

ADDENDUM NO. 1

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DATE: 5/21/2009

PROJECT: Greer Elementary School Kindergarten
248 West 'A' Street
Galt, CA 95632

Job No. 08014
DSA File Number No. 34-25
DSA Application No. 02-110621

FROM: Placerville
ANOVA Architects, Inc.
778 Pacific St.
Placerville, CA 95667

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents and previous Addenda as noted below. Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may subject Bidder to disqualification.

This Addendum consists of 2 pages and all attachments noted herein.

MODIFICATIONS TO PREVIOUS ADDENDA:

0.1 No Previous Addenda

MODIFICATIONS TO PROJECT MANUAL:

- 1. Reference Section 00120 – INSTRUCTIONS TO BIDDERS as follows:**
 - a. DELETE Section 00120 – Instructions to Bidders in its entirety.
 - b. ADD Section AD1-00120 – Instructions to Bidders, attached, in its entirety.
 - c. Clarified instructions to bidders.
 - d. Deleted reference to DVBE.
 - e. Deleted reference to labor compliance program.
 - f. As a point of clarification, bidders are not required to provide executed Payment and Performance Bonds at bid time. Successful bidder will be required to submit these bonds prior to commencement of work.
- 2. Reference Section 06412 – PLASTIC LAMINATE CASEWORK**
 - a. DELETE Section 06412 – Plastic Laminate Casework in its entirety.
 - b. ADD Section AD1-06412 – Plastic Laminate Casework, attached, in its entirety.
- 3. Reference Section 09310 – TILE**
 - a. DELETE Section 09310 – Tile in its entirety.
 - b. ADD Section AD1-09310 – Tile, attached, in its entirety.
 - c. Added model numbers and designations for tile products used in the project.
- 4. Reference Section 09650 – RESILIENT FLOORING**
 - a. DELETE Section 09650 – Resilient Flooring in its entirety.
 - b. ADD Section AD1-09650 – Resilient Flooring, attached, in its entirety.
 - c. Added model numbers and designations for resilient flooring used in the project.
- 5. Reference Section 09680 – CARPET**

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- a. DELETE Section 09680 – Carpet in its entirety.
- b. ADD Section AD1-09680 – Carpet, attached, in its entirety.
- c. Added model numbers and designations for carpets used in the project.

6. Reference Section 09720 – WALL COVERINGS

- a. DELETE Section 09720 – Wall Coverings in its entirety.
- b. ADD Section AD1-09720 – Wall Coverings, attached in its entirety.
- c. Added model numbers and designations for wall coverings used in the project.

7. Reference Section 16717 – COMMUNICATION CABLING SYSTEM

- a. ADD Section AD1-16717 – Communication Cabling System, attached, in its entirety.

MODIFICATIONS TO DRAWINGS:

CIVIL DRAWINGS:

C1. No Changes

ARCHITECTURAL DRAWINGS:

A1. Reference Sheet A8.1 – Interior Elevations

- a. Assume all walls identified to have GWB-T or MR-T to have P1SG finish.

A2. Reference Sheet A8.2 – Interior Elevations

- a. Assume all walls identified to have GWB-T or MR-T to have P1SG finish.

A3. Reference Sheet A8.3 – Interior Elevations

- a. Assume all walls identified to have GWB-T or MR-T to have P1SG finish.

HVAC DRAWINGS:

M1. No Changes

PLUMBING DRAWINGS:

P1. No Changes

ELECTRICAL DRAWINGS:

E1. Reference Sheet E0.1

- a. Voice and Data descriptions were modified to describe the type of voice and data being specified, per sheet AD1-E1, attached.
- b. Changed receptacles from 15A to 20A, per sheet AD1-E1, attached.

E2. Reference Sheet E3.1

- a. Voice and Data jacks were relocated, per sheet AD1-E2, attached.
- b. Voice and Data jacks were relocated, per sheet AD1-E3, attached.

LANDSCAPE DRAWINGS:

L1. No Changes

* End Addendum No. 1 *

INSTRUCTIONS TO BIDDERS

Page 1

1.1 DEFINITIONS

- A. The Project team consists of the Owner, the Architect: ANOVA Architects; the Project Inspector (Inspector of Record if applicable) DSA; the Contractor and other design professionals and consultants providing services in connection with the Project.
- B. Definitions set forth in the General Conditions of the Contract for Construction, or in other Bidding Documents are applicable to the Bidding Documents.
- C. Bidding Documents are the Conditions of the Contract (General and other Conditions), Drawings, Specifications, Addenda issued prior to bid, Instructions to Bidders, Notice to Bidders, the unexecuted forms, including the Bid Form, Owner Contractor Agreement, non-collusion affidavit, and performance and payment bonds, and other documents contained in the Project Manual.
- D. Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.
- E. A bid is a complete and properly signed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- F. The Base Bid is the sum stated in the bid for which the bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in alternate bids.
- G. An alternate bid is an amount stated in the bid to be added to or deducted from the amount of the base bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.
- H. A Unit Price is an amount stated in the bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.
- I. A bidder is a person or entity who submits a bid.

1.2 LIQUIDATED DAMAGES

- A. Liquidated damages shall be as set forth on the BID FORM. Refer to Article 8 of the General Conditions.

1.3 TIME FOR COMPLETION

- A. Time for completion shall be as set forth on the BID FORM. Refer to Article 8 of the General Conditions.

1.4 BIDDING PROCEDURES

- A. No bid will be considered unless it is made on forms identical to the forms included with the Bidding Documents. All blanks on the bid form shall be filled in by typewriter or manually in ink. Where so indicated by the makeup of the BID FORM, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the amount written in words shall govern.

Interlineations, alterations and erasures must be initialed by the signer of the bid. If the Owner determines that a bid is unintelligible, inconsistent, or ambiguous, the Owner may reject the bid.

- B. All requested Alternates shall be bid. If no change in the base bid is required, enter "No Change".
- C. All copies of the bid, the bid security, and other documents required to be submitted with the bid shall be enclosed in a sealed opaque envelope, addressed to the Owner in care of the Architect and identified with the Project name, the bidder's name and address, and, if applicable, the designated portion of the Work for which the bid is submitted. If the bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.
- D. Bids shall be deposited at the designated location prior to the time and date for receipt of bids. Bids received after the time and date for receipt of bids will be returned unopened. Bidder shall assume full responsibility for timely delivery at the location designated for receipt of bids. Oral, telephonic or telegraphic bids are invalid and will not receive consideration.

1.5 MODIFICATION OR WITHDRAWAL OF BIDS

- A. A bid may not be modified, withdrawn or cancelled by the bidder during the stipulated time period following the time and date designated for the receipt of bids, except in accordance with Sections 5100 through 5108 of the Public Contract Code.
- B. Prior to the time and date designated for receipt of bids, bids may be modified by telegraphic, facsimile or written communication, provided such communication is received by the Architect prior to the closing time. The telegraphic, facsimile or written communication shall be worded so that the amounts of the original bid are not revealed.
- C. Withdrawn bids may be resubmitted up to the time and date designated for receipt of bids.

1.6 BID OPENING AND CONTRACT AWARDS

- A. Bids will be opened publicly and read aloud after the time and date established for receipt of bids in document NOTICE TO BIDDERS.
- B. The Owner intends to award Contracts on the basis of the lowest responsive responsible bidder who submits a proper proposal in accordance with the requirements of the Bidding Documents. All awards will be made in the Owner's best interest.
- C. The form of Contract that the successful bidder will be required to execute, if awarded the work, is included in the OWNER-CONTRACTOR AGREEMENT.
- D. The Owner reserves the right to waive any informality or irregularity in any bids.
- E. The Owner reserves the right to reject any and all bids.
- F. The low bid will be the bid with the lowest base bid, without consideration of any alternate bids.

1.7 RESPONSIBLE BIDDERS

- A. **Evidence of Responsibility.** Within 7 days of a request, bidder shall submit 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.

- B. **Non-Responsible Bidders.** If an apparent low bidder is found to be not responsible the Owner shall give the apparent low bidder written notice stating that the Owner has found the bidder to be not responsible and a brief statement of the evidence reflecting on the bidder's responsibility. The decision by the Owner shall become final, unless within 5 days of delivery of the notice, the apparent low bidder files a request for a hearing with the Owner. Upon receipt of such request, the Owner shall promptly set a time and place for the hearing giving the apparent low bidder at least 3 days notice. At the hearing, the bidder shall be afforded the opportunity to rebut evidence relied on by the Owner and to present evidence that it is qualified to perform the Contract. The hearing shall be held before the Superintendent or his representative who shall conduct the hearing informally and who shall not be bound by formal rules of evidence or procedure. The representative may continue the hearing at his discretion to allow for the hearing of additional evidence. At the close of the hearing, the representative shall make findings to the Board and serve such report on each side. The final decision will be made by the Board which may hold additional hearings, remand the matter for further hearings, or approve or disapprove the recommendation.

1.8 BIDDER'S REPRESENTATIONS. By making a bid, bidder represents the following:

- A. Bidder has read and understands the Bidding Documents and has thoroughly examined and become familiar with the Drawing and Specifications.
- B. Bidder has visited the Site, become familiar with local conditions under which the Work is to be performed, has correlated personal observations with the requirements of the Contract Documents; and has incorporated the resolution of any resulting restrictions or difficulties in the bid.
- C. Bid is made in accordance with the Bidding Documents and based upon the required materials, equipment and systems, including incidental work reasonably inferable from Bidding Documents as may be necessary for a complete and functional Project.
- D. Bidder agrees that the Time for Completion specified on the bid form is a reasonable number of calendar days for completion of the Work. Bids shall include the cost of a full time superintendent, temporary facilities, General Conditions, and overhead for the full number of Contract calendar days specified plus the number of days required to complete the punch list.

1.9 BID SECURITY

- A. A bid guarantee in the amount of 10% of the bid must accompany the bid. Failure to furnish required bid guarantee in the proper form and amount, by the time set for opening the bids, may be cause for rejection of the bid. A bid guarantee, made payable to the Owner, shall be in the form of a firm commitment, such as a bid bond (AIA A310), Cashier's check, or money order. Bid guarantees, other than bid bonds, will be returned (a) to unsuccessful bidders as soon as practicable after the opening of the bids, (b) to the successful bidder upon the execution of such further contractual document and bonds as may be required by the bid as accepted. Except as provided in Section 5100 through 5108, inclusive, of the California Public Contract Code, if the bidder refuses or is unable after notification of the award of the Contract, to execute said Contract within 10 calendar days of such notification, or to furnish the required payment or performance bonds, said bidder's bid security shall become the property of the Owner not as a penalty, but as liquidated damages. In accordance with Section 5106 of the California Public Contract Code, award may then be made to the next best qualified bidder, or the Work may be re-bid as determined by the Owner's governing body to be in the public interest.

- B. Subcontractor Bid Bonds: Bid bonds, in the amount of 10% of sub-bid amounts for concrete, mechanical, electrical, plumbing, earthwork, and site utility sub-bid amounts over \$200,000.00 must also accompany the bid. Failure to furnish required sub-bid guarantees in the proper form and amount, within 48 hours of the time set for opening the bids, will be cause for rejection of the bids. Bid bonds must be on the AIA A310 form. The sureties utilized by the subcontractors must be authorized and admitted to transact business in California and shall have a minimum rating of B+ from A.M. Best Co. Subcontractors may submit the original copy of their sub-bid bond directly to the Owner at the location and up to the time designated for submission of bid guarantees, or to one of the bidders. If any sub-bidder refuses or is unable after notification of the award of a sub-contract, to execute said subcontract with the successful bidder within 10 calendar days of such notification, that sub-bidder's bid security shall become the property of the Owner not as a penalty, but as liquidated damages. The Owner will assign the sub-bid security to the successful bidder at the time of execution the Contract. Note: Bidders must notify subcontractors in their written and published requests for sub-bids that bid bonds will be required, and whether the bidder or the subcontractors must bear the cost of the bonds.

1.10 BIDDING DOCUMENTS

- A. Bidding Documents will be made available to interested bidders as described in the NOTICE TO BIDDERS. If deposits are being accepted in exchange for Bidding Document, deposit checks (no cash) are to be made payable to the Owner. Deposits will be refunded to bidders who submits a bona fide bid and return complete sets of Bidding Documents in good condition within 10 days after receipt of bids.
- B. Bidders shall use complete sets of Bidding Documents in preparing proposals; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- C. Bidding Documents are provided to bidders for bidding only. No other use is permitted.
- D. Requests from bidders for clarification or interpretation of the Bidding Documents, shall be directed to the Architect in writing no later than 7 days prior to the date set for the opening of bids so that all inquiries can be answered in writing and distributed to all bidders in the form of addenda to the Bidding Documents in ample time before the bid opening date.
- E. Should a bidder find discrepancies, ambiguities, inconsistencies, errors or omissions in the Drawings or Documents, or be in doubt as to their meaning, bidder should at once notify the Architect. Failure of the bidder to report obvious discrepancies, ambiguities, or omissions will not relieve the Contractor of the responsibility to perform the work necessary to carry out the intent of the Drawings or Specifications.
- F. Changes and corrections to the Bidding Documents will be made by Addendum and distributed to plan holders of record. Neither the Owner nor the Architect will be responsible for any verbal instructions.
- G. Plan holders of record: Architect will maintain a list of plan holders. It is the responsibility of any interested bidder to inform Architect of their desire to be placed on the plan holders list.
- H. No Addenda will be issued later than 72 hours prior to the time for receipt of bids except an Addendum withdrawing the request for bids or one which includes postponement of the date for receipt of bids.
- I. Each bidder shall ascertain, prior to submitting the bid, that every Addendum issued prior to the Bid Date has been considered, and shall acknowledge receipt of each Addendum in the Bid in

writing. Each Addendum will become a part of the Contract for Construction. Addenda issued prior to receipt of bids will be issued by the Architect to plan holders of record only.

- J. Each Bidder shall include, as part of the proposal, their Contractor's license number and license expiration date.
- K. Each Bidder shall include, as part of the bid documents, an executed "NON-COLLUSION AFFIDAVIT".

1.11 SUBSTITUTIONS. Pursuant to Sub-Article 5.3 of the GENERAL CONDITIONS, product substitutions will be considered up to 10 days prior to original bid date. Extension of bid date will not extend substitution period.

1.12 PRE-BID MEETING. The Owner and other members of the Project Team will be present to answer Bidders' questions regarding the Project, and to provide information to Bidders at a Pre-Bid Meeting for this Project to be held at the time and location indicated in the Notice to Bidders. Refer to Notice to Bidders to determine if attendance is mandatory for all bidders.

1.13 BONDS. Refer to Article 15 of the General Conditions for information regarding bonding requirements. Sample Bond forms are included in the Project Manual. Contractor shall submit concurrently with the payment and performance bonds evidence which verifies that the proposed surety has the authority to act as surety upon bonds in the state of California.

1.14 INSURANCE. Refer to Article 15 of the GENERAL CONDITIONS for information regarding insurance requirements.

1.15 BIDDERS INTERESTED IN MORE THAN ONE BID. Bidders are not allowed to make, or file, or be interested in more than one bid on the same Work unless alternate bids are called for. If a bidder submits a sub-proposal to another bidder, or quotes prices for materials to a bidder, bidder may still submit a proposal or quote prices to other bidders or make a prime bid.

1.16 FINGERPRINTING REQUIREMENTS

- A. All bidders shall submit at the time of bid opening, a fully executed "Declaration Regarding Employee Fingerprinting and Criminal Background Check." Refer to the FINGERPRINTING CERTIFICATION FORM.

1.17 WAGES

- A. Copies of the prevailing rate of per diem wages are on file and open to public inspection at the office of the Owner, and reference is made specifically thereto. The Contractor shall post a copy of the prevailing rate of per diem wages at the job site. Attention is directed to the provisions of Section 1777.5 and 1777.6 of the Labor Code of the State of California concerning employment of apprentices by the Contractor or any subcontractor under him. The prime Contractor is responsible for compliance with the requirements of Section 1777.5 and the prime Contractor and any subcontractor under him shall comply with the requirements of Section 1777.6.
- B. The attention of the bidder is directed to the fact that the schedule of prevailing rates of pay for each craft or type of workman needed to execute the work, contains the minimum rate of pay as established by the State Director of Industrial Relations in pursuance of the provisions of the Labor Code of the State of California, which Code requires the establishing of such rates for the locality in which the work is to be performed. Section 1770 of the Labor Code reads: "Nothing . . . shall prohibit the payment of more than the general prevailing rate of wages to any workman employed on public work."

- C. All bidders shall check the available source of labor supply and obtain information with reference to the length of the working day of various crafts and actual rates of wages being paid in the immediate vicinity of the place where work contemplated by these Specifications is to be performed, particularly with reference to rates of pay that may be in excess of those general prevailing rates established by the Owner.

1.18 CONTRACTOR'S LICENSE

- A. Bidder must be a Contractor properly licensed to perform the Work of this Project with an active license in good standing as of the date of receipt of bids. License must be issued by the Contractors State License Board of California and must be maintained in good standing throughout the term of the Contract.

1.19 SUBCONTRACTOR LISTING

- A. Pursuant to the provisions of Sections 4100 to 4114, inclusive, of the California Public Contracts Code, every bidder shall in the bid set forth:
 - 1. The name and location of the place of business of each subcontractor.
 - 2. The portion of the Work that will be done by each subcontractor. If the bidder fails to specify a subcontractor for any portion of the work to be performed under the Contract in excess of 1/2 of 1% of the bidder's total bid, bidder agrees to perform that portion with bidder's own forces. The successful bidder shall not, without the consent of the Owner, either:
 - a. Substitute any person as subcontractor in place of the subcontractor designated in the original bid.
 - b. Permit any subcontract to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.
 - c. Sublet or subcontract any portion of the work in excess of 1/2 of 1% of the total bid as to which the original bid did not designate a subcontractor.

END SECTION

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Bid Opening: Time: _____ Date: _____

TO: **GALT JOINT UNION ELEMENTARY SCHOOL DISTRICT** (Sometimes hereinafter called "Owner".)

Ladies/Gentlemen:

The undersigned hereby proposes and agrees to furnish any and all required labor, material, equipment, transportation and services for construction of the **Greer Elementary School Kindergarten** for **Galt Joint Union Elementary** School District, **Galt, California**, in strict conformity with the Drawings, Project Manual, and other documents on file at the office of the Architect, ANOVA Architects, Inc., 778 Pacific Street, Placerville, CA 95667.

BASE BID:

_____ DOLLARS (\$ _____.)

UNIT PRICES:

ITEM NO. 1: Vapor Control for Flooring

_____ DOLLARS (\$ _____)

TIME FOR COMPLETION: 60 CALENDAR DAYS.

The Contractor shall execute the Work in a prompt, and diligent manner. It is understood and agreed that the Work shall be completed within the number of calendar days stated on the Bid Form from the date stipulated on the written Notice to Proceed, unless extension of time or suspension of the Work is authorized as provided in the Conditions of the Contract.

Should the work contracted for under this Agreement not be completed within the Contract Period plus, if any, authorized extension of time, there will be deducted from any money due or that may become due the Contractor under the Contract the sum of \$500.00, as liquidated damages and not as a penalty, for each calendar day's delay after the expiration of said time until the substantial completion of said Work.

The undersigned, upon notice of the acceptance of the bid within 90 calendar days after the date of opening of the bids, hereby agrees to sign said Contract and furnish the necessary bonds and insurance certificates within 10 days after Notice of Award of said Contract.

The undersigned has examined the location of the proposed work and is familiar with the Drawings, Project Manual, and other Contract Documents and the local conditions at the place where the work is to be done.

The undersigned has checked carefully all of the above figures and understands that the Owner will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned acknowledges that the Owner reserves the right to reject any and all bids and/or waive any irregularities or informalities in the bidding.

Enclosed, made payable to the Owner, find Bidder's Bond, from a surety company registered with the State of California Insurance Commissioner, or Money Order in the amount of 10% of the bid.

Enclosed is signed and notarized Noncollusion Affidavit.

Receipt of Addenda is acknowledged as follows: Addenda No. _____ through _____.

CONTRACTOR:

By:

STREET ADDRESS:

City, State:

MAILING ADDRESS:

City, State, Zip Code:

TELEPHONE: (____)

CONTRACTORS STATE
LICENSE BOARD NO.:

CLASSIFICATION:

Dated this _____ day of _____, 20__.

SUBCONTRACTOR FORM

LIST OF SUBCONTRACTORS FOR _____, GENERAL CONTRACTOR.

PROJECT: **Greer Elementary School Kindergarten**

Pursuant to the provisions of Sections 4100 to 4114 inclusive, of the California Public Contract Code, and as set forth in Instructions to Bidders, and the General Conditions, the above named Contractor hereby designates below the names and locations of the place of business of each subcontractor proposed to be employed to perform work or labor or render service to the Bidder in or about the work in an amount in excess of 0.5% of the total amount of Bidder's proposal.

NAME OF SUBCONTRACTOR	WORK TO BE SUBCONTRACTED	LOCATION OF PLACE OF BUSINESS

(Copy this sheet if additional space is needed)

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PLASTIC LAMINATE CASEWORK

Section AD1-06412

Page 1

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes plastic laminate casework and related work as shown and specified.

1.3 SUBMITTALS

- A. Shop Drawings: Submit manufacture and installation details, including fastenings, for review. Provide WI Certified Compliance Label.
- B. Samples: Submit 2 minimum 2 x 3-inch plastic laminate samples for each color specified; other products if specifically requested.
- C. Product Data: None required for specified products.
- D. Certificates: Provide WI Certified Compliance Certificate for fabrication and installation of all casework in grade specified.
- E. Closeout: Provide completed Guarantee form per Article 1.5.

1.4 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. Woodwork Institute (WI): Eleventh Edition 2003 Manual of Millwork.
 - 2. National Electric Manufacturers Association (NEMA): Plastic laminate standards.
- B. Qualifications:
 - 1. Fabrication shall be performed by manufacturer with minimum 5 years documented experience in producing WI compliant casework.
 - 2. Installation shall be performed by the fabricator provided fabricator has minimum 5 years documented experience installing casework. Alternatively installation may be performed by a W.I. certified installer.
- C. Mock-up: Submit 1 full size base cabinet and 1 full size wall cabinet with finishes. Mock-ups or samples cabinets may be submitted without project colors. Mock-ups with correct colors may be incorporated into project subject to approval of Architect. Approved mock-up will set the standard of quality and construction of the work of this section.

1.5 GUARANTEE

- A. Provide in required form for a period of 1 year from date of acceptance by Owner.

PART 2 – PRODUCTS**2.1 MATERIALS**

- A. Conform to WI Custom Grade.
- B. Plastic Laminate: High-pressure decorative laminate plastic; Class A flame spread.
 - 1. Acceptable Manufacturers:
 - a. Wilsonart International.
 - b. Formica Corp.
 - c. Pionite
 - 1. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
 - 2. Plastic Veneer: NEMA Standard for vertical and horizontal surfaces grade; satin finish.
 - 3. Backing Sheets: Per NEMA Standard.
 - 4. Colors and Patterns: more than one per cabinet may be required.
 - a. Color A – Formica Natural Cane, No. 6930
 - b. Color B – Pionite Thyme Fiber, No. AV721
 - c. Color C – Pionite Chili Fiber, No. A010
 - 5. Low Pressure Melamine: Thermoset decorative laminate panel conforming to WI minimum acceptable standards when tested per NEMA “LD-3” test method.
- B. Polyvinyl Chloride (PVC) Banding: Resilient, minimum 3 millimeters thick by appropriate width. Install at all edges of drawers and doors only. Color to match laminate.
- C. Lumber:
 - 1. WI Custom Grade standards; particle board with 40 to 50 pound density.
 - 2. Scribe Moulds: Smallest possible size lumber; finish all exposed edges with plastic laminate to match casework.
- D. Casework Hardware:
 - 1. Per WI Standards, and as follows.
 - 2. Finish: Match door hardware finish; refer to Section 08710 – DOOR HARDWARE.
 - 3. Hinges:
 - a. General: Grade 1; do not let in hinge to edge of door.
 - b. Acceptable Products:

1. Model No. RPC 376-US26D, as manufactured by Rockford Process Control, Inc.
2. Comparable Grade 1 hinge, as manufactured by the Stanley Hardware Division of the Stanley Works.
- c. Alternate Products: Proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
4. Door and Drawer Pulls:
 - a. Acceptable Products: Model No. MC-402 U-shaped, 4-inch wire pull, as manufactured by Engineered Products Company.
 - b. Alternate Products: No known equals; proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
5. Magnetic Catches:
 - a. Acceptable Products: Model No. 323, as manufactured by the H.B. Ives Division of Ives, Horrow Company.
 - b. Alternate Products: No known equals; proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
6. Silencers:
 - a. Acceptable Manufacturers: Ceco Building Systems Division of Robertson-Ceco.
 - b. Alternate Manufacturers: No known equals; proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
7. Locks:
 - a. Acceptable Products: National Cabinet Lock Model No. NCL C-8183 cabinet lock; 5-pin tumbler, modified cam on backside. Olympus 700/800, manufactured by the Olympus Corp.; cylinders as specified in Section 08710 - DOOR HARDWARE.
 - b. Alternate Products: Proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
 - c. Keying: Coordinate with Owner.
8. Drawer Guides:
 - a. Acceptable Manufacturers: Accuride International, Inc.
 - b. Alternate Manufacturers: No known equals; proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.

- c. Small Drawer 16 inches Wide or Less: Model No. 3832; 75 pounds.
- d. Medium Drawer 24 inches Wide or Less: Model No. 3832; 100 pounds.
- e. Large Drawer 27 inches or Less: Model No. 3832; 150 pounds.
- f. Large Drawers 27 inches or More: Model No. 4034.
- g. Drawers 42 inches or More with Face Height 7 inches or More: Model No. 3640.
- 9. Adjustable Shelf Hardware:
 - a. Acceptable Products: Universal Model No. 1, as manufactured by Hettich America, L.P.
 - b. Alternate Products: Proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- 10. Wire Management Grommets:
 - a. Acceptable Products: Model No. SAG60-BK, as manufactured by Outwater Plastic Industries, Inc.
 - b. Alternate Products: Proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- E. Cantilevered Countertop Supports:
 - 1. Acceptable Products: Countertop Brace One (CB1): 1/8-inch thick steel “L” bracket as manufactured by A & M Hardware, Inc.
 - 2. Alternate Products: No known equals; proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
 - 3. Size: As shown.
 - 4. Color: As selected by Architect from manufacturer's full range.
- F. Fasteners and Adhesives: Per WI requirements.

2.2 FABRICATION

- A. General: Manufacture to Custom Grade standards, except where specifically noted otherwise, per Section 15 of the Manual of Millwork. Provide WI Certified Compliance Label for grade specified, to each elevation of casework.
- B. Construction:
 - 1. General: Style A (frameless); Type I (modular). Inside corner cabinets shall be accessible.
 - 2. Open Shelving: Semi-exposed surfaces on casework without doors or with glass doors shall be faced with vertical grade plastic laminate in color to match exposed surfaces.
 - 3. Door and Drawer Fronts: Reveal overlay; Type A. Surface mount door hinges.

4. Backs: ¼-inch thick, 1/2-inch thick where back is exposed; rabbeted or dadoed into top and sides; 1/2-inch nailer at top.
 5. Shelves: Shall be constructed of plywood or particle board in thicknesses and lengths per WI Table 15-1, "Maximum Adjustable Shelf Lengths" for 50 pounds per square foot load.
 6. Filler Panels: Thickness as required; to match cabinets.
 7. Edge Banding: 3 millimeters PVC at visible edges. Color to match cabinet.
 8. End Panels: 2 layers of 3/4-inch plywood at countertop end locations with no cabinets below.
- C. Countertops:
1. Plastic Laminate: Fabricate to waterfall profile, in longest practicable length; minimize number of joints. Make joints neat and watertight; abutting ends splined and adjoining surfaces flush. Ease exposed edges and provide a minimum 1-inch radius at outside corners. Provide backing sheet on bottom side of countertops where plumbing fixtures are to be installed or where exposed to moisture.
- D. Casework Hardware:
1. General: Prefit; remove for application of finish. Keep hardware with casework to which it has been prefit; reinstall after casework is anchored in place, as shown.
 2. Hinges: 4 - No. 8 screws into end panel and door panel; 1-1/2 pair on 7'-0" high cabinet doors; tall cabinet doors must swing 180 degrees when adjacent to low cabinets without interference from counter top.
 3. Magnetic Catches: One catch on cabinet doors up to 48 inches high; 2 catches (top and bottom) on cabinet doors over 48 inches high.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine conditions of work in place before beginning work; report defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Environmental Requirements: Relative humidity 50% or less; temperature 65 degrees F minimum.
- B. Measurements: Take field measurements prior to fabrication; report variance between plan and field dimensions.
- C. Delivery: Use clean, nonstaining materials for blocking and packing. Carefully load and cover for shipment; do not transport during inclement weather.

3.3 INSTALLATION

- A. Install in conformance with referenced standards, manufacturer's written directions, as shown, and as specified. Provide WI Certified Compliance Certificate for Installation.
- B. Casework:
 - 1. General: Install level, with tight joints between units; scribe edges to fit adjacent finishes. Secure to backing or plates in wall or to casework carriers with lag bolts with washers to permit removal; screw penetration of not less than 1 inch into 2 inches nominal backing or framing is required.
 - 2. Filler Panels: Scribe to cabinets and abutting finishes.
- C. Countertops:
 - 1. General: Install level, using concealed fasteners, with tight joints; scribe to fit wall finishes.
 - 2. Cantilevered Countertop Supports: Install brackets as shown. Paint fastener heads to match bracket color.
- D. Hardware:
 - 1. General: Check hardware upon delivery to site; store in an orderly manner. Fit and install in place without marring or injuring either hardware or casework.
 - 2. Seismic Restraint: At all shelf supports.

3.4 CLEANING

- A. General: Immediately following installation, clean casework to remove dirt, stains, scratches, and abrasions. Protect casework against damage by other trades; repair or replace damaged and defaced material at no cost to Owner.

3.5 JOBBING

- A. General: 6 months after final acceptance of the building, and at any time within 1 year after acceptance when so directed, examine casework doors, drawers, fittings, etc., and perform such fitting and adjustment as necessary to put items in good condition and working order.

END SECTION 06412

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes tile and related work as shown and specified.
- B. Furnish all labor, materials, tools, equipment and services necessary for and seasonably incidental to complete the tile work as shown and specified.

1.3 PERFORMANCE REQUIREMENTS

- A. Product Test Data:
 - 1. Water Absorption (ASTM C373): < 0.5%.
 - 2. Breaking Strength (ASTM C648): > 500 pounds per square inch.
 - 3. Scratch Hardness (MOHS): ≥ 8.0 .
 - 4. Chemical Resistance (ASTM C650): Resistant.
 - 5. Coefficient of Friction (ASTM C1028): ≥ 0.6 .

1.4 SUBMITTALS

- A. Product Data: Manufacturer's data, installation instructions and evidence of compliance with requirements of this section.
- B. Samples:
 - 1. Tile: Submit 2 minimum full-size samples of each type of tile for each color, finish, class and price group.
 - 2. Grout: Submit 2 minimum 3-inch long samples for each color specified.
- C. Master Grade Certificates: Per ANSI/TCA A137.1, for each type of tile, signed by tile manufacturer and Installer.
- D. Installer Qualifications: If requested, provide evidence that installers meet the requirements of article 1.4.
- E. Closeout Submittals:
 - 1. Manuals: Maintenance instructions and stain removal methods.
 - 2. Guarantee: Provide completed form per Article 1.6.

3. Extra Stock: Deliver 1% or a minimum of one full carton of each type, composition, color, pattern, size and shape of tile.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 3 years of experience on similar work; knowledge and understanding of standards referenced herein, and the skill necessary to perform in compliance with this specification. Installers failing to demonstrate the required experience, knowledge, or skill shall be removed from the project.
- B. Source Limitations: Obtain tiles of same type and color from a single source. Obtain setting and grouting materials from a single manufacturer.

1.6 GUARANTEE

- A. Provide manufacturer's warranty that products are to be free from defects in materials and workmanship for 2 years beginning at date of acceptance by Owner.

PART 2 - PRODUCTS

2.1 TILE

- A. Acceptable Manufacturers:
 1. American Olean.
 2. Dal Tile International.
 3. Interceramic Tile and Stone.
- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Edge Units: All exposed edges bullnosed including door openings to carpeted areas.
- D. Glazed Ceramic Wall Tile One (CWT1):
 1. Size: 4-1/4 x 4-1/4 inches, 5/16-inch thickness.
 2. Face: Plain with cushion edges.
 3. Products:
 - a. Price group 2; Standard Grade.
 - b. Semi Gloss, as manufactured by Dal-Tile.
 4. Finish: Bright, opaque glaze.
 5. Color: Garden Spot, No. 0141.
- E. Glazed Ceramic Wall Tile Two (CWT2):
 1. Size: 4-1/4 x 4-1/4 inches, 5/16-inch thickness.

2. Face: Plain with cushion edges.
3. Products:
 - a. Price group 2.
 - b. Semi Gloss, as manufactured by Dal-Tile.
4. Finish: Bright, opaque glaze.
5. Color: Almond, No. K165.

F. Glazed Ceramic Wall Tile Three (CWT3):

1. Size: 4-1/4 x 4-1/4 inches, 5/16-inch thickness.
2. Face: Plain with cushion edges.
3. Products:
 - a. Price group 4.
 - b. Semi Gloss, as manufactured by Dal-Tile.
4. Finish: Bright, opaque glaze.
5. Color: Wood Violet, No. Q467.

G. Glazed Ceramic Wall Tile Four (CWT4):

1. Size: 4-1/4 x 4-1/4 inches, 5/16-inch thickness.
2. Face: Plain with cushion edges.
3. Products:
 - a. Price group 4.
 - b. Semi Gloss, as manufactured by Dal-Tile.
4. Finish: Bright, opaque glaze.
5. Color: Fire Brick, No. Q093.

2.2 MORTAR

- A. Portland Cement: ASTM C150, Type I; gray.
- B. Aggregate: ASTM C144, fine sand.
- C. Water: Clean, fresh, potable and free of mineral or organic matter which can affect plaster.

2.3 GROUT

- A. Acceptable Manufacturers
 1. Laticrete International, Inc.
 2. Custom Building Products
- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 – PRODUCT SUBMITTALS AND SUBSTITUTIONS.

- C. Acceptable Products:
 - 1. Laticrete SpectraLock Pro Grout.

2.4 LIQUID LATEX MORTAR ADDITIVE

- A. Acceptable Manufacturers:
 - 1. Planicrete by Mapei Corporation.
 - 2. Laticrete International, Inc.
 - 3. Custom Building Products.
- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.

2.5 CEMENTITIOUS BACKER UNITS (CBB)

- A. General: Per ANSI A118.9; 1/2-inch thickness unless indicated otherwise.
- B. Acceptable Products:
 - 1. Wonderboard, by Custom Building Products.
 - 2. Util-A-Crete Concrete Backer Board, by FinPan, Inc.
 - 3. DUROCK Cement Board, by United States Gypsum Co.
 - 4. PERMABASE brand Cement Board, by National Gypsum Co.
- C. Alternate Products: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- D. Joint Reinforcement: 2-inch wide glass fiber tape.
- E. Joint Compound: Per manufacturer's written instructions.

2.6 CURING PAPER

- A. FS UU-B-790, Type II, Grade E, Style 8.

2.7 MIXES

- A. General: Mix only as much mortar or grout as can be used prior to initial set. Combine materials dry, to uniform color and consistency, before adding liquid. Protect mixtures from freezing, frost, contamination, and evaporation. Do not retemper mixes after initial set has occurred.
- B. Mortar Bed: ANSI A-108.4, no lime allowed in floor bedding mixes.
- C. Scratch Coat (Walls): ANSI A108.4.
- D. Latex-portland cement mortar: ANSI A118.4. Mix per liquid latex mortar additive manufactures written directions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions of work in place before beginning work; report defects.

3.2 PREPARATION

- A. Remove substances that are incompatible with tile-setting materials; verify surfaces to receive tile are clean.
- B. Take field measurements; report variance between plan and field dimensions.

3.3 INSTALLATION, GENERAL

- A. Install in conformance with referenced standards, manufacturer's written directions, as shown, and as specified. Comply with TCA's "Handbook for Ceramic Tile Installation" for applicable substrate conditions.
- B. Cutting:
 - 1. Tiles smaller than half size are not permitted; use cut tile on outer edges of field only.
 - 2. Level cut edges with carborundum stone until smooth; install no tile with jagged or flaked edges.
 - 3. Splitting is not allowed.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions, unless shown otherwise. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- E. Joints: Per TCA EJ171. Lay tile as shown. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions to permit laying pattern with a minimum of cut tiles; make adjustments at walls.
- F. Epoxy Grout: Per ANSI A108.3.

3.4 WALL TILE INSTALLATION

- A. Thin Set Over Cementitious Backer Units:
 - 1. Installation: Provide in showers and where shown per TCA W244 and as specified. Where tile backing panels abut other types of panels in the same plane, shim surfaces to produce a uniform plane across panel surfaces.
 - 2. Finishing: Tape joints and finish according to manufacturer's written instructions. Provide surface equivalent to Level 2 gypsum board finish for tile application.

3. Backer Units: Install with smooth side against supports. Attach to all supports at 8 inches on center with 1½-inch galvanized roofing nails or No. 8 rust resistant screws. Tape all joints. Set tape in skim coat of latex cement mortar.
 4. Bond Coat: Latex-Portland Cement Mortar.
- B. Joints:
1. General: Align with floor tile; 1/16-inch width.
- C. Penetrations: Fit tiles closely around penetrations and where edges will be covered by trim, escutcheons or other similar devices.
- D. Grouting: Grout joints full; make smooth and flush; remove excess.
- E. Sealant: Fill joints between wall tile and plumbing and other built-in fixtures with silicone rubber sealant to match tile or grout color.

3.5 ALLOWABLE TOLERANCES

- A. Setting Bed Method: Maximum deviations from level and plumb, and from elevations, locations, slopes, and alignments shown:
1. Floors: Any direction, 1/8 inch in 10'-0"; 1/32-inch offset.
 2. Walls: Any direction, 1/8 inch in 8'-0"; 1/32-inch offset.
- B. Thin Set Method: Maintain allowance permitted for substrate; 1/32-inch offset.

3.6 CURING

- A. General: Per referenced standards; keep damp for at least 72 hours.
- B. Horizontal Surfaces: Cover surfaces with curing paper.
- C. Epoxy Grout: Keep at a relatively even temperature during first 8 hours of cure.

3.7 CLEANING AND PROTECTING

- A. Prohibit traffic from floors for 7 days minimum after grouting.
- B. Keep premises free from accumulation of waste and debris. At completion of installation remove surplus materials and debris.
- C. At completion clean exposed surfaces in a manner that will not damage finish.

END SECTION 09310

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes resilient flooring and related work as shown and specified.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications, data, and installation instructions for review.
- B. Samples: Submit 2 minimum 3 x 3-inch samples for each flooring specified.
- C. Certificates: Certification that no product installed contains asbestos.
- D. Installer Qualifications: If requested, provide evidence that installers meet the requirements of Article 1.4. Proof of certification as Forbo "Master Mechanic" before start of work.
- E. Source Limitations: Obtain each flooring product from a single manufacturer.
- F. Closeout Submittals
 - 1. O & M Manuals: Maintenance and cleaning instructions.
 - 2. Guarantee: Provide completed form per Article 1.4.
 - 3. Extra Stock: Furnish extra full-size floor tiles equal to 1% of quantity installed (minimum of 1 full carton) that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.4 GUARANTEE

- A. Provide manufacturer's warranty that products are to be free from defects in materials and workmanship for 2 years beginning at date of acceptance by Owner.

1.5 QUALITY ASSURANCE

- A. Moisture Resistance: Flooring system must be guaranteed to bond to floor slab with moisture vapor emission 5 pounds per 1000 square feet in 24 hours as measured by ASTM F 1869-98, anhydrous calcium chloride test.
- B. Substrate Alkalinity at Linoleum: Maximum pH of 10.
- C. Installer Qualifications: Minimum of 3 years of experience on similar work; knowledge and understanding of standards referenced herein; skill necessary to perform in compliance with this specification. Installers failing to demonstrate the required experience, knowledge, or skill shall be removed from the project. Engage installer certified as a Forbo "Master Mechanic."

- D. Fire-Test-Response Characteristics:
 - 1. Critical Radiant Flux per ASTM E648: Class A.
 - 2. Smoke Developed Index per ASTM E662: 450 or less.

1.6 DELIVERY

- A. Linoleum sheet flooring must be ordered a minimum of 60 days prior to start of scheduled installation.

PART 2 - PRODUCTS

2.1 LINOLEUM

- A. Acceptable Manufacturers:
 - 1. Forbo Industries, Inc.
 - 2. Armstrong World Industries, Inc.
- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Linoleum Sheet Flooring One (LIN1): Marmoleum Vivace; Purple Passion.
- D. Linoleum Cleaner:
 - a. S485 Commercial Floor Cleaner, as manufactured by Armstrong World Industries, Inc.
 - b. Stride, as manufactured by Johnson Diversey.
- E. Linoleum Sealer:
 - a. S495 Commercial Floor Cleaner, as manufactured by Armstrong World Industries, Inc.
 - b. Linobase, as manufactured by Forbo.
- F. Linoleum Finish:
 - a. S480, Commercial Floor Polish, as manufactured by Armstrong World Industries, Inc.
 - b. Carefree, as manufactured by Forbo.

2.2 RESILIENT BASE

- A. Acceptable Manufacturers:
 - 1. Roppe Corporation.
 - 2. Burke/Mercer Flooring Products Division of Burke Industries, Inc.
 - 3. Armstrong World Industries, Inc.

- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Resilient Base One (RB1) Color: Walnut, No. P189. Rubber, type TS, 4 inch high, continuous strip, coved top-set base with matching pre-formed inside and outside corners to match base.

2.3 EDGING STRIPS

- A. Acceptable Manufacturers:
 - 1. Burke/Mercer Flooring Products Division of Burke Industries, Inc.
 - 2. Johnsonite Division of Duramax, Inc.
 - 3. Roppe Corporation.
- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.

2.4 ENTRY MATS

- A. Acceptable Manufacturers:
 - 1. American Floor Products Co. Inc.
 - 2. R.C. Musson Rubber Co.
- B. Alternate Manufacturers: Proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Entry Mat Color: Corded rubber tire tile; Model No. CC-1440 "Century Flooring"; 12 x 12 inches.

2.5 INSTALLATION MATERIALS

- A. Leveling and Patching Compounds (LVL):
 - 1. Ardex V 900, as manufactured by Ardex Engineered Cements.
 - 2. VAP I Level Pro, as manufactured by Koester American.
- B. Leveling and Patching Compound Primer:
 - 1. Ardex P 51, as manufactured by Ardex Engineered Cements.
 - 2. Level-Pro Primer E, as manufactured by Koester American.
- C. Adhesives:
 - 1. General: Moisture and alkali resistant, as recommended by flooring manufacturer to suit substrate conditions indicated.
 - 2. Linoleum Adhesive: Forbo L-910 at sheet linoleum.
 - 3. Resilient Base Adhesives:
 - a. Model No. 205 Cove Base Adhesive, as manufactured by Roppe.
 - b. Model No. 960, as manufactured by Johnsonite.

4. Edging Strip Adhesives:
 - a. Model No. BR-721 Solvent-Free, Two-Part Epoxy Tile and Stair Tread Adhesive, as manufactured by Burke/Mercer Flooring Products Division of Burke Industries, Inc.
 - b. Model No. 996 Two-Part Epoxy Adhesive, as manufactured by Johnsonite Division of Duramax, Inc.
 - c. Model No. ROP-605-A Two-Part Epoxy Adhesive, as manufactured by Roppe.
- D. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer. **Verify product intended for use with Owner and get Owner's written acceptance PRIOR to purchase of product.**

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions of work in place before beginning work; report defects. Perform bond, moisture and alkali testing of concrete sub-floors. No extra payment for work additional to that shown and/or specified, for complete application of resilient flooring, will be allowed if such additional work is apparent from inspection of existing premises and conditions.

3.2 PREPARATION

- A. Coordinate flooring installation with Owner's anhydrous calcium chloride testing to determine if installation of water vapor emission control system at concrete floor slabs is necessary. Refer to Section 01458 – TESTING LABORATORY SERVICES.
- B. Do not lay flooring until other work that might cause damage to flooring is complete.
- C. Maintain temperature of building and materials at 65 degrees F minimum for 24 hours prior to and during installation, and until adhesives have cured.
- D. Take field measurements; report variance between plan and field dimensions.
- E. Do not apply materials on wet or damp surfaces.
- F. Fill cracks, holes, and depressions in substrates with leveling compound; remove bumps and ridges to produce a uniform and smooth substrate. Remove existing flooring and adhesive.
- G. Clean substrates immediately before flooring installation.

3.3 INSTALLATION

- A. Install in conformance with referenced standards, manufacturer's written directions, as shown, and as specified.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Apply leveling and patching compound primer.
- D. Install leveling and patching compound.

- E. Apply adhesive per manufacturer's directions; do not exceed working area or time limits stated by manufacturer. Use a full spread of adhesive applied to substrate to produce a completed installation without surface imperfections. Apply linoleum adhesive using 1/16" x 1/16" x 1/16" square notch trowel and lay flooring into wet adhesive and roll with a 100 pound roller.
- F. Linoleum:
 - 1. General: Certified Forbo "Master Mechanic" must be present on job site daily.
 - 2. Sheet Flooring: Install with minimum number of tight, hairline seams. Seamless installation is required when roll width is sufficient to cover the width of room. Don't reverse sheets for seaming; install rolls and cuts in consecutive order. Heat weld seams.
 - 3. Tile Flooring: Install tile flooring square with room axis. Begin laying tile at the center point of the room, except in small spaces work lengthwise from one end. Install tiles in alternating directions.
- G. Base:
 - 1. Install on surfaces as scheduled, including cabinet bases and other equipment.
 - 2. Application: Set straight and level, joints closely fitted and flush; top and bottom edges in firm, full contact with floor and back bonded to wall. At masonry, V-joints in concrete, or similar irregular surfaces, fill voids at top edge of base with adhesive filler material as recommended by base manufacturer. Protect adjacent surfaces from adhesive staining.
- H. Edging Strips: Provide at transitions of floor covering material; center on doors.
- I. Entry Mats: Lay out square and parallel with straight unbroken joint lines; alternate direction of tile pattern for each abutting tile. Cement tiles using proper adhesive, and provide beveled edge strips at exposed tile edges.
- J. Scribe, cut, and fit flooring to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- K. Extend flooring into toe spaces, door reveals, closets, and similar openings. Extend flooring to center of door openings.

3.4 CLEANING AND PROTECTION

- A. Keep premises free from accumulation of waste and debris. At completion of installation remove surplus materials and debris.
- B. Protect flooring products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- C. At completion clean exposed surfaces in a manner that will not damage finish. Wait 5 days after linoleum installation before final cleaning.
- D. Apply liquid floor polish per manufacturer's instructions. Apply 2 coats linoleum sealer, followed by 2 coats of finish.
- E. Cover flooring until Substantial Completion.

END SECTION 09650

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes level loop carpet and related work as shown and specified.

1.3 SUBMITTALS

- A. Product Data: Submit for each type carpet indicated. Include manufacturer's written data on physical characteristics, durability, fade resistance and installation.
- B. Shop Drawings: Show seam layout and transition strip locations.
- C. Samples: Submit 2 minimum 18-inch by 18-inch samples for each color specified.
- D. Installer Qualifications: If requested, provide evidence that installers meet the requirements of Article 1.4.
- E. Closeout Submittals:
 - 1. O & M Manuals: Methods for maintaining carpet including cleaning and stain-removal products, procedures, manufacturer's recommended maintenance schedule and precautions for cleaning materials and methods that could be detrimental to carpet.
 - 2. Guarantee: Provide completed form per Article 1.5
 - 3. Extra Stock: Furnish extra carpet equal to 1% of amount installed for each type indicated, but not less than 8 square yards that match products installed, are packaged with protective covering for storage and identified with labels describing contents.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 3 years of experience on similar work; knowledge and understanding of standards referenced herein, and the skill necessary to perform in compliance with this specification. Installers failing to demonstrate the required experience, knowledge, or skill shall be removed from the project.
- B. Moisture Resistance: Carpet system must be guaranteed to bond to floor slab with moisture vapor emission 5 pounds per 1000 square feet in 24 hours as measured by ASTM F 1869-98, anhydrous calcium chloride test.

1.5 GUARANTEE

- A. Provide manufacturer's warranty that products are to be free from defects in materials and workmanship, for surface wear, edge ravel, zippering, resiliency, loss of backing, and delamination of secondary backing for 25 years beginning at date of acceptance by Owner.

1.6 PROJECT CONDITIONS

- A. Comply with CRI 104, Section 7.2, "Site Conditions; Temperature and Humidity".

PART 2 - PRODUCTS

2.1 CARPET

- A. Acceptable Products:
 - 1. Infinity, manufactured by Collins and Aikman Floor Coverings.
- B. Alternate Products: No known equals; proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Color One (CPT1): Tortoise Shell, No. 28509.
- D. Color Two (CPT2): Wheat Germ, No. 18530.

2.2 INSTALLATION ACCESSORIES

- A. Leveling and Patching Compound Primer:
 - 1. Ardex P 51, as manufactured by Ardex Engineered Cements.
 - 2. Level-Pro Primer E, as manufactured by Koester American.
- B. Leveling and Patching Compounds:
 - 1. Ardex V 900, as manufactured by Ardex Engineered Cements.
 - 2. VAP I Level Pro, as manufactured by Koester American.
- C. Edging Strips: Refer to Section 09650 – Resilient Flooring. Rubber, of width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints, unless noted otherwise.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates with Installer present, for compliance with specified requirements for conditions affecting carpet performance. Proceed with installation only after defects have been corrected.

3.2 PREPARATION

- A. General: Comply with CRI 104, and with carpet manufacturer's written installation instructions for preparing substrates. Confirm that floor areas to receive carpet are smooth, clean and dry prior to beginning installation.
- B. Coordinate flooring installation with Owner's anhydrous calcium chloride testing to determine if installation of water vapor emission control system at concrete floor slabs is necessary. Refer to Section 01458 – TESTING LABORATORY SERVICES.

- C. Deliver carpet to job site with manufacturer's register number tags attached and intact. Submit tags to Inspector.

3.3 INSTALLATION

- A. Apply leveling and patching compound primer.
- B. Install leveling and patching compound.
- C. Comply with CRI 104 and carpet manufacturer's written installation instructions.
- D. Seam Locations: Seam layouts shall be approved by Architect in advance. Install wall to wall, with continuous lengths and as broad of widths as possible. Do not place seams in doorways or in areas of change of direction of foot traffic; avoid placement of seams in traffic lanes. End or cross seams permitted only when approved in advance, for each specific location, by Architect. **NO EXCEPTIONS.**
- E. Maintain uniformity of carpet direction and lay of pile.
- F. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- G. Chemically weld seams; seams to be permanent and unnoticeable in finished installation.
- H. True cut edges and treat to form invisible, non-raveling joints where exposed.
- I. Provide edge strips at transitions of floor covering material.

3.4 CLEANING AND PROTECTING

- A. Keep premises free from accumulation of waste and debris. At completion of installation remove surplus materials and debris.
- B. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer. Remove yarns that protrude from carpet surface; vacuum.
- C. At completion vacuum carpet.

END SECTION 09680

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PART 1 - GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes wall coverings and related work as shown and specified.

1.3 SUBMITTALS

- A. Product Data: Include specifications, data on physical characteristics, durability, fade resistance, flame-resistance characteristics, and installation instructions.
- B. Samples: Submit 4 minimum 5 x 7-inch samples for EACH WALL COVERING and color specified.
- C. Installer Qualifications: If requested, provide evidence that installers meet the requirements of Article 1.4.
- D. Closeout Submittals:
 - 1. Manuals: Cleaning instructions.
 - 2. Guarantee: Provide completed form per Article 1.5.
 - 3. Extra Stock: Furnish extra 10% or a minimum of 1 full roll of each kind, type and color of wall covering installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 3 years of experience on similar work; knowledge and understanding of standards referenced herein; skill necessary to perform in compliance with this specification. Installers failing to demonstrate the required experience, knowledge, or skill shall be removed from the project.
- B. Source Limitations: Provide rolls of each type of wall covering from the same run number or dye lot.
- C. Fire-Test-Response Characteristics: ASTM E 84.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 50 or less.

1.5 GUARANTEE

- A. Provide manufacturer's warranty that products are to be free from defects in materials and workmanship for 5 years beginning at date of acceptance by Owner.

PART 2 - PRODUCTS

2.1 WALL COVERINGS

- A. Acceptable Manufacturers:
 - 1. Versa Wallcoverings, a Division of LSI Wallcovering.
 - 2. Genon, a Division of Omnova.
- B. Alternate Manufacturers: No known equals; proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Microvented: Perforated to provide a minimum water vapor transmission rate of 16.9 grams per square meter per 24 hours when tested in accordance with ASTM E96, Procedure A, and 50% relative humidity.
- D. Vinyl Wall Covering One (VWC1): Pilar, No. ASL-92829.
- E. Vinyl Wall Covering Microvented One (VWCM1): Pilar, No. ASL-92829, microvented.
- F. Identification: Mark or tag packaging and product to clearly distinguish between microvented and non-vented products.

2.2 TACKABLE WALL COVERING

- A. Acceptable Products: Tacwall, as manufactured by WallTalkers.
- B. Alternate Products: No known equals; proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Color (WC-1): Model No. as selected by Architect from manufacturer's full range.

2.3 RUBBER WALL COVERING

- A. Acceptable Products: Noraplan, as manufactured by Environcare.
- B. Alternate Products: No known equals; proposed equals are subject to substitution process per Section 01331 - PRODUCT SUBMITTALS AND SUBSTITUTIONS.
- C. Color (RSF-1): Model No. 2946, Morning Dew.

2.4 ACCESSORIES

- A. Filler: As recommended by wall covering manufacturer for application surface.
- B. Primer/Sealer: As recommended by manufacturer for type of installation required.
- C. Adhesives:
 - 1. Manufacturer's standard.
 - 2. At Tackable Wall Coverings: Model No. L-910 Linoleum Adhesive, as manufactured by Forbo.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Prepare substrates to achieve a smooth, dry, clean, structurally sound surface free of flaking, unsound coatings, cracks, and defects. Fill holes, depressions and cracks; scrape off other surface imperfections; leave surface completely smooth.
 - 1. Moisture Content: Maximum of 4% on substrates when tested with an electronic moisture meter.
 - 2. Plaster: Allow new plaster to cure. Neutralize areas of high alkalinity.
 - 3. Sealing: Prime, seal, neutralize or otherwise treat surfaces on which wall covering materials are to be applied as recommended by manufacturer of wall covering.
- C. Remove hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items. Reinstall after Work is completed.
- D. Take field measurements; report variance between plan and field dimensions.
- E. Acclimatize wall covering materials in the installation areas not less than 3 days before installation.
- F. Maintain a constant temperature not less than 60 degrees Fahrenheit in installation areas for a minimum of 3 days before and 3 days after installation.
- G. Protection: Provide drop cloths at areas where wall covering is to be installed; protect floors and adjacent work from damage.

3.3 INSTALLATION

- A. Install in conformance with manufacturer's written directions, as shown, and as specified.
- B. Install microvented wall covering where wall covering is called for on exterior walls, unless noted otherwise.
- C. Apply adhesive evenly to back surface of wall covering; scrape material to remove air pockets and wrinkles; remove excess paste immediately from other surfaces.
- D. Cut wall-covering strips in roll number sequence. Change roll numbers at partition breaks and corners.
- E. Install strips in same order as cut from roll.
- F. Install reverse hang, random match.
- G. Install wall covering with no gaps or overlaps, no lifted or curling edges, and no visible shrinkage.

- H. Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, and other defects.
- I. Trim edges and seams for color uniformity, pattern match, and tight closure. Butt seams without any overlay or spacing between strips.
- J. Set seams vertical and plumb, with no gaps or overlaps. Horizontal seams not allowed. Set 6 inches from outside corners and 6 inches from inside corners, minimum.
- K. Concealed Spaces: Wall covering is not required behind chalkboards or tackboards.

3.4 CLEANING

- A. Keep premises free from accumulation of waste and debris. At completion of installation remove surplus materials and debris.
- B. At completion clean exposed surfaces in a manner that will not damage finish.

END SECTION 09720

COMMUNICATIONS CABLING SYTEM

SECTION AD1 - 16717

Page 1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling. Cabling comprised of copper cabling, and support systems are covered under this document.
- B. The Horizontal (workstation) Cabling System shall consist of a minimum of two (2) 4-pair Unshielded Twisted Pair (UTP) Copper Cables to each outlet unless otherwise noted for specific locations on Drawings. The cables shall be installed from the Outlet to the Telecommunications Server Room located in the Library building, approximately 200 feet, and routed to the appropriate 110-connecting field on the backboard in Server closet. Contractor shall leave the cable labeled and coiled up for punch down by the district.
- C. The existing cabling back to the Server Room shall be removed and replaced with (24) CAT 6 Cables.
- D. The horizontal cabling shall be a universal data and telephone cabling system to provide data and voice to workstation locations including staff, library, and classrooms.

1.3 APPLIED STANDARDS

- A. The following industry standards are the basis for the structured cabling system described in this document. The list is incorporated by this reference to them.
 - 1. TIA/EIA
 - a. TIA/EIA-568-B Commercial Building Telecommunications Cabling Standard.
 - b. TIA/EIA-569-A Commercial Building Standard for Telecom Pathways and Spaces.
 - c. TIA/EIA-606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
 - d. TIA/EIA-607 Commercial Building Grounding/Bonding Requirements.
 - 2. NFPA
 - a. NFPA-70 National Electric Code (NEC)-1999.
 - b. ISO/IEC 11801 Generic Cabling for Customer Premises.
 - 3. The most recent versions of all documents apply to this project. if there is a conflict between applicable documents, the order above shall dictate the order of precedence in resolving the issue unless an enforceable local or national code is in effect.

1.4 HORIZONTAL CABLING DESCRIPTION

- A. The maximum allowable horizontal cable length is 295 feet (90 m). This maximum allowable length does not include an allowance for the length of 16 feet (4.9 m) to the workstation equipment. The maximum allowable length does not include an allowance for the length of 16 feet (4.9 m) in the horizontal cross-connect.

1.5 APPROVED CONTRACTOR

- A. The Telecommunications contractor must be an approved Certified Installer at a Plus tier (CIP, CIP-GOLD, CIP-PLATINUM, and multi-site/national contractors) and/or Berk-Tek Certified OASIS Integrator. A copy of certification documents must be submitted with the quote in order for such quote to be valid.

1.6 APPROVED PRODUCTS

- A. Approved 4-pair UTP Cable : Category 6 Cable (Plenum/Non-Plenum)
- B. Approved UTP connector product manufacturer: LEVITON

1.7 PERFORMANCE REQUIREMENTS

- A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA/EIA-568-B.1, when tested according to test procedures of this standard.
- B. In order to qualify for the guarantee, the structured cabling system must be installed per the following:
 - 1. Perform link or channel testing (100% of horizontal and/or backbone links/channels) and certification of all components.
 - 2. Furnish test results of all cabling to the owner on disk and paper format, listed by each closet, then by workstation ID.

1.8 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings:
 - 1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.
 - 2. Submit copies of the certification of the company and names of staff that will be performing the installation and termination of the installation to provide proof of compliance of this spec.
 - 3. Submit proof from manufacturer of contractor's good standing in manufacturer's program.
 - 4. Submit appropriate cut sheets and samples for all products, hardware and cabling.
- C. Qualification Data: For qualified layout technician, installation supervisor, and field inspector.

1.9 QUALITY ASSURANCE

- A. Standards: Furnish without extra charge any additional material and labor which may be required for compliance with these laws, rules, and regulations, even though the work is not mentioned in this Section.
1. The cable system shall meet the most current standards set forth in the American National Standards Institute / Electric Industries Association / Telecommunications Industry Association recommended standards for Category 6 wire specifications.
 2. All cable installed under this Section shall be Underwriters' Laboratories (UL) listed and certified to pass the appropriate UL test for cable designed for installation in plenum and riser spaces.
 3. The telecommunication cable system shall conform to all applicable local codes and applicable Section of the California Electrical Code, NFPA-70-1999.
 4. Firestopping shall be in accordance with ASTM E 814, ASTM E 136, and UL 1479 as well s Section 300-21 of the California Electrical Code.
 5. Other applicable standards: ANSI C2-1999 National Electric Safety Code. UL 497 electrical grounding and bonding equipment.
 - a. IEEE 802.3 carrier senses multiple access with collision detection.
 - b. FCC rules and regulations, Part 68.
 - c. REA cable designations – PE series specification.
 6. UL Listing: Products must be UL listed where a UL test procedure is applicable.
 7. Telephone system materials and equipment shall be FCC type-accepted and certified as such by supplier.
- B. Warranty: Contractor shall provide a twenty-five (25) year manufacturers warranty covering workmanship and compliance with manufacturer's specifications for category 6 systems. All repairs, including labor and material, shall be made at no cost to the Owner during the warranty period. All warranties shall be provided in writing to the Owner prior to acceptance of the cabling system.
- C. Grounding: Comply with ANSI-J-STD-607-A and the Telecommunications Infrastructure Standard for Data Centers as Described in TIA-942.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all materials in manufacturer's standard protective packaging.
- B. Do not remove protective packaging until ready for installation.
- C. Follow manufacturer's instructions for storage and handling.
- D. Test cables upon receipt at Project site.
 1. Test each pair of UTP cable for open and short circuits.

1.11 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.12 DRAWINGS

- A. It shall be understood that the electrical details and drawings provided with the specification package are diagrammatic. They are included to show the intent of the specifications and to aid the telecommunications contractor in bidding the job. The telecommunications contractor shall make allowance in the bid proposal to cover whatever work is required to comply with the intent of the plans and specifications.
- B. The telecommunications contractor shall verify all dimensions at the site and be responsible for their accuracy.
- C. Prior to submitting the bid, the telecommunications contractor shall call the attention of the Engineer to any materials or apparatus the telecommunications contractor believes to be inadequate and to any necessary items of work omitted.

1.13 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with other Contractors.
- B. Coordinate telecommunications outlet/connector locations with location of power receptacles at each work area.

1.14 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer and Installer agree to repair or replace components of intrusion detection devices and equipment that fails in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS**2.1 PATHWAYS**

- A. General Requirements: Comply with TIA/EIA-569-A.
- B. Cable Support: NRTL labeled for support of Category 6 cabling, designed to prevent degradation of cable performance and pinch points that could damage cable.
 - 1. Support brackets with cable tie slots for fastening cable ties to brackets.
 - 2. Lacing bars, spools, J-hooks, and D-rings.
 - 3. Straps and other devices.
- C. Conduit and Boxes: Comply with requirements in Division 16 Section "Raceways and Boxes."
 - 4. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.

5. Install 1-inch conduit for each wall outlet with a 4x4 boxes and single gang ring for the faceplate, to accessible space above ceiling, unless otherwise noted.

2.2 VOICE/DATA OUTLETS

- A. Work area cables shall each be terminated at their designated work area location in the connector types described in the subsections below. Included are modular telecommunication jacks. These connector assemblies shall snap into a faceplate.
- B. Voice/Data Outlet Assembly shall accommodate:
 1. A minimum of two (2) modular jacks. Refer to drawings for required jacks. Jacks shall be Leviton Catalog # 56108-RR5, SAN 106 Snap – in jack. Contractor shall verify with the school district for any changes in part number prior to bidding.
 2. Additional accommodations for specific locations as noted in the Drawings for optical fiber and/or additional copper cables as necessary
 3. A blank filler will be installed when extra ports are not used.
 4. Multiple jacks that are identified in close proximity on the drawings (but not separated by a physical barrier) may be combined in a single assembly. The telecommunications contractor shall be responsible for determining the optimum compliant configuration based on the products proposed.
 5. The same orientation and positioning of jacks and connectors shall be utilized throughout the installation. Prior to installation, the telecommunications contractor shall submit the proposed configuration for each outlet assembly for review by the Owner.
 6. The modular jack shall incorporate printed label strip for identifying the outlet. Printed labels shall be permanent and compliant with ANSI/TIA/EIA-606-A standard specifications. Labels shall be printed using a printer such as a Brady hand held printer. Hand printed labels shall not be accepted.
- C. Faceplates: The faceplates shall:
 1. Be LEVITON as appropriate to fit the modular jack used
 2. Be UL listed and CSA certified.
 3. Be constructed of high impact, ABS plastic UL 94V-0 construction (except where noted otherwise).
 4. Shall match the faceplate color used for other utilities in the building or match the color of the raceway if installed in surface raceway.

2.3 IDENTIFICATION PRODUCTS

- A. Comply with TIA/EIA-606-A and UL 969 for labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.4 SOURCE QUALITY CONTROL

- A. Factory test UTP and optical fiber cables on reels according to TIA/EIA-568-B.1.
- B. Factory test UTP cables according to TIA/EIA-568-B.2.
- C. Factory test multimode optical fiber cables according to TIA/EIA-526-14-A and TIA/EIA-568-B.3.
- D. Factory-sweep test coaxial cables at frequencies from 5 MHz to 1 GHz. Sweep test shall test the frequency response or attenuation over frequency, of a cable by generating a voltage whose frequency is varied through the specified frequency range and graphing the results.

- E. Cable will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of intrusion detection.
 - 1. Examine roughing-in for embedded and built-in anchors to verify actual locations of intrusion detection connections before intrusion detection installation.
 - 2. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of intrusion detection.

3.2 LABELING

- A. Each voice/data cable shall be labeled on each end. The labels sequence shall be as follows: Room "RM", Teaching "T", Student "S", Voice "V" Cable Number "01", "02", etc. Example, Classroom #7, teaching station, data jack one: RM7T01, teaching station voice jack one: RM7VT01.
- B. Each jack face plate shall also be labeled with same corresponding identification.

3.3 GROUNDING

- A. Ground system components and conductor and cable shields to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

3.4 FIELD QUALITY CONTROL

- A. Pretesting: After installation, align, adjust, and balance system and perform complete pretesting to determine compliance of system with requirements in the Contract Documents. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new ones and retest until satisfactory performance and conditions are achieved. Prepare forms for systematic recording of acceptance test results.
 - 1. Report of Pretesting: After pretesting is complete, provide a letter certifying that installation is complete and fully operable; include names and titles of witnesses to preliminary tests.
- B. Perform the following field tests and inspections and prepare reports:
 - 1. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified.
 - 2. Operational Tests: Schedule tests after pretesting has been successfully completed. Test all modes of system operation and intrusion detection at each detection device. Test for detection of intrusion and for false alarms in each protected zone. Test for false alarms by simulating activities outside indicated detection patterns.
 - 3. Electrical Tests: Comply with NFPA 72, Section A-7. Minimum required tests are as follows:

- a. Verify the absence of unwanted voltages between circuit conductors and ground.
 - b. Test all conductors for short circuits using an insulation-testing device.
 - c. With each circuit pair, short circuit at the far end of circuit and measure circuit resistance with an ohmmeter. Record circuit resistance of each circuit on Record Drawings.
 - d. Verify that each controller is in normal condition as detailed in manufacturer's operation and maintenance manual.
 - e. Test signal and data transmission circuits complying with requirements in Division 16 Section "Voice and Data Communication Cabling" for proper signal transmission under open-circuit conditions. One connection each should be opened at not less than 10 percent of initiating and indicating devices. Observe proper signal transmission according to class of wiring used.
 - f. Verify that transient surge-protection devices are installed according to manufacturer's written instructions.
 - g. Test each initiating and indicating device for alarm operation and proper response at central-station control unit.
- C. Report of Tests and Inspections: Prepare a written record of tests, inspections, and detailed test results in the form of a test log.
- D. Tag all equipment, stations, and other components for which tests have been satisfactorily completed.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain intrusion detection. Refer to Division 1 Section "Demonstration and Training."

END OF SECTION 13720

ABBREVIATIONS SYMBOL SCHEDULE

MASTER 12/17/07

VOICE/DATA:

- ▽ TELEPHONE OUTLET, 4" SQ. BOX WITH DEVICE RING AND PLATE, +18" UNLESS OTHERWISE NOTED. PROVIDE A PULL STRING INTO ACCESSIBLE CEILING SPACE
- ▽^W WALL TELEPHONE OUTLET. 1 CAT 5, WALL MOUNT TELEPHONE @ 48".
- ▽ DATA OUTLET, 4" SQ. BOX WITH DEVICE RING AND PLATE, +18" UNLESS OTHERWISE NOTED. PROVIDE A PULL STRING INTO ACCESSIBLE CEILING SPACE
- ▽^{#D} VOICE/DATA OUTLET, 4" SQ. BOX WITH DEVICE RING & PLATE, +18" UNLESS OTHERWISE NOTED.
^{#V} UNIVERSAL CATEGORY 6 VOICE AND DATA JACK LOCATION (PLUS # AND TYPE OF JACKS)
 #D=DATA, #V=VOICE
- ⊙ TELEPHONE OUTLET, FLUSH FLOOR MOUNTED
- ⊞ MICROPHONE OUTLET WITH DEVICE & PLATE FOR PLUG-IN DEVICE SWITCHCRAFT #C3F, +18" UNLESS OTHERWISE NOTED
- ⊞ TELEVISION OUTLET, 4" SQUARE BOX WITH DEVICE RING & PLATE @ +18", STUBBED 1"CO TO ACCESSIBLE CEILING SPACE

POWER:

- ⊙_S DUPLEX RECEPTACLE, 20 AMP, 125V, 3W, NEMA 5-20R, +18" WITH LOCKABLE COVER, UNLESS OTHERWISE NOTED
- ⊙ DUPLEX RECEPTACLE, 20 AMP, 125V, 3W, NEMA 5-20R, +18" UNLESS OTHERWISE NOTED
- ⊙[■] ■ = INDICATES RECEPTACLE MOUNTED ABOVE COUNTER BACKSPLASH. RECEPTACLE SIZE & TYPE AS INDICATED ON DRAWINGS
- ⊙ DEDICATED DUPLEX RECEPTACLE, 20 AMP, 125V, 3W, NEMA 5-20R, +18" UNLESS OTHERWISE NOTED
- ⊙ FOURPLEX RECEPTACLE, 20 AMP, 125V, 3W, NEMA 5-20R, +18" UNLESS OTHERWISE NOTED
- ⊙ DEDICATED FOURPLEX RECEPTACLE, 20 AMP, 125V, 3W, NEMA 5-20R, +18" UNLESS OTHERWISE NOTED

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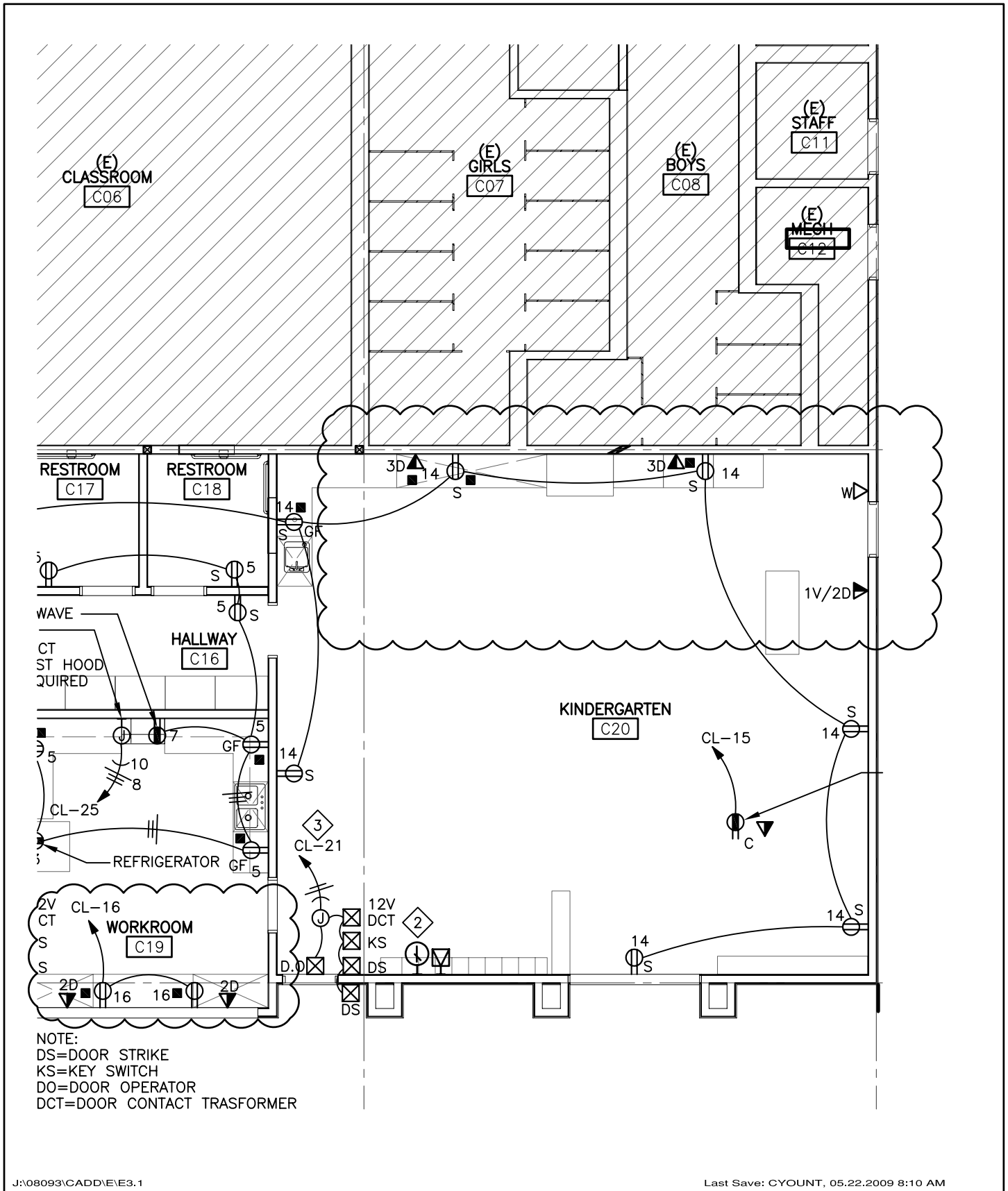
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 ARCHITECTS
 MURRAY DOWNS OSHIMA YEE
 776 PACIFIC STREET
 PLACERVILLE CA 95667
 TEL 530 626 1810 FAX 530 626 1931
 1990 THIRD STREET SUITE 500
 SACRAMENTO CA 95811
 TEL 916 443 5911 FAX 916 443 2965

PROJECT
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 GREER ELEMENTARY SCHOOL
 KINDERGARTEN**

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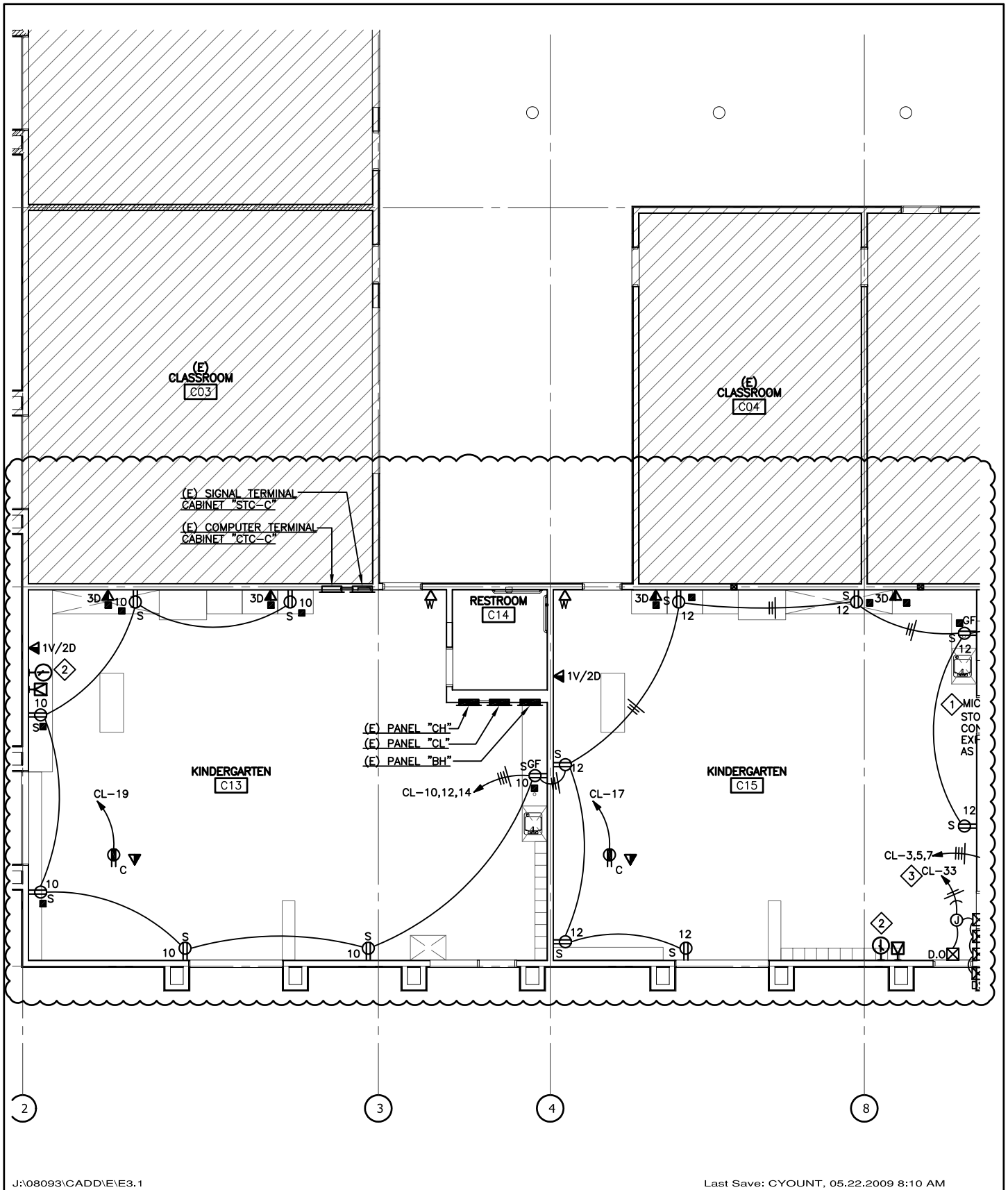
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