	CURRENT INPUT	CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	APPLICATIONS PROGRAMS
1	RETURN AIR TEMPERATURE																	3									
2	FILTER STATUS								3																	7	
3	SUPPLY AIR FAN PROOF											3														1	
4	SUPPLY AIR FAN START/STOP	3																									8, 10
5	COMPRESSOR START STOP				3																						
6	HEATING START/STOP					3																					
7	SPACE TEMPERATURE SENSOR																	3									
8	CONTROL POINT ADJUST																								3		
	POINTS SUBTOTAL:	9					0		6									9								TOTAL EMS POINTS:	24

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

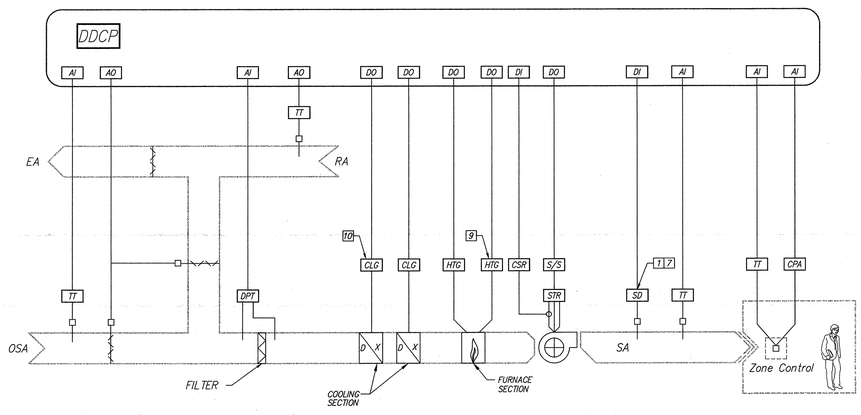
APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

NOTES THIS SHEET:

1. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.
2. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.
3. ELECTRICAL POWER, CABLING, CONDUIT, WIRING, AND RELATED COMPONENTS SHALL BE PROVIDED TO POWER ALL DDCP (BCMS) SYSTEMS, FANS, ROOFTOP PACKAGE UNITS, SPLIT SYSTEM HEAT PUMP, AND ALL OTHER COMPONENTS SHOWN ON THESE DRAWINGS.
4. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.
5. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.
6. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE.

SPLIT SYSTEM DDC SCHEMATIC

SCALE NTS | 1



SINGLE ZONE ROOFTOP PACKAGED UNITS
DDC SCHEMATIC DETAIL

DDC INPUT/OUTPUT POINTS CHART

SAN BERNARDINO VALLEY COLLEGE

FACILITY: LIFE SCIENCE BUILDING

SYSTEM: SINGLE ZONE ROOFTOP PACKAGE UNITS

	POINT NAME	OUTPUT DIGITAL: START/STOP	HIGH/LOW SPEED SELECT	COOLING COMPRESSOR 1 & 2	HEATING STAGE 1	HEATING STAGE 2	OUTPUT ANALOG: CONTROLLED DEVICE OUTPUT	INPUT DIGITAL: DIFFERENTIAL PRESSURE SWITCH	FLOW SWITCH	AUXILIARY CONTACT/STATUS	CURRENT SENSING RELAY	SMOKE DETECTOR	HEAT DETECTOR	CONTACT CLOSURE	PULSE METER	LOCAL ZONE OVERRIDE	INPUT ANALOG: TEMPERATURE INPUT	RELATIVE HUMIDITY INPUT	PRESSURE INPUT	FLOW INPUT	POSITION INPUT	POWER INPUT	CURRENT INPUT	CONTROL POINT ADJUSTMENT	SOFTWARE: ALARMS	APPLICATIONS PROGRAMS
1	OSA TEMPERATURE TRANSMITTER																20									
2	OSA ECONOMIZER MODE						20																			
3	FILTER STATUS							20																	7	
4	RETURN AIR TEMPERATURE TRANSMITTER																20									
5	BYPASS DAMPER																									
6	COMPRESSOR START/STOP		25																							
7	1st STAGE HEATING START/STOP			20																						
8	2nd STAGE HEATING START/ STOP				17																					
9	SUPPLY AIR FAN PROOF										20														1	
10	SUPPLY AIR FAN START/STOP	20																								9,10
11	SUPPLY AIR STATIC PRESSURE																		20							
12	DUCT MOUNTED SMOKE DETECTOR											10													4	
13	SUPPLY AIR TEMPERATURE TRANSMITTER																20									
14	ZONE DAMPER ACTUATOR																									
15	SPACE TEMPERATURE SENSOR																20									
16	CONTROL POINT ADJUST																							20		
	POINTS SUBTOTAL:	82					20		50									120							TOTAL EMS POINTS:	272

NOTES:
1. THIS CHART DESCRIBES THE MINIMUM POINTS REQUIRED; SOME MANUFACTURERS MAY NEED TO INCLUDE ADDITIONAL POINTS TO ACCOMPLISH THE INTENT OF THIS CHART AT NO ADDITIONAL COST TO OWNER.
2.
3.
4.

ALARMS:
1. PROOF FAILURE
2. STATUS FAILURE
3. PROCESS VARIABLE FAILURE
4. SMOKE ALARM
5. HIGH LIMIT
6. LOW LIMIT
7. FILTER ALARM
8. BOILER ALARM

APPLICATIONS PROGRAMS:
9. RUN TIME SCHEDULE
10. START/STOP OPTIMIZATION
11. CONTROL LOOP
12. MIXED AIR CONTROL
13. CONTROL POINT RESET
14. CONTROL DEVICE PNEUMATIC
15. CONTROL DEVICE ELECTRONIC
16. ENERGY TOTALIZATION
17. FAIL OPEN
18. FAIL CLOSED
19. FAIL TO LAST POSITION
20. CHW LOCKOUT
21. HHW LOCKOUT

NOTES THIS SHEET:

[1] ALL SYSTEMS PROVIDING AIR IN EXCESS OF 2000 CFM SHALL BE PROVIDED WITH DUCT MOUNTED SMOKE DETECTORS. SMOKE DETECTORS SHALL BE HARD WIRED TO SCHOOL FIRE ALARM SYSTEM AND SHALL AUTOMATICALLY SHUT DOWN THE AIR MOVING EQUIPMENT WHEN PRODUCTS OTHER THAN HEAT ARE DETECTED.

2. ALL POWER WIRING TO DDCP'S AND ASC'S SHALL HAVE A MINIMUM WIRE SIZE OF 12 AWG. ALL SUCH WIRING SHALL BE PROVIDED AND INSTALLED BY A QUALIFIED CONTRACTOR.

3. ALL ITEMS DESCRIBED AND SHOWN IN THESE DRAWINGS SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED COMPONENTS, SOFTWARE, PROGRAMMING, CALIBRATION, AND ALL OTHER NECESSARY ITEMS AND SERVICES TO PROVIDE FOR A FULLY FUNCTIONING AND SATISFACTORY SYSTEM.

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5. CONTRACTOR SHALL LOCATE ALL DDCP (BCMS), ELECTRICAL PANELS AND RELATED COMPONENTS IN SUITABLE LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATIONS WITH ALL AFFECTED TRADES.

6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING INSTALLATION OF ALL SYSTEMS AND COMPONENTS FOR APPROVAL PRIOR TO FABRICATION AND CONSTRUCTION. ANY WORK INSTALLED WITHOUT APPROVED SHOP DRAWINGS MAY BE SUBJECT TO DEMOLITION AND REINSTALLATION AT NO EXTRA COST TO OWNER.

[7] DUCT MOUNTED TYPE SMOKE DETECTORS APPLICABLE TO A/C UNITS : AC-9, AC-12, AC-14, AC-15, AC-17, AC-18, AC-20, AC-21, AC-24, & AC-26.

8. DATA LINES SHALL BE USED ON THIS PROJECT. NO MODEMS SHALL BE ACCEPTABLE. EMS SYSTEM SHALL NOT CONNECT TO ANY OPERABLE WINDOWS.

9. SECOUND STAGE HEATING MODE NOT APPLICABLE AC-19, AC-28, & AC-31.

[10] 2 INDEPENDENT COMPRESSOR CIRCUITS APPLICABLE TO A/C UNITS : AC-15, AC-17, AC-18, AC-20, & AC-21.

MECHANICAL DDC SCHEMATIC

SCALE NTS | 2

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REGISTERED PROFESSIONAL ENGINEER — DAVID FUNDAMENTAL — NO. M 24581 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — NO. C009332 — 3.31.03 RENEWAL DATE — STATE OF CALIFORNIA

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APPL. 04 – 103726
AC FS SS
DATE JUN 2 6 2002

SUBMITTALS

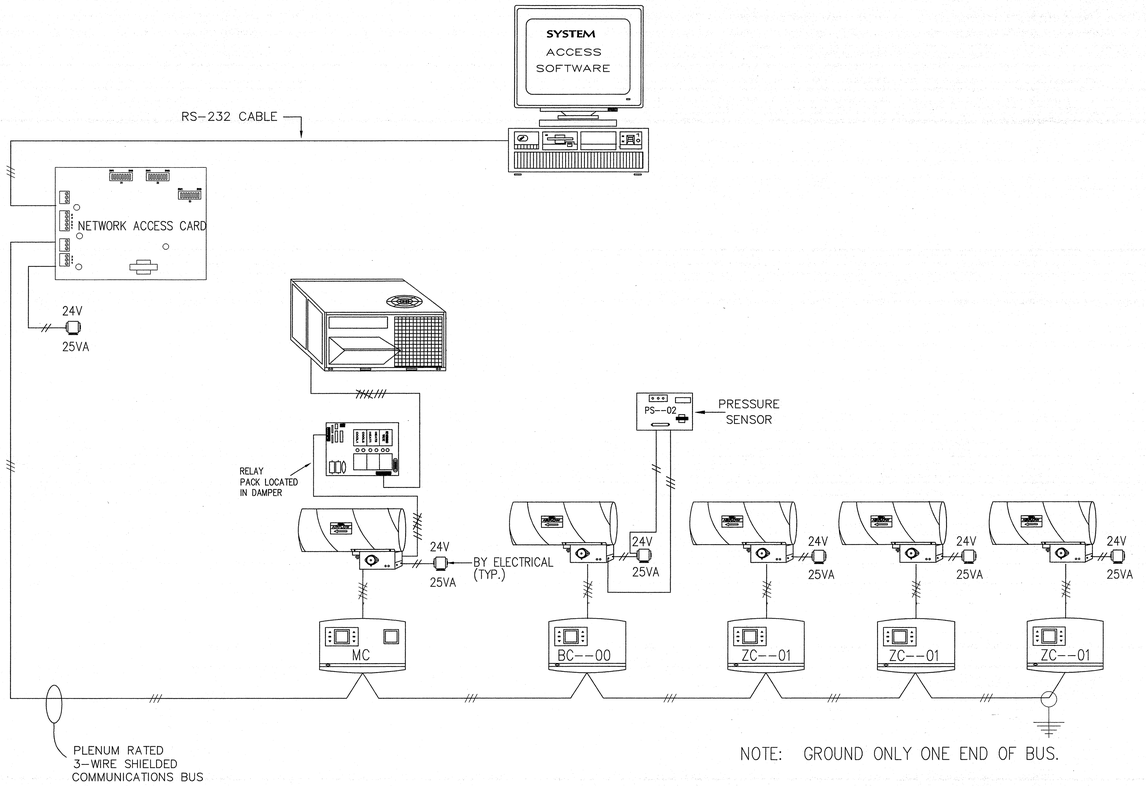
SBVC
LIFE SCIENCE BUILDING

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409
As-Built

MECHANICAL DDC DIAGRAMS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10. 11. 2001

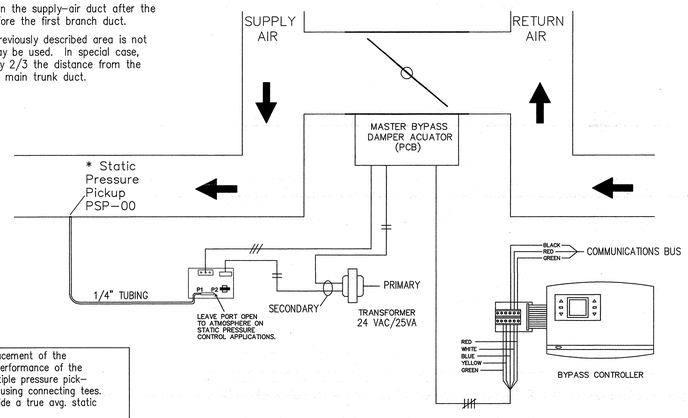
M5.02



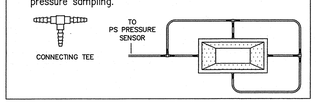
TYPICAL ZONE AND BYPASS DAMPER WIRING DIAGRAM

SCALE NTS 1

NOTES:
1. The PSP-00 should be located in an area of uniform airflow. 5 duct diameters downstream of the damper in laminar flowarea.
2. The PSP-00 should be located in the supply-air duct after the system's bypass damper, but before the first branch duct.
3. If locating the PSP-00 in the previously described area is not feasible, an alternate location may be used. In special case, locate the PSP-00 approximately 2/3 the distance from the supply-air fan to the end of the main trunk duct.



* For applications where proper placement of the PSP-00 is not possible or the performance of the PSP-00 must be enhanced, multiple pressure pick-ups can be manifolded together using connecting tees. This type of installation will provide a true avg. static pressure sampling.



TYPICAL BYPASS CONTROLLER STATIC PRESSURE DIAGRAM

SCALE NTS 2

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REGISTERED PROFESSIONAL ENGINEER — Mel Dehl — Exp. 9-30-02 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — STEVEN EHRLICH — No. C069332 — 5-31-03 RENEWAL DATE — STATE OF CALIFORNIA

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OFFICE OF REGULATION SERVICES
APPL 04 - 103726
ACC FLS SS
DATE JUN 26 2002

SUBMITTALS

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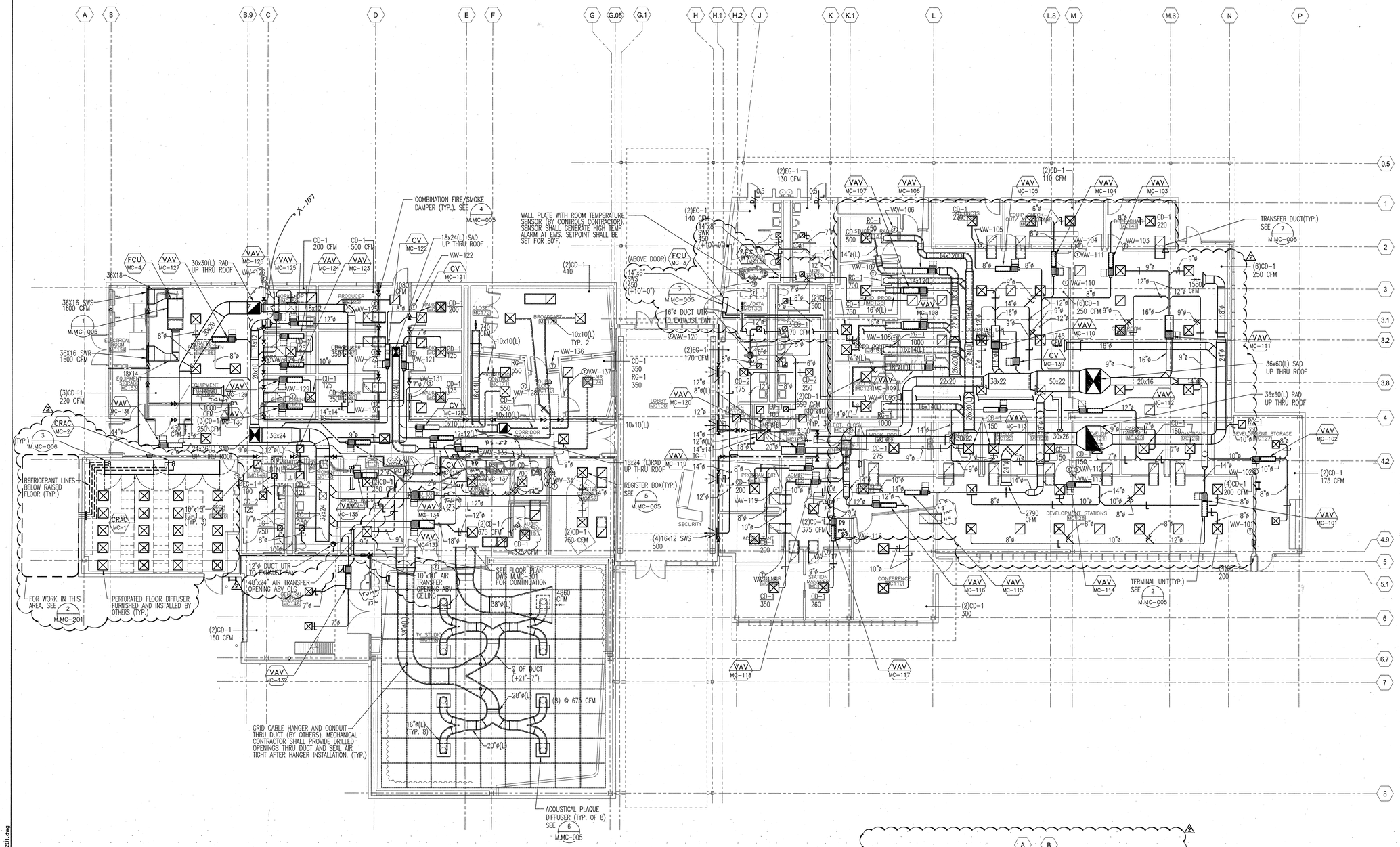
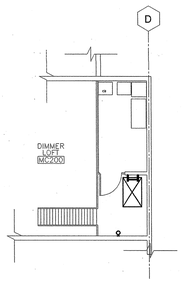
SAN BERNARDINO, CA 92409
As-Built

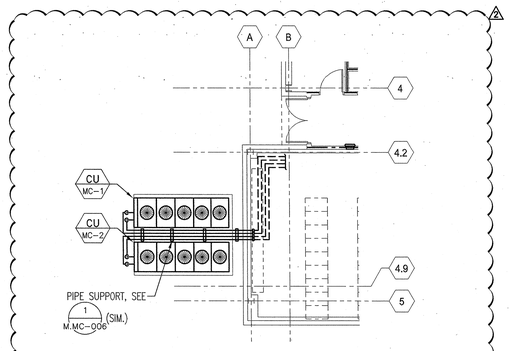
MECHANICAL TYPICAL ZONE AND BYPASS DAMPER SCHEMATIC DIAGRAM

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10. 11. 2001

M5.03







2 PARTIAL BUILDING PLAN

SCALE: 1/8"=1'-0"

RECORD DRAWING

THIS DOCUMENT REFLECTS INFORMATION ADDED BY THE CONTRACTOR, AS CERTIFIED BELOW.

FEB 02 2011

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P:\San Bernadino Valley College\Media Comm Bldg #20-07081\Dwgs\A\20-07081_M-MC-201.dwg

CLIENT:

San Bernardino Valley College

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO - CALIFORNIA

ARCHITECT:

NTD ARCHITECTURE

955 Overland Court, Suite 100
San Dimas, California 91773
909/450.2180

www.ntd.com

San Diego • Los Angeles • Auburn • Visalia • Phoenix • Tucson

PD MC 019 - T-stat Location (19)
PD MC 03
RPE 194 - Main Control Panel
PD MC 020 - X-97
PD MC 038 - Return Duct work (1)

REGISTERED PROFESSIONAL ENGINEER MECHANICAL Exp. 6-30-10 STATE OF CALIFORNIA

DCGA ENGINEERS
Consulting Mechanical and Electrical Engineers
4750 E. Ontario Mills Pkwy
Ontario, Ca. 91764
Ph.909.987.0001
Fax 909.980.702

ARCHITECT STAMP:

AGENCY STAMP:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

LICENSED ARCHITECT JAMES R. DELVECCHIO No. 12955 RENEWAL 11-30-09 STATE OF CALIFORNIA

04 109146

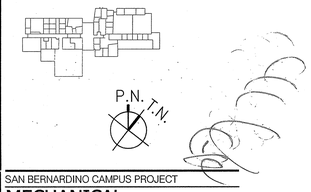
AC _____ F/LS _____ SS _____

DATE:

REVISION HISTORY - THIS SHEET

2 ADDENDUM #2 – 07.08.08

KEY PLAN



SAN BERNARDINO CAMPUS PROJECT

MECHANICAL FLOOR PLAN MEDIA-COMMUNICATIONS BUILDING

COMM. NO. 2007-0275-50
SCALE 1/8" = 1'-0"
DATE MARCH 24, 2008
DRAWN --

(M.MC-201)

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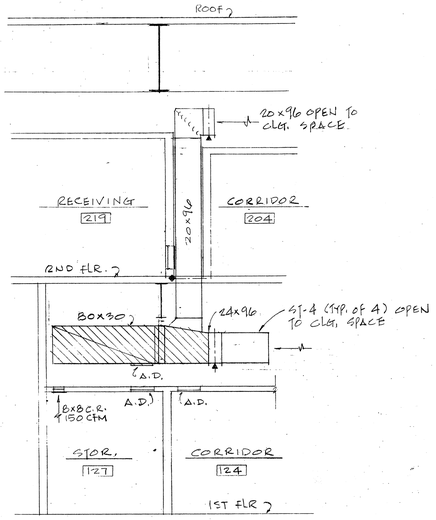
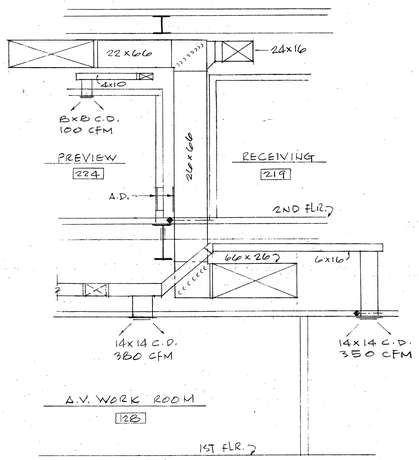
DCGA #20-07081

AD2-M5



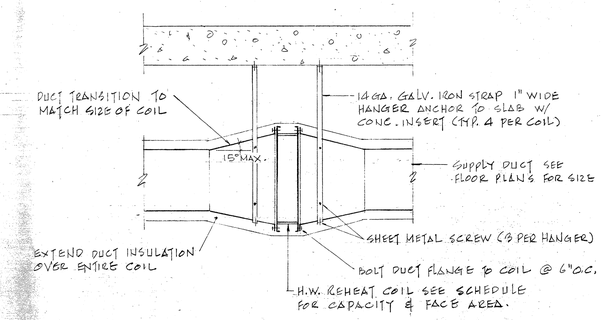
SECTION A M-2

SCALE: 1/4" = 1'-0"



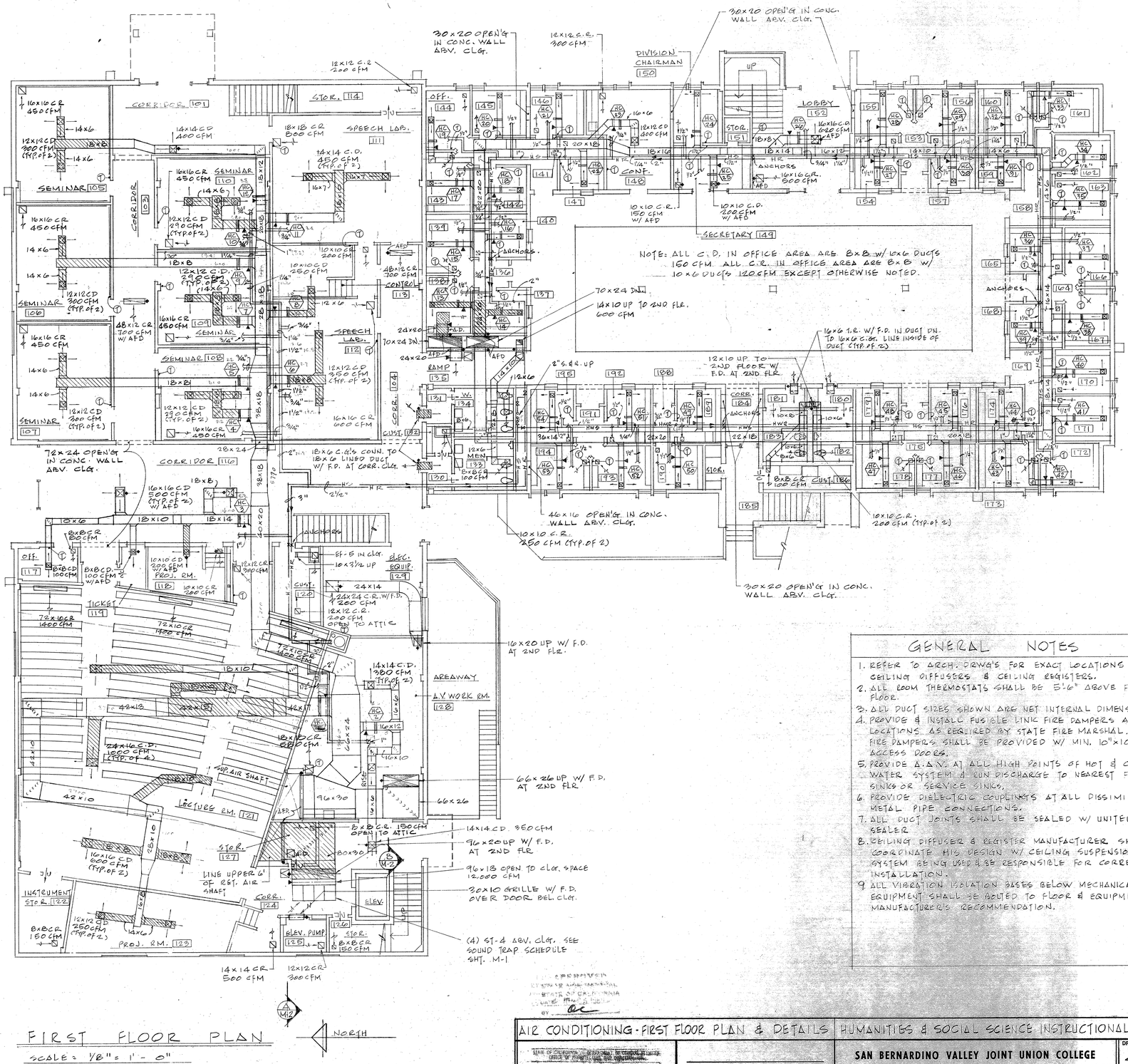
SECTION B M-2

SCALE: 1/4" = 1'-0"



TYPICAL H.W. REHEAT COIL INSTALLATION

NOT TO SCALE



FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO ARCH. DRWG'S FOR EXACT LOCATIONS OF CEILING DIFFUSERS & CEILING REGISTERS.
2. ALL ROOM THERMOSTATS SHALL BE 5'-6" ABOVE FINISHED FLOOR.
3. ALL DUCT SIZES SHOWN ARE NET INTERNAL DIMENSIONS.
4. PROVIDE & INSTALL FUSIBLE LINK FIRE DAMPERS AT ALL LOCATIONS AS REQUIRED BY STATE FIRE MARSHAL. ALL FIRE DAMPERS SHALL BE PROVIDED W/ MIN. 10"x10" ACCESS DOORS.
5. PROVIDE A.A.V. AT ALL HIGH POINTS OF HOT & CHILLED WATER SYSTEM & RUN DISCHARGE TO NEAREST FLOOR SINKS OR SERVICE SINKS.
6. PROVIDE DIELECTRIC COUPLINGS AT ALL DISSIMILAR METAL PIPE CONNECTIONS.
7. ALL DUCT JOINTS SHALL BE SEALED W/ UNITED DUCT SEALER
8. CEILING DIFFUSER & REGISTER MANUFACTURER SHALL COORDINATE HIS DESIGN W/ CEILING SUSPENSION SYSTEM BEING USED & BE RESPONSIBLE FOR CORRECT INSTALLATION.
9. ALL VIBRATION ISOLATION BASES BELOW MECHANICAL EQUIPMENT SHALL BE BOLTED TO FLOOR & EQUIPMENT PER MANUFACTURER'S RECOMMENDATION.

STATE OF CALIFORNIA — DEPARTMENT OF EDUCATION — DIVISION OF ARCHITECTURE AND CONSTRUCTION
APPROVED JUN [illegible]
PRESIDENT
BUSINESS MGR.
ARCHITECTS
ENGINEER

AIR CONDITIONING - FIRST FLOOR PLAN & DETAILS | HUMANITIES & SOCIAL SCIENCE INSTRUCTIONAL CENTER

SAN BERNARDINO VALLEY JOINT UNION COLLEGE
SAN BERNARDINO CALIFORNIA

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BOLE & WILSON — STRUCTURAL ENGINEER
THARALDSON, MATTHEWSON, ARMBRIGHT & DORN — MECHANICAL ENGINEER
LUTHER G. FISHER — ELECTRICAL ENGINEER

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S.C.	5-64
CHECKED BY	DATE
L.T.	6-25-69
REVISED	SHEET NO.
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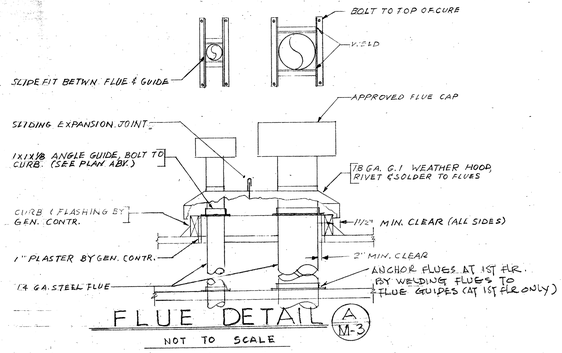
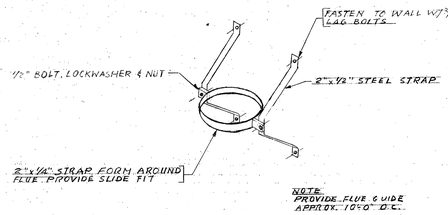


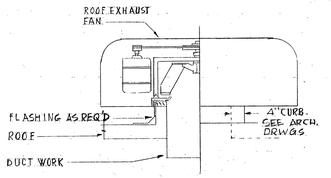
FLUE DETAIL (A M-3)

NOT TO SCALE



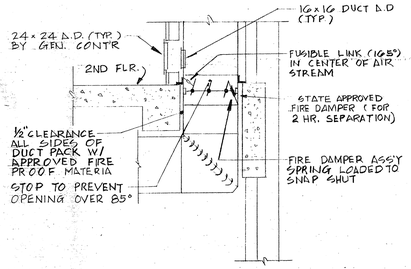
FLUE GUIDE DETAIL (B M-3)

NOT TO SCALE



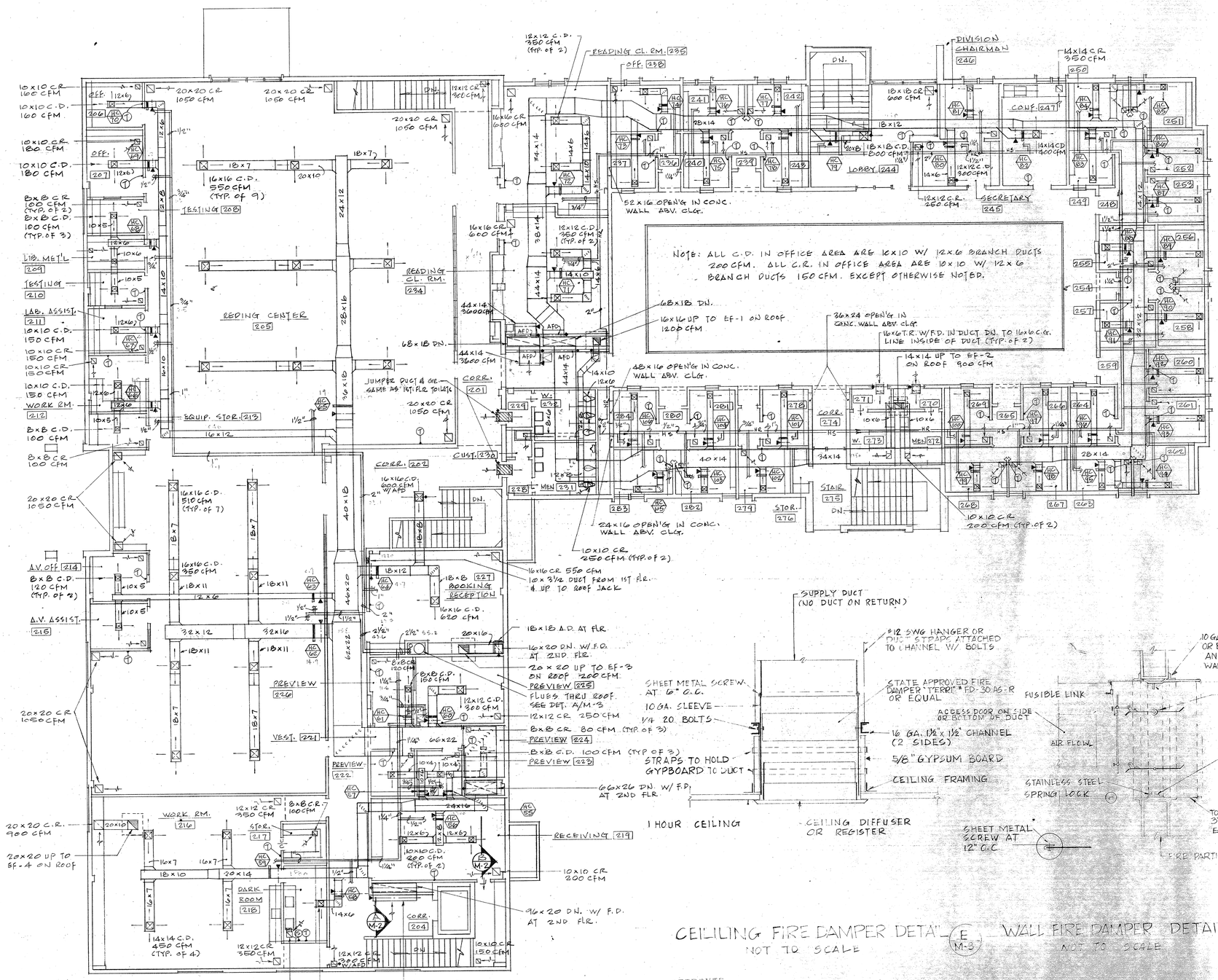
ROOF EXHAUST FAN (C M-3)

NOT TO SCALE



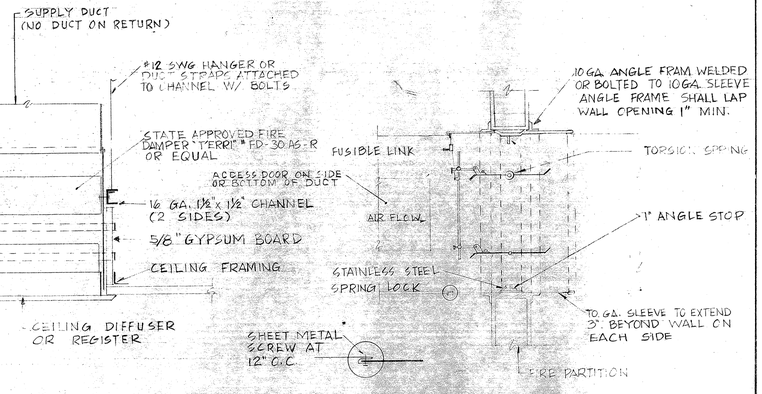
DETAIL OF FIRE DAMPER AT FLOOR (D M-3)

NOT TO SCALE



SECOND FLOOR PLAN

SCALE: ⅛" = 1'-0"



CEILING FIRE DAMPER DETAIL (E M-3)

NOT TO SCALE

WALL FIRE DAMPER DETAIL (F M-3)

NOT TO SCALE

APPROVED
STATE FIRE MARSHAL
STATE OF CALIFORNIA
DATE
BY

AIR CONDITIONING - SECOND FLOOR PLAN & DETAILS | HUMANITIES & SOCIAL SCIENCE INSTRUCTIONAL CENTER

STATE OF CALIFORNIA — DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
APPROVED JUN 25 1969
APPLICATION NO.

PRESIDENT
BUSINESS MGR.

ARCHITECTS
ENGINEER

SAN BERNARDINO VALLEY JOINT UNION COLLEGE
SAN BERNARDINO CALIFORNIA

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C.C.	5-64
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L.T.	6-25-69
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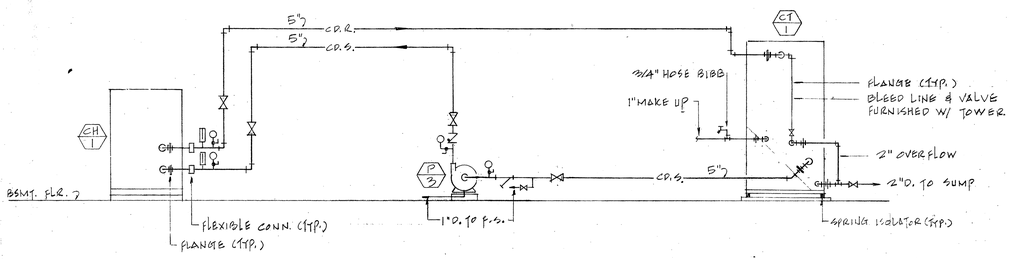
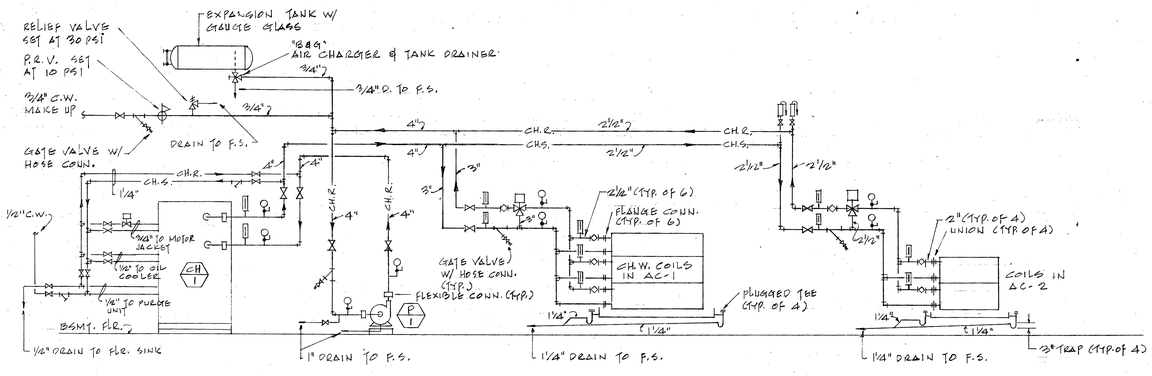
	M-3



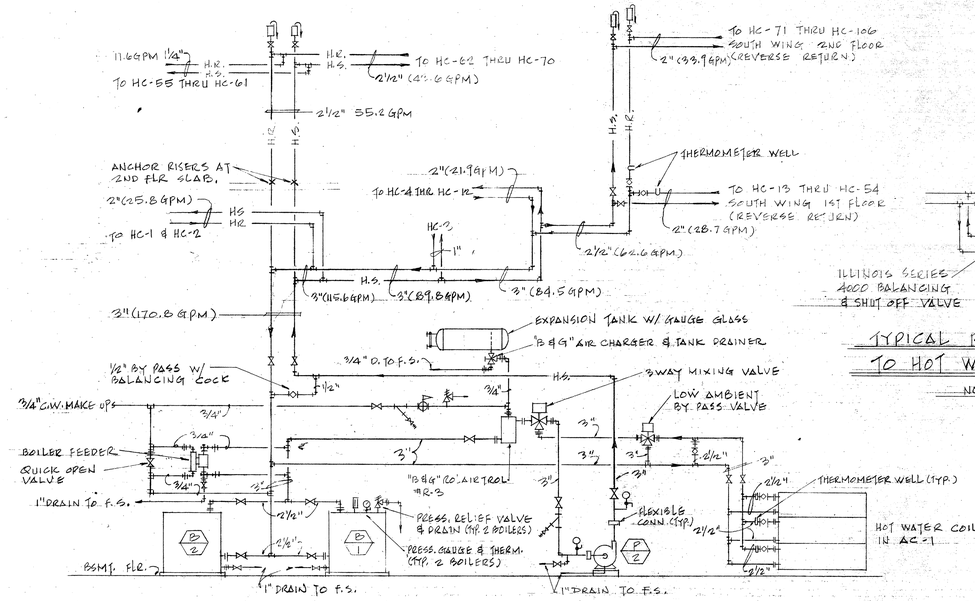
SCHEMATIC CONDENSER WATER PIPING (A / M-4)

NOT TO SCALE



SCHEMATIC CHILLED WATER PIPING (C / M-4)

NOT TO SCALE



SCHEMATIC HOT WATER PIPING (B / M-4)

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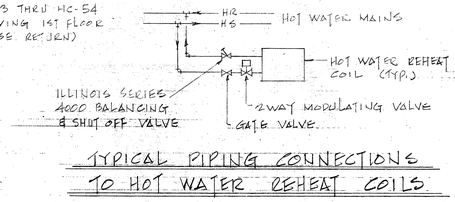

TYPICAL PIPING CONNECTIONS TO HOT WATER REHEAT COILS

NOT TO SCALE

EQUIPMENT SCHEDULE

ITEM	DESCRIPTION
CH 1	CENTRIFUGAL WATER CHILLER: TRANE #PCV-1C 120 TONS AT 288 GPM CH.W. FROM 55°F TO 45°F 360 GPM CD. W. FROM 85° TO 95°F 2 PASS EVAP. 20' P.D. 2 PASS CONDR 20' P.D. 480V-3/4-60~ 138 F.L.A. 756 LRA
CT 1	COOLING TOWER: BALTIMORE AIR COIL VNT-125 360 GPM FROM 95° TO 85°F AT 78°W.B. 15 HP MOTOR 25,500 CFM AT. 0"S.P. 4200# OP. WT.
P 1 / P 2	HOT WATER BOIL: BRYAN #415 GAS FIRED 1,650,000 BTU/HR INPUT EA. 1,340,000 BTU/HR OUTPUT EA. 14"ϕ VENT 2500# OP. WT.
P 1	CH.W. PUMP: WEINMAN 3K-1B2 288 GPM AT 53' HEAD 7 1/2"ϕ IMP. 75% EFF. 7.5' NPSH 7 1/2 HP MOTOR 1750 RPM
P 2	H.W. PUMP: WEINMAN 2 1/2 KH-1B2 170 GPM AT 80' HEAD 9"ϕ IMP. 66% EFF. 5' NPSH 7 1/2 HP MOTOR 1750 RPM
P 3	COND. W. PUMP.: WEINMAN 4KL-1B1 360 GPM AT 40' HEAD 7"ϕ IMP. 75% EFF. 3.7' NPSH 7 1/2 HP MOTOR 1750 RPM. MOTOR SHALL BE DRIP PROOF MOLDED EPOXY ENCAPSULATED TYPE.
AC 1	AIR CONDITIONING UNIT (NORTH WING) TRANE LOW PRESS. #63 HORIZ. 28,260 CFM AT .2" S.P. 20.12 ϕ FAN O.A. 670 RPM 1400 F/M O.V. 20 HP MOTOR CH.W. COIL = 63 ϕ 6 ROWS (2) 30x108 & (1) 24x108 TO COOL 28,260 CFM OF AIR FROM 81 DB 65 WB TO 57 DB 54.5 WB 77 TONS 1865 F/M 5' P.D. 45° TO 55°F CH.W. HOT WATER COIL = 68 ϕ 4 ROWS (2) 30x108 & (1) 24x108 1704 PM 5' P.D. FILTERS = MED. CAPACITY BOX (30) 20x25x2 90 ϕ NET AREA.
AC 2	AIRCONDITIONING UNIT (SOUTH WING) TRANE LOW PRESS. #35 VERT. 16,170 CFM AT 2" S.P. 11.2 ϕ FAN O.A. 900 RPM 1460 F/M O.V. 10 HP MOTOR CH.W. COIL = 35 ϕ 6 ROWS. (2) 24x108 TO COOL 16,170 CFM OF AIR FROM 81 DB 65 WB TO 57 DB 55 WB 42 TONS 102 GPM 5' P.D. 45 TO 55°F CH.W. HOT WATER COIL = NONE FILTERS = MED. CAPACITY BOX (16) 20x25x2 48.2 ϕ NET AREA.
RF 1	RET./EXH. FAN (NORTH WING) PORTER IN-LINE CENTRIFUGAL #4020 22,600 CFM AT 3/4" S.P. 1400 F/M O.V. 730 RPM 7 1/2 HP MOTOR ARRANG. 9
RF 2	RET./EXH. FAN (SOUTH WING) PORTER IN-LINE CENTRIFUGAL #3000 13,000 CFM AT 3/4" S.P. 1500 F/M O.V. 1040 RPM 5 HP MOTOR ARRANG. 9.
EF 1	ROOF EXH. FAN (NORTH TOILETS) JENN-AIR 203 CBS 1200 CFM AT 1/4" S.P. 3200 F/M T.S. 570 RPM 7 SONES MAX. W/O SOUND CURB. 1/3 HP MOTOR
EF 2	ROOF EXH. FAN (SOUTH TOILETS) JENN-AIR 162 CBS 900 CFM AT 1/4" S.P. 3160 F/M T.S. 710 RPM 7.3 SONES MAX. W/O SOUND CURB 1/4 HP MOTOR
EF 3	ROOF EXH. FAN (TRANSF. ROOM) JENN-AIR 205 CBS 2000 CFM AT 3/8" S.P. 735 RPM 4035 F/M T.S. 10.5 SONES MAX. W/O SOUND CURB. 3/4 HP MOTOR
EF 4	ROOF EXH. FAN (BLUE PRINT) JENN-AIR 162-CBS 900 CFM AT 1/4" S.P. 3160 F/M T.S. 710 RPM 7.3 SONES MAX. W/O SOUND CURB. 1/4 HP MOTOR
EF 6	CEILING EXH. FAN PACE #DD-250G 200 CFM AT 0.15" EXT. S.P. 1050 RPM DIRECT DRIVE COMPLETE W/ BACK DRAFT DAMPER, 10x6 DUCTWORK & ROOF JACK 1.7 SONES MAX.

HOT WATER COILS SHALL BE 2 ROW W/ MAX. AIR P.D. = 0.25" MAX. WATER P.D = 5' CAPACITIES AS INDICATED BELOW:

HC-1	5700 CFM.	9.5 ϕ F.A.	216 MBH	21.6 GPM W/ 180°H.W. (TYP.)
HC-2	1110 CFM	1.9 ϕ F.A.	42 MBH	4.2 GPM
HC-3	1400 CFM	2.4 ϕ F.A.	53 MBH	5.3 GPM
HC-4, 7 & 10	580 CFM	1 ϕ F.A.	22 MBH	2.2 GPM
HC-5 & 9	600 CFM	1 ϕ F.A.	22 MBH	2.2 GPM
HC-6	700 CFM	1.2 ϕ F.A.	27 MBH	2.7 GPM
HC-8 & 66	250 CFM	0.5 ϕ F.A.	10 MBH	1.0 GPM
HC-11	900 CFM	1.5 ϕ F.A.	34 MBH	3.4 GPM
HC-12	1000 CFM	1.7 ϕ F.A.	38 MBH	3.8 GPM
HC-13 TO 22, HC-24, HC-27 TO 54, HC-61 & 67	150 CFM	0.25 ϕ F.A.	5.7 MBH	0.6 GPM
HC-23, 56 & 82	400 CFM	0.7 ϕ F.A.	15.2 MBH	1.5 GPM
HC-25, 58, HC-73 TO 78, HC-81, HC-83 TO 106	200 CFM	0.4 ϕ F.A.	7.6 MBH	0.7 GPM
HC-26	620 CFM	1.1 ϕ F.A.	23.6 MBH	2.4 GPM
HC-55 & 57	100 CFM	0.2 ϕ F.A.	3.8 MBH	0.4 GPM
HC-59	1800 CFM	3 ϕ F.A.	68.5 MBH	6.8 GPM
HC-60, 68 & 80	300 CFM	0.5 ϕ F.A.	11.5 MBH	1.2 GPM
HC-62	3920 CFM	6.6 ϕ F.A.	149 MBH	14.9 GPM
HC-63	240 CFM	0.4 ϕ F.A.	9.1 MBH	0.9 GPM
HC-64	1200 CFM	2.1 ϕ F.A.	47 MBH	4.7 GPM
HC-65	4150 CFM	6.8 ϕ F.A.	190 MBH	19 GPM
HC-69	180 CFM	0.3 ϕ F.A.	6.9 MBH	0.7 GPM
HC-70	160 CFM	0.3 ϕ F.A.	6.1 MBH	0.6 GPM
HC-71 & 72	700 CFM	1.2 ϕ F.A.	27 MBH	2.7 GPM
HC-79	800 CFM	1.4 ϕ F.A.	31 MBH	3.1 GPM

APPROVED
STATE FIRE MARSHAL
STATE OF CALIFORNIA
DATE JUN 23 1969
BY ac

LEGEND

SYMBOL	ABBR.	DESCRIPTION	SYMBOL	ABBR.	DESCRIPTION
	C.D.	CEILING DIFFUSER	—CH.S.—	CH.S.	CHILLED WATER SUPPLY
	C.R.	CEILING REGISTER	—CH.R.—	CH.R.	CHILLED WATER RETURN
		LOUVERED DOOR	—H.S.—	H.S.	HOT WATER SUPPLY
		UNDERCUT DOOR	—H.R.—	H.R.	HOT WATER RETURN
	CONN.	CONNECTION, CONNECT		G.T.V.	GATE VALVE
	TYP.	TYPICAL		B.C.	BALANCING COCK
	W/	WITH		U.	UNION
—C.D.S.—		CONDENSER WATER FROM TOWER			STRAINER W/ GATE VALVE & HOSE CONN.
—C.D.R.—		CONDENSER WATER TO TOWER			FLANGE
	OP.WT.	OPERATING WEIGHT		S.A.	SUPPLY AIR DUCT
	S.P.	STATIC PRESSURE		F.A.	FRESH AIR DUCT
	MAX.	MAXIMUM		EA. OR RA	EXHAUST OR RETURN AIR DUCT
	F.A.	FACE AREA		P.G.	PRESSURE GAUGE WITH GAUGE COCK
	P.D.	PRESSURE DROP			THERMOMETER
	T.S.	TIP SPEED	T		ROOM THERMOSTAT
	O.A.	OUTLET AREA		P.R.V.	PRESSURE REDUCING VALVE
					PRESSURE RELIEF VALVE PIPE DRAIN TO F.S.
					ACOUSTICALLY LINED DUCTWORK
					FLEXIBLE CONNECTION
					MOTORIZED DAMPER
					MANUAL DAMPER
				A.F.D.	AUTOMATIC FIRE DAMPER
					DUCT TURN

AIR CONDITIONING - SCHEDULES & DETAILS | HUMANITIES & SOCIAL SCIENCE INSTRUCTIONAL CENTER

STATE OF CALIFORNIA — DEPARTMENT OF PUBLIC WORKS — DIVISION OF ARCHITECTURE
32888 APPROVED JUN 23 1969
Department of Public Works

PRESIDENT
BUSINESS MGR.

ARCHITECTS
ENGINEER

SAN BERNARDINO VALLEY JOINT UNION COLLEGE
SAN BERNARDINO CALIFORNIA

JESS J. JONES, A.I.A.
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LITTLER & FISHER — ELECTRICAL ENGINEER

DRAWN BY	JOB NO.
S.C.	5-64
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L.T.	6-25-69
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	M-4

M-4

7 DAY TIME CLOCK

120V-1φ C.B. (TYP.)

120V-1φ

480V-3φ C.B. (TYP.)

480V-3φ

H-O-A SW. (TYP.)

M&G STR (TYP.)

7½ HP H.W. PUMP (P-2)

7½ HP CH.W. PUMP (P-1)

P.E.SW.

CH.W. FLOW SW.

P.E. SW.

7½ HP C.D.W. PUMP (P-3)

C.D.W. FLOW SW.

P.E.SW.

15 HP TOWER FAN (CT-1)

¼ HP OIL PUMP IN (CH-1)

WYE-DELTA STARTER

COMPRESSOR MOTOR IN (CH-1)

(CH-1)

COMPRESSOR CONTROL PANEL

LL1 (24V) LL2 – N W R B G BA BB BC BD 9 10 11 12 +AL1 +AL2 +AL3 +AL4 +AL5 +AL6

S-200 MASTER O.S.A.

S-200 SUB-MASTER H.W. SUPPLY

VF-591 H.W. MIXING VALVE

S-200 CH.W. SUPPLY SET AT 45°F

S-200 C.D.W. LVG TOWER SET AT 85°F

COMPRESSOR INSTRUMENT PANEL IN (CH-1)

20# COMPRESSOR INLET VANES

480V-3φ 20 HP (AC-1)

480V-3φ 7½ HP (EF-1)

480V-3φ 10 HP (AC-2)

480V-3φ 5 HP (EF-2)

120V-1φ RELAY (TYP.)

120V-1φ 1/3 HP NORTH TOILETS (EF-1)

120V-1φ ¼ HP SOUTH TOILETS (EF-2)

N. 208V-3φ RM. STAT HAND-AUTO SW.

¾ HP TRANSFORMER RM. (EF-3)

120V-1φ ¼ HP BLUE PRINT (EF-4)

120V-1φ ON-OFF SW.

80 W. (EF-5) (TYP.)

120V-1φ H.W. BOILER (P-1)

120V-1φ H.W. BOILER (P-2)

LOW AMBIENT BY PASS VALVE
BY PASS COIL WHEN O.S.A. BEL. 65°F
THRU COIL WHEN O.S.A. ABV. 65°F

TO A.C.-2 CONTROL

S-200

SW-243 RELAY

S-200

243-0003 POSITIVE RELAY

VF-591 CH.W. MIXING VALVE

CH.R.

CH.S.

VF-591

FROM H.W. RETURN

F.A.

N.C. F.A. DP'R

S.A. TO OTHER ZONES

DP'R MOTOR (TYP.)

TO H.W. MIXING VALVE

N.O. R.A. DP'R

PREHEAT COIL IN AC-1 ONLY FROM H.W. RETURN

(EF-1), (EF-2)

E.A.

R.A.

N.C. E.A. DP'R

A. C UNIT CONTROLS

TYPICAL 2 SYSTEMS

ZONE STAT TH-1B0

VP-657

S.A. TO ROOM

H.W.S.

H.W.R

TYPICAL ZONE CONTROL

480V-3φ

120V-1φ

¾ HP TEMP. CONTROL AIR COMPRESSOR

REFRIGERATED AIR DRYER

FILTER

PRESS. GAUGE

RELIEF VALVE

PRESSURE REDUCING VALVE

AUTO. DRAIN W/ MANUAL DRAIN

DRAIN TO FLR. SINK

TEMPERATURE CONTROL AIR COMPRESSOR PIPING

APPROVED
STATE FIRE MARSHAL
STATE OF CALIFORNIA
DATE JUN 5 1969
By

NOTES:

- WIRING FURNISHED & INSTALLED BY ELEC. CONT'R
- EQUIPMENT FURNISHED & INSTALLED BY ELEC. CONT'R
- EQUIPMENT FURNISHED & INSTALLED BY MECH. CONT'R
- EQUIPMENT FURNISHED & INSTALLED BY CONTROL CONT'R
- PNEUMATIC PIPING FURNISHED & INSTALLED BY CONTROL CONT'R
- WATER PIPING FURNISHED & INSTALLED BY MECH. CONT'R

AIR CONDITIONING - CONTROL DIAGRAMS

HUMANITIES & SOCIAL SCIENCE INSTRUCTIONAL CENTER

STATE OF CALIFORNIA — DEPARTMENT OF GENERAL SERVICES — OFFICE OF ARCHITECTURE AND CONSTRUCTION
32088 APPROVED JUN 25 1969

SAN BERNARDINO VALLEY JOINT UNION COLLEGE
SAN BERNARDINO CALIFORNIA

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MECHANICAL ENGINEER

LUTHER G. FISHER
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SYMBOLS & LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S.A.R./ S.A.G.	SUPPLY AIR REGISTER/ GRILLE
	R/ S.A.R.	RETURN AIR REGISTER/ GRILLE
	R/ E.A.G.	EXHAUST AIR RETURN/GRILLE
		FLEX DUCT
		DUCT RISE/ DUCT DROP
		DUCT SOUND INSULATION
		TRANSITION FROM SQUARE TO ROUND
		ACCESS DOOR/HATCH
R		DUCT RISE
D		DUCT DROP
S	SD	SMOKE DETECTOR, DUCT TYPE SYSTEM
T		THERMOSTAT
	V.D.	VOLUME DAMPER
	P.O.C. / P.O.R.	POINT OF CONNECTION/ POINT OF REMOVAL
		DEMOLITION HATCH
CDWS	CDWS	CONDENSER WATER SUPPLY
CDWR	CDWR	CONDENSER WATER RETURN
CHWS	CHWS	CHILLED WATER SUPPLY
CHWR	CHWR	CHILLED WATER RETURN
HHWS	HHWS	HEATING HOT WATER SUPPLY
HHWR	HHWR	HEATING HOT WATER RETURN
G	G	GAS
HPR	LPR	LOW PRESSURE REFRIGERANT
LPR	HPR	HIGH PRESSURE REFRIGERANT
BV	BV	BALANCING VALVE/ CIRCUIT SETTER
GV, SOV	GV, SOV	GATE VALVE OR SHUT-OFF VALVE
CHV	CHV	CHECK VALVE
FLX. CON.	FLX. CON.	FLEXIBLE CONNECTION
XX/ XX/		EQUIPMENT IDENTIFICATION / EQUIPMENT NUMBER / BUILDING DESIGNATION
M		FURNISHED & INSTALLED BY MECHANICAL
ME		FURNISHED BY MECHANICAL INSTALLED BY ELECTRICAL
EM		FURNISHED BY ELECTRICAL INSTALLED BY MECHANICAL
E		FURNISHED & INSTALLED BY ELECTRICAL
ZD/ BD	ZD/ BD	ZONE DAMPER/ BYPASS DAMPER
MT		MASTER THERMOSTAT
S		SWITCH
ZC		ZONE CONTROLLER
BC		BYPASS CONTROLLER
	FD	FIRE DAMPER
	SFD	SMOKE FIRE DAMPER
	DDC	DIRECT DIGITAL CONTROL
	CD	CEILING DIFFUSER
	E	EXISTING TO REMAIN
	R.A.	RETURN AIR
	S.A.	SUPPLY AIR
	NTS	NOT TO SCALE
	EXP. JOINT	EXPANSION JOINT
	ABV.	ABOVE
	AC, A/C	AIR CONDITIONING
	A.F.F.	ABOVE FINISHED FLOOR
	BEL	BELOW
	C.A.	COMPRESSED AIR
	CEIL	CEILING
	CONTR	CONTRACTOR
	DN	DOWN
	EF	EXHAUST FAN
	EA	EXHAUST AIR
	ER	EXHAUST REGISTER
	FLR	FLOOR
	W/, W/O	WITH, WITHOUT
	N.I.C.	NOT IN CONTRACT
	O'HD	OVERHEAD
XX / XX / XX		MODEL NUMBER / CFM / NECK SIZE / THROW PATTERN
XX / XX / XX		BYPASS OR ZONE DAMPER (BD/ZD) / MODEL NUMBER AS MANUFACTURED BY TITUS / DUCT CONECTION SIZE

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS MAY BE USED THIS PROJECT.

DDC SYMBOLS LEGEND

SYMBOL	ABBR.	DESCRIPTION
AI	AI	ANALOG IN
ALM	ALM	ALARM HORN
AO	AO	ANALOG OUT
ASC	ASC	APPLICATION SPECIFIC CONTROLLER
CPA	CPA	CONTROL POINT ADJUST
CO2	CO2	CARBON DIOXIDE SENSOR
CSR	CSR	CURRENT SENSING RELAY
C/T	C/T	CURRENT TRANSFORMER
DDCP	DDCP	DIRECT DIGITAL CONTROL PANEL
DI	DI	DIGITAL IN
DM	DM	DAMPER MOTOR
DO	DO	DIGITAL OUT
DPT	DPT	DIFFERENTIAL PRESSURE TRANSMITTER
EMS	EMS	SIGNAL TRANSMITTED TO/FROM EMS
FS	FS	FLOW SWITCH
I/P	I/P	CURRENT/PRESSURE TRANSDUCER
R/V	RV	REVERSING VALVE
SD	SD	SMOKE DETECTOR (DUCT TYPE)
S/S	S/S	START/STOP
STR	STR	MOTOR STARTER
TC	TC	TEMPERATURE CONTROLLER
TT	TT	TEMPERATURE TRANSMITTER
VS	VS	VELOCITY SENSOR
NC - 14	NC	NORMALLY CLOSED CONTACT
NO - 11	NO	NORMALLY OPEN CONTACT
	OSA	OUTSIDE AIR
	NTS	NOT TO SCALE
	MA	MIXED AIR
	RA	RETURN AIR
	SA	SUPPLY AIR
	BCMS	BUILDING CONTROL MANAGEMENT SYSTEM

APPLICABLE CODES

LIST OF 1998 CALIFORNIA CODE OF REGULATIONS (C.C.R.):
APPLICABLE CODE AS OF JULY 1, 1999:

PART 1 – 1998 CALIFORNIA STANDARDS ADMINISTRATIVE CODE, TITLE 24 C.C.R.

PART 2 – 1998 CALIFORNIA BUILDING CODE (CBC), TITLE 24, C.C.R. VOLUMES 1,2, AND 2B.
(WITH 1997 U.B.C. FOR VOL. 1 AND 2 AND 1994 U.B.C. FOR VOL. 2B)

PART 3 – 1998 CALIFORNIA ELECTRICAL CODE, TITLE 24, C.C.R.
(WITH 1996 NATIONAL ELECTRICAL CODE OF NATIONAL FIRE PROTECTION ASSOCIATION)

PART 4 – 1998 CALIFORNIA MECHANICAL CODE (CMC), TITLE 24, C.C.R.
(WITH 1997 UNIFORM MECHANICAL CODE OF INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS)

PART 5 – 1998 CALIFORNIA PLUMBING CODE, TITLE 24, C.C.R.
(WITH 1997 UNIFORM PLUMBING CODE OF INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS)

PART 6 – 1998 CALIFORNIA ENERGY CODE, TITLE 24, C.C.R.

PART 7 – 1998 CALIFORNIA ELEVATOR SAFETY CONSTRUCTION CODE, TITLE 24, C.C.R.

PART 8 – 1998 CALIFORNIA HISTORICAL BUILDING CODE, TITLE 24, C.C.R.

PART 9 – 1998 CALIFORNIA FIRE CODE, TITLE 24, C.C.R.
(WITH 1997 UNIFORM FIRE CODE OF INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS AND THE WESTERN FIRE CHIEF'S ASSOCIATION)

PART 10 – 1998 CALIFORNIA CODE FOR BUILDING CONSERVATION, TITLE 24, C.C.R.
(WITH 1997 UNIFORM CODE FOR BUILDING CONSERVATION OF THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS)

PART 11 – 1998 CALIFORNIA REFERENCE STANDARDS CODE, TITLE 24, C.C.R.

PARTIAL LIST OF APPLICABLE NFPA STANDARDS:
1998 CALIFORNIA BUILDING CODE (FOR SFM) NATIONAL STANDARDS SECTION 3504.1.3.

NFPA 13 – AUTOMATIC SPRINKLER SYSTEMS, 1996 EDITION
NFPA 14 – STANDPIPE SYSTEMS, 1996 EDITION
NFPA 17A – WET CHEMICAL SYSTEMS, 1994 EDITION
NFPA 24 – PRIVATE FIRE MAINS, 1995 EDITION
NFPA 72 – (CALIFORNIA AMENDED) NATIONAL FIRE ALARM CODES, 1996 EDITION

THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 1998 CBC SECTION 1632A AND TABLE 16A–O. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLANS.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR CHANGE ORDER APPROVED BY THE OFFICE OF STATE ARCHITECT, AS REQUIRED BY SECTION 4–338, PART 1, TITLE 24, CCR.

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE OFFICE OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4–342, PART 1, TITLE 24, CCR.

UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT DEFINED AS APPROVED ON THE "DSA APPROVED BID SET" ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA'S DISTRICT STRUCTURAL ENGINEER PRIOR TO INSTALLATION BY THE CONTRACTOR AND INSPECTION BY THE PROJECT INSPECTOR.

GENERAL NOTES:

1. THESE DRAWINGS AND SPECIFICATIONS ARE DIAGRAMMATIC TO THE EXTENT THAT SOME ITEMS SHOWN ON PLANS ARE IN A MANNER TO TO PROVIDE CLARITY ONLY. ACTUAL FIELD ROUTING AND INSTALLATION SHALL BE PROVIDED IN COORDINATION WITH OTHER TRADES AND ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL PROPERLY INTERFACE WITH STRUCTURE AND ALL OTHER SYSTEMS TO ACCOMPLISH THE INTENT OF THIS DESIGN. LOCATIONS OF HVAC EQUIPMENT AND DUCTING MAY VARY DUE TO ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL NOT SCALE OFF OF THESE DRAWINGS TO PLACE OR OTHERWISE LOCATE EQUIPMENT HANGERS, ANCHORS OR ANY OTHER SUPPORT SYSTEM. FIELD VERIFY ALL DIMENSIONS, EQUIPMENT WEIGHTS, LOCATIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND ORDERING MATERIALS. MAKE ALL NECESSARY ACCOMMODATIONS TO PROVIDE FOR A COMPLETE AND OPERATING SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
2. CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES PRIOR TO START OF WORK.
3. WHEN CONFLICTS OCCUR BETWEEN TRADES, THE CONTRACTOR IMMEDIATELY NOTIFY THE ARCHITECT.
4. INSTALL ALL THERMOSTATS AT 4'–0" ABOVE FINISHED FLOOR WHERE INDICATED ON THE DRAWINGS.
5. INSTALL ALL DUCTWORK & PIPING AS HIGH AS POSSIBLE. WHERE DUCTWORK & PIPING ARE TO BE LOCATED IN SAME AREA, PIPING SHALL BE INSTALLED BELOW DUCTWORK.
6. ALL DUCT WORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN 1998 CALIFORNIA MECHANICAL CODE (CMC) AND SMACNA GUIDLINES, MOST RECENT EDITIONS.
7. ALL FIXTURES AND EQUIPMENT PROVIDED SHALL BE IN COMPLIANCE WITH CALIFORNIA ENERGY COMMISSION REQUIREMENTS AND CERTIFICATIONS.
8. THE CONTRACTOR SHALL INCLUDE STATEMENTS INDICATING THAT THE INSTALLED DEVICES CONFORM TO THE STATE OF CALIFORNIA APPLIANCE STANDARDS, OF TITLE 24, AND THESE PLANS AND SPECIFICATIONS.
9. THE AIR DISTRIBUTION DUCTS SHALL BE CONSTRUCTED, INSTALLED, SEALED, AND INSULATED AS PROVIDED IN SMACNA DESIGN GUIDE FOR DUCTWORK CONSTRUCTION AND SEISMIC RESTRAINTS, LATEST EDITION.
10. FAN SYSTEMS EXHAUSTING AIR FROM THE BUILDING SHALL BE PROVIDED WITH BACK DRAFT DAMPERS.
11. CLEARANCES TO BE PER MANUFACTURER'S LISTINGS ON ALL MECHANICAL AND ELECTRICAL EQUIPMENT.
12. PIPES, DUCTS, AND CONDUIT'S SHALL BE SUPPORTED AND BRACED PER MSS–SP–69 GUIDELINES.
13. ALL MECHANICAL WORK SHALL COMPLY WITH T24 PART 4 CCR.
14. ALL HVAC EQUIPMENT AND ACCESORIES SHALL BE INSTALLED TO THE UTMOST PROFESSIONAL STANDARDS.
15. ALL WORK INCLUDING BUT NOT LIMITED TO, BRACING LOCATED WITHIN THE BUILDING ENVELOPE SHALL BE INSTALLED TO THE UTMOST HIGHEST AND PROFESSIONAL STANDARDS. ALL SUCH WORK AND ASSOCIATED COMPONENTS SHALL BE INSTALLED IN SUCH A MANNER AS TO MAINTAIN ALL LEVEL LINES AND BUILDING LINES.
16. COORDINATE ALL CEILING EQUIPMENT, AND OTHER DEVICE EDGE CONDITIONS WITH CEILING CONDITIONS AND LIGHTING.
17. ALL HVAC UNITS SHALL BE PROVIDED WITH ALL REQUIRED COMPONENTS AND SYSTEM CONTROL'S SO AS TO PROVIDE FOR A COMPLETE AND FUNCTIONING SYSTEM. INSTALL ALL UNITS WITHIN MANUFACTURERS RECOMMENDED CLEARANCES.
18. ALL HVAC EQUIPMENT DIMENSIONS AND MODEL NUMBERS SHALL BE VERIFIED WITH MANUFACTURER PRIOR TO ORDERING OF ANY EQUIPMENT OR ASSOCIATED MATERIALS.
19. AIR FILTERS SHALL BE A STATE FIRE MARSHALL APPROVED AND LISTED TYPE. PRE FORMED FILTERS HAVING COMBUSTIBLE FANNING SHALL BE TESTED AS A COMPLETE ASSEMBLY. AIR FILTERS IN ALL IN ALL OCCUPANCIES SHALL BE CLASS 2 OR BETTER (AS SHOWN IN STATE FIRE MARSHALL LISTING). ALL FILTERS SHALL BE ACCESSIBLE TO CLEANING OR REPLACEMENT, AND BE OF A STANDARD SIZE.
20. PROVIDE AND INSTALL NECESSARY HARDWARE, WIRING AND CONDUIT TO REQUIRED COMPONENTS TO PROVIDE FOR A COMPLETE AND FUNCTIONING HVAC SYSTEM AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
21. BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDLINES AS APPROVED BY DSA/ORS.
22. WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDLINES, FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER AND DSA FIELD ENGINEER.
23. A COPY OF THE GUIDLINES PUBLISHED BY SMACNA AND APPROVAL BY SAS SHALLBE PROVIDED BY DSA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE HOB AT ALL TIMES.
24. UNDER NO CIRCUMSTANCES SHALL DUCT GAUGE BE LESS THAN 16.
25. ROUND DUCTS SHALL BE SPIRAL LOCK SEAM.
26. EXPOSED SUPPLY & RETURN DUCT'S AND PLENUM SHALL BE INTERNALLY LINED WITH 1–1/2" THICK ACOUSTICAL LINING. COORDINATE WITH ARCHITECTURAL REFELECTED CEILING PLANS.
27. PAINT VISIBLE BACK SIDES OF EXPOSED DIFFUSERS AND GRILLES WITH FLAT BLACK PAINT.
28. EXPOSED DUCTS SHALL BE SEALED WITH UNITED McGILL WATER BASED DUCT SEALER. SEALER SHALL CONTAIN NO SOLVENTS, ASBESTOS, OR HARMFUL FUMES. SEALER SHALL CONFORM WITH NFPA 90 FOR FLAME SPREAD. SEALER SHALL ALSO CONFORM TO ASTM D572 AND ASTM C732 FOR DURABILITY. APPLY SEALER AT EACH DUCT JOINT. APPLY IN SUCH A MANNER TO PROVIDE COMPLETE COVERAGE AND SEALING OF SYSTEM JOINT BUT SHALL NOT BE VISIBLE TO THE EYE.
29. PROVIDE AND INSTALL SESIMIC DUCT BRACING AS REQUIRED TO PREVENT DUCTS FROM COMING INTO CONTACT WITH ANY ADJACENT ITEM IN THE EVENT OF AN EARTHQUAKE.
30. ALL DIFFUSERS, GRILLS, REGISTERS, BYPASS AND ZONE DAMPERS SHALL BE MANUFACTURED BY TITUS OR APPROVED EQUAL. ALL CONTROLS FOR BYPASS AND ZONE DAMPERS SHALL BE PROVIDED, INSTALLED AND CALIBRATED BY AUTOMATED LOGIC.
31. MAXIMUM ANCHOR DEPTH INTO METAL DECK SHALL BE 4". IF INSTALLED ABOVE RIB, MAXIMUM DEPTH SHALL BE 2–1/2". MINIMUM DEPTH OF ANY ANCHOR SHALL BE 2–1/2" UNLESS NOTED OTHERWISE. ANCHORS SHALL BE HILTI QUICK BOLT II, I.C.B.O. NUMBER ER–4627, UNLESS NOTED OTHERWISE.
32. IF EQUIPMENT OTHER THAN SPECIFIED IS UTILIZED WITH DIFFERENT ELECTRICAL, DIMENSIONAL CHARACTERISTICS, THE CONTRACTOR SHALL COORDINATE THE WORK WITH EVERY AFFECTED TRADE TRADE WITHOUT ADDITIONAL COST TO THE OWNER. EXTRA COSTS SHALL BE BORNE BY THE CONTRACTOR.
33. IF EQUIPMENT OTHER THAN SPECIFIED IS UTILIZED, SAID EQUIPMENT SHALL NOT EXCEED THE WEIGHTS SHOWN ON THESE PLANS, INCLUDING BUT NOT LIMITED TO ROOFTOP PACKAGE UNIT WEIGHTS AND ASSOCIATED CURBS.
34. PROVIDE AND INSTALL BALANCING DAMPER'S WITH LOCKING QUADRANT AT EACH SUB–BRANCH SERVICING DIFFUSERS/GRILLS AS REQUIRED FOR SYSTEM BALANCING.

EXHAUST FAN SCHEDULE

EQUIP. SYM.	MANUFACTURER & MODEL NUMBER	AREA SERVED	TYPE	CFM	DRIVE	STATIC PRESSURE	MOTOR HP/W	MOTOR RPM	MOTOR VOLT/PHASE/HZ	APPROX. OPER. WEIGHT (LBS.)	REMARKS
EF 1	GREENHECK GB–90	1ST FLOOR STAFF'S RESTROOMS	ROOF MOUNTED EXHAUST	340	BELT	0.45	1/4 HP	1725	115/1/60	30	PROVIDE WITH MFR.'S 12 INCH TALL CURB, BACKDRAFT DAMPER.
EF 2	GREENHECK GB–140	1ST & 2ND FLOORS RESTROOMS	ROOF MOUNTED EXHAUST	1310	BELT	0.65	1/4 HP	1725	115/1/60	85	PROVIDE WITH MFR.'S 12 INCH TALL CURB, BACKDRAFT DAMPER.
EF 3	GREENHECK SP–216	2ND FLOOR STAFF'S RESTROOM	CEILING MOUNTED	120	DIRECT	0.25	76 W	1100	115/1/60	15	PROVIDE WITH MFRS ROOF CURB AND RCC–7 ROOF CAP. PROVIDE WITH NEOPRENE HAGNER ROD VIBRATION ISOLATORS.
EF 4	GREENHECK SP–226	MECHANICAL ROOM	CEILING MOUNTED	220	DIRECT	0.55	81 W	1050	115/1/60	21	PROVIDE WITH MFRS ROOF CURB AND RCC–7 ROOF CAP. PROVIDE WITH NEOPRENE HAGNER ROD VIBRATION ISOLATORS.
EF 5	GREENHECK SP–264	ELEC. ROOM	CEILING MOUNTED	1035	DIRECT	0.40	936 W	1450	115/1/60	56	PROVIDE WITH MFRS ROOF CURB AND RCC–7 ROOF CAP. PROVIDE WITH NEOPRENE HAGNER ROD VIBRATION ISOLATORS.

NOTE: SEE DETAIL 1, M 7.01 FOR ANCHORAGE.

FAN COIL UNIT SCHEDULE

SYMBOL	AREA SERVED	MFR MODEL	OUTSIDE AIR CFM	SUPPLY AIR CFM	ELECTRICAL V/ø/Hz	ELECTRICAL FAN FLA	ELECTRICAL POWER SUPPLY MCA	ELECTRICAL POWER SUPPLY MOCP	COOLING NET COOLING (BTUH)	HEATING BTUH INPUT	HEATING BTUH OUTPUT	HEATING AFUE	APPROX. OPERATING WT (LBS)	DIMENSIONS (LxWxH)	REMARKS
FC 1	ROOM 216 TELE. ROOM	CARRIER 40ONE–009	36	252	115V 1ø/60	.41	11.2	15	8,700	9,000	5,120	N/A	18.7 WT (LBS)	33.46x11.02x6.29	INSTALL PER MANUFACTURERS RECOMMENDATIONS. COORDINATE LOCATION WITH ELEC. CONTRACTOR INSTALL T–STAT. PER MANUFACTURERS RECOMMENDATIONS.

CONDENSOR UNIT SCHEDULE

EQUIP. NO.	MFR MODEL	AREA SERVED	COOLING CAPACITY NOMINAL TOTAL TONS	COOLING CAPACITY NET COOLING BTUH	HEATING HIGH HEAT CAP(BTUH)	HEATING LOW HEAT CAP(BTUH)	SEER	FAN 1 MOTOR F.L.A.	FAN 2 MOTOR F.L.A.	ELECTRICAL COMPRESSOR R.L.A.	ELECTRICAL COMPRESSOR L.R.A.	ELECTRICAL VOLTAGE RANGE MIN.	ELECTRICAL VOLTAGE RANGE MAX	MCA	MOCP	VOLTAGE V/PH/HZ	OPER. WT. LBS	EQUIPMENT DIMENSIONS LxWxH(IN.)	REMARKS
CD 1	CARRIER 38BK–009	ROOM 216 TELE. ROOM	3/4	8,700	9,000	5,120	10.0	.70	N/A	9.0	45.0	110	130	11.2	15	115/1ø/60	60.7	26x10–5/8x23–1/4	UNITS MAY ONLY BE USED WITH 40QNE FAN COIL. INSTALL PER MANUFACTURERS RECOMMENDATIONS.

NOTE: FOR ANCHORAGE OF UNIT TO PAD USE (4) 3/8" HILTI KWIK BOLTS, ICBO# ER–2895, 2–1/4" EDGE DISTANCE. 1–5/8" EMBEDMENT INTO MIN 3000 LT. WT. P.S.I CONCRETE MIN 2–1/2"THICK. REF STRUCTURAL DRAWINGS FOR PAD DETAIL.

ROOFTOP PACKAGED UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER & MODEL NO.	SA FAN CFM	MIN. O.S.A. CFM	COOLING CAPACITY NOMINAL TOTAL TONS	COOLING CAPACITY MBTU/HR	COOLING CAPACITY COND. °F EDB	COOLING CAPACITY EVAP. °F EWB	ESP IN. WG.	HEATING OUTPUT MBH (HIGH/LOW)	ELECTRICAL MCA	ELECTRICAL MOCP	ELECTRICAL V/PH/HZ	SEER/ EER	FILTER SIZE [IN] NO. & SIZE	APPROX. OPERATING WEIGHT	APPROX. CURB WEIGHT (lbs)	EQUIPMENT DIMENSIONS L X W X H	DISCHARGE PATTERN	ACCESORIES/REMARKS
AC 1	TRANE YCD 121C4	4000	BASED ON CO2 LEVEL	10	120	80	67	0.75	203/122	30	35	460/3/60	11.5 EER	THROWAWAY (4)20x20X2 (4)20x25X2	1573	290	93–11/16x63–5/16x49	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE. INSTALL WITH POWER EXHAUSTER & CO2 MONITORING STATION.
AC 2	TRANE YCD 061C4	2250	430	5	58	80	67	0.70	97/73	16.5	25	460/3/60	12.0 SEER	THROWAWAY (3)16X25X1	753	200	87–1/16x49–9/16x35	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. CURB SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE. PROVIDE OVERSIZED MOTOR.
AC 3	TRANE YCH 030F1 (YCC)	1120	145	2.5	29.8	80	67	0.75	58.5/46.8	21.3	35	230/1/60	10.0/9.1	THROWAWAY	358	189	55–1/4x36x29–3/16	HORIZONTAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 4	TRANE YCH 030F1 (YCC)	750	90	2.5	29.8	80	67	0.79	58.5/46.8	21.3	35	230/1/60	10.0/9.1	THROWAWAY	358	189	55–1/4x36x29–3/16	HORIZONTAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 5	TRANE SFHF C40C4	15,160	BASED ON CO2 LEVEL	40	494	80	67	SA: 1.50 RA: 0.85	850/287	130.0	150	460/3/60	–	THROWAWAY (16)20x25x2	7840	1550	27'–0"x7'–6.5"x6'–7.375"	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE. INSTALL CO2 MONITORING STATION.. MODULATING GAS VALVE. VFD SUPPLY FAN.
AC 6	TRANE YCD 103C4	3020	900	8.5	101	80	67	0.85	203/122	24	30	460/3/60	11.0 EER	THROWAWAY (3)20x20X2 (3)16x20X2	1273	230	93–11/16x63–5/16x49	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 7	TRANE YCH 061C4	2225	250	5	58	80	67	0.85	97/73	15.9	25	460/3/60	12.0 SEER	THROWAWAY (3)16X25X1	753	200	87–1/16x49–9/16x35	HORIZONTAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 8	TRANE YCH 042F1 (YCC)	1300	180	3.5	42	80	67	0.50	78/62.4	30.2	50	230/1/60	10.0/8.85	THROWAWAY	414	189	62–3/4x36x29–3/16	HORIZONTAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 9	TRANE YCH 036F4 (YCC)	1050	185	3	35.4	80	67	0.60	78/62.4	8	15	460/3/60	10.0/9.5	THROWAWAY	394	189	55–1/4x36x29–3/16	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 10	TRANE YCH 036F4 (YCC)	1190	120	3	35.4	80	67	0.50	78/62.4	8	15	460/3/60	10.0/9.5	THROWAWAY	394	189	55–1/4x36x29–3/16	VERTICAL	PROVIDE WITH O.S.A. PARABLADE ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 11	TRANE YCD 211C4	7980	1265	17.5	208	80	67	0.70	284/203	46	60	460/3/60	11.0 EER	THROWAWAY (2)20x20X2 (4)20x25X2	2168	380	106–11/16X70–13/16X50–2/16	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 12	TRANE YCC 024	800	130	2.5	23.4	80	67	0.55	39/31.2	25	15.7	230/1/60	9.10 EER	THROWAWAY	310	189	55–1/4x36x25–3/16	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 13	TRANE YCC 024	700	130	2.5	23.4	80	67	0.55	39/31.2	25	15.7	230/1/60	9.10 EER	THROWAWAY	310	189	55–1/4x36x25–3/16	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 14	TRANE YCH 061C4	2335	300	5	58	80	67	0.90	97/73	16.5	25	460/3/60	12.0 SEER	THROWAWAY (3)16X25X1	753	200	87–1/16x49–9/16x35	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 15	TRANE YCD 061C5	1870	480	5	58	80	67	0.55	97/73	15.9	25	460/3/60	12.0 SEER	THROWAWAY (3)16X25X1	753	200	87–1/16x49–9/16x35	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 16	TRANE YCD 061C4	1985	690	5	58	80	67	0.55	97/73	16.5	25	460/3/60	12.0 SEER	THROWAWAY (3)16X25X1	753	200	87–1/16x49–9/16x35	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE.
AC 17	TRANE YCD 301C4	9970	BASED ON CO2 LEVEL	25	278	80	67	1.15	384/203	56	70	460/3/60	10.4 EER	THROWAWAY (4) 20x20x2 (4)20x20x2	2271	619	121–11/16x84–13/16x54	VERTICAL	PROVIDE WITH O.S.A. ECONOMIZER & SMOKE DETECTOR. ALL CURBS SHALL BE INSTALLED COMPLETELY LEVEL TO MATCH ROOF SLOPE. INSTALL WITH POWER EXHAUSTER & CO2 MONITORING STATION.

1) PROVIDE AND INSTALL FLEXIBLE CANVAS CONNECTION BETWEEN MACHANICAL EQUIPMENT AND MAIN DUCT BRANCH; INSTALL PER SMACNA GUIDLINES, AND PROVIDE WEATHER SHIELD OVER TOP AND SIDE OF CANVAS CONNECTION WHERE INSTALLED EXTERIOR TO BUILDING.
2) PROVIDE AND INSTALL 100% BARAMETRIC RELEIF ECONOMIZERS WITH ENTHALAPY CONTROLS.
3) PROVIDE AND INSTALL POWER EXHAUST TO ALL UNITS. 4) AC–5 SHALL BE 2–STAGE HIGH HEATING & MODULATING STEP GAS VALVE.

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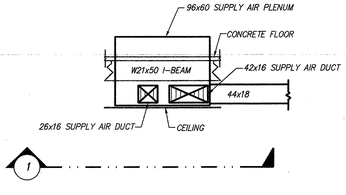
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL. 04-103279
AC ☐ RS ☐ NR ☐ SS ☒
DATE MAR 13

GENERAL NOTES

1. THERMOSTATS AND ZONE CONTROLLERS SHALL DISPLAY SPACE TEMPERATURE AND SET POINT, ADDITIONALLY EACH CONTROLLER SHALL BE PROVIDED WITH A SET POINT ADJUST AND MANUAL OVERRIDE.

KEY NOTES

1. 3/4" SPACING, 0" DEFLECTION.
2. 3/4" SPACING, 35° DEFLECTION.
3. S.A. AND R.A. DUCTS SHALL BE INTERNALLY LINED WITHIN ROOM 147 AND 149.
4. BOTTOM OF GRILLE AT 12'-0" A.F.F.
5. BOTTOM OF GRILLE AT APPROXIMATELY 16'-0" A.F.F.
6. SEE SECOND FLOOR PLAN FOR CONTINUATION. PROVIDE 90° ELBOWS AS REQUIRED AND TRANSITION TO ROUND DUCT.
7. PROVIDE & INSTALL 18"x14" DOOR LOUVER, MIN. 50% FREE AREA.
8. PROVIDE & INSTALL 24"x18" FIRE RATED DOOR LOUVER, MIN. 50% FREE AREA.
9. CAP BOTTOM OF DUCT SHAFT TO FORM PLENUM. INCREASE WIDTH OF EACH DUCT BY SIX INCHES AS SOON AS POSSIBLE. SEE M2.02 FOR SIZE OF DUCTS IN SHAFT.
10. S.A. & R.A. DUCT'S RUN AT APPROXIMATELY 25' A.F.F.
11. DIFFUSER LOCATED ABOVE WOOD CEILING SYSTEM. SEE A5.06. ADJUST FOR VERTICAL THROW PATTERN.
12. TOP OF DUCT AT APPROXIMATELY 20' A.F.F.
13. 48"x12" S.A DUCT FROM BOTTOM OF MAIN S.A DUCT AND SERVING S.A AT SIDE WALL GRILLE IN ROOM 147.
14. PROVIDE 8'-9" DUCT DROP FROM MAIN BRANCH TO SERVE DIFFUSERS. ZONE DAMPERS SHALL BE LOCATED NO MORE THAN 2'-0" ABOVE CEILING TILE.
15. SUPPLY RETURN FROM A/C-3.
16. S.A AND R.A DOWN FROM A/C-4.
17. LOCATE MC AND BC FOR A/C-4 IN ROOM 135, ADJACENT TO LIGHT SWITCH.
18. BY-PASS DAMPER IS LOCATED ON THE 2nd FLOOR IN CEILING SPACE STUDY AREA ROOM 204.
19. PROVIDE & INSTALL GREEHECK FSD-23 FIRE/SMOKE DAMPER. INSTALL IN VERTICAL POSITION AT PENETRATION THROUGH 2ND FLOOR INTO 1ST FLOOR ATTIC SPACE. SEE DETAIL 2, M7.05.
20. SEE DETAIL 6, M7.04.
21. PROVIDE & INSTALL LINE VOLTAGE THERMOSTAT INTERLOCK WITH EF-4. SET TEMPERATURE AT 85° F.
22. 10x10 E.A. DUCT UP TO ROOF.
23. PROVIDE & INSTALL LINE VOLTAGE THERMOSTAT INTERLOCK WITH EF-5. SET TEMPERATURE AT 85° F.
24. SEE DETAIL 1, M7.06 FOR SPECIAL HANGER REQUIRMENTS FOR DUCTS SUPPORTED FROM EXPOSED METAL DECK. TYPICAL WHERE OCCURS.
25. PROVIDE AND INSTALL A GREENHECK EDJ-401 24"x20" LOUVER ABOVE ELECTRICAL ROOM DOOR.
26. PROVIDE AND INSTALL A TITUS T-700 24"x20" DOOR GRILL 10" ABOVE BOTTOM OF DOOR.
27. 16" DIAMETER BYPASS DAMPER. DROP FROM MAIN SUPPLY AND RETURN AIR DUCT. LOCATE DAMPER NO HIGHER THAN 12" A.F.F.
28. AH-5 ,T-STAT CONTROLLER FOR ROOM 136, COMPUTER LAB.
29. AH-17, T-STAT CONTROLLER FOR ROOM 128, STUDY AREA.



MECHANICAL FIRST FLOOR PLAN

SCALE 3/32"=1'-0" 1

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LICENSED ARCHITECT — STEVEN H. BLUROCK — NO. C009332 — 1-31-03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT — OFFICE OF REGULATION SERVICES — APPL 04-103279 — ACCESS FLS INT TSS DATE MAR 13 2002

SUBMITTALS

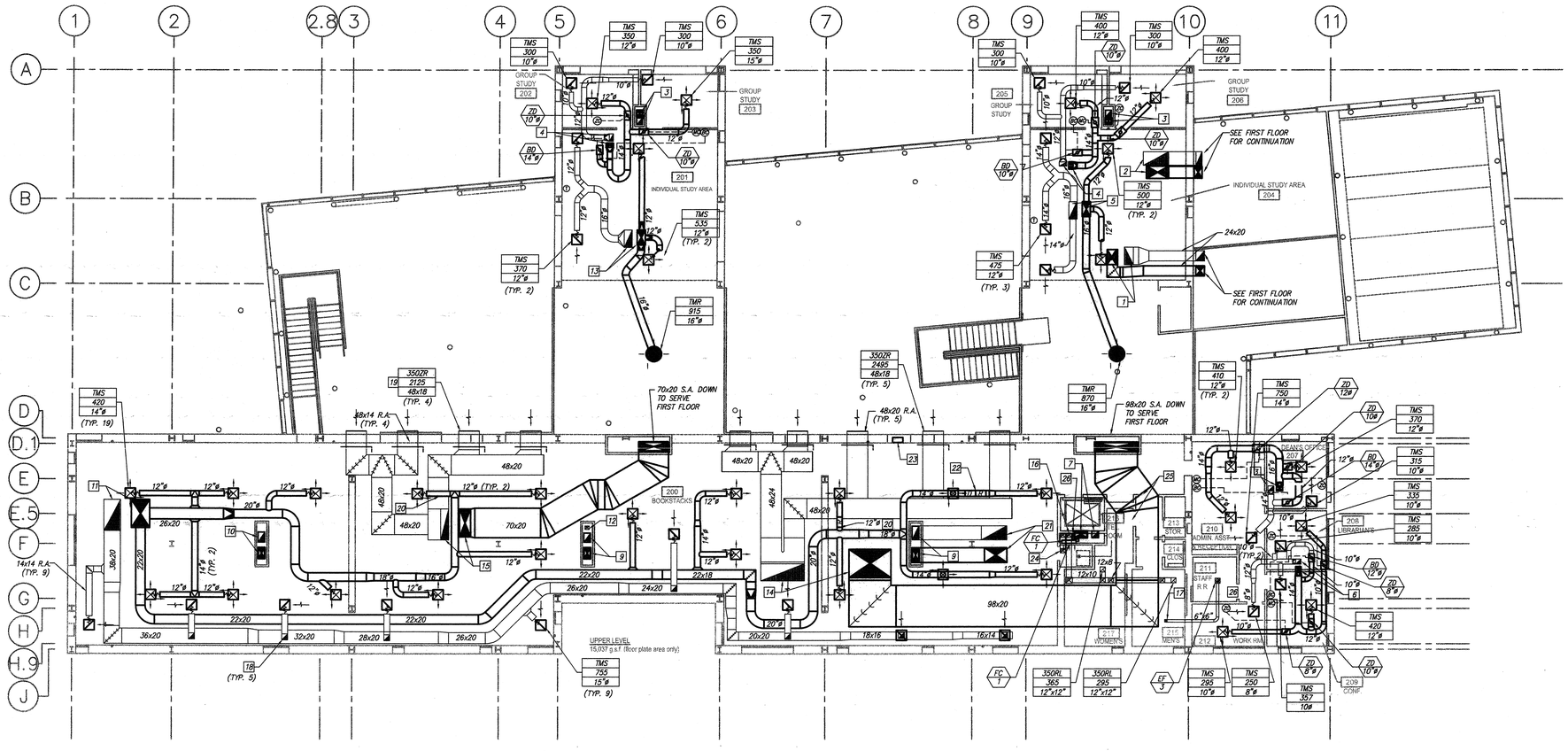
SBVC
LEARNING RESOURCE CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL FIRST FLOOR

PROJECT NO.: 98-22
SCALE: 3/32" = 1'-0"
DATE: 10. 11. 2001

M2.01



MECHANICAL SECOND FLOOR PLAN

SCALE 3/32"=1'-0" 1

GENERAL NOTES

1. THERMOSTATS AND ZONE CONTROLLERS SHALL DISPLAY SPACE TEMPERATURE AND SET POINT. ADDITIONALLY EACH CONTROLLER SHALL BE PROVIDED WITH A SET POINT ADJUST AND MANUAL OVERRIDE.

KEY NOTES

1. 24x36 SUPPLY AIR TRANSITION, 21x41 RETURN AIR TRANSITION WITH TURNING VANES.
2. 53x29 SUPPLY AIR TRANSITION, 60x32 RETURN AIR TRANSITION WITH TURNING VANES.
3. 12x14 SUPPLY AIR & RETURN AIR.
4. 17-1/2x26 SUPPLY AIR TRANSITION, 17-1/2x10 RETURN AIR TRANSITION WITH TURNING VANES.
5. 35x19 SUPPLY AIR PLENUM, 41x19 RETURN AIR PLENUM WITH ACOUSTICAL LINNING.
6. 12X14 SUPPLY AIR, 12x12 RETURN AIR.
7. 14X28 SUPPLY AIR, 14x14 RETURN AIR.
8. 14x32 SUPPLY AIR, 14x30 RETURN AIR.
9. 14X24 SUPPLY AIR, 14x20 RETURN AIR.
10. 14x24 SUPPLY AIR, 14x22 RETURN AIR.
11. 43x66 SUPPLY AIR PLENUM, 39X73 RETURN AIR TRANSITION WITH TURNING VANES.
12. 8x10 EXHAUST AIR DUCT FROM BELOW.
13. 19x35 SUPPLY AIR TRANSITION, 19x41 RETURN AIR TRANASITION WITH TURNING VANES.
14. 67x98 SUPPLY AIR TRANSITION WITH TURNING VANES, 40x102 RETURN PLENUM WITH ACOUSTICAL INSULATION.
15. 26x66 SUPPLY AIR TRANSITION, 19x73 RETURN AIR TRANSITION WITH TURNING VANES.
16. 10x12 EXHAUST AIR DUCT FROM BELOW.
17. PROVIDE A 6"x6" EXHAUST AIR DUCT UP TO ROOF.
18. RETURN AIR DUCT RISE OVER TOP OF SUPPLY AIR DUCT AS SHOWN.
19. BOTTOM OF DIFFUSER AT APPROXIMATELY 22'-10" ABOVE 1st FLOOR LEVEL. COORDINATE WITH ARCHITECTURAL.
20. S.A. DUCT ON TOP OF R.A. DUCT.
21. 35x52 S.A. TRANSITION, 33x59 R.A. TRANSITION WITH TURNING VANES.
22. SUPPLY DUCT DROPS BELOW BEAM AND RISE TO GO OVER TOP OF R.A. DUCT.
23. PROVIDE & INSTALL RECESSED DIRECT DIGITAL CONTROL PANEL (DDCP) FOR EMS OPERATIONS. LOW VOLTAGE WIRING AND CONDUIT AND WIRING WITHIN BULDING ENVELOPE BY CONTROLS CONTRACTOR. LOW VOLTAGE CONDUIT FROM EXTERIOR OF BUILDING AND BACK TO CONTROL STATION AT MAINTENANCE SHOP BY ELECTRICAL, WIRE BY CONTROLS CONTRACTOR.
24. 12x10 EXHAUST AIR DUCT UP TO ROOF.
25. PROVIDE & INSTALL 18"x14" SIGHT-PROOF DOOR LOUVER. MINIUM FREE AREA 50%.
26. REFERIGANT LINES FROM CONDENSING UNIT ON ROOF.

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LICENSED ARCHITECT DAVID H. BLUROCK NO. C009332 5-31-03 RENEWAL DATE STATE OF CALIFORNIA

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES
APPL 04-103279
AC S RLS NT SS XX
DATE MAR 13 2002

SUBMITTALS

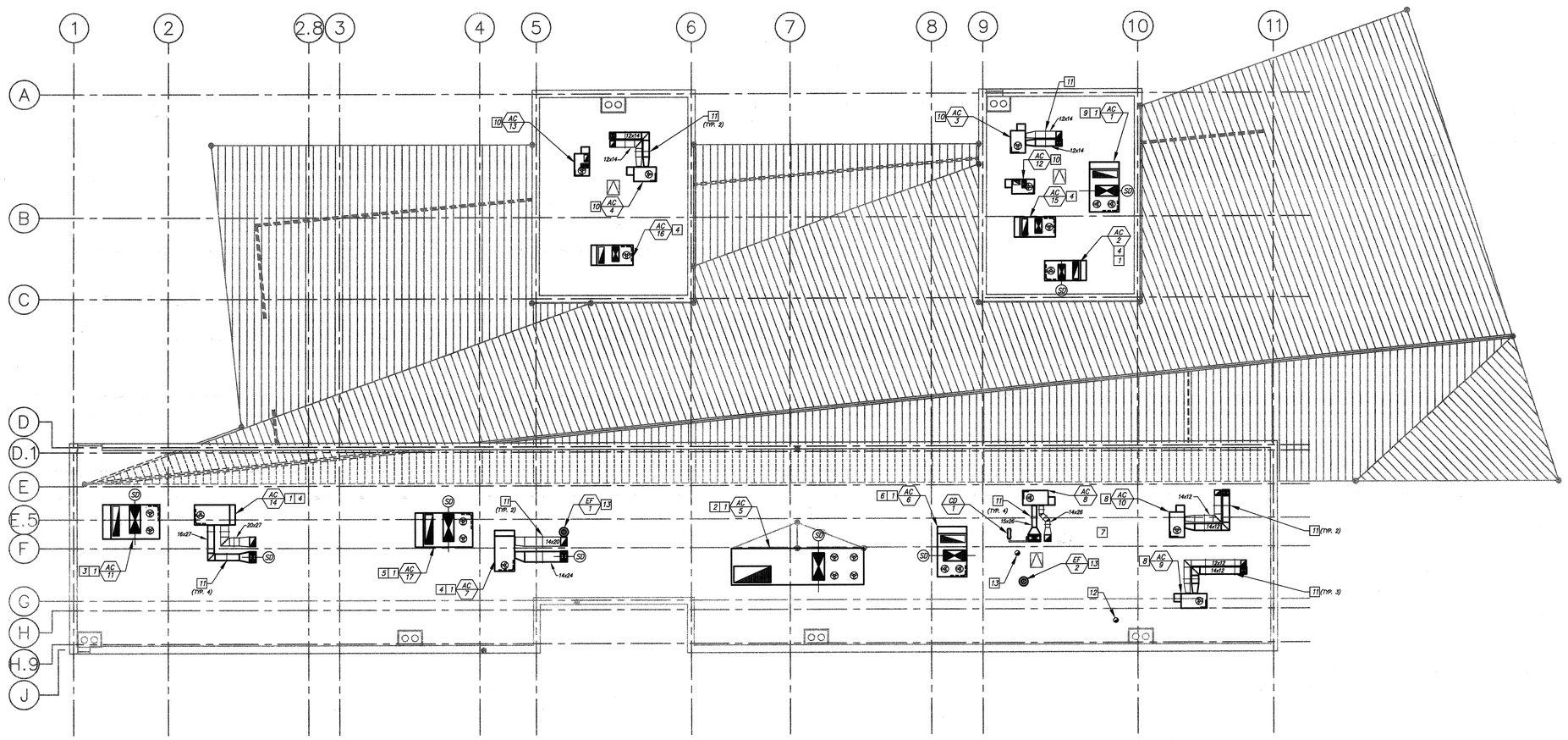
SBVC
LEARNING RESOURCE CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL SECOND FLOOR

PROJECT NO.: 98-22
SCALE: 3/32" = 1'-0"
DATE: 10. 11. 2001

M2.02



GENERAL NOTES

1. ROOFTOP PACKAGED UNITS SHALL BE INSTALLED LEVEL. EQUIPMENT CURBS SHALL BE ORDERED TO MATCH PITCH OF ROOF.
2. THE MINIMUM HEIGHT OF THE TOP OF EACH CURB FROM THE TOP OF THE ROOF SHALL BE 8".
3. REFER TO DETAIL 1/M7.04 FOR TYP. ROOF MOUNTED EQUIPMENT ANCHORAGE. LOCATION OF EQUIPMENT SHALL BE COORDINATED WITH STRUCTURAL STEEL BEAM LOCATIONS TO AVOID CONFLICTS WITH BACKING PLATE/THRU-BOLT CONNECTIONS.
   PROVIDE LAYOUT DRAWINGS DIMENSIONED TO STRUCTURAL STEEL BEAMS FOR ARCHITECT'S REVIEW PRIOR TO INSTALLATION.

KEY NOTES

- [1] SMOKE DETECTOR REQUIRED, SEE DETAIL 6, M7.03. LOCATE SMOKE DETECTOR WITHING BUILDING ENVELOPE PER IN SUPPLY AIR DUCT PER 1998 C.M.C, SECTION 608.
- [2] SEE DETAIL 1, M7.04 FOR ANCHORAGE.
- [3] SEE DETAIL 7, M7.02 FOR ANCHORAGE.
- [4] SEE DETAIL 4, M7.02 FOR ANCHORAGE.
- [5] SEE DETAIL 9, M7.02 FOR ANCHORAGE.
- [6] SEE DETAIL 5, M7.02 FOR ANCHORAGE.
- [7] SEE DETAIL 3, M7.04 FOR ANCHORAGE.
- [8] SEE DETAIL 4, M7.04 FOR ANCHORAGE.
- [9] SEE DETAIL 6, M7.02 FOR ANCHORAGE.
- [10] SEE DETAIL 5, M7.04 FOR ANCHORAGE.
- [11] TYPICAL DUCT ACCROSS ROOF SUPPORT. SEE DETAIL 2, M7.01. SPACING OF SUPPORTS SHALL BE PER 1998 C.M.C TABLE A6-3-E.
- [12] E.A. DUCT FROM EF-3.
- [13] E.A. DUCT FROM EF-4.

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SUBMITTALS

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SAN BERNARDINO, CA 92409

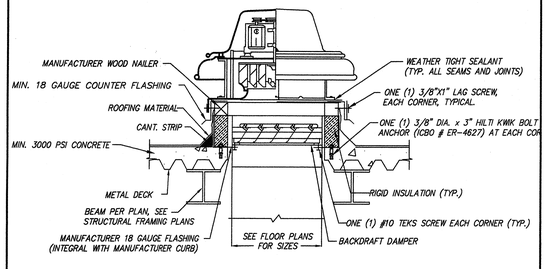
MECHANICAL ROOF PLAN

PROJECT NO.: 98-22
SCALE: 3/32" = 1'-0"
DATE: 10.11.2001

M3.01

MECHANICAL ROOF PLAN

SCALE 3/32"=1'-0" | 1

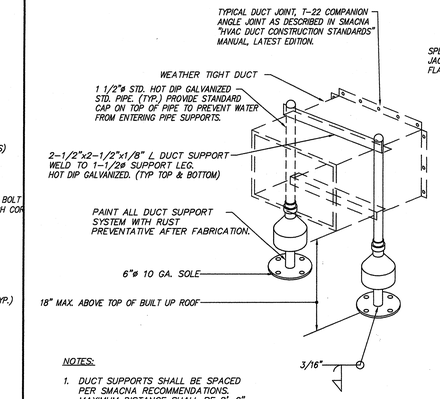


CONNECTION TO CONCRETE DECK

NOTES:

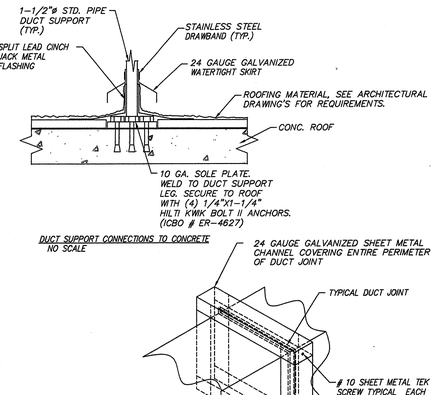
1. SEE ARCHITECTURAL DRAWING A9.21/10 FOR ROOF ROOF FLASHING REQUIREMENTS.

TYPICAL ROOF MOUNTED EXHAUST FAN — SCALE NTS — 1

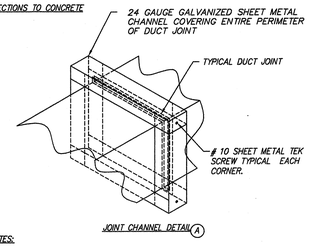


NOTES:

1. DUCT SUPPORTS SHALL BE SPACED PER SMACNA RECOMMENDATIONS. MAXIMUM DISTANCE SHALL BE 8'-0".
2. ALL DUCTS ON ROOF SHALL BE INSTALLED WITH CROSS BREAKS SO AS TO PROVIDE FOR WATER RUN OFF.
3. NO PITCH POCKETS ON THIS PROJECT.
4. DUCT JOINTS ON ROOF SHALL BE COVERED WITH 24 GAUGE CHANNEL, SEE DETAIL (A)



DUCT SUPPORT CONNECTIONS TO CONCRETE
NO SCALE

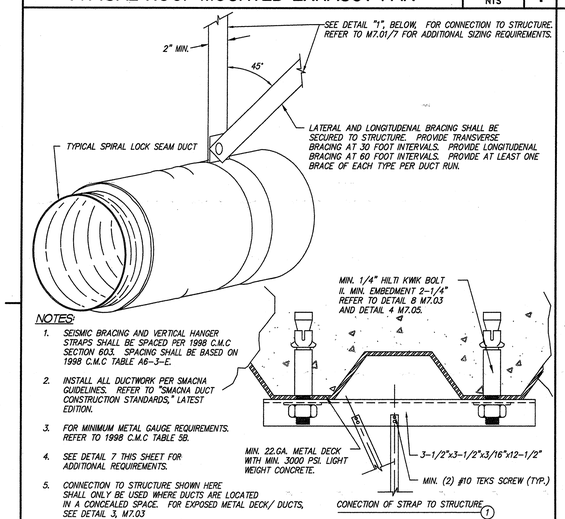


JOINT CHANNEL DETAIL (A)

CHANNEL NOTES:

1. SECURE CHANNEL TO ONE ANOTHER WITH 1-#10 TEK SCREW AT EACH CORNER. NO SCREW'S SECURING CHANNEL SHALL PENETRATE DUCT'S.

TYPICAL DUCT ACCROSS ROOF SUPPORT — SCALE NTS — 2

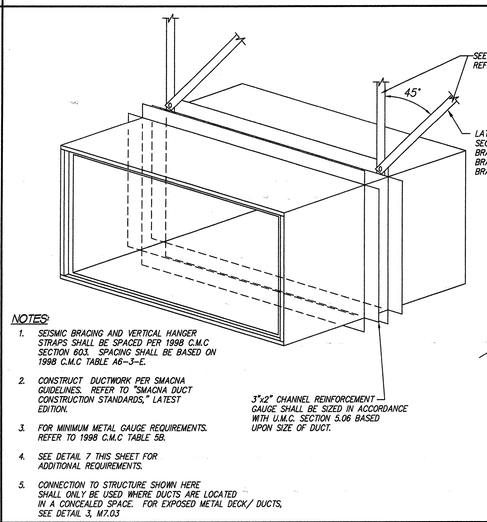


NOTES:

1. SEISMIC BRACING AND VERTICAL HANGER STRAPS SHALL BE SPACED PER 1998 C.M.C SECTION 603. SPACING SHALL BE BASED ON 1998 C.M.C TABLE A6-3-E.
2. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. FOR MINIMUM METAL GAUGE REQUIREMENTS. REFER TO 1998 C.M.C TABLE 5B.
4. SEE DETAIL 7 THIS SHEET FOR ADDITIONAL REQUIREMENTS.
5. CONNECTION TO STRUCTURE SHOWN HERE SHALL ONLY BE USED WHERE DUCTS ARE LOCATED IN A CONCEALED SPACE. FOR EXPOSED METAL DECK/ DUCTS, SEE DETAIL 3, M7.03

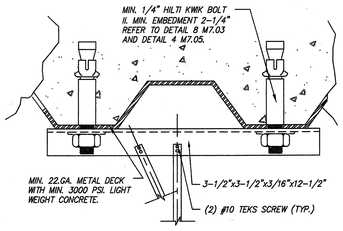
CONECTION OF STRAP TO STRUCTURE (1)

TYPICAL 6"-23" DIA. ROUND DUCT SUPPORT — SCALE NTS — 4



NOTES:

1. SEISMIC BRACING AND VERTICAL HANGER STRAPS SHALL BE SPACED PER 1998 C.M.C SECTION 603. SPACING SHALL BE BASED ON 1998 C.M.C TABLE A6-3-E.
2. CONSTRUCT DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. FOR MINIMUM METAL GAUGE REQUIREMENTS. REFER TO 1998 C.M.C TABLE 5B.
4. SEE DETAIL 7 THIS SHEET FOR ADDITIONAL REQUIREMENTS.
5. CONNECTION TO STRUCTURE SHOWN HERE SHALL ONLY BE USED WHERE DUCTS ARE LOCATED IN A CONCEALED SPACE. FOR EXPOSED METAL DECK/ DUCTS, SEE DETAIL 3, M7.03



CONECTION OF STRAP TO STRUCTURE (1)

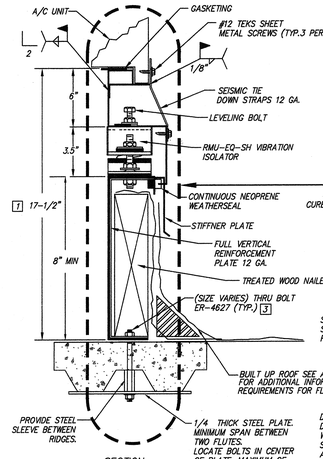
TYPICAL RECTANGULAR DUCT SUPPORT FOR SIZES UP TO 29x29 — SCALE NTS — 5

NOTES:

1 CURB HEIGHT SHALL VARY WITH THE ROOF PITCH SO AS TO PROVIDE FOR A LEVEL INSTALLATION OF HVAC EQUIPMENT. MINIMUM HEIGHT ABOVE ROOF TO TOP OF BASE FRAME SHALL BE 8".

2. VIBRATION ISOLATOR/SEISMIC RESTRAINTS SHALL BE OSHPD PRE-APPROVED #IR-0098.

3 VERIFY BOLT SIZE(S) AND SEISMIC STRAP GAUGE(S) WITH SHOP DRAWINGS/CALCULATIONS PROVIDED BY CURB MANUFACTURER. CALCULATIONS SHALL BE SIGNED AND STAMPED BY A REGISTERED ENGINEER QUALIFIED TO PERFORM CALCULATIONS. SEE SHEET M7.02 AND M7.04 FOR MORE SPECIFIC INFORMATION FOR EACH EQUIPMENT SIZE.



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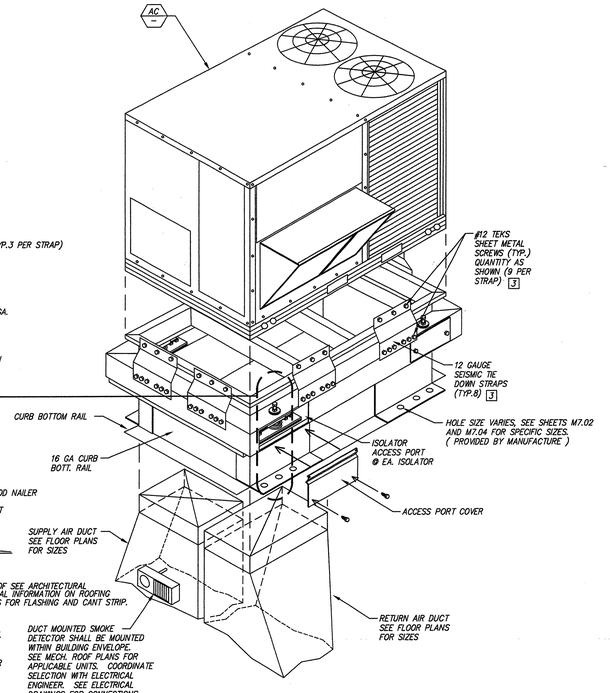
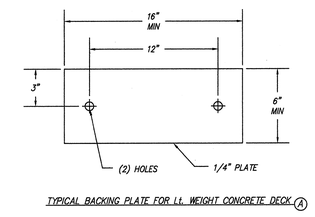
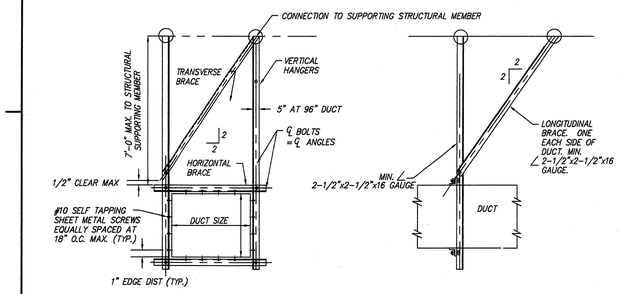




TYPICAL BACKING PLATE FOR Lt. WEIGHT CONCRETE DECK (A)

TYPICAL ROOFTOP MOUNTED PACKAGE UNIT ANCHORAGE — SCALE NTS — 3



NOTES:

1. THIS DETAIL REFERS TO MIN. REQUIREMENTS FOR RECTANGULAR DUCTS WHERE W"xD" EQUALS 30"x30" MINIMUM. SEE SMACNA TABLE 5-1 FOR ADDITIONAL REQUIREMENTS.
2. THE MAXIMUM DIMENSION OF DUCT SHALL GOVERN WHAT BRACING IS REQUIRED PER SMACNA TABLE 5-1.
3. USE SMACNA CONNECTION LEVEL 3 FOR ALL CONNECTIONS.
4. PROVIDE TRANSVERSE BRACING AT 30'-0" AND LONGITUDINAL BRACING AT 60'-0".
5. SEE DETAIL 2, M7.04 FOR CONNECTION TO STRUCTURE.
6. SEE DETAIL 4, M7.05 FOR SMACNA TABLES.

TYP. 30x30 OR LARGER RECTANGULAR DUCT BRACING — SCALE NTS — 6

TABLE 6-E DUCT SUPPORTS

PART I-VERTICAL DUCTS

MAXIMUM SIDE OF RECTANGULAR DUCT	METAL STRAP OR ANGLE BRACKET	MAXIMUM DIAMETER OF ROUND DUCTS	STRAPS
		x25.4 FOR mm	
24"	1"x1/8" (STRAP) (1)	10"	0.047" (NO. 18 GAGE) GALVANIZED STEEL 2" WIDE (1)
(4) 36"	1"x1"x1/8" ANGLE (1)	20"	0.058" (NO. 16 GAGE) GALVANIZED STEEL 2" WIDE (1)
(4) 48"	1 1/8"x1 1/8"x1/8" ANGLE (1)	(4) 40"	1/8" STEELx1 1/2" (1)
(4) 60"	1 1/2"x1 1/2"x1/8" ANGLE (1)	(4) 60"	1/8" STEELx2" (1)
(4) OVER 60"	2"x2"x1/8" ANGLE (1)	(4) OVER 60"	3/16" STEELx2" (1)

PART II-HORIZONTAL DUCTS

18"	1"x18 GAGE (2)	10"	SAME GAGE AS GALVANIZED STEEL DUCT, 1-1/2" WIDE OR (NO. 18 GAGE GALVANIZED STEEL WIRE) ON 10' CENTERS
(4) 30"	1"x18 GAGE (2)	20"	SAME GAGE AS GALVANIZED STEEL DUCT, 1-1/2" WIDE OR (NO.
(4) 48"	1"x1/8" (2)	(4) 40"	8 GAGE GALVANIZED STEEL WIRE) TIED TO 1-1/2" GALVANIZED
(4) 60"	1"x1/8" (2)	(4) 60"	STEEL BAND AROUND DUCT ON 10' CENTERS
(4) 80"	1"x1/8" (2)	(4) OVER 60"	SAME GAGE AS GALVANIZED STEEL DUCT, 1 1/2" WIDE ON 6' CENTERS
			SAME GAGE AS GALVANIZED STEEL DUCT, 1 1/2" WIDE ON 4' CENTERS

PART II-HORIZONTAL DUCTS-TRAPEZE-TYPE SUPPORTS

MAXIMUM DIAMETER OF ROUND DUCT OR SIDE OF RECTANGULAR DUCT	HORIZONTAL SUPPORT ANGLE (3)	HANGER
36"	1 1/2"x1 1/2"x1/8"	1/4" ROUND ROD OR 1"x1"x1/8" ANGLE
(4) 48"	2"x2"x1/8"	1/4" ROUND ROD OR 1"x1"x1/8" ANGLE
(4) 60"	2"x2"x1/8"	5/16" ROUND ROD OR 1"x1"x1/8" ANGLE
(4) 84"	2"x2"x1/8"	3/8" ROUND ROD OR 1"x1"x1/8" ANGLE

(1) SPACED VERTICALLY NOT MORE THAN 12 FEET (3658 mm) ON CENTERS.
(2) SPACED HORIZONTALLY NOT MORE THAN 10 FEET (3048 mm) ON CENTERS.
(3) SPACED NOT MORE THAN 8 FEET (2438 mm) ON CENTERS.
(4) DO NOT USE FOR THIS PROJECT, REFER TO DETAIL 6, M7.01 OR DETAIL 3, M7.03.

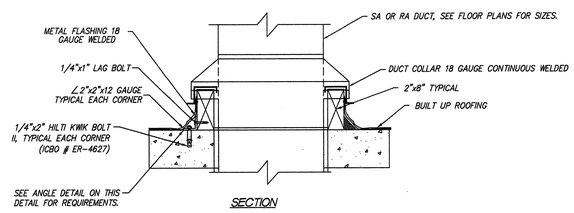
TABLE A6-3-E HANGER SPACING

DUCT SIZE (x 25.4 FOR mm)	MAXIMUM HANGER SPACING (FEET) (x 304.8 FOR mm)
48" WIDE OR GREATER	4
LESS THAN 48" WIDE AND LESS THAN 12" DEEP	6
WIDTH BETWEEN 24" AND 48" AND GREATER THAN 24" DEEP	6
LESS THAN 48" WIDE AND DEPTH BETWEEN 12" AND 24"	8
WIDTH 24" OR LESS AND DEPTH GREATER THAN 12"	8

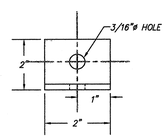
TYPICAL NON SESMIC DUCT SUPPORT TABLE (1998 CMC.) — SCALE NONE — 7

NOTES:

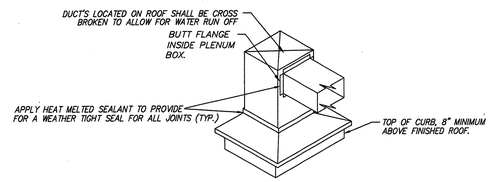
1. REFER TO 1998 C.M.C TABLE 5B AND 5C FOR MIN. METAL GAUGE REQUIREMENTS.
2. INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
3. PROVIDE RECTANGULAR TO ROUND DUCT TRANSITION WHERE REQUIRED. TRANSITION SHALL BE IN ACCORDANCE WITH SMACNA RECOMMENDATIONS.
4. SEE ARCHICTECTURAL DRAWING A9.21/10 FOR ROOF MATERIAL FLASHING REQUIREMENTS.



SECTION



ANGLE DETAIL (1)



ISOMETRIC

TYPICAL DUCT PENETRATION THRU ROOF DETAIL — SCALE NTS — 8

THOMAS BLUROCK ARCHITECTS
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Costa Mesa, CA
92627

ph: 949.646.9373
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CONSULTANTS:

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Irvine, CA 92614
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REGISTERED PROFESSIONAL ENGINEER — No. 24431 — STATE OF CALIFORNIA

LICENSED ARCHITECT — NO. C009332 — 33103 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-103279
AC FLS NL SS
DATE MAR 13 2002

SUBMITTALS

SBVC
LEARNING RESOURCE CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL DETAILS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10. 11. 2001

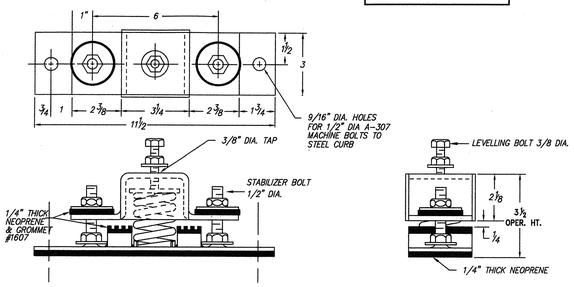
M7.01

MARK	MAKE	TYPE	SIZE

		OD	DEFL	
		2-1/2	2	

NOTES: 1) ALL DIMENSIONS IN INCHES
2) SPRING DEFLECTION = 2"

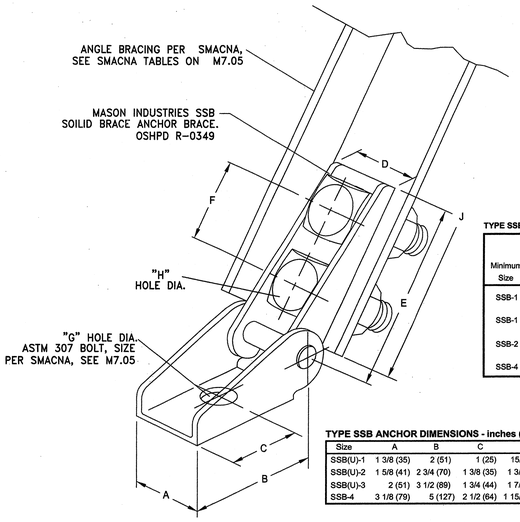
ISOLATORS SHALL BE O.S.H.P.D. PRE-APPROVED No. R-0098



MAX. ALLOW. LOADS: HORIZ. 1100 lbs. VERT. (UP) 1400 lbs.

TYPICAL ROOF CURB ISOLATOR DETAIL

SCALE NTS — 1



TYPE SSB(U) ANCHOR RATINGS

Size	OSHPD Max. Ratings lbs (kN)	Minimum Torque on Bolts ft-lbs (N-m)
SSB(U)-1	1500 (6.6)	25 (34)
SSB(U)-2	3000 (13.3)	45 (61)
SSB(U)-3	5000 (22.2)	55 (75)
SSB-4	8750 (38.9)	200 (271)

TYPE SSB ANCHOR RATINGS WITH STEEL BRACE MEMBERS

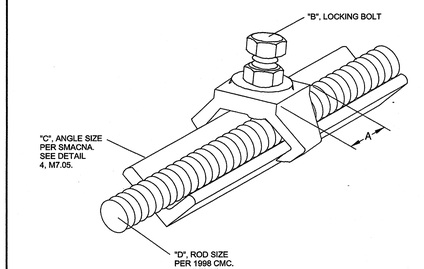
Minimum Size	OSHPD Max. Ratings lbs (kN)	Minimum Steel Angle Brace Member - in (mm) at Maximum Brace Length 5'-0" (1.5 m)	9'-6" (2.9 m)	14'-6" (4.4 m)
SSB-1	550 (2.4)	2 x 2 x 1/8 * (51x51x3)*	2 x 2 x 1/8 * (51x51x3)*	3 x 3 x 1/4 * (76x76x6)*
SSB-1	1150 (5.1)	2 x 2 x 1/8 * (51x51x3)*	2 x 2 x 1/4 * (51x51x6)*	3 x 3 x 1/4 ** (76x76x6)**
SSB-2	2875 (12.7)	2 x 2 x 1/4 ** (51x51x6)**	3 x 3 x 1/4 ** (76x76x6)**	4 x 4 x 1/4 (102x102x6)
SSB-4	8125 (36.1)	3 x 3 x 1/4 (76x76x6)	4 x 4 x 1/4 (102x102x6)	5 x 5 x 3/8 (127x127x10)

TYPE SSB ANCHOR DIMENSIONS - inches (mm)

Size	A	B	C	D	E	F	G	H	J
SSB(U)-1	1 3/8 (35)	2 (51)	1 (25)	15/16 (24)	3 3/8 (86)	1 1/2 (38)	9/16 (14)	1/2 (13)	7 (178)
SSB(U)-2	1 5/8 (41)	2 3/4 (70)	1 3/8 (35)	1 3/16 (30)	4 3/8 (111)	1 3/4 (44)	11/16 (17)	5/8 (16)	8 (203)
SSB(U)-3	2 (51)	3 1/2 (89)	1 3/4 (44)	1 7/16 (37)	4 3/4 (121)	2 (51)	13/16 (21)	3/4 (19)	9 (229)
SSB-4	3 1/8 (79)	5 (127)	2 1/2 (64)	1 15/16 (49)	5 3/4 (146)	2 1/4 (57)	1 5/16 (33)	1 (25)	———

TYPICAL MASON SSB ANCHOR BRACE DETAIL

SCALE NTS — 2



TYPE SRC WITH STEEL ANGLE ASSEMBLY RATINGS

Rod Size in (mm)	Maximum Compr. Force lbs (kN)	Steel Angle Stiffener Min. Size in (mm)	Max. Length in (mm)	Maximum SRC Spacing in (mm)
1/4 (6)	75 (0.3)	1 x 1 x 1/8 (25 x 25 x 3)	96 (2438)	14 (356)
3/8 (10)	425 (1.9)	1 x 1 x 1/8 (25 x 25 x 3)	96 (2438)	22 (559)
1/2 (13)	1275 (5.6)	1 x 1 x 1/8 (25 x 25 x 3)	96 (2438)	31 (787)
	1200 (5.3)	1 1/2 x 1 1/2 x 1/4 (38 x 38 x 6)	120 (3048)	31 (787)
5/8 (16)	1475 (6.5)	1 x 1 x 1/8 (25 x 25 x 3)	96 (2438)	39 (991)
	1325 (5.9)	1 1/2 x 1 1/2 x 1/4 (38 x 38 x 6)	120 (3048)	39 (991)
3/4 (19)	2500 (11.1)	1 1/2 x 1 1/2 x 1/4 (38 x 38 x 6)	144 (3658)	48 (1212)
7/8 (22)	4600 (20.4)	1 1/2 x 1 1/2 x 1/4 (38 x 38 x 6)	132 (3353)	56 (1422)
	4400 (19.5)	2 x 2 x 1/4 (51 x 51 x 6)	144 (3658)	56 (1422)
1 (25)	5800 (25.8)	1 1/2 x 1 1/2 x 1/4 (38 x 38 x 6)	132 (3353)	65 (1651)
	6900 (30.7)	2 x 2 x 1/4 (51 x 51 x 6)	144 (3658)	65 (1651)
1 1/8 (29)	9600 (42.7)	2 x 2 x 1/4 (51 x 51 x 6)	144 (3658)	73 (1854)
1 1/4 (32)	12000 (53.4)	2 x 2 x 1/4 (51 x 51 x 6)	144 (3658)	82 (2083)

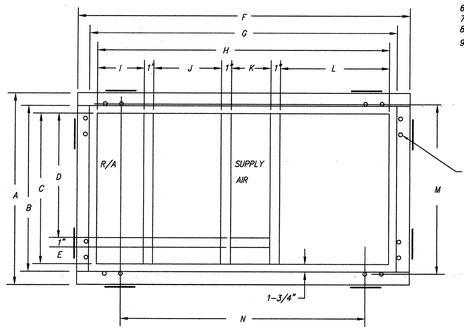
Note: Refer to Page G1 for SRC installation details.

TYPE SRC DIMENSIONS - inches (mm)

Size	A	B	C Acceptable Rod Size
SRC-1	1 3/8 (35)	1/2 x 1 3/4 Long (13 x 44 Long)	1/4 to 5/8 (6 to 16)
SRC-1 1/2	1 9/16 (40)	5/8 x 2 Long (16 x 51 Long)	1/2 to 1 (13 to 25)
SRC-2	1 3/4 (44)	5/8 x 3 Long (16 x 76 Long)	7/8 to 1 1/4 (22 to 32)

TYPICAL MASON SRC ROD CLAMP DETAIL

SCALE NTS — 3

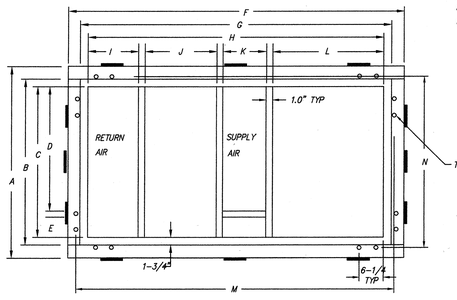


MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
TRANE	YCD	061C	113 LBS.	30-7/16	45-15/16	42-7/16	36-3/16	5-1/4	85-5/8	81-1/8	77-5/8
	YCH	061C	113 LBS.								
				I	J	K	L	M	N		
				14-3/8	18-1/4	17-1/4	24-3/4	45-5/16	65-1/8		

1) M and N DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) ——— INDICATES SEISMIC TIE-DOWN PLATE. (2) REQ'D PER LONG SIDE ONLY. FOR TIE DOWN PLATE SEE DETAIL 8 THIS SHEET.
6) FOR ISOLATOR DETAIL, SEE DETAIL 1, THIS SHEET.
7) VIC-EQ WEIGHT = 200 lbs.
8) VIC-EQ FOOTPRINT = 45-7/16" X 80-5/8"
9) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3

TYPICAL TRANE YCD/H 061 CURB DETAIL

SCALE NTS — 4

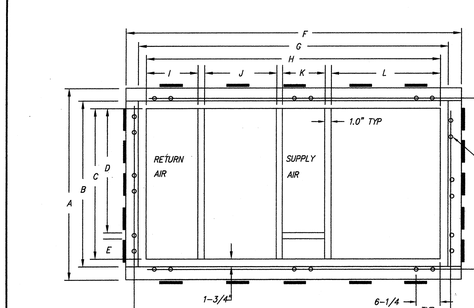


MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
TRANE	YCD	103C	1308 LBS.	63 7/16	58 15/16	55 5/16	47 1/16	7	93 5/16	88 1/16	85 5/16	19 1/8	9 7/8	24 1/2	28 5/16	89 5/16	59 5/16	

1) M and N DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION =2.0"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) ——— INDICATES SEISMIC TIE-DOWN PLATE. (3) REQUIRED PER SIDE. FOR DETAIL, FOR TIE DOWN PLATES SEE DETAIL 8, THIS SHEET.
6) FOR ISOLATOR DETAIL, SEE DETAIL 1, THIS SHEET.
7) VIC-EQ WEIGHT = 230 LBS.
8) VIC-EQ FOOTPRINT = 61-7/16" X 91-5/16".
9) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3.

TYPICAL TRANE YCD 103 CURB DETAIL

SCALE NTS — 5

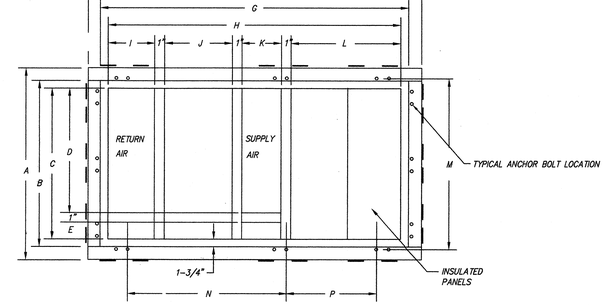


MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
TRANE	YCD	121C	1523 LBS.	71	66½	63	55½	6½	106¼	100⅜	58¼	20⅛	11⅞	28½	28⅜	102¼	71	

1) M and N DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) ——— INDICATES SEISMIC TIE-DOWN PLATE. (5) REQ'D PER SIDE ONLY. FOR DETAIL, SEE DETAIL 8 THIS SHEET.
6) FOR ISOLATOR DETAIL, SEE DETAIL 1 THIS SHEET.
7) VIC-EQ WEIGHT = 619 lbs. (w/ACOUSTIC MATERIALS BY CONTRACTOR)
8) VIC-EQ FOOTPRINT = 83" X 119 1/4"
9) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3.

TYPICAL TRANE YCD 121 CURB DETAIL

SCALE NTS — 6

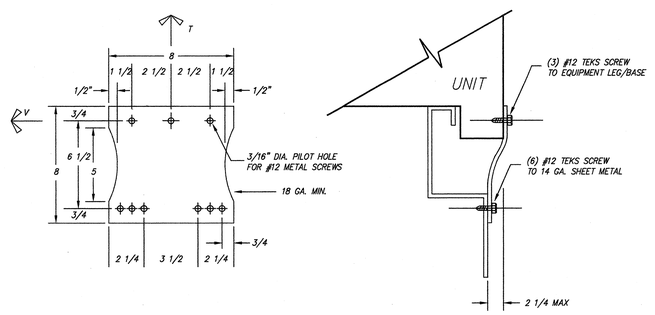


MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
TRANE	YCD	211B	2547 LBS.	85	80-1/2	77	69-1/2	6-1/2	121-1/4	116-3/4	113-1/4
				I	J	K	L	M	N	P	
				22-1/4	23-1/4	28-9/16	36-3/16	80	70-5/16	30-7/16	

1) M, N, P DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) ——— INDICATES SEISMIC TIE-DOWN PLATE. (2) REQ'D PER SIDE. FOR TIE DOWN PLATES SEE DETAIL 8, THIS SHEET.
6) FOR ISOLATOR DETAIL 1, THIS SHEET.
7) VIC-EQ WEIGHT = 380 lbs.
8) VIC-EQ FOOTPRINT = 80" X 116-1/4".
9) DUCT FLANGES ARE RECESSED 9-1/2" BELOW TOP OF CURB.
10) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3.

TYPICAL TRANE YCD 211 CURB DETAIL

SCALE NTS — 7

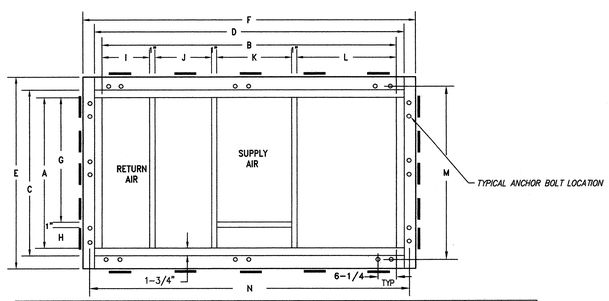


NOTE(S) 1. THE SEISMIC CAPACITY OF TIE-DOWN PLATES IS DEPENDENT ON PROPER FIELD INSTALLATION AS SHOWN ABOVE. THE ALLOWABLE LOADS SHOWN BELOW WERE CALCULATED BASED ON SHEAR (V) AND TENSION (T) ACTING SIMULTANEOUSLY.

Vallow = 400 LBS Tallow = 300 LBS

TYPICAL SEISMIC TIE DOWN PLATE

SCALE NTS — 8



MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
TRANE	YCD	301	2366 LBS.	77	113-1/4	80-1/2	116-3/4	85-1/2	121-3/4	69-1/2	6-1/2
				I	J	K	L	M	N		
				22-1/4	23-1/4	28-9/16	36-3/16	81	117-1/4		

TYPICAL TRANE YCD 301 CURB DETAIL

SCALE NTS — 9

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LICENSED ARCHITECT — STEVEN L. EHRLICH — NO. C009332 — 1-31-03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT — OFFICE OF REGULATION SERVICES — APPL 04-103279 — AC RS NL SS — DATE MAR 13 2002

SUBMITTALS

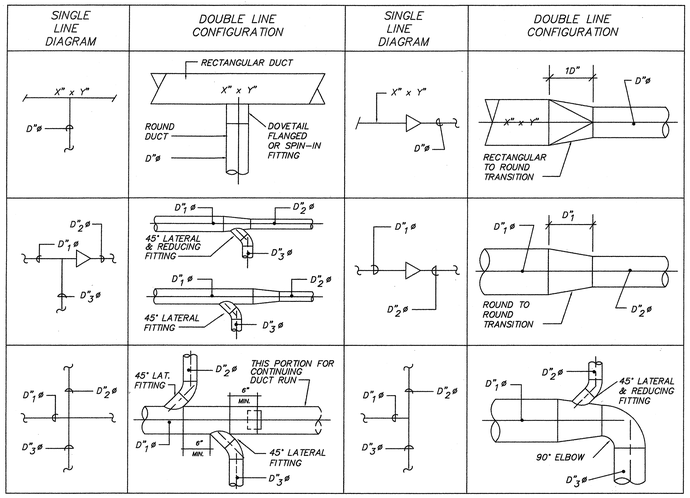
SBVC
LEARNING RESOURCE CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL DETAILS

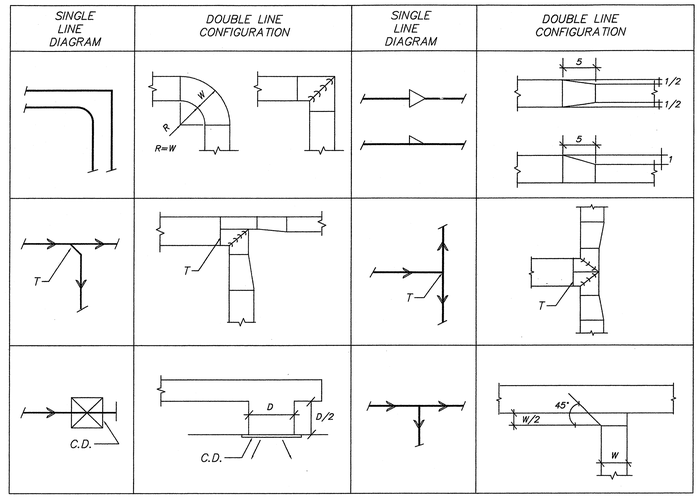
PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M7.02



ROUND LOW PRESSURE DUCT WORK

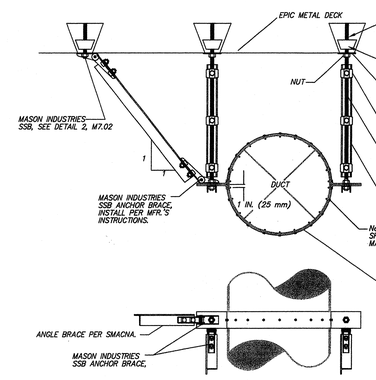
SCALE: NTS — 1



RECTANGULAR DUCT WORK

SCALE: NTS — 2

ALL–DIRECTIONAL SEISMIC SOLID BRACE GUIDELINES FOR ROUND DUCT

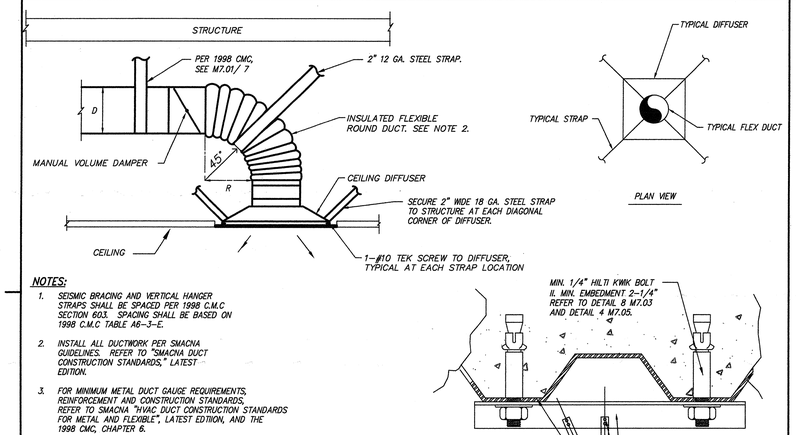


NOTE:

1. *TRANSVERSE BRACING SHALL BE SPACED AT 30 FT AND LONGITUDINAL BRACING SHALL BE AT 60 FT. A MINIMUM OF AT LEAST ONE BRACE OF EACH TYPE SHALL OCCUR PER DUCT RUN.*
2. *ALL BOLTS SHALL CONFORM TO ASTM A307.*
3. *REFER TO SMACNA SEISMIC RESTRAINT MANUAL FOR ADDITIONAL INFORMATION. CONNECTIONS AND FABRICATION REQUIREMENTS SHALL BE IN STRICT ACCORDANCE WITH SMACNA TABLES SHL A, CONNECTION LEVEL 3.*
4. *SEE DETAIL 1, M7.06 FOR SSB ANCHOR BRACE SIZING REQUIREMENTS*
5. *HANGER RODS AND SEISMIC ANGLES SHALL BE CLEANED, PAINTED AND FREE OF GREASE AND OTHER FOREIGN MATTER. COORDINATE COLOR WITH ARCHITECT.*
6. *NON–SEISMIC HANGER RODS AND BRACING SHALL ADHERE TO THE SAME AESTHETIC STANDARDS AS SEISMIC BRACING, INCLUDING BUT NOT LIMITED TO PAINTING REQUIREMENTS.*
7. *HANGER RODS AND BRACING SHALL BE SQUARE IN ALL PLANES WHEN TESTED WITH A LEVEL.*
8. *HANGER RODS, BRACING AND WEDGE NUTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ROOFING MANUFACTURERS INSTALLATION INSTRUCTIONS.*

TYPICAL EXPOSED 24"-48" DIA. ROUND DUCT HANGER DETAIL

SCALE: NTS — 3

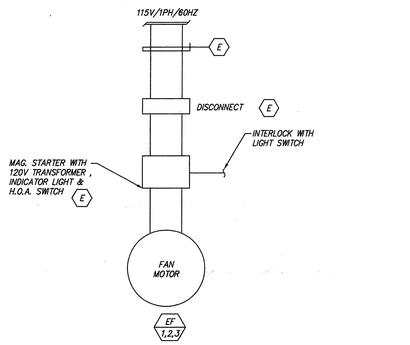


NOTES:

1. *SEISMIC BRACING AND VERTICAL HANGER STRAPS SHALL BE SPACED PER 1998 C.M.C SECTION 603. SPACING SHALL BE BASED ON 1998 C.M.C TABLE A6–3–E.*
2. *INSTALL ALL DUCTWORK PER SMACNA GUIDELINES. REFER TO "SMACNA DUCT CONSTRUCTION STANDARDS," LATEST EDITION.*
3. *FOR MINIMUM METAL DUCT GAUGE REQUIREMENTS, REINFORCEMENT AND CONSTRUCTION STANDARDS, REFER TO SMACNA "HVAC DUCT CONSTRUCTION STANDARDS FOR METAL AND FLEXIBLE", LATEST EDITION, AND THE 1998 CMC, CHAPTER 6.*
5. *SEE DETAIL 7, M7.01 FOR ADDITIONAL INFORMATION.*
6. *CONNECTION TO STRUCTURE SHOWN HERE SHALL ONLY BE USED WHERE DUCTS ARE LOCATED IN A CONCEALED SPACE. FOR EXPOSED METAL DECK/ DUCTS, SEE DETAIL 3, M7.03*

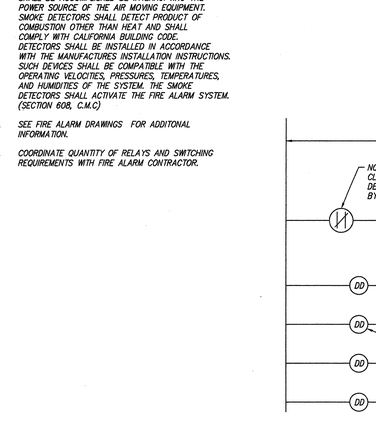
TYPICAL ROUND NECK CEILING DIFFUSER DETAIL

SCALE: NTS — 4



TYPICAL EXHAUST FAN WIRING DETAIL

SCALE: NTS — 5



TYPICAL DUCT DETECTOR DIAGRAM DETAIL

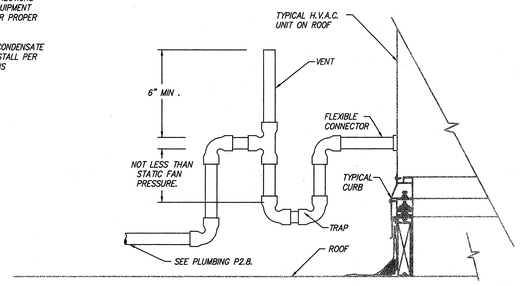
SCALE: NTS — 6

NOTES THIS DETAIL:

1. *SYSTEMS PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN THE BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BE INTERRUPTING THE POWER SOURCE OF THE AIR MOVING EQUIPMENT. SMOKE DETECTORS SHALL DETECT PRODUCT OF COMBUSTION OTHER THAN HEAT AND SHALL COMPLY WITH CALIFORNIA BUILDING CODE. DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES, AND HUMIDITIES OF THE SYSTEM. THE SMOKE DETECTORS SHALL ACTIVATE THE FIRE ALARM SYSTEM. (SECTION 608, C.M.C)*
2. *SEE FIRE ALARM DRAWINGS FOR ADDITONAL INFORMATION.*
3. *COORDINATE QUANTITY OF RELAYS AND SWITCHING REQUIREMENTS WITH FIRE ALARM CONTRACTOR.*

NOTES:

1. *ALL INTERIOR CONDENSATE DRAINS ABOVE CEILING SHALL BE INSULATED .*
2. *IF HORIZONTAL RUN IS GREATER THAN 15 FT., INSTALL UNION THE SAME SIZE AS DRAIN.*
3. *IF CONDENSATE DRAIN RUNS TO FLOOR SINK, ALLOW A MINIMUM 2" AIR GAP AT FLOOR SINK.*
4. *ALL CONDENSATE DRAIN CONNECTIONS SHALL OCCUR ABOVE ALL EQUIPMENT FRAMING & SHALL ALLOW FOR PROPER P–TRAP INSTALLATION.*
5. *VERIFY WITH MANUFACTURE CONDENSATE TRAP REQUIREMENTS AND INSTALL PER MANUFACTURES INSTALLATIONS INSTRUCTIONS.*



TYPICAL CONDENSATE DRAIN DETAIL

SCALE: NTS — 7

TENSION TEST LOAD (lb.) (1)				
"KWIK BOLT II" EXPANSION BOLTS (3) (5)				
BOLT SIZE (D)	EDGE DIST (M_{ED}) (2)	EMBEDMENT (E)	NORMAL WT. CONCRETE (2)	LIGHT WT. CONCRETE (2)
1/4"	3"	2" TO < 3 3/4"	880	1008
		≥ 3 3/4"	1000	1008
3/8"	3 3/4"	2 1/2" TO < 4 1/4"	1760	1008
		≥ 4 1/4"	1976	1008
1/2"	5 1/4"	3 1/2" TO < 6"	3200	1600
		≥ 6"	3464	1600
5/8"	6"	4" TO < 7"	4272	2640
		≥ 7"	5200	2640
3/4"	7 1/8"	4 3/4" TO < 8"	5800	3520
		≥ 8"	7400	3520
1"	9"	6" TO < 9"	8496	NOT USED
		≥ 9"	11280	NOT USED

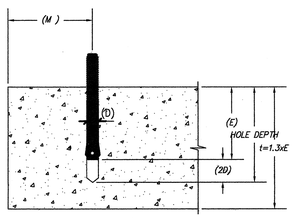
(1) *TEST VALUES ARE BASED ON 2x(80% ICBO TENSION LOAD)*

(2) *EDGE DISTANCE MAY BE REDUCED 33% TENSION LOAD TEST SHALL BE REDUCED 20% WHEN EDGE DISTANCE IS REDUCED 33% USE LINEAR INTERPOLATION FOR ACTUAL EDGE DISTANCE BETWEEN TABULATED AND MINIMUM EDGE DISTANCE.*

(3) *ANCHOR BOLTS SHALL BE ICBO # ER–4627*

(4) *SEE SPECIFICATIONS FOR TEST AND INSPECTION REQUIREMENTS.*

(5) *MAXIMUM ANCHOR EMBEDMENT FOR THIS PROJECT SHALL BE 4.00 INCHES, 2.5 INCHES AT TOP OF FLUTE.*



EXPANSION BOLT

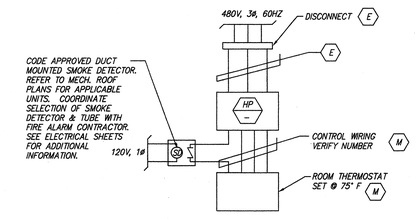
TYPICAL DRILLED IN HILTI II EXPANSION BOLTS

SCALE: NTS — 8

LEGEND

(M) *FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.*

(E) *FURNISHED AND INSTALLED BY*



TYPICAL AC UNIT WIRING DIAGRAM DETAIL

SCALE: NTS — 9

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OFFICE OF REGULATION SERVICES
APPL 04-103279
ACCEPTED RLS NLC SS
DATE MAR 13 2002

SUBMITTALS

SBVC
LEARNING RESOURCE CENTER

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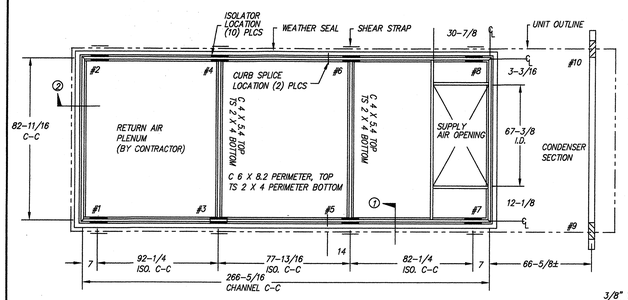
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL DETAILS

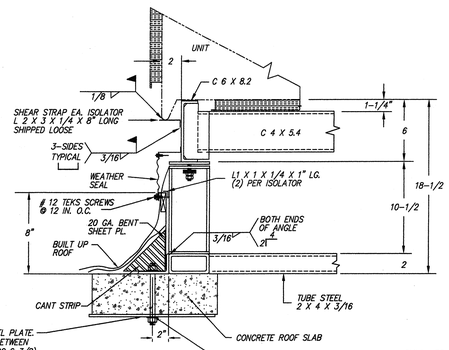
PROJECT NO.: 98-22
SCALE: NONE
DATE: 10. 11. 2001

M7.03



LAYOUT

NOTES:
1. FOR ATTACHMENT OF UNIT TO CURB, SEE DWG. (1)
2. FOR ANCHORAGE OF CURB TO STRUCTURE, SEE DWG. (1) (2)
3. FOR CONDENSER SUPPORT DETAIL, SEE DWG. (3)
4. ROOFCURBS SHIPPED IN THREE OR MORE SECTIONS WILL REQUIRE FIELD ASSEMBLY, VERIFY WITH MANUFACTURE.
5. [X] ICBO # ER-4627
6. FOR FLASHING REQUIREMENTS OF CURB SEE ARCHITECTURAL A9.21/10
7. TEST EVERY OTHER ANCHOR FOR 3200 LBS PULLOUT. TEST EVERY ANCHOR IN CASE OF ANY ONE FAILURE.

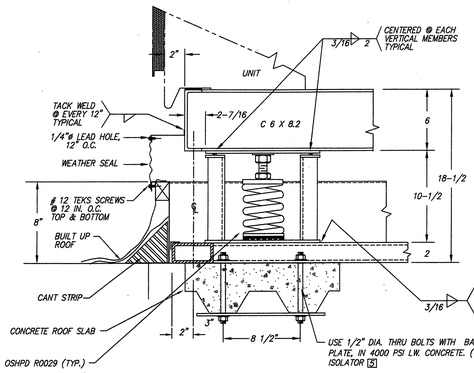


3/8" THICK STEEL PLATE. MINIMUM SPAN BETWEEN 3FLUTES. MIN. (20x6x3/8) LOCATE BOLTS IN CENTER OF PLATE. MAXIMUM OF 3 BOLTS PER PLATE. SEE DETAIL (2) FOR DIMENSIONS. BETWEEN BOLTS PROVIDE BOLT SLEEVE BETWEEN METAL DECK AND TOP OF STEEL PLATE WHERE BOLTS PENETRATE HIGH POINT OF RIDGE. FIELD SHAPE STEEL PLATE AS REQUIED IN FIELD TO ACCOMODATE ACTUAL FIELD CONDITIONS. SEE DETAIL A.

USE 1/2" DIA. THRU BOLTS WITH BACKING PLATE, THROUGH 4000 PSI LW. CONCRETE. (4) PER ISOLATOR [X]

TYPICAL SECTION – LONG SIDE @ ISOLATOR (1)

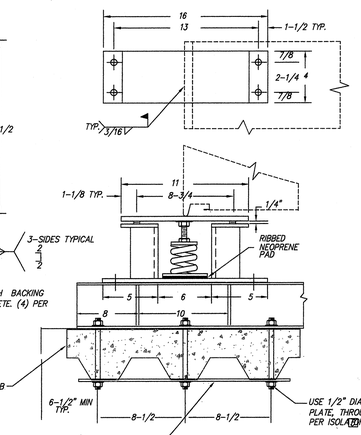
MOUNT #	SPRING	O.D.	LOAD	DEFL.
9		4.0"		2"
10				



RMLS -EQ, OSHPD RO029 (TYP.)

USE 1/2" DIA. THRU BOLTS WITH BACKING PLATE, IN 4000 PSI LW. CONCRETE. (4) PER ISOLATOR [X]

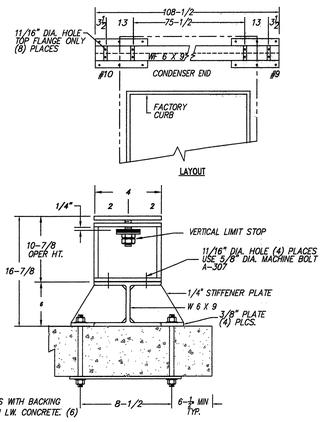
TYPICAL SECTION – SHORT SIDE @ CORNER ISOLATOR (2)

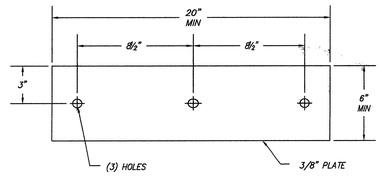


3/8" THICK STEEL PLATE. MINIMUM SPAN BETWEEN 3 FLUTES, MIN.(20x8x3/8). LOCATE BOLTS IN CENTER OF PLATE. MAXIMUM OF 3 BOLTS PER PLATE. PROVIDE BOLT SLEEVE BETWEEN METAL DECK AND TOP OF STEEL PLATE WHERE BOLTS PENETRATE HIGH POINT OF RIDGE. FIELD SHAPE STEEL PLATE AS REQUIED IN FIELD TO ACCOMODATE ACTUAL FIELD CONDITIONS. SEE DETAIL A.

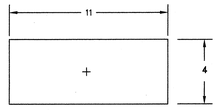
USE 1/2" DIA. THRU BOLTS WITH BACKING PLATE, THROUGH 4000 PSI LW. CONCRETE. (6) PER ISOLATOR [X]

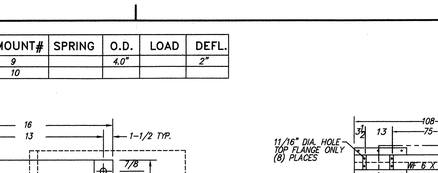
TYPICAL CONDENSER SUPPORT (3)



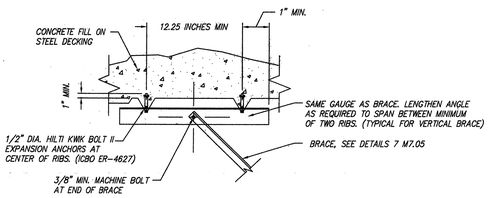


TYPICAL BACKING PLATE (A)



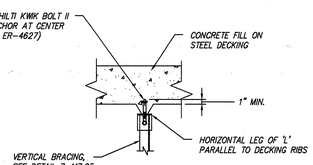


TYPICAL TRANE SFHF CURB DETAIL



DETAIL A

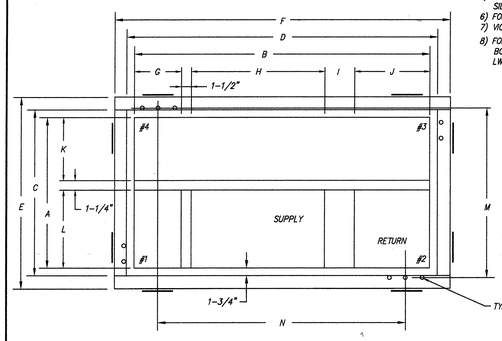
NOTES:
1. REFER TO SMACNA SEISMIC RESTRAINT MANUAL TABLE 8-1 FOR ADDITIONAL REQUIREMENTS.
2. MAX LOAD CAPACITY FOR DETAIL SHOWN IN IS 1040LBS. FOR LOADS GREATER REFER TO SMACNA SEISMIC RESTRAINT MANUAL TABLE 8-1.
3. SEE DETAIL 8, M7.03 FOR ADDITIONAL INFORMATION.



DETAIL B

TYPICAL 30x30 DUCT CONNECTIONS TO CONCRETE — SCALE NTS — 2

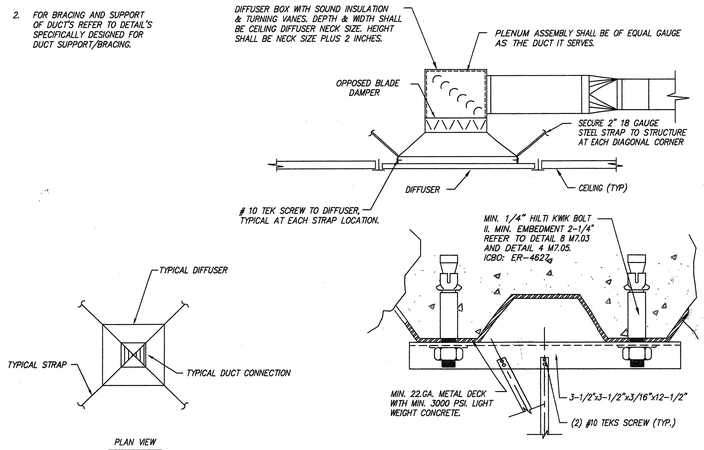
1) M and N DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) —— INDICATES SEISMIC TIE-DOWN PLATE. (2) REQ'D PER LONG SIDE ONLY. FOR TIE DOWN PLATE SEE DETAIL 8, M7.02.
6) FOR ISOLATOR DETAIL, SEE DETAIL 1, M7.02.
7) VIC-EQ WEIGHT = 176 lbs.
8) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3.



MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
TRANE	YCC	042	412 LBS.	39-1/2	58-9/16	43	62-1/16	47-1/2	66-9/16	11-11/16	19
				I	J	K	L	M	N		
				4-1/2	21-7/8	17-1/2	20-3/4	41-1/2	46-1/16		

TYPICAL TRANE YCH 042 CURB DETAIL — SCALE NTS — 3

NOTES:
1. SEE DETAIL (1) THIS SHEET FOR BRACING AND ANCHORAGE OF STRAP TO STRUCTURE.
2. FOR BRACING AND SUPPORT OF DUCT'S REFER TO DETAIL'S SPECIFICALLY DESIGNED FOR DUCT SUPPORT/BRACING.

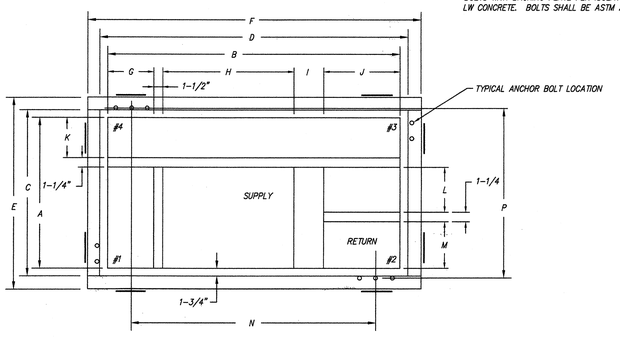


PLAN VIEW

CONECTION OF STRAP TO CONCRETE ROOF (1)

CEILING DIFFUSER PLENUM ASSEMBLY — SCALE NTS — 1

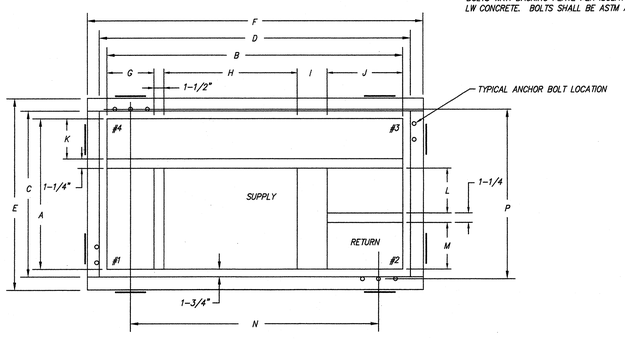
1) N and P DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) —— INDICATES SEISMIC TIE-DOWN PLATE. (2) REQ'D PER LONG SIDE ONLY. FOR TIE DOWN PLATE SEE DETAIL 8, THIS SHEET.
6) FOR ISOLATOR DETAIL, SEE DETAIL 1, M7.02.
7) VIC-EQ WEIGHT = 158 lbs.
8) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3.



MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
TRANE	YCH	036	384 LBS.	30-1/2	49-5/8	34	53-1/8	38-1/2	57-5/8	14-1/2	11-1/4
				I	J	K	L	M	N	P	
				4-1/2	8-1/4	8-1/4	8	11-1/4	37-1/8	37-1/8	

TYPICAL TRANE YCH 036 CURB DETAIL — SCALE NTS — 4

1) N and P DIMENSIONS ARE TO CENTERLINE OF ANCHOR HOLES IN IN BOTTOM CURB.
2) SPRING DEFLECTION = 2"
3) SEISMIC RESTRAINTS ARE OSHPD PRE-APPROVED R# 0098.
4) SPRING ISOLATORS ARE OSHPD PRE-APPROVED R# 0098.
5) —— INDICATES SEISMIC TIE-DOWN PLATE. (2) REQ'D PER LONG SIDE ONLY. FOR TIE DOWN PLATE SEE DETAIL 8, M7.02.
6) FOR ISOLATOR DETAIL, SEE DETAIL 1, M7.02.
7) VIC-EQ WEIGHT = 158 lbs.
8) FOR ANCHORAGE OF CURB TO STRUCTURE USE (2) 3/8" THRU BOLTS WITH BACKING PLATE PER ISOLATOR THROUGH 4000 PSI LW CONCRETE. BOLTS SHALL BE ASTM A 307. SEE M7.01, DETAIL 3.



MAKE	TYPE	SIZE	WEIGHT	A	B	C	D	E	F	G	H
TRANE	YCC	024	314 LBS.	30-1/2	49-5/8	34	53-1/8	38-1/2	57-5/8	14-1/2	11-1/4
TRANE	YCC	030	319 LBS.								
				I	J	K	L	M	N	P	
				4-1/2	8-1/4	8-1/4	8	11-1/4	37-1/8	37-1/8	

TYPICAL TRANE YCC/H 024/030 CURB DETAIL — SCALE NTS — 5

TYPICAL TRANE YCH 036 CURB DETAIL — SCALE NTS — 4

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LICENSED ARCHITECT — RICHARD H. BEVERLY — NO. C009332 — 8-31-03 RENEWAL DATE — STATE OF CALIFORNIA

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT — OFFICE OF REGULATION SERVICES — APPL 04-103279 — AC — FLS — SS — DATE MAR 13 2002

MAR 13 2002

SUBMITTALS

SBVC
LEARNING RESOURCE CENTER

SAN BERNARDINO COMMUNITY COLLEGE DISTRICT
114 SOUTH DEL ROSA AVENUE
SAN BERNARDINO, CA 92409

MECHANICAL DETAILS

PROJECT NO.: 98-22
SCALE: NONE
DATE: 10.11.2001

M7.04

DIRT/AIR SEPARATOR SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	REQUIRED CAPACITY GPM	CONNECTION SIZE (NPT)	PRESSURE DROP (PS)	OPERATING WEIGHT LBS.	NOTES
AS-NH-1	SPIROTHERM "SPIROVENT" VOT250	NORTH HALL ROOF	HOT WATER REHEAT	56	2 1/2"	0.10	80	FLANGED CONNECTIONS WITH MANUAL BLOW DOWN VALVE AND MANUFACTURER'S FLOOR STAND.

EXHAUST FAN SCHEDULE

ITEM	MANUFACTURE & MODEL NO.	LOCATION	AREA SERVED	TYPE	CFM	S.P. (IN.)	WHEEL DIA. IN.	RPM	BHP	MOTOR DATA HP	VOLT	PHASE	HZ	OPER. WT. LB.	NOTES
EF-NH-1	GREENHECK BSQ-120	FIRST FLOOR LOCKER ROOM	M/W LOCKER ROOMS	INLINE	1100	0.4	–	1197	0.17	1/4	120	1	60	100	②③ INTERLOCK WITH AC/NH-2 VIA BAS
EF-NH-2	GREENHECK GB300-20	NORTH HALL ROOF	M/W REST ROOMS	ROOF CENTRIFUGAL	5100	1.0	–	665	2.03	2.0	208	3	60	350	①② INTERLOCK WITH BAS
EF-NH-3	GREENHECK GB-081	NORTH HALL ROOF	MACHINE RMS	ROOF CENTRIFUGAL	425	1.0	–	1634	0.15	1/6	120	1	60	100	①② INTERLOCK WITH AC/NH-2 VIA BAS
EF-NH-4	GREENHECK BSQ-120	NORTH COVERED PATIO	FOOD LAB NH 125	INLINE	1150	0.5	–	1313	0.2	1/4	120	1	60	100	②③ INTERLOCK WITH AC/NH-1 VIA BAS

NOTES:

① PROVIDE PITCHED ROOF CURB.
② PROVIDE BACKDRAFT DAMPER.
③ PROVIDE SPRING HANGING ISOLATORS.

EXPANSION TANK SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	TANK VOLUME GAL.	ACCEPTANCE VOLUME GAL.	CHARGE PRESSURE (PSIG)	CONNECTION SIZE (NPT)	OPERATING WEIGHT (LBS)	NOTES
ET-NH-1	AMTROL 300-L	NORTH HALL BUILDING ROOF	HOT WATER REHEAT	80	27	12	1	250	UPRIGHT TANK WITH TOP CONNECTION AND REPLACEABLE BLADDER. 150 PSIG ASME CONSTRUCTION.

HOT WATER BOILER SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	CAPACITY (MBH) INPUT	CAPACITY (MBH) MINIMUM OUTPUT	MINIMUM EFFICIENCY %	FUEL TYPE	GAS CONNECTION SIZE (INCHES)	MIN. GPM	WATER TEMPERATURE DEG. F ENT	WATER TEMPERATURE DEG. F LVG	ELECTRICAL DATA BLOWER HP	VOLT	PH	HZ	OPER. WT. LB.	NOTES
B-NH-1	RAYPAK HI-DELTA H3-652AE	NORTH HALL ROOF	650	566	87	GAS	1 1/4	28.0	140	180	–	120	1	60	650	OUTDOOR UNIT. PROVIDE COLD START KIT, VENT CAP, COMBUSTION AIR HOOD, FLOW SWITCH AND BAS INTERFACE.
B-NH-2	RAYPAK HI-DELTA H3-652AE	NORTH HALL ROOF	650	566	87	GAS	1 1/4	28.0	140	180	–	120	1	60	650	OUTDOOR UNIT. PROVIDE COLD START KIT, VENT CAP, COMBUSTION AIR HOOD, FLOW SWITCH AND BAS INTERFACE.

PUMP SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	FLUID	TYPE	GPM	TOTAL HEAD FT. WG.	PUMP RPM	MINIMUM EFFICIENCY %	ELECTRICAL DATA BRAKE HP	MOTOR HP	VOLT	PHASE	HZ	VIBRATION ISOLATION TYPE	MINIMUM STATIC DEFL. INCHES	BASE TYPE	PUMP OPERATING WEIGHT LBS.	NOTES
HHWP-NH-1	BELL & GOSSETT SERIES 1510 1-1/2 AC	NORTH HALL ROOF	HOT WATER REHEAT	WATER	END SUCTION	56	30	1750	57.8	0.75	1.5	460	3	60	SPRING	1	–	250	BRONZE CONSTRUCTION. PROVIDE BASEPLATE, SUCTION DIFFUSER AND TRIPLE DUTY VALVE. LEAD/STANDBY OPERATION.
HHWP-NH-2	BELL & GOSSETT SERIES 1510 1-1/2 AC	NORTH HALL ROOF	HOT WATER REHEAT	WATER	END SUCTION	56	30	1750	57.8	0.75	1.5	460	3	60	SPRING	1	–	250	BRONZE CONSTRUCTION. PROVIDE BASEPLATE, SUCTION DIFFUSER AND TRIPLE DUTY VALVE. LEAD/STANDBY OPERATION.

PACKAGED AIR CONDITIONING UNIT SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	SUPPLY FAN CFM	SUPPLY FAN EXTERNAL SP. IN. WC	SUPPLY FAN RPM	SUPPLY FAN HP	COOLING COIL ENT. AIR TEMP. °F DB	ENT. AIR TEMP. °F WB	LVG. AIR TEMP. °F DB	LVG. AIR TEMP. °F WB	EER	CAPACITY (MBH) TOTAL	CAPACITY (MBH) SENSIBLE	FURNACE INPUT MBH	FURNACE OUTPUT MBH	FURNACE AFUE	ELECTRICAL MOCP	ELECTRICAL MCA	ELECTRICAL VOLT	ELECTRICAL PH	ELECTRICAL HZ	POWER EXHAUST FAN CFM	POWER EXHAUST FAN EXTERNAL SP. IN. WC	POWER EXHAUST FAN RPM	POWER EXHAUST FAN HP	FILTER TYPE	FILTER SIZE	FILTER EFF.	OPER. WT. LB.	MIN. OUTSIDE AIR CFM	NOTES
AC-NH-1	TRANE YCH600	NORTH HALL ROOF	NE PERIMETER	20,000	2.0	730	20	86.8	68.6	61.7	59.8	10.0	584.9	558.3	–	–	–	150	133.2	460	3	60	7800	0.5	1075	1.0	THROW AWAY	17/16x20x2	30	7150	7800	①②③④⑤⑥
AC-NH-2	TRANE YCH600	NORTH HALL ROOF	SW PERIMETER	19,400	2.0	720	20	90.0	68.0	63.0	58.8	10.0	593.5	593.5	–	–	–	150	133.2	460	3	60	7940	0.5	1075	1.0	THROW AWAY	17/16x20x2	30	7150	7800	①②③④⑤⑥
AC-NH-3	TRANE YCH600	NORTH HALL ROOF	NE PERIMETER	19,100	2.0	718	20	90.0	68.0	62.6	58.7	10.0	592.2	592.2	–	–	–	150	133.2	460	3	60	7800	0.5	1075	1.0	THROW AWAY	17/16x20x2	30	7150	7800	①②③④⑤⑥
AC-NH-4	TRANE YCH360	NORTH HALL ROOF	MULTI-ACTIVITY	9,250	1.5	551	7.5	89.7	66.7	58.2	54.9	10.0	334.8	317.6	–	–	–	110	92.0	460	3	60	3000	0.5	1075	1.0	THROW AWAY	16/16x20x2	30	5500	3000	②③④⑤⑥

NOTES:

① UNIT TO BE PROVIDED WITH VARIABLE FREQUENCY DRIVE WITH BY-PASS.
② UNIT TO BE PROVIDED WITH SPRING ISOLATION BASE.
③ PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER AND MODULATING POWER EXHAUST.
④ UNIT TO BE PROVIDED WITH 2-STAGE HEATING.
⑤ PROVIDE SINGLE POWER POINT FOR AC-UNIT AND POWER EXHAUST.
⑥ DUCT SMOKE DETECTOR FOR AUTOMATIC SHUT-OFF NOT REQUIRED PER EXCEPTION 1 OF C.M.C. 609, AREA SERVED BY A TOTAL COVERAGE SMOKE DETECTION SYSTEM.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

INDOOR FAN COIL UNIT ITEM	MANUFACTURER & MODEL NO.	AREA SERVED	CFM	TOTAL SP. IN. WC	ELECTRICAL DATA HP	VOLT	PH	HZ	MCA	MOCP	TOTAL CAP. MBH	MIN. SENSIBLE CAP. MBH	OPER. WT. LB.	MIN. OUTSIDE AIR CFM	OUTDOOR CONDENSER ITEM	MANUFACTURER & MODEL NO.	LOCATION	UNIT SERVED	SEER	ELECTRICAL DATA HP	VOLT	PH	HZ	MCA	MOCP	OPERATING WEIGHT LBS.	NOTES
FCU-NH-1	MITSUBISHI PKA-A24FA/L	MDF ROOM NH-115	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-1	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-1	13.5	–	208	1	60	18	30	175	①②
FCU-NH-2	MITSUBISHI PKA-A24FA/L	ELEC. ROOM NH-112	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-2	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-2	13.5	–	208	1	60	18	30	175	①②
FCU-NH-3	MITSUBISHI PKA-A24FA/L	IDF ROOM NH-216	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-3	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-3	13.5	–	208	1	60	18	30	175	①②
FCU-NH-4	MITSUBISHI PKA-A24FA/L	ELEC. ROOM NH-212	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-4	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-4	13.5	–	208	1	60	18	30	175	①②
FCU-NH-5	MITSUBISHI PKA-A24FA/L	IDF ROOM NH-314	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-5	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-5	13.5	–	208	1	60	18	30	175	①②
FCU-NH-6	MITSUBISHI PKA-A24FA/L	ELEC. ROOM NH-312	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-6	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-6	13.5	–	208	1	60	18	30	175	①②
FCU-NH-7	MITSUBISHI PKA-A24FA/L	MACHINE ROOM NH-162	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-7	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-7	13.5	–	208	1	60	18	30	175	①②

NOTES:

① PROVIDE TIME DELAY RELAY, LOW AMBIENT KIT AND MASON "SUPER WMH" ISOLATION PAD.
② UNIT COMPLETE WITH UNIT-POWERED CONDENSATE PUMP (LITTLE GIANT "VCC" OR EQUIVALENT), MOUNTING BRACKETS AND NON-PROGRAMMABLE T-STAT. PROVIDE WALLMOUNT AND LOCK BOX FOR T-STAT.

P:\San Bernardino Valley College\North Hall Repl #20-07078\Dwgs\M\20_07078-M.NH-002.dwg 08/07/08 2:52:56pm 1 hvillalobos

CLIENT:

San Bernardino Valley College

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NTD ARCHITECTURE

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ARCHITECT STAMP: AGENCY STAMP:

LICENSED ARCHITECT — CAPT. R. TYLER — No. C-17966 — EXP. 08-31-09 — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

APPL # 4-109147
FILE # 36-C2

AC _____ F/LS _____ SS _____

DATE:

REVISION HISTORY - THIS SHEET

2 ADDENDUM #2 – 08.13.08

KEY PLAN

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THIS DOCUMENT REFLECTS INFORMATION SUBMITTED BY THE CONTRACTOR, AS CERTIFIED BELOW.
FEB 02 2011
NTD ARCHITECTURE DOES NOT GUARANTEE OR CERTIFY THE ACCURACY OR COMPLETENESS OF ADDED INFORMATION.

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL SCHEDULES NORTH HALL REPLACEMENT BUILDING

2007-0275-20

SCALE NONE
DATE April 24, 2008
DRAWN --

AD3-M2

(M.NH-002)

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DIRT/AIR SEPARATOR SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	REQUIRED CAPACITY GPM	CONNECTION SIZE (NPT)	PRESSURE DROP (PSI)	OPERATING WEIGHT LBS.	NOTES
AS-NH-1	SPIROTHERM "SPIROVENT" VD7250	NORTH HALL ROOF	HOT WATER REHEAT	56	2 1/2"	0.10	80	FLANGED CONNECTIONS WITH MANUAL BLOW DOWN VALVE AND MANUFACTURER'S FLOOR STAND.

EXHAUST FAN SCHEDULE

ITEM	MANUFACTURE & MODEL NO.	LOCATION	AREA SERVED	TYPE	CFM	S.P. (IN.)	WHEEL DIA. IN.	RPM	BHP	MOTOR DATA				OPER. WT. LB.	NOTES
										HP	VOLT	PHASE	HZ		
EF-NH-1	GREENHECK BSQ-120	FIRST FLOOR LOCKER ROOM	M/W LOCKER ROOMS	INLINE	1100	0.4	–	1197	0.17	1/4	120	1	60	100	② ③ INTERLOCK WITH AC/NH-2 VIA BAS
EF-NH-2	GREENHECK GB300-20	NORTH HALL ROOF	M/W REST ROOMS	ROOF CENTRIFUGAL	5100	1.0	–	665	2.03	2.0	120	1	60	350	① ② INTERLOCK WITH BAS
EF-NH-3	GREENHECK GB-081	NORTH HALL ROOF	MACHINE RMS	ROOF CENTRIFUGAL	425	1.0	–	1634	0.15	1/6	120	1	60	100	① ② INTERLOCK WITH AC/NH-2 VIA BAS
EF-NH-4	GREENHECK BSQ-120	NORTH COVERED PATIO	FOOD LAB NH 125	INLINE	1150	0.5	–	1313	0.2	1/4	120	1	60	100	② ③ INTERLOCK WITH AC/NH-1 VIA BAS

NOTES:

① PROVIDE PITCHED ROOF CURB.
② PROVIDE BACKDRAFT DAMPER.
③ PROVIDE SPRING HANGING ISOLATORS.

EXPANSION TANK SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	TANK VOLUME GAL.	ACCEPTANCE VOLUME GAL.	CHARGE PRESSURE (PSIG)	CONNECTION SIZE (NPT)	OPERATING WEIGHT (LBS)	NOTES
ET-NH-1	AMTROL 300-LBC	NORTH HALL BUILDING ROOF	HOT WATER REHEAT	80	27	12	1	250	UPRIGHT TANK WITH TOP CONNECTION AND REPLACEABLE BLADDER. 150 PSIG ASME CONSTRUCTION.

HOT WATER BOILER SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	CAPACITY (MBH)		MINIMUM EFFICIENCY %	FUEL TYPE	GAS CONNECTION SIZE (INCHES)	MIN. GPM	WATER TEMPERATURE DEG. F		ELECTRICAL DATA					OPER. WT. LB.	NOTES
			MBH INPUT	MINIMUM MBH OUTPUT					ENT	LVG	BLOWER HP	VOLT	PH	HZ			
B-NH-1	RAYPAK HI-DELTA H3-652AE	NORTH HALL ROOF	650	566	87	GAS	1 1/4	28.0	140	180	–	120	1	60		650	OUTDOOR UNIT. PROVIDE COLD START KIT, MOUNTED CIRCULATING PUMP, VENT CAP, COMBUSTION AIR HOOD, FLOW SWITCH AND BAS INTERFACE.
B-NH-2	RAYPAK HI-DELTA H3-652AE	NORTH HALL ROOF	650	566	87	GAS	1 1/4	28.0	140	180	–	120	1	60		650	OUTDOOR UNIT. PROVIDE COLD START KIT, MOUNTED CIRCULATING PUMP, VENT CAP, COMBUSTION AIR HOOD, FLOW SWITCH AND BAS INTERFACE.

PUMP SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	FLUID	TYPE	GPM	TOTAL HEAD FT. WC.	PUMP RPM	MINIMUM EFFICIENCY %	ELECTRICAL DATA					VIBRATION ISOLATION			PUMP OPERATING WEIGHT LBS.	NOTES
										BRAKE HP	MOTOR HP	VOLT	PHASE	HZ	TYPE	MINIMUM STATIC DEFL. INCHES	BASE TYPE		
HWWP-NH-1	BELL & GOSSETT SERIES 1510 1-1/2 AC	NORTH HALL ROOF	HOT WATER REHEAT	WATER	END SUCTION	56	30	1750	57.8	0.75	1.5	460	3	60	SPRING	1	–	250	BRONZE CONSTRUCTION. PROVIDE BASEPLATE, SUCTION DIFFUSER AND TRIPLE DUTY VALVE. LEAD/STANDBY OPERATION.
HWWP-NH-2	BELL & GOSSETT SERIES 1510 1-1/2 AC	NORTH HALL ROOF	HOT WATER REHEAT	WATER	END SUCTION	56	30	1750	57.8	0.75	1.5	460	3	60	SPRING	1	–	250	BRONZE CONSTRUCTION. PROVIDE BASEPLATE, SUCTION DIFFUSER AND TRIPLE DUTY VALVE. LEAD/STANDBY OPERATION.

PACKAGED AIR CONDITIONING UNIT SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	SUPPLY FAN				COOLING COIL						FURNACE			ELECTRICAL					POWER EXHAUST FAN				FILTER			OPER. WT. LB.	MIN. OUTSIDE AIR CFM	NOTES
				CFM	EXTERNAL SP. IN. WC	RPM	HP	ENT. AIR TEMP. °F		LVG. AIR TEMP. °F		EER	CAPACITY (MBH)	INPUT MBH	OUTPUT MBH	AFUE	MOCP	MCA	VOLT	PH	HZ	CFM	EXTERNAL SP. IN. WC	RPM	HP	TYPE	SIZE	EFF.			
								DB	WB	DB	WB		TOTAL / SENSIBLE																		
AC-NH-1	TRANE YCH600	NORTH HALL ROOF	NE PERIMETER	20,000	2.0	730	20	86.8	68.6	61.7	59.8	10.0	584.9 / 558.3	–	–	–	–	133.2	460	3	60	7800	0.5	1075	1.0	THROW AWAY	17/16x20x2	30	7150	7800	① ② ③ ⑥
AC-NH-2	TRANE YCH600	NORTH HALL ROOF	SW PERIMETER	19,400	2.0	720	20	90.0	68.0	63.0	58.8	10.0	593.5 / 593.5	–	–	–	–	133.2	460	3	60	7940	0.5	1075	1.0	THROW AWAY	17/16x20x2	30	7150	7800	① ② ③ ⑥
AC-NH-3	TRANE YCH600	NORTH HALL ROOF	NE PERIMETER	19,100	2.0	718	20	90.0	68.0	62.6	58.7	10.0	592.2 / 592.2	–	–	–	–	133.2	460	3	60	7800	0.5	1075	1.0	THROW AWAY	17/16x20x2	30	7150	7800	① ② ③ ⑥
AC-NH-4	TRANE YCH360	NORTH HALL ROOF	MULTI-ACTIVITY	9,250	1.5	551	7.5	89.7	66.7	58.2	54.9	10.0	334.8 / 317.6	–	–	–	–	92.0	460	3	60	3000	0.5	1075	1.0	THROW AWAY	16/16x20x2	30	5500	3000	② ③ ④ ⑤ ⑥

NOTES:

① UNIT TO BE PROVIDED WITH VARIABLE FREQUENCY DRIVE WITH BY-PASS.
② UNIT TO BE PROVIDED WITH SPRING ISOLATION BASE.
③ PROVIDE MODULATING POWER EXHAUST.
④ UNIT TO BE PROVIDED WITH 2-STAGE HEATING.
⑤ PROVIDE SINGLE POWER POINT FOR AC-UNIT AND POWER EXHAUST.
⑥ DUCT SMOKE DETECTOR FOR AUTOMATIC SHUT-OFF NOT REQUIRED PER EXCEPTION 1 OF C.M.C. 609, AREA SERVED BY A TOTAL COVERAGE SMOKE DETECTION SYSTEM.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

INDOOR FAN COIL UNIT													OUTDOOR CONDENSER										OPERATING WEIGHT LBS.	NOTES
ITEM	MANUFACTURER & MODEL NO.	AREA SERVED	CFM	TOTAL SP. IN. WC	ELECTRICAL DATA						TOTAL CAP. MBH.	MIN. SENSIBLE CAP. MBH	OPER. WT. LB.	MIN. OUTSIDE AIR CFM	ITEM	MANUFACTURER & MODEL NO.	LOCATION	UNIT SERVED	SEER	ELECTRICAL DATA								
					HP	VOLT	PH	HZ	MCA	MOCP										HP	VOLT	PH	HZ	MCA	MOCP		
FCU-NH-1	MITSUBISHI PKA-A24FA/L	MDF ROOM NH-115	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-1	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-1	13.5	–	208	1	60	18	30	175	① ②
FCU-NH-2	MITSUBISHI PKA-A24FA/L	ELEC. ROOM NH-112	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-2	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-2	13.5	–	208	1	60	18	30	175	① ②
FCU-NH-3	MITSUBISHI PKA-A24FA/L	IDF ROOM NH-216	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-3	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-3	13.5	–	208	1	60	18	30	175	① ②
FCU-NH-4	MITSUBISHI PKA-A24FA/L	ELEC. ROOM NH-212	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-4	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-4	13.5	–	208	1	60	18	30	175	① ②
FCU-NH-5	MITSUBISHI PKA-A24FA/L	IDF ROOM NH-314	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-5	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-5	13.5	–	208	1	60	18	30	175	① ②
FCU-NH-6	MITSUBISHI PKA-A24FA/L	ELEC. ROOM NH-313	530	–	–	208	1	60	1	15	24.0	16.8	53	–	CU-NH-6	MITSUBISHI PUY-A24NHA	NORTH HALL ROOF	FCU-NH-6	13.5	–	208	1	60	18	30	175	① ②

NOTES:

① PROVIDE TIME DELAY RELAY, LOW AMBIENT KIT AND MASON "SUPER WMH" ISOLATION PAD.
② UNIT COMPLETE WITH UNIT-POWERED CONDESATE PUMP (LITTLE GIANT "VCC" OR EQUIVALENT), MOUNTING BRACKETS AND NON-PROGRAMMABLE T-STAT. PROVIDE WALLMOUNT AND LOCK BOX FOR T-STAT.

P:\San Bernardino Valley College\North Hall Rep\ #20-07078\Dwgs\VA 20_07078-M.NH-002.dwg 04/14/08 5:39:35pm 1 Adloz

CLIENT:

San Bernardino Valley College

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO - CALIFORNIA

ARCHITECT:

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955 Overland Court, Suite 100
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REGISTERED PROFESSIONAL ENGINEER — MARC N. ANDERSON — No. 30522 — EXP. 6-30-08 — MECHANICAL — STATE OF CALIFORNIA

DCGA ENGINEERS
Consulting Mechanical and Electrical Engineers
531 N. Euclid Avenue
Ontario, Ca. 91762
Ph.909.983.8822
Fax 909.988.2220

ARCHITECT STAMP: AGENCY STAMP:

LICENSED ARCHITECT — DAN R. LOADSMAN — No. C12955 — RENEWAL 11-30-09 — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL # 4-109147
FILE # 36-C2
AC ✓ F/LS ✓ SS
DATE: APR 2 4 2008

REVISION HISTORY - THIS SHEET

KEY PLAN

RECORD DRAWING
THIS DOCUMENT REFLECTS THE CONTRACTOR'S INTERPRETATION OF CHANGES AS CERTIFIED BELOW.
FEB 02 2011
NTD ARCHITECTURE DOES NOT GUARANTEE OR CERTIFY THE ACCURACY OR COMPLETENESS OF AGENCY INFORMATION.

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL SCHEDULES NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE NONE
DATE April 24, 2008
DRAWN --

M.NH-002

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DCGA #20-07078

TERMINAL UNIT SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	AREA SERVED	SYSTEM SERVED	INLET SIZE (IN.)	CFM MAXIMUM	CFM MINIMUM	MAXIMUM PRESSURE DROP IN. WC	ELECTRICAL VOLT/PHASE	HEATING COIL TOTAL HEATING MBH	HEATING COIL WATER TEMP.(°F) ENT.	HEATING COIL AIR TEMP. (°F) ENT.	HEATING COIL AIR TEMP. (°F) LVG.	HEATING COIL GPM	HEATING COIL MAX. WATER PRES.DROP (FT. WC)	HEATING COIL NO. OF ROWS	OPERATING WEIGHT LB	NOTES
VAV-NH-101	PRICE SDV	FOOD LAB NH-125 TO 127	AC/NH-1	16ø	2400	1150	0.20	120/1ø	31.2	180	55	95	2.60	1.40	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE. 2
VAV-NH-102	PRICE SDV	CLASSROOM 2 NH-128	AC/NH-1	14ø	1600	480	0.15	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-103	PRICE SDV	FIT STUDIO NH-133	AC/NH-1	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-104	PRICE SDV	FIT STUDIO NH-134	AC/NH-1	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-105	PRICE SDV	MUSIC PRCT. NH-130 TO 132	AC/NH-1	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-311	PRICE SDV	SM. PRCT. NH-135 TO 137	AC/NH-1	9ø	700	210	0.11	120/1ø	9.1	180	55	95	0.60	0.04	1	55	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-107	PRICE SDV	CORRIDOR NH-101	AC/NH-1	14ø	1100	1100	0.16	120/1ø	47.7	180	55	95	1.80	0.50	2	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-108	PRICE SDV	LECTURE NH-117	AC/NH-2	24x16	2980	1000	0.13	120/1ø	42.2	180	55	93.9	2.20	1.40	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE. 2
VAV-NH-109	PRICE SDV	OFFICE NH-118 TO 119	AC/NH-2	8ø	725	180	0.21	120/1ø	7.8	180	55	95	0.60	0.30	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-110	PRICE SDV	ROOM NH-113,116	AC/NH-2	9ø	425	425	0.10	120/1ø	18.4	180	55	95	0.60	0.10	2	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-111	PRICE SDV	STORAGE NH-165 TO 166	AC/NH-2	12ø	750	750	0.15	120/1ø	32.5	180	55	95	1.20	0.40	2	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-112	PRICE SDV	OFFICE NH-142 & 143	AC/NH-3	7ø	450	135	0.19	120/1ø	10.3	180	55	95	0.52	0.09	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-113	PRICE SDV	ROOM NH-138 & NH-141	AC/NH-3	6ø	350	110	0.21	120/1ø	4.8	180	55	95	0.40	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-114	PRICE SDV	ROOM NH-139 TO 140	AC/NH-3	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-115	PRICE SDV	LAB NH-150	AC/NH-3	10ø	990	300	0.19	120/1ø	13.0	180	55	95	1.60	0.26	1	55	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-116	PRICE SDV	CLASSROOM 6 NH-151	AC/NH-3	12ø	1200	360	0.16	120/1ø	15.0	180	55	93.3	1.00	0.15	1	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-117	PRICE SDV	CLASSROOM 5 NH-152	AC/NH-3	12ø	1200	360	0.17	120/1ø	22.5	180	55	95	1.13	0.17	1	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-118	PRICE SDV	CLASSROOM 4 NH-153	AC/NH-3	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE.
CV-NH-119	PRICE SDV	CLASSROOM 4 NH-153	AC/NH-3	14ø	1000	1000	0.13	120/1ø	37.9	180	55	90	1.10	0.21	2	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-120	PRICE SDV	MDF ROOM NH-115	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER.
CV-NH-121	PRICE SDV	ELECTRICAL ROOM NH-112	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER. 2
CV-NH-122	PRICE SDV	MACHINE ROOM NH-162	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER.
VAV-NH-201	PRICE SDV	LAB 2 NH-218	AC/NH-1	16ø	2400	720	0.20	120/1ø	–	180	55	80.5	0.60	0.08	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-202	PRICE SDV	ROOM NH-219 TO 220	AC/NH-1	8ø	500	150	0.12	120/1ø	6.5	180	55	95	0.40	0.12	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-203	PRICE SDV	LAB 1 NH-221	AC/NH-1	16ø	2000	600	0.15	120/1ø	27.1	180	55	96.6	1.90	0.73	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-204	PRICE SDV	COMPUTER LAB NH-222	AC/NH-1	16ø	2000	600	0.15	120/1ø	27.1	180	55	96.6	1.90	0.73	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-205	PRICE SDV	CLASSROOM 1 NH-217	AC/NH-2	12ø	1200	360	0.16	120/1ø	15.0	180	55	93.3	1.00	0.15	1	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-206	PRICE SDV	PIANO LAB NH-216	AC/NH-2	16ø	2000	600	0.15	120/1ø	27.1	180	55	96.6	1.90	0.73	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-207	PRICE SDV	CLASSROOM 3 NH-215	AC/NH-2	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-208	PRICE SDV	CORRIDOR NH-201	AC/NH-2	12ø	800	800	0.17	120/1ø	34.7	180	55	95	1.30	0.50	2	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-209	PRICE SDV	DEANS OFFICE NH-225	AC/NH-3	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-210	PRICE SDV	OFFICE NH-223 TO 224	AC/NH-3	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-211	PRICE SDV	OFFICE NH-250	AC/NH-3	10ø	990	290	0.19	120/1ø	11.0	180	55	89.8	0.80	0.06	1	55	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-212	PRICE SDV	CLASSROOM 10 NH-251	AC/NH-3	12ø	1200	360	0.16	120/1ø	15.0	180	55	93.3	1.00	0.15	1	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-213	PRICE SDV	CLASSROOM 8 NH-252	AC/NH-3	14ø	1590	475	0.13	120/1ø	20.6	180	55	95	1.20	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-214	PRICE SDV	CLASSROOM 7 NH-253	AC/NH-3	16ø	1980	590	0.14	120/1ø	25.6	180	55	95	1.50	0.50	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE.
CV-NH-215	PRICE SDV	ROOM 204,206,209,210,214	AC/NH-3	14ø	1125	1125	0.16	120/1ø	48.8	180	55	95	1.80	0.55	2	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE. 2
CV-NH-216	PRICE SDV	IDF ROOM NH-213	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER.
CV-NH-217	PRICE SDV	ELECTRICAL ROOM NH-212	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER.
VAV-NH-301	PRICE SDV	CLASSROOM 17 NH-340	AC/NH-1	16ø	2000	600	0.15	120/1ø	26.0	180	55	95	1.60	0.52	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-302	PRICE SDV	CLASSROOM 16 NH-341	AC/NH-1	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-303	PRICE SDV	CLASSROOM 15 NH-342	AC/NH-1	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-304	PRICE SDV	CLASSROOM 14 NH-343	AC/NH-1	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-305	PRICE SDV	CORRIDOR NH-301	AC/NH-1	12ø	950	950	0.22	120/1ø	41.2	180	55	95	1.80	0.90	2	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-306	PRICE SDV	CLASSROOM 13 NH-336	AC/NH-2	12ø	1200	360	0.16	120/1ø	15.6	180	55	95	1.30	0.22	1	60	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-307	PRICE SDV	ANTH NH-337 TO 338	AC/NH-2	5ø	200	110	0.05	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-308	PRICE SDV	OFFICE NH-323,324,334,335	AC/NH-2	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-309	PRICE SDV	OFFICE NH-325,326,332,333	AC/NH-2	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-310	PRICE SDV	OFFICE NH-327-29, 330-331	AC/NH-2	8ø	500	150	0.12	120/1ø	6.5	180	55	95	0.40	0.12	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-311	PRICE SDV	OFFICE NH-320 TO 322	AC/NH-2	9ø	700	210	0.11	120/1ø	9.1	180	55	95	0.60	0.04	1	55	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-312	PRICE SDV	OFFICE NH-318 TO 319	AC/NH-2	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-313	PRICE SDV	OFFICE NH-315 TO 317	AC/NH-2	6ø	325	150	0.18	120/1ø	6.5	180	55	95	0.70	0.30	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-314	PRICE SDV	DEANS OFFICE NH-347	AC/NH-3	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-315	PRICE SDV	OFFICE NH-348	AC/NH-3	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-316	PRICE SDV	OFFICE NH-344 TO 346	AC/NH-3	10ø	950	300	0.18	120/1ø	13.0	180	55	95	1.60	0.30	1	55	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-317	PRICE SDV	OFFICE NH-350	AC/NH-3	10ø	990	300	0.19	120/1ø	13.0	180	55	95	1.60	0.30	1	55	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR. 2
VAV-NH-318	PRICE SDV	CLASSROOM 11 NH-351	AC/NH-3	14ø	1590	475	0.13	120/1ø	20.6	180	55	95	1.20	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE.
VAV-NH-319	PRICE SDV	CLASSROOM 9 NH-352	AC/NH-3	14ø	1590	475	0.13	120/1ø	20.6	180	55	95	1.20	0.30	1	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE.
VAV-NH-320	PRICE SDV	CLASSROOM 12 NH-353	AC/NH-3	16ø	1980	590	0.14	120/1ø	25.6	180	55	95	1.50	0.50	1	90	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR, PROVIDE 3-WAY VALVE. 2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
CV-NH-322	PRICE SDV	ROOM 304,306,309,310	AC/NH-4	14ø	1000	1000	0.13	120/1ø	37.9	180	55	90	1.10	0.20	2	75	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-323	PRICE SDV	IDF NH-314	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER. 2
CV-NH-324	PRICE SDV	ELECTRICAL ROOM NH-313	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPENDENT WITH 1-INCH THICK LINER.

AIR DISTRIBUTION SCHEDULE

SYM.	CFM	MAX. P.D. INCHES	MAX. NC	NECK SIZE	MANUF/MODEL	REMARKS
CD-1	50-200	0.10	30	6"	"PRICE" #SPD#	SQUARE PLAQUE DIFFUSER, STEEL CONSTRUCTION, WHITE POWDER COAT FINISH.
	201-350	0.10	30	8"		
	351-500	0.10	30	10"		
	501-700	0.10	30	12"		
	701-900	0.10	30	14"		
	901-1,000	0.10	30	15"		
CD-2	50-150	0.10	30	6"x6"	PRICE "520"	DOUBLE DEFLECTION DIFFUSER. STEEL CONSTRUCTION, WHITE POWDER COAT FINISH. PROVIDE BLADE ORIENTATION 'S' WITH SURFACE MOUNT FRAME.
	151-200	0.10	30	8"x6"		
	201-550	0.10	30	14"x10"		
	551-800	0.10	30	16"x14"		
	801-1200	0.10	30	18"x18"		
CD-3	50-150	0.10	30	6"	PRICE "RCD"	ROUND CONE DIFFUSER. STEEL CONSTRUCTION, WHITE POWDER COAT FINISH.
	151-250	0.10	30	8"		
	251-375	0.10	30	10"		
	376-550	0.10	30	12"		
	551-800	0.10	30	14"		
	801-1000	0.10	30	18"		
LS-1	–	0.06	30	–	PRICE "JSP"	24" SLOT LINEAR SUPPLY (1) 1" SLOT @ 6" LONG, PROVIDE LINED PLENUM WITH 12" INLET AND REMOTE-OPERATED DAMPER. CONCEALED FRAME. COLOR TO BE SELECTED BY ARCHITECT.
LR-1	–	0.06	30	–	PRICE "JSP"	24" SLOT LINEAR RETURN (1) 1" SLOT @ 6" LONG, PROVIDE LINED PLENUM WITH 12" INLET AND REMOTE-OPERATED DAMPER. CONCEALED FRAME. COLOR TO BE SELECTED BY ARCHITECT.
RG-1/ EG-1/ WG-1	50-125	0.10	30	6"x6"	"PRICE" #530	LOUVERED FACE, 3/4" BLADE SPACING, STEEL CONSTRUCTION, WHITE POWDER COAT FINISH.
	126-250	0.10	30	8"x8"		
	251-375	0.10	30	10"x10"		
	376-550	0.10	30	12"x12"		
	551-700	0.10	30	14"x14"		
	701-950	0.10	30	16"x16"		
	951-1400	0.10	30	18"x18"		
	1401-1750	0.10	30	20"x20"		

NOTE:
- CEILING DIFFUSER THROWS SHALL BE 4-WAY UNLESS OTHERWISE NOTED.
- PROVIDE REMOTE CABLE OPERATED DAMPER ("ROTOTWIST" OR APPROVED EQUIVALENT) AT HARD CEILINGS.
- ALL AIR DISTRIBUTION DEVICES TO HAVE CONCEALED MOUNTING OPTION.
- PROVIDE FILLER PANEL FOR AIR DISTRIBUTION INSTALLED IN LAY-IN CEILINGS.
- ALL AIR DISTRIBUTION TO PERFORM AT NC-30 OR LOWER SOUND LEVELS.
- * FOR 2-WAY PATTERN, INSTALL QUADRANT BLANKS.

P:\San Bernadino Valley College\North Hall Repl #20-07078\Dwgs\A\20_07078-M_NH-003.dwg 08/07/08 2:53:02pm 1 hvillalobos

CLIENT:

San Bernardino Valley College

701 SOUTH MOUNT VERNON AVE.
SAN BERNARDINO - CALIFORNIA

ARCHITECT:

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San Dimas, California 91773
909/450.2180
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DCGA ENGINEERS
Consulting Mechanical and Electrical Engineers
4750 E. Ontario Mills Pkwy
Ontario, Ca. 91764
Ph.909.987.0017
Fax.909.980.7023

ARCHITECT STAMP:

AGENCY STAMP:

LICENSED ARCHITECT JAY R. TITCOMB No. C12358 STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL # 4-109147
FILE # 36-C2
AC _____ F/LS _____ SS _____
DATE:

REVISION HISTORY - THIS SHEET

2 ADDENDUM #2 - 08.13.08

KEY PLAN

RECORD DRAWING
INFORMATION AS RECEIVED FROM THE CONTRACTOR, AS NOTED BELOW.
FEB 02 2011
NTD ARCHITECTURE DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR CERTIFY THE ACCURACY OF COMPLETENESS

SAN BERNARDINO CAMPUS PROJECT:

MECHANICAL SCHEDULES
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE NONE
DATE April 24, 2008
DRAWN --

AD3-M3

M.NH-003

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DCGA #20-07078

TERMINAL UNIT SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	AREA SERVED	SYSTEM SERVED	INLET SIZE (IN.)	CFM MAXIMUM	CFM MINIMUM	MINIMUM PRESSURE DROP IN. WC	ELECTRICAL VOLT/PHASE	HEATING COIL TOTAL HEATING MBH	HEATING COIL WATER TEMP.(°F) ENT.	HEATING COIL AIR TEMP. (°F) ENT.	HEATING COIL AIR TEMP. (°F) LVG.	HEATING COIL GPM	HEATING COIL MAX. WATER PRES.DROP (FT. WC)	HEATING COIL NO. OF ROWS	OPERATING WEIGHT LB	NOTES
VAV-NH-101	PRICE SDV	FOOD LAB NH-125 TO 127	AC/NH-1	16ø	2400	1150	0.20	120/1ø	31.2	180	55	95	2.60	1.40	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-102	PRICE SDV	CLASSROOM 2 NH-128	AC/NH-1	14ø	1600	480	0.15	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-103	PRICE SDV	FIT STUDIO NH-133	AC/NH-1	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-104	PRICE SDV	FIT STUDIO NH-134	AC/NH-1	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-105	PRICE SDV	MUSIC PRCT. NH-130 TO 132	AC/NH-1	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-311	PRICE SDV	SM. PRCT. NH-135 TO 137	AC/NH-1	9ø	700	210	0.11	120/1ø	9.1	180	55	95	0.60	0.04	1	55	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-107	PRICE SDV	CORRIDOR NH-101	AC/NH-1	14ø	1100	1100	0.16	120/1ø	47.7	180	55	95	1.80	0.50	2	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-108	PRICE SDV	LECTURE NH-117	AC/NH-2	24x16	2980	1000	0.13	120/1ø	42.2	180	55	93.9	2.20	1.40	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-109	PRICE SDV	OFFICE NH-118 TO 119	AC/NH-2	8ø	725	180	0.21	120/1ø	7.8	180	55	95	0.60	0.30	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-110	PRICE SDV	ROOM NH-113,116	AC/NH-2	9ø	425	425	0.10	120/1ø	18.4	180	55	95	0.60	0.10	2	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-111	PRICE SDV	STORAGE NH-165 TO 166	AC/NH-2	12ø	750	750	0.15	120/1ø	32.5	180	55	95	1.20	0.40	2	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-112	PRICE SDV	OFFICE NH-142 & 143	AC/NH-3	7ø	450	135	0.19	120/1ø	10.3	180	55	95	0.52	0.09	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-113	PRICE SDV	ROOM NH-138 & NH-141	AC/NH-3	6ø	350	110	0.21	120/1ø	4.8	180	55	95	0.40	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-114	PRICE SDV	ROOM NH-139 TO 140	AC/NH-3	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-115	PRICE SDV	LAB NH-150	AC/NH-3	10ø	990	300	0.19	120/1ø	13.0	180	55	95	1.60	0.26	1	55	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-116	PRICE SDV	CLASSROOM 6 NH-151	AC/NH-3	12ø	1200	360	0.16	120/1ø	15.0	180	55	93.3	1.00	0.15	1	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-117	PRICE SDV	CLASSROOM 5 NH-152	AC/NH-3	12ø	1200	360	0.17	120/1ø	22.5	180	55	95	1.13	0.17	1	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-118	PRICE SDV	CLASSROOM 4 NH-153	AC/NH-3	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR. PROVIDE 3-WAY VALVE.
CV-NH-119	PRICE SDV	CLASSROOM 4 NH-153	AC/NH-3	14ø	1000	1000	0.13	120/1ø	37.9	180	55	90	1.10	0.21	2	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-120	PRICE SDV	MDF ROOM NH-115	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER.
CV-NH-121	PRICE SDV	ELECTRICAL ROOM NH-112	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER.
VAV-NH-201	PRICE SDV	LAB 2 NH-218	AC/NH-1	16ø	2400	720	0.20	120/1ø	–	180	55	80.5	0.60	0.08	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-202	PRICE SDV	ROOM NH-219 TO 220	AC/NH-1	8ø	500	150	0.12	120/1ø	6.5	180	55	95	0.40	0.12	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-203	PRICE SDV	LAB 1 NH-221	AC/NH-1	16ø	2000	600	0.15	120/1ø	27.1	180	55	96.6	1.90	0.73	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-204	PRICE SDV	COMPUTER LAB NH-222	AC/NH-1	16ø	2000	600	0.15	120/1ø	27.1	180	55	96.6	1.90	0.73	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-205	PRICE SDV	CLASSROOM 1 NH-217	AC/NH-2	12ø	1200	360	0.16	120/1ø	15.0	180	55	93.3	1.00	0.15	1	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-206	PRICE SDV	PIANO LAB NH-216	AC/NH-2	16ø	2000	600	0.15	120/1ø	27.1	180	55	96.6	1.90	0.73	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-207	PRICE SDV	CLASSROOM 3 NH-215	AC/NH-2	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-208	PRICE SDV	CORRIDOR NH-201	AC/NH-2	12ø	800	800	0.17	120/1ø	34.7	180	55	95	1.30	0.50	2	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-209	PRICE SDV	DEANS OFFICE NH-225	AC/NH-3	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-210	PRICE SDV	OFFICE NH-223 TO 224	AC/NH-3	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-211	PRICE SDV	OFFICE NH-250	AC/NH-3	10ø	990	290	0.19	120/1ø	11.0	180	55	89.8	0.80	0.06	1	55	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-212	PRICE SDV	CLASSROOM 10 NH-251	AC/NH-3	12ø	1200	360	0.16	120/1ø	15.0	180	55	93.3	1.00	0.15	1	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-213	PRICE SDV	CLASSROOM 8 NH-252	AC/NH-3	14ø	1590	475	0.13	120/1ø	20.6	180	55	95	1.20	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-214	PRICE SDV	CLASSROOM 7 NH-253	AC/NH-3	16ø	1980	590	0.14	120/1ø	25.6	180	55	95	1.50	0.50	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR. PROVIDE 3-WAY VALVE.
CV-NH-215	PRICE SDV	ROOM 204,206,209,210,214	AC/NH-3	14ø	1125	1125	0.16	120/1ø	48.8	180	55	95	1.80	0.55	2	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-216	PRICE SDV	IDF ROOM NH-213	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER.
CV-NH-217	PRICE SDV	ELECTRICAL ROOM NH-212	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER.
VAV-NH-301	PRICE SDV	CLASSROOM 17 NH-340	AC/NH-1	16ø	2000	600	0.15	120/1ø	26.0	180	55	95	1.60	0.52	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-302	PRICE SDV	CLASSROOM 16 NH-341	AC/NH-1	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-303	PRICE SDV	CLASSROOM 15 NH-342	AC/NH-1	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-304	PRICE SDV	CLASSROOM 14 NH-343	AC/NH-1	14ø	1600	480	0.14	120/1ø	20.8	180	55	95	1.30	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-305	PRICE SDV	CORRIDOR NH-301	AC/NH-1	12ø	950	950	0.22	120/1ø	41.2	180	55	95	1.80	0.90	2	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-306	PRICE SDV	CLASSROOM 13 NH-336	AC/NH-2	12ø	1200	360	0.16	120/1ø	15.6	180	55	95	1.30	0.22	1	60	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-307	PRICE SDV	ANTH NH-337 TO 338	AC/NH-2	5ø	200	110	0.05	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-308	PRICE SDV	OFFICE NH-323,324,334,335	AC/NH-2	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-309	PRICE SDV	OFFICE NH-325,326,332,333	AC/NH-2	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-310	PRICE SDV	OFFICE NH-327-29, 330-331	AC/NH-2	8ø	500	150	0.12	120/1ø	6.5	180	55	95	0.40	0.12	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-311	PRICE SDV	OFFICE NH-320 TO 322	AC/NH-2	9ø	700	210	0.11	120/1ø	9.1	180	55	95	0.60	0.04	1	55	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-312	PRICE SDV	OFFICE NH-318 TO 319	AC/NH-2	7ø	400	130	0.11	120/1ø	5.6	180	55	95	0.30	0.07	1	45	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-313	PRICE SDV	OFFICE NH-315 TO 317	AC/NH-2	6ø	325	150	0.18	120/1ø	6.5	180	55	95	0.70	0.30	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-314	PRICE SDV	DEANS OFFICE NH-347	AC/NH-3	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-315	PRICE SDV	OFFICE NH-348	AC/NH-3	6ø	300	110	0.15	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-316	PRICE SDV	OFFICE NH-344 TO 346	AC/NH-3	10ø	950	300	0.18	120/1ø	13.0	180	55	95	1.60	0.30	1	55	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-317	PRICE SDV	OFFICE NH-350	AC/NH-3	10ø	990	300	0.19	120/1ø	13.0	180	55	95	1.60	0.30	1	55	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-318	PRICE SDV	CLASSROOM 11 NH-351	AC/NH-3	14ø	1590	475	0.13	120/1ø	20.6	180	55	95	1.20	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-319	PRICE SDV	CLASSROOM 9 NH-352	AC/NH-3	14ø	1590	475	0.13	120/1ø	20.6	180	55	95	1.20	0.30	1	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
VAV-NH-320	PRICE SDV	CLASSROOM 12 NH-353	AC/NH-3	16ø	1980	590	0.14	120/1ø	25.6	180	55	95	1.50	0.50	1	90	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR. PROVIDE 3-WAY VALVE.
VAV-NH-321	PRICE SDV	CONTROL ROOM NH-363	AC/NH-4	5ø	250	110	0.06	120/1ø	4.8	180	55	95	0.30	0.06	1	40	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-322	PRICE SDV	ROOM 304,306,309,310	AC/NH-4	14ø	1000	1000	0.13	120/1ø	37.9	180	55	90	1.10	0.20	2	75	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER PROVIDE MANUFACTURER'S 3-FOOT LONG ATTENUATOR AND COIL ACCESS DOOR.
CV-NH-323	PRICE SDV	IDF NH-314	AC/NH-2	7ø	450	450	0.05	120/1ø	–	180	55	–	–	–	–	14	PRESSURE INDEPEDENT WITH 1-INCH THICK LINER.

AIR DISTRIBUTION SCHEDULE

SYM.	CFM	MAX. P.D. INCHES	MAX. NC	NECK SIZE	MANUF./MODEL	REMARKS
CD-1	50-200	0.10	30	6"	"PRICE" ßSPD*	SQUARE PLAQUE DIFFUSER, STEEL CONSTRUCTION, WHITE POWDER COAT FINISH.
	201-350	0.10	30	8"		
	351-500	0.10	30	10"		
	501-700	0.10	30	12"		
	701-900	0.10	30	14"		
	901-1,000	0.10	30	15"		
CD-2	50-150	0.10	30	6"x6"	PRICE "520"	DOUBLE DEFLECTION DIFFUSER, STEEL CONSTRUCTION, WHITE POWDER COAT FINISH. PROVIDE BLADE ORIENTATION "S" WITH SURFACE MOUNT FRAME.
	151-200	0.10	30	8"x6"		
	201-550	0.10	30	14"x10"		
	551-800	0.10	30	16"x14"		
	801-1200	0.10	30	18"x18"		
CD-3	50-150	0.10	30	6"	PRICE "RCD"	ROUND CONE DIFFUSER, STEEL CONSTRUCTION, WHITE POWDER COAT FINISH.
	151-250	0.10	30	8"		
	251-375	0.10	30	10"		
	376-550	0.10	30	12"		
	551-800	0.10	30	14"		
	801-1000	0.10	30	16"		
LS-1	–	0.06	30	–	PRICE "JSP"	JET SLOT LINEAR SUPPLY. (1) 1 SLOT @ 8Ø LONG, PROVIDE LINED PLENUM WITH 1/2" INLET AND REMOTE OPERATED DAMPER. CONCEALED FRAME. COLOR TO BE SELECTED BY ARCHITECT.
LR-1	–	0.06	30	–	PRICE "JSP"	JET SLOT LINEAR RETURN. (1) 1 SLOT @ 8Ø LONG, PROVIDE LINED PLENUM WITH 1/2" INLET AND REMOTE OPERATED DAMPER. CONCEALED FRAME. COLOR TO BE SELECTED BY ARCHITECT.
RG-1/ EG-1/ SG-1/	50-125	0.10	30	6"x6"	"PRICE" ß530	LOUVERED FACE, 3/4" BLADE SPACING, STEEL CONSTRUCTION, WHITE POWDER COAT FINISH.
	126-250	0.10	30	8"x8"		
	251-375	0.10	30	10"x10"		
	376-550	0.10	30	12"x12"		
	551-700	0.10	30	14"x14"		
	701-950	0.10	30	16"x16"		
	951-1400	0.10	30	18"x18"		
	1401-1750	0.10	30	20"x20"		

NOTE:
- CEILING DIFFUSER THROWS SHALL BE 4-WAY UNLESS OTHERWISE NOTED.
- PROVIDE REMOTE CABLE OPERATED DAMPER ("ROTOTWIST" OR APPROVED EQUIVALENT) AT HARD CEILINGS.
- ALL AIR DISTRIBUTION DEVICES TO HAVE CONCEALED MOUNTING OPTION.
- PROVIDE FILLER PANEL FOR AIR DISTRIBUTION INSTALLED IN LAY-IN CEILINGS.
- ALL AIR DISTRIBUTION TO PERFORM AT NC-30 OR LOWER SOUND LEVELS.
- FOR 2-WAY PATTERN, INSTALL QUADRANT BLANKS.

P:\San Bernadino Valley College\North Hall Repl #20-07078\Dwgs\M\20_07078-MNH-003.dwg 04/14/08 5:40:03pm 1 4dsz

CLIENT:

San Bernardino Valley College

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Fax 909.988.2220

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LICENSED ARCHITECT — No. C12955 — REN. 11-30-09 — STATE OF CALIFORNIA

IDENTIFICATION STAMP
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OFFICE OF REGULATION SERVICES
APPL # 4-109147
FILE # 36-C2
AC F/LS SS
DATE: APR 2 4 2008

REVISION HISTORY - THIS SHEET

KEY PLAN

RECEIVED DRAWING — FEB 12 2011 — DSA — THIS REVIEW IS ONLY FOR THE ITEMS CHECKED BY THE CONTRACTOR, INFORMATION SUBMITTED AND NOTED BELOW. — NO COMMENTS

NTD ARCHITECTURE DISCLOSES NOT GUARANTEE OR CERTIFY THE ACCURACY OF THIS DOCUMENT INFORMATION. CHANGES MADE BY OTHERS

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL SCHEDULES
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE NONE
DATE April 24, 2008
DRAWN --

M.NH-003

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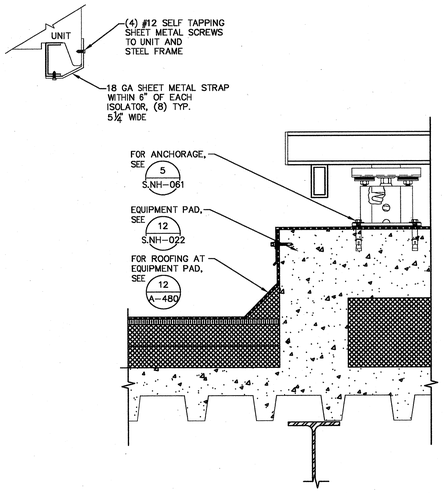
DCGA #20-07078



1 A/C UNIT MOUNTING DETAIL

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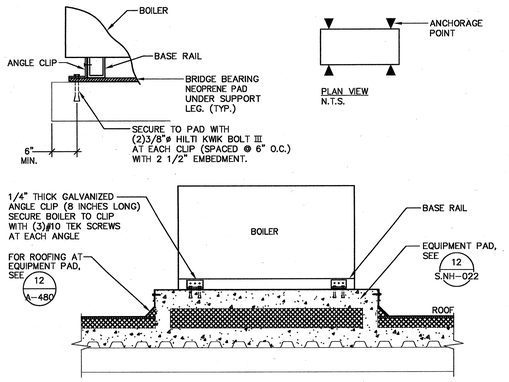

2 BOILER MOUNTING DETAIL

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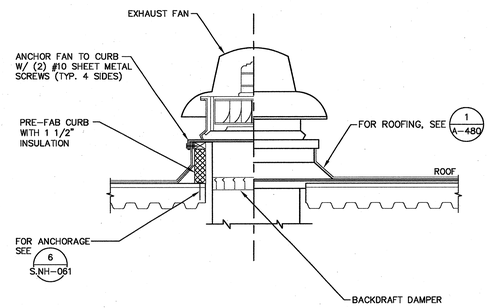

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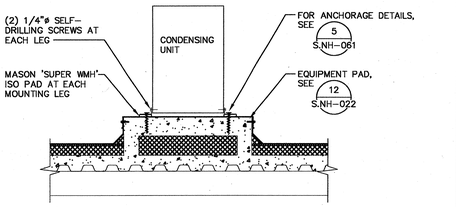

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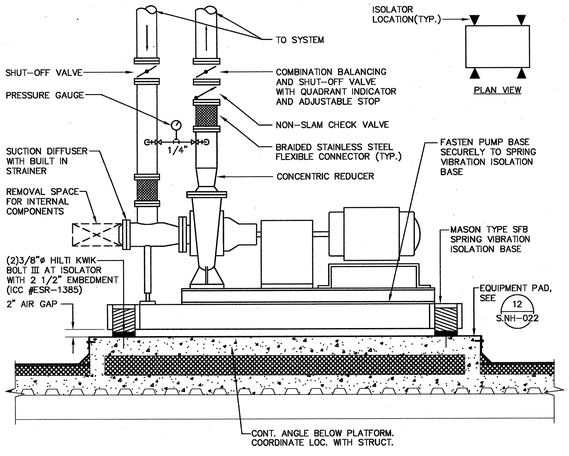

5 PUMP MOUNTING DETAIL

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SCALE: NTS

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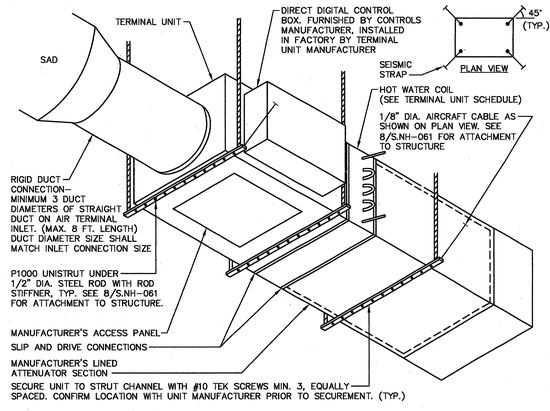
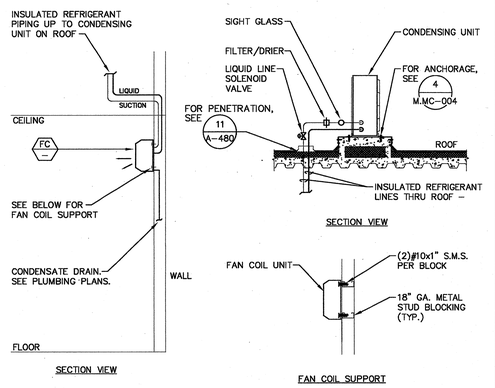


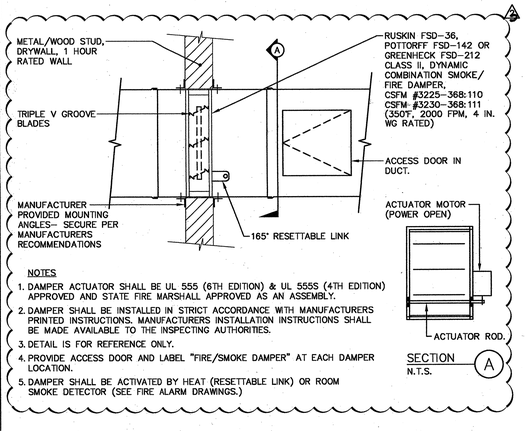
7 VAV BOX INSTALLATION DETAIL

SCALE: NTS



8 SPLIT SYSTEM DETAIL

SCALE: NTS



9 COMBINATION FIRE/SMOKE DAMPER DETAIL

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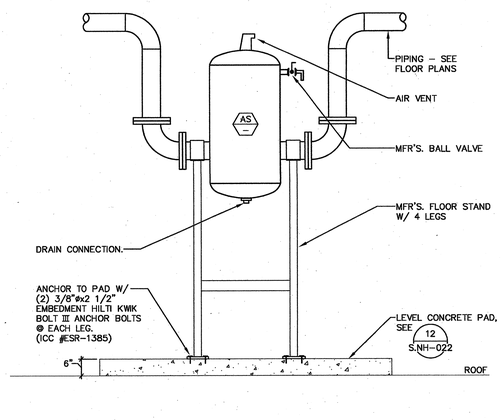

10 AIR SEPARATOR MOUNTING DETAIL

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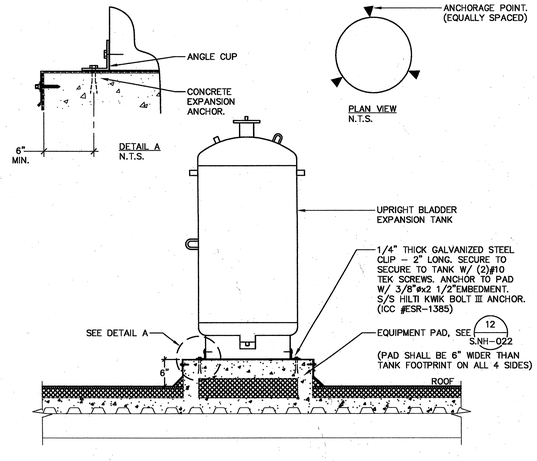

11 EXPANSION TANK MOUNTING DETAIL

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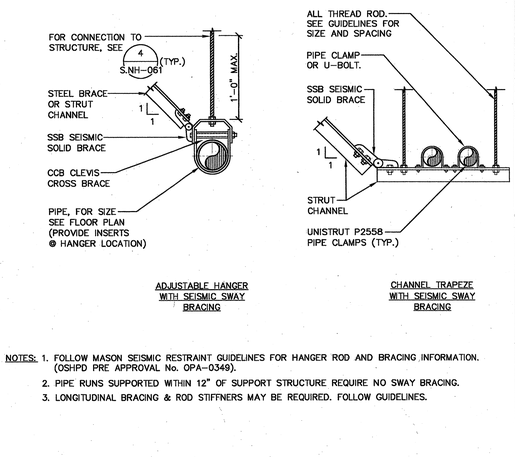

NOTES: 1. FOLLOW MASON SEISMIC RESTRAINT GUIDELINES FOR HANGER ROD AND BRACING INFORMATION. (OSHPD PRE APPROVAL No. OPA-0349).
2. PIPE RUNS SUPPORTED WITHIN 12" OF SUPPORT STRUCTURE REQUIRE NO SWAY BRACING.
3. LONGITUDINAL BRACING & ROD STIFFNERS MAY BE REQUIRED. FOLLOW GUIDELINES.

12 CONCEALED PIPE HANGER DETAIL

SCALE: NTS

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Fax 909.980.7023

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LICENSED ARCHITECT — JAY R. TITTLE — No. C12485 — 12-31-09 — STATE OF CALIFORNIA

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DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL # 4-109147
FILE # 36-C2
AC _____ F/LS _____ SS _____
DATE:

REVISION HISTORY - THIS SHEET

2 ADDENDUM #2 - 08.13.08

KEY PLAN

RECORD DRAWING
THIS DOCUMENT REFLECTS INFORMATION RECEIVED FROM THE CONTRACTOR.
FEB 02 2011

SAN BERNARDINO CAMPUS PROJECTS

MECHANICAL DETAILS
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

AD3-MA

M.NH-004

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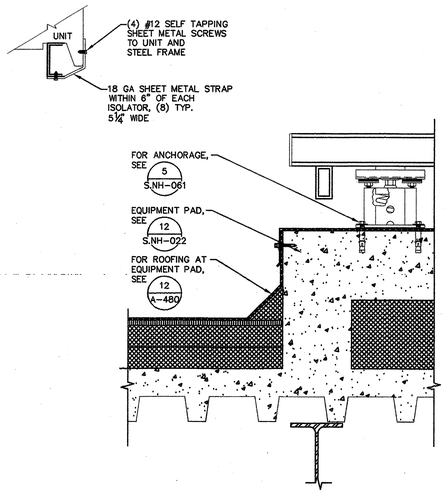

1 A/C UNIT MOUNTING DETAIL

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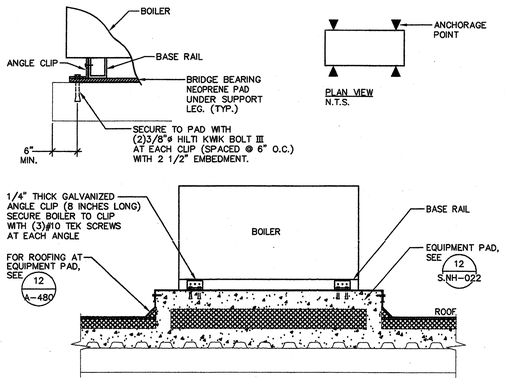

2 BOILER MOUNTING DETAIL

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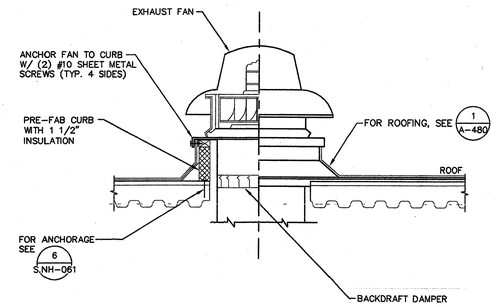

3 EXHAUST FAN MOUNTING DETAIL

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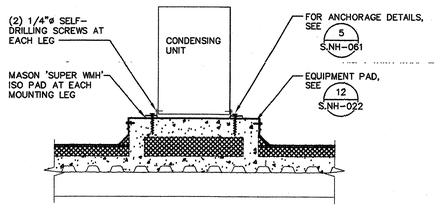

4 CONDENSING UNIT MOUNTING DETAIL

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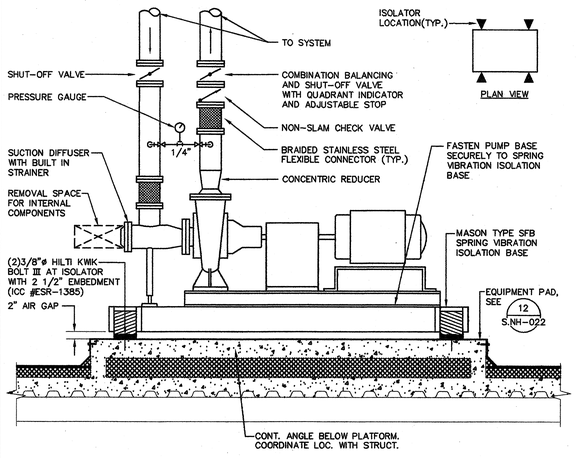

5 PUMP MOUNTING DETAIL

SCALE: NTS

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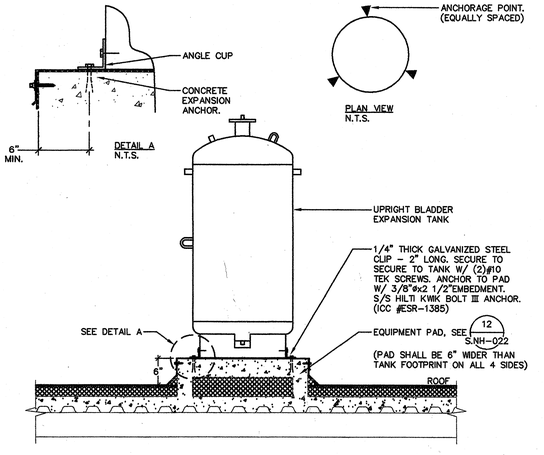

7 VAV BOX INSTALLATION DETAIL

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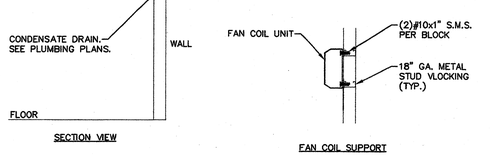

8 SPLIT SYSTEM DETAIL

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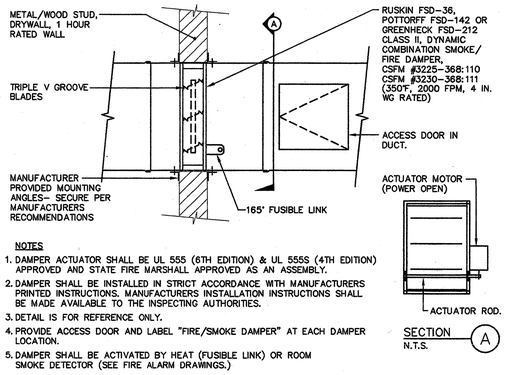
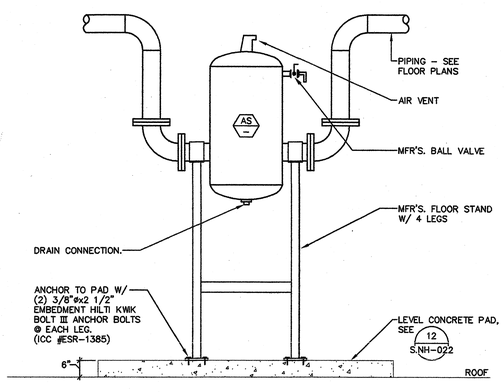


9 COMBINATION FIRE/SMOKE DAMPER DETAIL

SCALE: NTS

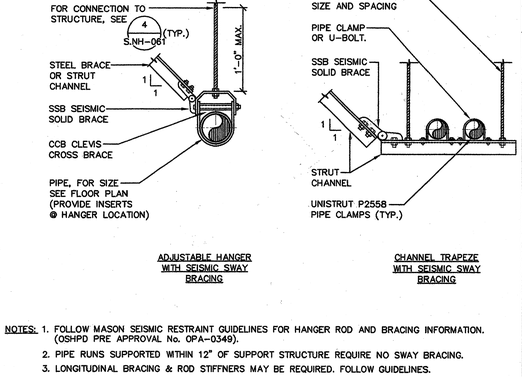


10 AIR SEPARATOR MOUNTING DETAIL

SCALE: NTS

11 EXPANSION TANK MOUNTING DETAIL

SCALE: NTS



NOTES: 1. FOLLOW MASON SEISMIC RESTRAINT GUIDELINES FOR HANGER ROD AND BRACING INFORMATION. (OSHPD PRE APPROVAL No. OPA-0349).
2. PIPE RUNS SUPPORTED WITHIN 12" OF SUPPORT STRUCTURE REQUIRE NO SWAY BRACING.
3. LONGITUDINAL BRACING & ROD STIFFNERS MAY BE REQUIRED. FOLLOW GUIDELINES.

12 CONCEALED PIPE HANGER DETAIL

SCALE: NTS

CLIENT:

San Bernardino Valley College

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SAN BERNARDINO - CALIFORNIA

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FILE # 36-C2
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DATE: APR 2 4 2008

REVISION HISTORY - THIS SHEET

KEY PLAN

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL DETAILS NORTH HALL REPLACEMENT BUILDING

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DSA REVIEW DOES NOT RELIEVE CONTRACTOR OF THE RESPONSIBILITY TO FULFILL CONTRACT DOCUMENT REQUIREMENTS
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	2007-0275-20
SCALE	AS NOTED
DATE	April 24, 2008
DRAWN	--

M.NH-004

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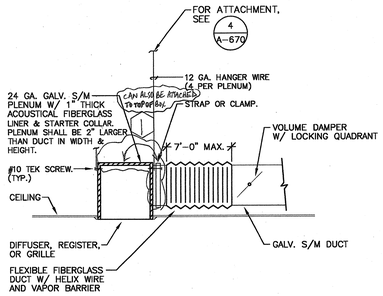

1 REGISTER BOX DETAIL

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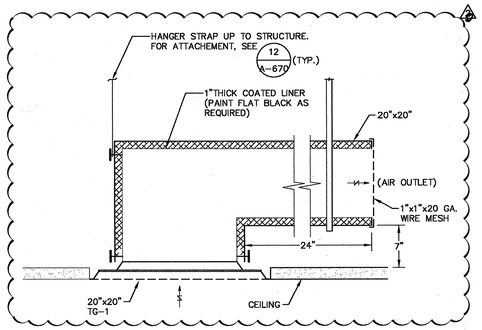
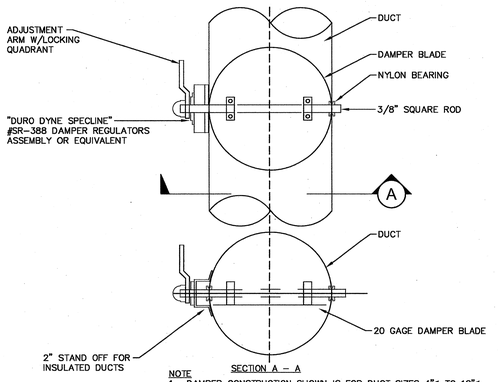


NOTES:
1. POSITION BOOT SO THAT AIR OUTLET IS NOT OBSTRUCTED OR DOES NOT FACE CEILING FRAMING.
2. SECURE BOOT TO CEILING FRAMING WITH 1-1/2"x1-1/2"x20GA. ANGLE - 2 PIECES MIN.
3. FIELD VERIFY EXACT GRILLE LOCATION. BOOT SHALL NOT BE VISIBLE FROM COMMON AREA(S).

2 RETURN/TRANSFER DUCT DETAIL

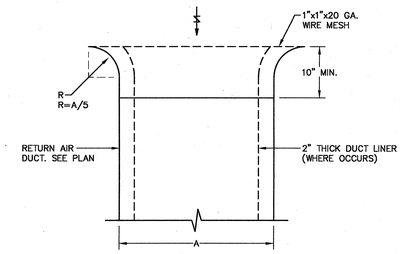
SCALE: NTS



NOTE
1. DAMPER CONSTRUCTION SHOWN IS FOR DUCT SIZES 4"ø TO 18"ø.
2. FOR 20"ø DUCT AND ABOVE, PROVIDE DURO DYNE "SPECLINE" CLOSED END BEARING MODEL #SB-338 OR EQUIVALENT.

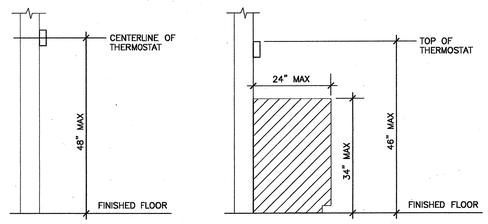
3 ROUND VOLUME DAMPER DETAIL

SCALE: NTS



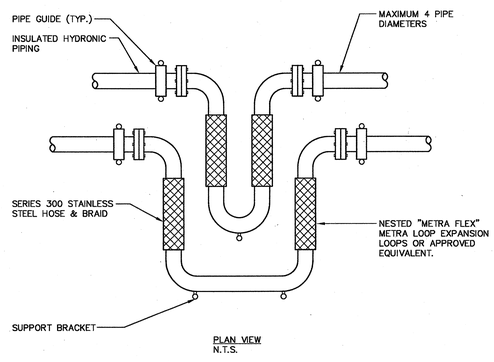
4 BELLMOUTH INTAKE DETAIL

SCALE: NTS



5 THERMOSTAT MOUNTING DETAIL

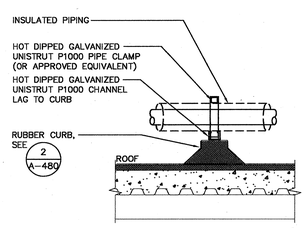
SCALE: NTS



PLAN VIEW
N.T.S.

6 PIPE EXPANSION LOOP DETAIL

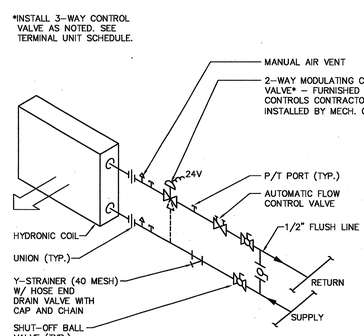
SCALE: NTS



NOTES:
- ALL PIPES SHALL BE ROUTED PARALLEL TOGETHER AND SUPPORTED ON A COMMON CURB
- SUPPORT @ 10'-0" O.C. INTERVALS

7 PIPING ON ROOF DETAIL

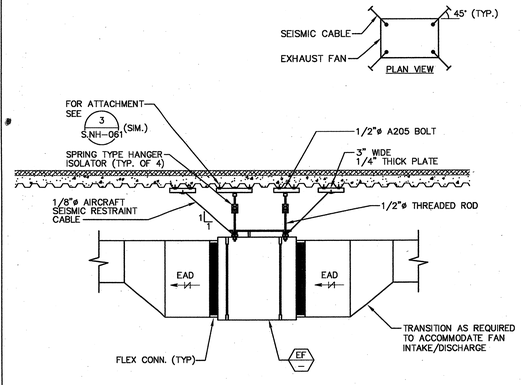
SCALE: NTS



NOTE:
"GRISWOLD" OR "FLOW DESIGN" PIPING KIT MAY BE SUBMITTED IN LIEU OF INDIVIDUAL COMPONENTS.

8 TERMINAL UNIT/REHEAT COIL PIPING DIAGRAM

SCALE: NTS



9 INLINE EXHAUST FAN DETAIL

SCALE: NTS

NOT USED

10 -

SCALE: NTS

NOT USED

11 -

SCALE: NTS

NOT USED

12 -

SCALE: NTS

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CLIENT:

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701 SOUTH MOUNT VERNON AVE.
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FILE # 36-C2
AC ____ F/LS ____ SS ____
DATE:

REVISION HISTORY - THIS SHEET
- ADDENDUM #3 - 08.13.08
- 1 RFI #390

KEY PLAN

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL DETAILS
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

AD3-M5

(M.NH-005)

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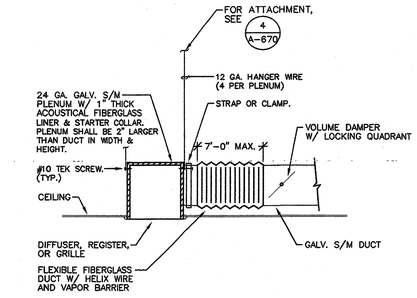
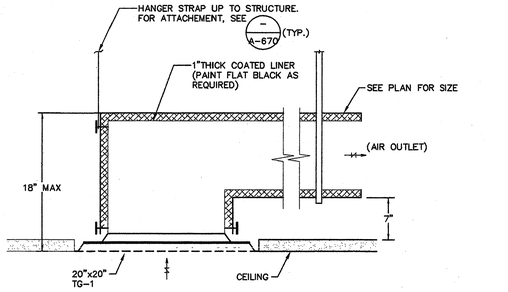


1 REGISTER BOX DETAIL

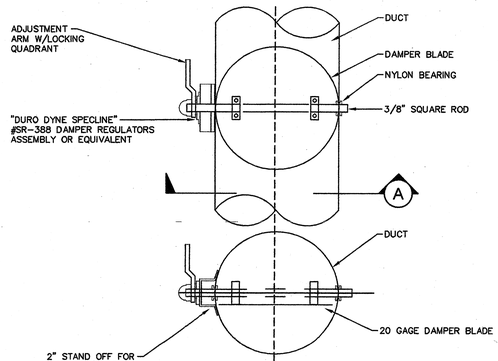
SCALE: NTS



NOTES:
1. POSITION BOOT SO THAT AIR OUTLET IS NOT OBSTRUCTED OR DOES NOT FACE CEILING FRAMING.
2. SECURE BOOT TO CEILING FRAMING WITH 1-1/2"x1-1/2"x200A. ANGLE – 2 PIECES MIN.
3. FIELD VERIFY EXACT GRILLE LOCATION. BOOT SHALL NOT BE VISIBLE FROM COMMON AREA(S).

2 RETURN/TRANSFER DUCT DETAIL

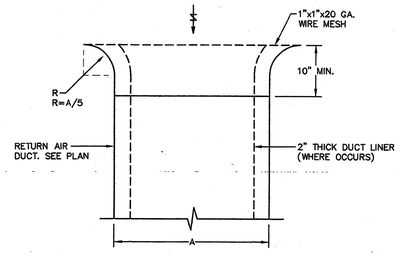
SCALE: NTS



NOTE
1. DAMPER CONSTRUCTION SHOWN IS FOR DUCT SIZES 4"ø TO 18"ø.
2. FOR 20"ø DUCT AND ABOVE, PROVIDE DURO DYNE "SPECLINE" CLOSED END BEARING MODEL #SB-338 OR EQUIVALENT.

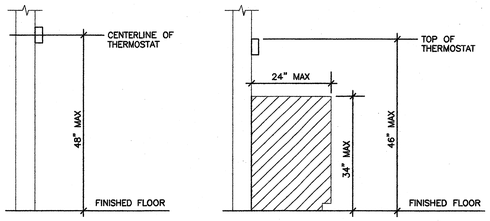
3 ROUND VOLUME DAMPER DETAIL

SCALE: NTS



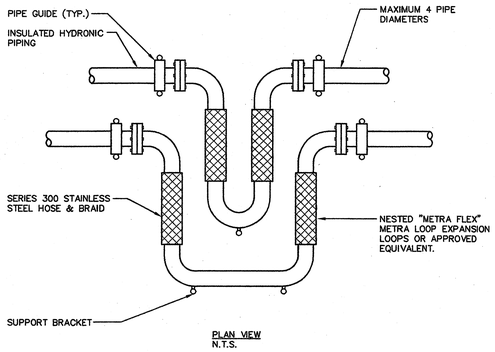
4 BELLMOUTH INTAKE DETAIL

SCALE: NTS



5 THERMOSTAT MOUNTING DETAIL

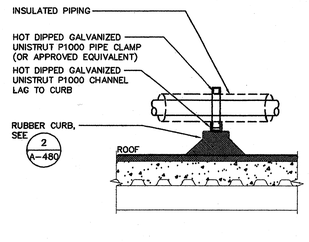
SCALE: NTS



PLAN VIEW
N.T.S.

6 PIPE EXPANSION LOOP DETAIL

SCALE: NTS



NOTES:
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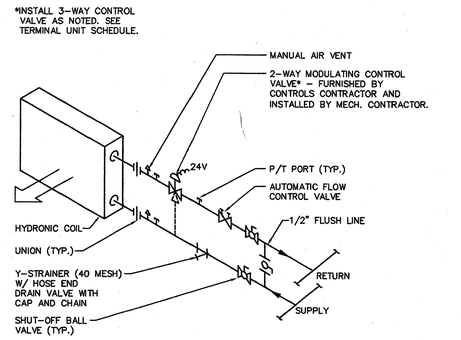
- SUPPORT @ 10'-0" O.C. INTERVALS

7 PIPING ON ROOF DETAIL

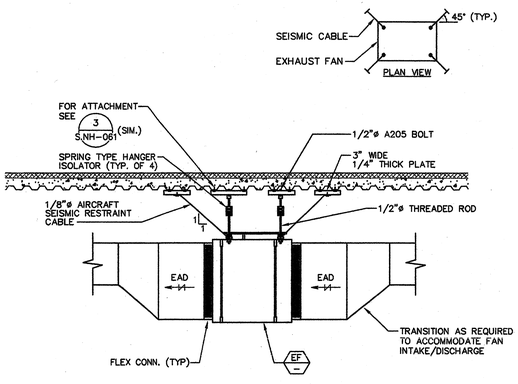
SCALE: NTS



NOTE:
"GRISWOLD" OR "FLOW DESIGN" PIPING KIT MAY BE SUBMITTED IN LIEU OF INDIVIDUAL COMPONENTS.

8 TERMINAL UNIT/REHEAT COIL PIPING DIAGRAM

SCALE: NTS



9 INLINE EXHAUST FAN DETAIL

SCALE: NTS

NOT USED

10 -

SCALE: NTS

NOT USED

11 -

SCALE: NTS

NOT USED

12 -

SCALE: NTS

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APPL # 4-109147
FILE # 36-C2
AC F/LS SS
DATE: APR 24 2008

REVISION HISTORY - THIS SHEET

KEY PLAN

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SAN BERNARDINO CAMPUS PROJECT:

MECHANICAL DETAILS
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

M.NH-005

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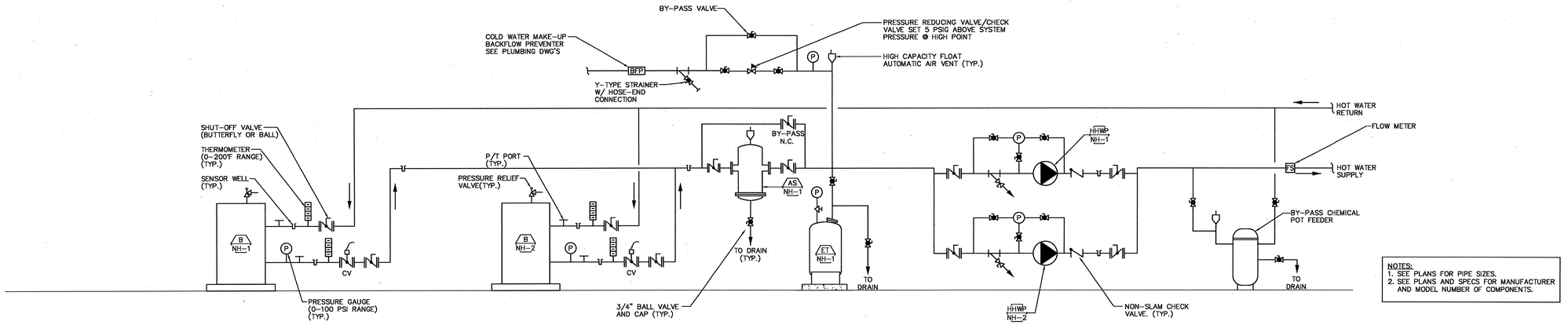
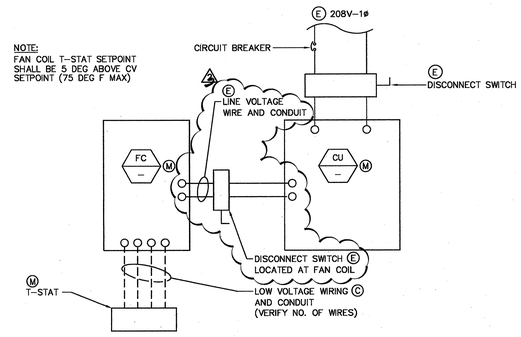


NOTES:
1. SEE PLANS FOR PIPE SIZES.
2. SEE PLANS AND SPECS FOR MANUFACTURER AND MODEL NUMBER OF COMPONENTS.

1 HOT WATER PIPING DIAGRAM

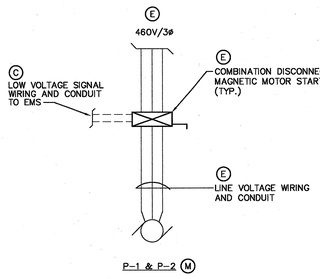
SCALE: NTS



(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(C) FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

2 SPLIT SYSTEM CONTROL DIAGRAM

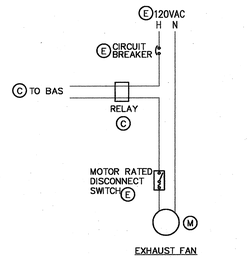
SCALE: NTS



(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(C) FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

3 PUMP WIRING DIAGRAM

SCALE: NTS



(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(C) FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

4 EXHAUST FAN CONTROL DIAGRAM

SCALE: NTS

NOT USED

5 -

SCALE: NTS

NOT USED

6 -

SCALE: NTS

NOT USED

7 -

SCALE: NTS

NOT USED

8 -

SCALE: NTS

NOT USED

9 -

SCALE: NTS

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Exp. 6-30-10

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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL
DETAILS
NORTH HALL
REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

AD3-M6

(M.NH-006)

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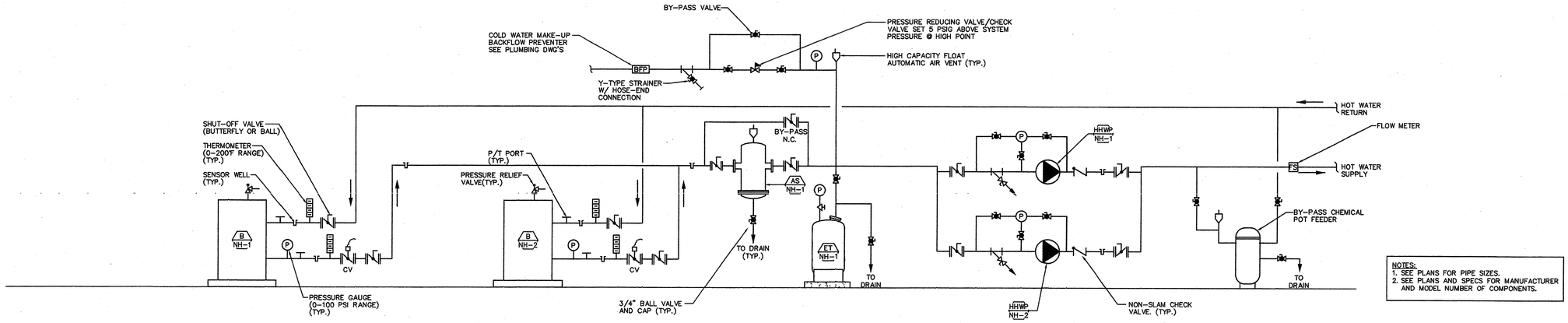
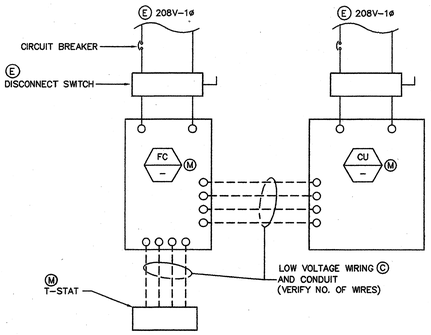


NOTES:
1. SEE PLANS FOR PIPE SIZES.
2. SEE PLANS AND SPECS FOR MANUFACTURER AND MODEL NUMBER OF COMPONENTS.

1 HOT WATER PIPING DIAGRAM

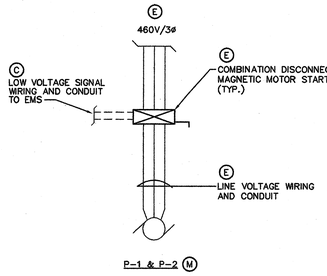
SCALE: NTS



(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(C) FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

2 SPLIT SYSTEM CONTROL DIAGRAM

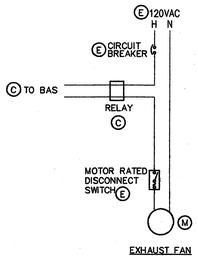
SCALE: NTS



(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(C) FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

3 PUMP WIRING DIAGRAM

SCALE: NTS



(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(C) FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

4 EXHAUST FAN CONTROL DIAGRAM

SCALE: NTS

NOT USED

5 -

SCALE: NTS

NOT USED

6 -

SCALE: NTS

NOT USED

7 -

SCALE: NTS

NOT USED

8 -

SCALE: NTS

NOT USED

9 -

SCALE: NTS

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APPL # 4-109147
FILE # 36-C2
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KEY PLAN

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL DETAILS
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

M.NH-006

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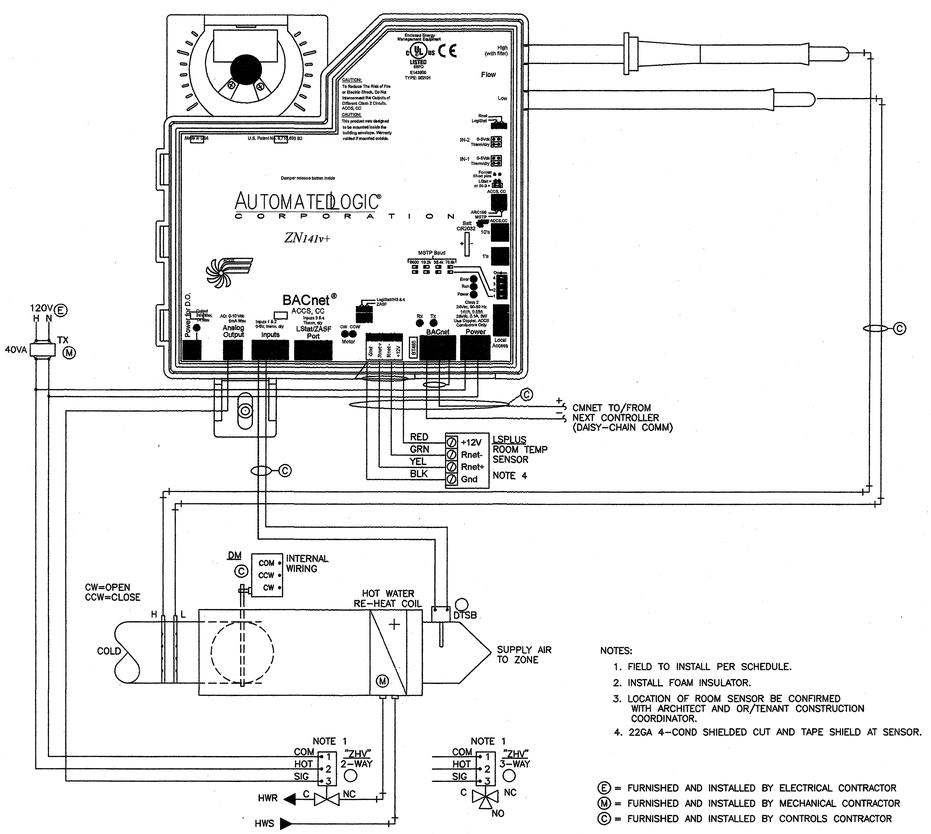


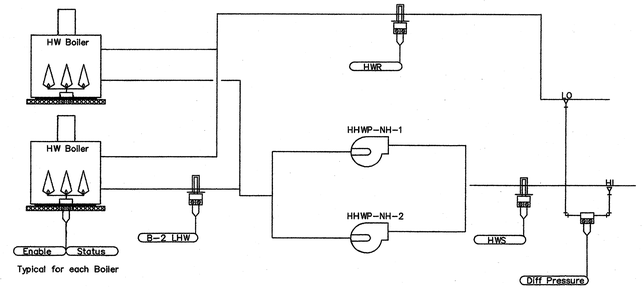
NOTES:

1. FIELD TO INSTALL PER SCHEDULE.
2. INSTALL FOAM INSULATOR.
3. LOCATION OF ROOM SENSOR BE CONFIRMED WITH ARCHITECT AND OR/TENANT CONSTRUCTION COORDINATOR.
4. 22GA 4-COND SHIELDED CUT AND TAPE SHIELD AT SENSOR.

(E) = FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(M) = FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(C) = FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

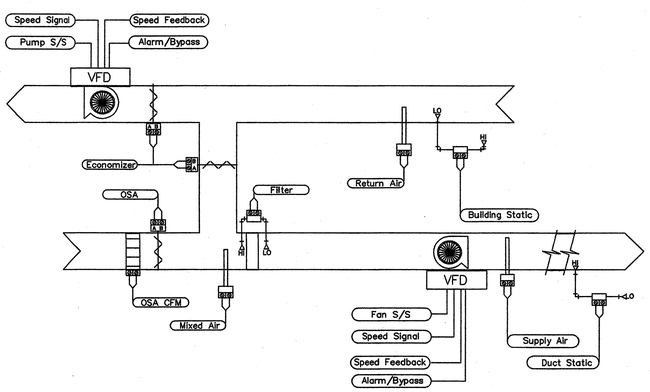
1 | VAV TERMINAL UNIT, REHEAT COIL

SCALE: NTS



2 | HOT WATER CONTROL DIAGRAM

SCALE: NTS



3 | VAV AIR CONDITIONERS AC-NH-1,2,3,4

SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER
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No. 30982
Exp. 6-30-08
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STATE OF CALIFORNIA

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APPL # 4-109147
FILE # 36-C2
AC F/LS PVA SS
DATE: APR 24 2008

LICENSED ARCHITECT
MARC N. ANDERSON
No. C12855
SIGN: 11-30-09
STATE OF CALIFORNIA

REVISION HISTORY - THIS SHEET

KEY PLAN

SAN BERNARDINO CAMPUS PROJECT

CONTROL DIAGRAMS
NORTH HALL
REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

M.NH-007

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CERTIFICATE OF COMPLIANCE — MECH-1-C

PROJECT NAME	DATE
S.B.V.C. North Hall	11/5/2007

Designer:

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the boxes by all acceptance tests that apply and list all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems to be tested in parentheses. The NJ number designates the Section in the Appendix of the Nonresidential ACM Manual that describes the test. Also indicate the person responsible for performing the tests (i.e. the installing contractor, design professional or an agent selected by the owner). Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Building Departments:

SYSTEM ACCEPTANCE. Before an occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

In addition a Certificate of Acceptance, MECH-1-A Form shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6.

STATEMENT OF COMPLIANCE	
☒ MECH-2-A: Ventilation System Acceptance Document -Variable Air Volume Systems Outdoor Air Acceptance -Constant Air Volume Systems Outdoor Air Acceptance Equipment requiring acceptance testing: ALL AIR MOVING EQUIPMENT *Test required on all New systems both New Construction and Retrofit.*	
☒ MECH-3-A: Packaged HVAC Systems Acceptance Document Equipment requiring acceptance testing: ALL PACKAGED HVAC EQUIPMENT *Test required on all New systems both New Construction and Retrofit.*	
☒ MECH-4-A: Air-Side Economizer Acceptance Document Equipment requiring acceptance testing: ALL ECONOMIZERS ***Test required on all New systems both New Construction and Retrofit. Units with economizers that are installed at the factory and certified with the** commission do not require equipment testing but do require construction inspection.*	
☒ MECH-5-A: Air Distribution Acceptance Document Equipment requiring acceptance testing: ALL AIR DISTRIBUTION ***This test required if the unit serves 5,000 ft2 of space or less and 25% or more of the ducts are in nonconditioned or semiconditioned space like an** attic. New systems that meet the above requirements. Retrofit systems that meet the above requirements and either extend ducts, replace ducts or replace the packaged unit.*	
☐ MECH-6-A: Demand Control Ventilation Acceptance Document Equipment requiring acceptance testing: *All new DCV controls installed on new or existing packaged systems must be tested.*	
☒ MECH-7-A: Supply Fan Variable Flow Control Acceptance Document Equipment requiring acceptance testing: ALL VARIABLE FLOW SUPPLY FANS *All new VAV fan volume controls installed on new or existing systems must be tested*	
☒ MECH-8-A: -Hydronic System Control Acceptance Document -Variable Flow Controls *Applies to chilled and hot water systems.* -Automatic Isolation Controls *Applies to new boilers and chillers and the primary pumps are connected to a common header.* -Supply Water Temperature Reset Controls *Applies to new constant flow chilled and hot water systems that have a design capacity greater than or equal to 500,000 Btu/hr.* -Water-loop Heat Pump Controls *Applies to all new waterloop heat pump systems where the combined loop pumps are greater than 5 hp.* -Variable Frequency Controls *Applies to all new distribution pumps on new variable flow chilled, hydronic heat pump or condenser water systems where the pumps motors are greater than 5 hp.* Equipment requiring acceptance testing: RESET CONTROLS	

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LICENSED ARCHITECT — JAY R. TURNER — No. C-21435 — Exp. 10-31-09 — STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

APPL # 4-109147
FILE # 36-C2

AC _____ F/LS _____ SS _____

DATE:

REVISION HISTORY - THIS SHEET

2 ADDENDUM #2 - 08.13.08

KEY PLAN

AS-BUILT RECORD DRAWING
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CONTRACTOR
FEB 02 2011

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SAN BERNARDINO CAMPUS PROJECT

TITLE 24 ENERGY COMPLIANCE FORMS NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

AD3-M8

(M.NH-008)

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CERTIFICATE OF COMPLIANCE — MECH-1-C

PROJECT NAME	DATE
S.B.V.C. North Hall	11/5/2007

Designer:

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the boxes by all acceptance tests that apply and list all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems to be tested in parentheses. The NJ number designates the Section in the Appendix of the Nonresidential ACM Manual that describes the test. Also indicate the person responsible for performing the tests (i.e. the installing contractor, design professional or an agent selected by the owner). Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Building Departments:

SYSTEM ACCEPTANCE. Before an occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

In addition a Certificate of Acceptance, MECH-1-A Form shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6.

STATEMENT OF COMPLIANCE	
☐ MECH-2-A: Ventilation System Acceptance Document -Variable Air Volume Systems Outdoor Air Acceptance -Constant Air Volume Systems Outdoor Air Acceptance Equipment requiring acceptance testing_____ *Test required on all New systems both New Construction and Retrofit.*	
☐ MECH-3-A: Packaged HVAC Systems Acceptance Document Equipment requiring acceptance testing_____ *Test required on all New systems both New Construction and Retrofit.*	
☐ MECH-4-A: Air-Side Economizer Acceptance Document Equipment requiring acceptance testing_____ *Test required on all New systems both New Construction and Retrofit. Units with economizers that are installed at the factory and certified with the commission do not require equipment testing but do require construction inspection.*	
☐ MECH-5-A: Air Distribution Acceptance Document Equipment requiring acceptance testing_____ *This test required if the unit serves 5,000 ft2 of space or less and 25% or more of the ducts are in nonconditioned or semiconditioned space like an attic. New systems that meet the above requirements. Retrofit systems that meet the above requirements and either extend ducts, replace ducts or replace the packaged unit.*	
☐ MECH-6-A: Demand Control Ventilation Acceptance Document Equipment requiring acceptance testing_____ *All new DCV controls installed on new or existing packaged systems must be tested.*	
☐ MECH-7-A: Supply Fan Variable Flow Control Acceptance Document Equipment requiring acceptance testing_____ *All new VAV fan volume controls installed on new or existing systems must be tested*	
☐ MECH-8-A: -Hydronic System Control Acceptance Document -Variable Flow Controls *Applies to chilled and hot water systems.* -Automatic Isolation Controls *Applies to new boilers and chillers and the primary pumps are connected to a common header.* -Supply Water Temperature Reset Controls *Applies to new constant flow chilled and hot water systems that have a design capacity greater than or equal to 500,000 Btu/hr.* -Water-loop Heat Pump Controls *Applies to all new waterloop heat pump systems where the combined loop pumps are greater than 5 hp.* -Variable Frequency Controls *Applies to all new distribution pumps on new variable flow chilled, hydronic heat pump or condenser water systems where the pumps motors are greater than 5 hp.* Equipment requiring acceptance testing_____	

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CLIENT:

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IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

APPL # 4-109147
FILE # 36-C2

AC ✓ F/LS ✓ SS ✓

DATE: APR 2 4 2008

REVISION HISTORY - THIS SHEET

KEY PLAN

RECORD DRAWING
THIS DOCUMENT REFLECTS INFORMATION FURNISHED BY THE CONTRACTOR, AS NOTED BELOW.
FEB 02 2011

NTD ARCHITECTURE DOES NOT GUARANTEE CONSTRUCTION MEANS AND METHODS OR COMPLETENESS OF ASSIGN INFORMATION.

SAN BERNARDINO CAMPUS PROJECT

TITLE 24 ENERGY COMPLIANCE FORMS NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE AS NOTED
DATE April 24, 2008
DRAWN --

M.NH-008

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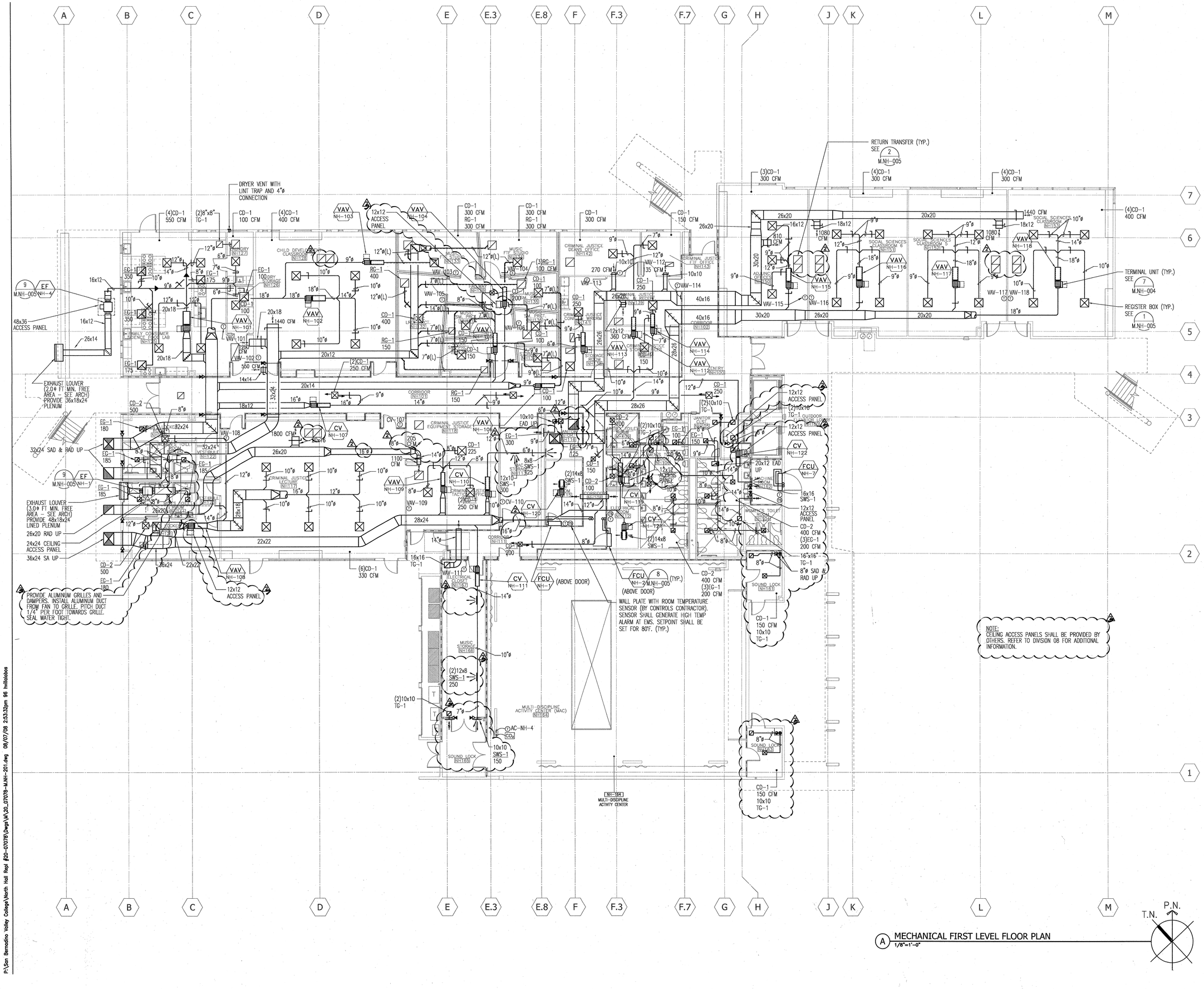
A
B
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H
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K
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M
1
2
3
4
5
6
7
DRYER VENT WITH LINT TRAP AND 4"ø CONNECTION
RETURN TRANSFER (TYP.) SEE 2 M.NH-005
TERMINAL UNIT (TYP.) SEE 7 M.NH-004
REGISTER BOX (TYP.) SEE 1 M.NH-005
EXHAUST LOUVER (2.0ø FT MIN. FREE AREA - SEE ARCH) PROVIDE 36x18x24" PLENUM
EXHAUST LOUVER (3.0ø FT MIN. FREE AREA - SEE ARCH) PROVIDE 48x18x24" LINED PLENUM
48x36 ACCESS PANEL
32x24 SAD & RAD UP
26x20 RAD UP
24x24 CEILING ACCESS PANEL
36x24 SA UP
PROVIDE ALUMINUM GRILLES AND DAMPERS. INSTALL ALUMINUM DUCT FROM FAN TO GRILLE. PITCH DUCT 1/4" PER FOOT TOWARDS GRILLE. SEAL WATER TIGHT.
12x12 ACCESS PANEL
20x12 EAD UP
WALL PLATE WITH ROOM TEMPERATURE SENSOR (BY CONTROLS CONTRACTOR). SENSOR SHALL GENERATE HIGH TEMP ALARM AT EMS. SETPOINT SHALL BE SET FOR 80°F. (TYP.)
NOTE: CEILING ACCESS PANELS SHALL BE PROVIDED BY OTHERS. REFER TO DIVISION 08 FOR ADDITIONAL INFORMATION.
NH-164 MULTI-DISCIPLINE ACTIVITY CENTER
CHILD DEVELOPMENT CLASSROOM [NH128]
FAMILY CONSUMER SCIENCE FOOD LAB [NH127]
LAUNDRY [NH137]
DRY STORAGE [NH126]
MUSIC FAC STUDIO [NH133]
MUSIC FAC STUDIO [NH134]
MUSIC SM. PRAC. [NH135]
MUSIC PRACT. [NH136]
MUSIC STORAGE [NH132]
CRIMINAL JUSTICE DEANS OFFICE [NH142]
CRIMINAL JUSTICE FAC OFFICE [NH143]
CRIMINAL JUSTICE CONFERENCE [NH141]
CRIMINAL JUSTICE CLASSROOM [NH140]
CRIMINAL JUSTICE STORAGE [NH138]
CRIMINAL JUSTICE EQUIPMENT STORAGE [NH118]
CRIMINAL JUSTICE LECTURE [NH117]
CRIMINAL JUSTICE LAB [NH116]
CORRIDOR [NH101]
CORRIDOR [NH111]
JANITOR CLOSET [NH119]
ELECTRICAL [NH112]
MENS TOILET ROOM [NH120]
WOMENS TOILET ROOM [NH121]
SOUND LOCK [NH161]
SOUND LOCK [NH162]
SOUND LOCK [NH165]
MUSIC STORAGE [NH166]
MULTI-DISCIPLINE ACTIVITY CENTER (MAC) [NH164]
ADJUNC OFFICES [NH150]
SOCIAL SCIENCES CLASSROOM 6 [NH153]
SOCIAL SCIENCES CLASSROOM 5 [NH152]
SOCIAL SCIENCES CLASSROOM 4 [NH151]
CENTRY [NH100]
CRIMINAL JUSTICE FAC OFFICE [NH139]
CRIMINAL JUSTICE STORAGE [NH144]
CRIMINAL JUSTICE CLASSROOM [NH145]
CORRIDOR [NH102]
OUTDOOR JANITOR ROOM [NH122]
MACHINE ROOM [NH129]
ELECTRICAL CLOSET [NH167]
ELECTRICAL CLOSET [NH168]
ELECTRICAL CLOSET [NH169]
ELECTRICAL CLOSET [NH170]
ELECTRICAL CLOSET [NH171]
ELECTRICAL CLOSET [NH172]
ELECTRICAL CLOSET [NH173]
ELECTRICAL CLOSET [NH174]
ELECTRICAL CLOSET [NH175]
ELECTRICAL CLOSET [NH176]
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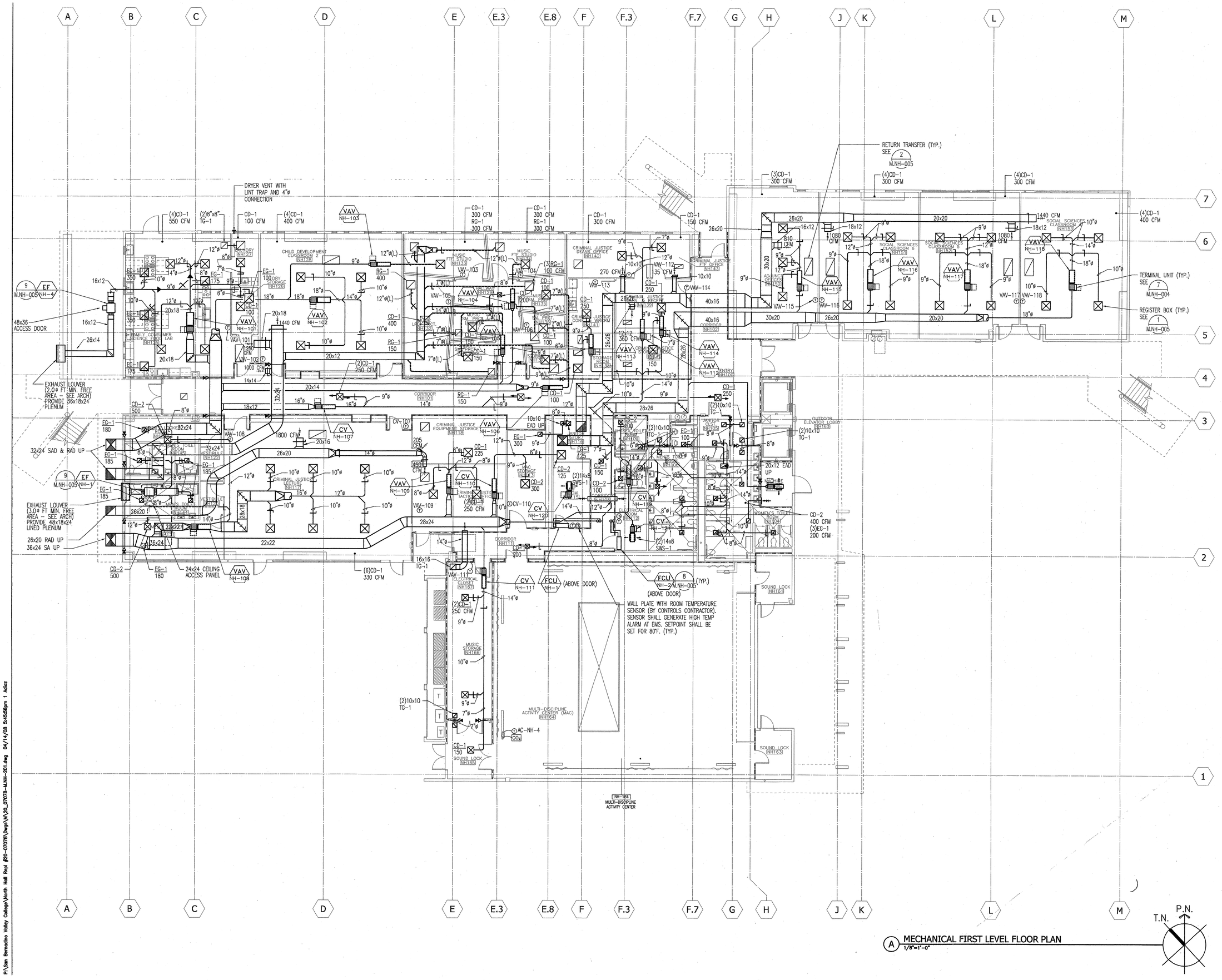
ELECTRICAL CLOSET [NH179]
ELECTRICAL CLOSET



A MECHANICAL FIRST LEVEL FLOOR PLAN
1/8"=1'-0"

P:\San Bernadino Valley College\North Hall Repl #20-07078\Dwgs\A\20_07078-MJNH-201.dwg 04/14/08 5:45:56pm 1 Aldaz

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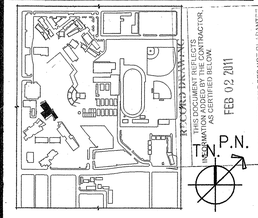
APPL # 4-109147
FILE # 36-C2
AC F/LS SS
DATE: APR 2 4 2008

REVISION HISTORY - THIS SHEET

KEY PLAN



SAN BERNARDINO CAMPUS PROJECT

MECHANICAL FIRST LEVEL FLOOR PLAN
NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
DRAWN --

M.NH-201

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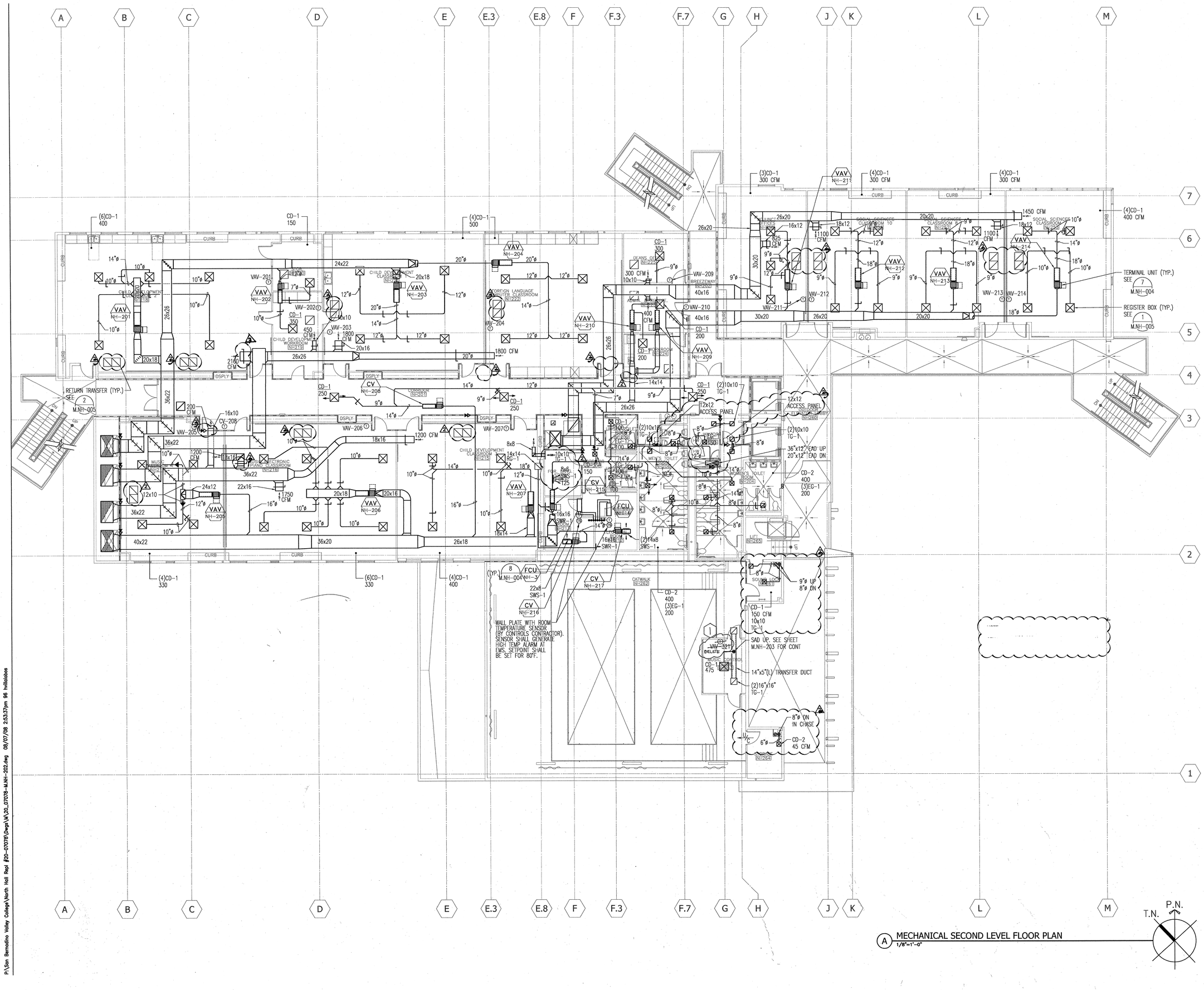

A MECHANICAL SECOND LEVEL FLOOR PLAN
1/8"=1'-0"

P.N.
T.N.

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2	ADDENDUM #2 - 08.13.08
1	RFI #215

KEY PLAN

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MECHANICAL SECOND LEVEL FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20

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DATE April 24, 2008

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(M.NH-202)

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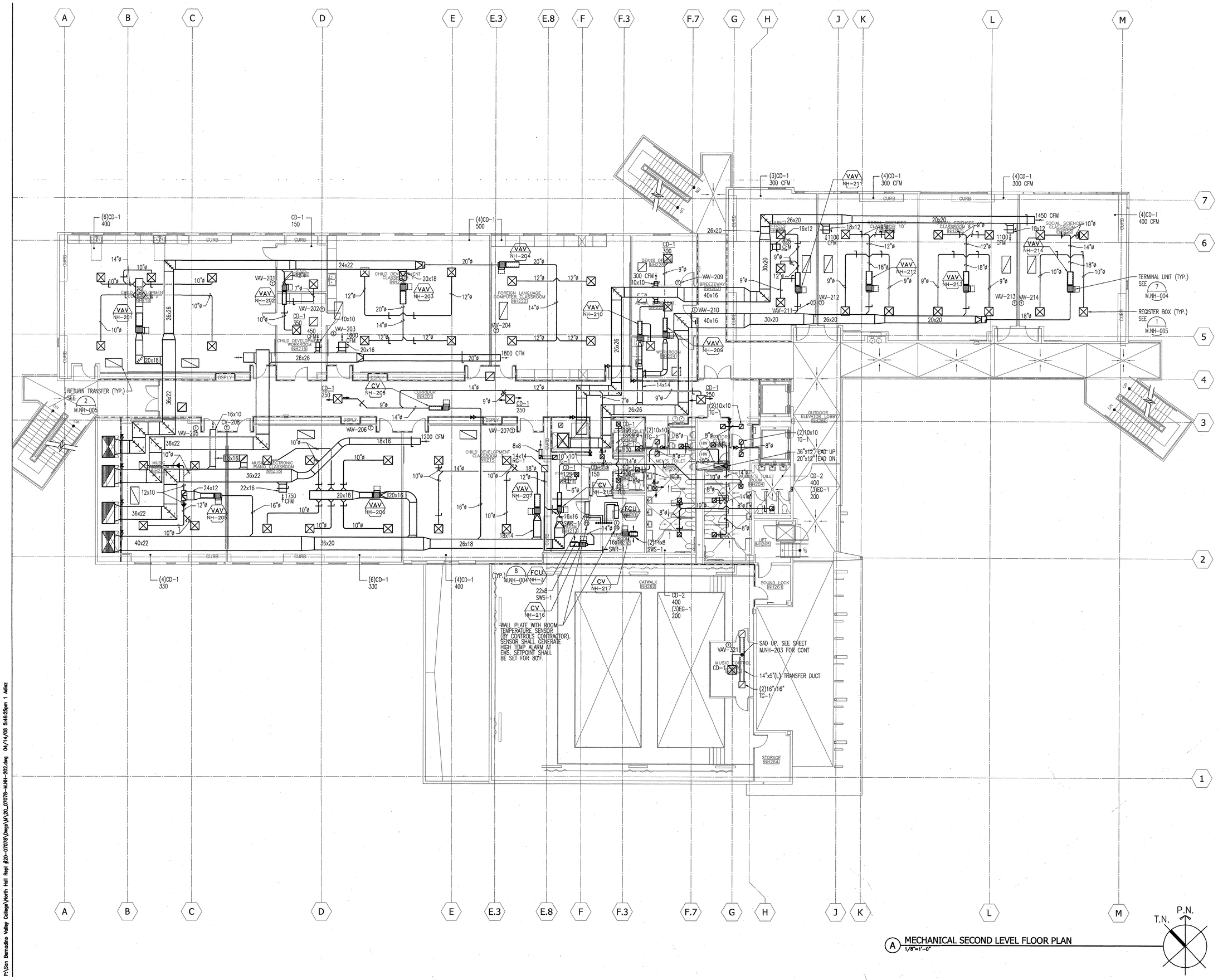

A MECHANICAL SECOND LEVEL FLOOR PLAN
1/8"=1'-0"

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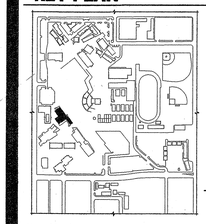
OFFICE OF REGULATION SERVICES
APPL # 4-109147
FILE # 36-C2
AC F/LS SS
DATE: APR 24 2008

REVISION HISTORY - THIS SHEET

KEY PLAN



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FEB 02 2011

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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL SECOND LEVEL FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
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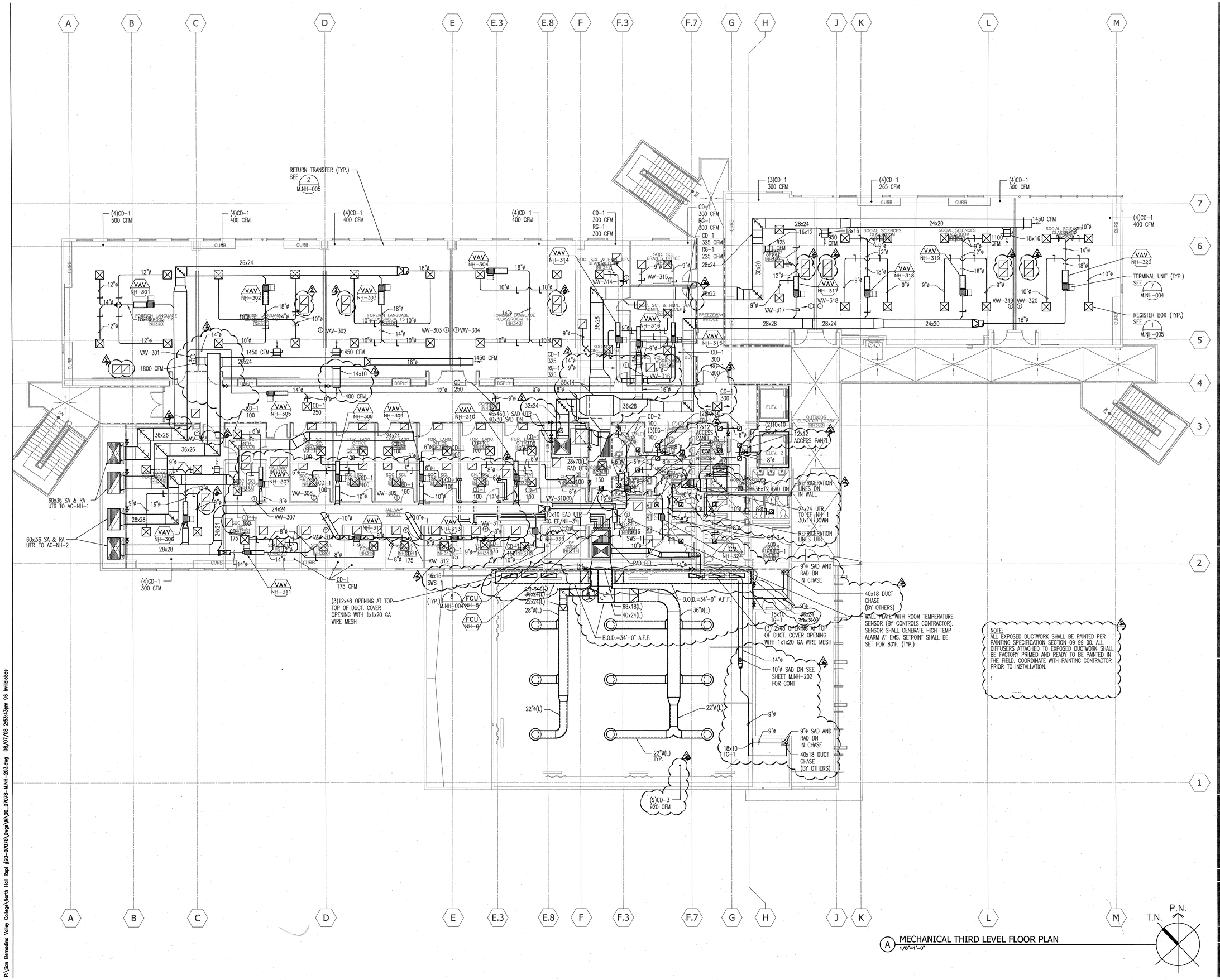

A MECHANICAL THIRD LEVEL FLOOR PLAN
1/8"=1'-0"

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LICENSED ARCHITECT JAY R. TITTLE No. C18345 STATE OF CALIFORNIA

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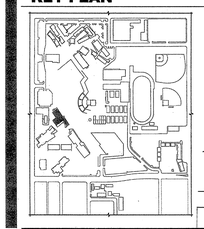
REVISION HISTORY - THIS SHEET
- ADDENDUM #3 - 08.13.08
- 1 RFI # 304

KEY PLAN



SAN BERNARDINO CAMPUS PROJECT

MECHANICAL THIRD LEVEL FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

FEB 12 2011

ACCEPTED FOR RECORDING
THIS DOCUMENT REFLECTS THE AS-BUILT CONDITIONS AS CERTIFIED BELOW.
APPROVED
DATE
BY

I, NTD ARCHITECTURE DOES HEREBY CERTIFY THE ACCEPTANCE OF COMPLETENESS OF ADDENDUM

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
DRAWN --

AD3-M11

(M.NH-203)

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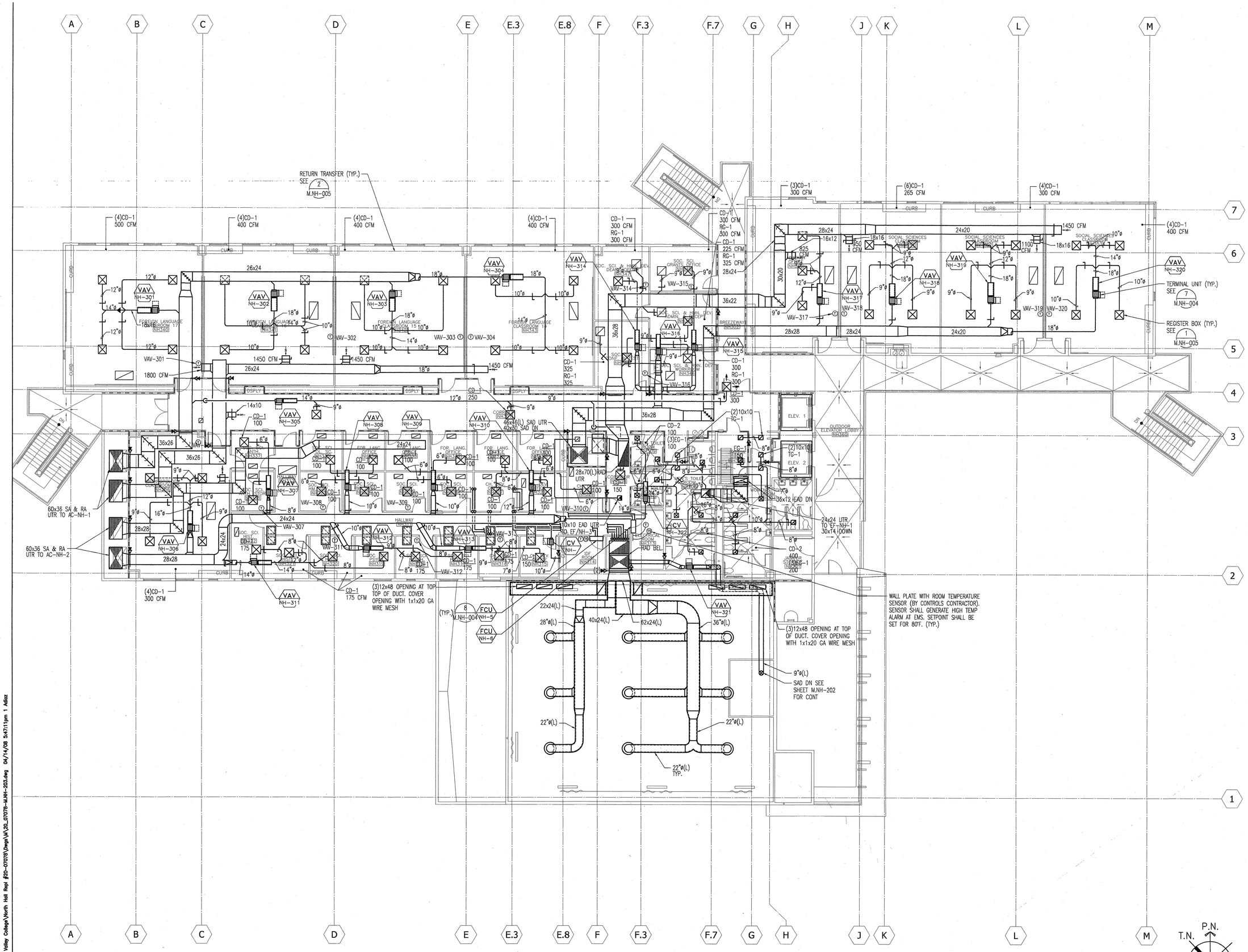

A MECHANICAL THIRD LEVEL FLOOR PLAN
1/8"=1'-0"

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APPL # 4-109147
FILE # 36-C2
AC F/LS
DATE: APR 24 2008

REVISION HISTORY - THIS SHEET

KEY PLAN

RECORD DRAWING
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FEB 02 2011

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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL THIRD LEVEL FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
DRAWN --

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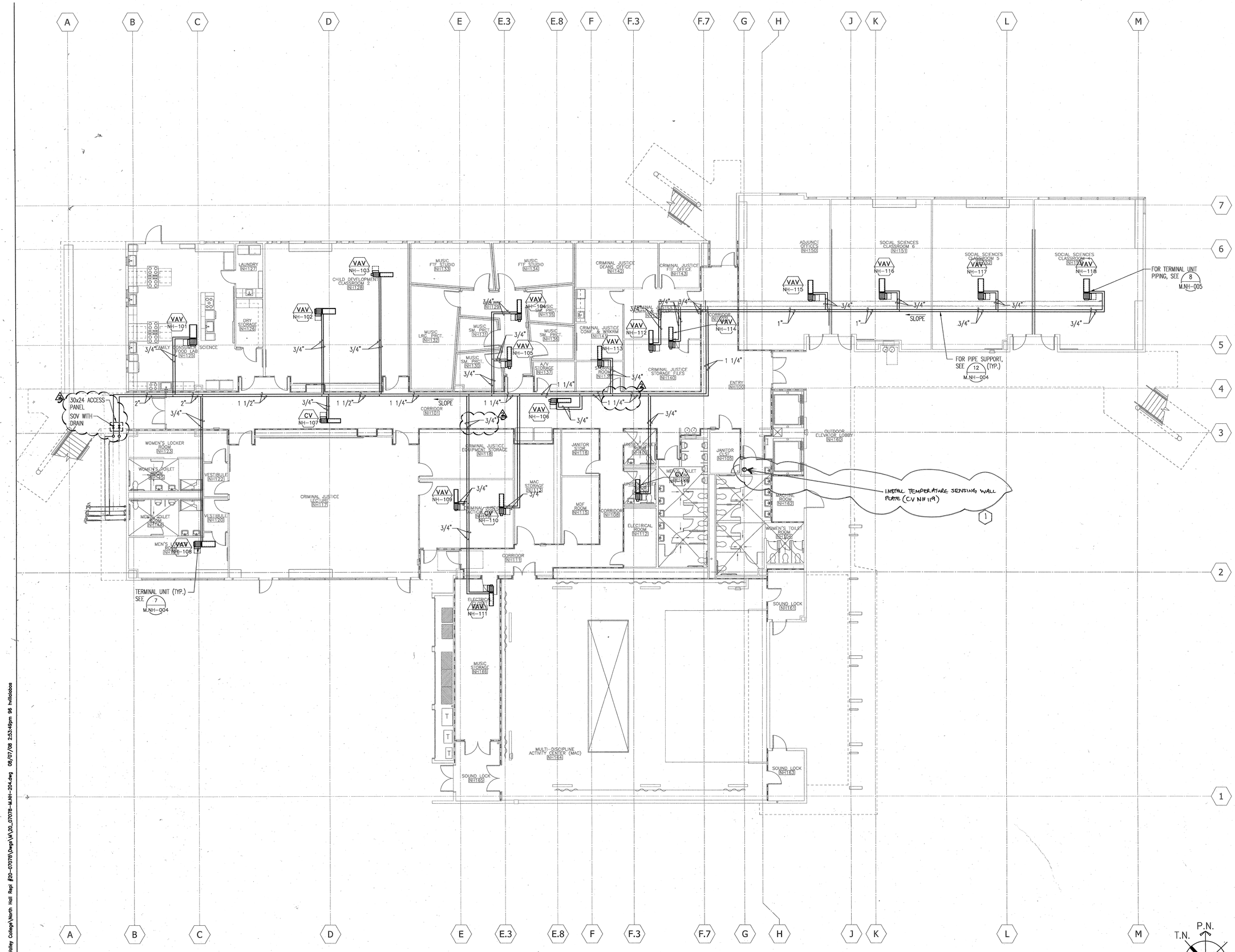

A MECHANICAL FIRST LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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LICENSED ARCHITECT — JAY R. ALTHOUSE — No. C12936 — RENEWAL 08-31-09 — STATE OF CALIFORNIA

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FILE # 36-C2
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A ADDENDUM #3 - 08.13.08
1 PD #053

KEY PLAN

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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL 1ST LEVEL PIPING FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
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AD3-M12

(M.NH-204)

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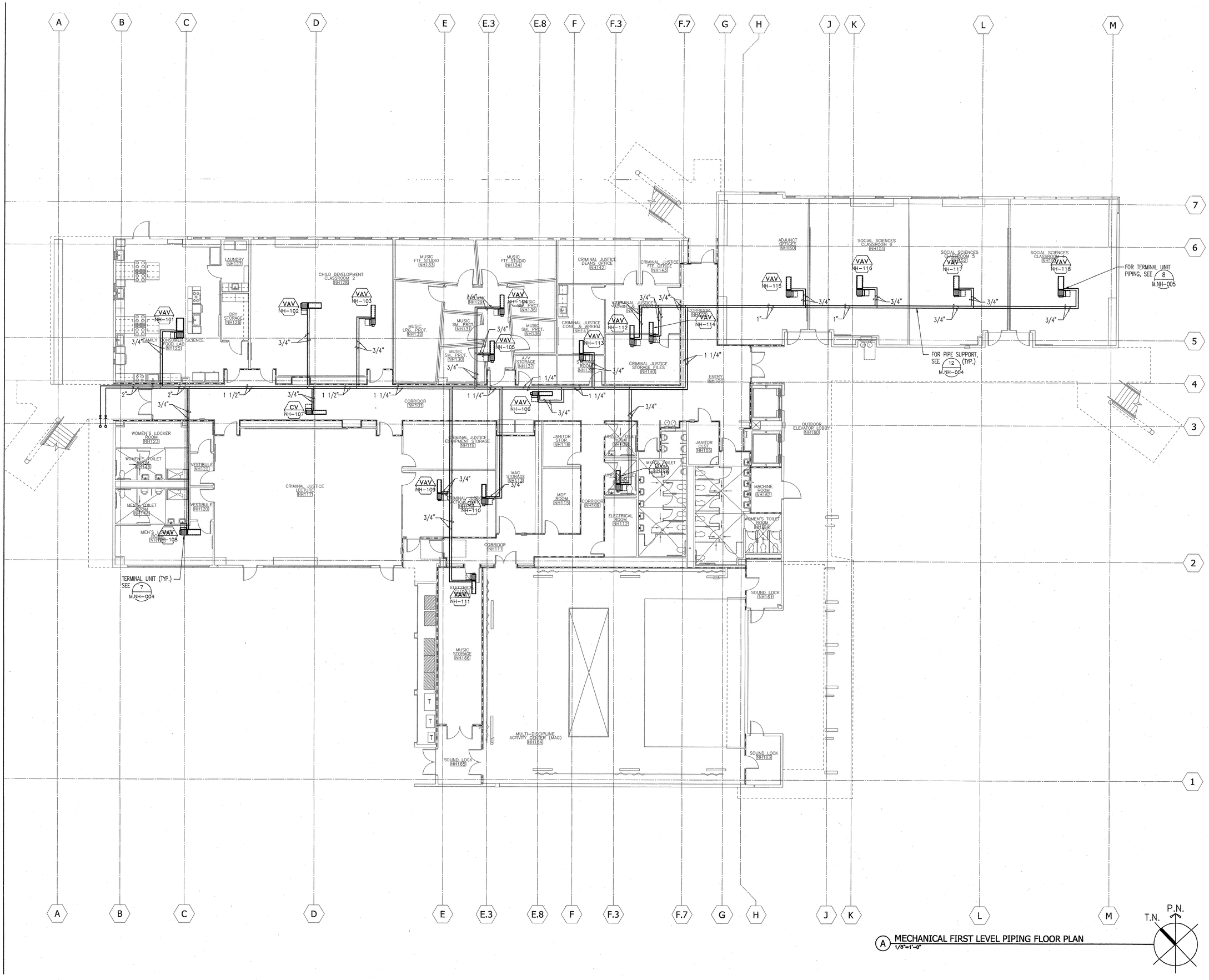

A MECHANICAL FIRST LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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APPL # 4-109147
FILE # 36-C2

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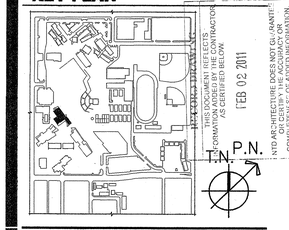
KEY PLAN



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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL 1ST LEVEL PIPING FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
DRAWN --

M.NH-204

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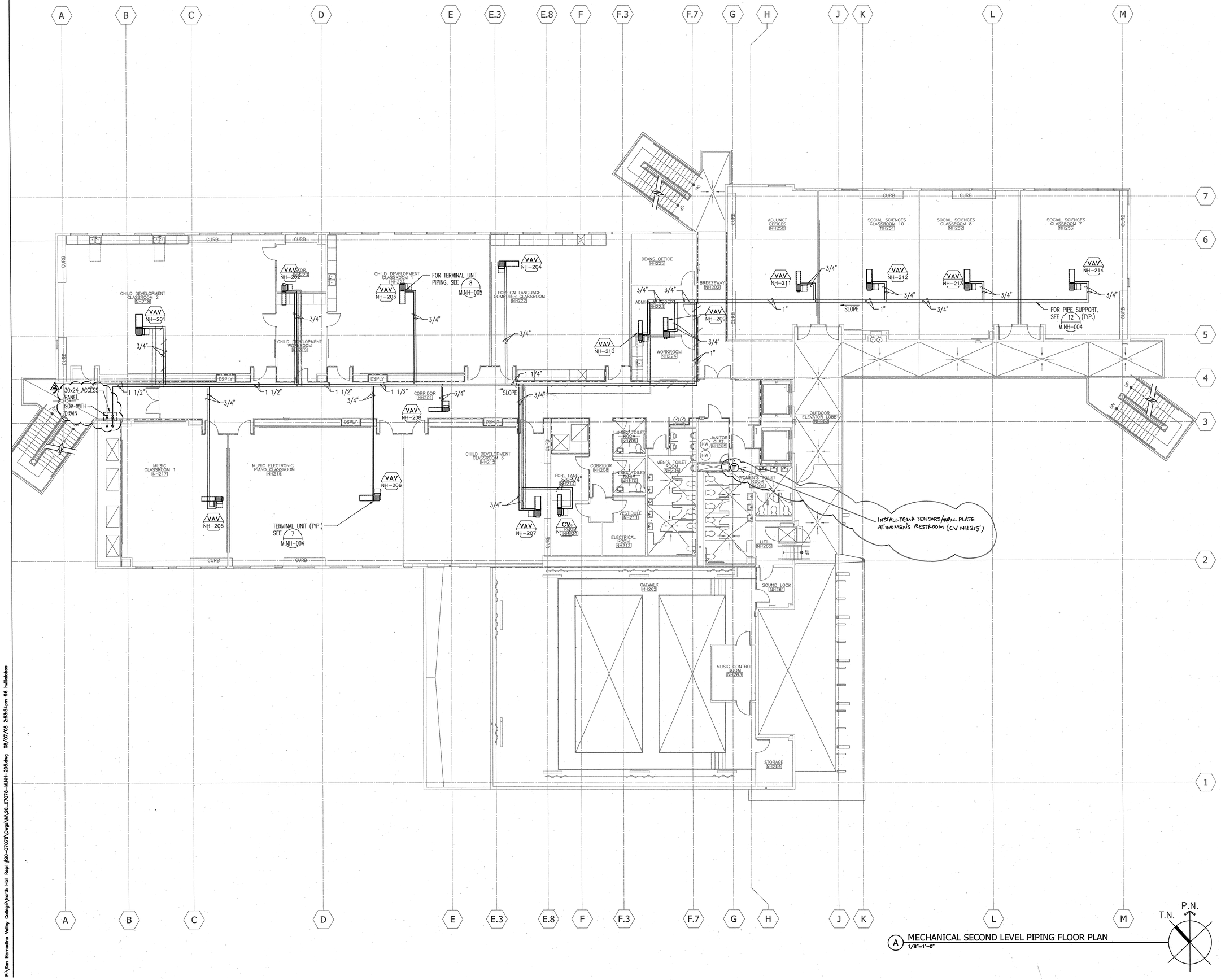

A MECHANICAL SECOND LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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REVISION HISTORY - THIS SHEET
2 ADDENDUM #2 — 08.13.08
1 PD # 053

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MECHANICAL 2ND LEVEL PIPING FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
DRAWN --

AD3-M13

(M.NH-205)

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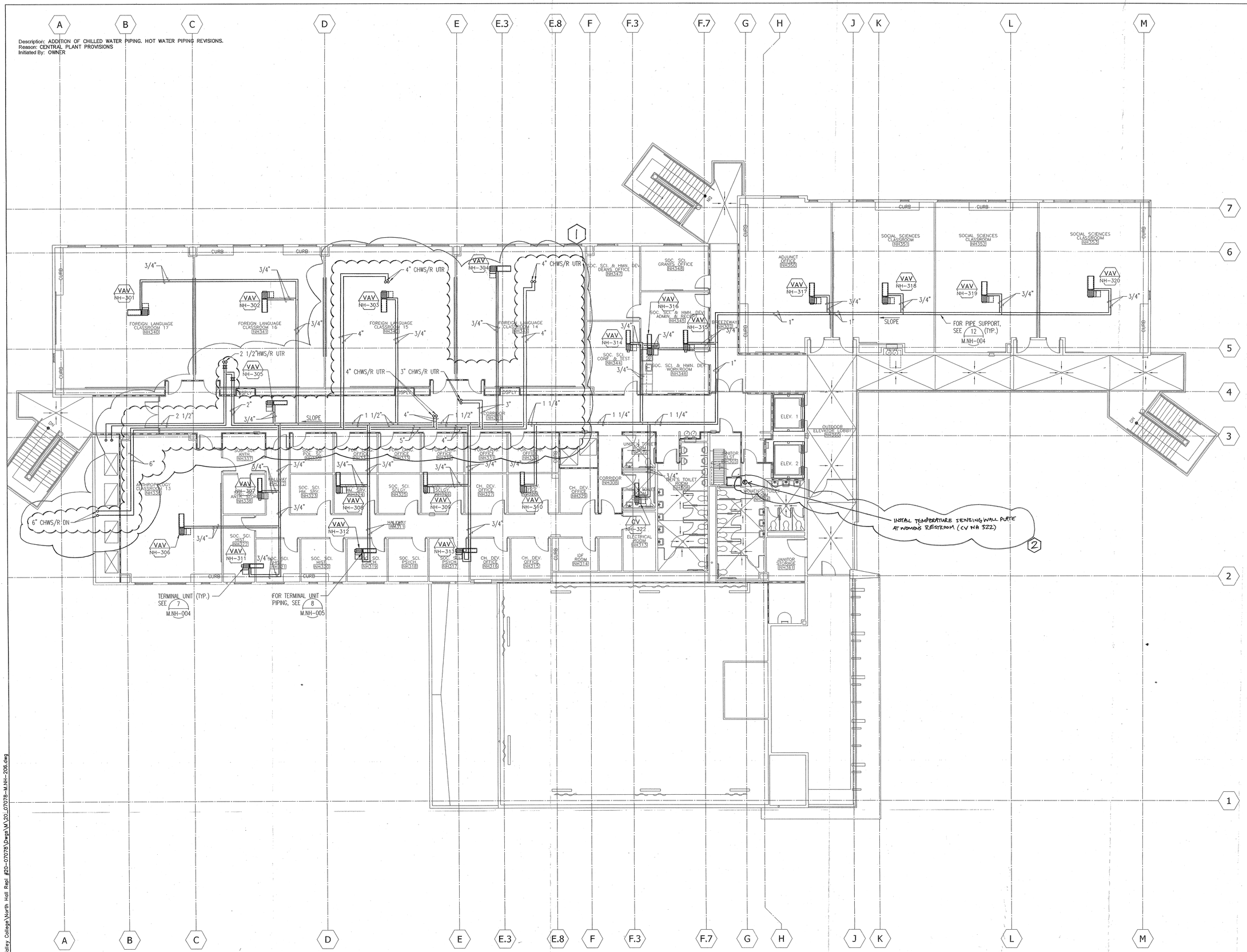
Description: ADDITION OF CHILLED WATER PIPING. HOT WATER PIPING REVISIONS.
Reason: CENTRAL PLANT PROVISIONS
Initiated By: OWNER



A MECHANICAL THIRD LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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1 PD #004
2 PD #053

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MECHANICAL 3RD LEVEL PIPINGFLOOR PLAN

NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
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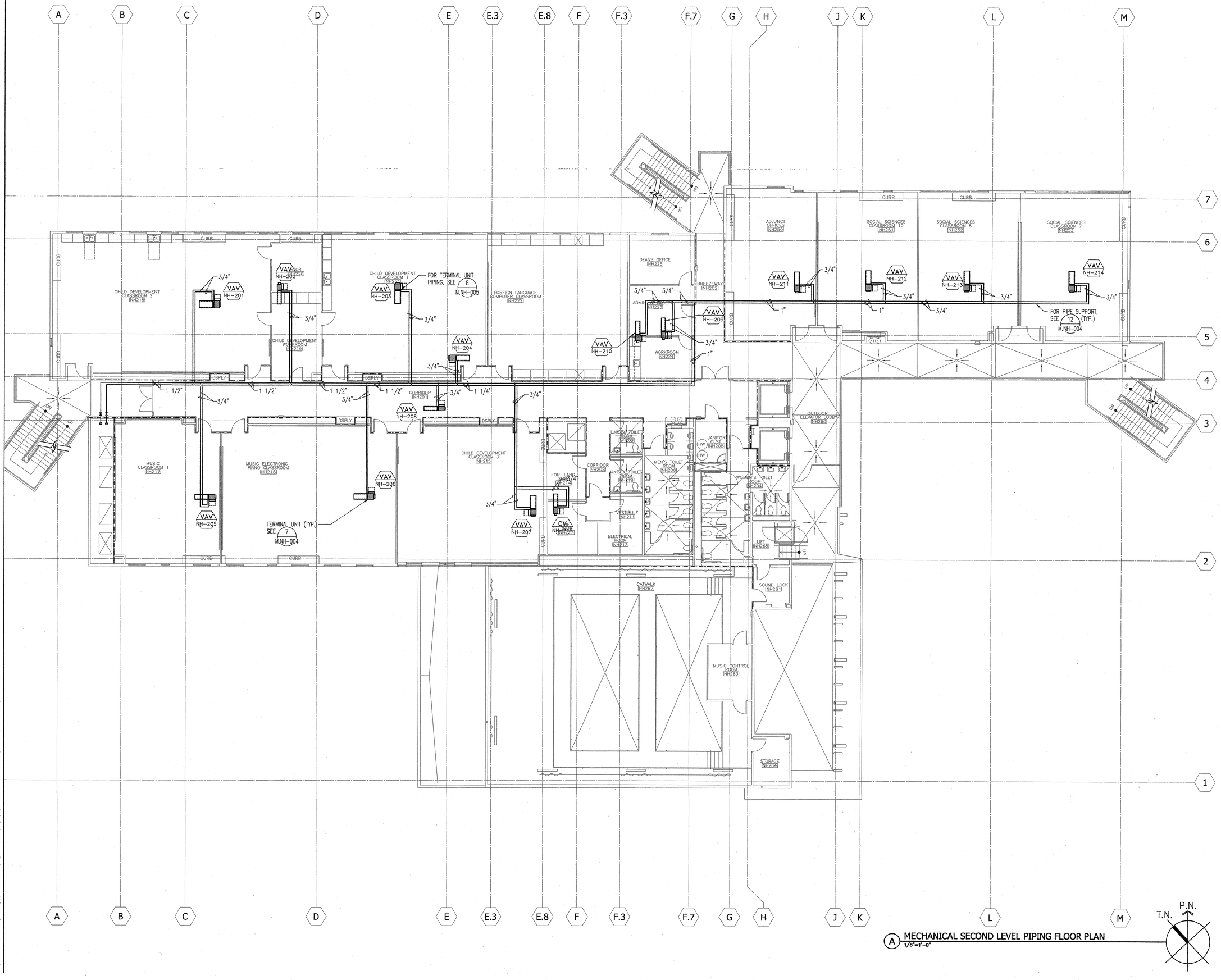

A MECHANICAL SECOND LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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APPL # 4-109147
FILE # 36-C2
AC F/LS MB SS

DATE: APR 2 4 2008

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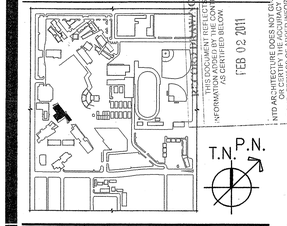

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL 2ND LEVEL PIPING FLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
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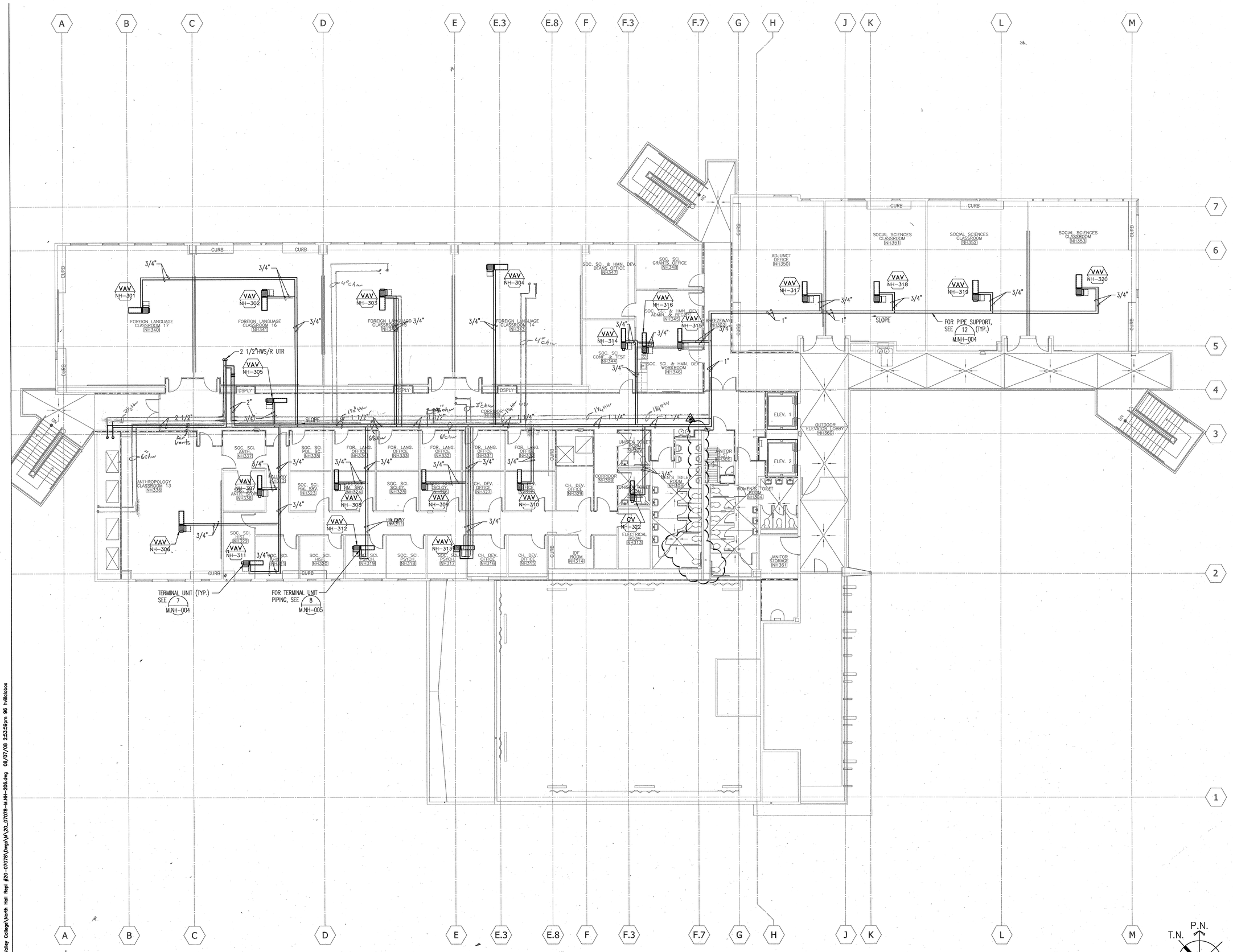

A MECHANICAL THIRD LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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REGISTERED STATE OF CALIFORNIA

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1	ADDENDUM #3 - 08.13.08

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MECHANICAL 3RD LEVEL PIPINGFLOOR PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
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(M.NH-206)

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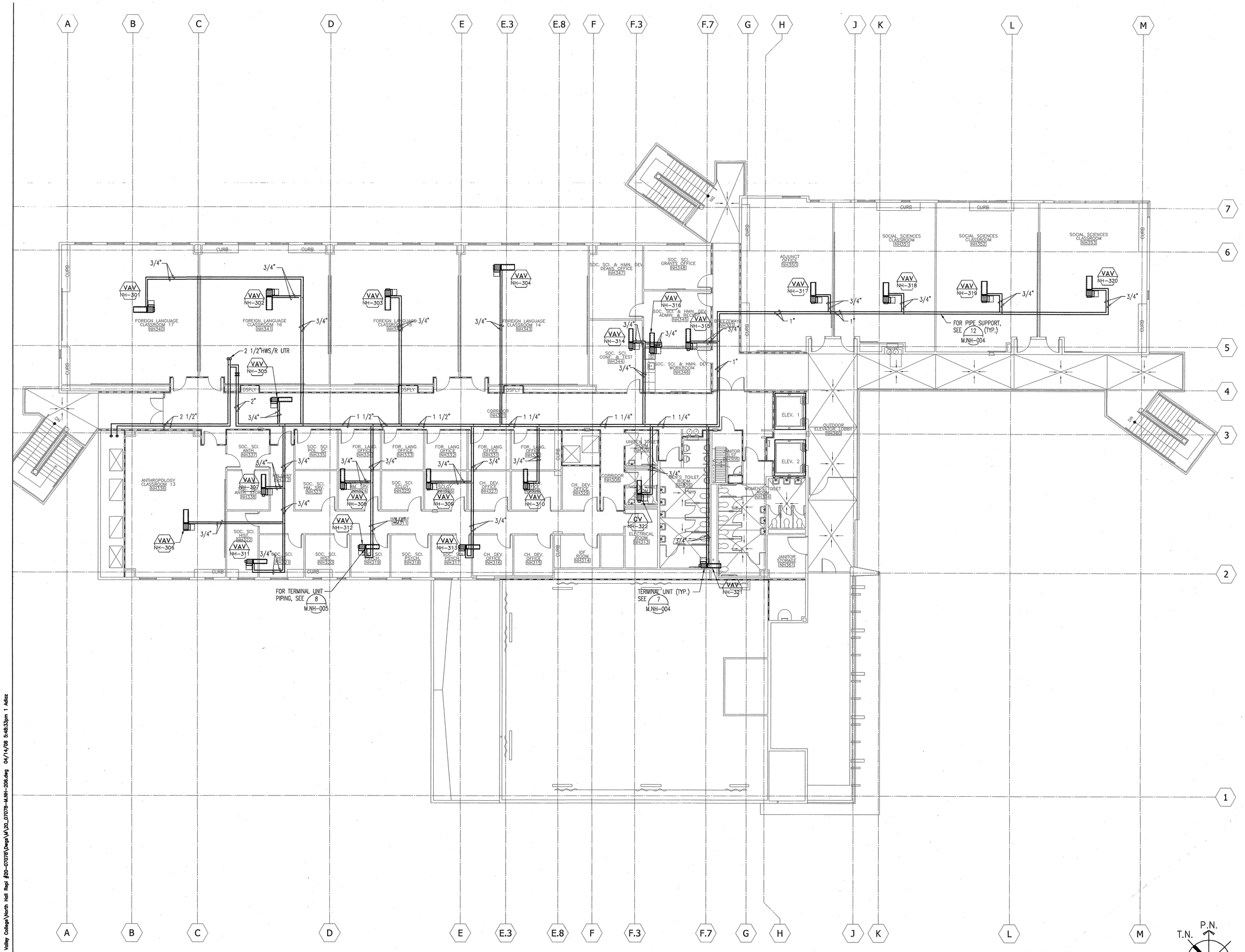

A MECHANICAL THIRD LEVEL PIPING FLOOR PLAN
1/8"=1'-0"

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DATE: APR 24 2008

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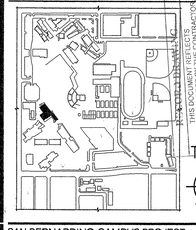

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2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
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M.NH-206

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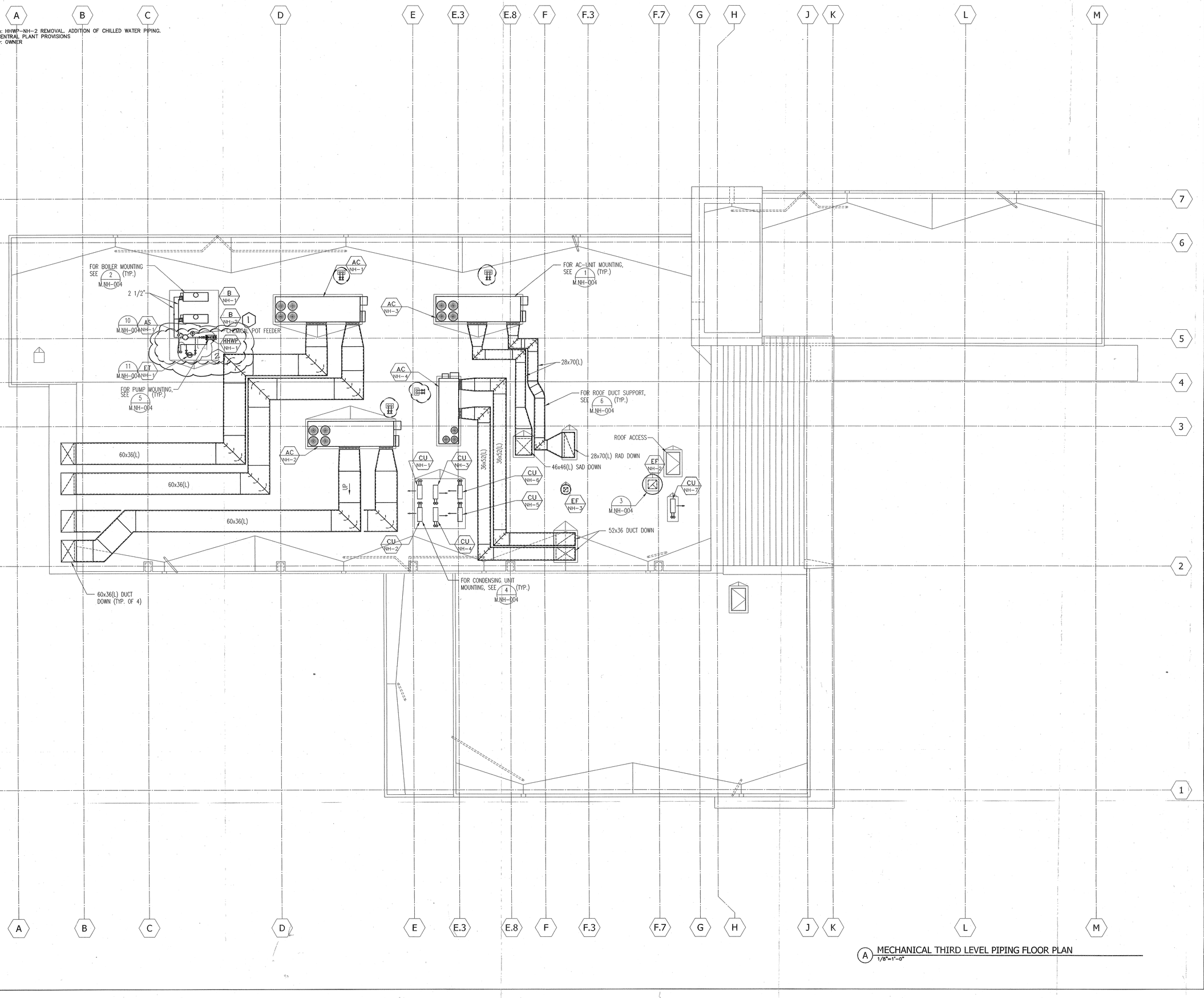
Description: HHWP-NH-2 REMOVAL. ADDITION OF CHILLED WATER PIPING.
Reason: CENTRAL PLANT PROVISIONS
Initiated By: OWNER



A MECHANICAL THIRD LEVEL PIPING FLOOR PLAN
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LICENSED ARCHITECT — JAY R. TITTLE — NO. C-23485 — REN. 11-30-09 — STATE OF CALIFORNIA

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1. PD #004
2. RFI #433 - INSTALL CHECK VALVE AT SUPPLY SIDE OF BACKF

KEY PLAN

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MECHANICAL ~~3RD LEVEL PIPINGFLOOR~~ ROOF PLAN

NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE
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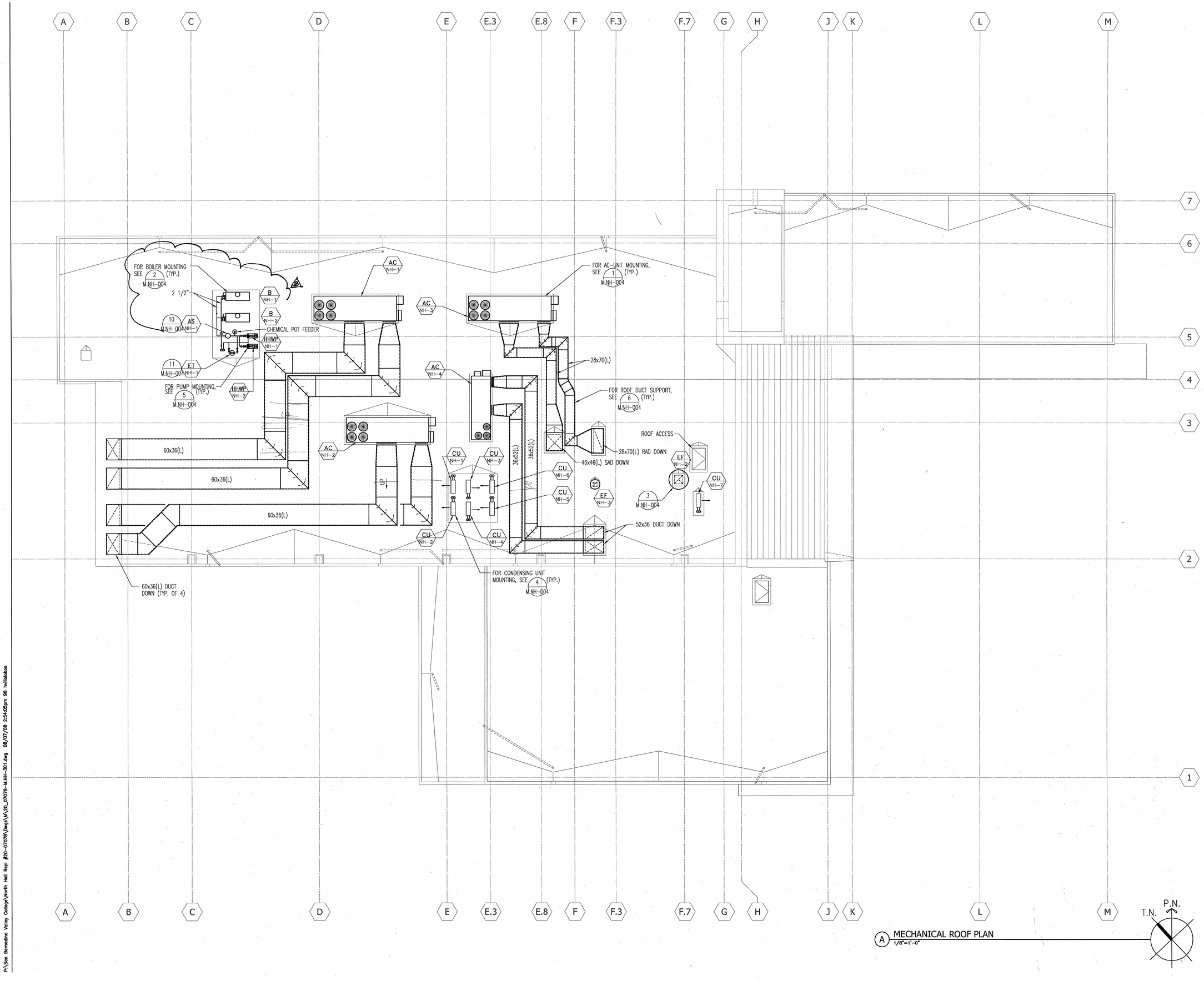

A MECHANICAL ROOF PLAN
1/8"=1'-0"

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FILE # 36-C2

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A ADDENDUM #3 - 08.13.08

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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL ROOF PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20
SCALE 1/8" = 1'-0"
DATE April 24, 2008
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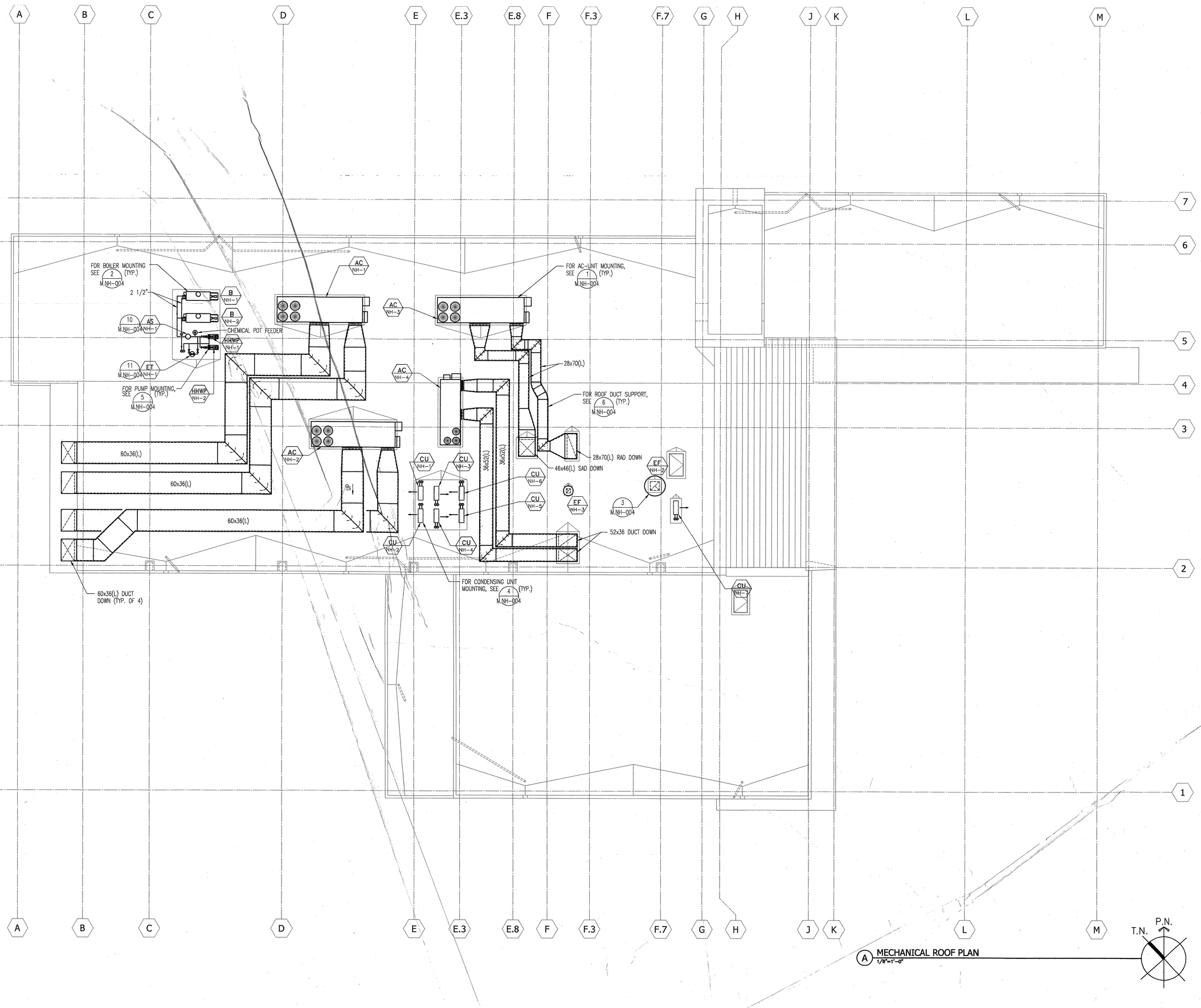

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APPL # 4-109147
FILE # 36-C2
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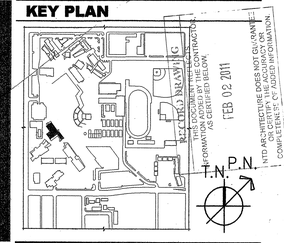
DATE: APR 24 2008

REVISION HISTORY - THIS SHEET

KEY PLAN



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SAN BERNARDINO CAMPUS PROJECT

MECHANICAL ROOF PLAN NORTH HALL REPLACEMENT BUILDING

2007-0275-20

SCALE	1/8" = 1'-0"
DATE	April 24, 2008
DRAWN	--

M.NH-301

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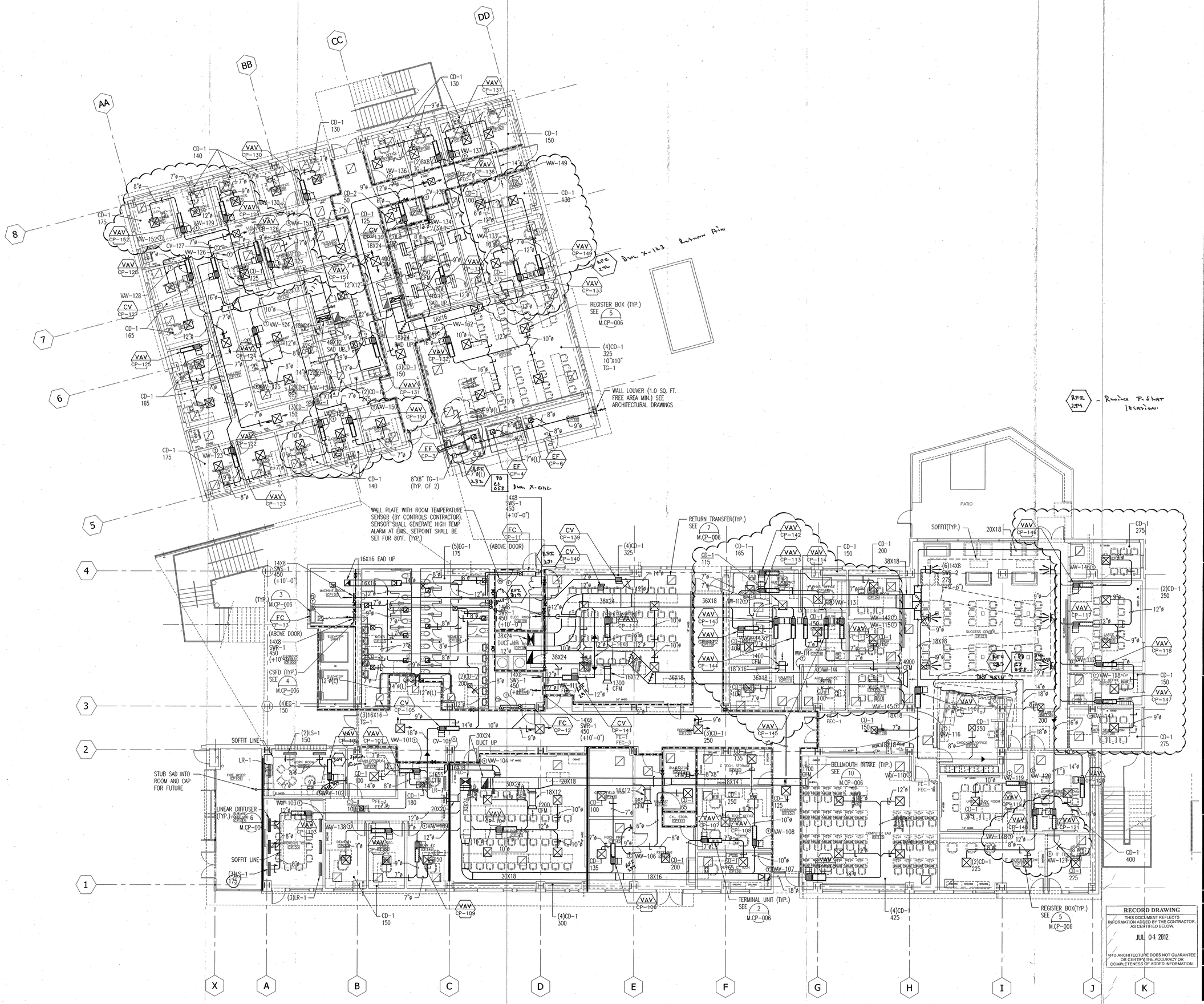

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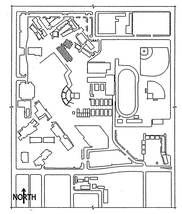
DATE:

1 10-30-08 ADDENDUM 1
2 01-15-10 LEED
RPE - More Sprinkler Risers
PD 01 See Sprinkler Drwgs.

REVISION HISTORY - THIS SHEET

KEY PLAN



SAN BERNARDINO CAMPUS PROJECT

MECHANICAL
FIRST LEVEL
FLOOR PLAN
CHEMISTRY/PHYSICAL
SCIENCE BUILDING

COMM. NO.	2007-0275-10
SCALE	1/8" = 1'-0"
DATE	MAR 19, 2008
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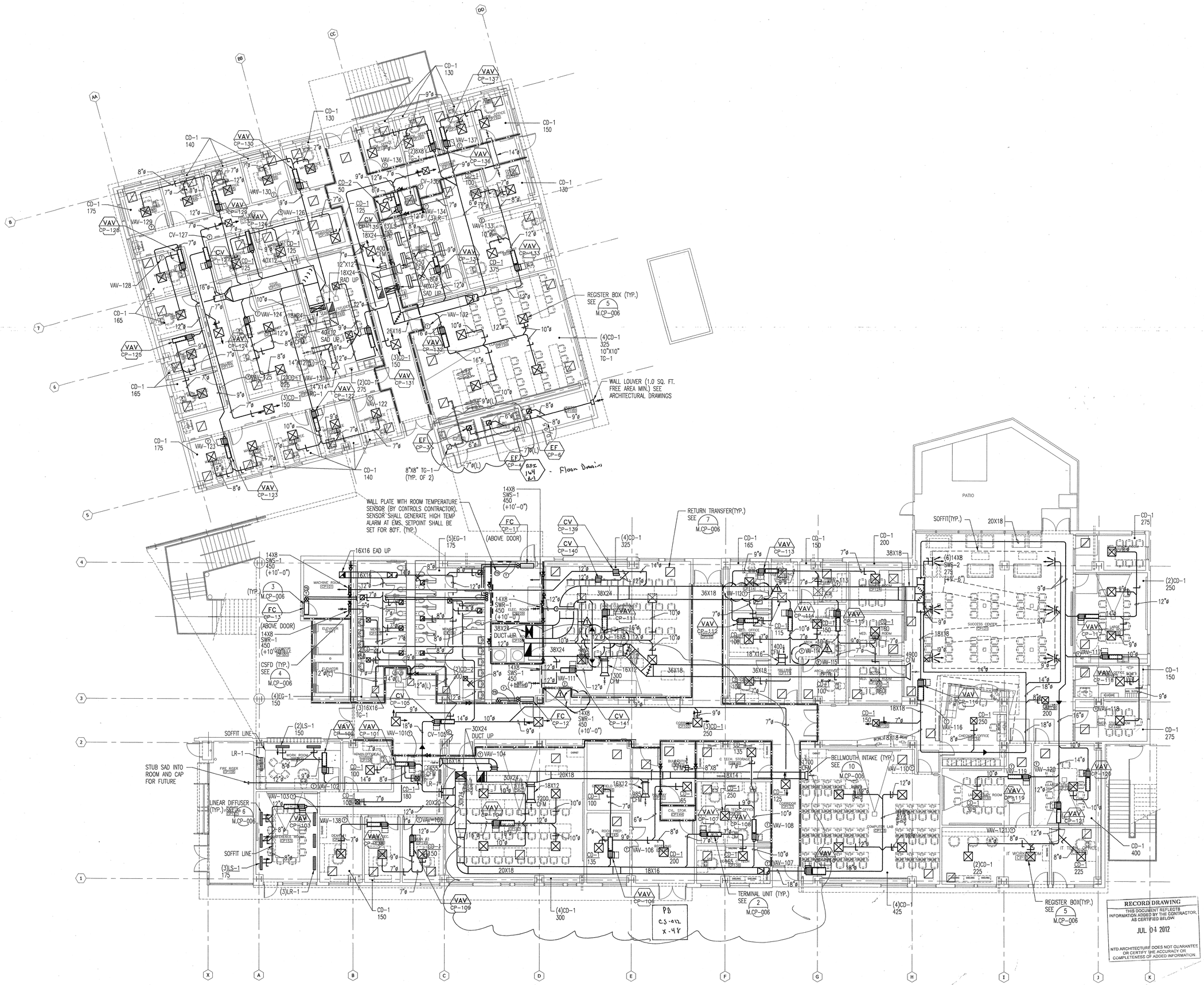

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KEY PLAN

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL FIRST LEVEL FLOOR PLAN CHEMISTRY/PHYSICAL SCIENCE BUILDING

COMM. NO.	2007-0275-10
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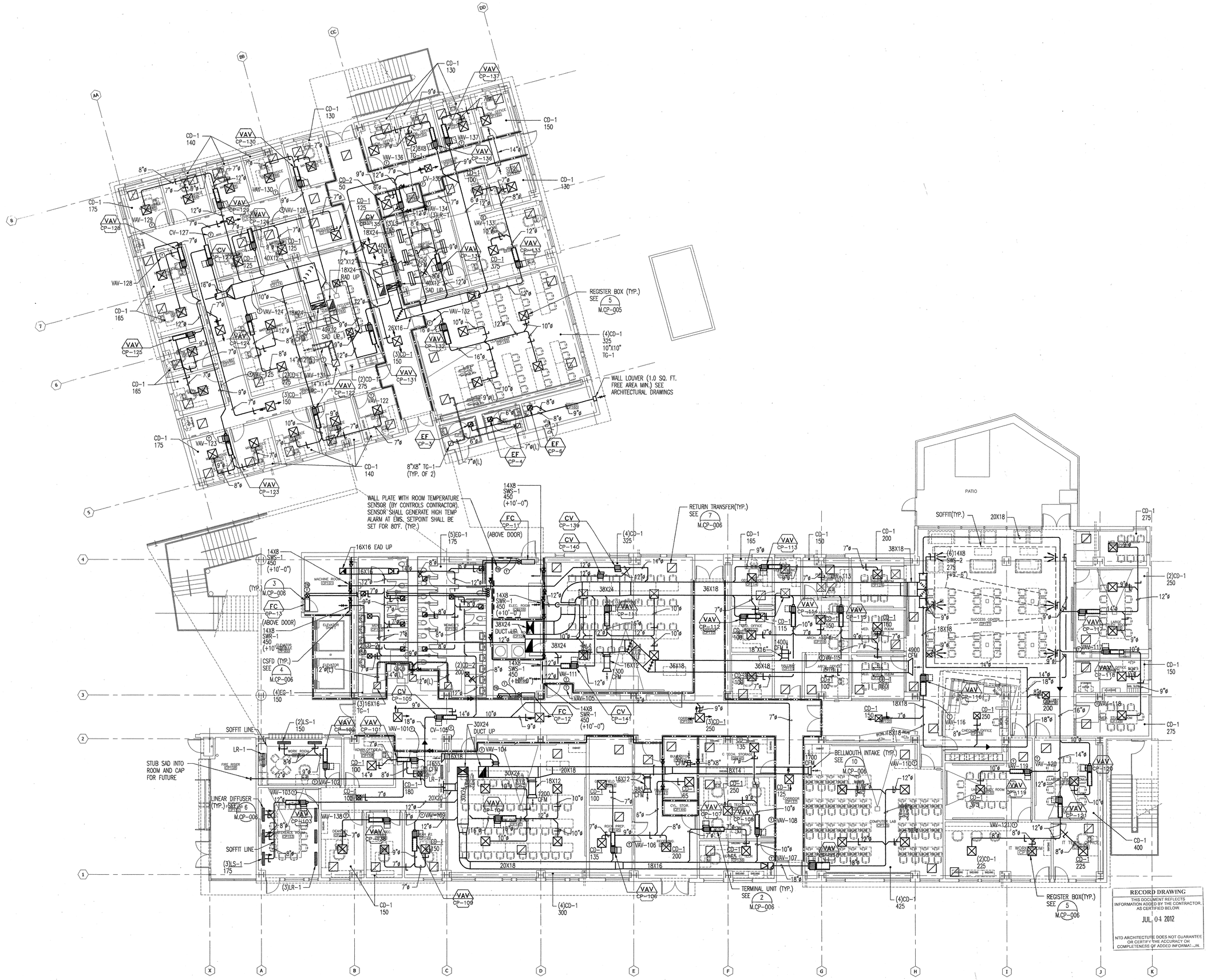

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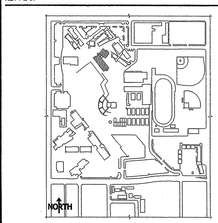

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MECHANICAL FIRST LEVEL FLOOR PLAN CHEMISTRY/PHYSICAL SCIENCE BUILDING

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RFI 147 - Floor Drains.

RFI 239 - Duct Sparing.

RFI 319 - RMS Rat Locator

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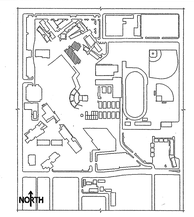

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL
SECOND LEVEL
FLOOR PLAN
CHEMISTRY/PHYSICAL
SCIENCE BUILDING

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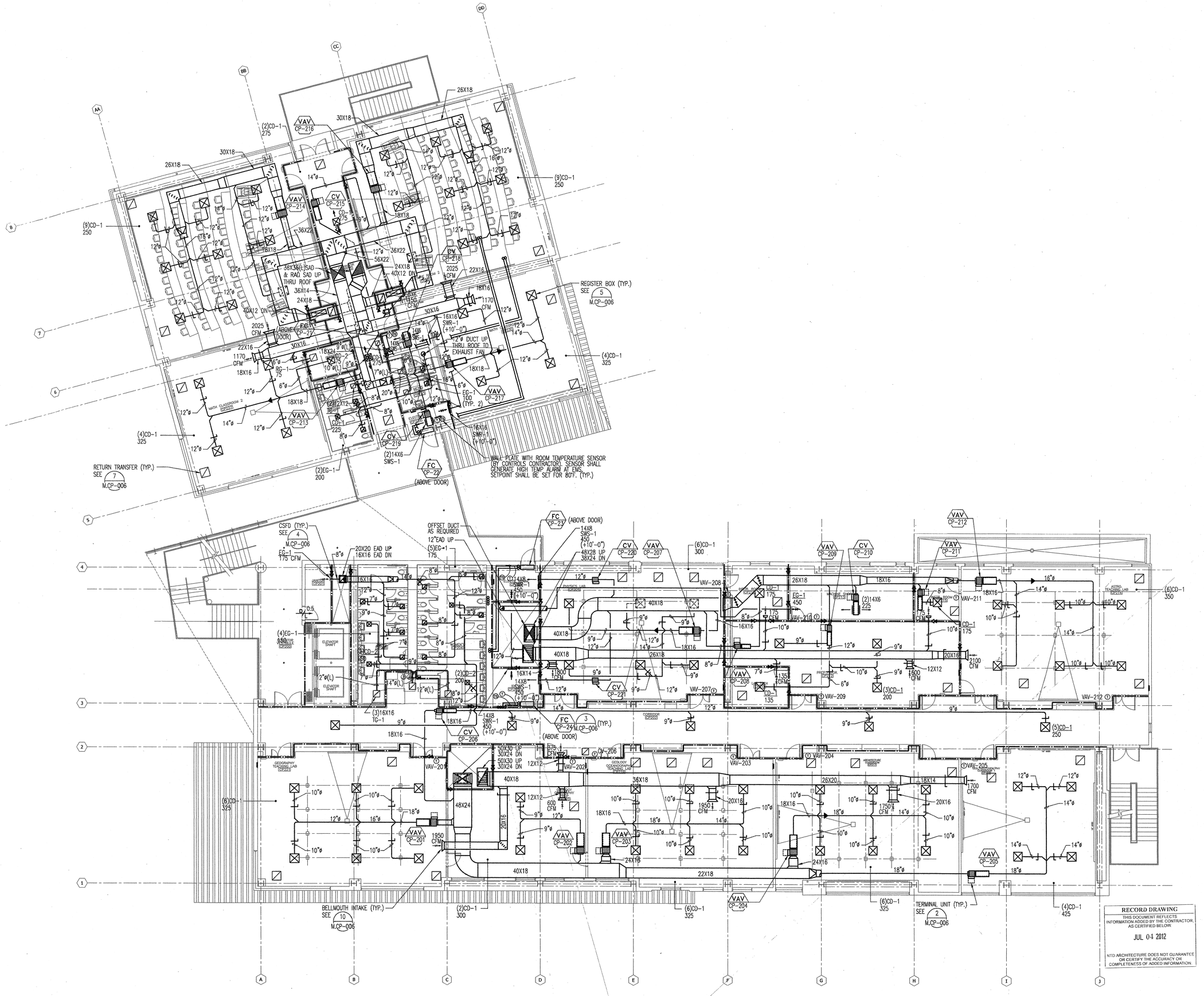

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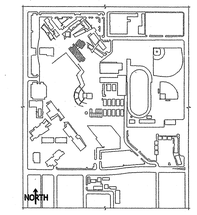

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MECHANICAL SECOND LEVEL FLOOR PLAN CHEMISTRY/PHYSICAL SCIENCE BUILDING

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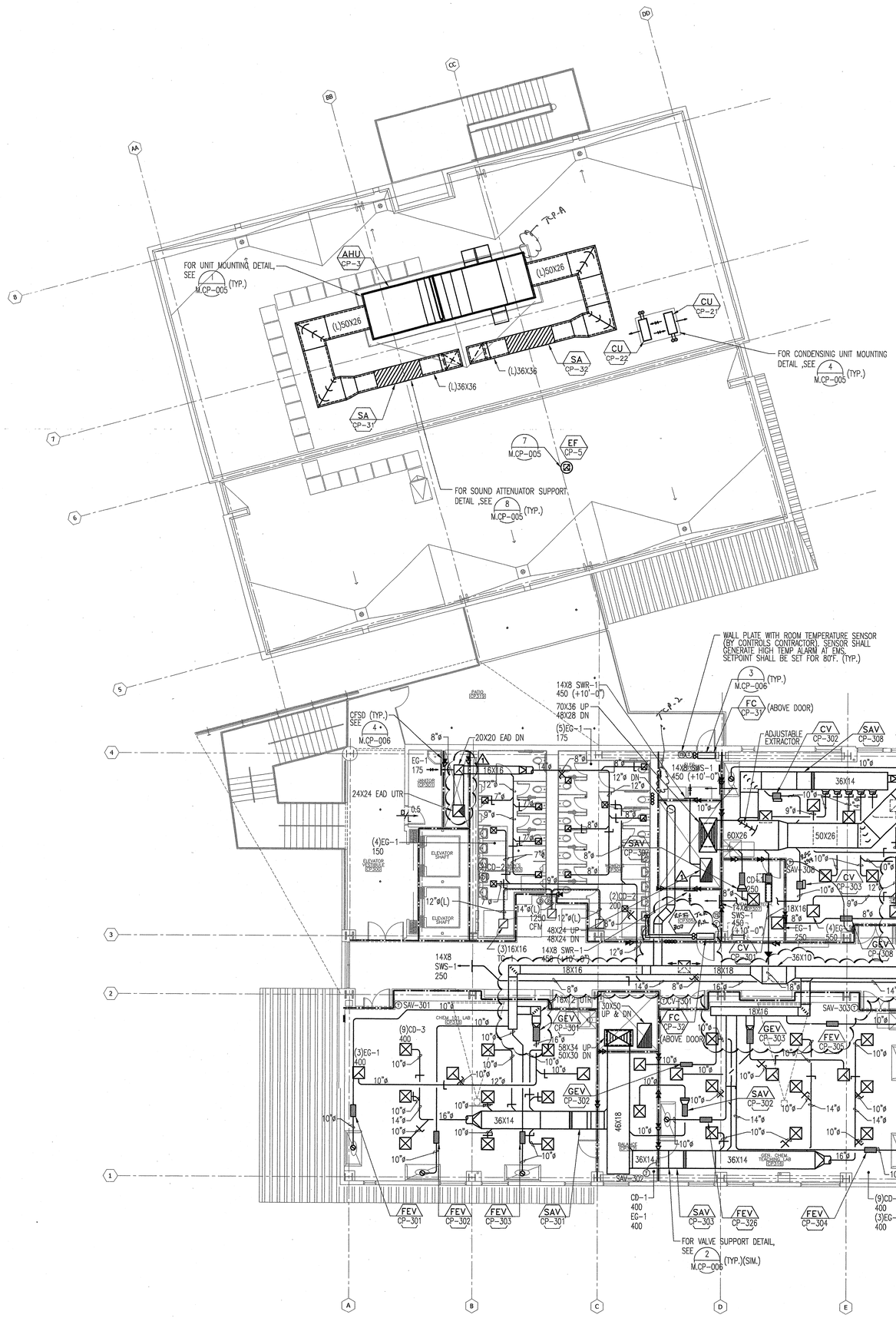

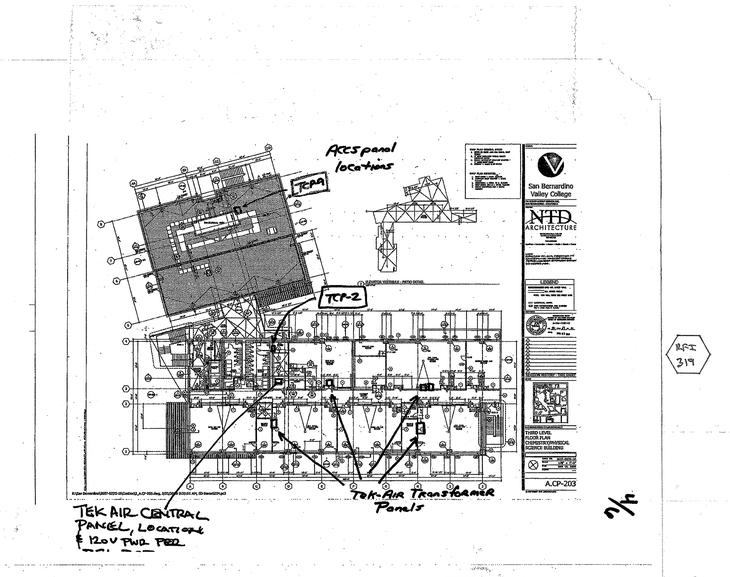

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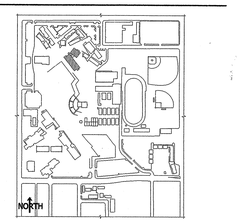

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MECHANICAL THIRD LEVEL FLOOR PLAN CHEMISTRY/PHYSICAL SCIENCE BUILDING

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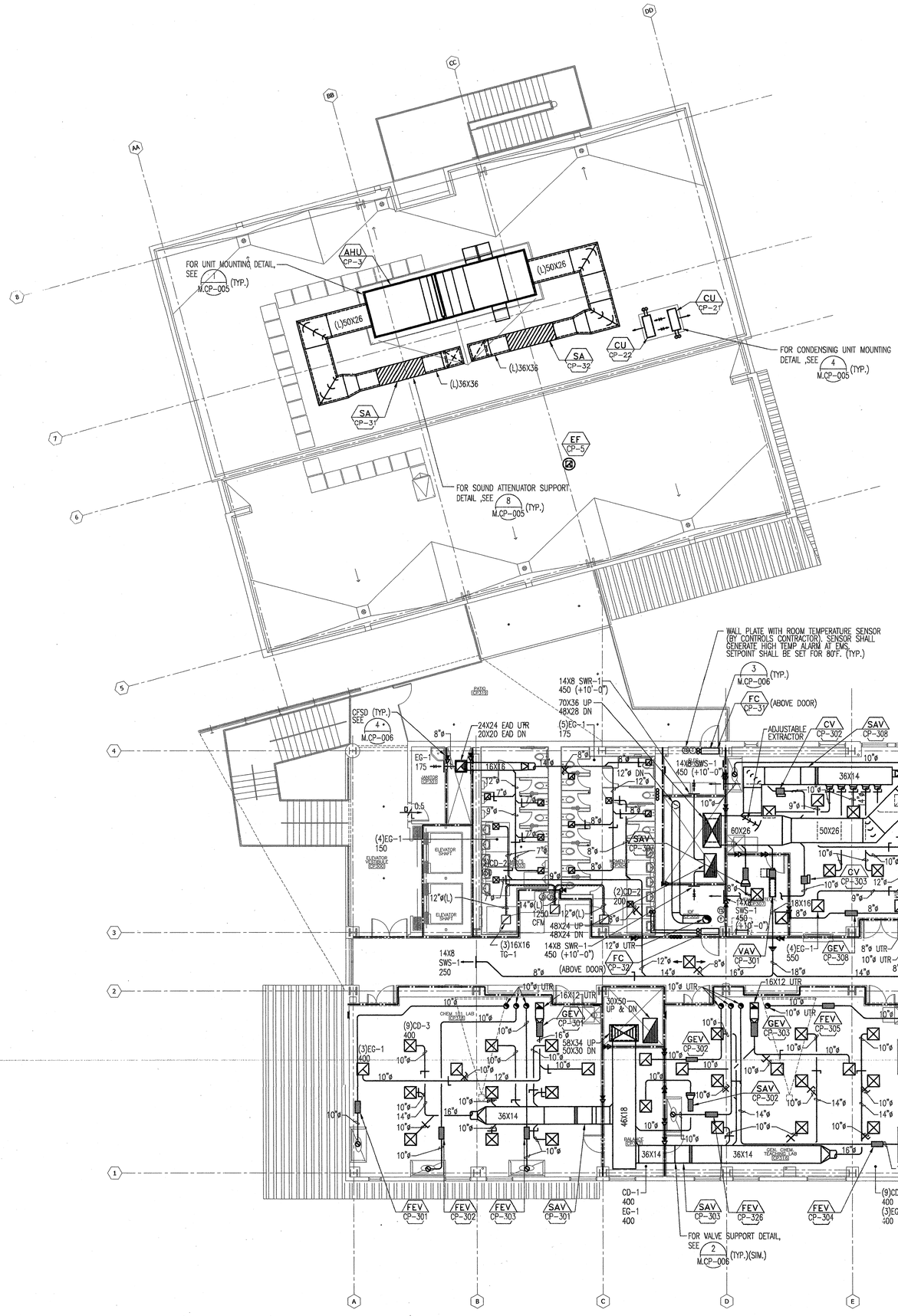

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KEY PLAN

NORTH

SAN BERNARDINO CAMPUS PROJECT

MECHANICAL THIRD LEVEL FLOOR PLAN CHEMISTRY/PHYSICAL SCIENCE BUILDING

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