

# POUDRE SCHOOL DISTRICT R-1 INVITATION FOR BID

### EARLY CHILDHOOD RESTROOM PROJECTS

BENNETT ELEMENTARY
HARRIS BILINGUAL
KRUSE ELEMENTARY
LAUREL ELEMENTARY
PUTNAM ELEMENTARY

IFB 21-700-004

#### **BID SCHEDULE**

IFB Posted to BidNet April 12, 2021

Pre-bid Site Visits April 19, 2021 – 11 a.m. MST

Questions Due April 21, 2021 – 2 p.m. MST

IFB Closing Date April 27, 2021 – 2 p.m. MST

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#### EARLY CHILDHOOD RESTROOM PROJECTS IFB 21-700-004

Poudre School District (the District) is requesting bids from professional and qualified contractors to provide construction of in-classroom restrooms to comply with the State of Colorado mandates for the Early Childhood Program at five (5) elementary school sites as specified in this Invitation for Bid (IFB).

A copy of the IFB and any associated addenda may be obtained from the Rocky Mountain E-Purchasing (BidNet) website: <a href="http://www.RockyMountainBidSystem.com">http://www.RockyMountainBidSystem.com</a>.

Contractors planning to submit bids are encouraged to be represented at the pre-bid site visits on April 19, 2021 at 11 a.m. MST. The pre-bid site visits will begin promptly at 11 a.m. MST at the front entrance of Putnam Elementary and then proceed to the other school sites in the order presented below.

Putnam Elementary – 1400 Maple Street, 80521 Bennett Elementary – 1125 Bennett Road, 80521 Harris Bilingual – 501 East Elizabeth Street, 80524 Laurel Elementary – 1000 East Locust Court, 80524 Kruse Elementary – 4400 McMurry Avenue, 80525

The site visits must follow all current federal and local recommendations regarding social distancing, face coverings, and other COVID-19 considerations.

Questions regarding this IFB must be in writing and directed to the District through the BidNet platform any time after the issuance of this IFB through and including 2:00 p.m. MST on April 21, 2021. Questions received after the deadline date and time and/or not submitted electronically through the BidNet platform may not be addressed. Questions submitted, as well as the District's response thereto, shall be provided in an addendum through BidNet.

Note: Questions must be submitted individually. Multiple questions per entry will not be answered.

The District will only accept and consider electronically submitted bids. Bids must be submitted and received in BidNet's electronic solicitation portal by 2:00 p.m. MST on April 27, 2021. At that time, the submission portal will close, and no further submittals will be allowed, nor considered.

District staff shall review the bids received in response to this IFB during the bid consideration period commencing on April 27, 2021. During the bid consideration period, the District may ask questions of and/or request additional information from contractors who have submitted bids.

During the solicitation process and until an award has been announced, communication regarding this IFB will only be permitted with the Procurement Agent named below. Communication with a district employee other than the Procurement Agent named below may disqualify your bid from consideration.

Sales Prohibited/Conflict of Interest: No officer, employee, or member of the School Board, shall have a financial interest in the sale to the school district of any real or personal property, equipment, material, supplies or services where such officer or employee exercises directly or indirectly any decision-making authority concerning such sale or any supervisory authority over the services to be rendered. This rule also applies to subcontracts with the District.

Soliciting or accepting any gift, gratuity favor, entertainment, kickback, or any items of monetary value from any person who has or is seeking to do business with the District is prohibited.

Collusive or sham bids: Any bid deemed to be collusive, or a sham bid will be rejected and reported to authorities as such. Your authorized signature on the bid assures that such bid is genuine and is not a collusive or sham bid.

The District reserves the right to reject any and all bids and to waive any irregularities or informalities.

Sincerely, Karen Wailly Senior Procurement Agent

#### 1.0 BACKGROUND

The District is a high-performing district, covering more than 1,800 square miles in northern Colorado with diverse school settings. The District's instructional program is centered around District Ends, under the Policy Governance model, developed to support a comprehensive curriculum.

While more than 70% of District families choose to send their children to their neighborhood school, the District does support school choice and offers a wide spectrum of educational programs to fit any child's needs. Program options include International Baccalaureate, Core Knowledge, Bilingual/Dual Language Immersion, Hybrid/Online, Expeditionary Learning, Science, Technology, Engineering and Math (STEM) along with extra-curriculars and athletics.

The District has two LEED certified school buildings and over 30 Energy Star awards and supports operational sustainability in all areas of work.

#### Our Schools:

- 31 elementary schools
- 10 middle schools
- 4 comprehensive high schools
- 6 option (100% choice) schools
- 3 alternative high schools
- 5 charter schools
- 1 online school

The District is fully accredited by the Colorado Department of Education Accreditation and Accountability Unit and is subject to periodic monitoring to ensure continued compliance with accreditation standards.

#### 2.0 GENERAL TERMS AND CONDITIONS

- 2.1 This is a solicitation for an offer and is not an offer to contract for goods or services.
- 2.2 These General Terms and Conditions apply to all offers made to the District by all prospective contractors (Contractors) on behalf of District solicitations including, but not limited to, Invitation for Bids (IFB), Request for Quotes (RFQ) and Request for Proposals (RFP).
- 2.3 Submission of a bid is deemed as acceptance of all terms, conditions and specifications contained in the solicitation package provided to the Contractor. Any proposed modification must be accepted in writing by the District prior to award of the agreement.
- 2.4 Contractor must provide all requested information. Failure to do so may result in rejection of the bid at the option of the District.
- 2.5 The District is exempt from City, County, State and Federal Sales/Excise Taxes. Tax Exempt Certificates will be issued upon request. The District's Tax-Exempt Number is: 98-03335.
- 2.6 There is no expressed or implied obligation for the District to reimburse Contractors for any expenses incurred in preparing bids in response to this solicitation.
- 2.7 Bids must meet or exceed specifications contained in the solicitation document.
- 2.8 All chemicals, equipment and materials proposed and/or used by Contractor in satisfaction of the terms of this solicitation shall conform to the standards required by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA). Safety Data Sheets (SDS) shall accompany each shipment, when applicable.
- 2.9 Each Contractor and its employees, representatives, and subcontractors agrees to abide by all applicable Federal, State and Local codes, laws, rules, and regulations. The awarded Contractor shall also furnish all supplies, which conform to all applicable safety codes and regulations.
- 2.10 The Contractor, by affixing its signature to the bid, certifies that its bid is made without previous understanding, agreement, or connection either with any persons, firms or corporations offering a bid for the same items or with the District. The Contractor also certifies that its bid is in all respects fair, without outside control, collusion, fraud, or otherwise illegal action.
- 2.11 For services requiring Contractor's presence on District property, the successful Contractor must provide proof of insurance that meets the insurance requirements

- stated in Section 9.0 of this Bid document. Contractor must maintain required insurance during the term of the contract.
- 2.12 Notwithstanding the planned term of the agreement and/or any extensions thereof, the District may terminate the agreement at any time in its sole discretion for any reason, with or without cause, upon written notice served on the Contractor no less than thirty (30) days prior to the date of termination. In the event of such early termination by the District, the Contractor shall be paid up to the date of termination for services performed under and in accordance with this agreement.
- 2.13 Notwithstanding any other term or provision of this IFB, the District's obligations hereunder are expressly subject to its budgeting and appropriation of sufficient funds for each fiscal year (July 1 June 30) an agreement is in effect. In no event, shall the District's obligations in an agreement constitute a multiple-fiscal year direct or indirect debt or other financial obligation under Article X, Section 20(4)(b) of the Colorado Constitution.
- 2.14 In the event the District has reasonable grounds to believe that any individual assigned to perform work under this agreement has a criminal record, is a registered sex offender, is under the influence of alcohol or other substance, has exhibited violence or based upon other information the District deems reliable; the District may exclude such individual from any school building or grounds or impose reasonable conditions upon such individual's presence upon any school premises. In the judgment of the District, if the agreement cannot be performed as a result of such action, the agreement may be terminated.
- 2.15 Contractor shall provide any and all services as an independent Contractor of the District, and the persons performing such services shall not be considered employees of the District. Contractor shall be exclusively responsible for: (a) all compensation, employment tax withholdings and payments, and all fringe benefits for its employees in full compliance with all applicable federal, state and local laws; (b) all insurance coverage's and benefits for its employees in full compliance with all applicable federal, state and local laws, including but not limited to pension or retirement benefits, works' compensation, unemployment compensation, and Social Security benefits; and (c) all payments to its Contractors and subcontractors for goods and/or services directly or indirectly related to the solicitation.
- 2.16 Contractor must note in its response any intent to use subcontractors. The subcontractor's name, address, phone number and three (3) client references, along with the type of work to be performed must be included. Use of subcontractors may be considered as a factor in the District's evaluation process. If the Contractor fails to notify the District of its intent to use subcontractors in its bid submittal, the bid submittal may be considered a void offer. Subcontractors will be allowed only by written permission of the District. The Contractor agrees that it is fully responsible to the District for the acts or omissions of its subcontractors, or any persons employed by them, in the same way as it is for the acts and omissions of persons directly

- employed by the Contractor. Nothing contained in the Agreement or any subcontract shall create any contractual relation between any subcontractor and the District.
- 2.17 Contractor certifies, represents, warrants, and agrees that it will not knowingly employ or contract with an illegal alien to provide services under this agreement, and will not enter into an agreement with a subcontractor that fails to certify to Contractor that the subcontractor will not knowingly employ or contract with an illegal alien to provide services under this agreement. Contractor also certifies, represents, warrants and agrees that it will confirm the employment eligibility of all its employees who are newly hired for employment to provide services under this agreement through Contractor's participation in either: (a) the E-Verify Program created under federal law and jointly administered by the Department of Homeland Security and the Social Security Administration; or (b) the Colorado Department of Labor and Employment Program ("Department Program") established pursuant to C.R.S. § 8-17.5-102(5)(c).
  - 2.17.1 Contractor shall not use either the E-Verify Program or the Department Program procedures to undertake pre-employment screening of job applicants while this agreement is being performed. If Contractor obtains actual knowledge that a subcontractor providing services under this agreement knowingly employs or contracts with an illegal alien, Contractor shall notify the subcontractor and the District within three (3) days that Contractor has such actual knowledge and terminate the subcontract within three (3) days of providing the notice if the subcontractor has not stopped employing or contracting with the illegal alien. Contractor shall comply with any reasonable request made by the Department of Labor and Employment in the course of an investigation undertaken pursuant to the authority of C.R.S. § 8-17.5-102(5). If Contractor participates in the Department Program, it shall: (a) notify the District and the Department of Labor and Employment of such participation as required by law; and (b) within twenty (20) days after hiring an employee to provide services under this agreement, provide to the District a written notarized copy of an affirmation that it has examined the legal work status of such employee, retained file copies of the documents required by 8 U.S.C. § 1324a, and not altered or falsified the identification documents for such employee.
- 2.18 Contractor agrees to provide the services as a result of this solicitation in strict accordance with the District's specifications and at the price noted for each item.
- 2.19 Contractor shall not assign an agreement, as a result of this solicitation, or any of its rights, interests, or obligations without the prior written consent of the District. The consent may be withheld for any reason or no reason as determined by the District in its sole discretion.
- 2.20 Contractor agrees to not refuse to hire, discharge, promote, demote, or to otherwise discriminate in matters of compensation against any person otherwise qualified solely because of race, creed, sex, national origin, ancestry, or physical handicap.

- 2.21 Venue for any and all legal action regarding or arising out of transactions covered herein shall be solely in the District Court in and for Larimer County, State of Colorado. The transactions covered herein shall be governed by the laws of the State of Colorado.
- 2.22 Bids shall contain a signature of an authorized representative in the space provided on the Bid Certification Form. Failure to properly sign bid may result in bid being considered non-responsive.
- 2.23 Where there appears to be variances or conflicts between the General Terms and Conditions and the special conditions outlined in this solicitation, the special conditions shall prevail.
- 2.24 The District shall issue written addenda if substantial changes, which impact the technical submission of bids, are required. These addenda will be distributed via the BidNet system.
  - 2.24.1 In the event of conflict with the original agreement documents, addenda shall govern all other agreement documents to the extent specified. Subsequent addenda shall govern over prior addenda only to the extent specified.
  - 2.24.2 Amendments or clarifications to the submitted bids not requested by the District will not be accepted, nor considered in awarding the agreement.
- 2.25 All information and supplemental documentation required in conjunction with this bid shall be furnished by the Contractor with its bid. If the Contractor fails to supply any required information or documents, its bid may be considered non-responsive and ineligible for award.
- 2.26 The accuracy of the bid is the sole responsibility of the Contractor. No changes in the bid shall be allowed after the submission deadline, except when the Contractor can show clear and convincing evidence that an unintentional factual mistake was made, including the nature of the mistake and the price actually intended.
- 2.27 Substitutions after award for equipment unavailability or unforeseen conditions may be considered only under the following criteria:
  - 2.27.1 Unforeseen change to original project scope
  - 2.27.2 Cannot be delivered during the progress of the work
  - 2.27.3 Will no longer be available during the progress of the work
  - 2.27.4 The quality of the material, as specified, no longer meets the specifications

- 2.27.5 Contractor shall be required to justify the substitution, confirm warranty, etc. Acceptance or rejection of a request will be based on the District's opinion to adaptability, durability, quality, aesthetics, and agreement amount change, compared to the specified or noted items.
- 2.28 Contractors may offer a cash discount for prompt payment; however, such discounts shall not be considered in determining the lowest net cost for bid evaluation purposes.
- 2.29 A purchase order resulting from this solicitation shall be governed by and construed in accordance with the laws of the State of Colorado.
- 2.30 Payment for the goods and/or services furnished by the Contractor shall not constitute acceptance thereof. The District shall have the right to inspect such goods and the products of such services, and to reject any or all of which are in the District's judgment defective or nonconforming. In addition to the District's other rights, goods rejected, and goods supplied in excess of quantities specified in a purchase order, may be returned to the Contractor at the Contractor's expense. The District may charge Contractor all expenses of unpacking, examining, repacking, and reshipping such goods. In the event the District receives goods whose defects or nonconformity is not apparent upon examination, the District may require replacement and/or payment of damages upon discovery of the defects or nonconformity. Nothing contained herein shall relieve, in any way, Contractor from the obligation of testing, inspection, and quality control.
- 2.31 The District may, at its sole and absolute discretion:
  - 2.31.1 Reject any and all or parts of any or all bids submitted by prospective Contractors;
  - 2.31.2 Re-advertise this solicitation;
  - 2.31.3 Postpone or cancel the bid process for this solicitation;
  - 2.31.4 Waive any irregularities or technicalities that are not qualified as a requirement for responsiveness in this bid or in bids received in conjunction with this bid; and/or
  - 2.31.5 Determine the criteria and process whereby bids are evaluated and awarded.
- 2.32 Information and materials submitted in response to this IFB may be considered public records subject to disclosure under the Colorado Open Records Act ("CORA"), C.R.S. §§ 24-72-200.1 to -205.5. Information and materials that Contractor believes are confidential and not subject to disclosure under CORA must be submitted separately with a citation to the section of CORA and any other relevant law under which Contractor believes they are confidential. The District, not Contractor, shall determine whether information and materials so identified will be withheld as

- confidential, but will inform Contractor in advance of disclosure to give it an opportunity to take legal action to protect its interests vis-à-vis the party making the CORA request.
- 2.33 For the purposes of solicitation evaluation, Contractor must indicate any variances to the specifications and terms and conditions, no matter how slight. If variations are not stated in the Contractor's response, it shall be construed that its bid fully complies with the specifications and terms and conditions. Notwithstanding the above, it is hereby agreed and understood that the District reserves the right to reject these variations if they individually, or as a whole, do not meet the standards established in the specifications.
- 2.34 Appeal of Award. Contractor may appeal the award by submitting, in writing, a request for re-consideration to the District's Strategic Sourcing department within seventy-two (72) hours after the receipt of the notice of award.

#### 3.0 SPECIFIC CONDITIONS

- 3.1 Health Standards. The Contractor shall have and maintain a set of protocols and guidelines to meet evolving health and safety requirements and implement communicable diseases protocols, which shall follow guidance and orders from state and/or local public health officials and shall be no less strict than the District's protocols.
  - 3.1.1 Contractor shall ensure all individuals providing Services under this agreement for the Contractor wear appropriate personal protective equipment at all times while on District property.
  - 3.1.2 If the District is directed, or the District determines to limit or restrict access to any or all of its facilities or District Location due to a public health or safety concern, the District may, at its discretion, temporarily delay or stop Contractor's services, with or without prior notice.
- 3.2 The District is committed to be a responsible steward of its natural resources and believes that public education should provide leadership in developing an ethic of sustainability in all its practices. In the District we have both Energy Conservation and Waste Management policies and espouse these values, making environmental stewardship an integral part of the physical plant operation.
- 3.3 During the performance of this contract, the Contractor agrees to provide a "drug-free workplace." For the purposes of this section, a "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to the Contractor. The Contractor's employees are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance during the performance of this contract.

- 3.4 Where there appears to be variances or conflicts between the information outlined in this IFB and/or the referenced Drawings and Specifications (if applicable), the more stringent requirement shall prevail. In all cases, the Contractor is responsible for notifying the District of the variance or conflict.
- 3.5 If the Contractor experiences a back order of items from its Supplier or Distributor, the Contractor shall ensure that such back orders are filled within a reasonable period of time. The Contractor shall not invoice PSD for back ordered items until items are delivered and accepted by PSD authorized representative. PSD shall determine what constitutes a reasonable period of time and may verbally cancel back orders, seek the items from another Contractor, and charge the Contractor for any re-procurement costs.
- 3.6 Work schedule shall be coordinated between the Contractor and District Project Manager.
  - 3.6.1 All work will be performed in accordance with accepted standards for work of a similar nature.
  - 3.6.2 Services will be provided as established by Purchase Order.
- 3.7 Inspection of the work shall not relieve the Contractor of any obligation to fulfill the contract as prescribed. Work not meeting specifications shall be corrected, at Contractor's expense, and unsuitable work may be rejected, notwithstanding that such work had been previously inspected by the District Project Manager.
  - 3.7.1 Receipt of pertinent documentation and final inspection of finished product by the District Project Manager are required prior to release of final payment to the awarded Contractor.
- 3.8 Any measurements referenced may be approximations. Contractors are responsible for obtaining exact measurements 'Verify in Field' (V.I.F).
- 3.9 Upon request, Contractor shall supply a list of employees working on these projects.
- 3.10 Proof of materials cost shall be provided upon request.
- 3.11 The District will provide access to the premises and related facilities during the project work for regular working hours or outside regular working hours and days as requested by the District.
- 3.12 The District will respond in a timely manner to requests by the Contractor in cases where there are ambiguities in the work to be performed or resources to be supplied by the District that are not available.

#### 4.0 CONTRACTOR RESPONSIBILITIES

- 4.1 Contractor is responsible for all DORA permits and any fire systems permits.
  - 4.1.1 The District is responsible for the state building permit and Poudre Fire Authority review.
- 4.2 The Contractor shall furnish all labor, materials, and equipment necessary for satisfactory Contract performance.
- 4.3 Upon request, proof will be available that the Contractor possesses adequate and sufficient equipment and resources to perform quality service and to commence work once the contract has been fully executed.
- 4.4 Contractor shall be responsible for all site cleanups, to include trash removal. The buildings and property of the District shall be left in an acceptable as found condition. At completion, the Contractor shall thoroughly clean up all areas where work has been involved as mutually agreed with the District Project Manager.
  - 4.4.1 Contractor shall not use District sanitary facilities, trash receptacles, roll offs, supplies, tools, or equipment. The Contractor shall haul away all debris and trash to an off-site location.
- 4.5 The Contractor shall be responsible for disposing environmentally hazardous waste materials in a manner that is consistent with regulations stipulated by the United States Environmental Protection Agency (EPA) as well as with any state or locally prescribed procedures.
- 4.6 Contractor shall be solely responsible for the safety of its work, materials, equipment, tools, etc. on the site and shall, if deemed necessary or expedient, employ, at its own expense, the services of a competent watchman. The District disclaims all responsibility for the safety of the work, materials, equipment tools, etc. or for any damage, which may be done to same due to theft, or any other cause until such time as the District formally accepts the completed work.
- 4.7 Contractor will be responsible for providing a clean and safe environment surrounding the work area at all times, including, if necessary, fencing of equipment, storage, and work area.
- 4.8 Contractor agrees that it is fully responsible to the District for the acts or omissions of its subcontractors or of persons employed by them, in the same way as it is for the acts and omissions of persons directly employed by the Contractor. Nothing contained in the contract or any subcontract shall create any contractual relation between any subcontractor and the District.
- 4.9 Project estimates, schedules, work activity, other trades not included in the contract, inspections, and payment requests must be approved by the District Project Manager.

- 4.10 Upon issuance of a purchase order, the Contractor shall adhere to the specified start and completion timeline stated on the purchase order and/or executed agreement. Failure to complete the projects within the stated dates could result in termination of the contract by the District.
- 4.11 Contractor shall visit the project sites prior to commencement of work to verify working area project scope and safety issues.
- 4.12 Contractor shall furnish all required personal safety equipment.
- 4.13 Contractor shall promptly repair, replace, or otherwise correct any of its workmanship and any parts, materials, components, equipment, or other items in the work which contain faults or defects, whether such failures are observed by the District or Contractor before or after completion. The Contractor shall bear all costs of correcting such work covered by the warranties.
- 4.14 Contractor, at its own expense, shall repair or replace any damages to any equipment, facilities or other personal or real property owned or leased by the District which is damaged as a result of any such fault or defect, at no cost to the District.
- 4.15 Contractor is responsible for monitoring the BidNet website for any additional requirements, addenda, and award information.

#### 5.0 PROJECT SCOPE AND SPECIFICATIONS

- 5.1 Five (5) District elementary schools require the construction of an in-classroom restroom in order to comply with the State of Colorado mandates for the Early Childhood Program.
  - 5.1.1 Bennett Elementary
  - 5.1.2 Harris Bilingual
  - 5.1.3 Kruse Elementary
  - 5.1.4 Laurel Elementary
  - 5.1.5 Putnam Elementary
- Work may begin as early as June 1, 2021 and must be completed by August 10, 2021. There is no early finish incentive offered to the Contractor(s).
  - 5.2.1 After hours or weekend work, at no additional cost to the District, may be necessary to meet the completion date of August 10, 2021.

- 5.3 Construction drawings for each of the five (5) elementary schools are provided as Exhibits.
- 5.4 The following items are included in the projects and must be incorporated in the base bid lump sums.
  - 5.4.1 Off-site trash and debris removal and disposal
  - 5.4.2 All materials, labor, and freight to complete the projects
- 5.5 Bid submittal must include bids for the alternates as separate line items.

#### 6.0 EVALUATION AND AWARD

- 6.1 The projects may be awarded to one, or multiple Contractors at the sole discretion of the District.
- Award shall be made to the responsive and responsible Contractor(s) meeting the specifications and deemed to be in the best interest of the District. Final evaluation may be based on, but not limited to price, delivery time, adherence to specifications, and previous experience with similar projects.

#### 7.0 PERFORMANCE AND PAYMENT BOND

- 7.1 Colorado State Statues require a Performance Bond and a Payment Bond on public projects more than \$50,000.00. Contractor is required to post bonds, executed by a surety company authorized to do business in the State of Colorado, upon notification of bid award. Performance and Payment bonds will each be equal to 100% of contract price and must remain in effect until completion of contract.
- 7.2 Both the Performance Bond and the Payment Bond shall be written on AIA A312 Performance Bond and AIA A312 Payment Bond Forms, as issued by The American Institute of Architects. Date of bonds shall coincide with the date of the contract between the District and Contractor. Substitute forms may not be used.

#### 8.0 WARRANTIES

8.1 The Contractor warrants that all parts, material, components, equipment, and other items used to perform the work shall be new and suitable for the purpose used and will be of good quality, free from faults and defects and all Work will be free of defects and in conformance with the contract documents. The Contractor also warrants that its workers will be sufficiently skilled to produce the highest quality of Work, which is free from faults and defects. Work not so conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor further warrants that the construction processes and methods employed to perform the work shall be suitable for the results required.

- 8.2 The Contractor shall promptly repair, replace, or otherwise correct any of its workmanship and any parts, materials, components, equipment, or other items in the Work which contain faults or defects, whether such failures are observed ty the District, consultant, or Contractor before or after final completion. The Contractor shall bear all costs of correcting such work covered by the warranties.
- 8.3 The Contractor shall further warrant that all work shall be free of defects of material and workmanship for a period of one (1) year minimum and/or as required in the did documents. The Contractor agrees it will, at its own expense, repair and replace all such defective work and all other work damaged thereby which become defective during the term of the guarantee warranty. Whenever guarantees or warranties are required by the specifications for a longer period than the one (1) year warranty, such period shall govern. The District shall have the full benefit of longer warranties provided by the Contractor/manufacturer.
- 8.4 Upon discovery of any warranty defect, the District shall give written notice to the Contractor and state the time frame in which the repairs shall be made.
- 8.5 The Contractor, at its own expense, shall repair or replace any damages to equipment, facilities, or other personal or real property owned by the District which is damaged as a result of any such fault or defect, at no cost to the District.

#### 9.0 INSURANCE

Contractor shall procure and maintain the required insurance specified below for the duration of this Agreement, which insurance shall be written for not less than the amounts specified or greater if required by law. The District's receipt of a Certificate of Insurance from the Contractor with limits and or coverages that do not meet the requirements does not waive the requirements and the Contractor shall still be responsible for the limits and coverages stated in this Agreement. Specified coverages and amounts may be provided by a combination of a primary policy plus an umbrella or following form excess policy. All insurance shall be with a carrier licensed in the state of Colorado and shall have a minimum A.M. Best rating of A-VII. Contractor shall furnish the District's Risk Management Department with certificates of the required insurance prior to the District's approval and signing of this Agreement, and with renewal certificates prior to the expiration of any required insurance that expires during the term of this Agreement. Memorandums of Insurance will not be accepted. Certificates of Insurance and all communication regarding insurance shall be addressed to:

Poudre School District Attention: Risk Management 2407 Laporte Ave Ft. Collins, CO 80521

Please Email Certificates to: risk@psdschools.org

Any insurance and/or self-insurance carried by the District is excess of the coverage extended to the District by Contractor. Contractor shall provide at least thirty (30) days' advance written notice to the District prior to cancellation, change of coverage, or non-renewal. The insurance requirements specified in this section shall not reduce the indemnification liability that Contractor has assumed in section 9.1.

#### **Commercial General Liability**

#### **Minimum Limits**

a.	Each Occurrence Limit	\$2,000,000
b.	General Aggregate	\$3,000,000
c.	Products/Completed Operations Aggregate	\$3,000,000
d.	Personal/Advertising Injury	\$2,000,000
e.	Fire Damage (Any One Fire)	\$50,000
f.	Medical Payments (Any One Person)	\$5,000

- g. The policy shall provide for bodily injury and property damage, Premises and Operations, Products/Completed Operations, Personal/Advertising Injury and liability assumed under and insured contract (including defense costs).
- h. The policy shall be endorsed to include the following additional insured language: "Poudre School District R-1, its elected officials, employees, agents, and volunteers shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor" and shall be insured to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Contract. Copy of policy endorsement must be attached to the Certificate of Insurance.
- i. Completed Operations Coverage shall be kept in place for up to the statute of repose.

Contractor's Pollution Liability, Including Errors and Omissions (If work involves potential pollution risk or losses caused by pollution conditions, including asbestos).

For losses caused by pollution conditions including coverage for bodily injury, property damage, (including natural resource damage), cleanup costs, removal, storage, disposal, and or use of the pollutant; and defense costs, including costs and expenses incurred in the investigation, defense, or settlement of claims. Coverage shall apply to the sudden and gradual pollution conditions resulting from the escape or release of smoke, vapors, fumes, acids alkalis, toxic chemicals, liquids, or gases, natural gas, waste materials, or other irritants, contaminants, or pollutants (including asbestos). and cleanup costs that arise from the operations of the Contractor as described in the Scope of Services section of this Agreement.

#### **Minimum Limits**

a. Per Loss \$5,000,000b. Products/Completed Operations Aggregate \$5,000,000

- c. The policy shall provide for protection against claims for third-party bodily injury, property damage, or environmental damage caused by pollution conditions resulting from the Contractor's contracting activities for which the Contractor is legally liable.
- d. The policy shall provide for cleanup costs when mandated by governmental entities, when required by law, or as a result of third-party claims.

- e. The policy shall be endorsed to include the following additional insured language: "Poudre School District R-1, its elected officials, employees, agents, and volunteers shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor" and shall be insured to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Contract. Copy of policy endorsement must be attached to the Certificate of Insurance.
- f. Contractor warrants that any retroactive date under the policy shall precede the effective date of this Agreement; and that either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of three (3) years beginning at the time work under this Agreement is completed.

## Commercial Automobile Liability Providing Coverage for Owned, Non-Owned, and Leased or Hired Vehicles

a. Bodily Injury & Property Damage Combined Single Limit Minimum

\$1,000,000

b. If Contractor operates vehicles in performing any services under this Contract, the policy shall be endorsed to include the following additional insured language: "Poudre School District R-1, its elected officials, employees, agents, and volunteers shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor" and shall be insured to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Contract. Copy of policy endorsement must be attached to the Certificate of Insurance.

#### Workers' Compensation and Employers' Liability

If Contractor is exempt under the Colorado Workers' Compensation Act, this requirement will be waived if proof a current Workers' Compensation Coverage Rejection is on file with the Colorado Department of Labor and Employment, Division of Worker's Compensation and a copy is submitted to the District.

#### **Minimum Limits**

a. State of Coloradob. Employer's LiabilityStatutory\$500,000 Each Accident

\$500,000 Disease – Policy Limit

\$500,000 Disease – Each Employee

c. Waiver of subrogation in favor of Poudre School District R-1.

#### 9.1 <u>Indemnification</u>

Contractor shall indemnify and hold harmless the District and the District's Board members, employees, representatives, and agents from and against any and all liability arising from any suit, action, grievance, charge or proceeding brought in connection with or related to Contractor's operations, provision of Services and/or conduct of any of its employees, volunteers, agents, or representatives. The indemnification and hold harmless obligation hereunder shall include all attorney fees, costs and expenses incurred by the District and/or the District's Board

members, employees, representatives and/or agents in defense of said suits, actions, grievances, charges and/or proceedings. Nothing in this section or otherwise in this Agreement shall be construed in any way or applied in any manner as a compromise or waiver of the District's rights and protections under the Colorado Constitution or the Colorado Governmental Immunity Act.

## 10.0 REFERENCES

References are required. List three (3) references for which your company has completed similar services for projects of similar scope. Colorado K-12 public school references are preferred.

10.1	Company Name_
	Address
	Contact Person
	Telephone
	Email
	Describe type of work/service performed or items supplied
100	
10.2	Company Name
	Address
	Contact Person
	Telephone
	Email
	Describe type of work/service performed or items supplied
10.3	Company Name
10.5	
	Address
	Contact Person
	Telephone
	Email
	Describe type of work/service performed or items supplied

Bids must be submitted and received in BidNet's electronic solicitation portal on or before 2:00 p.m. MST on April 27, 2021.

The undersigned hereby affirms that:

- He/she is a duly authorized agent of the company issuing this bid and that all information provided in the bid is true and accurate.
- He/she has read the conditions and technical specifications, which were made available to the company in conjunction with this solicitation, and fully understands and accepts these terms unless specific variations have been expressly listed in the bid.
- The company will adhere to all terms and conditions and provide, at a minimum, all services as expressed in the solicitation and/or the company's bid responding to the solicitation.
- The company meets or exceeds all the required criteria as specified by this solicitation, or if not, has submitted a Justification for Consideration addressing any failure to meet the criteria.
- The company's bid is being offered independently of any other Contractor and in full compliance with the terms specified in Sections 2 and 3 of the solicitation.
- The company will accept any awards made to it, contingent on agreement negotiation, as a result of this solicitation for a minimum of ninety (90) calendar days following the date and time of the solicitation opening.

Company Name				
Mailing address				
Signature of Agent				
Printed Name				
Title				
E-mail address				
Phone number				
Contact Person (If different from A gent – inc.	olude e-mail address and	d nhone number)		

NOTE: Bids submitted without the signature of an authorized agent of the company may be considered non-responsive and ineligible for award.

12.0 <u>BID FORM</u> IFB 21-700-004

Poudre School District reserves the right to reject any or all bids or any parts thereof. Contractor agrees to furnish all labor and materials to complete the execution of the Scope described in the bid documents and addenda.

## 12.1 Base Bid Lump Sums

Bennett Elementary		
	_ Dollars (\$	_)
Harris Bilingual		
	_ Dollars (\$	
Kruse Elementary		
	_ Dollars (\$	_)
Laurel Elementary		
	_ Dollars (\$	_)
Putnam Elementary		
	_ Dollars (\$	_)
12.2 Alternate Pricing		
Bennett Elementary Alternate #1: New hallway carpeting		
	_ Dollars (\$	
Laurel Elementary Alternate #1: Ceramic wall tile		
	_ Dollars (\$	_)
Laurel Elementary Alternate #2: Exhaust fan to be controll system	ed by the building automation	
	_ Dollars (\$	_)
Putnam Elementary Alternate #1: New hallway carpeting		
	_ Dollars (\$	_)

## 12.3 Confirmation of Addenda receipt

It is the responsibility of the Contractor to confirm all project Addenda have been received. The modifications to the bid documents noted in the Addenda issued by Poudre School District have been considered and costs are incorporated in the pricing above.

Q&A/Addendum #	Dated	Signature	
Q&A/Addendum#	Dated	Signature	
Q&A/Addendum#	Dated	Signature	
Q&A/Addendum#	Dated	Signature	
12.4 Schedule Confirmation  The undersigned Contractor agrees to achieve completion of the project(s) by August 10, 2021 with a start date as early as June 1, 2021. There is no early incentive offered by the District.			
Company Name			
Authorized Agent's Nam	e		
Authorized Agent's Signa	ature		
Date			





## LIMITED SCOPE AGREEMENT

PROVISION OF PROFESSIONAL SERVICES, CONSTRUCTION SERVICES, AND/OR MATERIALS

THIS AGREEMENT, effective the day of	, 202, by and between Poudre			
School District R-1, hereinafter referred to as	the "District," and,			
hereinafter referred to as the "Contractor," for the following project:				
IFB # <u>21-XXX-XXX</u>				

#### WITNESSETH THAT:

WHEREAS, the District is desirous of engaging the services of the Contractor for purposes of obtaining the Contractor's expertise in the areas of construction and/or to provide certain materials for the above project; and

WHEREAS, the Contractor has agreed to provide such services and/or materials under certain terms and conditions as hereinafter set forth; and

WHEREAS, the services and/or materials to be provided by the Contractor are to be limited to the services which are more fully described herein; and

WHEREAS, the parties hereto wish to memorialize, in writing, the terms of their agreements and understandings with regard to the rights and obligations of the District and the Contractor in connection therewith.

NOW, THEREFORE, in consideration of the covenants and promises hereinafter set forth, the parties hereto agree as follows:

- 1. The Contractor will provide the services which are described herein and contemplated to be provided by the Contractor in fulfillment of the project of the District, and in accordance with the scope of services, including the project scope and specifications, set forth in the District's Invitation for Bid (IFB) #21-XXX-XXX, which is attached as "Exhibit 1" and incorporated herein by reference. The provisions of this Agreement shall prevail in the event of conflict between this Agreement and any Exhibit hereto or any purchase order associated herewith.
- 2. The Contractor shall perform the services in a professional manner and in conformity with all applicable federal, state, county, and local municipal or regulatory statutes, ordinances, codes, standards, directives, rules, and regulations. The Contractor shall indemnify and hold harmless the District and the District's Board members, employees, representatives and agents from and against any and all liability arising from any suit, action, grievance, charge or proceeding brought in connection with or related to: (a) the Contractor's operations; (b) the Contractor's provision of the Services; (c) the Contractor's actual or

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alleged infringement of any third party's patent or copyright; and/or (d) the conduct of any of the Contractor's employees, volunteers, agents or representatives. The indemnification and hold harmless obligation hereunder shall include all attorney fees, costs and expenses incurred by the District and/or the District's Board members, employees, representatives and/or agents in defense of said suits, actions, grievances, charges and/or proceedings. Nothing in this section or otherwise in this Agreement shall be construed in any way or applied in any manner as a compromise or waiver of the District's rights and protections under the Colorado Constitution or the Colorado Governmental Immunity Act. Any materials obtained or provided by the Contractor hereunder shall be of good quality and sufficient for the project and/or the District's needs.

- 3. The District shall provide the Contractor with complete information concerning the project and shall allow the Contractor the opportunity to review all necessary and reasonable documents concerning the project.
- 4. The Contractor shall not be liable for the District's use of materials prepared by the Contractor if the District's use is beyond the scope of the project.
- 5. Changes in the nature and scope of the services to be provided by the Contractor pursuant to this Agreement shall be as agreed upon in writing from time to time by the Contractor and the District. Any material changes in the nature of the services to be provided by the Contractor must first be reduced to writing and executed by the District and Contractor.
- 6. This Agreement may be terminated by either of the parties hereto upon seven (7) days written notice to the other party if either party should fail to substantially perform its obligations pursuant to this Agreement. If not so terminated, this Agreement shall continue until the services (as set forth in the scope of services) have been completed, but in any event, no later than
  - 6.1. Notwithstanding the provisions of section 6, the District may terminate this Agreement at any time in its sole discretion for any reason, with or without cause, upon written notice served on the Contractor no less than thirty (30) days prior to the date of termination. In the event of such early termination by the District, the Contractor shall be paid up to the date of termination for services performed under and in accordance with this Agreement.
- 7. The compensation to be paid by the District to the Contractor shall be subject to early termination of this Agreement as described in section 6.
- 8. For all purposes, the Contractor is an independent contractor of the District and not an employee. This Agreement shall not be deemed to create any partnership or joint venture or other enterprise between the parties or any employer-employee relationship and is executed, in part, to rebut the presumptions set forth in Sec. 8-40-202(2), C.R.S.
  - 8.1. The Contractor shall be responsible for obtaining the Contractor's own workers' compensation, medical, health, unemployment and other insurance and coverage as

contractor deems necessary or as may be required by law. The Contractor is required to make appropriate filings with federal, state, and local taxing authorities to include income tax, social security, Medicare, and other payments. No federal or state withholdings shall be made by the District on any compensation paid to the Contractor and for services rendered under this Agreement.

- 9. In the event of any dispute or claim arising under or related to this Agreement, the parties shall use their best efforts to settle such dispute or claim through good faith negotiations with each other. If such dispute or claim is not settled through negotiations within 30 days after the earliest date on which one party notifies the other party in writing of its desire to attempt to resolve such dispute or claim through negotiations, then the parties agree to attempt in good faith to settle such dispute or claim by mediation conducted under the auspices of a recognized established mediation service within the State of Colorado. Such mediation shall be conducted within 60 days following either party's written request therefor. If such dispute or claim is not settled through mediation, then either party may initiate a civil action in the state courts of Larimer County, Colorado. No such action shall be removed to any other court or jurisdiction. The prevailing party in such court action shall be entitled to collect, as part of any judgment entered, its reasonable expert witness and attorneys' fees and costs.
- 10. The Contractor agrees to procure and maintain, at its sole expense, all licenses or registrations necessary for doing business within the applicable governing jurisdictions that may regulate the performance of the work set forth in this Agreement and any attached Exhibits or Attachments, except in those instances when the District is required to procure them due to ownership of the building, structure, or property.
- 11. The Contractor shall procure and maintain the required insurance specified in Section 8.0 of IFB 21-XXX-XXX, attached as Exhibit 1 by reference.
- 12. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado.
- 13. Contractor shall maintain documentation of services provided to the District under the terms of this Agreement and said information shall be available to the District at any time upon request. The District's representative shall monitor and coordinate the performance of the terms of this Agreement. The Contractor agrees to coordinate activities under this Agreement with the District's representative, (Name) , (Title)
- 14. Performance and Payment Bond. Colorado State Statues require Performance Bond and a Payment Bond on public construction projects of more than \$50,000.00. Contractor is required to post bonds, executed by a surety company authorized to do business in the State of Colorado, upon notification of bid award. Performance and Payment bonds will each be equal to 100% of contract price and must remain in effect until completion of contract.
- 14.1. Both the Performance Bond and the Payment Bond shall be written on AIA A312

  Performance Bond and AIA A312 Payment Bond Forms, as issued by The American

  Construction Services

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  Last updated 12/9/2020

Institute of Architects. Dates of bonds shall coincide with the date of the Contract between the Owner and the Contractor. Substitute forms may not be used.

**REQUIRED:** ⊠ YES □ NO

15. Immigrant Worker Regulation. See Attachment A. The Contractor agrees to comply with, sign, and return Attachment A, "Immigrant Worker Regulation."

**REQUIRED:**  $\boxtimes$  **YES**  $\square$  **NO** 

16. Asbestos Hazardous Material Clause. See Attachment B. The Contractor agrees to comply with, sign, and return Attachment B, "Asbestos Hazardous Material Clause - Protection of Persons or Property."

**REQUIRED:** ⊠ YES □ NO

17. Lead-Based Paint Material Clause. See Attachment C. The Contractor agrees to comply with, sign, and return Attachment C, "Lead Paint Renovation, Repair, & Painting Recordkeeping Checklist."

**REQUIRED:** ⊠ YES □ NO

18. Stormwater Management Permit. See Attachment D. The Contractor agrees to comply with Attachment D, "Stormwater Management Permit."

**REQUIRED:**  $\square$  **YES**  $\boxtimes$  **NO** 

19. All notices, requests, demands, and other communications required or permitted under this Agreement shall be in writing and shall be deemed to have been duly given when served if served personally, or on the third day after mailing if mailed by first class mail, registered or certified, postage prepaid, and properly addressed to the party to whom notice is to be given as set forth below.

#### **To the District:**

Earl Smith, Director of Construction Services Poudre School District R-1 2445 Laporte Avenue Fort Collins, CO 80521

#### **To the Contractor:**

Name
Firm
Address
City, State & Zip

	TNESS WHEREOF, the parties' authorized representative the date first above written.	ives have executed this Agreement,
POUD	DRE SCHOOL DISTRICT R-1	
By:		
Title:	Director of Construction Services	
Date:		
CONT	TRACTOR	
By:		
Title:		
Date:	-	
	ALL CONTRACTS MUST BE APPROVED PER D  Coudre School District Policy DJA requires all contracts of \$250,000 models.	250,000 or more to have Board of
Execut below	ducation approval. Contracts less than \$250,000 must be appr lative Director of Finance, or authorized designee. This Contr low by an authorized person. Contractor is not authorized to b fractor begins performing prior thereto, Poudre School Distra for such performance or for any goods and/or service	act is not valid until signed and dated egin performance until such time. If ct is not obligated to pay Contractor
APPR(	OVED:	
(Signat	ture)	
(Printed	ed name, title, and date)	

## EXHIBIT 1

## PROJECT SCOPE OF SERVICES

## Please refer to the following:

Poudre School District's IFB # 21-XXX-XXX
Project published to Bidnet on\_\_\_\_\_\_.

#### **ATTACHMENT A**

#### **IMMIGRANT WORKER REGULATION**

- 1. UNLAWFUL EMPLOYEES, CONTRACTORS AND SUBCONTRACTORS. Contractor shall not knowingly employ or contract with an illegal alien to perform work under this Contract. Contractor shall not knowingly contract with a subcontractor that (a) knowingly employs or contracts with an illegal alien to perform work under this Contract or (b) fails to certify to the Contractor that the subcontractor will not knowingly employ or contract with an illegal alien to perform work under this contract.
- 2. VERIFICATION REGARDING ILLEGAL ALIENS. Contractor has verified or attempted to verify through participation in the basic pilot program of the State of Colorado that Contractor does not employ any illegal aliens or Contractor verifies that Contractor has not been accepted into the basic pilot program prior to entering into this Contract. Contractor further verifies that if Contractor has not been accepted into the basic pilot program of the State of Colorado, Contractor will apply to participate in the basic pilot program of the State of Colorado every three months until Contractor is accepted or this Contract is completed, whichever is earlier. If the Basic Pilot Program is discontinued, this provision shall not be required or be effective.
- 3. LIMITATION REGARDING BASIC PILOT PROGRAM. Contractor shall not use Basic Pilot Program procedures to undertake pre-employment screening of job applicants while performing this Contract.
- 4. DUTY TO TERMINATE A SUBCONTRACT; EXCEPTIONS. If Contractor obtains actual knowledge that a subcontractor performing work under this Contract knowingly employs or contracts with an illegal alien, the Contractor shall:
  - 4.1 Notify the subcontractor and the District within three days that the Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien: and,
  - 4.2 Terminate the subcontract with the subcontractor if, within three days of receiving notice that the Contractor has actual knowledge that the subcontractor is employing or contracting with the illegal alien. The contractor shall not terminate the contract with the subcontractor if during the three days, the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.
- 5. DUTY TO COMPLY WITH STATE INVESTIGATION. Contractor shall comply with any reasonable request of the Colorado Department of Labor and Employment made in the course of an investigation pursuant to Section 8-17.5-102(5), C.R.S.
- 6. DAMAGES FOR BREACH OF CONTRACT. In addition to any other legal or equitable remedy, the District may be entitled to for a breach of this Contract, if the District terminates this Contract, in whole or in part, due to Contractor's breach of the obligations set forth above, Contractor shall be liable for actual and consequential damages to the District.

## **ATTACHMENT A - FORM**

## CONTRACTOR'S CERTIFICATE REGARDING EMPLOYING OR CONTRACTING WITH AN ILLEGAL ALIEN

FRO	M:		
	(Contractor)		
TO:	Poudre School District R-1 2407 Laporte Avenue Fort Collins, CO 80521		
Proje	ct Name:		
IFB N	Number:	Project Number:	
certif partic	ication, I (we) do not knowingly	tified bid, I (we) do hereby certify that y employ or contract with an illegal alcipate in the basic pilot program of the bloy any illegal aliens.	ien and the I (we) have
Signe	ed on		
	ractor Name		
By:			
Title:			

#### **ATTACHMENT B**

#### Asbestos Hazardous Material Clause - Protection of Persons or Property

#### **Asbestos-Containing Materials:**

- 1. Notice is hereby given that Poudre School District, in accordance with the United States Environmental Protection Agency's Asbestos Hazard Emergency Response Act, has completed federally mandated asbestos inspections of its facilities and that AHERA Inspection Reports and Management Plan Updates are available for review at each school facility and at the Department of Facility Services, Operations Service Center without cost or restriction for inspection during normal business hours. Copies can be made of such Plans at the normal copying charges established by the District.
  - 1.1. If asbestos containing material (ACM) is discovered during construction, Contractor is to notify the Owner immediately for evaluation and removal.

#### 2. NON-USE OF ASBESTOS CONTAINING MATERIAL

2.1. No asbestos or asbestos containing products shall be used in this construction or in any tools, devise, clothing or equipment used to affect this construction. Specific exceptions to this exclusion are as follows: vehicles with asbestos containing material (ACM) brake linings; elevator brake linings; laboratory muffle furnace with interior ACM insulation.

#### 3. DEFINITION AND TESTING

- 3.1. Asbestos and/or asbestos-containing products shall be defined as all items containing chrysotile, crocidolite, amosite, anthophyllite, tremolite or actinolite.
- 3.2. Any or all material containing greater than one tenth of one percent (0.1%) asbestos shall be defined as ACM.
- 3.3. Any disputes involving the question of whether or not material contains asbestos shall be settled by electron microscopy; the costs of any such tests which confirm the presence of ACM shall be paid by the Contractor; if no ACM is found, the cost of such tests shall be borne by the Owner.

#### 4. REMEDIATION

4.1. All work or materials found to contain asbestos or work or material installed with asbestos-containing equipment will be immediately rejected upon discovery and this Work will be remediated at no additional cost to the Owner. Such cost for remediation shall include, but is not limited to, cost of; the asbestos contractor, insurance, asbestos consultant, analytical and laboratory fees, and any other additional cost as may be incurred by Owner.

#### 5. CERTIFICATION

- 5.1. The Contractor shall certify, on the Certification of Nonuse of Asbestos Form Attachment B, that to the best of his knowledge no ACM was used as a building material in the construction of the Project. Attachment B is to be submitted in a separate folder with the closeout documents. Attachment B follows this section.
- 5.2. Certification required for final payment.

# ATTACHMENT B - FORM CONTRACTORS/ARCHITECTS CERTIFICATION OF NON-USE OF ASBESTOS CONTAINING BUILDING MATERIAL

PROJECT NAME:	PROJECT NO
CONTRACTOR:	
CONSTRUCTION DATES: NOTICE TO PROCEED (ST	ΓART):
SUBSTANTIAL COMPLET	ΓΙΟΝ DATE:
SQUARE FEET: (BUILDING OR I	PROJECT AREA)
	d above, to the best of my knowledge, no asbestos-containing ing material in the construction of this project.
Contractor's Company Name	
Name & Title	
Signature	Date
	d above, to the best of my knowledge, no asbestos-containing ing material in the construction of this project.
Architect's Company's Name	
Name & Title	
Signature	Date

#### **ATTACHMENT C**

#### <u>Lead-Based Paint Materials Clause – Protection of Persons or Property</u>

#### **Lead-Based Paint Materials:**

- 1. Notice is hereby given that Poudre School District, in accordance with the United States Environmental Protection Agency's Lead Safety for Renovation, Repair, and Painting Rule has performed lead-based paint inspections of its elementary school facilities constructed prior to 1980.
- 2. Lead-Based Paint Evaluation Reports are available for review at each elementary school built prior to 1980 and at the Department of Facility Services, Operations Service Center without cost or restriction for inspection during normal business hours. Copies can be made of such reports at the normal copying charges established by the District.
- 3. In the event that lead-based paint materials or suspected lead-based paint materials are discovered in the area designated for construction, the Contractor assumes responsibility to notify to the District and all workmen of existing lead-based paint conditions. Notification shall be made on approved EPA Forms and includes posting of notices in accordance with EPA and OSHA Guidelines. The Contractor shall assume all responsibility for compliance with applicable codes and regulations regarding discovery and notification of the presence of lead-based paint material.
- 4. If suspect lead-based paint material is identified, the Contractor shall not continue until the District, upon proper notification from the Contractor or Subcontractor, has the suspected lead-based materials analyzed. This will be done promptly by the District. If the Contractor proceeds after notification by the District not to proceed, the Contractor shall become liable for all costs associated with the cleaning and clearance for occupancy (using clearance testing method set out by the RRP Rule Regulations) of the structure or site.
- 5. All Work impacting Lead-Based Paint shall be performed by firms and individuals certified in Lead Safety for Renovation, Repair, and Painting. A copy of the firm's certification and a copy of certification of renovators shall be provided to the District within 10 days of contract issuance. The Contractor shall provide the District a copy of the Attachment Lead Paint Renovation, Repair, and Painting Recordkeeping Checklist for each work area at project completion.

## **ATTACHMENT C - FORM**

## <u>LEAD PAINT RENOVATION, REPAIR, & PAINTING RECORDKEEPING</u> <u>CHECKLIST</u>

Work Date(s):Facility:	
Work Area(s):	
Brief Description of Work:	
Review Conducted of Lead-Based Paint Evaluation Report for Facility to determine whether lead was present on components affected by work: (Signature REQUIRED)	
Work Impacted by Lead-Paint: NO ———— YES: ———— (if YES complete remaining form)	
Name of Certified RRP Renovator (if used):  Copies of RRP renovator qualifications (training certificates, certifications) on file or attached.  Warning signs posted at entrance to work area.  Work area contained to prevent spread of dust and debris.  All objects in the work area removed or covered (interiors).  HVAC ducts in the work area closed and covered (interiors).  Windows in the work area sealed.  Windows within 20 feet of the work area closed.  Doors in the work area closed and sealed (interiors).  Doors in and within 20 feet of the work area closed and sealed (exteriors).  Doors that must be used in the work area covered to allow passage but prevent spread of dust.  Floors in the work area covered with taped-down plastic (interiors).  Ground covered by plastic extending 10 feet from work area.  Vertical containment installed to prevent migration of dust and debris to adjacent areas.  All visible debris HEPA vacuumed or cleaned with wet cloths, protective sheeting misted, folded dirty side inward, and taped for disposal in exterior dumpster.  TCLP performed of waste streams greater than 220 lbs. Results (attach lab report):  Certified Renovator performed EPA Post-Renovation Cleaning Verification Card (describe results, time & date):	
☐ Work Waste sealed with duct tape in appropriate trash bag and disposed of in exterior dumpster.	
I certify under penalty of law that the above information is true and complete	
(Signature REQUIRED):	

#### ATTACHMENT D

#### STORMWATER MANAGEMENT PERMIT

- 1. The Contractor is responsible for securing and paying for the State Stormwater Management Permit and/or local Stormwater Management Permit as may be required.
  - 1.1. The contractor is responsible to ensure that all the requirements of either the State or local Stormwater Management Permit are strictly followed during construction.
  - 1.2. The Contractor shall review and follow the District's Illicit Discharge reporting procedures in the event of an occurrence.
- 2. The District may engage a civil engineer to prepare an erosion control plan as part of the overall contract documents.
  - 2.1. The Contractor can use or modify the contract document plan as necessary in their preparation of the Stormwater Management Permit application. However, this does not relieve the Contractor from preparing their own site specific plan for application submission if no plan is provided in the contract documents.
- 3. The District or designated District's representative may inspect the Stormwater Management plan, project site and Best Management Practices (BMPs) and communicate noted deficiencies for corrective measures at any time during the construction project.
  - 3.1. The Contractor shall be fined up to \$250 dollars per day in addition to any Federal, State or local fines until deficiencies are corrected.
  - 3.2. The Contractor shall coordinate all inspections required by the State or authority having jurisdiction (AHJ).
- 4. The District's final acceptance of the project and Contractor de-mobilization does not relieve the Contractor of their responsibilities and duties as required in the permit, (i.e., maintain BMPs, regular and post-event inspections as defined in the permit, etc.) while it is still open.
  - 4.1. Final acceptance of ground areas including permanent stormwater structures shall only occur after the required vegetation and stabilization has been established.
  - 4.2. The Contractor is required to conduct monthly inspections of the site and BMPs during this warranty period and make corrective changes to the BMPs or add BMPs as needed.
- 5. The Contractor will notify the District in writing when they believe all vegetation and stabilization has reached the contract requirements and they want to close the Stormwater Management Permit.
  - 5.1. The District must be allowed the opportunity to review the site and approve the contractor's request to close the permit. The Contractor cannot apply to close the Stormwater Management permit without the District's written approval.
  - 5.2. It is the contractor's responsibility to remove and dispose of all BMPs after the Stormwater Management Permit has been closed.
- 6. The Contractor shall provide full-time, qualified, and efficient supervision of the work, using competent skill and attention.
  - 6.1. The Contractor's superintendent shall be knowledgeable and completed training in

- Stormwater Management & Erosion Control and OSHA construction safety.
- 6.2. The superintendent shall be knowledgeable of all building codes that govern the construction of the project.
- 6.3. The superintendent shall direct, schedule, and coordinate the work.
- 6.4. The superintendent is responsible for determining and supervising all temporary and permanent erection and construction sequences, techniques, means and methods.
- 6.5. The superintendent shall coordinate the work to ensure that all parts fit together properly and in accordance with the Contract Documents.
- 6.6. The superintendent shall carefully study and compare all Contract Documents and other instructions and shall at once report to the Architect (if applicable) and the District any error, inconsistency, or omission which they may discover.



### A Renovation for:

# 1125 Bennett Road

# Bennett Elementary School

**Fort Collins** 

Kenney & Lee

architecture group, inc.

NOTICE: DUTY OF COOPERATION - Release of these plans contemplates further cooperation among the owner, his contractor, and the architect. Design and construction are complex. Although the architect and his consultants have performed their services with due care and diligence,

they cannot quarantee perfection. Communication is imperfect, and every contingency cannot be anticipated. Any ambiguity or discrepancy

and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility

for all consequences. Changes made from the plans without the consent of the architect are unauthorized, and shall relieve the architect of

discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding

land • Colorado (970) 663-0548

### ABBREVIATIONS

GLASS ADJUSTABLE BOTTOM OF FTG. HORIZONTAL BLDG BUILDING LONG LIGHT BLOCK MB MACHINE BOLT BOTTOM OF STL. ML MICRO-LAM CABINET MTL METAL CAST-IN-PLACE NIC NOT IN CONTRACT CEILING OC ON CENTER CLEAR OHC OVERHEAD CABINET CMU CONC. MASONRY P TOP PLATE CONC CONCRETE OR PROPERTY LINE CONT CONTINUOUS PT PRESSURE TREATED CONN CONNECTION RAD RADIUS COUNTERSINK R&S ROD AND SHELF DOUBLE S&P SHELF AND POLE DOUGLAS-FIR SHELF DIAMETER SIM SIMILAR DOWN SQUARE DRAWING STL STEEL EACH TOF TOP OF FOUNDATION EACH FACE TOS TOP OF SLAB EQUAL TOW TOP OF WALL EACH SIDE TS TUBE STEEL EACH WAY TYP TYPICAL FLOOR DRAIN UNO UNLESS NOTED FOUNDATION OTHERWISE FINISH FLOOR VERTICAL MD MOOD FLOOR WWF WELDED WIRE FIELD NAIL FABRIC

### CONSULTANTS

### ARCHITECT

KENNEY LEE ARCHITECTURE GROUP, INC. ATTN: KRIS LEE 209 EAST FOURTH STREET LOVELAND, COLORADO 80537 (970)663-0548

### OWNER

POUDRE SCHOOL DISTRICT ATTN: JASON LEE 2445 LAPORTE AVE. FORT COLLING, COLORADO 80521 (970) 490-3017

### M. P. E. ENGINEER

PIVOTAL ENGINEERING WEST, LLC 1355 GREENRIDGE RD, SUITE B WINDSOR, COLORADO 80550 (516) 547-5714

responsibility for all consequences arising out of such changes.

### CODE SUMMARY

CODE REQUIREMENTS HAVE REMAINED CONSISTENT WITH THE ORIGINAL BUILDING CONSTRUCTION INCLUDING OCCUPANCY GROUP AND CONSTRUCTION TYPE.

THIS PROJECT SHALL COMPLY WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE, 2018 INTERNATIONAL MECHANICAL CODE, 2018 INTERNATIONAL PLUMBING CODE, 2017 N.E.C., 2018 INTERNATIONAL FIRE CODE, ALL APPLICABLE LOCAL ORDINANCES AND REQUIREMENTS. \$ 2017 ANSI A117.1 STANDARDS

TYPE OF CONSTRUCTION TYPE II B (NON-SPRINKLERED)

OCCUPANCY CLASSIFICATION PER CHAPTER 3

MAXIMUM BUILDING HEIGHT & NO. OF STORIES PER TABLE 504.3 & 504.4 E GROUP: 15' AND THREE STORIES ALLOWED

(NO CHANGE IN HEIGHT OR AREA) OCCUPANCY SEPARATION PER TABLE 508.4

E / E (NONE REQUIRED)

### Colorado

SHEET INDEX

FINISH SCHEDULE / DETAILS

MECHANICAL, ELEC. M-1.0 PLUMBING & MECHANICAL FLOOR PLANS & SCHEDULES

GENERAL MECHANICAL NOTES & OUTLINE SPECS

E-0.1 LEGEND, NOTES, SPECIFICATIONS & SCHEDULES

E-1.0 LIGHTING & POWER PLAN







NOTE: THIS SET IS NULL & VOID SHOULD SHT. ALO BE OMITTED FROM THIS SET.

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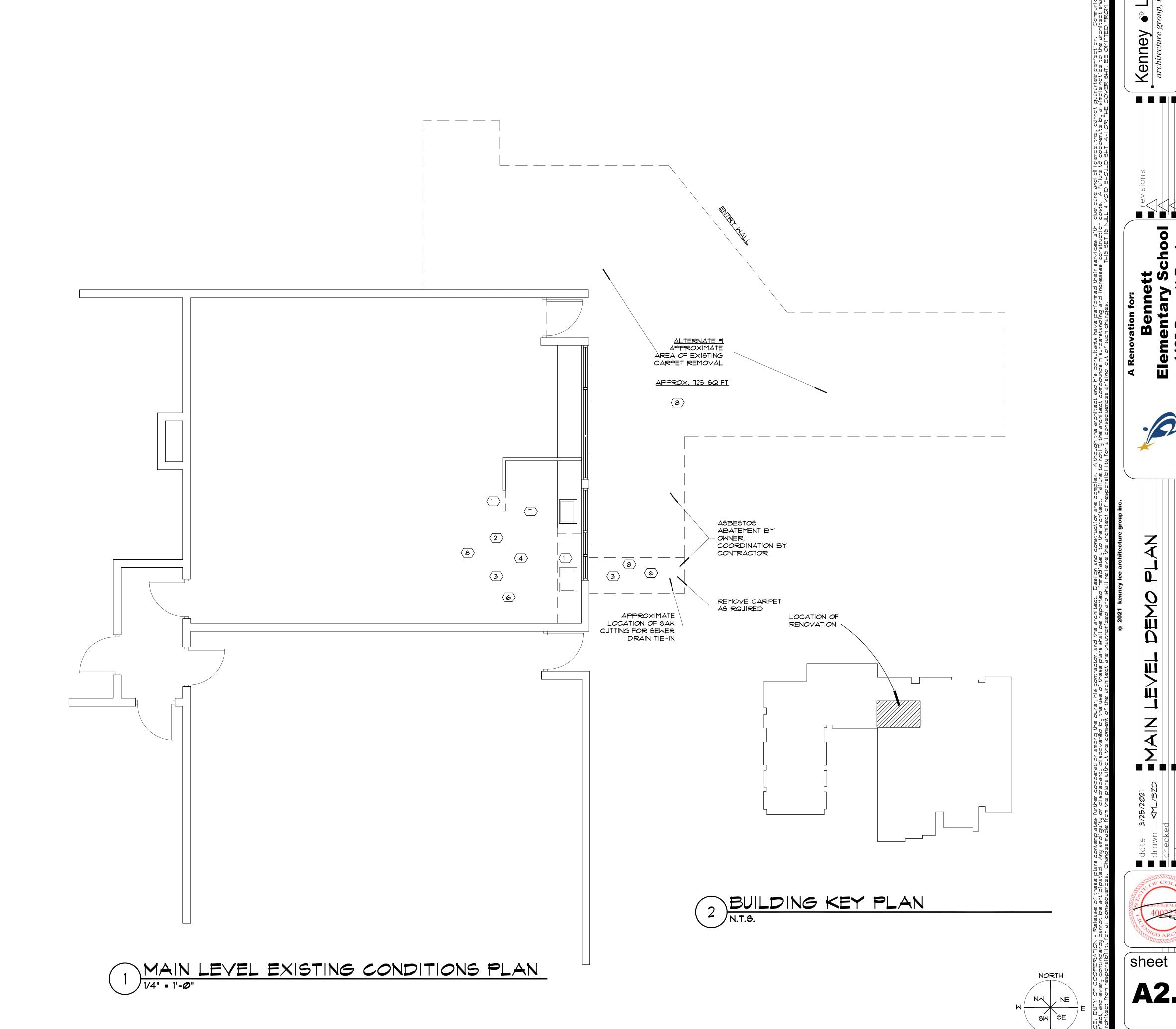
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### DEMOLITION PLAN KEY NOTES

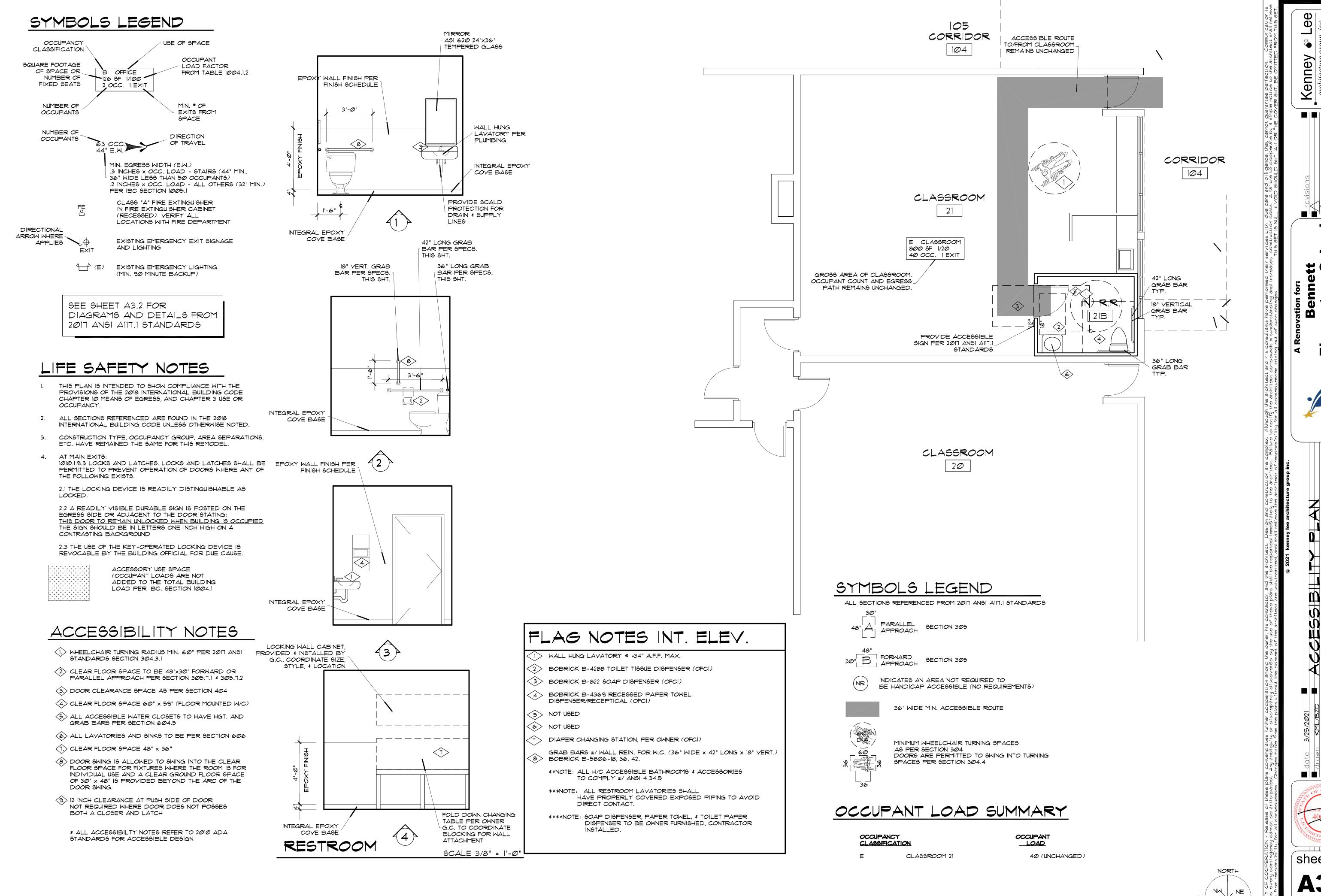
- REMOVE ALL EXISTING WALLS, DOORS, WINDOWS, ETC. AT ALL AREAS INDICATED.
- CONTRACTOR TO INVENTORY AND INSPECT FOR REUSE. PROPERLY TERMINATE ALL ELECTRICAL CONNECTIONS. TEMPORARILY RETAIN ONE PANEL AND SERVICE TO OPERATE THE EXISTING LIGHTS FOR CONSTRUCTION LIGHTING.
- REMOVE ALL FLOORING IN THIS AREA TO THE LIMITS OF ADJACENT CONSTRUCTION. VERIFY W/ FACILITIES FOR EXTENT OF FLOORING
- ALL LIGHT FIXTURES IN OPEN SPACE TO REMAIN UNTIL GENERAL CONTRACTOR INSTRUCTS REMOVAL. CONTINUE TO PROVIDE ELECTRICAL SERVICE TO LIGHTS.
- ANY FIRE LINES TO BE REMOVED OR ALTERED MUST BE DONE BY A LICENSED FIRE SPRINKLER CONTRACTOR ONLY AS DESIGN/BUILD. SPRINKLER HEADS TO MATCH EXISTING. WORK TO BE COMPLETED OFF HOURS AFTER 5:00, VERIFY DATE W/ OWNER.
- DEMO CONTRACTOR MUST LOCATE ALL UNDERSLAB ELECTRICAL & PLUMBING LINES AND/OR CONDUIT PRIOR TO ANY SLAB SAWCUTTING WORK.
- EXISTING FURNITURE TO BE REMOVED AND STOCKED PER POUDRE SCHOOL FACILITIES INSTRUCTION. (N.I.C.)
- ANY AND ALL ASBESTOS TESTING AND ABATEMENT TO BE PERFORMED BY POUDRE SCHOOL FACILITIES. GENERAL CONTRACTOR TO COORDINATE EXTENTS OF WORK.

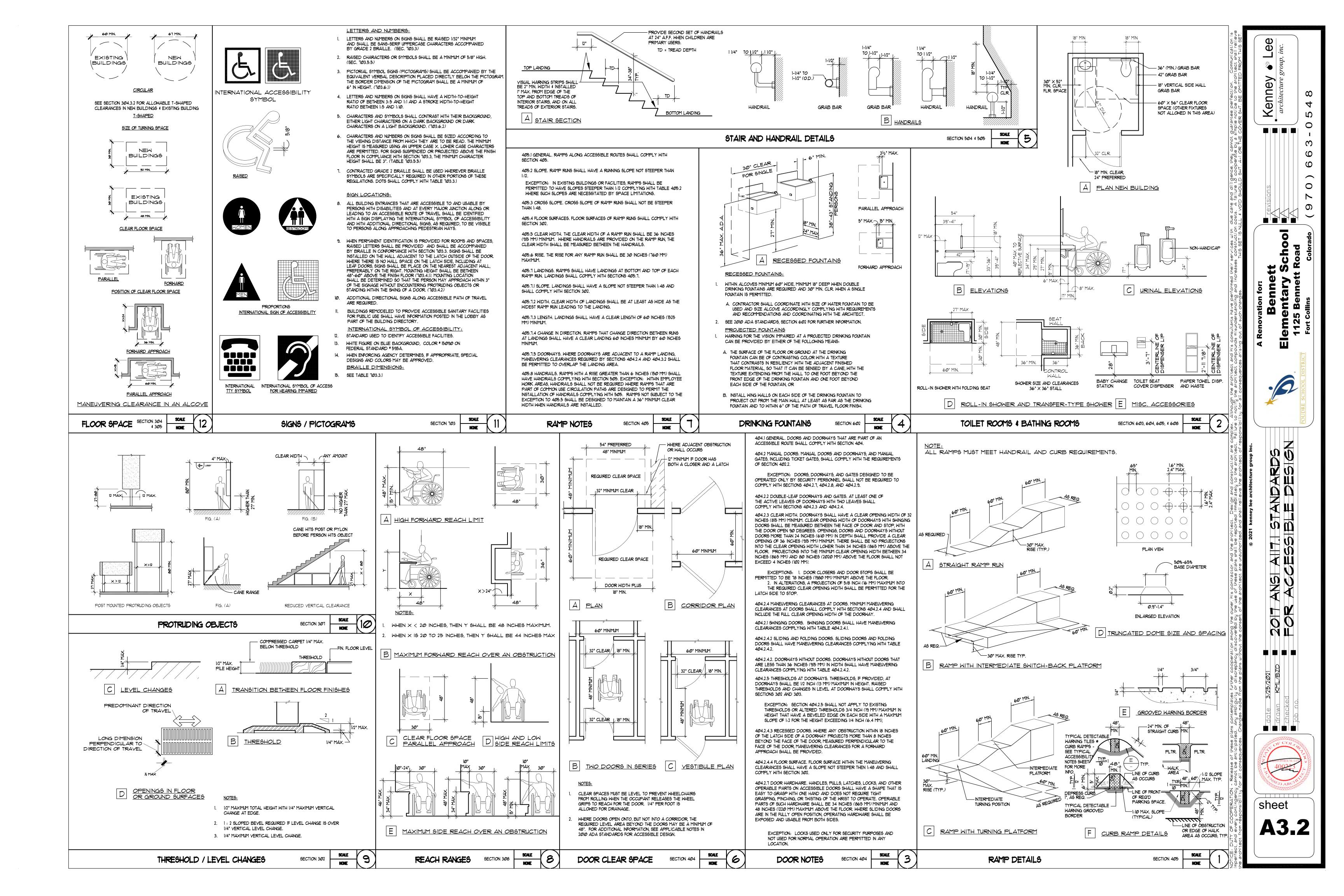
### GENERAL DEMO NOTES

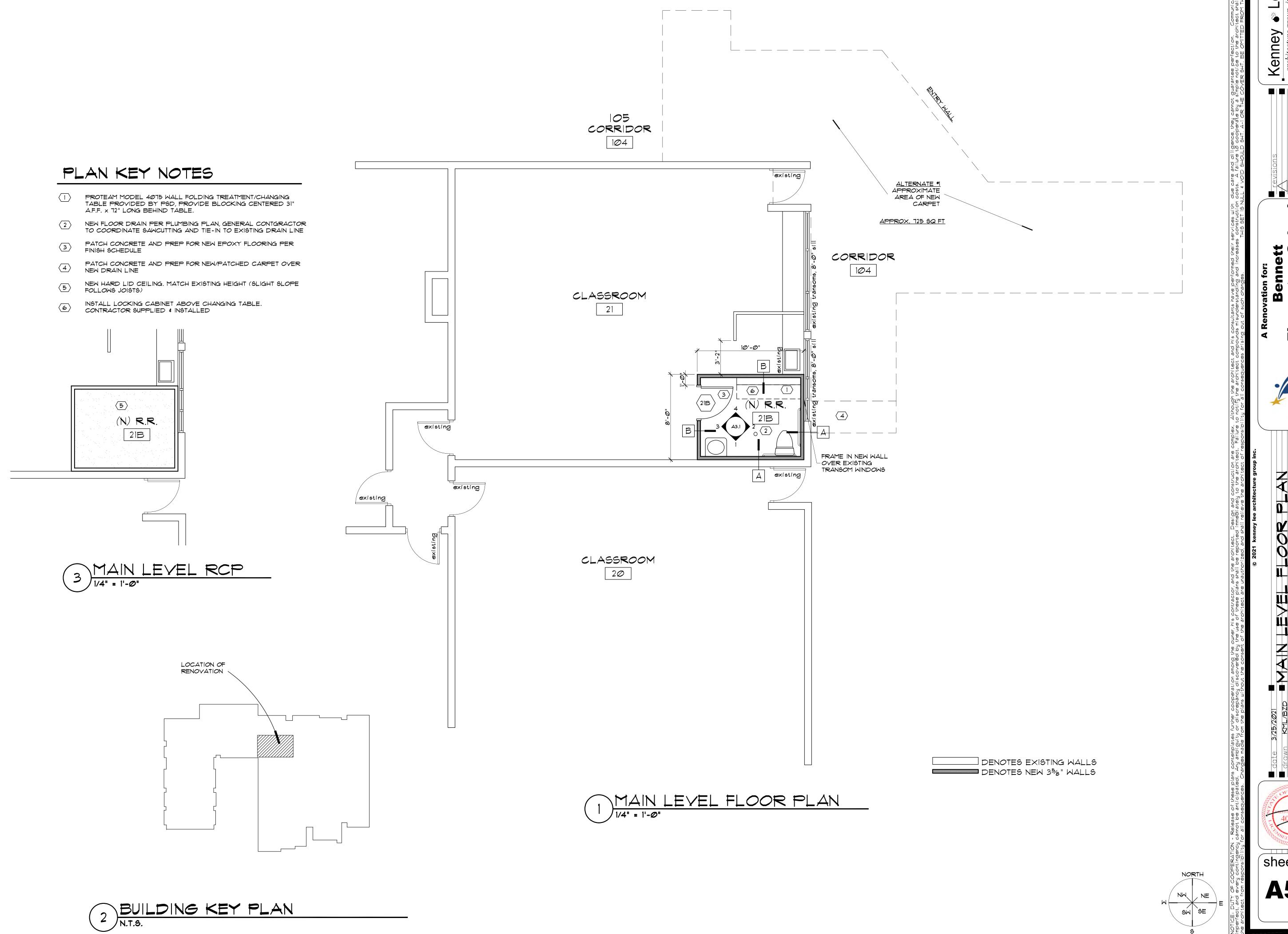
- 1. DEMO. SUB-CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO STARTING CONSTRUCTION IN AREA CONCERNED. DO NOT SCALE DRAWINGS.
- 2. GENERAL CONTRACTOR SHALL PERFORM DEMOLITION IN MANNER REQUIRED TO MAXIMIZE EFFICIENCY OF INTEGRATION WITH REQUIRED NEW CONSTRUCTION AND/OR PATCHING. CONTRACTOR SHALL REMOVE ITEMS IN A WORKMANSHIP LIKE MANNER SO AS TO ENSURE THAT ADJACENT CONSTRUCTION SHALL REMAIN INTACT.
- 3. PRIOR TO COMMENCING CONSTRUCTION GENERAL CONTRACTOR SHALL CONFIRM EXTENT OF ACCEPTED ALTERNATES AS ALTERNATES MAY REVISE SCOPE OF DEMOLITION REQUIRED IN BUILDING.
- 4. ALL DEMOLITION WORK AND LOCATION IDENTIFIED ON THE DEMOLITION PLANS, ARE DIAGRAMMATIC IN NATURE. NOT ALL REQUIRED DEMOLITION WORK HAS BEEN NOTED ON THE DRAWINGS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXISTING ITEMS REQUIRED FOR THE COMPLETION OF THE WORK INDICATED IN THE CONSTRUCTION DOCUMENTS OR DAMAGED AS A RESULT OF THE CONSTRUCTION PROCESS.
- 5. RUBBLE CONSTRUCTION DEBRIS AND ANY CONTAMINATED OR HAZARDOUS MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE. ALL MATERIAL DISPOSAL COST SHALL BE INCLUDED AS A PART OF THE BID ITEMS FOR SITE DEMOLITION WORK.
- 6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE PRESENCE AND LOCATIONS OF ALL EXISTING UTILITIES IN THE AREA OF THE WORK PRIOR TO THE START OF DEMOLITION AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL PRESERVE INTACT ALL CULVERTS, UNDERGROUND CONDUITS, AND CABLES ENCOUNTERED DURING CONSTRUCTION (EXCEPT THOSE UTILITIES SCHEDULED FOR REMOVAL OR ABANDONMENT.)
- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES, STRUCTURES, & LANDSCAPE AREAS WHICH ARE CAUSED AS A RESULT OF THE CONSTRUCTION WORK. THE CONTRACTOR SHALL HOLD THE OWNER HARMLESS FROM ANY LIABILITY OR EXPENSE FOR INJURIES RESULTING FROM SUCH DAMAGES.
- 8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COMMUNICATING WITH THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES NOT SHOWN ON THE PLANS. ITEMS ON THE PLANS MIGHT NOT SHOW ACTUAL CONDITIONS ONCE DEMOLITION BEGINS. ANY BEARING CONDITIONS NOT KNOWN MUST BE BROUGHT TO THE ATTENTION OF ARCHITECT AND ENGINEER.



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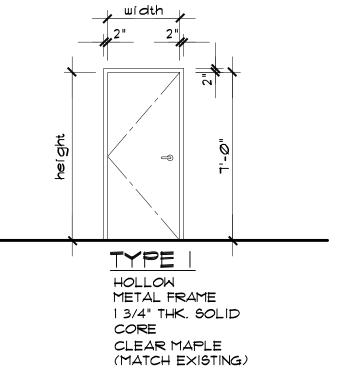


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GROUP 1 HINGES: 3 EACH SBBL US32D IVE LOCK SET: PRIVACY ND405RH 0626, 6 PIN CORE KICKEPLATE: 8400 10"x34" US32D IVE DOOR STOP: WS407 CCV US32D IVE RUBBER DOOR SILENCERS

Ž	EW D	OOR	SCH	HEDULE	
SYM. ()	SI	ZE HGT.	<u>Н</u>	HARDWARE GROUP	NOTES
21B	3'-Ø"	7'-Ø"	1	1	PAINT DOOR FRAME TO MATCH EXISTING FRAMES

	IN.	TERIOR F	FINISH S	SCHE	DULE					
M.	ROOM	19E	ΩŽ		MAL	LS		<u>ā</u>	CLG. HGT. A.F.F.	
NO.	NAME	m	교	N	E	S	$  \qquad \bowtie \qquad  $	Ú		REMARKS
21B	(N) ADA R.R.	FLR-1	FLR-1	MALL-1/2	WALL-1/2	MALL-1/2	WALL-1/2	CLG-1	8'-0"	WALL-2 TO 4'-4" A.F.F. PATCH CPT-1 AS NECESSARY



NOTE: SEE FLOOR PLANS FOR ALL DOOR SWING DIRECTIONS, TYP.

### FLOOR FINISH LEGEND

FLR-1

<u>CARPET</u> MANUFACTURER: TANDUS, MANNINGTON OR MOWHAWK COLLECTION: MATCH EXISTING DESIGN: MATCH EXISTING COLOR: MATCH EXISTING

SIZE: BROADLOOM SHEET GOOD

BAS SPARTACOTE DURA-A-FLEX, DEX-O-TEX DECOR EPOXY FLOORING SYSTEM OR APPROVED EQUAL

RESINOUS FLOOR POLYASPARTIC COATING (DECORATIVE BROADCAST EPOXY FLOORING SYSTEM USING COLORED QUARTZ OR PAINT CHIP ONLY)

EPOXY FLOOR
POURED ACRYLIC FLOOR W/INTEGRAL 4" COVE BASE

### FINISH SPECIFICATIONS

#### <u>WALL FINISH</u> FIELD COLOR WALL-1

(1) COAT WHITE PRIMER, DU-1507 PRO-MAX (2) COATS PAINTED GYP. BD. TEXTURE: GYPSUM ASSOCIATION LEVEL 4 FINISH COLOR: SEMI-GLOSS LATEX, ZERO PLUS

#### EPOXY WALL FINISH MALL-2

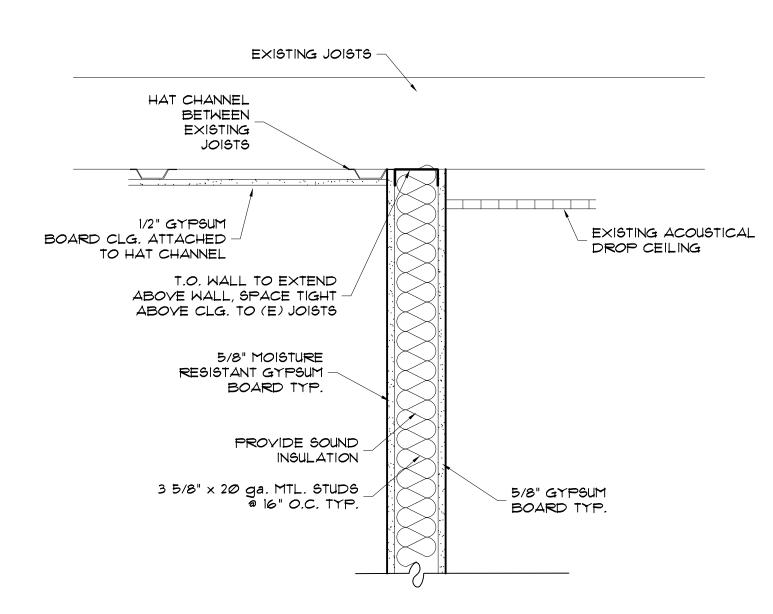
BAS SPARTACOTE DURA-A-FLEX, DEX-O-TEX DECOR EPOXY FLOORING SYSTEM OR APPROVED EQUAL COLOR: TBD SEE INTERIOR ELEVATION FOR HEIGHT & LOCATION

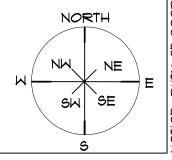
### CEILING FINISH

#### CEILING FINISH FIELD COLOR

(1) COAT WHITE PRIMER, DU-1507 PRO-MAX (2) COATS PAINTED GYP. BD. TEXTURE: GYPSUM ASSOCIATION LEVEL 4 FINISH COLOR: SEMI-GLOSS LATEX, ZERO PLUS

### - EXISTING JOISTS HAT CHANNEL BETWEEN EXISTING JOISTS 1/2" GYPSUM BOARD CLG. ATTACHED TO HAT CHANNEL 5/8" MOISTURE RESISTANT GYPSUM BOARD TYP. PROVIDE SOUND INSULATION \_ 3 5/8" x 20 ga. MTL. STUDS @ 16" O.C. TYP. EXISTING CMU WALL





Kenney 

Elemon 1128







- RELOCATE EXISTING TRANSFER DUCTWORK AND GRILLES. REFER TO NEW WORK PLAN.
- REMOVE EXISTING TRANSFER GRILLE AND KEEP FOR RE-INSTALL. REFER TO NEW WORK PLAN.
- EXTEND 6"ØE.A. DUCT UP THROUGH ROOF WITH FLASHING, STORM COLLAR AND WEATER CAP.
- 4 UNDER-CUT DOOR 1" FOR FREE-AIR MOVEMENT.
- EXTEND EXISTING TRANSFER DUCT FROM ABOVE CABINETS AND RE-INSTALL GRILLE IN CEILING.

(THIS SHEET ONLY)

- RE-INSTALL EXISTING RELOCATED TRANSFER DUCT, EXTEND DUCT FROM ABOVE CABINETS AND INSTALL GRILLE IN CEILING.
- REMOVE EXISTING SINK AND RETURN TO OWNER. CAP ALL ASSOCIATED CW, HW VENT AND SS PIPING AS CLOSE TO MAINS AS POSSIBLE.
- MAINTAIN EXISTING SINK.
- CONNECT NEW 3"SS TO EXISTING 4"SS, FIELD VERIFY REQUIREMENTS.
- CONNECT NEW 3/4"CW AND 1/2"HW TO EXISTING, PROVIDE BALL VALVE. FIELD VERIFY REQUIREMENTS.

DRAWING INDEX											
NUMBER	DRAWING TITLE		PERMIT SET 03/19/2021								
M-1.0	INDEX, HVAC AND PLUMBING FLOOR PLANS, SHEDULES.	o	۰								
M-1.1	GENERAL MECHANICAL NOTES AND OUTLINE SPECIFICATIONS.	۰	۰								
COODDINATIO	AL.	•									

03/19/21 - ARCHITECTURAL DRAWING SET NOT AVAIL. - STRUCTURAL DRAWING SET

03/19/21 - ELECTRICAL DRAWING SET NOT AVAIL. - CIVIL DRAWING SET

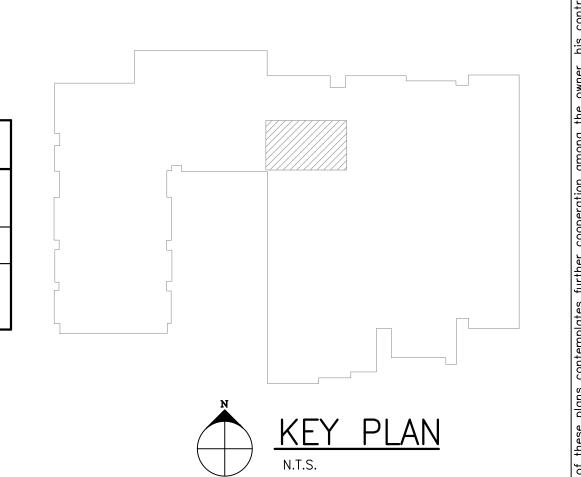
CLASSROOM
21 CLASSROOM
21 <u>DEMO</u> NEW WORK <u>DEMO</u> NEW WORK PLUMBING FLOOR PLANS

SCALE = 1/4" = 1'-0" HVAC FLOOR PLANS

SCALE = 1/4" = 1'-0"

TAG	DESCRIPTION
WC-1	WATER CLOSET (HANDICAP) KOHLER, HIGHLINE, MODEL K-3999, 17 INCH RIM HEIGHT FLOOR MOUNTED TANK TYPE, ELONGATED BOWL, GRAVITY FLUSH, 1.28 GALLONS CLASS 5, SIPHON JET ACTION, VITREOUS CHINA. BENEKE SEAT MODEL 527-SS, OPEN FRONT, CHECK HINGES. ANGLE SUPPLY WITH LOOSE KEY STOP, RISER, COUPLING NUTS ESCUCHEONS, CHROME FINISH. (ADA/ANSI) 3"SS, 2"V, ½"CW. (OR APPROVED EQUAL)
L-1	LAVATORY (HANDICAP) KOHLER, GREENWICH, MODEL K-2032, 20"x18" WALL HUNG, WHITE VITREOUS CHINA, 4" CENTERS, WITH CHICAGO FAUCET MODEL 802 VACP FAUCET, 0.5 GPM AERATOR, OPEN GRID DRAIN, TAILPIECE, LOOSE KEY STOPS, COUPLING NUTS, ESCUTCHEONS. ADA/ANSI APPROVED INSULATION ON TAILPIECE, P-TRAP, ANGLE VALVES, AND CW/HW AS MANUFACTURED BY TRUEBRO, INC., ASSE 1070 APPROVED TEMPERING VALVE. CHROME FINISH FITTINGS. 1½"SS, 1½"V, ½"CW, ½"HW. (OR APPROVED EQUAL)
-D-1	FLOOR DRAIN PROSET, MODEL T(X)5630-F-P, 5 INCH DIAMETER NICKEL BRONZE STRAINER, PVC BODY WITH FLASHING CLAMP, INTEGRAL 'TRAP-GUARD' ACCESSORY. REFER TO FLOOR PLANS FOR SIZES. (OR APPROVED EQUAL)
SV-1	STUDOR VENT (AIR ADMITTANCE VALVE) STUDOR MINI VENT, 2"V. PROVIDE VENTILATED ACCESS DOOR WHERE REQUIRED. (OR APPROVED EQUAL)
WCO	WALL CLEANOUT ZURN MODEL ZN01446 WITH SMOOTH STAINLESS STEEL ACCESS COVER AND SECURING SCREW. (OR APPROVED EQUAL)
FCO	FLOOR CLEANOUT  ZURN, MODEL ZN-1400 WITH NICKEL BRONZE TOP IN FINISHED AREAS. (OR APPROVED EQUAL)

FAI	N SCI	HEDUL	E															
								FAN DATA					МОТО	R DATA				
TAG	LOCATION	SERVICE	MANUF.	MODEL	TOTAL CFM	E.S.P. (IN W.G.)	TYPE	DIAM. (IN)	MAX RPM	MAX SONES	MOUNT	DRIVE	H.P.	F.L.A.	VOLTS/PH	OP. WT. (LBS)	OPTIONS	TAG
EF-1	CEILING	RESTROOM 21B	соок	GC-124	70	0.25	CENTRIF.		900	1.7	CEILING	DIRECT	65W		120/1	15.0	A,B,C	EF-1
A. BAC	Y INSTALLED ( CKDRAFT DAMF CONNECT SWI	PER.	C.	FAN MOUN	D OPTIONS: NTED SPEED D BE CONTRO					– 15MIN.	RUN-TIM	E MIN.						





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PLUMBING & MECHANICAL F PLANS INDEX & SCHEDUL

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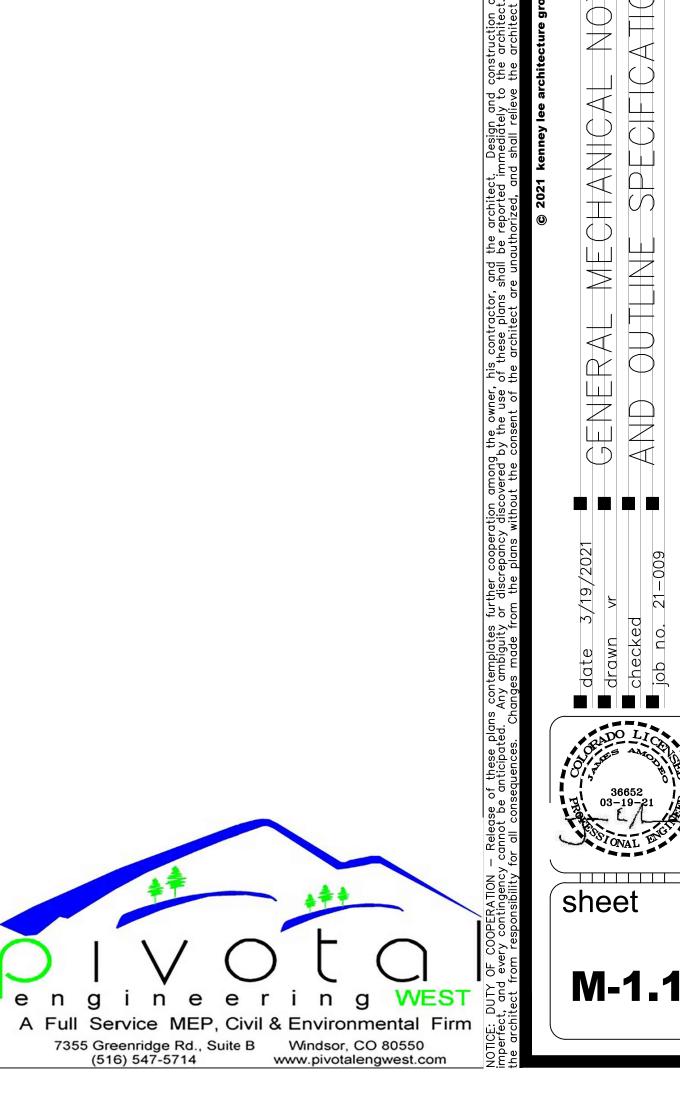
M-1.0

- 1. ALL WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THESE OUTLINE SPECIFICATIONS WILL BE EXECUTED UNDER CONTRACTS BETWEEN OWNER, GENERAL CONTRACTOR AND MECHANICAL CONTRACTORS. COORDINATE WITH THE WORK BY OTHERS IN THE REVIEW OF SHOP DRAWINGS AND THE EXACT LOCATION OF ROUGH-INS FOR THEIR EQUIPMENT. COOPERATE IN THE SCHEDULING OF WORK AND IN THE USE OF SPACE. COORDINATE WORK AND RELATED ITEMS SUCH AS ROUGH-IN, BLOCKING AND STRUCTURAL SUPPORTS, GROUTING, ELECTRICAL ROUGH-IN, MECHANICAL ROUGH-IN, ETC.
- 2. THE MECHANICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PATENT RIGHTS, AND LICENSES THAT ARE REQUIRED FOR PERFORMING THE WORK UNDER ALL LAWS, ORDINANCES, RULES AND REGULATIONS, OR ORDERS OF ANY OFFICER AND/OR GOVERNING BODY, HAVING JURISDICTION FOR THE WORK SHOWN HEREIN. THE CONTRACTOR SHALL GIVE ALL NOTICES NECESSARY IN CONNECTION WITH, PAY ALL FEES RELATING TO AND ALL COSTS AND EXPENSES INCURRED ON ACCOUNT OF THE WORK SHOWN HEREIN. NO WORK SHALL BE COVERED BEFORE INSPECTION BY THE JURISDICTIONAL INSPECTOR AND THE OWNER'S REPRESENTATIVE. POST PERMITS AS REQUIRED.
- 3. PRECAUTIONS SHALL BE EXERCISED AT ALL TIMES TO CONTROL DUST CREATED AS A RESULT OF ANY OPERATIONS DURING THE CONSTRUCTION PERIOD. IF SERIOUS PROBLEMS ARISE DUE TO AIR BORNE DUST, AND WHEN DIRECTED BY OWNER, OPERATIONS CAUSING SUCH PROBLEMS SHALL BE TEMPORARILY DISCONTINUED AND NECESSARY STEPS TAKEN TO CONTROL THE DUST. MAINTAIN GOOD HOUSEKEEPING PRACTICES TO REDUCE THE RISK OF FIRE DAMAGE AND INJURY TO WORKMEN. ALL SCRAP MATERIALS, RUBBISH AND TRASH SHALL BE REMOVED DAILY FROM IN AND ABOUT THE WORK AREA AND SHALL NOT BE PERMITTED TO BE SCATTERED TO ADJACENT AREAS. A FIRE EXTINGUISHER SHALL BE AVAILABLE AT EACH LOCATION WHERE CUTTING OR WELDING IS BEING PERFORMED. WHERE ELECTRIC OR GAS WELDING OR CUTTING WORK IS DONE, INTERPOSED SHIELDS OF INCOMBUSTIBLE MATERIAL SHALL BE USED TO PROTECT AGAINST FIRE DAMAGE DUE TO SPARKS AND HOT METAL. WHEN TEMPORARY HEATING DEVICES ARE USED, A WATCHMAN SHALL BE PRESENT TO COVER PERIODS WHEN OTHER WORKMEN ARE NOT ON THE PREMISES.
- 4. THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC, SHOWING CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE MECHANICAL WORK AND ITS INTERFACE WITH OTHER WORK. SUCH ESTABLISHMENT IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACT DOCUMENTS INDICATE THE AVAILABLE INFORMATION ON EXISTING UTILITIES AND SERVICES. AND ON NEW SERVICES TO BE PROVIDED TO THE PROJECT BY UTILITY COMPANIES AND AGENCIES.
- 5. THE EQUIPMENT AND MATERIALS INDICATED ON THE CONTRACT DOCUMENTS REPRESENT A STANDARD OF QUALITY TO BE MAINTAINED. SUBSTITUTIONS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND UNUSED AND INSTALLED BY ONLY QUALIFIED PERSONNEL. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, IN ADDITION TO ANY STATE AND LOCAL CODES THAT MAY APPLY. WORKMANSHIP: ALL LABOR SHALL BE CAREFULLY SKILLED FOR THIS KIND OF WORK, THOROUGH IN ALL RESPECTS AND UNDER THE DIRECTION OF A COMPETENT FOREMAN.
- GENERAL SUBMITTAL REQUIREMENTS: COORDINATE SUBMITTALS SO THAT WORK WILL NOT BE DELAYED BY SUBMITTALS. NO EXTENSION OF TIME WILL BE ALLOWED BECAUSE OF FAILURE TO PROPERLY COORDINATE AND SEQUENCE SUBMITTALS. DO NOT SUBMIT PRODUCT DATA, OR ALLOW ITS USE ON THE PROJECT, UNTIL COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS HAS BEEN CONFIRMED BY THE CONTRACTOR, SUBMITTAL IS FOR INFORMATION AND RECORD, UNLESS OTHERWISE INDICATED, PROVIDE PERMANENT MARKING ON EACH SUBMITTAL TO IDENTIFY USE, PROJECT, DATE, CONTRACTOR, SUBCONTRACTOR SUBMITTAL NAME AND SIMILAR INFORMATION TO DISTINGUISH IT FROM OTHER SUBMITTALS. INDICATE ANY PORTIONS OF WORK WHICH DEVIATE FROM THE CONTRACT DOCUMENTS. EXPLAIN THE REASONS FOR THE DEVIATIONS. SHOW HOW SUCH DEVIATIONS COORDINATE WITH INTERFACING PORTIONS OF OTHER WORK. SHOW CONTRACTORS EXECUTED REVIEW AND APPROVAL MARKING. PROVIDE SPACE FOR ENGINEERS "ACTION" MARKING. SUBMITTALS WHICH ARE RECEIVED FROM SOURCES OTHER THAN THROUGH CONTRACTORS OFFICE WILL BE RETURNED "WITHOUT ACTION." EXCEPT AS OTHERWISE INDICATED, ELECTRONIC SUBMITTALS. WHERE A REQUIRED SUBMITTAL RELATES TO AN OPERATIONAL ITEM OF EQUIPMENT USED IN MORE THAN ONE SYSTEM INCREASE THE NUMBER OF FINAL COPIES AS NECESSARY TO COMPLETE THE MAINTENANCE MANUALS FOR EACH SYSTEM. PROVIDE A PRELIMINARY, TWO-COPY SUBMITTAL FOR AUTOMATIC TEMPERATURE CONTROLS AND, WHEN PRODUCT DATA IS REQUIRED OR DESIRED BY CONTRACTOR, FOR SELECTION OF OPTIONS BY ENGINEER. PROVIDE ADDITIONAL DISTRIBUTION OF SUBMITTALS, NOT INCLUDED IN FOREGOING COPY SUBMITTAL REQUIREMENTS TO SUBCONTRACTORS, SUPPLIERS, FABRICATORS, INSTALLERS, GOVERNING AUTHORITIES AND OTHERS AS NECESSARY FOR PROPER PERFORMANCE OF WORK. INCLUDE SUCH COPIES IN TRANSMITTAL TO ENGINEER WHERE REQUIRED RECEIVE "ACTION" MARKING BEFORE FINAL DISTRIBUTION. SHOW SUCH DISTRIBUTIONS ON TRANSMITTAL FORMS.
- 7. EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL HAVE A PERMANENT LABEL CLEARLY INDICATING THE MAINTENANCE TO BE PERFORMED TO MAINTAIN THE EQUIPMENT IN EFFICIENT OPERATING CONDITION. EQUIPMENT SUPPLIERS SHALL FURNISH THE FULL AND PARTIAL INPUT AND OUTPUT CAPACITIES TO ENABLE THE DETERMINATION OF COMPLIANCE WITH THE ENERGY CONSERVATION CODE.
- 8. SUBMIT THREE TYPED AND BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS PRIOR TO SCHEDULING SYSTEMS DEMONSTRATION FOR THE OWNER. MANUALS SHALL HAVE INDEX WITH TAB DIVIDERS FOR EACH MAJOR EQUIPMENT SECTION TO FACILITATE LOCATING INFORMATION ON A SPECIFIC PIECE OF EQUIPMENT. ALPHABETICAL LIST OF SYSTEM COMPONENTS, WITH THE NAME, ADDRESS AND 24 HOUR TELEPHONE NUMBER OF THE COMPANY RESPONSIBLE FOR SERVICING EACH ITEM DURING THE FIRST YEAR OF OPERATION.
- 9. DELIVERY AND STORAGE OF MATERIALS: PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNERS REPRESENTATIVE PROTECT ALL MATERIALS AND EQUIPMENT FROM DAMAGE AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. REPLACE ALL DAMAGED AND DEFECTIVE WORK BEFORE FILING APPLICATION FOR FINAL ACCEPTANCE.
- 10. BEFORE SUBMITTING HIS BID, THE CONTRACTOR FOR THE WORK SHOWN HEREIN SHALL CARFFULLY STUDY ALL DRAWINGS. AND SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES. HE SHALL DEFINITELY DETERMINE IN ADVANCE, THE METHODS OF INSTALLATION AND CONNECTING THE APPARATUS AND THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT INTO PLACE, AFTER AWARD OF THE CONTRACT. NO SUBSEQUENT ALLOWANCES WILL BE MADE TO THE CONTRACTOR DUE TO HIS FAILURE TO COMPLY WITH THE ABOVE REQUIREMENTS AND ANY OTHER CONDITIONS AFFECTING THE INSTALLATION AND COMPLETION OF ALL WORK.
- 11. ACCURATELY RECORD ALL CHANGES TO THE CONTRACT DOCUMENTS ON ONE SET OF DRAWINGS. TRANSMIT THE INFORMATION TO THE ENGINEER.
- 12. FURNISH WRITTEN CERTIFIED GUARANTEE, IN ACCEPTANCE FORM, TO THE OWNER AGAINST DEFECTIVE WORKMANSHIP, MATERIALS AND OPERATING EQUIPMENT. IN ADDITION TO THE GUARANTEES REQUIRED ELSEWHERE. ALL WORK, MATERIALS AND EQUIPMENT PROVIDED UNDER THE MECHANICAL SECTIONS SHALL BE GUARANTEED FOR A PERIOD OF (1) YEAR FROM THE DAY OF ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR UNDER THIS GUARANTEE, SHALL BE RESPONSIBLE FOR ALL DAMAGE TO ANY PART OF THE PREMISES CAUSED BY EQUIPMENT AND MATERIALS FURNISHED UNDER THIS SECTION. PROVIDE CERTIFICATES FOR ALL EQUIPMENT HAVING WARRANTIES IN EXCESS OF 1 YEAR.
- 13. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH CURRENT SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY, THE NATIONAL ELECTRIC CODE, LOCAL BUILDING CODES, THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL FUEL GAS CODE, THE INTERNATIONAL BUILDING CODE AND OTHER APPLICABLE CODES, THE CITY OF FORT COLLINS, LAWS OR REGULATIONS OF BODIES LAWFULLY EMPOWERED AND HAVING JURISDICTION OVER THIS PROJECT. NOTHING IN THE PLANS OR THESE SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- 14. RESOLVE ALL QUESTIONS, DISCREPANCIES OR CONFLICTS WITH ENGINEER BEFORE ANY EQUIPMENT IS ORDERED, MATERIALS FABRICATED OR SYSTEMS INSTALLED.
- 15. PROVIDE IDENTIFICATION TAGS FOR ALL SCHEDULED EQUIPMENT.
- 16 COORDINATE THE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES AND PROVIDE OFFSETS AS NECESSARY TO ACCOMMODATE STRUCTURE AND OTHER TRADES.
- 17. PROVIDE ACCESS PANELS IN CEILINGS AND/OR DUCTWORK WHERE REQUIRED FOR ACCESS TO ALL MOTORS, CONTROLS, FIRE DAMPERS, SMOKE/FIRE DAMPERS, VALVES, AND BALANCING DAMPERS.
- 18. LEVEL ALL EQUIPMENT CURBS/BASES PRIOR TO INSTALLATION OF ANY EQUIPMENT.
- 19. SEAL ALL WALL AND ROOF PENETRATIONS WATERTIGHT WITH SILICONE CAULKING AND BACKER ROD. U.L. CLASSIFIED AND FM APPROVED SEALANTS SHALL BE USED AT ALL PENETRATIONS OF RATED WALLS, CEILINGS AND FLOORS, PENETRATIONS OF THE ROOFING MEMBRANE SHALL BE COMPLETED BY A QUALIFIED ROOFING CONTRACTOR TO MAINTAIN THE INTEGRITY OF THE ROOFING SYSTEM AND RELATED EXISTING WARRANTIES.
- 20. COORDINATE ALL THE MISCELLANEOUS SUPPORT AND FRAMING REQUIRED FOR THE MECHANICAL EQUIPMENT, PROVIDED BY OTHERS.
- 21. COORDINATE AND VERIFY ALL OPENINGS IN STRUCTURAL WALLS, ABOVE CEILINGS, AND FLOORS WITH THE STRUCTURAL CONTRACTOR.
- 22. ALL SUPPLY AND RETURN DUCTWORK UNLESS SPECIFICALLY INDICATED SHALL BE IN ASTM A527 LOCK FRAMING QUALITY GALVANIZED SHEET METAL WITH ASTM A525 G90 ZINC COATING INSTALLED IN ACCORDANCE WITH CHAPTER 6 OF THE 2015 IMC AND THE SMACNA DUCT CONSTRUCTION STANDARDS, FOR PRESSURE CLASS "A" FOR 3" SP AND ABOVE, CLASS "B" FOR 2" TO 3" SP AND CLASS C" FOR 0.5" TO 2" SP, WITH "HARD CAST" SEALED JOINTS. THE USE OF PRESSURE SENSITIVE TAPE WILL NOT BE ACCEPTABLE. DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS.
- 23. EXTERNALLY INSULATE ALL RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK WITH MINIMUM 1.5"Ib DENSITY FIBERGLASS. ALL INSULATION SHALL HAVE MINIMUM INSTALLED "R" VALUE OF 8.0, FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS AND BE RATED FOR OPERATING TEMPERATURES UP TO 250°F. LINE ALL EXHAUST, SUPPLY & RETURN DUCTWORK FOR 15 LF FROM FAN. DUCT LINERS SHALL HAVE AN ACRYLIC COATING ON SURFACE IN CONTACT WITH THE AIR STREAM. DUCT WRAP SHALL HAVE AN ALUMINUM FOIL FACING.
- 24. ALL ROUND SA & RA DUCTS TO BE INSULATED WITH 1-1/2" "INSULSLEEVE" THAT HAS A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX NOT MORE THAN 50 (ASTM E 84) WITH VAPOR BARRIER (R VALUE = 12.0). DO NOT INSULATE EXPOSED SPIRAL DUCTWORK AND FITTINGS.
- 25. ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, DEMISING WALLS TO HAVE APPROVED AUTOMATIC FIRE DAMPERS OR TO PROVIDE APPROPRIATE FIRE RATED SHAFTS FOR ALL SUCH PENETRATIONS. VERIFY WITH I.B.C/I.M.C AND RESPECTIVE CITY.
- 26. ALL CONCEALED, ROUND SUPPLY AIR DUCTS 12" AND SMALLER SHALL BE GALVANIZED SHEET METAL SNAP-LOCK. ROUND SUPPLY DUCT GREATER THAN 12" SHALL BE GALVANIZED SHEET METAL SPIRAL, INSULATED FLEXIBLEDUCT MAY BE USED FOR THE CONNECTION TO THE AIR OUTLET PROVIDED THE LENGTH OF THE FLEXIBLE DUCT DOES NOT EXCEED 6 LINEAR FEET.
- 27. ALL BRANCH DUCT CONNECTIONS TO AIR OUTLETS AND AIR INLETS SHALL BE THE SAME SIZE AS THE DEVICE NECK UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

- 28. PROVIDE EQUIPMENT VIBRATION ISOLATION FROM STRUCTURE AND ASSOCIATED DUCT/PIPE SYSTEMS. 29. ALL BALANCING SHALL BE COMPLETED BY AN INDEPENDENT QUALIFIED AND CERTIFIED TECHNICIAN (TABB. NEBB OR SIMILAR) WITH FIVE (5) OR MORE YEARS EXPERIENCE IN TESTING, ADJUSTING, AND BALANCING HVAC AND
  - HYDRONIC SYSTEMS. ADJUST VALVES AND DAMPERS AS NECESSARY TO OBTAIN AIR AND WATER QUANTITIES SHOWN. PROVIDE COMPLETE WRITTEN TEST AND BALANCE REPORT INDICATING QUANTITIES AT INLET AND OUTLET. USE VOLUME DAMPERS FOR ALL REGISTERS FOR BALANCING OF THE SYSTEMS. AIR DISTRIBUTION SHALL BE BALANCED FOR WITHIN 5% OF INDICATED VALUES.
  - 30. EXAMINE THE AREAS TO BE EXCAVATED AND THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. REMOVE ALL ROCK AND BOULDERS FROM EXCAVATION BEFORE INSTALLING MECHANICAL WORK. SLOPE SIDES OF EXCAVATIONS AS REQUIRED FOR STABILITY, OR PROVIDE NECESSARY SHORING. LOCATE AND PROTECT EXISTING UTILITIES AND OTHER UNDERGROUND WORK IN A MANNER WHICH WILL ENSURE THAT NO DAMAGE OR SERVICE INTERRUPTION WILL RESULT FROM EXCAVATING AND BACKFILLING. DO NOT INSTALL MECHANICAL WORK ON FROZEN EXCAVATION BASES OR SUB-BASES. MAINTAIN DRY EXCAVATIONS FOR MECHANICAL WORK BY REMOVING WATER. PROTECT EXCAVATIONS FROM INFLOW OF SURFACE WATER. PUMP MINOR INFLOW OF GROUND WATER FROM EXCAVATIONS. STORE EXCAVATED MATERIAL (TEMPORARILY) NEAR THE EXCAVATION. RETAIN EXCAVATED MATERIAL WHICH COMPLIES WITH THE REQUIREMENTS FOR BACKFILL MATERIAL. DO NOT BACKFILL UNTIL INSTALLED MECHANICAL WORK HAS BEEN TESTED AND ACCEPTED. CONDITION BACKFILL MATERIAL BY EITHER DRYING OR ADDING WATER UNIFORMLY, TO FACILITATE COMPACTION TO ACCEPTABLE DENSITIES. BACKFILL TO ELEVATIONS MATCHING ADJACENT GRADES. BACKFILL EXCAVATIONS IN 8" HIGH COURSES OF BACKFILL MATERIAL, UNIFORMLY COMPACTED USING POWER-DRIVEN OR HAND-OPERATED COMPACTION EQUIPMENT.
  - 31. COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE OPENINGS THROUGH CONCRETE FOR PIPE PENETRATION AND SIMILAR SERVICES BY CORE DRILLING AND SAWING. REVIEW THE PROPOSED CUTTING WITH THE INSTALLER OF THE WORK TO BE CUT, AND COMPLY WITH HIS RECOMMENDATIONS TO
  - 32. INSTALL IONIZATION TYPE SMOKE DETECTOR AND SAMPLING TUBE IN THE RETURN AIR DUCT FROM THE RTU'S (IF/WHERE INDICATED ON THE DRAWINGS). THE DETECTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND SHALL HAVE AN AUXILIARY SET OF CONTACTS FOR CONNECTION TO THE FIRE ALARM SYSTEM. THE DETECTOR SHALL BE WIRED TO SHUT DOWN
  - 33. ALL DUCT, PIPING AND EQUIPMENT LOCATIONS INDICATED ON THESE DOCUMENTS ARE FOR REFERENCE ONLY AND SHALL BE USED AS A GUIDE. ALL ELEVATIONS AND FLOOR TO FLOOR HEIGHTS SHALL BE VERIFIED PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY DUCT OR PIPING SYSTEM.
  - 34. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL REQUIREMENTS FOR ALL CUTTING AND PATCHING OF EXISTING FACILITIES TO BE COMPLETED BY THE GENERAL CONTRACTOR OR OTHERS.
  - 35. USE ADJUSTABLE PIPE HANGERS ON SUSPENDED PIPE. ISOLATE HANGERS COMING IN CONTACT WITH BARE COPPER PIPE WITH DIELECTRIC HANGER LINERS. PROVIDE SUPPORTS BETWEEN PIPING AND BUILDING STRUCTURE WHERE NECESSARY TO PREVENT SWAYING. CONFORM TO THE INTERNATIONAL PLUMBING AND MECHANICAL CODE FOR HANGER SIZES AND SPACING. DO NOT SUPPORT PIPE FROM OTHER PIPE OR DUCT SYSTEMS. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED MOVEMENT OF PIPING SYSTEM AND TO PERMIT PROPER MOVEMENT BETWEEN PIPE ANCHORS.
  - 36. INSTALL PIPE, TUBE AND FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY-LEAKPROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH A MINIMUM OF JOINTS AND COUPLINGS, BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY, MAINTENANCE OR REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES BY USE OF REDUCING FITTINGS. INSTALL PIPING WITHOUT SPRINGING OR FORCING. SUPPORT PIPING INDEPENDENTLY AT EQUIPMENT SO ITS WEIGHT WILL NOT BE SUPPORTED BY THE EQUIPMENT. FURNISH ALL DEVICES NECESSARY FOR FINAL CONNECTION, INCLUDING BUT NOT LIMITED TO TAIL PIECES, STOPS AND SUPPLIES. LOCATE PIPING RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY. AVOID DIAGONAL RUNS WHEREVER POSSIBLE. ORIENT HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. HOLD PIPING CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS AND OTHER STRUCTURAL AND PERMANENT-ENCLOSURE ELEMENTS OF THE BUILDING. LIMIT CLEARANCE OF 0.5" WHERE FURRING IS SHOWN FOR ENCLOSURE OR CONCEALMENT OF PIPING, BUT ALLOW FOR INSULATION THICKNESS, IF ANY. WHERE POSSIBLE, LOCATE INSULATED PIPING FOR 1.0" CLEARANCE OUTSIDE INSULATION. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL PIPING FROM VIEW BY LOCATING IN COLUMN ENCLOSURES, IN HOLLOW WALL CONSTRUCTION OR ABOVE
  - 37. FLUSH OUT PIPING SYSTEMS WITH CLEAN WATER BEFORE PROCEEDING WITH THE REQUIRED TESTS. PROVIDE TEMPORARY EQUIPMENT FOR TESTING, INCLUDING PUMP AND GAUGES. TEST PIPING SYSTEM BEFORE INSULATION IS INSTALLED WHEREVER FEASIBLE. TEST EACH NATURAL SECTION OF EACH PIPING SYSTEM INDEPENDENTLY, BUT DO NOT USE PIPING SYSTEM VALVES TO ISOLATE SECTIONS WHERE TEST PRESSURE EXCEEDS VALVE PRESSURE RATING. FILL EACH SECTION OF WATER, DRAIN OR VENT PIPING WITH WATER AND PRESSURIZE FOR TWO HOURS AT 150% OF OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR PRESSURE PIPING AND TEN FEET FOR DRAIN AND VENT PIPING. TEST FAILS IF LEAKAGE IS OBSERVED OR IF PRESSURE DROP EXCEEDS 5% OF TEST PRESSURE. REPAIR PIPING SYSTEMS SECTIONS WHICH FAIL BY DISASSEMBLY AND RE-INSTALLATIONS, USING NEW MATERIALS TO THE EXTENT REQUIRED TO OVERCOME LEAKAGE. DO NOT USE CHEMICALS, STOP-LEAK COMPOUNDS, MASTICS OR OTHER TEMPORARY REPAIR METHODS. AFTER TESTING AND REPAIR WORK HAVE BEEN COMPLETED, DRAIN TEST WATER FROM PIPING SYSTEMS.
  - 38. FILL ALL DOMESTIC WATER LINES WITH A CHLORINE WATER SOLUTION OF 50 PARTS PER MILLION. MINIMUM. HOLD SOLUTION IN PIPE FOR AT LEAST 24 HOURS. OPEN AND CLOSE ALL VALVES 3 TIMES DURING CHLORINATION. WASTE CHLORINE SOLUTION FROM EACH OUTLET. MEASURE SOLUTION AT END. IF NOT 10 PPM, REPEAT. ALL NEW POTABLE WATER SYSTEMS SHALL BE CLEANED AS HEREIN SPECIFIED PRIOR TO TESTING OR APPLICATION OF INSULATION. COMPLY WITH <u>CITY OF FORT COLLINS CO STANDARDS</u> OR LARIMER COUNTY DEPARTMENT OF HEALTH REQUIREMENTS, WHICHEVER IS MORE STRINGENT.
  - 39. <u>BALL VALVES 1" AND SMALLER</u>: <u>NO THREADED VALVES</u> NIBCO S585 OR EQUAL (SOLDERED ENDS). RATED FOR 150 PSI NON-SHOCK WOG 2-PIECE CAST BRONZE BODIES, TFE SEAT, FULL PORT, BRONZE TRIM, BLOWOUT PROOF STEMS BRASS/BRONZE BALL. VALVE ENDS SHALL HAVE FULL DEPTH ANSI THREADS OR EXTENDED SOLDER CONNECTIONS
  - CHECK VALVES 2 1/2" AND SMALLER: NO THREADED VALVES NIBCO S413 OR EQUAL (SOLDERED ENDS). Y-PATTERN HORIZONTAL SWING-TYPE, CLASS 125, RATED FOR 200 PSI WOG BRONZE ASTM B-62 BODY WITH TFE SEAT DISC.
  - 40. INSTALL VALVES WITH STEMS POINTING UP, AND AS CLOSE TO VERTICAL AS POSSIBLE. INSTALL VALVES AT EACH PIECE OF EQUIPMENT, FIXTURE OR APPLIANCE SO THAT THE SUPPLY AND RETURN SERVICES CAN BE SHUT OFF TO REMOVE THE ITEM WITHOUT DISTURBING THE PIPING SYSTEM. INSTALL VALVES WHERE REQUIRED FOR PROPER OPERATION OF PIPING AND EQUIPMENT, INCLUDING VALVES IN BRANCH LINES TO ISOLATE SECTIONS OF PIPING WHERE BRANCH FLOW IS MORE THAN 10% OF THE TOTAL
  - 41. NATURAL GAS PIPING ABOVE GROUND 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL SCREWED WITH 150 LB. MALLEABLE IRON, THREADED FITTINGS. NATURAL GAS ABOVE GROUND OVER 2" SHALL BE SCHEDULE 40 BLACK STEEL, PLAIN END WITH STANDARD WEIGHT, BUTT WELD FITTINGS. REMOVE CUTTING AND THREADING BURRS BEFORE ASSEMBLING PIPING. DO NOT INSTALL DEFECTIVE PIPING OR FITTINGS. DO NOT USE PIPE WITH THREADS WHICH ARE CHIPPED, STRIPPED OR DAMAGED. USE TEFLON TAPE ON MALE PIPE THREADS. PLUG EACH GAS OUTLET INCLUDING VALVES WITH A THREADED PLUG OR CAP, IMMEDIATELY AFTER INSTALLATION, AND RETAIN UNTIL CONTINUING PIPING OR EQUIPMENT CONNECTION IS COMPLETED. AFTER ROUGH-IN OR PRIOR TO INITIAL OPERATION, TEST AND PURGE GAS PIPING IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODE. TEST PIPING SYSTEM AT 100 PSIG. REPAIR OR REPLACE PIPING AS REQUIRED TO ELIMINATE LEAKS AND RETEST. AFTER EQUIPMENT INSTALLATION, TEST ALL PIPING AND VALVES UP TO GAS REGULATOR WITH "U" TUBE MANOMETER AT 10 PSIG. PAINT ALL PIPING EXPOSED TO THE ELEMENTS.
  - 42. DOMESTIC WATER PIPING: ABOVE GROUND INSIDE BUILDINGS, SIZE 4" AND UNDER SHALL BE COPPER TUBE, HARD TEMPER. TYPE "L" PIPE WITH WROUGHT COPPER, OR CAST BRONZE FITTINGS AND ANTIMONY FREE AND LEAD FREE SOLDER. BELOW GROUND, SIZE 2" AND UNDER SHALL BE COPPER TUBE, ANNEALED, TYPE "K" PIPE WITH WROUGHT COPPER, BRAZED FITTINGS. PRESS-ON FITTINGS ARE APPROVED. DOMESTIC WATER PIPING OPTION:
    POTABLE HOT AND COLD WATER DISTRIBUTION PIPING SHALL BE CROSSLINKED POLYETHYLENE (PEX) TUBING AND ASTM F1960 COLD EXPANSION FITTINGS. (DESIGN BASIS: WIRSBO 'AQUAPEX' TUBING AND 'ProPEX' FITTINGS.)
  - 43. SOIL AND VENT PIPING: ABOVE AND BELOW GROUND SHALL BE SOLID CORE SCHEDULE 40 PVC WITH SOLVENT GLUED FITTINGS AND JOINTS. IF LOCATED IN A RETURN AIR PLENUM SHALL BE CAST IRON NO HUB NEOPRENE GASKET AND STAINLESS STEEL SLEEVE JOINT.
  - 44. STORM/ROOF DRAINAGE PIPING: ABOVE GROUND SHALL BE CAST IRON NO HUB NEOPRENE GASKET AND STAINLESS STEEL SLEEVE JOINT. BELOW GROUND SHALL BE SCHEDULE 40 PVC WITH SOLVENT GLUED FITTINGS AND JOINTS.
  - 45. INSTALL FULL SIZE CONDENSATE DRAIN WITH TRAP SEAL DEPTH EQUAL TO 1.5 x UNIT TOTAL STATIC PRESSURE FOR EACH COOLING COIL.

\*\*\*PROVIDE FULLY SUPPORTED COPPER STUB-OUTS FROM MAIN ARE REQUIRED.

46. CLEAN AND DRY PIPE SURFACES PRIOR TO INSULATING. EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED. INSTALL PROTECTIVE SHEETMETAL SHIELD AROUND BOTTOM HALF OF PIPE INSULATION AT EACH PIPE SUPPORT SUFFICIENT TO PREVENT CRUSHING OF THE INSULATION. AT CONTRACTORS OPTION, INSTALL PRE-MANUFACTURED HEAVY DENSITY PIPE SHIELDS IN LIEU OF PIPE INSULATION AT EACH PIPE SUPPORT. EXCEPT AS NOTED, COVER VALVES, FLANGES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. DO NOT COVER VALVE OPERATORS, THREADED OR SOLDER JOINT STRAINERS OR BLOWDOWN END OF STRAINERS. MARK LOCATION OF UNIONS AND FLANGES COVERED BY INSULATION WITH PERMANENT PAINT OR INK, PAINTED STENCIL OR APPROVED LABEL. MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON INSULATION OF COLD PIPES AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. INSULATE BETWEEN PIPE AND PIPE SADDLES. ON UNDERGROUND PIPE INSULATION, INSTALL UNICELLULAR INSULATION ON PIPE WITHOUT SLITTING INSULATION. SEAL ALL TRANSVERSE JOINTS WITH ADHESIVE. PROVIDE COMPOSITE INSTALLATION (INSULATION, JACKET, COVERING, SEALER, MASTIC AND ADHESIVE) COMPLYING WITH THE FOLLOWING: FLAME SPREAD: 25 OR LESS. SMOKE DEVELOPED: 50 OR LESS. METHOD: ASTM E84 (NFPA 255). FIBERGLASS PIPE INSULATION: SCHULLER MICRO-LOK 850, HEAVY DENSITY PIPE INSULATION WITH AP-T JACKET. FIBERGLASS FITTING INSULATION: SCHULLER "ZESTON" FITTING COVERS WITH FACTORY-CUT FIBERGLASS INSULATION INSERT. DOMESTIC HOT WATER PIPING (ABOVE GRADE): 2" AND SMALLER PIPING: 1" FIBERGLASS, 2-1/2" AND LARGER PIPING: 1-1/2" FIBERGLASS, RUNOÚT PIPING UP TO 2" NOT EXCEEDING 12 FEET IN LENGTH: 1/2" FIBERGLASS. DOMESTIC COLD WATER PIPING (ABOVE GRADE): ALL SIZES = 1/2" FIBERGLASS. ROOF DRAIN BOWLS AND DOWN LEADERS: 1" FIBERGLASS.



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### ELECTRICAL SPECIFICATIONS

The scope of the work covered herein consists of furnishing all labor, materials, necessary equipment and services to complete the Electrical Work and related work in full accordance as indicated on the drawings, as specified herein or both and subject to the terms and conditions of the Contract.

#### 2. Codes, Rules, Permits, Fees

Electrical Contractor is generally responsible to insure all work, both old and new, complies with the NEC and any applicable local and state codes and ordinances.

#### 3. <u>Drawings</u>

Drawings are diagrammatic and indicate the general arrangement of systems and work included in the contract. Drawings are not to be scaled. The Architectural drawings and details shall be examined for exact location of fixtures and equipment. Any conflict shall be immediately brought to the attention of the Architect or Engineer before proceeding with the work.

#### 4. <u>Shop Drawings</u>

Materials or products specified herein and/or indicated on drawings by trade name, manufacturer's name or catalog number shall be provided as specified.

#### 5. Cooperation With Other Trades

The Subcontractor shall give full cooperation to other trades and shall furnish in writing to the contractor, with copies to the Engineer, any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay. Coordinate all conduit runs and equipment with other trades. Verify nameplate electrical data of actual equipment furnished by others before beginning installation.

#### 6. <u>Cutting</u>, <u>Patching</u>, <u>And Finishing</u>

The Electrical Contractor shall do all cutting, drilling, etc. required for work under this section of the specifications, inside the building.

#### 7. <u>Excavation And Backfilling</u>

The Subcontractor shall do all trench and pit excavating and backfilling required for work under this section of the specifications, inside and outside the building, all required shoring, bracing, pumping and all protection for safety of persons and property.

#### 8. <u>Material And Workmanship</u>

All materials and apparatus required for the work shall be new unless indicated otherwise on the plans.

Electrical Contractor shall provide and install all electrical as shown, verifying all mounting heights and exact locations of all wall—mounted electrical devices with architect prior to rough—in.

Connections and junction boxes to equipment are diagrammatic. Verify exact location of connection to specific equipment and devices.

#### 9. <u>Panelboards</u>

Panels shall be as manufactured by Square—D, G.E., Siemens or equivalent of sizes, ratings, and requirements shown on the plans. Panels shall be of dead front construction. All bussing shall be as specified on panel schedules.

#### Multi-pole breakers shall have a single handle to trip all poles at once.

A laminated black plastic with white lettering plastic nameplates with the identification number as shown on the panel schedule shall be mounted on the outside of the door with sheet metal screws. Nameplate size shall be 3" wide X 1-1/2" high with 1/2" high engraving. Provide a completed circuit directory, typed and mounted in a clear plastic sleeve, on the interior of the panel door.

#### 10. <u>Grounding</u>

Provide a complete grounding network for the entire electrical system to comply with NEC requirements. All conduits shall have a ground wire installed. A conduit ground shall not be used.

#### 11. <u>Disconnect Switches</u>

Equipment disconnect switches shall be Square—D, G.E., Siemens heavy duty of the type and rating on the plans. Fuses shall be provided of the appropriate type and rating for the equipment to be served.

### 12. <u>Miscellaneous Equipment</u>

Switches — All general use lighting (SPST toggle with or without pilot) switches to be rated 20A., 120—277V. as manufactured by Leviton, Lutron, P & S, or equivalent. Coordinate color with Owner/Architect.

Receptacles — All general use duplex receptacles to be rated 20A., 120V as manufactured by Leviton, Lutron, P & S, or equivalent. Coordinate color with Owner/Architect. Receptacles in patient care areas shall be hospital grade and red in color when on the critical branch. Label all cover plates with serving circuits.

Conductors — All conductors shall be rated 600V, copper, type THWN, XHHW/THHN. Where indicated aluminum conductors may be used and shall be type THHW/XHHW. Conductors of #8 AWG and larger shall be stranded. HCF listed cables are permitted in patient care areas per NEC 517.

Lighting fixtures — Lighting fixtures shall be as indicated on the fixture schedule or approved equals.

### 13. <u>Conduit</u>

Conduit shall be EMT, GRC, SCH. 40 PVC, SCH. 80 PVC, liquid tight metal flexible, or metal flexible.

GRC shall be used at exposed exterior locations and for panel feeders. Flex shall be used for connection to all fixed equipment, except in damp or wet locations, where liquid tight metal flexible shall be used. EMT shall be used at all exposed interior locations. All remaining locations may use PVC.

HCF listed cables are permitted in patient care areas per NEC 517.

Insulating bushings with double lock—nuts shall be used for entrance of 1-1/4" or larger into enclosures.

Sizes indicated are minimums, larger sizes may be used to facilitate wire pulls, etc.

### 14. <u>Network And Access Cabling</u>

Provide a 2'  $\times$  4'  $\times$  3/4" fire resistant plywood backboard for telephone distribution. A terminated bus bar shall be installed adjacent to the backboard. Install empty conduit(s) as indicated on the plans with pullwire installed for the telephone service entrance.

A 3/4" conduit shall be routed from all data outlets to the ceiling space. Terminate conduit in ceiling space with a 90 degree bend and bushing at end of conduit. Extend conduit to nearest accessible ceiling space if no access to the ceiling space above the outlet is present. Provide a conduit path through all obstructions to the backboard.

15. <u>Equipment Furnished By Others</u>
Electrical Contractor shall provide conduit, wire and disconnect switches indicated on drawings, to connect electrical equipment supplied by others which shall include both new and relocation of existing equipment. All final electrical connections are to be by electrical contractor.

### 16. <u>Record Drawings</u>

The Contractor shall keep accurate records of actual construction including device locations and conduit runs if different from the plans.

The Contractor shall provide the owner with a reproducible set of plans of the complete electrical and special systems as installed. The scale on these drawings shall be no smaller than the scale used on the original plans.

### 17. <u>Testing</u>

Final tests shall be made only after the Engineer is satisfied that all work has been completed.

Acceptance testing of electrical gear shall be in accordance with NEC 517 and NETA STD ATS — Acceptance Testing Standards for Electrical Power Distribution Equipment and Systems.

### 18. <u>Final Acceptance</u>

After testing, a final inspection shall be made by the Engineer and other authorized persons with the Electrical Contractor.

Final acceptance of the project shall not prejudice the Owner's right to require replacement and/or repair any defective work or materials.

#### **LEGEND** CONTROL **OUTLETS SWITCHES** DUPLEX RECEPTACLE (120 V) SINGLE-POLE SWITCH THERMOSTAT (line voltage U.O.N. DEDICATED DUPLEX RECEPTACLE (120V) \$2 furnished by DIV. 15 U.O.N.) DOUBLE-POLE SWITCH (H) HUMIDISTAT (line voltage U.O.N. WEATHERPROOF RECEPTACLE THREE-WAY SWITCH furnished by DIV. 15 U.O.N.) GROUND FAULT RECEPTACLE FOUR-WAY SWITCH ⊖PC PHOTOCELL (voltage as required) \$- SWITCH WITH PILOT LIGHT ISOLATED GROUND RECEPTACLE TIME CLOCK (24 hour U.O.N.) SWITCHED RECEPTACLE \$k KEY SWITCH PUSHBUTTON STATION (number of HALF SWITCHED RECEPTACLE \$wp WEATHERPROOF SWITCH \$T TIME SWITCH buttons indicated) DOUBLE DUPLEX RECEPTACLE FLUSH FLOOR RECEPTACLE, DUPLEX DOWN DIMMER SWITCH (WATTAGE SHOWN) LIGHTING CONTACTOR IRRIGATION CONTROLLER SPECIAL EQUIPMENT RECEPTACLE LS LIGHT SENSOR LOCKING RECEPTACLE S WALL OCCUPANCY SENSOR FLUSH FLOOR TELEPHONE OUTLET OSD WALL DIMMER / OCCUPANCY SENSOR DATA, TELEPHONE, OR FAX OUTLET © CEILING OCCUPANCY SENSOR **DESIGNATIONS** TELEPOWER POLE REVISION NOTE (T=telephone, P=power, C=computer) # FLAG NOTE JUNCTION BOX <#> KEY NOTE **CIRCUITRY and RACEWAYS SOUND and SIGNAL** (#) FEEDER NUMBER UON UNLESS OTHERWISE NOTED SPEAKER CIRCUIT UP WP DEVICE DESIGNATED WEATHER PROOF VOLUME CONTROL CIRCUIT DOWN AC DEVICE ABOVE COUNTER BUZZER HOME RUN (with circuit numbers) CLG DEVICE IN CEILING CHIME END OF CONDUIT RUN

▼ TELEVISION ANTENNA OUTLET

MICROPHONE OUTLET

VI INTERCOM OUTLET

VNCNURSE CALL

END OF RUN. CAP AND STAKE

"RUN CONTINUES" INDICATION

WIREMOLD (2-Channel)

PLUGMOLD

ww---

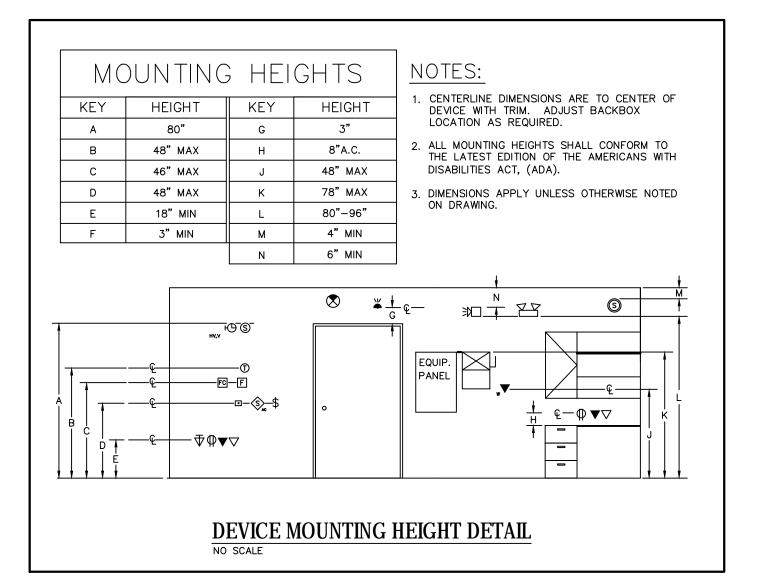
FLR DEVICE IN FLOOR

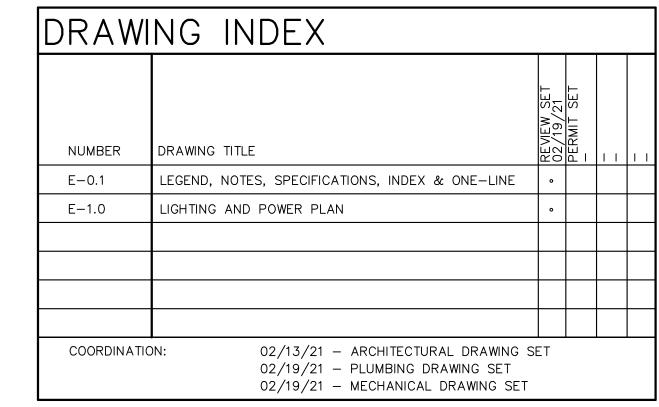
AFF ABOVE FINISHED FLOOR

(R) EXISTING TO BE RELOCATED

(D) EXISTING TO BE REMOVED

(E) EXISTING TO REMAIN





KEY NOTES

(THIS SHEET ONLY)

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LUM	INAIRE SCHEI	DULE				
Tag	Lamps	Description	Manufacturer	Part No.	Voltage	Notes
L	8.9W LED	6" Diam. Recessed Down Light	Lithonia	LDN6 35/07 LO6 AR LSS MVOLT GZ10	120	1
W2	12.2W LED	2' Wall Bracket	Lithonia	WL2 12L MVOLT EZ1 LP835	120	1
Notes:						
1	Or Approved Equal					

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KEY	EQUIPMENT	CHARAC	CHARACTERISTICS							PROTEC	TION		NOTES
		HP	RLA/FLA	Watts	PH	Volts	MCA	MOCP	Breaker	Switch	Fuse	Disconnect at unit	
F-1	Exhaust Fan		0.5	65	1	120	0.7	20	20			Integral	



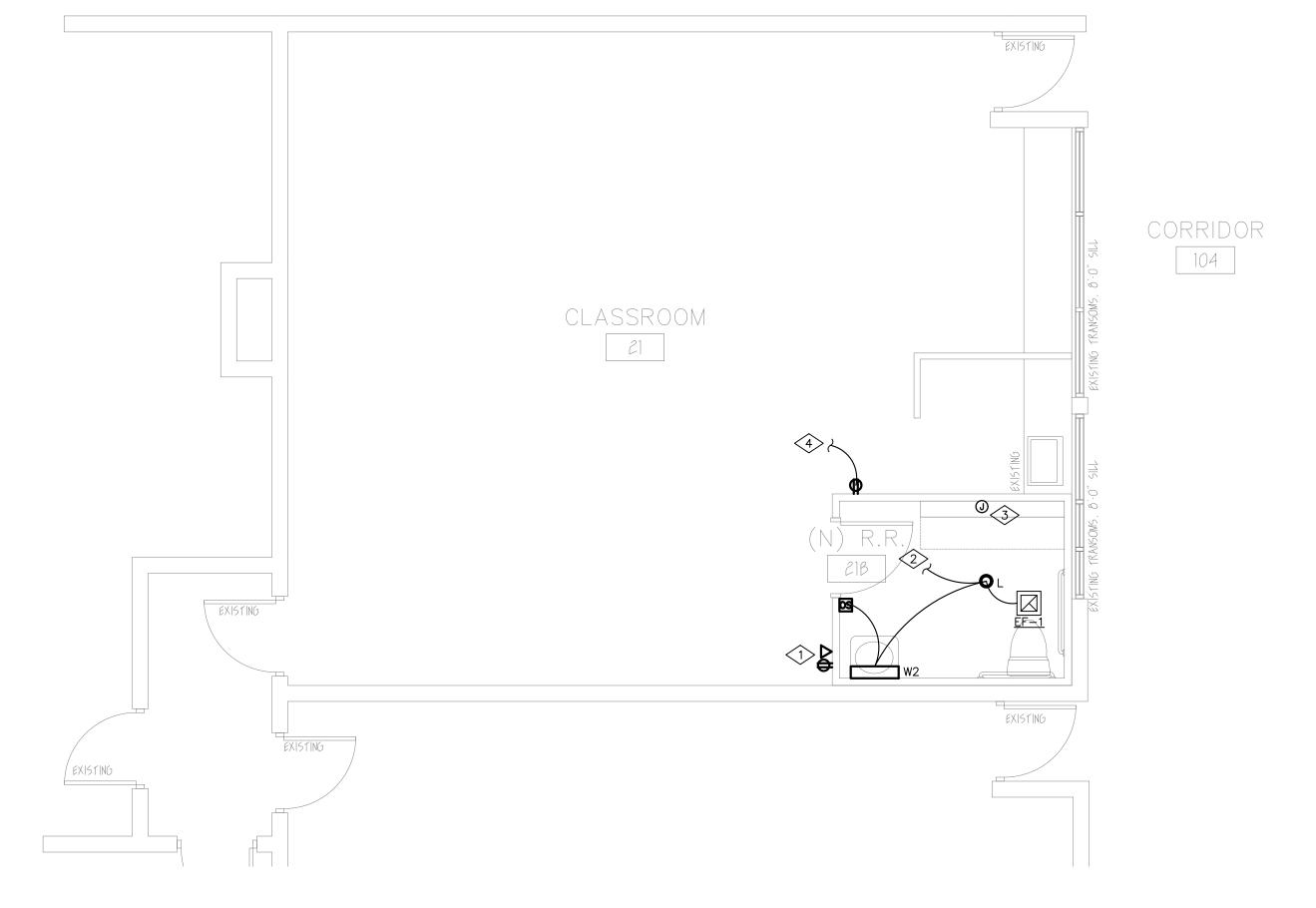
### DEMO NOTES

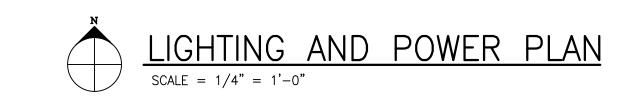
- REMOVE EXISTING LIGHT FIXTURE.
- REMOVE EXISTING SURFACE MOUNT RACEWAY, DATA AND RECEPTACLE J-BOXES.

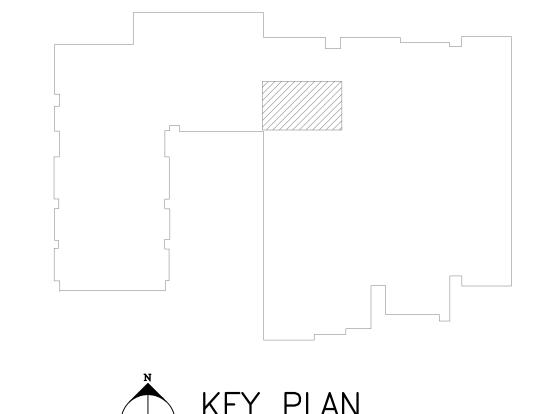
### KEY NOTES

- RELOCATE AND RE-FEED, AS NEEDED, SURFACE MOUNT RECEPTACLES AND DATA J-BOXES. MAINTAIN INTEGRITY OF CIRCUIT DOWN STREAM. FIELD VERIFY EXACT LOCATION BASED ON SITE CONDITIONS.
- 2 CONNECT TO EXISTING LIGHTING CIRCUIT, UPSTREAM OF LOCAL CLASSROOM SWITCHING. DOCUMENT CIRCUIT NUMBER ON RECORD DRAWINGS.
- PROVIDE J-BOX WITH CONDUIT STUBBED TO ACCESSIBLE CEILING SPACE FOR FIRE ALARM HORN / STROBE. COORDINATE EXACT LOCATION WITH G.C. AND OWNER. CABLING BY OTHERS.
- 4 CONNECT TO NEAREST AVAILABLE 120V RECEPTACLE CIRCUIT SERVING AREA. DOCUMENT CIRCUIT NUMBER ON RECORD DRAWINGS.

CORRIDOR







### GENERAL NOTES:

- CONNECT ALL EXIT AND EM LIGHTS TO CIRCUITS SHOWN AHEAD OF LOCAL SWITCHING.
- 2. LUMINAIRES DENOTED "NL" SHALL BE CONNECTED AHEAD OF LOCAL SWITCHING.
- 3. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LIGHTING FIXTURE LOCATIONS.
- 4. REFER TO MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT.
- 5. ALL CONDUCTORS SHALL BE COPPER AND #12 UNLESS OTHERWISE NOTED.
- 6. ALL SWITCHES, CONVENIENCE RECEPTACLES, AND PLATES SHALL BE WHITE NONMETALLIC UNLESS NOTED. CONFIRM COLOR WITH ARCHITECT PRIOR TO ORDERING DEVICES.
- 7. INSTALL, WHERE REQUIRED BY JURISDICTION, MANUFACTURE APPROVED SEALING KITS ON ALL RECESSED CANS INSTALLED IN INSULATED CAVITIES.
- 8. LABEL ALL JUNCTION BOXES WITH CIRCUIT NUMBERING DURING ROUGH—IN OF CONDUIT SYSTEM.
- 9. PROVIDE POWER FOR VVT'S AS REQUIRED BY M.C.. (REFER TO MECHANICAL PLANS)
- 10. COPIES OF ALL INSTALLATION, OPERATIONAL AND MAINTENANCE MATERIALS ARE TO BE SAVED PROVIDED TO THE PROJECT MANAGER FOR ASSEMBLY AND DELIVERY TO THE CONTRACTOR AND OWNER.
- 11. THE ELECTRICAL CONTRACTOR JOB FORMAN SHALL DOCUMENT ALL UNDERGROUND FEEDERS AS WELL AS ANY DEVIATIONS TO THE CONSTRUCTION DOCUMENTS ON THE RECORD DRAWINGS. SHOW DIMENSIONS ONLY WHEN ACCURACY CAN BE ASSURED.
- 12. COORDINATE EXACT RECEPTACLE LOCATIONS WITH ARCHITECTURAL DRAWINGS.

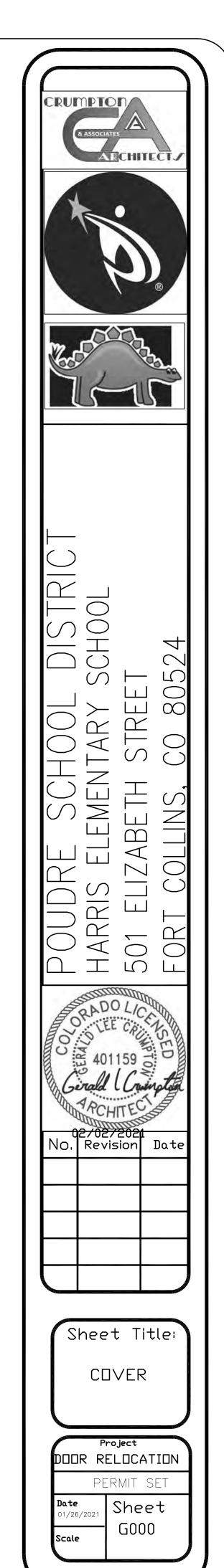


E-1.0



# HARRIS ELEMENTARY SCHOOL

EARLY CHILDHOOD ROOM DOOR RELOCATION



### ARCHITECT

CRUMPTON AND ASSOCIATES, ARCHITECTS
12891 JACKSON CIRCLE
THORNTON, CO 80241
PHONE: 720.427.5421
FAX: NA

CIVIL CONSULTANT

### STRUCTURAL CONSULTANT

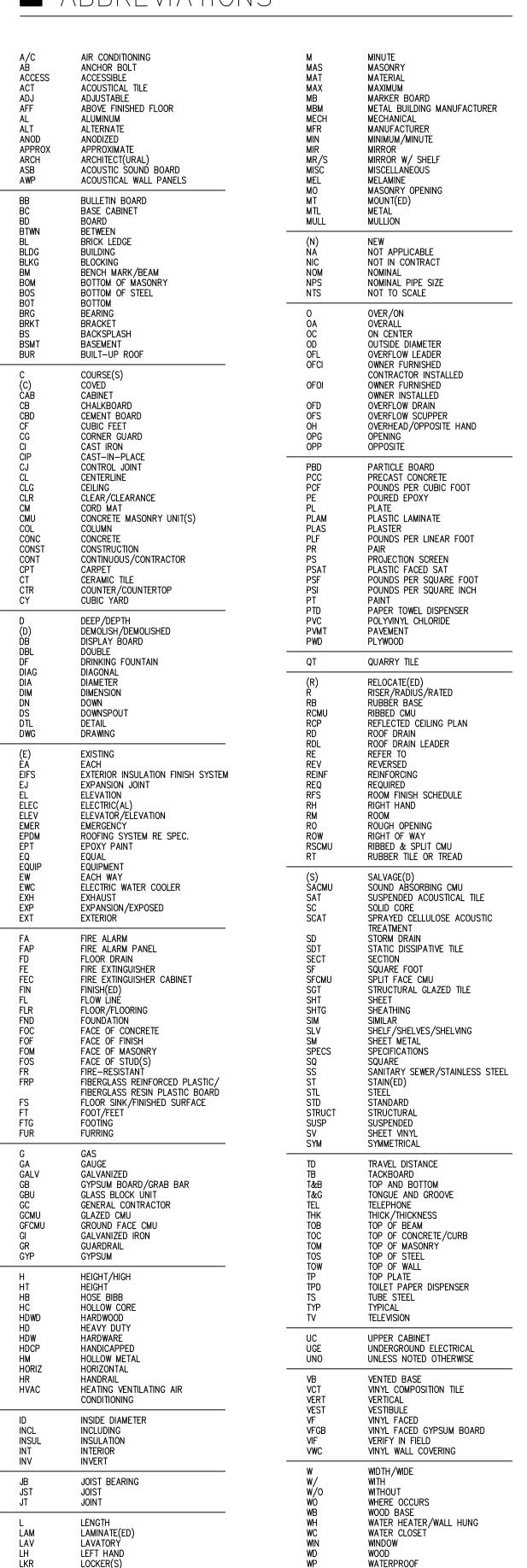
GILBERT STRUCTURAL ENGINEERING, LLC 3113 MEDOWLARK AVE FORT COLLINS, CO 80526 PHONE: 970.377.3100 FAX: NA

MECHANICAL CONSULTANT

ELECTRICAL CONSULTANT

FIRE ALARM CONSULTANT

### ABBREVIATIONS



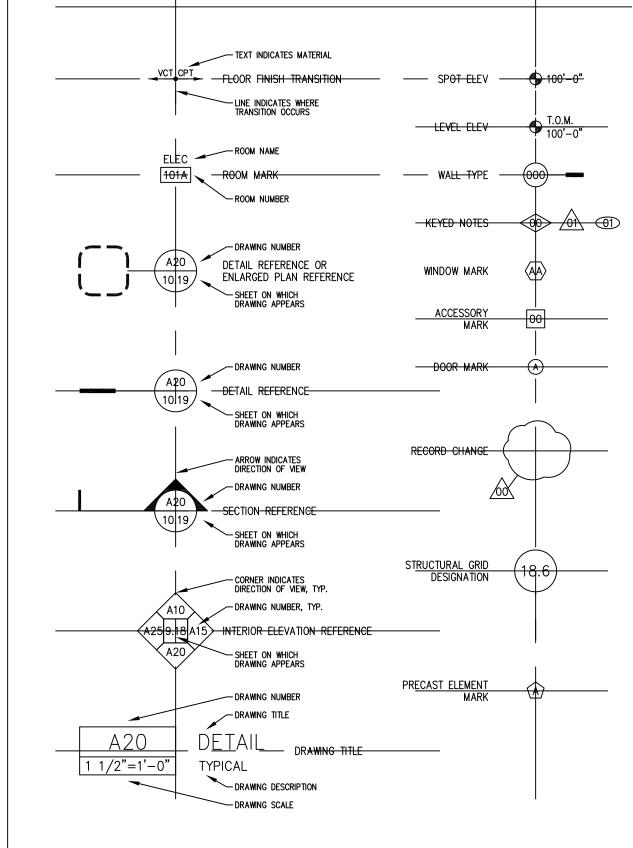
LIQUID MARKER BOARD

LINOLEUM

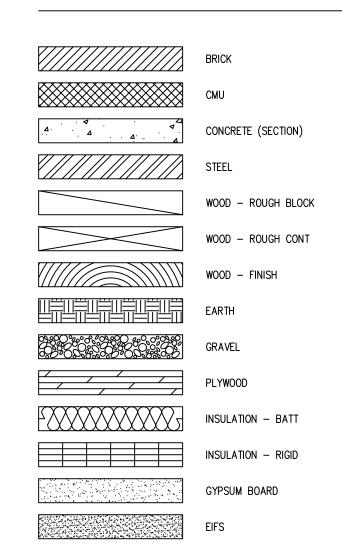
LIGHTING LOUVER WATER RESISTANT

WEIGHT WELDED WIRE FABRIC

### ARCHITECTURAL SYMBOLS



### MATERIALS LEGEND



### GENERAL NOTES

DEMOLITION WORK INCLUDES NOTES ON ALL SHEETS IN THE FOLLOWING DRAWING SET.
THESE SHEETS ARE NOT INTENDED TO BE ALL INCLUSIVE OF THE COMPLETE SCOPE OF
REQUIRED DEMOLITION. REMOVE EXISTING CONSTRUCTION REQUIRED FOR ALL WORK
INCLUDING NEW MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS. THE CONTRACTOR IS
RESPONSIBLE FOR ALL DEMOLITION AND ASSOCIATED PATCHING / FINISHING REQUIRED TO
COMPLETE ALL PHASES OF WORK.

DO NOT SCALE DRAWINGS. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT
IMMEDIATELY WHEN DISCREPANCIES ARE DISCOVERED.

IT IS THE RESPONSIBILITY OF THE MECHANICAL AND THE ELECTRICAL SUBCONTRACTOR TO

REVIEW ALL THE DRAWINGS, INCLUDING ARCHITECTURAL, FOR WORK UNDER THEIR RESPECTIVE CONTRACTS. ROOF PLANS AND REFLECTED CEILING PLANS DESCRIBE MECHANICAL AND ELECTRICAL WORK AS DO OTHER ARCHITECTURAL DRAWINGS. NO EXTRAS WILL BE ALLOWED FOR WORK SHOWN IN ANY PART OF THESE DRAWINGS.

INTERIOR DIMENSIONS ARE FROM FACE OF STUD, FACE OF MASONRY, OR FACE OF CONCRETE (UNLESS NOTED OTHERWISE). WHERE DIMENSION IS NOTED "CLEAR", DIMENSION IS TO FINAL FINISH.

### DRAWING INDEX

COVER

G000 COVER SHEET/CODE PLAN G100 SYMBOLS GENERAL

OIV/II NOT US

CIVIL NOT USED

STRUCTURAL

S100 XXXX

ARCHITECTURAL

AD101 DEMO
A101 PARTIAL FLOOR PLANS,ELEVATIONS
A301 NOT USED
A202.1 NOT USED

ELECTRICAL

ED101 NOT USED ED101 NOT USED E101 NOT USED

FIRE

NOT USED

P301

MECHANICAL
M001 NOT USED
M101 NOT USED
P001 NOT USED
P101 NOT USED

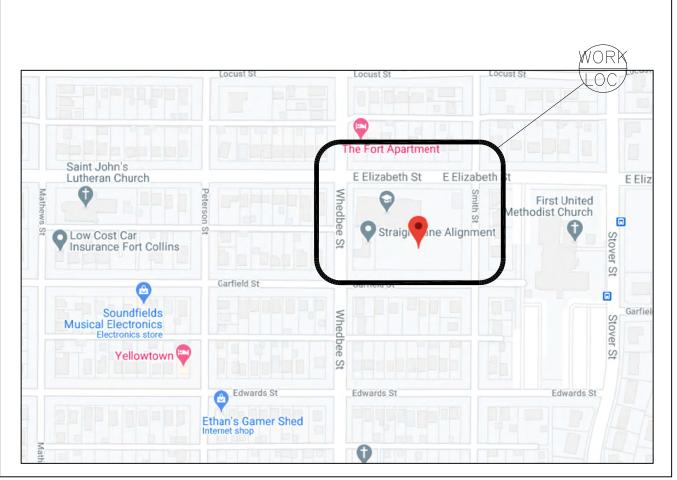
NOT USED

CODE ANALYSIS:

CONSTRUCTION II-B OCCUPANCY IS E

INTERIOR DOOR RELOCATION IN A NON LOAD BEARING WALL.
SMALL PROJECT CPDS FORM 4004 BY OWNER

CODES USED 2015, IBC, IFC, 2020 NEC, 2015 IECC AND ANSI 117.1/2009



VICINITY MAP



POUDRE SCHOOL DISTRICT

Secretaria School

HARRIS ELEMENTARY SCHOOL

501 ELIZABETH STREET

FORT COLLINS, CO 80524

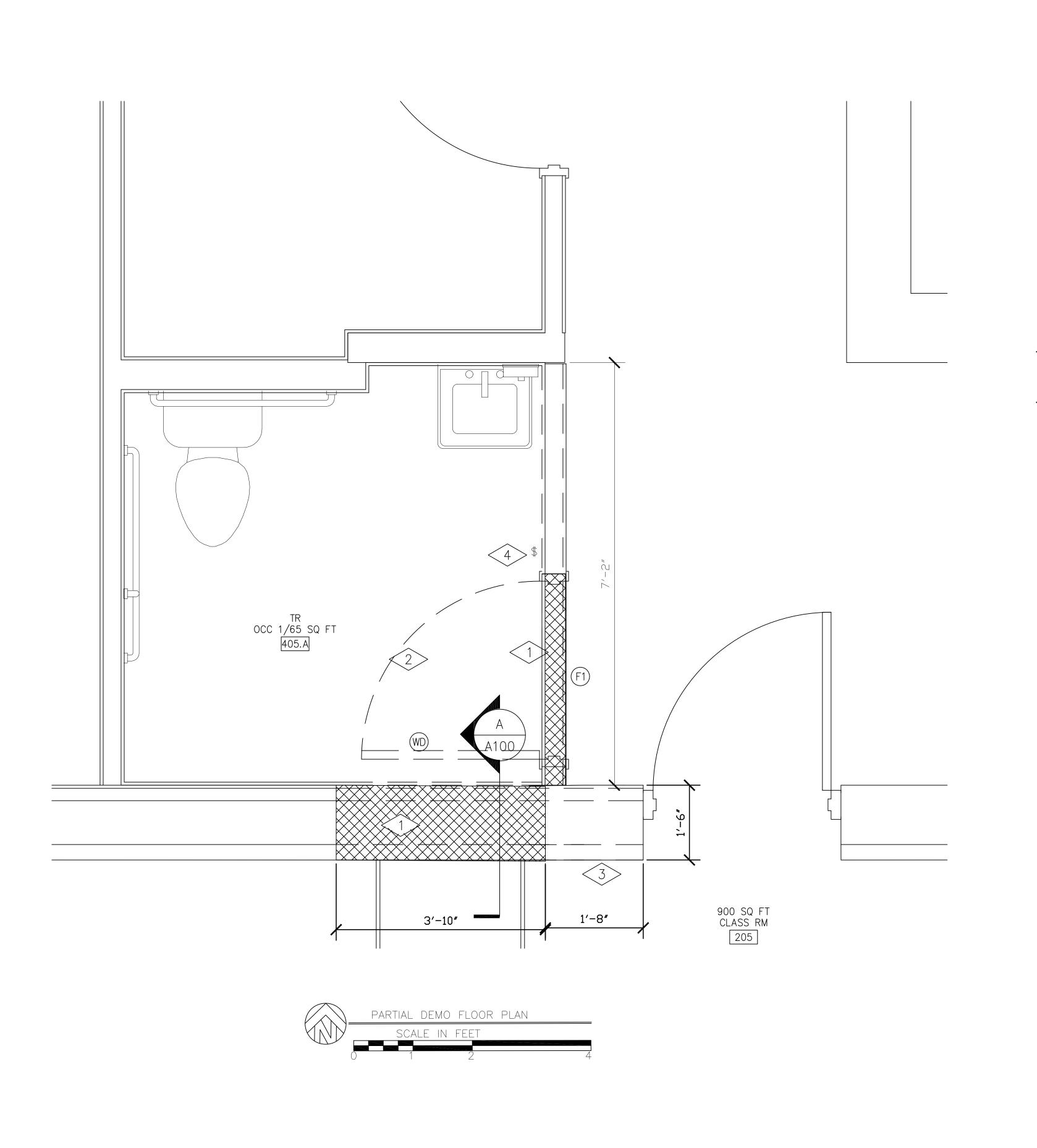
GRAPHICS

Sheet Title:

DOOR RELOCATION

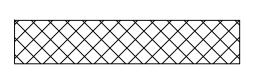
PERMIT SET

Date
12/17/2020 Sheet
G100



KEY DEMO NOTES:

> WALL DEMO CARE TO BE GIVEN TO PROTECT (E) CEILINGS. REPAIR AS NEEDED



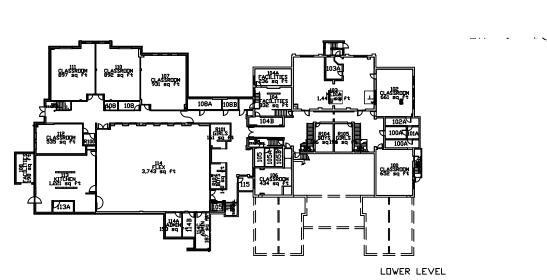
DEMO DOOR/FRAME AND HARDWARE.SAVE TRIM FOR REUSE

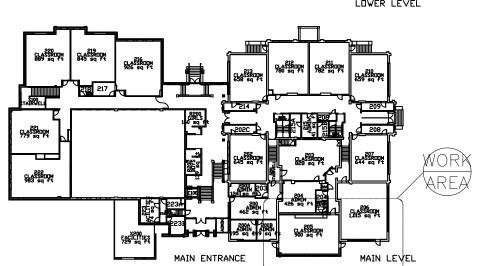
WD

F1

> 3 Wall Switches to Remain. Move coax cable

RELOCATE (E) SWITCH TO LATCH SIDE OF NEW OPENING. TOP OF BOX TO BE 48" AFF.





KEY PLAN NTS





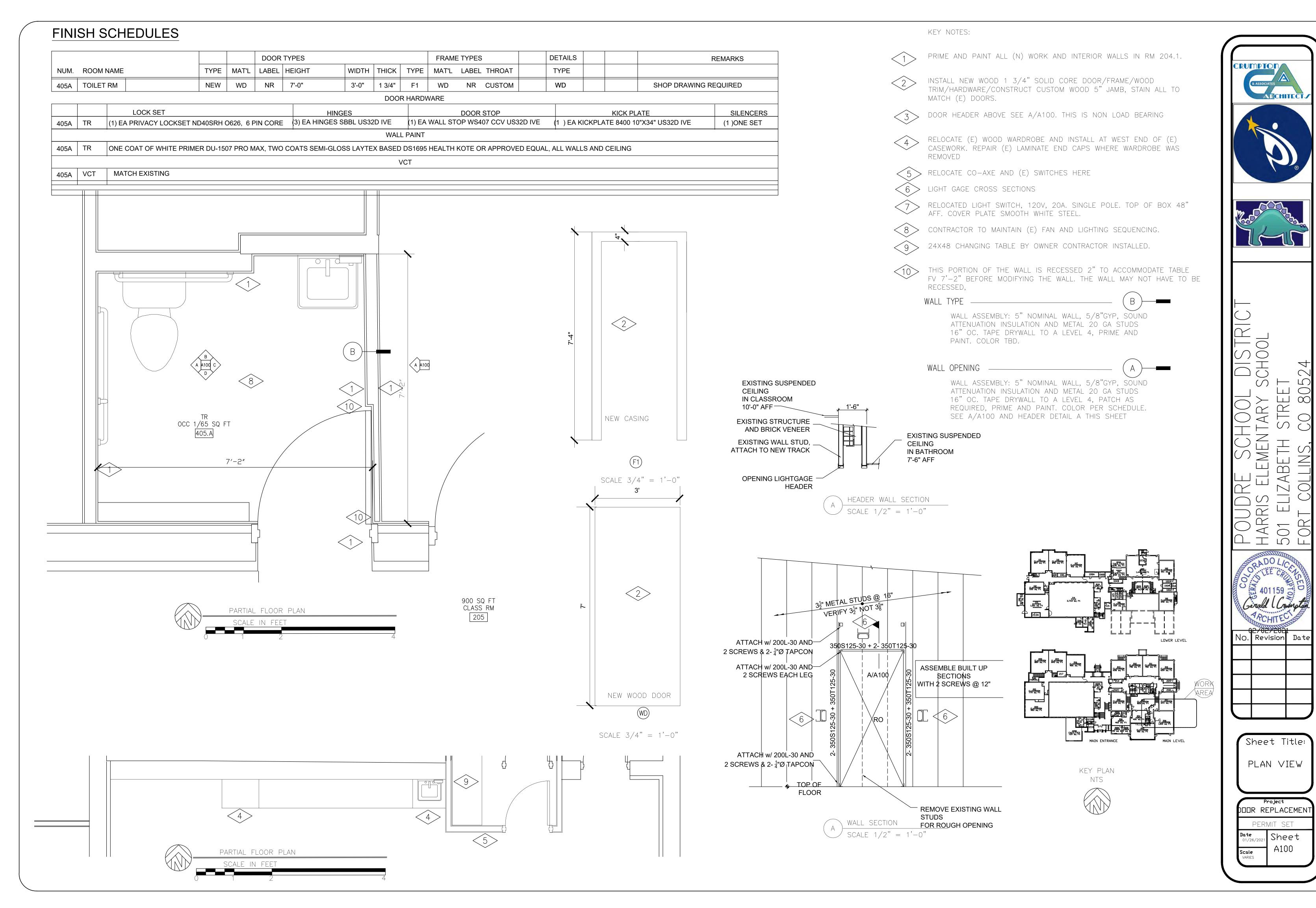
No. Revision

Sheet Title:

DOOR RELOCATION

PERMIT SET

Sheet





# A Renovation for:

# Kruse Elementary School 4400 McMurry Ave.

**Fort Collins** 

Kenney & Lee

architecture group, inc.

land • Colorado (970) 663-0548

### ABBREVIATIONS

GLASS ADJUSTABLE BOTTOM OF FTG. HORIZONTAL BLDG BUILDING LONG LIGHT BLOCK MB MACHINE BOLT BOTTOM OF STL. ML MICRO-LAM CABINET MTL METAL CAST-IN-PLACE NIC NOT IN CONTRACT CEILING OC ON CENTER CLEAR OHC OVERHEAD CABINET CMU CONC. MASONRY P TOP PLATE CONC CONCRETE OR PROPERTY LINE CONT CONTINUOUS PT PRESSURE TREATED CONN CONNECTION RAD RADIUS COUNTERSINK R&S ROD AND SHELF DOUBLE S&P SHELF AND POLE DOUGLAS-FIR SHELF DIAMETER SIM SIMILAR DOWN SQUARE DRAWING STL STEEL EACH TOF TOP OF FOUNDATION EACH FACE TOS TOP OF SLAB EQUAL TOW TOP OF WALL EACH SIDE TS TUBE STEEL EACH WAY TYP TYPICAL FLOOR DRAIN UNO UNLESS NOTED FOUNDATION OTHERWISE FINISH FLOOR VERTICAL MD MOOD FLOOR WWF WELDED WIRE FIELD NAIL FABRIC

### CONSULTANTS

### ARCHITECT

KENNEY LEE ARCHITECTURE GROUP, INC. ATTN: KRIS LEE 209 EAST FOURTH STREET LOYELAND, COLORADO 80537 (970)663-0548

### OWNER

POUDRE SCHOOL DISTRICT ATTN: JASON LEE 2445 LAPORTE AVE. FORT COLLINS, COLORADO 80521 (970) 490-3017

### M. P. E. ENGINEER

PIVOTAL ENGINEERING WEST, LLC 1355 GREENRIDGE RD, SUITE B WINDSOR, COLORADO 80550 (516) 547-5714

### CODE SUMMARY

CODE REQUIREMENTS HAVE REMAINED CONSISTENT WITH THE ORIGINAL BUILDING CONSTRUCTION INCLUDING OCCUPANCY GROUP AND CONSTRUCTION TYPE.

THIS PROJECT SHALL COMPLY WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE, 2018 INTERNATIONAL MECHANICAL CODE, 2018 INTERNATIONAL PLUMBING CODE, 2017 N.E.C., 2018 INTERNATIONAL FIRE CODE, ALL APPLICABLE LOCAL ORDINANCES AND REQUIREMENTS, & 2017 ANSI A117.1 STANDARDS

TYPE OF CONSTRUCTION TYPE II B (SPRINKLERED)

OCCUPANCY CLASSIFICATION PER CHAPTER 3

MAXIMUM BUILDING HEIGHT & NO. OF STORIES PER TABLE 504.3 & 504.4 E GROUP: 15' AND THREE STORIES ALLOWED

(NO CHANGE IN HEIGHT OR AREA)

OCCUPANCY SEPARATION PER TABLE 508.4

E / E (NONE REQUIRED)

### Colorado

### SHEET INDEX

FINISH SCHEDULE / DETAILS

MECHANICAL, ELEC.

M-1.0 PLUMBING & MECHANICAL FLOOR PLANS & SCHEDULES GENERAL MECHANICAL NOTES &

OUTLINE SPECS E-Ø.1 LEGEND, NOTES, SPECIFICATIONS &

SCHEDULES

E-1.0 LIGHTING & POWER PLAN



NOTE: THIS SET IS NULL & VOID SHOULD SHT. ALO BE OMITTED FROM THIS SET.

FOR FOR FOR ISSUED ISSUED ISSUED ISSUED



sheet

A1.0

NOTICE: DUTY OF COOPERATION - Release of these plans contemplates further cooperation among the owner, his contractor, and the architect. Design and construction are complex. Although the architect and his consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect, and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without the consent of the architect are unauthorized, and shall relieve the architect of responsibility for all consequences arising out of such changes.

### DEMOLITION PLAN KEY NOTES

- REMOVE ALL EXISTING WALLS, DOORS, WINDOWS, ETC. AT ALL AREAS INDICATED.
- CONTRACTOR TO INVENTORY AND INSPECT FOR REUSE.
  PROPERLY TERMINATE ALL ELECTRICAL CONNECTIONS.
  TEMPORARILY RETAIN ONE PANEL AND SERVICE TO OPERATE THE EXISTING LIGHTS FOR CONSTRUCTION LIGHTING.
- REMOVE ALL CARPETING IN THIS AREA TO THE LIMITS OF ADJACENT CONSTRUCTION. VERIFY W/ FACILITIES FOR EXTENT OF CARPET REPLACEMENT
- ALL LIGHT FIXTURES IN OPEN SPACE TO REMAIN UNTIL GENERAL CONTRACTOR INSTRUCTS REMOVAL. CONTINUE TO PROVIDE ELECTRICAL SERVICE TO LIGHTS.
- ANY FIRE LINES TO BE REMOVED OR ALTERED MUST BE DONE BY A LICENSED FIRE SPRINKLER CONTRACTOR ONLY AS DESIGN/BUILD. SPRINKLER HEADS TO MATCH EXISTING. WORK TO BE COMPLETED OFF HOURS AFTER 5:00, VERIFY DATE W/ OWNER.
- DEMO CONTRACTOR MUST LOCATE ALL UNDERSLAB ELECTRICAL & PLUMBING LINES AND/OR CONDUIT PRIOR TO ANY SLAB SAWCUTTING WORK.
- EXISTING FURNITURE TO BE REMOVED AND STOCKED PER POUDRE SCHOOL FACILITIES INSTRUCTION. (N.I.C.)
- ANY ALL ASBESTOS TESTING AND ABATEMENT TO BE PERFORMED BY POUDRE SCHOOL FACILITIES. GENERAL CONTRACTOR TO COORDINATE EXTENTS OF WORK.
- REMOVE EXISTING CEILING TILES IN BULKHEAD SOFFIT DIRECTLY ADJACENT NEW WORK
- REMOVE CCTV DEVICES, COORDINATE EXTENTS WITH PSD

### GENERAL DEMO NOTES

1. DEMO. SUB-CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO STARTING CONSTRUCTION IN AREA CONCERNED. DO NOT SCALE DRAWINGS.

2. GENERAL CONTRACTOR SHALL PERFORM DEMOLITION IN MANNER REQUIRED TO MAXIMIZE EFFICIENCY OF INTEGRATION WITH REQUIRED NEW CONSTRUCTION AND/OR PATCHING. CONTRACTOR SHALL REMOVE ITEMS IN A WORKMANSHIP LIKE MANNER SO AS TO ENSURE THAT ADJACENT CONSTRUCTION SHALL REMAIN INTACT.

3. PRIOR TO COMMENCING CONSTRUCTION GENERAL CONTRACTOR SHALL CONFIRM EXTENT OF ACCEPTED ALTERNATES AS ALTERNATES MAY REVISE SCOPE OF DEMOLITION REQUIRED IN BUILDING.

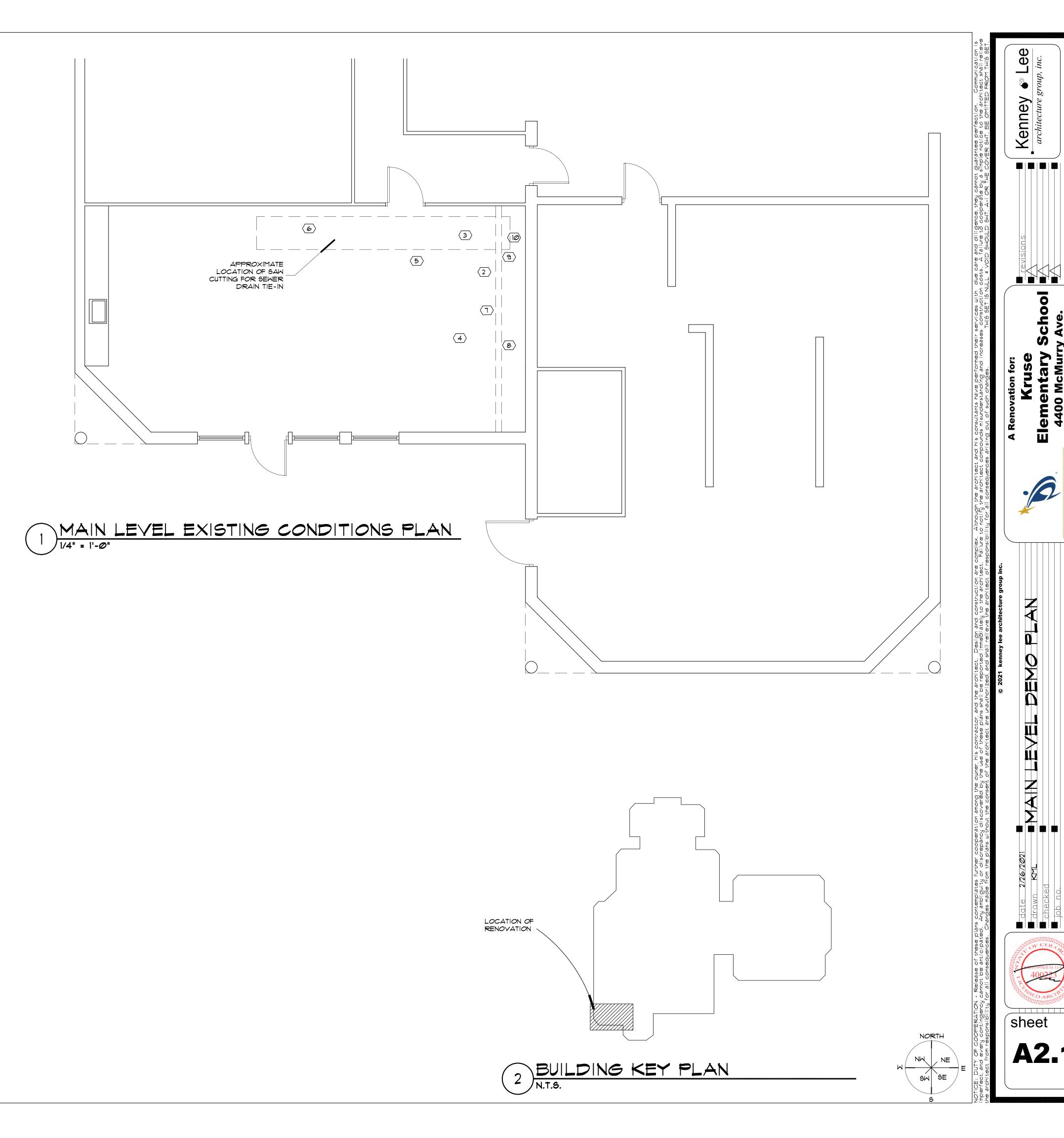
4. ALL DEMOLITION WORK AND LOCATION IDENTIFIED ON THE DEMOLITION PLANS, ARE DIAGRAMMATIC IN NATURE. NOT ALL REQUIRED DEMOLITION WORK HAS BEEN NOTED ON THE DRAWINGS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXISTING ITEMS REQUIRED FOR THE COMPLETION OF THE WORK INDICATED IN THE CONSTRUCTION DOCUMENTS OR DAMAGED AS A RESULT OF THE CONSTRUCTION PROCESS.

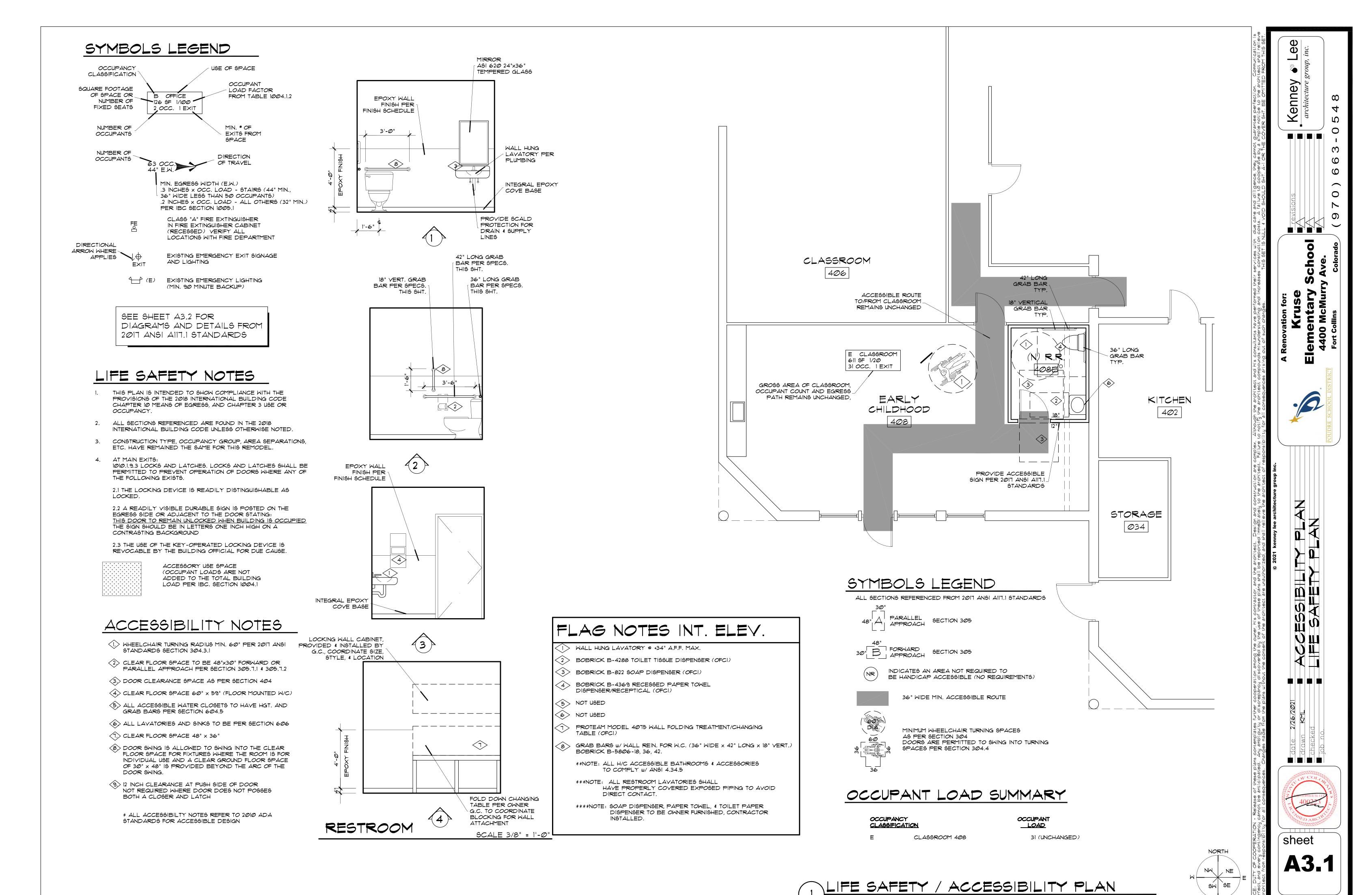
5. RUBBLE CONSTRUCTION DEBRIS AND ANY CONTAMINATED OR HAZARDOUS MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE. ALL MATERIAL DISPOSAL COST SHALL BE INCLUDED AS A PART OF THE BID ITEMS FOR SITE DEMOLITION WORK.

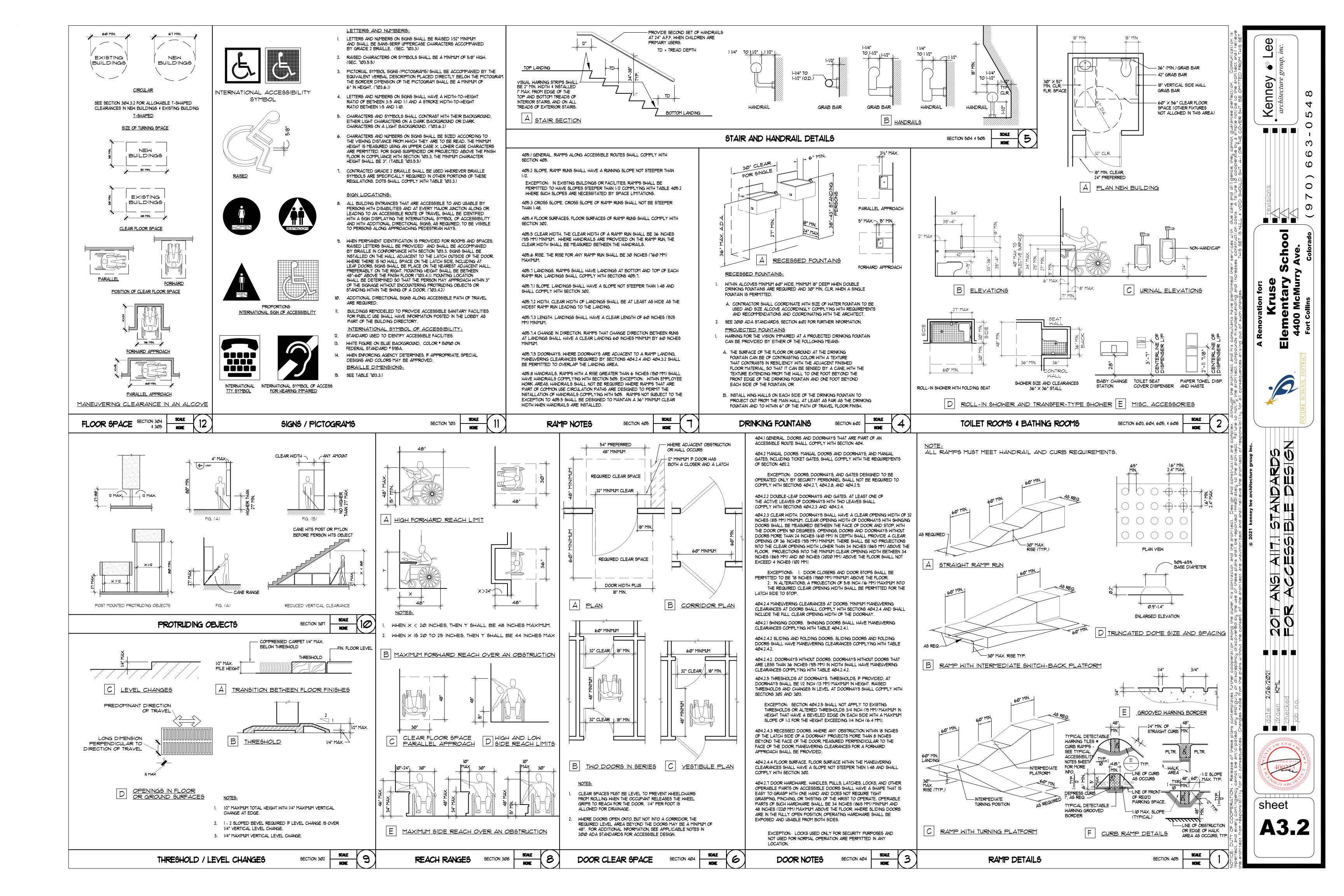
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE PRESENCE AND LOCATIONS OF ALL EXISTING UTILITIES IN THE AREA OF THE WORK PRIOR TO THE START OF DEMOLITION AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL PRESERVE INTACT ALL CULVERTS, UNDERGROUND CONDUITS, AND CABLES ENCOUNTERED DURING CONSTRUCTION (EXCEPT THOSE UTILITIES SCHEDULED FOR REMOVAL OR ABANDONMENT.)

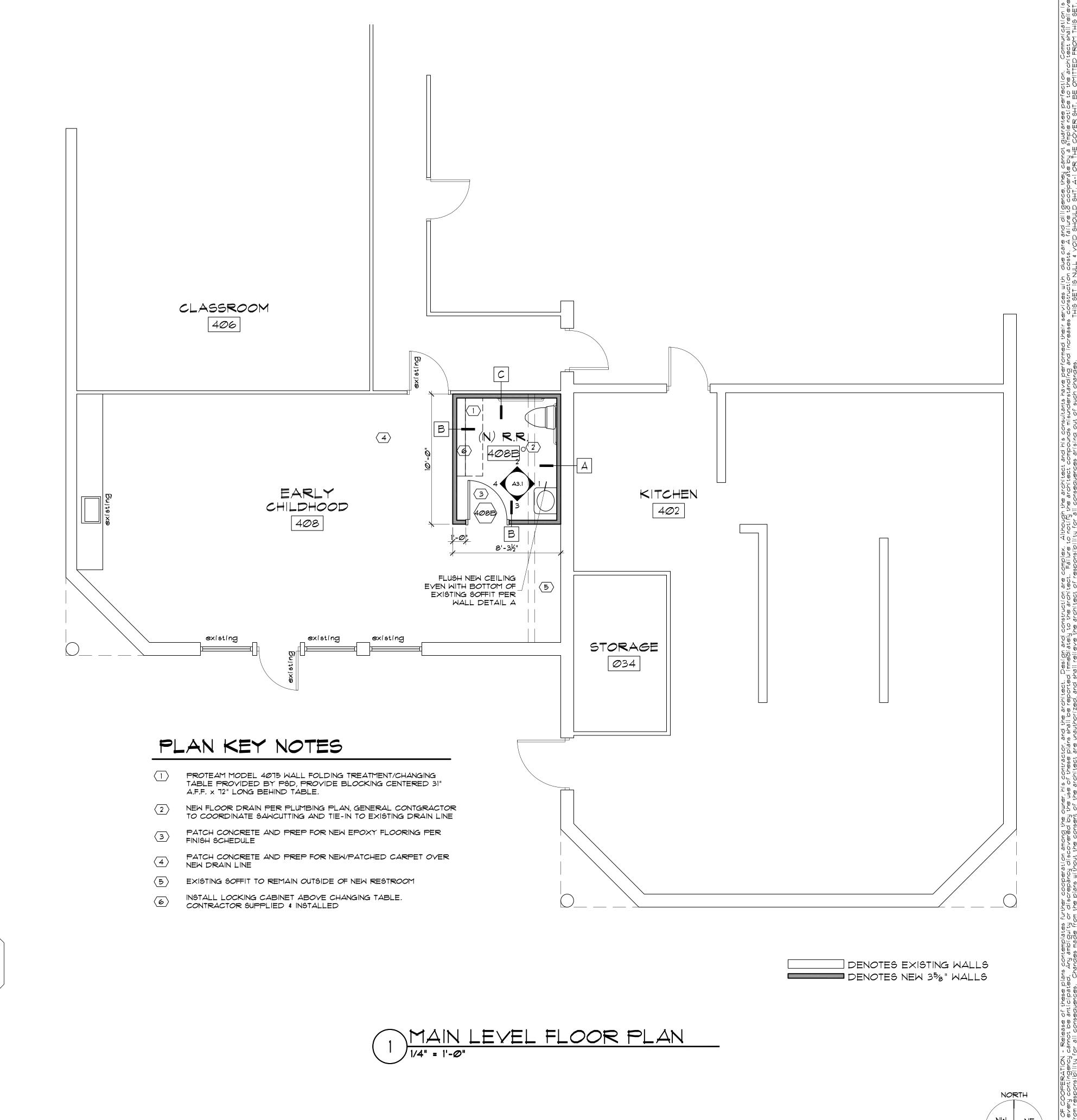
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES, STRUCTURES, & LANDSCAPE AREAS WHICH ARE CAUSED AS A RESULT OF THE CONSTRUCTION WORK. THE CONTRACTOR SHALL HOLD THE OWNER HARMLESS FROM ANY LIABILITY OR EXPENSE FOR INJURIES RESULTING FROM SUCH DAMAGES.

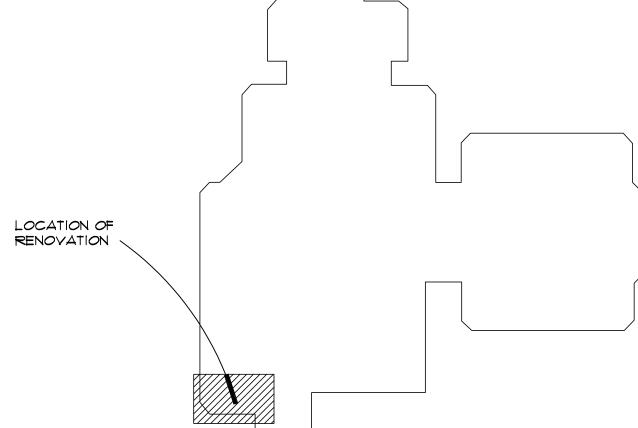
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COMMUNICATING WITH THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES NOT SHOWN ON THE PLANS. ITEMS ON THE PLANS MIGHT NOT SHOW ACTUAL CONDITIONS ONCE DEMOLITION BEGINS. ANY BEARING CONDITIONS NOT KNOWN MUST BE BROUGHT TO THE ATTENTION OF ARCHITECT AND ENGINEER.











BUILDING KEY PLAN
N.T.S.

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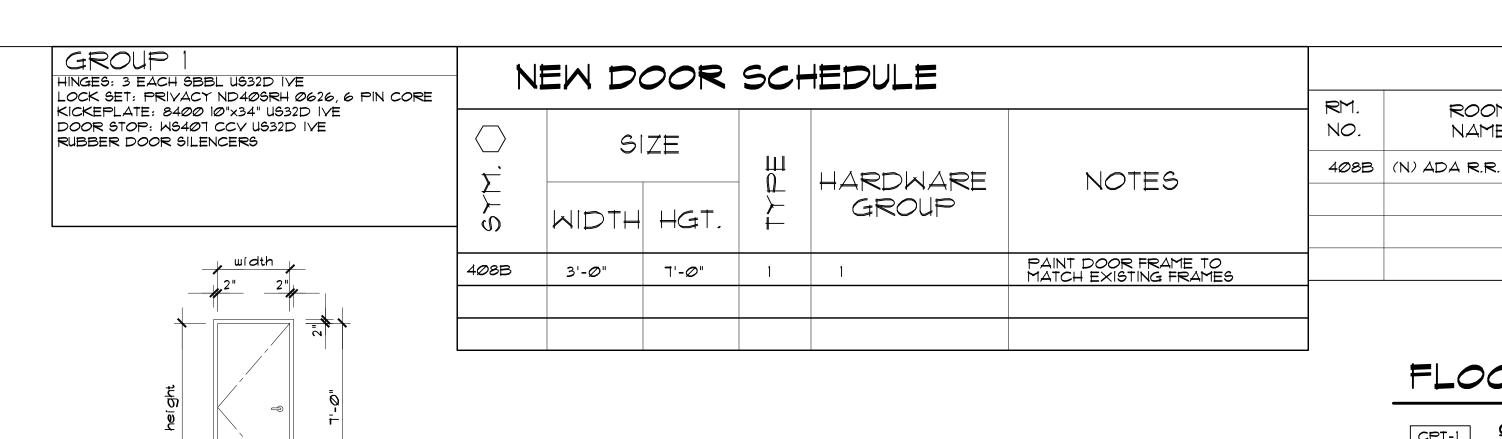
FLOOR PLAN

FLOOR PLAN

FLOOR PLAN

sheet

Kenney



TYPE

CORE

NOTE: SEE FLOOR PLANS FOR ALL DOOR SWING DIRECTIONS, TYP.

HOLLOW METAL FRAME

1 3/4" THK. SOLID

(MATCH EXISTING)

CLEAR MAPLE

### FLOOR FINISH LEGEND

FLR-1

ROOM

NAME

CARPET
MANUFACTURER: TANDUS, MANNINGTON OR MOWHAWK COLLECTION: MATCH EXISTING DESIGN: MATCH EXISTING COLOR: MATCH EXISTING

INTERIOR FINISH SCHEDULE

FLR-1

SIZE: BROADLOOM SHEET GOOD

#### EPOXY FLOOR POURED ACRYLIC FLOOR W/INTEGRAL 4" COVE BASE FLR-1

BAS SPARTACOTE DURA-A-FLEX, DEX-O-TEX DECOR EPOXY FLOORING SYSTEM OR APPROVED EQUAL

RESINOUS FLOOR POLYASPARTIC COATING (DECORATIVE BROADCAST EPOXY FLOORING SYSTEM USING COLORED QUARTZ OR PAINT CHIP ONLY)

### FINISH SPECIFICATIONS

#### <u>WALL FINISH</u> FIELD COLOR MALL-1

| WALL-1/2 | WALL-1/2 | WALL-1/2 | CLG-1

(1) COAT WHITE PRIMER, DU-1507 PRO-MAX (2) COATS PAINTED GYP. BD. TEXTURE: GYPSUM ASSOCIATION LEVEL 4 FINISH COLOR: SEMI-GLOSS LATEX, ZERO PLUS

CLG. HGT.

8'-0"

REMARKS

WALL-2 TO 4'-4" A.F.F. PATCH CPT-1 AS NECESSARY

#### EPOXY WALL FINISH WALL-2

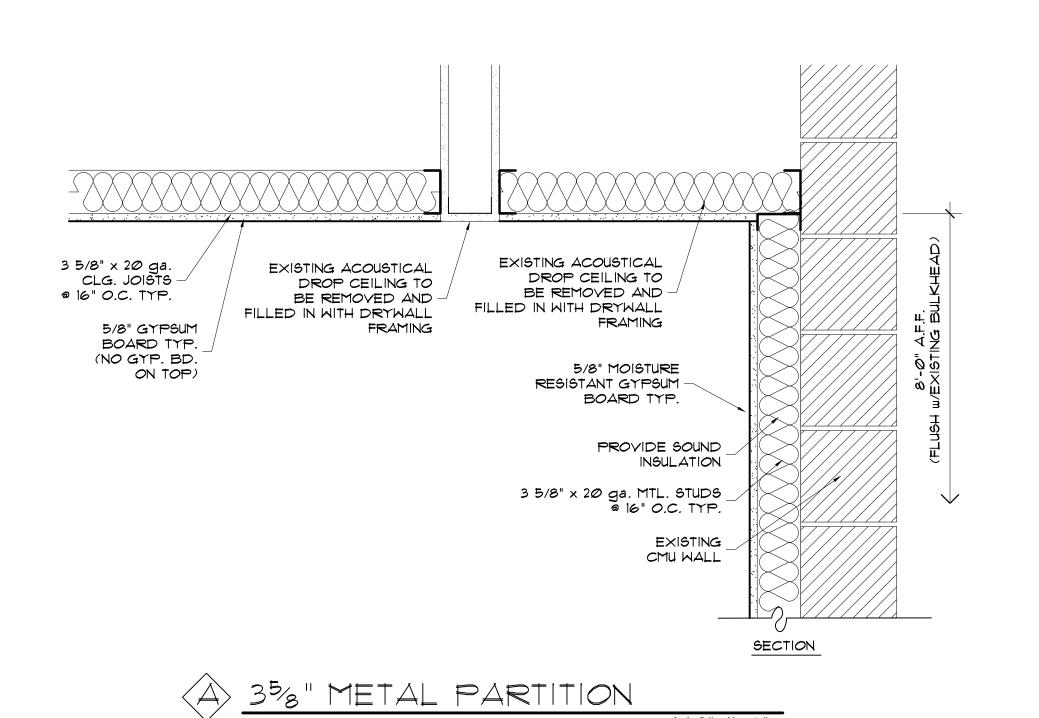
BAS SPARTACOTE DURA-A-FLEX, DEX-O-TEX DECOR EPOXY FLOORING SYSTEM OR APPROVED EQUAL COLOR: TBD SEE INTERIOR ELEVATION FOR HEIGHT & LOCATION

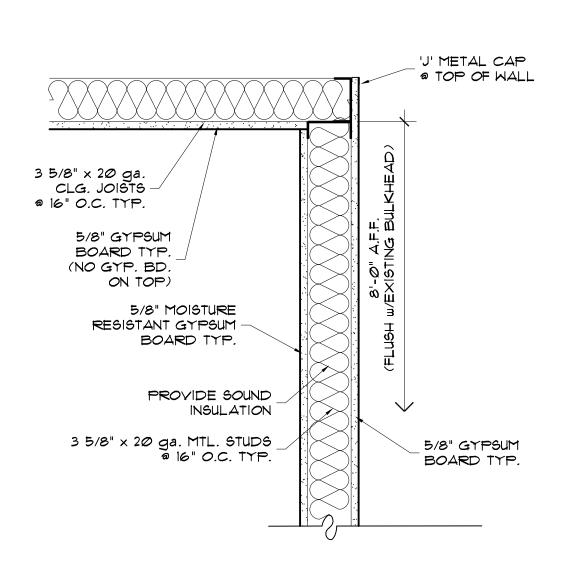
### CEILING FINISH

#### CEILING FINISH FIELD COLOR

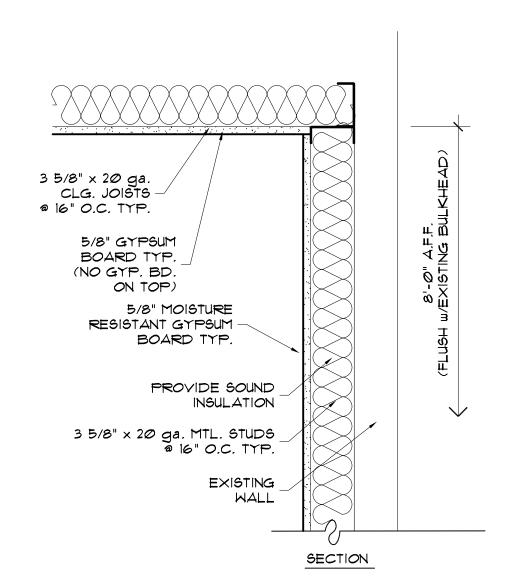
(1) COAT WHITE PRIMER, DU-1507 PRO-MAX (2) COATS PAINTED GYP. BD. TEXTURE: GYPSUM ASSOCIATION LEVEL 4 FINISH

COLOR: SEMI-GLOSS LATEX, DS1695 ZERO PLUS

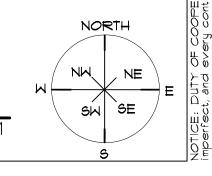












Kenney 

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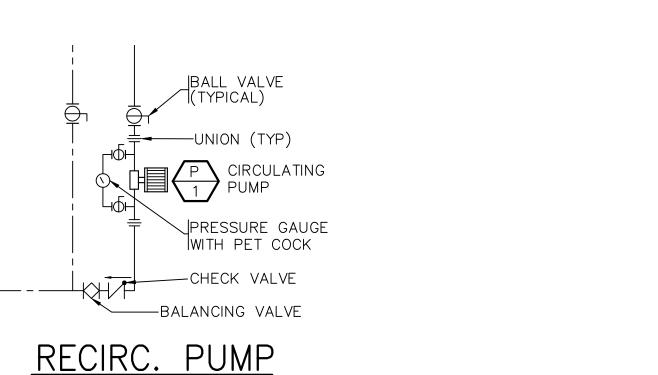
0 colorar Š >

Kruse
Kruse
Elementary
4400 McMurr





**A6.1** 



### KEY NOTES

(THIS SHEET ONLY)

EXTEND 6"ØE.A. DUCT UP THROUGH ROOF WITH FLASHING, STORM COLLAR AND WEATER CAP.

UNDER-CUT DOOR 1" FOR FREE-AIR MOVEMENT.

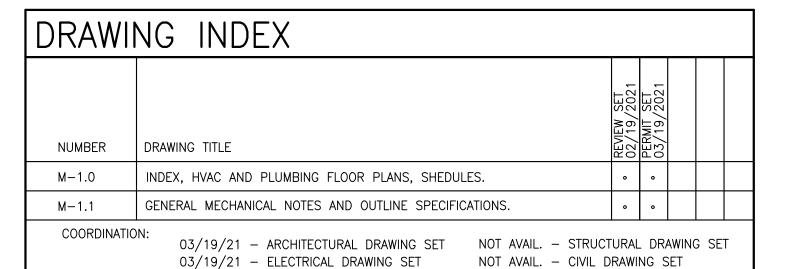
CONNECT NEW 3"SS TO EXISTING 4"SS, FIELD VERIFY REQUIREMENTS.

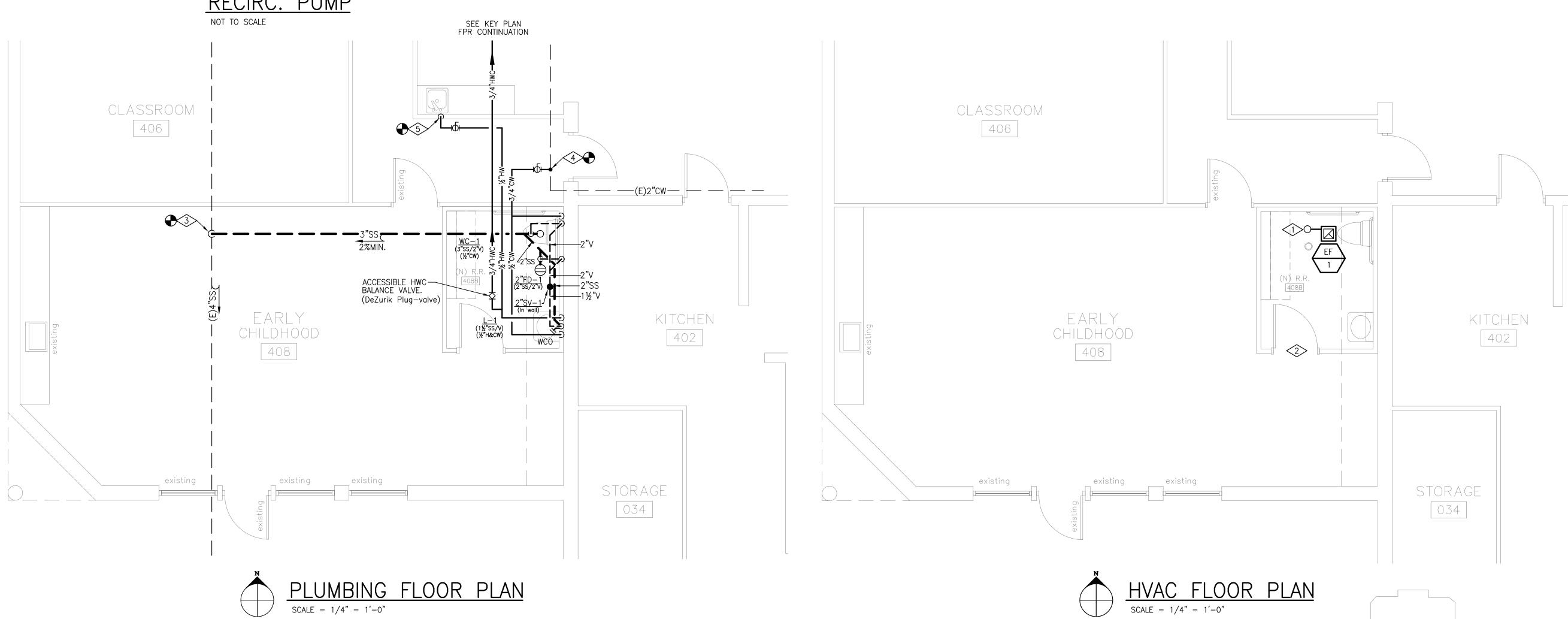
CONNECT NEW 3/4"CW TO EXISTING CW, PROVIDE BALL VALVE. FIELD VERIFY REQUIREMENTS.

CONNECT NEW ½"HW TO EXISTING HW IN CONFERENCE ROOM AND EXTEND TO NEW RESTROOM, PROVIDE BALL VALVE. FIELD VERIFY REQUIREMENTS.

INSTALL NEW HOT WATER RECIRCULATION PUMP P-1. PROVIDE ISOLATION AND CHECK VALVES. CONNECT 3/4"HWC TO CW PIPING AT INLET TO WATER HEATER.

ROUTE NEW 3/4"HWC PIPING ABOVE CEILING IN HALLWAYS TO NEW REST ROOM. REFER TO PLUMBING PLAN THIS SHEET FOR CONTINUATION.

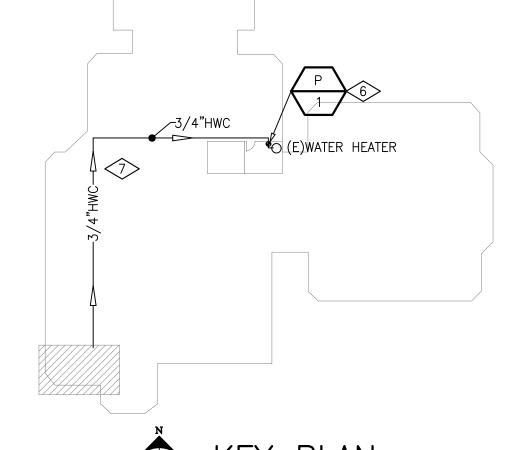




PLUM	IBING FIXTURE SCHEDULE
TAG	DESCRIPTION
WC-1	WATER CLOSET (HANDICAP) KOHLER, HIGHLINE, MODEL K-3999, 17 INCH RIM HEIGHT FLOOR MOUNTED TANK TYPE, ELONGATED BOWL, GRAVITY FLUSH, 1.28 GALLONS CLASS 5, SIPHON JET ACTION, VITREOUS CHINA. BENEKE SEAT MODEL 527-SS, OPEN FRONT, CHECK HINGES. ANGLE SUPPLY WITH LOOSE KEY STOP, RISER, COUPLING NUTS ESCUCHEONS, CHROME FINISH. (ADA/ANSI) 3"SS, 2"V, ½"CW. (OR APPROVED EQUAL)
L-1	LAVATORY (HANDICAP) KOHLER, GREENWICH, MODEL K-2032, 20"x18" WALL HUNG, WHITE VITREOUS CHINA, 4" CENTERS, WITH CHICAGO FAUCET MODEL 802 VACP FAUCET, 0.5 GPM AERATOR, OPEN GRID DRAIN, TAILPIECE, LOOSE KEY STOPS, COUPLING NUTS, ESCUTCHEONS. ADA/ANSI APPROVED INSULATION ON TAILPIECE, P-TRAP, ANGLE VALVES, AND CW/HW AS MANUFACTURED BY TRUEBRO, INC., ASSE 1070 APPROVED TEMPERING VALVE. CHROME FINISH FITTINGS. 1½"SS, 1½"V, ½"CW, ½"HW. (OR APPROVED EQUAL)
FD-1	FLOOR DRAIN PROSET, MODEL T(X)5630-F-P, 5 INCH DIAMETER NICKEL BRONZE STRAINER, PVC BODY WITH FLASHING CLAMP, INTEGRAL 'TRAP-GUARD' ACCESSORY. REFER TO FLOOR PLANS FOR SIZES. (OR APPROVED EQUAL)
SV-1	STUDOR VENT (AIR ADMITTANCE VALVE) STUDOR MINI VENT, 2"V. PROVIDE VENTILATED ACCESS DOOR WHERE REQUIRED. (OR APPROVED EQUAL)
WCO	WALL CLEANOUT ZURN MODEL ZN01446 WITH SMOOTH STAINLESS STEEL ACCESS COVER AND SECURING SCREW. (OR APPROVED EQUAL)
FCO	FLOOR CLEANOUT ZURN, MODEL ZN-1400 WITH NICKEL BRONZE TOP IN FINISHED AREAS. (OR APPROVED EQUAL)

	DW	VH CIRCULATING	PΙ	JMF		SCH	IED	ULE				
	TAG	TYPE		HEAD	HP	CHAR	AMPS	RPM	NOTES	SIZE	MANUFACTURER	TAG
	P-1	1 HWC IN-LINE CIRCULATOR SERVES: DWH-1		12'	45W	115/1	0.65	3-SPD	1 THROUGH 3	ALPHA 15-55SF	GRUNDFOS	P-1
ſ	NOTES: 1. STAINLESS STEEL BODY 2. TERMINAL BOX 3. LINE CORD											

FA	N SCI	HEDUL	. <b>L</b>															
								FAN DATA					МОТО	R DATA				
TAG	LOCATION	SERVICE	MANUF.	MODEL	TOTAL CFM	E.S.P. (IN W.G.)	TYPE	DIAM. (IN)	MAX RPM	MAX SONES	MOUNT	DRIVE	H.P.	F.L.A.	VOLTS/PH	OP. WT. (LBS)	OPTIONS	TAG
EF-1	CEILING	RESTROOM 408B	COOK	GC-124	70	0.25	CENTRIF.		900	1.7	CEILING	DIRECT	65W		120/1	15.0	A,B,C	EF-1
FACTOR	RY INSTALLED (	OPTIONS:	•		FIELD	) INSTALLE	D OPTIONS:											







7355 Greenridge Rd., Suite B (516) 547-5714

sheet

M-1.0

PLUMBING & MECH PLANS INDEX &

Kenney

- 2. THE MECHANICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PATENT RIGHTS, AND LICENSES THAT ARE REQUIRED FOR PERFORMING THE WORK UNDER ALL LAWS, ORDINANCES, RULES AND REGULATIONS, OR ORDERS OF ANY OFFICER AND/OR GOVERNING BODY, HAVING JURISDICTION FOR THE WORK SHOWN HEREIN. THE CONTRACTOR SHALL GIVE ALL NOTICES NECESSARY IN CONNECTION WITH, PAY ALL FEES RELATING TO AND ALL COSTS AND EXPENSES INCURRED ON ACCOUNT OF THE WORK SHOWN HEREIN. NO WORK SHALL BE COVERED BEFORE INSPECTION BY THE JURISDICTIONAL INSPECTOR AND THE OWNER'S REPRESENTATIVE. POST PERMITS AS REQUIRED.
- 3. PRECAUTIONS SHALL BE EXERCISED AT ALL TIMES TO CONTROL DUST CREATED AS A RESULT OF ANY OPERATIONS DURING THE CONSTRUCTION PERIOD. IF SERIOUS PROBLEMS ARISE DUE TO AIR BORNE DUST, AND WHEN DIRECTED BY OWNER, OPERATIONS CAUSING SUCH PROBLEMS SHALL BE TEMPORARILY DISCONTINUED AND NECESSARY STEPS TAKEN TO CONTROL THE DUST. MAINTAIN GOOD HOUSEKEEPING PRACTICES TO REDUCE THE RISK OF FIRE DAMAGE AND INJURY TO WORKMEN. ALL SCRAP MATERIALS, RUBBISH AND TRASH SHALL BE REMOVED DAILY FROM IN AND ABOUT THE WORK AREA AND SHALL NOT BE PERMITTED TO BE SCATTERED TO ADJACENT AREAS. A FIRE EXTINGUISHER SHALL BE AVAILABLE AT EACH LOCATION WHERE CUTTING OR WELDING IS BEING PERFORMED. WHERE ELECTRIC OR GAS WELDING OR CUTTING WORK IS DONE, INTERPOSED SHIELDS OF INCOMBUSTIBLE MATERIAL SHALL BE USED TO PROTECT AGAINST FIRE DAMAGE DUE TO SPARKS AND HOT METAL. WHEN TEMPORARY HEATING DEVICES ARE USED, A WATCHMAN SHALL BE PRESENT TO COVER PERIODS WHEN OTHER WORKMEN ARE NOT ON THE PREMISES.
- 4. THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC, SHOWING CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE MECHANICAL WORK AND ITS INTERFACE WITH OTHER WORK. SUCH ESTABLISHMENT IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACT DOCUMENTS INDICATE THE AVAILABLE INFORMATION ON EXISTING UTILITIES AND SERVICES, AND ON NEW SERVICES TO BE PROVIDED TO THE PROJECT BY UTILITY COMPANIES AND AGENCIES.
- 5. THE EQUIPMENT AND MATERIALS INDICATED ON THE CONTRACT DOCUMENTS REPRESENT A STANDARD OF QUALITY TO BE MAINTAINED. SUBSTITUTIONS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND UNUSED AND INSTALLED BY ONLY QUALIFIED PERSONNEL. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, IN ADDITION TO ANY STATE AND LOCAL CODES THAT MAY APPLY. WORKMANSHIP: ALL LABOR SHALL BE CAREFULLY SKILLED FOR THIS KIND OF WORK, THOROUGH IN ALL RESPECTS AND UNDER THE DIRECTION OF A COMPETENT FOREMAN.
- GENERAL SUBMITTAL REQUIREMENTS: COORDINATE SUBMITTALS SO THAT WORK WILL NOT BE DELAYED BY SUBMITTALS. NO EXTENSION OF TIME WILL BE ALLOWED BECAUSE OF FAILURE TO PROPERLY COORDINATE AND SEQUENCE SUBMITTALS. DO NOT SUBMIT PRODUCT DATA, OR ALLOW ITS USE ON THE PROJECT, UNTIL COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS HAS BEEN CONFIRMED BY THE CONTRACTOR. SUBMITTAL IS FOR INFORMATION AND RECORD, UNLESS OTHERWISE INDICATED. PROVIDE PERMANENT MARKING ON EACH SUBMITTAL TO IDENTIFY USE, PROJECT, DATE, CONTRACTOR, SUBCONTRACTOR SUBMITTAL NAME AND SIMILAR INFORMATION TO DISTINGUISH IT FROM OTHER SUBMITTALS. INDICATE ANY PORTIONS OF WORK WHICH DEVIATE FROM THE CONTRACT DOCUMENTS. EXPLAIN THE REASONS FOR THE DEVIATIONS. SHOW HOW SUCH DEVIATIONS COORDINATE WITH INTERFACING PORTIONS OF OTHER WORK. SHOW CONTRACTORS EXECUTED REVIEW AND APPROVAL MARKING. PROVIDE SPACE FOR ENGINEERS "ACTION" MARKING. SUBMITTALS WHICH ARE RECEIVED FROM SOURCES OTHER THAN THROUGH CONTRACTORS OFFICE WILL BE RETURNED "WITHOUT ACTION." EXCEPT AS OTHERWISE INDICATED, ELECTRONIC SUBMITTALS. WHERE A REQUIRED SUBMITTAL RELATES TO AN OPERATIONAL ITEM OF EQUIPMENT USED IN MORE THAN ONE SYSTEM INCREASE THE NUMBER OF FINAL COPIES AS NECESSARY TO COMPLETE THE MAINTENANCE MANUALS FOR EACH SYSTEM. PROVIDE A PRELIMINARY, TWO-COPY SUBMITTAL FOR AUTOMATIC TEMPERATURE CONTROLS AND, WHEN PRODUCT DATA IS REQUIRED OR DESIRED BY CONTRACTOR, FOR SELECTION OF OPTIONS BY ENGINEER. PROVIDE ADDITIONAL DISTRIBUTION OF SUBMITTALS, NOT INCLUDED IN FOREGOING COPY SUBMITTAL REQUIREMENTS, TO SUBCONTRACTORS, SUPPLIERS, FABRICATORS, INSTALLERS, GOVERNING AUTHORITIES AND OTHERS AS NECESSARY FOR PROPER PERFORMANCE OF WORK. INCLUDE SUCH COPIES IN TRANSMITTAL TO ENGINEER WHERE REQUIRED RECEIVE "ACTION" MARKING BEFORE FINAL DISTRIBUTION. SHOW SUCH DISTRIBUTIONS ON TRANSMITTAL FORMS.
- EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL HAVE A PERMANENT LABEL CLEARLY INDICATING THE MAINTENANCE TO BE PERFORMED TO MAINTAIN THE EQUIPMENT IN EFFICIENT OPERATING CONDITION. EQUIPMENT SUPPLIERS SHALL FURNISH THE FULL AND PARTIAL INPUT AND OUTPUT CAPACITIES TO ENABLE THE DETERMINATION OF COMPLIANCE WITH THE ENERGY CONSERVATION CODE.
- 8. SUBMIT THREE TYPED AND BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS PRIOR TO SCHEDULING SYSTEMS DEMONSTRATION FOR THE OWNER. MANUALS SHALL HAVE INDEX WITH TAB DIVIDERS FOR EACH MAJOR EQUIPMENT SECTION TO FACILITATE LOCATING INFORMATION ON A SPECIFIC PIECE OF EQUIPMENT. ALPHABETICAL LIST OF SYSTEM COMPONENTS, WITH THE NAME, ADDRESS AND 24 HOUR TELEPHONE NUMBER OF THE COMPANY RESPONSIBLE FOR SERVICING EACH ITEM DURING THE FIRST YEAR OF OPERATION.
- 9. DELIVERY AND STORAGE OF MATERIALS: PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNERS REPRESENTATIVE PROTECT ALL MATERIALS AND EQUIPMENT FROM DAMAGE AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. REPLACE ALL DAMAGED AND DEFECTIVE WORK BEFORE FILING APPLICATION FOR FINAL ACCEPTANCE.
- 10. BEFORE SUBMITTING HIS BID, THE CONTRACTOR FOR THE WORK SHOWN HEREIN SHALL CAREFULLY STUDY ALL DRAWINGS, AND SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES. HE SHALL DEFINITELY DETERMINE IN ADVANCE, THE METHODS OF INSTALLATION AND CONNECTING THE APPARATUS AND THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT INTO PLACE, AFTER AWARD OF THE CONTRACT, NO SUBSEQUENT ALLOWANCES WILL BE MADE TO THE CONTRACTOR DUE TO HIS FAILURE TO COMPLY WITH THE ABOVE REQUIREMENTS AND ANY OTHER CONDITIONS AFFECTING THE INSTALLATION AND COMPLETION OF ALL WORK.
- 11. ACCURATELY RECORD ALL CHANGES TO THE CONTRACT DOCUMENTS ON ONE SET OF DRAWINGS. TRANSMIT THE INFORMATION TO THE ENGINEER.
- 12. FURNISH WRITTEN CERTIFIED GUARANTEE, IN ACCEPTANCE FORM, TO THE OWNER AGAINST DEFECTIVE WORKMANSHIP, MATERIALS AND OPERATING EQUIPMENT. IN ADDITION TO THE GUARANTEES REQUIRED ELSEWHERE. ALL WORK, MATERIALS AND EQUIPMENT PROVIDED UNDER THE MECHANICAL SECTIONS SHALL BE GUARANTEED FOR A PERIOD OF (1) YEAR FROM THE DAY OF ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR UNDER THIS GUARANTEE, SHALL BE RESPONSIBLE FOR ALL DAMAGE TO ANY PART OF THE PREMISES CAUSED BY EQUIPMENT AND MATERIALS FURNISHED UNDER THIS SECTION. PROVIDE CERTIFICATES FOR ALL EQUIPMENT HAVING WARRANTIES IN EXCESS OF 1 YEAR.
- 13. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH CURRENT SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY, THE NATIONAL ELECTRIC CODE, LOCAL BUILDING CODES, THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL FUEL GAS CODE, THE INTERNATIONAL BUILDING CODE AND OTHER APPLICABLE CODES, THE CITY OF FORT COLLINS, LAWS OR REGULATIONS OF BODIES LAWFULLY EMPOWERED AND HAVING JURISDICTION OVER THIS PROJECT. NOTHING IN THE PLANS OR THESE SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- 14. RESOLVE ALL QUESTIONS, DISCREPANCIES OR CONFLICTS WITH ENGINEER BEFORE ANY EQUIPMENT IS ORDERED, MATERIALS FABRICATED OR SYSTEMS INSTALLED.
- 15. PROVIDE IDENTIFICATION TAGS FOR ALL SCHEDULED EQUIPMENT.
- 16. COORDINATE THE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES AND PROVIDE OFFSETS AS NECESSARY TO ACCOMMODATE STRUCTURE AND OTHER TRADES.
- 17. PROVIDE ACCESS PANELS IN CEILINGS AND/OR DUCTWORK WHERE REQUIRED FOR ACCESS TO ALL MOTORS, CONTROLS, FIRE DAMPERS, SMOKE/FIRE DAMPERS, VALVES, AND BALANCING DAMPERS.
- 18. LEVEL ALL EQUIPMENT CURBS/BASES PRIOR TO INSTALLATION OF ANY EQUIPMENT.
- 19. SEAL ALL WALL AND ROOF PENETRATIONS WATERTIGHT WITH SILICONE CAULKING AND BACKER ROD. U.L. CLASSIFIED AND FM APPROVED SEALANTS SHALL BE USED AT ALL PENETRATIONS OF RATED WALLS, CEILINGS AND FLOORS. PENETRATIONS OF THE ROOFING MEMBRANE SHALL BE COMPLETED BY A QUALIFIED ROOFING CONTRACTOR TO MAINTAIN THE INTEGRITY OF THE ROOFING SYSTEM AND RELATED EXISTING WARRANTIES.
- COORDINATE ALL THE MISCELLANEOUS SUPPORT AND FRAMING REQUIRED FOR THE MECHANICAL EQUIPMENT, PROVIDED BY OTHERS.
- 21. COORDINATE AND VERIFY ALL OPENINGS IN STRUCTURAL WALLS, ABOVE CEILINGS, AND FLOORS WITH THE STRUCTURAL CONTRACTOR.
- 22. ALL SUPPLY AND RETURN DUCTWORK UNLESS SPECIFICALLY INDICATED SHALL BE IN ASTM A527 LOCK FRAMING QUALITY GALVANIZED SHEET METAL WITH ASTM A525 G90 ZINC COATING INSTALLED IN ACCORDANCE WITH CHAPTER 6 OF THE 2015 IMC AND THE SMACNA DUCT CONSTRUCTION STANDARDS, FOR PRESSURE CLASS "A" FOR 3" SP AND ABOVE, CLASS "B" FOR 2" TO 3" SP AND CLASS "C" FOR 0.5" TO 2" SP, WITH "HARD CAST" SEALED JOINTS. THE USE OF PRESSURE SENSITIVE TAPE WILL NOT BE ACCEPTABLE. DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS.
- 23. EXTERNALLY INSULATE ALL RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK WITH MINIMUM 1.5"Ib DENSITY FIBERGLASS. ALL INSULATION SHALL HAVE MINIMUM INSTALLED "R" VALUE OF 8.0, FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS AND BE RATED FOR OPERATING TEMPERATURES UP TO 250°F. LINE ALL EXHAUST, SUPPLY & RETURN DUCTWORK FOR 15 LF FROM FAN. DUCT LINERS SHALL HAVE AN ACRYLIC COATING ON SURFACE IN CONTACT WITH THE AIR STREAM. DUCT WRAP SHALL HAVE AN ALUMINUM FOIL FACING.
- 24. ALL ROUND SA & RA DUCTS TO BE INSULATED WITH 1-1/2" "INSULSLEEVE" THAT HAS A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX NOT MORE THAN 50 (ASTM E 84) WITH VAPOR BARRIER (R VALUE = 12.0). DO NOT INSULATE EXPOSED SPIRAL DUCTWORK AND FITTINGS.
- 25. ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, DEMISING WALLS TO HAVE APPROVED AUTOMATIC FIRE DAMPERS OR TO PROVIDE APPROPRIATE FIRE RATED SHAFTS FOR ALL SUCH PENETRATIONS. VERIFY WITH I.B.C/I.M.C AND RESPECTIVE CITY.
- 26. ALL CONCEALED, ROUND SUPPLY AIR DUCTS 12" AND SMALLER SHALL BE GALVANIZED SHEET METAL SNAP-LOCK.
  ROUND SUPPLY DUCT GREATER THAN 12" SHALL BE GALVANIZED SHEET METAL SPIRAL. INSULATED FLEXIBLEDUCT MAY BE
  USED FOR THE CONNECTION TO THE AIR OUTLET PROVIDED THE LENGTH OF THE FLEXIBLE DUCT DOES NOT EXCEED 6 LINEAR FEET.
- 27. ALL BRANCH DUCT CONNECTIONS TO AIR OUTLETS AND AIR INLETS SHALL BE THE SAME SIZE AS THE DEVICE NECK UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

- 28. PROVIDE EQUIPMENT VIBRATION ISOLATION FROM STRUCTURE AND ASSOCIATED DUCT/PIPE SYSTEMS.
- 29. ALL BALANCING SHALL BE COMPLETED BY AN INDEPENDENT QUALIFIED AND CERTIFIED TECHNICIAN (TABB, NEBB OR SIMILAR) WITH FIVE (5) OR MORE YEARS EXPERIENCE IN TESTING, ADJUSTING, AND BALANCING HVAC AND HYDRONIC SYSTEMS. ADJUST VALVES AND DAMPERS AS NECESSARY TO OBTAIN AIR AND WATER QUANTITIES SHOWN. PROVIDE COMPLETE WRITTEN TEST AND BALANCE REPORT INDICATING QUANTITIES AT INLET AND OUTLET. USE VOLUME DAMPERS FOR ALL REGISTERS FOR BALANCING OF THE SYSTEMS. AIR DISTRIBUTION SHALL BE BALANCED FOR WITHIN 5% OF INDICATED VALUES.
- 30. EXAMINE THE AREAS TO BE EXCAVATED AND THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. REMOVE ALL ROCK AND BOULDERS FROM EXCAVATION BEFORE INSTALLING MECHANICAL WORK. SLOPE SIDES OF EXCAVATIONS AS REQUIRED FOR STABILITY, OR PROVIDE NECESSARY SHORING. LOCATE AND PROTECT EXISTING UTILITIES AND OTHER UNDERGROUND WORK IN A MANNER WHICH WILL ENSURE THAT NO DAMAGE OR SERVICE INTERRUPTION WILL RESULT FROM EXCAVATING AND BACKFILLING. DO NOT INSTALL MECHANICAL WORK ON FROZEN EXCAVATION BASES OR SUB-BASES. MAINTAIN DRY EXCAVATIONS FOR MECHANICAL WORK BY REMOVING WATER. PROTECT EXCAVATIONS FROM INFLOW OF SURFACE WATER. PUMP MINOR INFLOW OF GROUND WATER FROM EXCAVATIONS. STORE EXCAVATED MATERIAL (TEMPORARILY) NEAR THE EXCAVATION. RETAIN EXCAVATED MATERIAL WHICH COMPLIES WITH THE REQUIREMENTS FOR BACKFILL MATERIAL. DO NOT BACKFILL UNTIL INSTALLED MECHANICAL WORK HAS BEEN TESTED AND ACCEPTED. CONDITION BACKFILL MATERIAL BY EITHER DRYING OR ADDING WATER UNIFORMLY, TO FACILITATE COMPACTION TO ACCEPTABLE DENSITIES. BACKFILL TO ELEVATIONS MATCHING ADJACENT GRADES. BACKFILL EXCAVATIONS IN 8" HIGH COURSES OF BACKFILL MATERIAL, UNIFORMLY COMPACTED USING POWER-DRIVEN OR HAND-OPERATED COMPACTION EQUIPMENT.
- 31. COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE OPENINGS THROUGH CONCRETE FOR PIPE PENETRATION AND SIMILAR SERVICES BY CORE DRILLING AND SAWING. REVIEW THE PROPOSED CUTTING WITH THE INSTALLER OF THE WORK TO BE CUT, AND COMPLY WITH HIS RECOMMENDATIONS TO MINIMIZE DAMAGE.
- 32. INSTALL IONIZATION TYPE SMOKE DETECTOR AND SAMPLING TUBE IN THE RETURN AIR DUCT FROM THE RTU'S (IF/WHERE INDICATED ON THE DRAWINGS). THE DETECTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND SHALL HAVE AN AUXILIARY SET OF CONTACTS FOR CONNECTION TO THE FIRE ALARM SYSTEM. THE DETECTOR SHALL BE WIRED TO SHUT DOWN THE LINITS SUPPLY FAN
- 33. ALL DUCT, PIPING AND EQUIPMENT LOCATIONS INDICATED ON THESE DOCUMENTS ARE FOR REFERENCE ONLY AND SHALL BE USED AS A GUIDE. ALL ELEVATIONS AND FLOOR TO FLOOR HEIGHTS SHALL BE VERIFIED PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY DUCT OR PIPING SYSTEM.
- 34. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL REQUIREMENTS FOR ALL CUTTING AND PATCHING OF EXISTING FACILITIES TO BE COMPLETED BY THE GENERAL CONTRACTOR OR OTHERS.
- 35. USE ADJUSTABLE PIPE HANGERS ON SUSPENDED PIPE. ISOLATE HANGERS COMING IN CONTACT WITH BARE COPPER PIPE WITH DIELECTRIC HANGER LINERS. PROVIDE SUPPORTS BETWEEN PIPING AND BUILDING STRUCTURE WHERE NECESSARY TO PREVENT SWAYING. CONFORM TO THE INTERNATIONAL PLUMBING AND MECHANICAL CODE FOR HANGER SIZES AND SPACING. DO NOT SUPPORT PIPE FROM OTHER PIPE OR DUCT SYSTEMS. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED MOVEMENT OF PIPING SYSTEM AND TO PERMIT PROPER MOVEMENT BETWEEN PIPE ANCHORS.
- 36. INSTALL PIPE, TUBE AND FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY—LEAKPROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH A MINIMUM OF JOINTS AND COUPLINGS, BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY, MAINTENANCE OR REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES BY USE OF REDUCING FITTINGS. INSTALL PIPING WITHOUT SPRINGING OR FORCING. SUPPORT PIPING INDEPENDENTLY AT EQUIPMENT SO ITS WEIGHT WILL NOT BE SUPPORTED BY THE EQUIPMENT. FURNISH ALL DEVICES NECESSARY FOR FINAL CONNECTION, INCLUDING BUT NOT LIMITED TO TAIL PIECES, STOPS AND SUPPLIES. LOCATE PIPING RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY. AVOID DIAGONAL RUNS WHEREVER POSSIBLE. ORIENT HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. HOLD PIPING CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS AND OTHER STRUCTURAL AND PERMANENT—ENCLOSURE ELEMENTS OF THE BUILDING. LIMIT CLEARANCE OF 0.5" WHERE FURRING IS SHOWN FOR ENCLOSURE OR CONCEALMENT OF PIPING, BUT ALLOW FOR INSULATION THICKNESS, IF ANY. WHERE POSSIBLE, LOCATE INSULATED PIPING FOR 1.0" CLEARANCE OUTSIDE INSULATION. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL PIPING FROM VIEW BY LOCATING IN COLUMN ENCLOSURES, IN HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED. CFILINGS.
- 37. FLUSH OUT PIPING SYSTEMS WITH CLEAN WATER BEFORE PROCEEDING WITH THE REQUIRED TESTS. PROVIDE TEMPORARY EQUIPMENT FOR TESTING, INCLUDING PUMP AND GAUGES. TEST PIPING SYSTEM BEFORE INSULATION IS INSTALLED WHEREVER FEASIBLE. TEST EACH NATURAL SECTION OF EACH PIPING SYSTEM INDEPENDENTLY, BUT DO NOT USE PIPING SYSTEM VALVES TO ISOLATE SECTIONS WHERE TEST PRESSURE EXCEEDS VALVE PRESSURE RATING. FILL EACH SECTION OF WATER, DRAIN OR VENT PIPING WITH WATER AND PRESSURIZE FOR TWO HOURS AT 150% OF OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR PRESSURE PIPING AND TEN FEET FOR DRAIN AND VENT PIPING. TEST FAILS IF LEAKAGE IS OBSERVED OR IF PRESSURE DROP EXCEEDS 5% OF TEST PRESSURE. REPAIR PIPING SYSTEMS SECTIONS WHICH FAIL BY DISASSEMBLY AND RE—INSTALLATIONS, USING NEW MATERIALS TO THE EXTENT REQUIRED TO OVERCOME LEAKAGE. DO NOT USE CHEMICALS, STOP—LEAK COMPOUNDS, MASTICS OR OTHER TEMPORARY REPAIR METHODS. AFTER TESTING AND REPAIR WORK HAVE BEEN COMPLETED, DRAIN TEST WATER FROM PIPING SYSTEMS.
- 38. FILL ALL DOMESTIC WATER LINES WITH A CHLORINE WATER SOLUTION OF 50 PARTS PER MILLION, MINIMUM. HOLD SOLUTION IN PIPE FOR AT LEAST 24 HOURS. OPEN AND CLOSE ALL VALVES 3 TIMES DURING CHLORINATION. WASTE CHLORINE SOLUTION FROM EACH OUTLET. MEASURE SOLUTION AT END. IF NOT 10 PPM, REPEAT. ALL NEW POTABLE WATER SYSTEMS SHALL BE CLEANED AS HEREIN SPECIFIED PRIOR TO TESTING OR APPLICATION OF INSULATION. COMPLY WITH CITY OF FORT COLLINS CO STANDARDS OR LARIMER COUNTY DEPARTMENT OF HEALTH REQUIREMENTS, WHICHEVER IS MORE STRINGENT.
- 39. BALL VALVES 1" AND SMALLER: NO THREADED VALVES NIBCO S585 OR EQUAL (SOLDERED ENDS). RATED FOR 150 PSI NON-SHOCK WOG 2-PIECE CAST BRONZE BODIES, TFE SEAT, FULL PORT, BRONZE TRIM, BLOWOUT PROOF STEMS BRASS/BRONZE BALL. VALVE ENDS SHALL HAVE FULL DEPTH ANSI THREADS OR EXTENDED SOLDER CONNECTIONS.

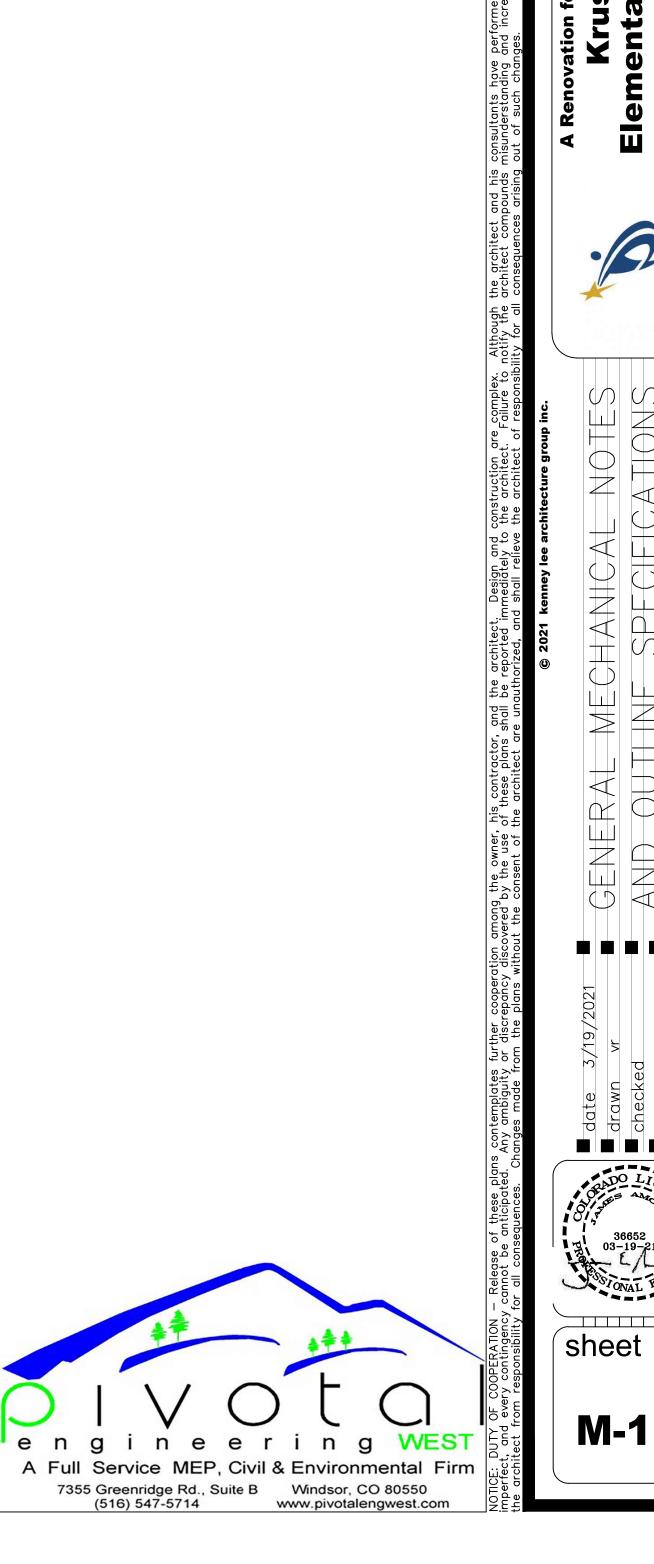
  CHECK VALVES 2 1/2" AND SMALLER: NO THREADED VALVES NIBCO S413 OR EQUAL (SOLDERED ENDS). Y-PATTERN HORIZONTAL SWING-TYPE, CLASS 125, RATED FOR 200 PSI WOG BRONZE ASTM B-62 BODY WITH TFE SEAT DISC.
- 40. INSTALL VALVES WITH STEMS POINTING UP, AND AS CLOSE TO VERTICAL AS POSSIBLE. INSTALL VALVES AT EACH PIECE OF EQUIPMENT, FIXTURE OR APPLIANCE SO THAT THE SUPPLY AND RETURN SERVICES CAN BE SHUT OFF TO REMOVE THE ITEM WITHOUT DISTURBING THE PIPING SYSTEM. INSTALL VALVES WHERE REQUIRED FOR PROPER OPERATION OF PIPING AND EQUIPMENT, INCLUDING VALVES IN BRANCH LINES TO ISOLATE SECTIONS OF PIPING WHERE BRANCH FLOW IS MORE THAN 10% OF THE TOTAL
- 41. NATURAL GAS PIPING ABOVE GROUND 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL SCREWED WITH 150 LB. MALLEABLE IRON, THREADED FITTINGS. NATURAL GAS ABOVE GROUND OVER 2" SHALL BE SCHEDULE 40 BLACK STEEL, PLAIN END WITH STANDARD WEIGHT, BUTT WELD FITTINGS. REMOVE CUTTING AND THREADING BURRS BEFORE ASSEMBLING PIPING. DO NOT INSTALL DEFECTIVE PIPING OR FITTINGS. DO NOT USE PIPE WITH THREADS WHICH ARE CHIPPED, STRIPPED OR DAMAGED. USE TEFLON TAPE ON MALE PIPE THREADS. PLUG EACH GAS OUTLET INCLUDING VALVES WITH A THREADED PLUG OR CAP, IMMEDIATELY AFTER INSTALLATION, AND RETAIN UNTIL CONTINUING PIPING OR EQUIPMENT CONNECTION IS COMPLETED. AFTER ROUGH—IN OR PRIOR TO INITIAL OPERATION, TEST AND PURGE GAS PIPING IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODE. TEST PIPING SYSTEM AT 100 PSIG. REPAIR OR REPLACE PIPING AS REQUIRED TO ELIMINATE LEAKS AND RETEST. AFTER EQUIPMENT INSTALLATION, TEST ALL PIPING AND VALVES UP TO GAS REGULATOR WITH "U" TUBE MANOMETER AT 10 PSIG. PAINT ALL PIPING EXPOSED TO THE ELEMENTS.
- 42. DOMESTIC WATER PIPING:

  ABOVE GROUND INSIDE BUILDINGS, SIZE 4" AND UNDER SHALL BE COPPER TUBE, HARD TEMPER,
  TYPE "L" PIPE WITH WROUGHT COPPER, OR CAST BRONZE FITTINGS AND ANTIMONY FREE AND LEAD
  FREE SOLDER. BELOW GROUND, SIZE 2" AND UNDER SHALL BE COPPER TUBE, ANNEALED, TYPE "K"
  PIPE WITH WROUGHT COPPER, BRAZED FITTINGS. PRESS—ON FITTINGS ARE APPROVED.

  DOMESTIC WATER PIPING OPTION:
  POTABLE HOT AND COLD WATER DISTRIBUTION PIPING SHALL BE CROSSLINKED POLYETHYLENE (PEX) TUBING AND
  ASTM F1960 COLD EXPANSION FITTINGS. (DESIGN BASIS: WIRSBO 'AQUAPEX' TUBING AND 'ProPEX' FITTINGS.)
- 43. SOIL AND VENT PIPING: ABOVE AND BELOW GROUND SHALL BE SOLID CORE SCHEDULE 40 PVC WITH SOLVENT GLUED FITTINGS AND JOINTS. IF LOCATED IN A RETURN AIR PLENUM SHALL BE CAST IRON NO HUB NEOPRENE GASKET AND STAINLESS STEEL SLEEVE JOINT.
- 44. STORM/ROOF DRAINAGE PIPING: ABOVE GROUND SHALL BE CAST IRON NO HUB NEOPRENE GASKET AND STAINLESS STEEL SLEEVE JOINT. BELOW GROUND SHALL BE SCHEDULE 40 PVC WITH SOLVENT GLUED FITTINGS AND JOINTS.
- 45. INSTALL FULL SIZE CONDENSATE DRAIN WITH TRAP SEAL DEPTH EQUAL TO 1.5 x UNIT TOTAL STATIC PRESSURE FOR EACH COOLING COIL.

\*\*\*PROVIDE FULLY SUPPORTED COPPER STUB-OUTS FROM MAIN ARE REQUIRED.

46. CLEAN AND DRY PIPE SURFACES PRIOR TO INSULATING. EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED. INSTALL PROTECTIVE SHEETMETAL SHIELD AROUND BOTTOM HALF OF PIPE INSULATION AT EACH PIPE SUPPORT SUFFICIENT TO PREVENT CRUSHING OF THE INSULATION. AT CONTRACTORS OPTION, INSTALL PRE-MANUFACTURED HEAVY DENSITY PIPE SHIELDS IN LIEU OF PIPE INSULATION AT EACH PIPE SUPPORT. EXCEPT AS NOTED, COVER VALVES, FLANGES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. DO NOT COVER VALVE OPERATORS, THREADED OR SOLDER JOINT STRAINERS OR BLOWDOWN END OF STRAINERS. MARK LOCATION OF UNIONS AND FLANGES COVERED BY INSULATION WITH PERMANENT PAINT OR INK, PAINTED STENCIL OR APPROVED LABEL. MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON INSULATION OF COLD PIPES AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. INSULATE BETWEEN PIPE AND PIPE SADDLES. ON UNDERGROUND PIPE INSULATION, INSTALL UNICELLULAR INSULATION ON PIPE WITHOUT SLITTING INSULATION. SEAL ALL TRANSVERSE JOINTS WITH ADHESIVE. PROVIDE COMPOSITE INSTALLATION (INSULATION, JACKET, COVERING, SEALER, MASTIC AND ADHESIVE) COMPLYING WITH THE FOLLOWING: FLAME SPREAD: 25 OR LESS. SMOKE DEVELOPED: 50 OR LESS. METHOD: ASTM E84 (NFPA 255). FIBERGLASS PIPE INSULATION: SCHULLER MICRO-LOK 850, HEAVY DENSITY PIPE INSULATION WITH AP-T JACKET. FIBERGLASS FITTING INSULATION: SCHULLER "ZESTON" FITTING COVERS WITH FACTORY-CUT FIBERGLASS INSULATION INSERT. DOMESTIC HOT WATER PIPING (ABOVE GRADE): 2" AND SMALLER PIPING: 1" FIBERGLASS, 2-1/2" AND LARGER PIPING: 1-1/2" FIBERGLASS, RUNOUT PIPING UP TO 2" NOT EXCEEDING 12 FEET IN LENGTH: 1/2" FIBERGLASS. DOMESTIC COLD WATER PIPING (ABOVE GRADE): ALL SIZES = 1/2" FIBERGLASS. ROOF DRAIN BOWLS AND DOWN LEADERS: 1" FIBERGLASS.



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### **ELECTRICAL SPECIFICATIONS**

The scope of the work covered herein consists of furnishing all labor, materials, necessary equipment and services to complete the Electrical Work and related work in full accordance as indicated on the drawings, as specified herein or both and subject to the terms and conditions of the Contract.

#### 2. <u>Codes, Rules, Permits, Fees</u>

Electrical Contractor is generally responsible to insure all work, both old and new, complies with the NEC and any applicable local and state codes and ordinances.

#### 3. <u>Drawings</u>

Drawings are diagrammatic and indicate the general arrangement of systems and work included in the contract. Drawings are not to be scaled. The Architectural drawings and details shall be examined for exact location of fixtures and equipment. Any conflict shall be immediately brought to the attention of the Architect or Engineer before proceeding with the work.

#### 4. Shop Drawings

Materials or products specified herein and/or indicated on drawings by trade name, manufacturer's name or catalog number shall be provided as specified.

#### 5. <u>Cooperation With Other Trades</u>

The Subcontractor shall give full cooperation to other trades and shall furnish in writing to the contractor, with copies to the Engineer, any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay. Coordinate all conduit runs and equipment with other trades. Verify nameplate electrical data of actual equipment furnished by others before beginning installation.

#### 6. <u>Cutting</u>, <u>Patching</u>, <u>And Finishing</u>

The Electrical Contractor shall do all cutting, drilling, etc. required for work under this section of the specifications, inside the building.

#### 7. Excavation And Backfilling

The Subcontractor shall do all trench and pit excavating and backfilling required for work under this section of the specifications, inside and outside the building, all required shoring, bracing, pumping and all protection for safety of persons and property.

#### 8. Material And Workmanship

All materials and apparatus required for the work shall be new unless indicated otherwise on the plans.

Electrical Contractor shall provide and install all electrical as shown, verifying all mounting heights and exact locations of all wall-mounted electrical devices with architect prior to rough-in.

Connections and junction boxes to equipment are diagrammatic. Verify exact location of connection to specific equipment and devices.

#### 9. <u>Panelboards</u>

Panels shall be as manufactured by Square-D, G.E., Siemens or equivalent of sizes, ratings, and requirements shown on the plans. Panels shall be of dead front construction. All bussing shall be as specified on panel schedules.

#### Multi-pole breakers shall have a single handle to trip all poles at once.

A laminated black plastic with white lettering plastic nameplates with the identification number as shown on the panel schedule shall be mounted on the outside of the door with sheet metal screws. Nameplate size shall be 3" wide X = 1-1/2" high with 1/2" high engraving. Provide a completed circuit directory, typed and mounted in a clear plastic sleeve, on the interior of the panel door.

#### 10. <u>Grounding</u>

Provide a complete grounding network for the entire electrical system to comply with NEC requirements. All conduits shall have a ground wire installed. A conduit ground shall not be used.

#### 11. <u>Disconnect Switches</u>

Equipment disconnect switches shall be Square-D, G.E., Siemens heavy duty of the type and rating on the plans. Fuses shall be provided of the appropriate type and rating for the equipment to be served.

### 12. <u>Miscellaneous Equipment</u>

Switches - All general use lighting (SPST toggle with or without pilot) switches to be rated 20A., 120-277V. as manufactured by Leviton, Lutron, P & S, or equivalent. Coordinate color with Owner/Architect.

Receptacles - All general use duplex receptacles to be rated 20A., 120V as manufactured by Leviton. Lutron, P & S, or equivalent. Coordinate color with Owner/Architect. Receptacles in patient care areas shall be hospital grade and red in color when on the critical branch. Label all cover plates with serving circuits.

Conductors - All conductors shall be rated 600V, copper, type THWN, XHHW/THHN. Where indicated aluminum conductors may be used and shall be type THHW/XHHW. Conductors of #8 AWG and larger shall be stranded. HCF listed cables are permitted in patient care areas per NEC 517.

Lighting fixtures — Lighting fixtures shall be as indicated on the fixture schedule or approved equals.

### 13. <u>Conduit</u>

Conduit shall be EMT, GRC, SCH. 40 PVC, SCH. 80 PVC, liquid tight metal flexible, or metal flexible.

GRC shall be used at exposed exterior locations and for panel feeders. Flex shall be used for connection to all fixed equipment, except in damp or wet locations, where liquid tight metal flexible shall be used. EMT shall be used at all exposed interior locations. All remaining locations may use PVC.

HCF listed cables are permitted in patient care areas per NEC 517.

Insulating bushings with double lock-nuts shall be used for entrance of 1-1/4" or larger into enclosures.

Sizes indicated are minimums, larger sizes may be used to facilitate wire pulls, etc.

### 14. Network And Access Cabling

Provide a 2' x 4' x 3/4" fire resistant plywood backboard for telephone distribution. A terminated bus bar shall be installed adjacent to the backboard. Install empty conduit(s) as indicated on the plans with pullwire installed for the telephone service entrance.

A 3/4" conduit shall be routed from all data outlets to the ceiling space. Terminate conduit in ceiling space with a 90 degree bend and bushing at end of conduit. Extend conduit to nearest accessible ceiling space if no access to the ceiling space above the outlet is present. Provide a conduit path through all obstructions to the backboard.

15. <u>Equipment Furnished By Others</u> Electrical Contractor shall provide conduit, wire and disconnect switches indicated on drawings, to connect electrical equipment supplied by others which shall include both new and relocation of existing equipment. All final electrical connections are to be by electrical contractor.

### 16. <u>Record Drawings</u>

The Contractor shall keep accurate records of actual construction including device locations and conduit runs if different from the plans.

The Contractor shall provide the owner with a reproducible set of plans of the complete electrical and special systems as installed. The scale on these drawings shall be no smaller than the scale used on the original plans.

### 17. <u>Testing</u>

Final tests shall be made only after the Engineer is satisfied that all work has been completed.

Acceptance testing of electrical gear shall be in accordance with NEC 517 and NETA STD ATS -Acceptance Testing Standards for Electrical Power Distribution Equipment and Systems.

### 18. <u>Final Acceptance</u>

After testing, a final inspection shall be made by the Engineer and other authorized persons with the

Final acceptance of the project shall not prejudice the Owner's right to require replacement and/or repair any defective work or materials.

### Electrical Contractor.

### **LEGEND**

#### CONTROL DUPLEX RECEPTACLE (120 V) SINGLE-POLE SWITCH THERMOSTAT (line voltage U.O.N. DEDICATED DUPLEX RECEPTACLE (120V) \$2 furnished by DIV. 15 U.O.N.) DOUBLE-POLE SWITCH (line voltage U.O.N. THREE-WAY SWITCH WEATHERPROOF RECEPTACLE furnished by DIV. 15 U.O.N.) GROUND FAULT RECEPTACLE FOUR-WAY SWITCH ⊖PC PHOTOCELL (voltage as required) ISOLATED GROUND RECEPTACLE SWITCH WITH PILOT LIGHT TIME CLOCK (24 hour U.O.N.) KEY SWITCH SWITCHED RECEPTACLE PUSHBUTTON STATION (number of \$wp WEATHERPROOF SWITCH HALF SWITCHED RECEPTACLE TIME SWITCH buttons indicated) DOUBLE DUPLEX RECEPTACLE FLUSH FLOOR RECEPTACLE, DUPLEX D600 DIMMER SWITCH (WATTAGE SHOWN) M LIGHTING CONTACTOR IRRIGATION CONTROLLER SPECIAL EQUIPMENT RECEPTACLE LIGHT SENSOR LOCKING RECEPTACLE S WALL OCCUPANCY SENSOR

OSD WALL DIMMER / OCCUPANCY SENSOR

SOUND and SIGNAL

VOLUME CONTROL

MICROPHONE OUTLET

INTERCOM OUTLET

#### (T=telephone, P=power, C=computer) JUNCTION BOX

SPEAKER

BUZZER

VNCNURSE CALL

CHIME

DATA, TELEPHONE, OR FAX OUTLET 

© CEILING OCCUPANCY SENSOR

CIRCUITRY and RACEWAYS CIRCUIT UP CIRCUIT DOWN → 1,3 HOME RUN (with circuit numbers) END OF CONDUIT RUN END OF RUN, CAP AND STAKE "RUN CONTINUES" INDICATION wm---

WIREMOLD (2-Channel)

PLUGMOLD

PM---

FLUSH FLOOR TELEPHONE OUTLET

TELEPOWER POLE

⟨#⟩ KEY NOTE (#) FEEDER NUMBER UON UNLESS OTHERWISE NOTED WP DEVICE DESIGNATED WEATHER PROOF AC DEVICE ABOVE COUNTER CLG DEVICE IN CEILING FLR DEVICE IN FLOOR TELEVISION ANTENNA OUTLET AFF ABOVE FINISHED FLOOR (E) EXISTING TO REMAIN (R) EXISTING TO BE RELOCATED

(D) EXISTING TO BE REMOVED

DESIGNATIONS

REVISION NOTE

# FLAG NOTE

MOUNTING HEIGHTS NOTES: . CENTERLINE DIMENSIONS ARE TO CENTER OF DEVICE WITH TRIM. ADJUST BACKBOX HEIGHT HEIGHT KEY LOCATION AS REQUIRED. ALL MOUNTING HEIGHTS SHALL CONFORM TO 48" MAX 8"A.C. Н THE LATEST EDITION OF THE AMERICANS WITH DISABILITIES ACT, (ADA). 46" MAX 48" MAX J 48" MAX K 78" MAX DIMENSIONS APPLY UNLESS OTHERWISE NOTED 18" MIN 80"-96" L 3" MIN 4" MIN М N 6" MIN EQUIP. PANEL —FC—F €-Ф**▲**△ ┰━╚═┼═╋Ф▼▽ DEVICE MOUNTING HEIGHT DETAIL

NUMBER	DRAWING TITLE	EVIEW SET 2/19/21	<u>ERMIŤ SET</u>	
		20		11
E-0.1	LEGEND, NOTES, SPECIFICATIONS, INDEX & ONE-LINE	°		
E-1.0	LIGHTING AND POWER PLAN	•		
COORDINATI	ON: 02/13/21 - ARCHITECTURAL DRAWING S 02/19/21 - PLUMBING DRAWING SET 02/19/21 - MECHANICAL DRAWING SET	ET	ı	l

KEY NOTES

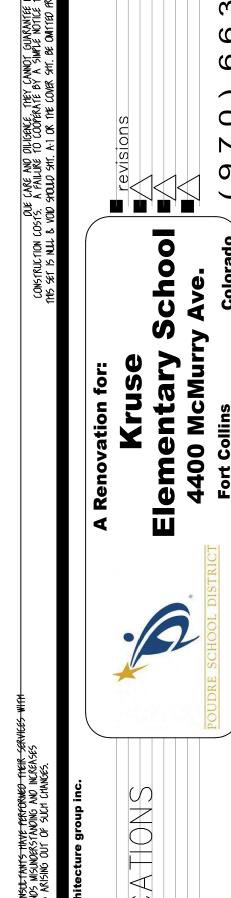
(THIS SHEET ONLY)

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LUM	INAIRE SCHED	ULE				
Tag	Lamps	Description	Manufacturer	Part No.	Voltage	Notes
L	8.9W LED	6" Diam. Recessed Down Light	Lithonia	LDN6 35/07 LO6 AR LSS MVOLT GZ10	120	1
W2	12.2W LED	2' Wall Bracket	Lithonia	WL2 12L MVOLT EZ1 LP835	120	1
Notes:						
1	Or Approved Equal					

MECHANICAL EQUIPMENT & MOTOR SCHEDULE													
KEY	EQUIPMENT CHARACTERISTICS						CIRCUIT			NOTES			
		HP RLA/FLA Watts PI				Volts	MCA	MOCP	MOCP Breaker		Fuse	Disconnect at unit	
EF-1	Exhaust Fan		0.5	65	1	120	0.7	20	20			Snap Switch	
P-1	Circulating Pump	0.4 45 1				120	0.5	20	20			Snap Switch	
NOTES													
1													





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sheet

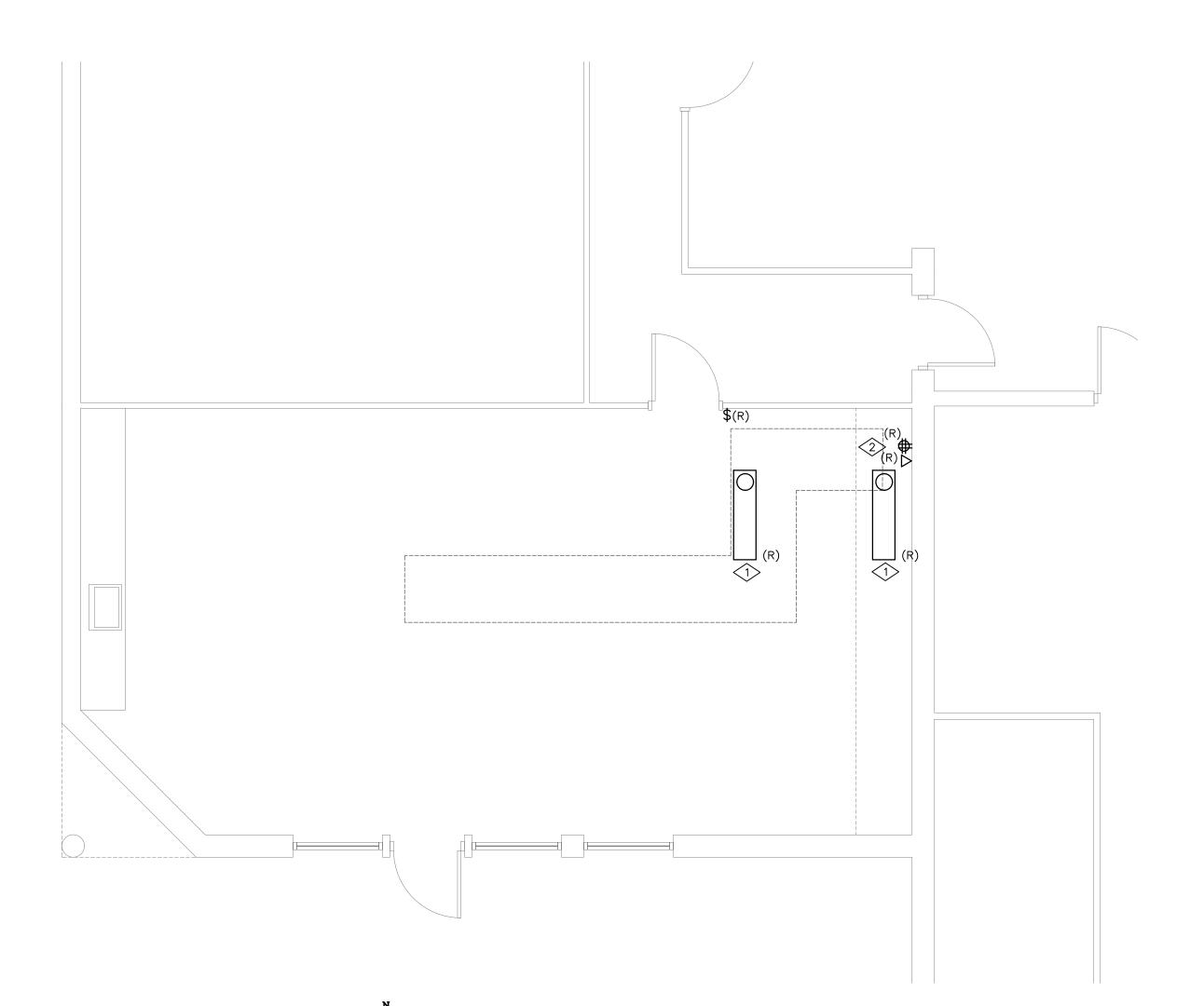
E-0.1

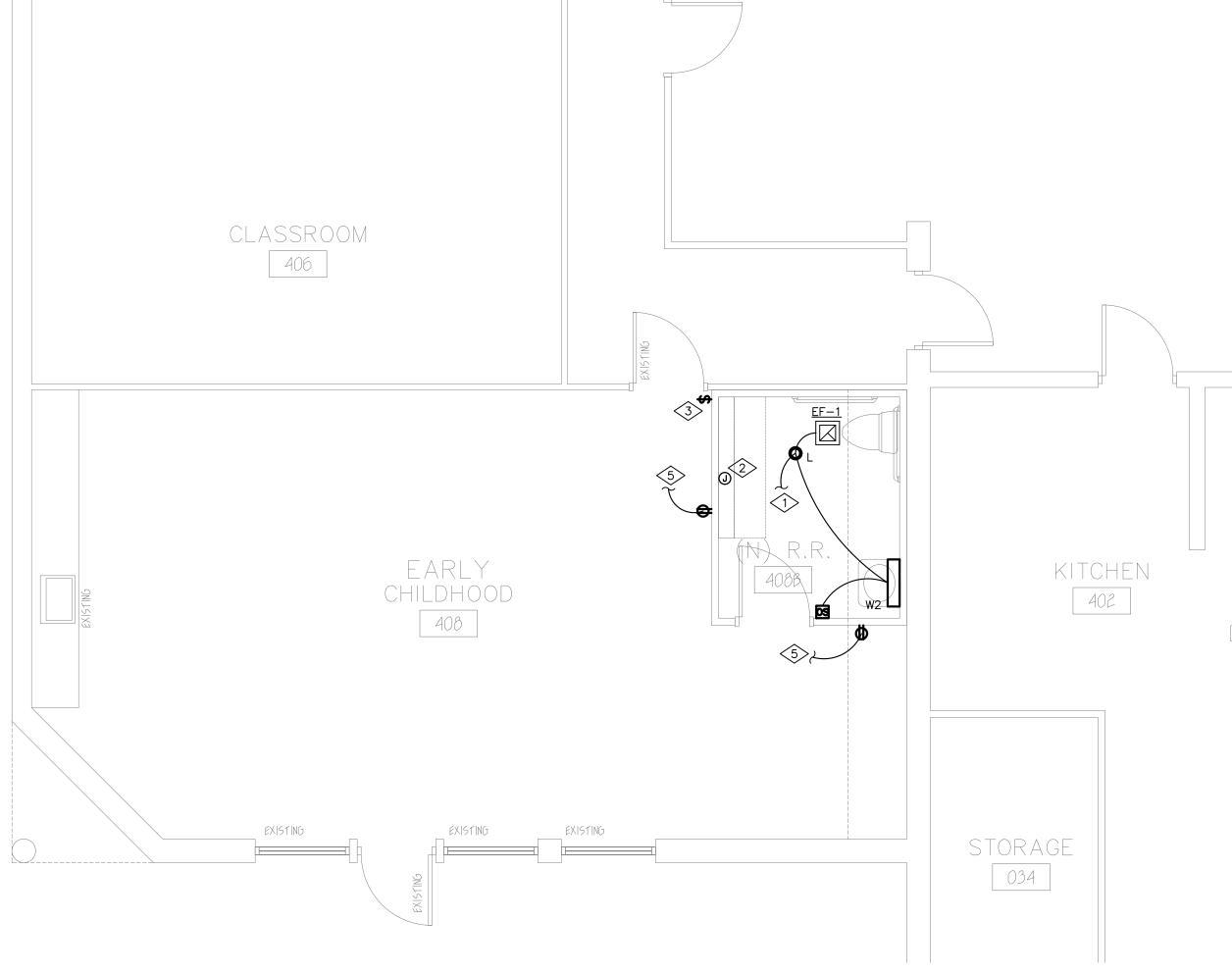
### DEMO NOTES

- REMOVE EXISTING LIGHT FIXTURE.
- REMOVE EXISTING DATA BOX AND RECEPTACLES. MAINTAIN INTEGRITY OF CIRCUIT DOWN STREAM.
- 3 EXISTING LIGHTING SWITCH TO BE RELOCATED.

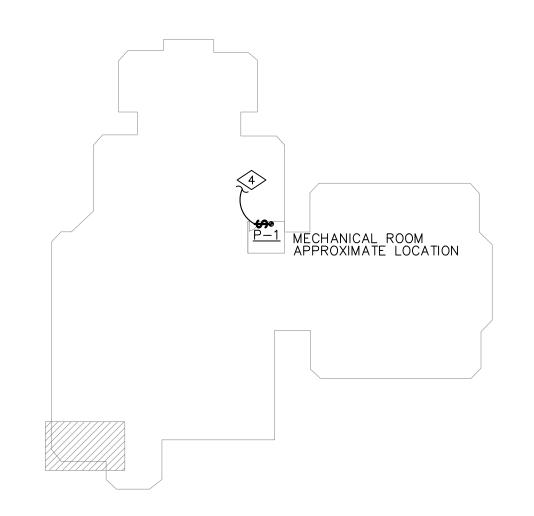
### KEY NOTES

- CONNECT TO EXISTING LIGHTING CIRCUIT, UPSTREAM OF LOCAL CLASSROOM SWITCHING. DOCUMENT CIRCUIT NUMBER ON RECORD DRAWINGS.
- PROVIDE J-BOX WITH CONDUIT STUBBED TO ACCESSIBLE CEILING SPACE FOR FIRE ALARM HORN / STROBE. COORDINATE EXACT LOCATION WITH G.C. AND OWNER. CABLING BY OTHERS.
- RELOCATED CLASSROOM LIGHTING SWITCH.
- CONNECT NEW CIRCULATION PUMP TO EXISTING RECEPTACLE CIRCUIT SERVING MECHANICAL ROOM.
- CONNECT TO NEAREST AVAILABLE 120V RECEPTACLE CIRCUIT SERVING AREA. DOCUMENT CIRCUIT NUMBER ON RECORD DRAWINGS.











### GENERAL NOTES:

- CONNECT ALL EXIT AND EM LIGHTS TO CIRCUITS SHOWN AHEAD OF LOCAL SWITCHING.
- 2. LUMINAIRES DENOTED "NL" SHALL BE CONNECTED AHEAD OF LOCAL SWITCHING.
- 3. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LIGHTING FIXTURE LOCATIONS.
- 4. REFER TO MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT.
- 5. ALL CONDUCTORS SHALL BE COPPER AND #12 UNLESS OTHERWISE NOTED.6. ALL SWITCHES, CONVENIENCE RECEPTACLES, AND PLATES SHALL BE WHITE NONMETALLIC UNLESS NOTED. CONFIRM COLOR WITH ARCHITECT PRIOR TO ORDERING DEVICES.
- 7. INSTALL, WHERE REQUIRED BY JURISDICTION, MANUFACTURE APPROVED SEALING KITS ON ALL RECESSED CANS INSTALLED IN INSULATED CAVITIES.
- 8. LABEL ALL JUNCTION BOXES WITH CIRCUIT NUMBERING DURING ROUGH—IN OF CONDUIT SYSTEM.
- 9. PROVIDE POWER FOR VVT'S AS REQUIRED BY M.C.. (REFER TO MECHANICAL PLANS)
- 10. COPIES OF ALL INSTALLATION, OPERATIONAL AND MAINTENANCE MATERIALS ARE TO BE SAVED PROVIDED TO THE PROJECT MANAGER FOR ASSEMBLY AND DELIVERY TO THE CONTRACTOR AND OWNER.
- 11. THE ELECTRICAL CONTRACTOR JOB FORMAN SHALL DOCUMENT ALL UNDERGROUND FEEDERS AS WELL AS ANY DEVIATIONS TO THE CONSTRUCTION DOCUMENTS ON THE RECORD DRAWINGS. SHOW DIMENSIONS ONLY WHEN ACCURACY CAN BE ASSURED.
- 12. COORDINATE EXACT RECEPTACLE LOCATIONS WITH ARCHITECTURAL DRAWINGS.



36652 03-19-21

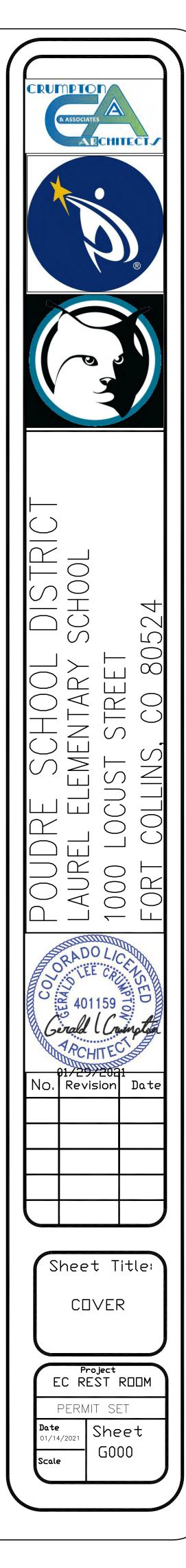
sheet

E-1.



# LAUREL ELEMENTARY SCHOOL

EARLY CHILDHOOD RESTROOM PROJECT



### ARCHITECT

CRUMPTON AND ASSOCIATES, ARCHITECTS 12891 JACKSON CIRCLE THORNTON, CO 80241 PHONE: 720.427.5421

- CIVIL CONSULTANT
- STRUCTURAL CONSULTANT
- MECHANICAL CONSULTANT

DESIGN POINT ENGINEERING, LLC 19 OLD TOWN SQUARE SUITE 238 FORT COLLINS, CO 80524 PHONE: 970.430.5783

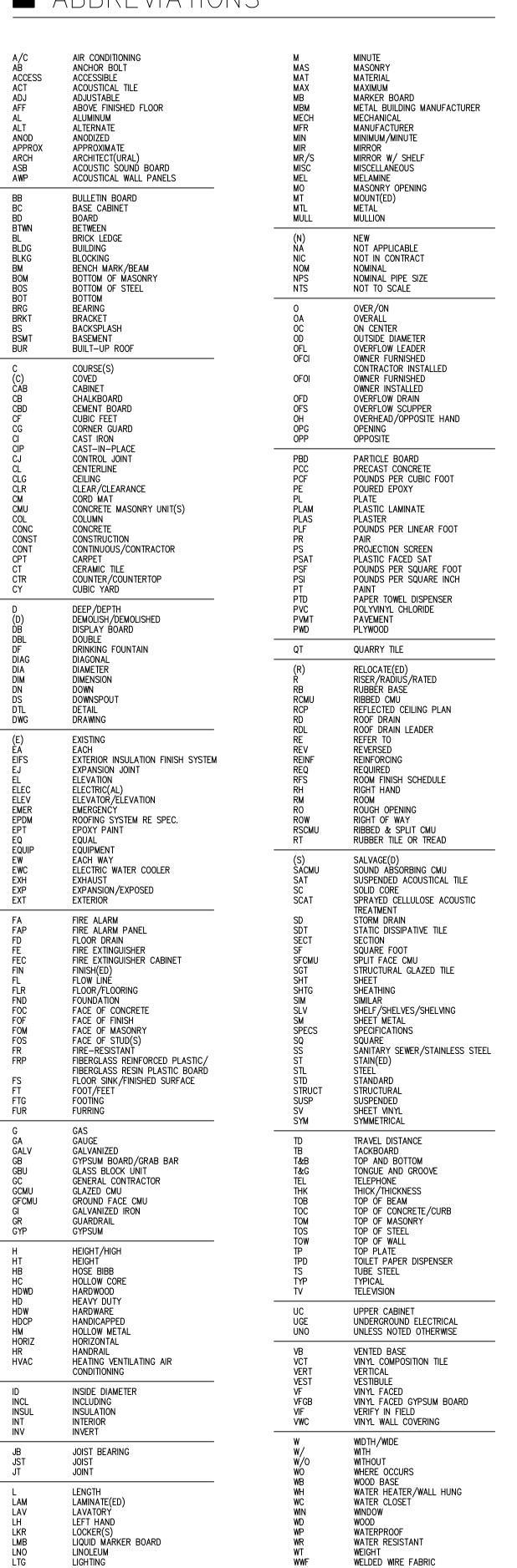
### ELECTRICAL CONSULTANT

RJ MCNUTT AND ASSOCIATES, LLC 6801 W 20TH STREET GREELEY, CO PHONE: 970.330.3266

### FIRE ALARM CONSULTANT

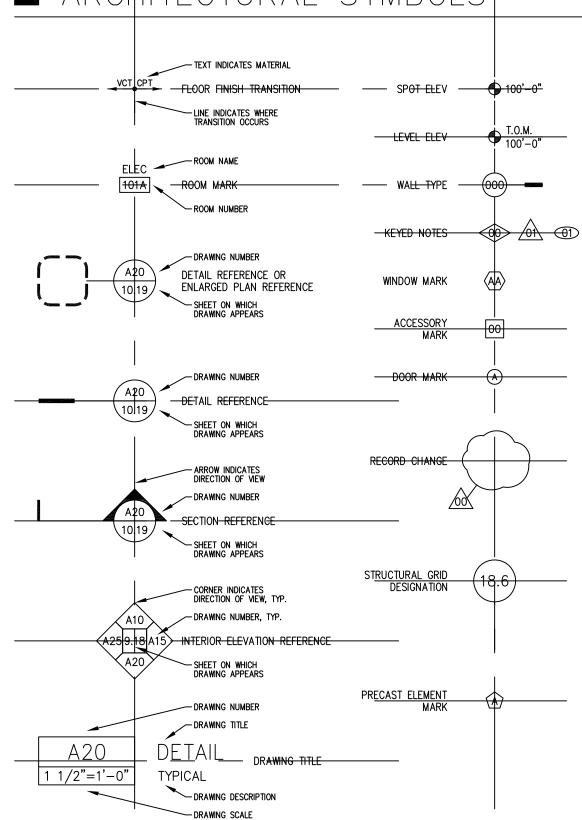
CODE ANALYSIS: CONSTRUCTION II-B OCCUPANCY IS E GROSS SQUARE FOOTAGE IS 75 OCCUPANT LOAD IS 1 FULLY SPRINKLED CODES USED 2015 IEBC LEVEL III, IBC, IFC, 2020 NEC, 2015 IECC AND ANSI 117.1/2009 METHODS OF COMPLIANCE USED: IEBC CHAPTER 301.1.1 PRESCRIPTIVE METHOD

### ABBREVIATIONS

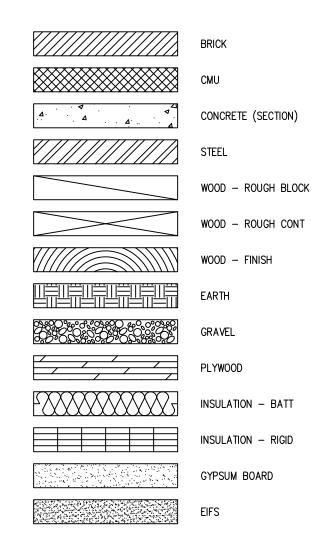


LOUVER

## ARCHITECTURAL SYMBOLS



### MATERIALS LEGEND



### S GENERAL NOTES

DEMOLITION WORK INCLUDES NOTES ON ALL SHEETS IN THE FOLLOWING DRAWING SET. THESE SHEETS ARE NOT INTENDED TO BE ALL INCLUSIVE OF THE COMPLETE SCOPE OF REQUIRED DEMOLITION. REMOVE EXISTING CONSTRUCTION REQUIRED FOR ALL WORK INCLUDING NEW MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND ASSOCIATED PATCHING / FINISHING REQUIRED TO COMPLETE ALL PHASES OF WORK.

DO NOT SCALE DRAWINGS. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IMMEDIATELY WHEN DISCREPANCIES ARE DISCOVERED.

IT IS THE RESPONSIBILITY OF THE MECHANICAL AND THE ELECTRICAL SUBCONTRACTOR TO REVIEW ALL THE DRAWINGS, INCLUDING ARCHITECTURAL, FOR WORK UNDER THEIR RESPECTIVE CONTRACTS. ROOF PLANS AND REFLECTED CEILING PLANS DESCRIBE MECHANICAL AND ELECTRICAL WORK AS DO OTHER ARCHITECTURAL DRAWINGS. NO EXTRAS WILL BE ALLOWED FOR WORK SHOWN IN ANY PART OF THESE DRAWINGS.

INTERIOR DIMENSIONS ARE FROM FACE OF STUD, FACE OF MASONRY, OR FACE OF CONCRETE (UNLESS NOTED OTHERWISE). WHERE DIMENSION IS NOTED "CLEAR", DIMENSION IS TO FINAL FINISH.

### DRAWING INDEX

### COVER

G000 COVER SHEET/CODE PLAN G100 SYMBOLS

GENERAL

CIVIL NOT USED

STRUCTURAL

NOT USED

ARCHITECTURAL

AD100 PARTIAL FLOOR PLAN SCHEDULES AND DETAILS

### ELECTRICAL

LEGENDS/NOTES DEMO PLAN ED101 E101 ELECTRICAL PLAN

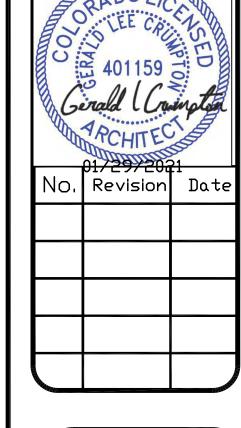
### FIRE

NOT USED

NOTES AND LEGENDS MECHANICAL FLOOR PLAN NOTES AND LEGENDS PLUMBING FLOOR PLAN

PLUMBING SCHEDULES AND DETAILS

### **ARY** ⊢ Z J $\geq$ 1000 Locust Ct Fort Collins, CO 80524 Laurel Elementary 970-488-592 AUR SADOLIA Elementary Area



CRUMPTON

DISTF CHOOL

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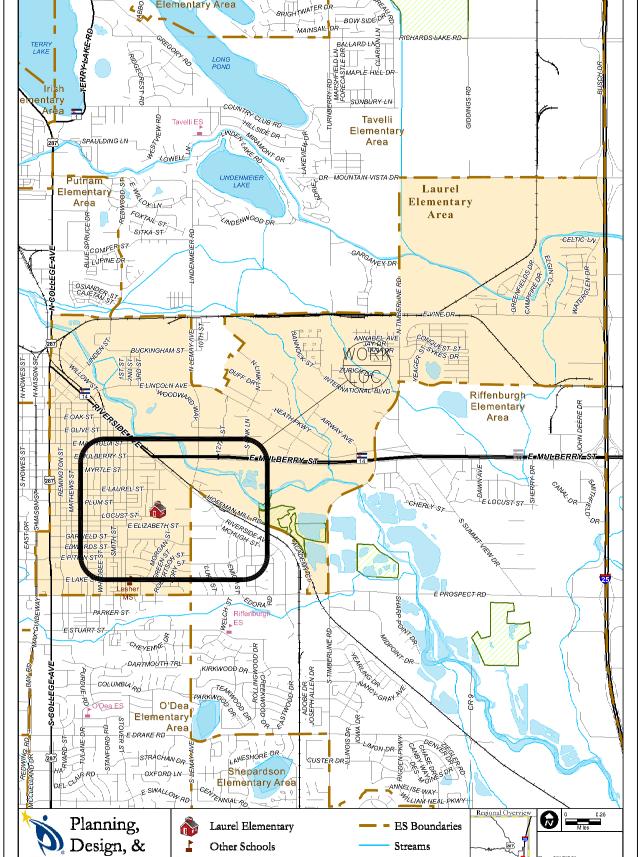
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Sheet Title: GRAPHICS

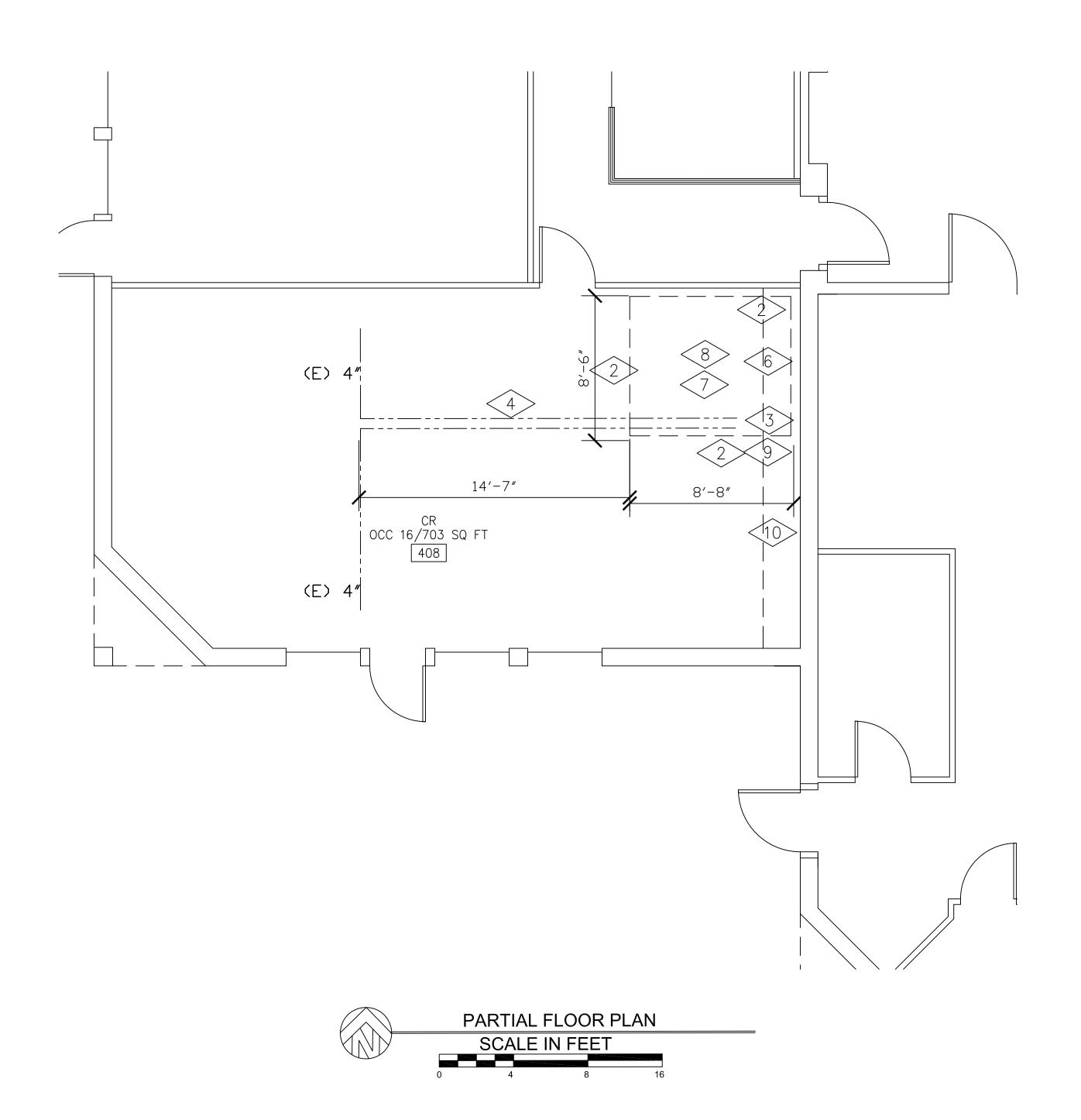
EC REST ROOM PERMIT SET Sheet G100 Scale



Laurel ES Boundary

Construction

Parks / C.E.



KEY DEMO NOTES:

1 NOT USED

2 R&R SOFT CEILING TO ACCOMMODATE (N) WALLS

MODIFY HARD CEILING FOR NEW WALL INSTALLATION.

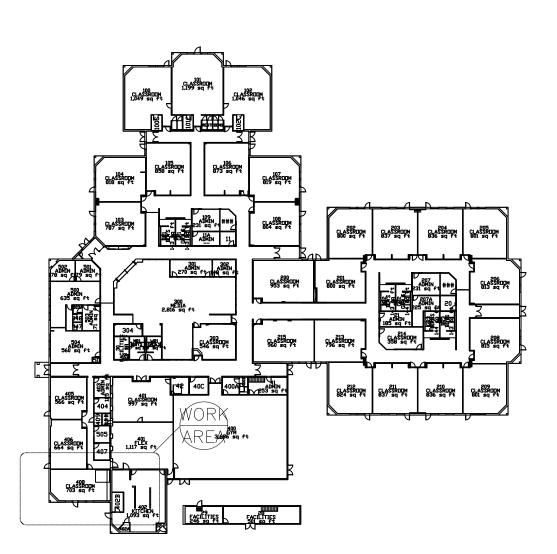
5 DEMO ELECTRICAL/LIGHTS SEE E SHEETS

6 CUT ROOF DECK FOR EF. REPAIR SEE G1/A300 & H1/A300, M SHEETS. PENETRATE WHERE THE ROOF IS FLAT.

7 FLOOR DRAIN SEE P SHEETS

MOVE (E) FIRE SPRINKLER HEAD TO INSIDE OF (N) TOILET ROOM.THIS IS DESIGN BUILD GC RESPONSIBILITY.

RELOCATE WHITE BOARD TO ACCOMMODATE NEW WALL

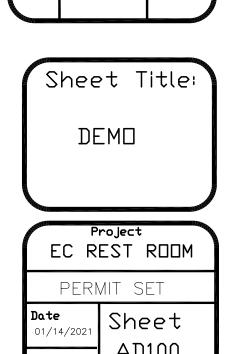


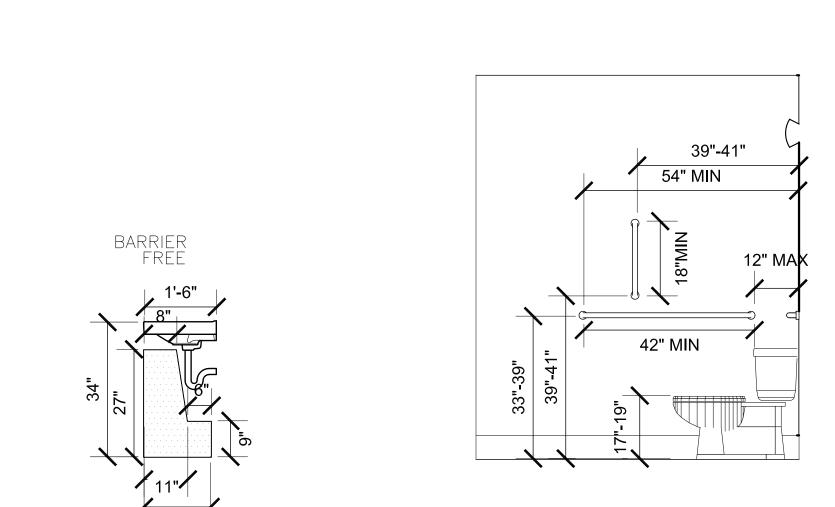




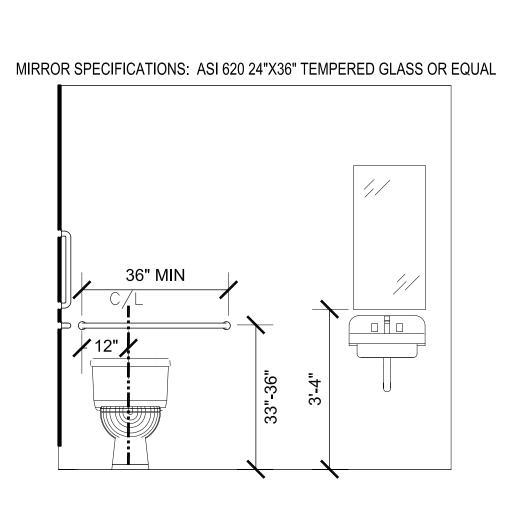
LAUREL ELEMENTARY SCHOOL

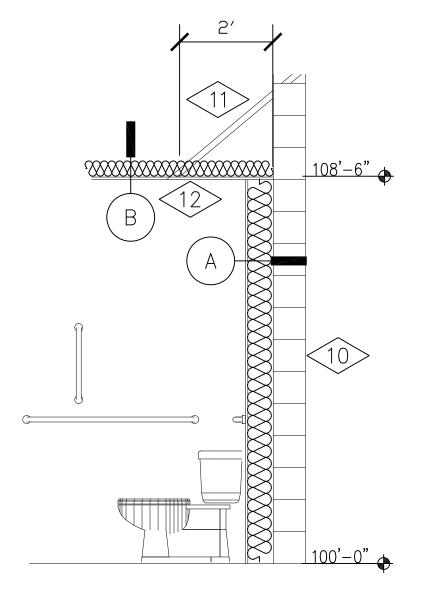
Single Control of the Con





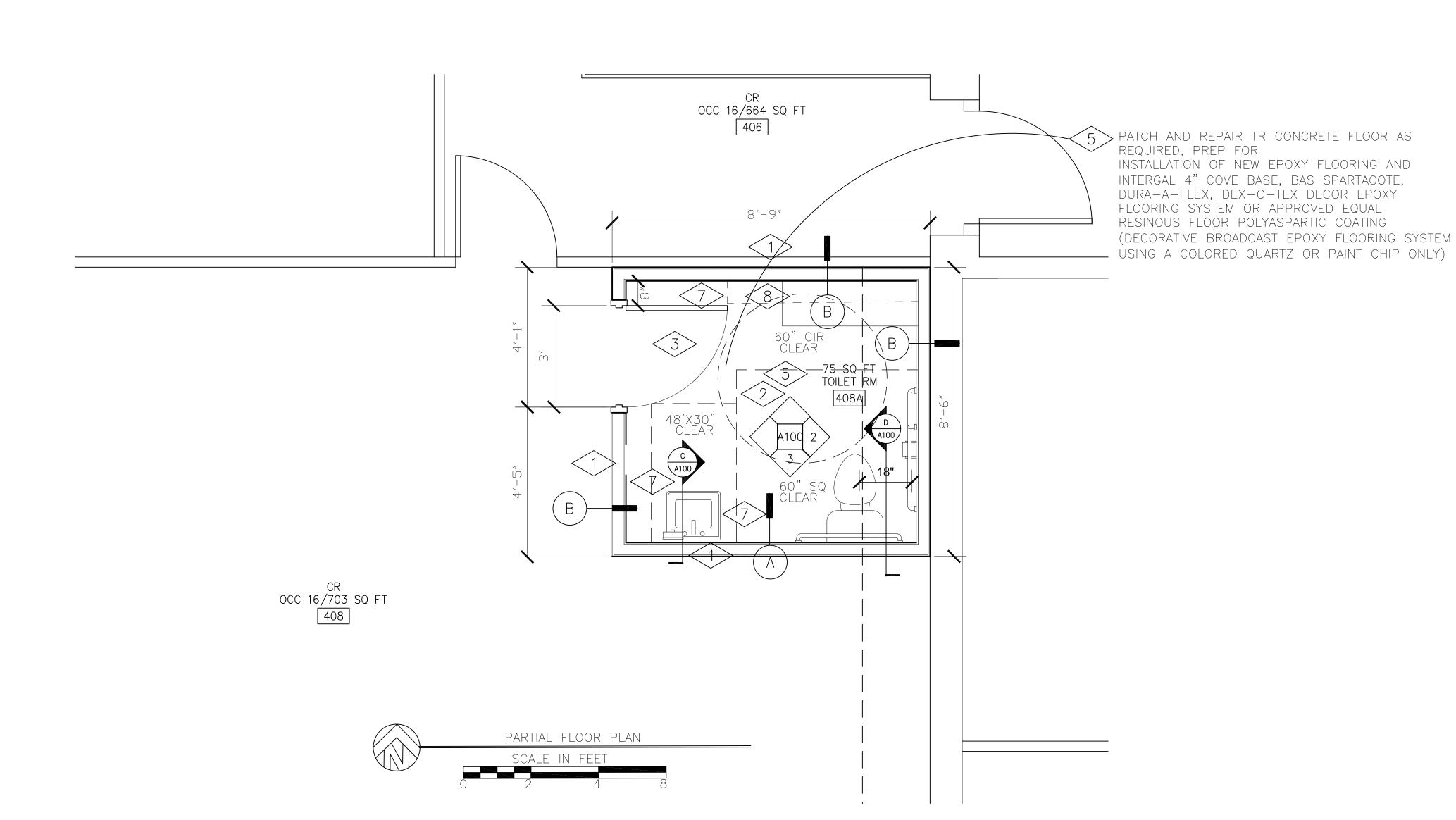
WALL ELEVATION





WALL ELEVATION

WALL SECTION SCALE 1/2" = 1'-0"



KEY NOTES:

1 NEW WALLS/CEILING

 $\langle 2 \rangle$  (N) FLOOR DRAIN SEE PLUMBING SHEETS

NEW HARD GYP CEILING INSULATE WITH SOUND ATTENUATION BATTS. SEE B/A301

4 PATCH CONCRETE/REPAIR CARPET

NEW POURED ACRYLIC FLOORS AND INTEGRAL 4" COVE BASE

<6> MEETS ANSI 117.1/2009 305, 404, AND 606

RFP GLASBOARD SANITARY PANELS SEC 068316 4"X12" CERAMIC WALL TILES. DALTILE, WALL COLOR ARTIC WHITE WHITE 0190, OCEAN BLUE 1049 BULL NOSE CAPS.

8 FOLDING DIAPER TABLE OWNER SUPPLIED/CONTRACTOR INSTALLED AND LOCKABLE STORAGE CABINETS MADE IN FIELD, BOTTOM OF CABINET 5'-0"

9 NOT USED

(E) BLOCK WALL

(E) ACT CEILING

12> BUILD NEW CEILING UNDER (E) SOFFIT SEE D/A100

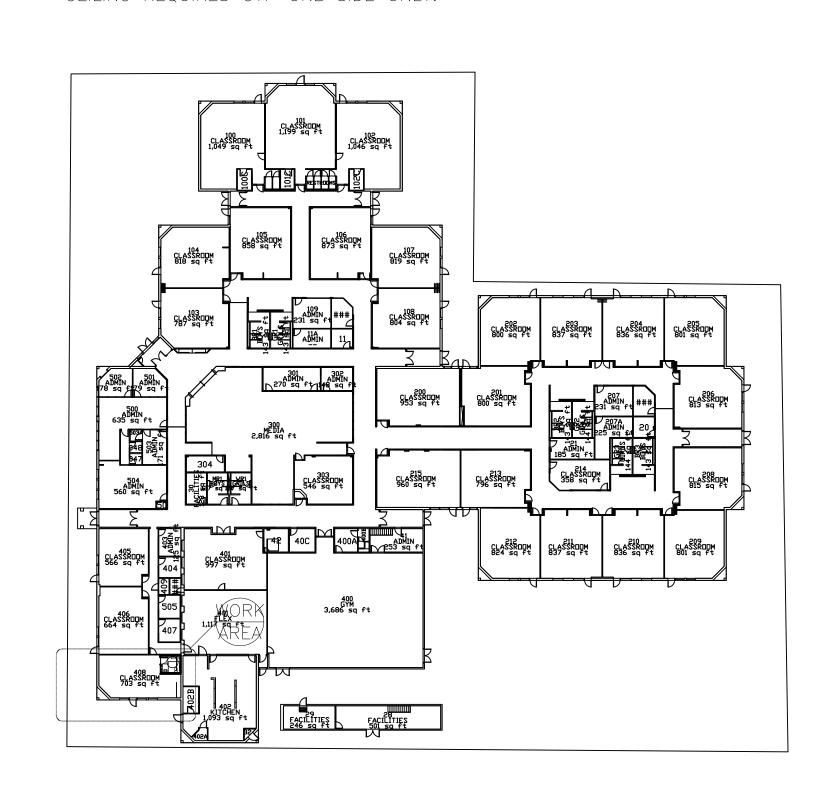
WALL TYPE PLUMBING. PLUMBING WALL ASSEMBLY: 7" NOMINAL WALL,

5/8"GYP, SOUND ATTENUATION INSULATION AND METAL 20 GA STUDS 16" OC. TAPE DRYWALL TO A LEVEL 4, PRIME AND PAINT. COLOR TBD. ALL PARTITIONS ARE 6" ABOVE (E) CEILINGS

WALL AND CEILING TYPE — WALL ASSEMBLY: 5" NOMINAL WALL, 5/8"GYP, SOUND ATTENUATION INSULATION AND METAL 20 GA STUDS

16" OC. TAPE DRYWALL TO A LEVEL 4, PRIME AND

PAINT. COLOR TBD. CEILING REQUIRES GYP ONE SIDE ONLY.







8052 H H H 000 01/29/2021 No. Revision

Sheet Title:

PLAN VIEW

Date

EC REST ROOM PERMIT SET Sheet

### FINISH SCHEDULES

			DOOR TYPES						FRAME TYPES				DETAILS	REMARKS	
NUM.	ROOM NAME		TYPE	MAT'L	LABEL	HEIGHT	WIDTH	THICK	TYPE	MAT'L	LABEL	THROAT		TYPE	
408A	TOILET		NEW	WD	NR	7'-0"	3'-0"	1 3/4"	F1	НМ	NR	5"		16 GA	NEW DOOR, FRAME AND HARDWARE

	LOCK SET	HINGES	DOOR STOP	KICK PLATE	SILENCERS
408A	TOILET (1) EA PRIVACY LOCKSET ND40SRH O626, 6 PIN CORE	(3) EA HINGES SBBL US32D IVE	(1) EA WALL STOP WS407 CCV US32D IVE	1 ) EA KICKPLATE 8400 10"X34" US32D IVE	(1 )ONE SET

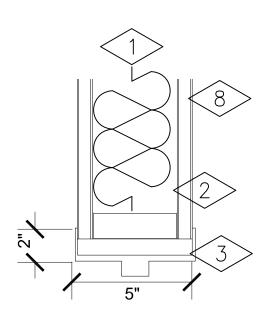
WALL PAINT

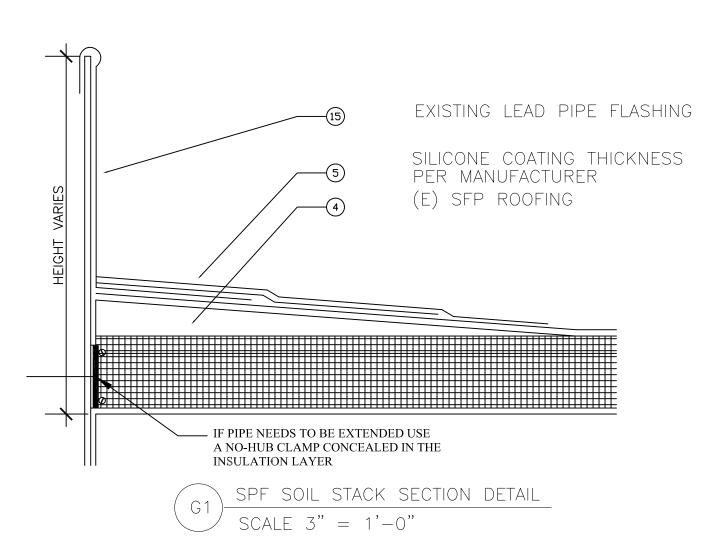
DOOR HARDWARE

406A TOILET ONE COAT OF WHITE PRIMER DU-1507 PRO MAX, TWO COATS SEMI-GLOSS LAYTEX BASED DS1695 HEALTH KOTE OR APPROVED EQUAL

CARPET

TANDUS, MANNINGTON OR MOHAWK ARE APPROVED MANUFACTURERS: MATCH EXISTING. USE MATERIAL SALVAGED FROM DEMO

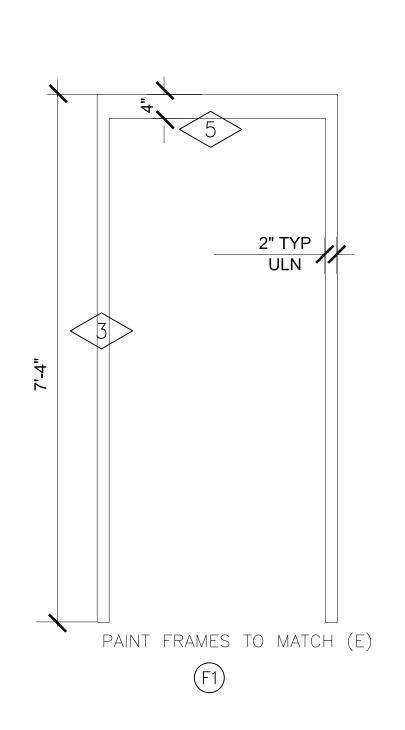




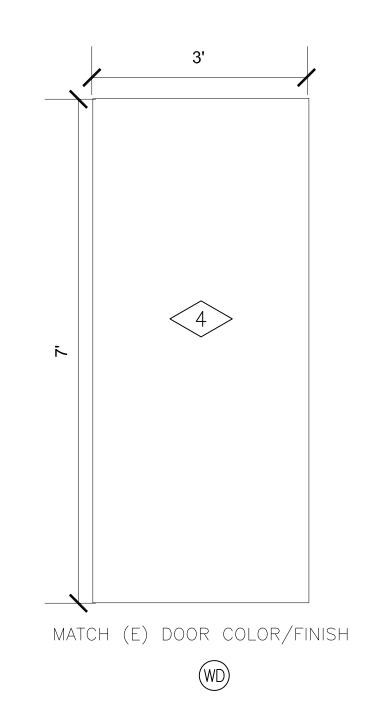
4) TAPERED EDGE SET IN HOT ASPHALT OR MECHANICALLY FASTENED.

5) 5 COURSE STRIPPING (PLASTIC CEMENT, FABRIC, PLASTIC CEMENT, FABRIC, PLASTIC CEMENT).

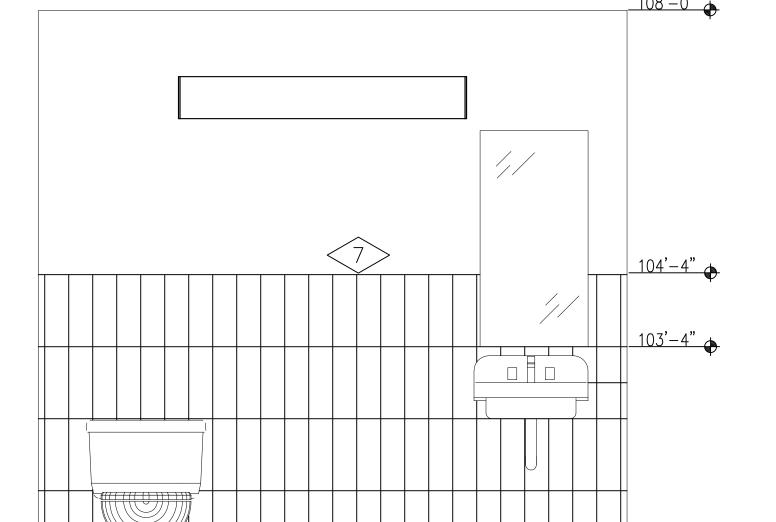
15) LEAD JACK, PRIME, SET IN PLASTIC CEMENT, STRIP IN WITH COTTON FABRIC AND PLASTIC CEMENT 5 COURSE STYLE.



SCALE 3/4" = 1'-0"



SCALE 3/4" = 1'-0"



INTEGRAL 4" COVE BASE

100'-4"

100'-0"

MIRROR SPECIFICATIONS: ASI 620 24"X36" TEMPERED GLASS OR EQUAL

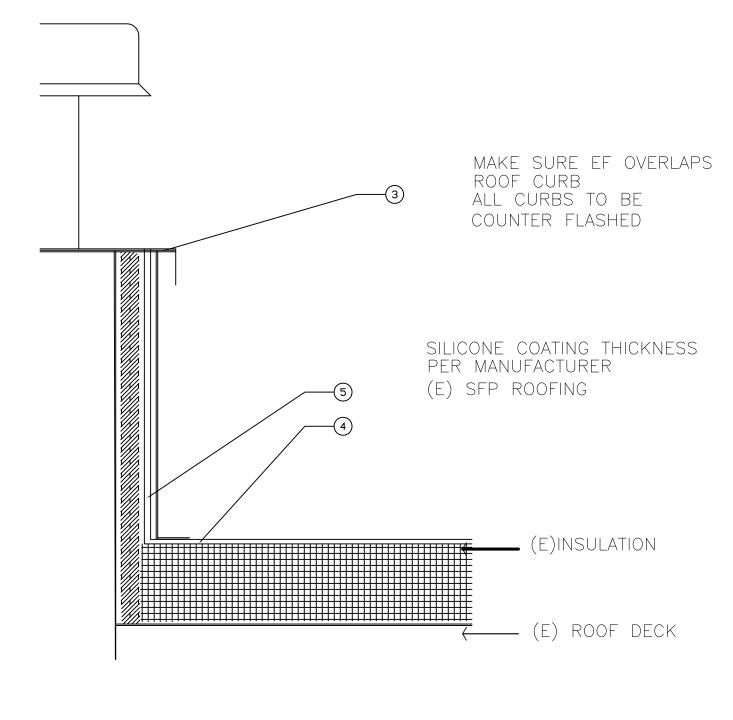


### KEYED NOTES

- SOUND ATTENUATING INSULATION 3.5". OWENS CORNING QUITEZONE ALL WALLS AND CEILING.
- 20 GA METAL STUD
- HM FRAME 16 GA
- FINISH TO MATCH WOOD DOOR 1 3/4" THICK
- PAINT TO MATCH EXISTING FRAME COLOR
- PRIME AND PAINT NEW WORK IMPACTED BY THE CONSTRUCTION
- RFP GLASBOARD SANITARY PANELS SEC 068316 OR ALTERNATE 1 4"X12" CERAMIC WALL TILES. DALTILE, WALL COLOR ARTIC WHITE WHITE 0190, OCEAN BLUE 1049 BULL NOSE CAPS.
- 8 5/8" TYPE X GYP

CONTRACTOR TO COORDINATE AND VERIFY ROOF PENETRATION OCCURS IN THE FLAT PORTION OF THE ROOF

### SEE M SHEETS FOR DIMENSIONS







 $\mathbb{H}$ COL LAUR 1000 FORT

Sheet Title: SCHEDULES DETAILS EC REST ROOM

PERMIT SET

### PLUMBING GENERAL NOTES AND SPECIFICATIONS:

- 1. ALL WORK SHALL COMPLY WITH THE POUDRE SCHOOL DISTRICT TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN A COPY PRIOR TO THE BID AND NOTIFY THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES. WHERE A CONFLICT OCCURS, THE CONTRACTOR SHALL INCLUDE IN THEIR BID THE MORE STRINGENT (HIGHEST COST) REQUIREMENT.
- 2. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL AND STATE CODES INCLUDING BUT NOT LIMITED TO THE 2018 INTERNATIONAL BUILDING, FIRE, MECHANICAL, PLUMBING, FUEL GAS, AND ENERGY CONSERVATION CODES (IBC, IFC, IMC, IPC, IFGC, IECC) WITH LOCAL AMENDMENTS.
- 3. CONTRACTOR AND SUB-CONTRACTORS SHALL PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT TO COMPLETE ALL WORK SHOWN ON PLANS, CALLED FOR IN SPECIFICATIONS, OR REASONABLY IMPLIED FOR A COMPLETE INSTALLATION.
- 4. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON DRAWINGS WITH ACTUAL FIELD CONDITIONS. COORDINATE DRAWINGS WITH ACTUAL FIELD CONDITIONS. COORDINATE WORK LAYOUTS AND LOCATIONS OF OPENINGS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WITH DRAWINGS OR OTHER REQUIREMENTS. VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OR CONSTRUCTION AND NOTIFY ENGINEER OF ANY
- 5. PLUMBING DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE REQUIRED OFFSETS, FITTINGS, ETC. DO NOT SCALE DRAWINGS, USE DIMENSIONS ONLY. ALL DIMENSIONS/LAYOUTS SHOWN ARE APPROXIMATE, FIELD VERIFY ALL WORK PRIOR TO ORDERING MATERIALS OR INSTALLING
- 6. KEEP SITE AND BUILDING ACCESSIBLE AND SAFE TO CONTRACTOR'S PERSONNEL, OWNER'S EMPLOYEES AND PUBLIC AT ALL TIMES. CONTRACTOR SHALL ENSURE SAFETY OF PERSONNEL, OWNER AND PUBLIC DURING ALL WORK AND COMPLY WITH ALL APPLICABLE REGULATIONS AND ORDINANCES PERTAINING TO SAFETY OF PERSONS AND PROPERTY.
- 7. INSTALL ALL WORK IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, ANCHORING ALL COMPONENTS PLUMB, LEVEL, SQUARE, AND FIRMLY INTO PLACE IN FIRST CLASS MANNER AND WORKMANSHIP ACCORDING TO STANDARD CONSTRUCTION PRINCIPLES & AS APPROVED BY ENGINEER.
- 8. THROUGHOUT THE WORK, CAULK AND SEAL ALL JOINTS REQUIRED TO PROVIDE A POSITIVE BARRIER AGAINST THE PASSAGE OF AIR AND MOISTURE.
- 9. PROTECT EXISTING OR ADJACENT SITE IMPROVEMENTS, EXISTING FLOOR, WALL, CEILING AND ROOF FINISHES, FURNISHINGS AND EQUIPMENT TO REMAIN DURING CONSTRUCTION. REPLACE OR REPAIR ANY DAMAGED IMPROVEMENTS. MATERIALS, FINISHES, FURNISHINGS OR EQUIPMENT TO SATISFACTION OF ARCHITECT/ENGINEER.
- 10. REPLACE OR REPAIR ANY DAMAGED SURFACES, FILL AND PATCH HOLES, ETC., TO MATCH ADJACENT SURFACES AFTER ALL ALTERATIONS AND OTHER WORK IS COMPLETED, TO SATISFACTION OF ARCHITECT/ENGINEER.
- 11. PRIOR TO THE DEMOLITION OF ANY EXISTING EQUIPMENT, COORDINATE WITH THE OWNER TO DETERMINE WHAT EQUIPMENT THEY MAY WANT TO KEEP. ANY EQUIPMENT NOT WANTED BY THE OWNER SHALL BECOME THE PROPERTY OF \( \textstyle \) THE GENERAL CONTRACTOR AND SUBCONTRACTORS AND SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN A LAWFUL MANNER.
- 12. THE ENGINEER HAS ENDEAVORED TO LOCATE AND IDENTIFY THE PLUMBING EQUIPMENT AND PIPING IN THE SCOPE OF WORK INCLUDING IDENTIFYING SIZES. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ADDITIONAL MINOR MECHANICAL WORK THAT MAY NOT BE SHOWN IN ORDER TO PROVIDE A COMPLETE AND WORKING SYSTEM.
- 13. ASBESTOS MAY BE ENCOUNTERED DURING MECHANICAL WORK INCLUDING BUT NOT LIMITED TO PIPE INSULATION. IF THE CONTRACTOR DURING CONSTRUCTION ENCOUNTERS WHAT IS BELIEVED TO BE ASBESTOS CONTAINING MATERIALS, NOTIFY THE ENGINEER IMMEDIATELY.
- 14. WHERE THE CEILING SPACE IS TO BE USED AS A RETURN AIR PLENUM, THE MECHANICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES TO ENSURE THAT ALL MATERIALS ARE NON-COMBUSTIBLE AND HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 - REFER TO MECHANICAL PLANS.
- 15. COORDINATE WITH THE G.C. TO PROVIDE ACCESS PANELS AS REQUIRED TO ACCESS VALVES, PLUMBING ACCESSORIES, ETC. REQUIRED FOR THE PROPER MAINTENANCE OF THE PLUMBING SYSTEMS.
- 16. COORDINATE WITH G.C. TO PATCH ROOFING, ROOF DECK, AND FLASHINGS AS REQ'D WITH NEW MATERIALS AND FLASHINGS FOR ALL NEW ROOF PENETRATIONS.

- 17. DO NOT RUN PIPES ABOVE ELECTRICAL PANELS OR EQUIPMENT. COORDINATE 35. OFFSET FLANGES AND CROSS FITTINGS ARE NOT PERMITTED. WITH THE E.C. FOR LOCATIONS PRIOR TO THE START OF WORK.
- 18. SEE THE <u>PLUMBING FIXTURE CONNECTION SCHEDULE</u> FOR MINIMUM PIPE SIZES TO THE FIXTURES. PROVIDE A INCREASER/REDUCER AS REQUIRED AT THE FIXTURE CONNECTION.
- 19. DOMESTIC WATER PIPING SHALL BE TYPE 'L' COPPER ASTM B88 WITH ASME B16.18 CAST COPPER OR ASME B16.22 WROUGHT COPPER OR ASME B16.51 PRESS-CONNECT FITTINGS, SOLDER JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.
- 20. PIPING INSULATION SHALL BE INSTALLED BY A QUALIFIED INSULATION CONTRACTOR WITH A MINIMUM OF 3-YEARS DOCUMENTED EXPERIENCE INSULATION WORK SHALL BE COMPLETE WITH ALL EDGES SEALED, PER INDUSTRY STANDARDS. AND TO THE SATISFACTION OF THE ENGINEER. SEE THE FOLLOWING PARAGRAPHS FOR INSULATION REQUIREMENTS.
- 21. COPPER DOMESTIC WATER PIPES SHALL BE INSULATED WITH FIBERGLASS PIPE INSULATION JACKETED WITH A REINFORCED VAPOR RETARDER FACING WITH A FACTORY LONGITUDINAL ACRYLIC ADHESIVE CLOSURE SYSTEM. OVERSIZE HANGERS FOR INSULATION SO NO PENETRATION OF THE VAPOR BARRIER OCCURS. PROVIDE INSERTS AND SADDLES AS REQUIRED TO PREVENT INSULATION DAMAGE FROM SUPPORTS. JOHNS MANVILLE MICRO-LOK OR
- EQUAL BY KNAUF OR OWENS CORNING. 21.1. DOMESTIC COLD WATER: 0.5" THICK (PIPES 11/4" AND SMALLER), 1" THICK (PIPES 1½" AND LARGER)
- 21.2. DOMESTIC HOT WATER: 1" THICK (PIPES 11/4" AND SMALLER), 11/2" THICK (PIPES 1½" TO 4")
- 21.3. DOMESTIC HOT WATER RECIRC: 1" THICK (ALL SIZES).
- 22. PROVIDE AND INSTALL PIPE HANGERS IN ACCORDANCE WITH MSS SP-58. PIPE HANGERS SHALL HAVE A GALVANIZED INSULATION SADDLE (11/2" AND SMALLER) OR PIPE INSERT (2" AND LARGER) TO PROTECT INSULATION.
- 23. WASTE & VENT PIPING (EXCEPT IN RETURN AIR PLENUM-RE: MECHANICAL): 23.1. SOLID CORE SCHEDULE 40 PVC, ASTM D2665. FITTINGS SHALL BE ASTM D2665. JOINTS SHALL BE ASTM D2855 SOLVENT WELD WITH ASTM D2564 SOLVENT CEMENT. CELLULAR CORE IS NOT ACCEPTABLE. 23.2. USE PURPLE PVC PRIMER. CLEAR PRIMER NOT ACCEPTABLE
- 24. WASTE AND VENT PIPING (IN RETURN AIR PLENUM-RE: MECHANICAL): 24.1. CAST IRON PIPE, CISPI 301, HUB-LESS, SERVICE WEIGHT. FITTINGS SHALL BE CAST IRON, CISPI 301. JOINTS SHALL BE CISPI 310, NEOPRENE GASKETS AND STAINLESS STEEL CLAMP-AND-SHIELD ASSEMBLIES.
- 25. DOMESTIC WATER PIPING MAY NOT BE INSTALLED IN ANY EXTERIOR WALLS.
- 26. ACCEPTABLE VALVE MANUFACTURERS MANUFACTURERS: APOLLO VALVE, JOMAR, NIBCO, RED & WHITE, OR PRIOR APPROVED EQUAL
- 27. ALL VALVES USED ON DOMESTIC WATER SYSTEMS SHALL BE LEAD FREE AND NSF RATED.
- 28. USE DIELECTRIC NIPPLES OR FLANGES WHERE JOINING DISSIMILAR METALS. DIELECTRIC UNIONS SHALL NOT BE USED.
- 29. BALL VALVES 2" AND SMALLER: NSF 61 COMPLIANT, MSS SP110, 600 PSI WOG. TWO PIECE BRONZE BODY. CHROME PLATED BRASS BALL, FULL PORT. TEFLON SEATS. BLOW-OUT PROOF STEM, SOLDER OR PRESS-CONNECT ENDS, EXTENDED LEVER HANDLE AS REQUIRED FOR OPERATION WITH PIPING

INSULATION.

PORT.

- 30. MANUAL BALANCING VALVES: NSF 61 COMPLIANT, 400 PSI AT 250°F, BALL TYPE VALVE WITH CALIBRATED NAMEPLATE AND MEMORY STOP. LEAD-FREE BRASS BODY WITH SOLDER OR PRESS-CONNECT ENDS. DIFFERENTIAL PRESSURE READOUT PORTS WITH INTERNAL CHECK VALVES. STAINLESS STEEL BALL, TEFLON SEAT RINGS, AND EPDM O-RING. 1/4" TAPPED DRAIN/PURGE
- HORIZONTAL SWING CHECK VALVES 2" AND SMALLER: NSF 61 COMPLIANT, MSS SP 80, CLASS 125, BRONZE BODY AND CAP, Y-PATTERN, BRONZE
- REGRINDING DISC, SOLDER OR PRESS-CONNECT ENDS. 32. SPRING LOADED CHECK VALVES 2" AND SMALLER: NSF 61 COMPLIANT, MSS SP 80, CLASS 125, BRONZE BODY, IN-LINE SPRING LIFT CHECK, SILENT CLOSING, BUNA-N DISC, INTEGRAL SEAT, SOLDER OR PRESS-CONNECT ENDS.
- 33. PROVIDE BALL VALVES ON ALL BRANCH WATER LINES WHETHER SHOWN ON THE PLANS OR NOT.
- 34. REFERENCE ARCHITECTURAL PLANS FOR EXACT FIXTURE LOCATIONS. EXAMINE ROUGH-IN FOR WATER AND WASTE PIPING. USE MANUFACTURER'S ROUGH-IN DIMENSIONS. ADJUST EXISTING AS REQUIRED. REFER TO THE ARCHITECTURAL PLANS FOR EXACT FIXTURE LOCATION DIMENSIONS.

- 36. INSTALL PLUMBING FIXTURES LEVEL AND PLUMB. SEAL AROUND FIXTURES TO WALL OR FLOOR WITH SEALANT TO MATCH FIXTURE. CLEAN ALL FIXTURES BEFORE TURNING OVER TO THE OWNER.
- 37. PROVIDE A QUARTER TURN STOP ON THE WATER SUPPLY TO EACH PLUMBING FIXTURE. INSTALL STOPS SO THAT THEY ARE EASILY ACCESSIBLE. ALL SUPPLIES AFTER THE STOPS TO BE RIGID CHROME PLATED.
- 38. ALL PIPE PENETRATIONS THROUGH THE FLOORS AND WALLS SHALL BE SLEEVED WITH GALVANIZED STEEL. SLEEVES SHALL BE LARGE ENOUGH TO ALLOW FOR INSULATION TO BE CONTINUOUS THROUGH THE SLEEVE. SEAL AROUND SLEEVES AND PROVIDE CHROME PLATED ESCUTCHEONS IN FINISHED SPACES.
- 39. WHERE PIPES PENETRATE A FIRE RATED ASSEMBLY PACK THE VOID WITH BACKING MATERIAL AND SEAL WITH UL LISTED FIRE CAULK TO MEET THE FIRE RATING OF ASSEMBLY PENETRATED. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND TYPES OF FIRE RATED ASSEMBLIES.
- 40. INSTALL TRAP AND VENT ON THE DRAIN OUTLET OF EACH FIXTURE TO BE DIRECTLY CONNECTED TO THE SANITARY SEWER SYSTEM. EXPOSED P-TRAPS LOCATED UNDER SINKS TO BE 17 GA. CHROME WITH CLEANOUT.
- 41. WALL CLEANOUTS IN FINISHED AREAS SHALL BE LINE TYPE WITH ROUND STAINLESS STEEL ACCESS COVER SECURED WITH MACHINE SCREWS.
- 42. FLOOR AND GRADE CLEANOUTS IN FINISHED AREAS SHALL BE LINE TYPE, CAST IRON BODY WITH ADJUSTABLE RISER, NO-HUB OUTLET. CAST IRON FRAME AND GRATE COVER AND INTERNAL PLUG.
- 43. PLUMBING VENTS THROUGH THE ROOF SHALL BE 3" MINIMUM. WHERE THE CONNECTING PIPE IS SMALLER, THE PIPE SHALL TRANSITION A MINIMUM OF 12" BELOW THE ROOF STRUCTURE AND THEN EXTEND THROUGH THE ROOF AS A 3" PIPE.
- 44. COORDINATE EXACT LOCATION OF EQUIPMENT AND ROUTES TO AND FROM EQUIPMENT WITH STRUCTURE AND CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR OFFSETS OF PIPING TO AVOID CONFLICTS. NOT ALL OFFSETS, FITTINGS, EXTENSIONS SHOWN THAT MAY BE REQUIRED DURING CONSTRUCTION
- 45. LABEL ALL DOMESTIC WATER, WASTE, VENT, AND GAS PIPES WITH NAMES AND FLOW ARROWS. LABELS SHALL BE NOT MORE THAN 10'-0" APART AND SHALL BE LOCATED AT ALL ACCESS LOCATION TO CONCEALED SPACES. EXTERIOR GAS PIPING TO HAVE STENCIL PAINT LABELS AND FLOW ARROWS.
- 46. TEST ALL WATER, WASTE, AND VENT PIPING IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE AND PER THE LOCAL AUTHORITY HAVING JURISDICTION. ALL TESTS, INSPECTIONS, AND PIPE FLUSHING TO BE WITNESSED BY THE PSD PLUMBING DEPARTMENT.
- 47. ALL DOMESTIC HOT WATER RECIRCULATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SHOWN. THE BALANCING FIRM SHALL EITHER BE AABC OR NEBB CERTIFIED AND SHALL SUBMIT A BALANCE REPORT TO THE ENGINEER FOR REVIEW.
- 48. THE PLUMBING CONTRACTOR SHALL PROVIDE PRODUCT DATA SUBMITTALS FOR ALL THE PLUMBING EQUIPMENT SCHEDULED, PLUMBING FIXTURES, PIPING, PIPE INSULATION. AND VALVES. ALL EQUIPMENT SUBMITTALS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO THE START OF WORK.
- 49. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH (1) FULL SIZE SET OF THE AS-BUILT PLUMBING DRAWINGS WHICH SHALL SHOW THE ACTUAL LOCATIONS OF PIPES, VALVES, FIXTURES, AND ACCESSORIES OR ANY OTHER DEVIATIONS FROM THE DESIGN DRAWINGS.
- 50. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH (1) COPY OF ALL OPERATIONAL AND MAINTENANCE (O&M) MANUALS FOR EACH PIECE OF EQUIPMENT. THE MANUAL SHALL INCLUDE: THE CONTRACTOR'S CONTACT INFORMATION, THE MANUFACTURER'S PUBLISHED O&M INSTRUCTIONS, THE APPROVED SUBMITTAL DRAWINGS, AND THE FINAL APPROVED TEST AND BALANCE REPORT. COMBINE ALL THE MANUALS IN A 3-RING BINDER INDEXED FOR EACH PIECE OF EQUIPMENT. ALSO PROVIDE THE OWNER WITH THE ENTIRE O&M MANUAL IN PDF FORMAT.
- 51. THE CONTRACTOR SHALL PROVIDE OWNER TRAINING ON THE OPERATION AND MAINTENANCE OF THE PLUMBING EQUIPMENT.

### SHEET INDEX:

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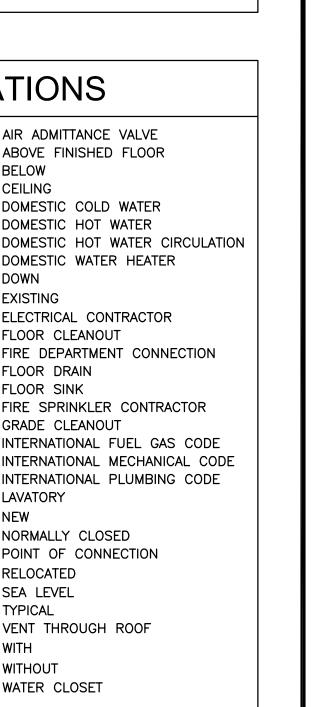
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PLUMBING NOTES, LEGEND, & SCHEDULE P101 PLUMBING PLANS

PLUMBING LEGEND **ABBREVIATIONS** AIR ADMITTANCE VALVE EXISTING PIPE AFF ABOVE FINISHED FLOOR BLW BELOW **+-----**PIPE DEMOLITION CLG **CEILING** DCW DOMESTIC COLD WATER DOMESTIC COLD WATER DHW DOMESTIC HOT WATER DOMESTIC HOT WATER ---DHW----DHWC DOMESTIC HOT WATER CIRCULATION DWH DOMESTIC WATER HEATER DOMESTIC HOT WATER **---** DHWC ----DN DOWN (E) **EXISTING** WASTE PIPE (DASHED BELOW GROUND) EC ELECTRICAL CONTRACTOR WASTE PIPE (SOLID ABOVE GROUND) FCO FLOOR CLEANOUT FDC FIRE DEPARTMENT CONNECTION VENT PIPE **----**FD FLOOR DRAIN FS FLOOR SINK BALL VALVE, PRESSURE REDUCING VALVE FSS FIRE SPRINKLER CONTRACTOR CONTROL VALVE, CHECK VALVE GCO GRADE CLEANOUT IFGC INTERNATIONAL FUEL GAS CODE UNION OR FLANGE, REDUCER/INCREASER IMC INTERNATIONAL MECHANICAL CODE IPC INTERNATIONAL PLUMBING CODE PIPE ELBOW UP, PIPE ELBOW DOWN LAV **LAVATORY** (N) TEE UP, TEE DOWN NORMALLY CLOSED NC POINT OF CONNECTION POC POINT OF CONNECTION (REL) **RELOCATED** LIMIT OF DEMOLITION SEA LEVEL TYP TYPICAL

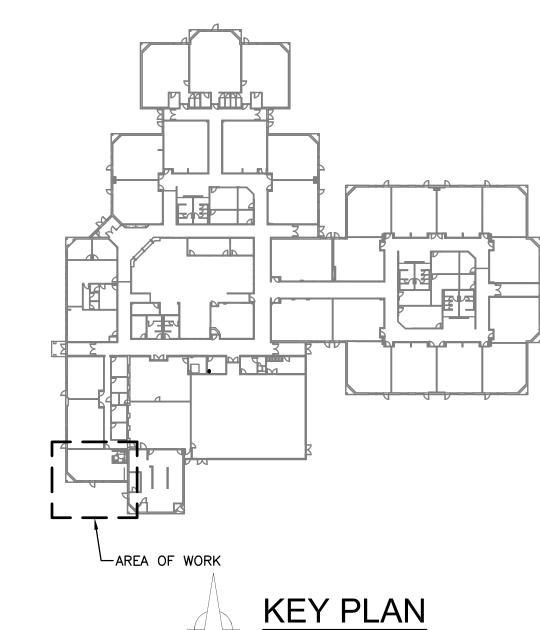


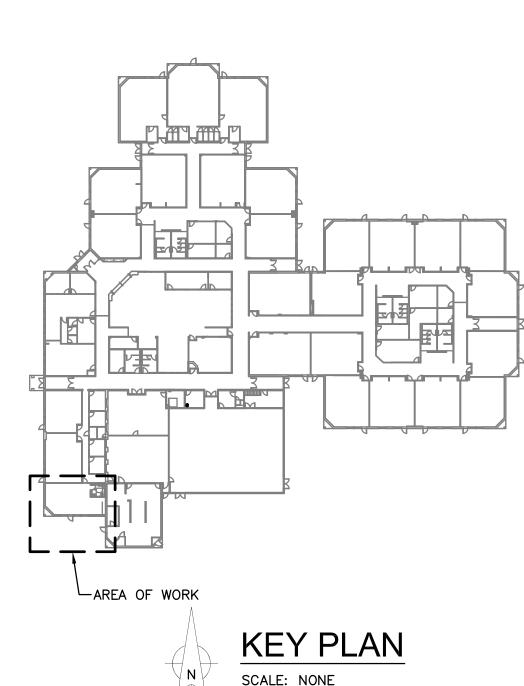


TAG			FIXTURE INFORMATION		FAUCE	PI	PE RUN	REMARKS			
IAG	MAKE	MODEL	DESCRIPTION	MAKE	MODEL	DESCRIPTION	DCW	DHW	w	V	NEMARKS
FD-1	ZURN	Z415B	EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, REVERSIBLE CLAMPING COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, ADJUSTABLE 5" ROUND HEEL PROOF NICKEL BRONZE STRAINER, AND NO-HUB OUTLET.						2"	1½"	4
LAV-1	AMERICAN STANDARD	LUCERNE #0355.012	WALL HUNG LAVATORY SINK, WHITE VITREOUS CHINA WITH SELF-DRAINING DECK AREA, 5" BACKSPLASH, AND FRONT OVERFLOW. 4" CENTER SET FAUCET HOLES. PROVIDE WITH PERFORATED STRAINER AND CHROME-PLATED BRASS 1-1/4" OFFSET TAILPIECE. ADA COMPLIANT.	CHICAGO	802-VE2805ABCP	HEAVY DUTY CAST BRASS DECK FAUCET WITH 4" CENTERS, CHROME FINISH, TWO QUARTER-TURN LEVER HANDLES, AND 0.5 GPM NON-AERATING SPRAY OUTLET. ADA COMPLIANT.	½"	½"	2"	1½"	1-3
SA-1	ZURN	SHOKTROL Z1700-200	TYPE 304 STAINLESS STEEL WATER HAMMER ARRESTOR WITH STAINLESS STEEL NESTING BELLOWS AND THREADED PIPE CONNECTION. PDI SIZE B. ASSE 1010.				3/4"				NONE
TMV-1	LEONARD	170A-LF	ASSE 1070 LISTED THERMOSTATIC MIXING VALVE. 0.25 GPM MIN. INTEGRAL INLET FILTER WASHERS AND CHECK VALVES. LEAD FREE. PROVIDE WITH COLD WATER BYPASS AND MOUNTING BRACKET. SET OUTLET TEMP. TO 110° F.				½"	½"			NONE
WC-1	AMERICAN STANDARD	MADERA #3043.001	FLOOR MOUNTED FLUSHOMETER WATER CLOSET W/ ELONGATED BOWL. 1½" TOP SPUD. WHITE VITREOUS CHINA. 16½" BOWL HEIGHT. 1.28 GPF. PROVIDE WITH OPEN FRONT SOLID PLASTIC SEAT.	SLOAN	ROYAL 111-1.28	EXPOSED MANUAL FLUSHOMETER VALVE FOR TOP SPUD WATER CLOSET. POLISHED CHROME FINISH. 1.28 GPF. ADA COMPLIANT. LOCATE HANDLE TO THE OPEN SIDE OF THE ROOM.	1¼"		4"	2"	NONE

1.) PROVIDE WITH UNDER SINK PIPE INSULATION, TRUEBRO LAV GUARD 2. 2.) PROVIDE WITH THERMOSTATIC MIXING VALVE TMV-1. 3.) PROVIDE WITH FLOOR MOUNTED CONCEALED ARM CARRIER 4.) PROVIDE WITH ASSE 1072 TRAP SEAL PROTECTION DEVICE

ACCEPTABLE MANUFACTURERS LAVATORY & WATER CLOSET - KOHLER OR AMERICAN STANDARD, FLOOR DRAIN & WATER HAMMER ARRESTOR - JOSAM, JR SMITH, WATTS, OR ZURN, THERMOSTATIC MIXING VALVE - LEONARD, WATTS, OR ZURN

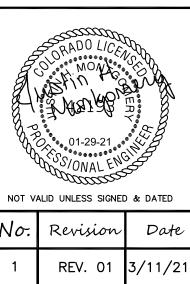








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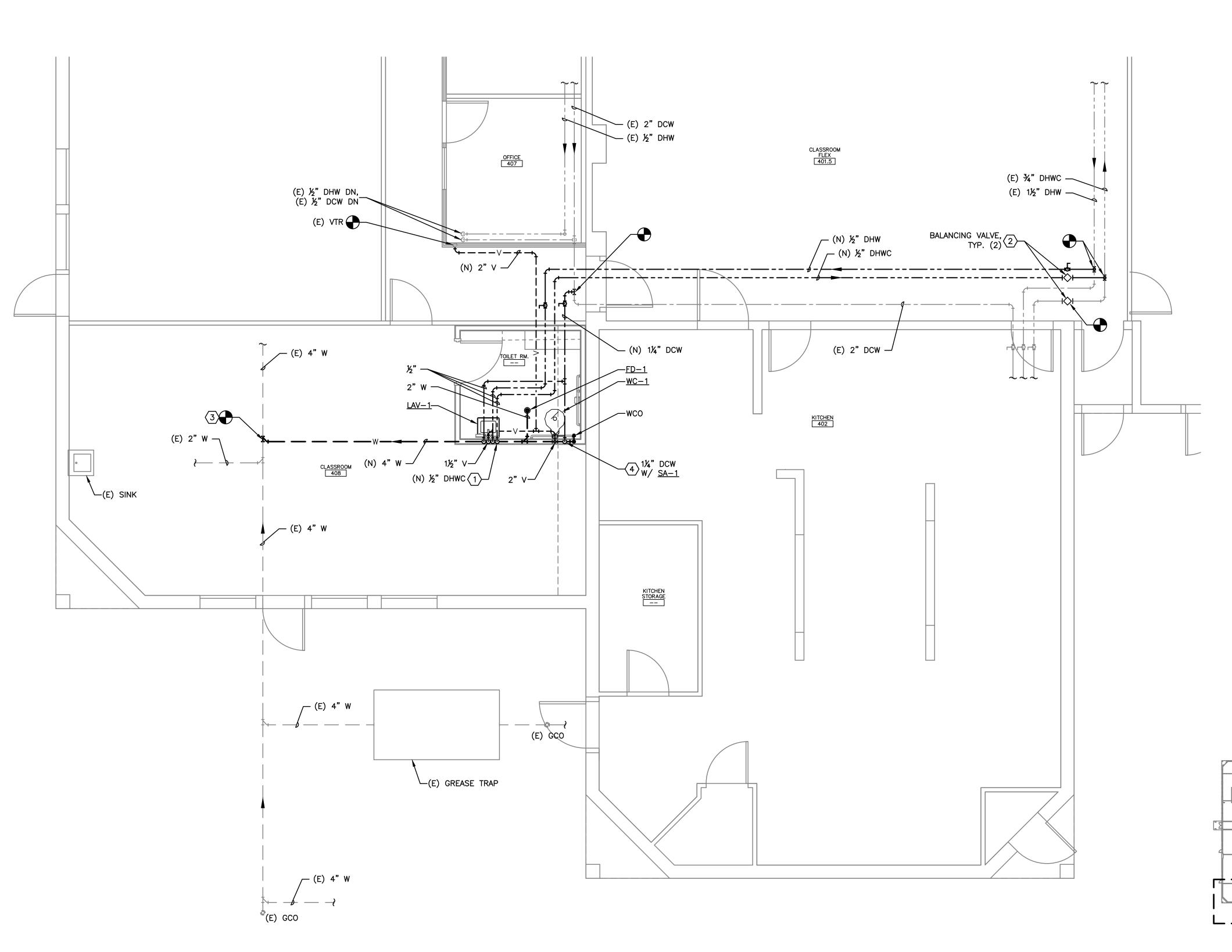
Sheet Title: PLUMBING NOTES, LEGEND &

SCHEDULE

EC REST ROOM PERMIT SET Sheet

P001

# # FLAG NOTES: 1. EXTEND DHWC PIPE DOWN TO CONNECT TO DHW PIPE WITHIN 24" OF THE LAVATORY FIXTURE CONNECTION PER THE 2018 2. INSTALL BALANCING VALVES IN AN ACCESSIBLE LOCATION DESIGNPOIN ABOVE THE CEILING. BALANCE NEW BRANCH FOR ½ GPM. BALANCE EXISTING BRANCH TO REMAINING FLOW OF THE **ENGINEERING** CIRCULATOR PUMP. 3. CONNECT TO EXISTING 4" W BELOW THE FLOOR IN THIS AREA. CONTRACTOR TO FIELD VERIFY LOCATION & INVERT ELEVATION PRIOR TO THE START OF WORK. COORDINATE W/ G.C. FOR FLOOR CUTTING AND PATCHING. 4. INSTALL SHOCK ABSORBER WITH SHUTOFF VALVE FOR FUTURE MAINTENANCE. INSTALL IN WALL, SHOWN OFFSET FOR CLARITY. COORDINATE W/ THE G.C. TO PROVIDE A PAINTED ACCESS PANEL IN THE WALL ABOVE THE TILE, RE: ARCHITECTURAL. COLOR BY ARCHITECT. I A H EME. NOT VALID UNLESS SIGNED & DATED No. Revision Sheet Title: PLUMBING PLAN EC REST ROOM PERMIT SET Sheet LAREA OF WORK KEY PLAN SCALE: NONE



PLUMBING REMODEL PLAN

#### MECHANICAL GENERAL NOTES AND SPECIFICATIONS:

- 1. ALL WORK SHALL COMPLY WITH THE POUDRE SCHOOL DISTRICT TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN A COPY PRIOR TO THE BID AND NOTIFY THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES. WHERE A CONFLICT DOES OCCUR, THE CONTRACTOR SHALL INCLUDE IN THEIR BID THE MORE STRINGENT (HIGHEST COST) REQUIREMENT.
- 2. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL AND STATE CODES INCLUDING BUT NOT LIMITED TO THE 2018 INTERNATIONAL BUILDING, FIRE, MECHANICAL, PLUMBING, FUEL GAS, AND ENERGY CONSERVATION CODES (IBC, IFC, IMC, IPC, IFGC, IECC) WITH LOCAL AMENDMENTS.
- 3. CONTRACTOR AND SUB-CONTRACTORS SHALL PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT TO COMPLETE ALL WORK SHOWN ON PLANS, CALLED FOR IN SPECIFICATIONS, OR REASONABLY IMPLIED FOR A COMPLETE INSTALLATION.
- 4. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON DRAWINGS WITH ACTUAL FIELD CONDITIONS. COORDINATE DRAWINGS WITH ACTUAL FIELD CONDITIONS. COORDINATE WORK LAYOUTS AND LOCATIONS OF OPENINGS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WITH DRAWINGS OR OTHER REQUIREMENTS. VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OR CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
- 5. MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DO NOT SCALE DRAWINGS, USE DIMENSIONS ONLY. ALL DIMENSIONS/LAYOUTS SHOWN ARE APPROXIMATE, FIELD VERIFY ALL WORK PRIOR TO ORDERING MATERIALS OR INSTALLING
- 6. KEEP SITE AND BUILDING ACCESSIBLE AND SAFE TO CONTRACTOR'S PERSONNEL, OWNER'S EMPLOYEES AND PUBLIC AT ALL TIMES. CONTRACTOR SHALL ENSURE SAFETY OF PERSONNEL, OWNER AND PUBLIC DURING ALL WORK AND COMPLY WITH ALL APPLICABLE REGULATIONS AND ORDINANCES PERTAINING TO SAFETY OF PERSONS AND PROPERTY.
- 7. INSTALL ALL WORK IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, ANCHORING ALL COMPONENTS PLUMB, LEVEL, SQUARE, AND FIRMLY INTO PLACE IN FIRST CLASS MANNER AND WORKMANSHIP ACCORDING TO STANDARD CONSTRUCTION PRINCIPLES & AS APPROVED BY ENGINEER.
- 8. THROUGHOUT THE WORK, CAULK AND SEAL ALL JOINTS AS REQUIRED TO PROVIDE A POSITIVE BARRIER AGAINST THE PASSAGE OF AIR AND MOISTURE.
- 9. PROTECT EXISTING OR ADJACENT SITE IMPROVEMENTS. EXISTING FLOOR, WALL, CEILING AND ROOF FINISHES, FURNISHINGS AND EQUIPMENT TO REMAIN DURING CONSTRUCTION. REPLACE OR REPAIR ANY DAMAGED IMPROVEMENTS, MATERIALS, FINISHES, FURNISHINGS OR EQUIPMENT TO SATISFACTION OF
- 10. REPLACE OR REPAIR ANY DAMAGED SURFACES, FILL AND PATCH HOLES, ETC., TO MATCH ADJACENT SURFACES AFTER ALL ALTERATIONS AND OTHER WORK IS COMPLETED, TO SATISFACTION OF
- 11. PRIOR TO THE DEMOLITION OF ANY EXISTING EQUIPMENT, COORDINATE WITH THE OWNER TO DETERMINE WHAT EQUIPMENT THEY MAY WANT TO KEEP. ANY EQUIPMENT NOT WANTED BY THE OWNER SHALL BECOME THE PROPERTY OF THE GENERAL CONTRACTOR AND SUBCONTRACTORS AND SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN A LAWFUL MANNER.
- 12. CONTRACTOR MUST COORDINATE THE WORK SO AS NOT TO EXTENSIVELY DISRUPT OWNERS OCCUPANCY OF ADJACENT AREAS AS APPROVED BY OWNER.
- 13. THE ENGINEER HAS ENDEAVORED TO LOCATE AND IDENTIFY THE MECHANICAL EQUIPMENT AND PIPING IN THE SCOPE OF WORK INCLUDING IDENTIFYING SIZES. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ADDITIONAL MINOR MECHANICAL WORK THAT MAY NOT BE SHOWN IN ORDER TO PROVIDE A COMPLETE AND WORKING SYSTEM.
- 14. ASBESTOS MAY BE ENCOUNTERED DURING MECHANICAL WORK INCLUDING BUT NOT LIMITED TO PIPE INSULATION. IF THE CONTRACTOR DURING CONSTRUCTION ENCOUNTERS WHAT IS BELIEVED TO BE ASBESTOS CONTAINING MATERIALS, NOTIFY THE ENGINEER IMMEDIATELY.
- 15. WHERE THE CEILING SPACE IS TO BE USED AS A RETURN AIR PLENUM, THE MECHANICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES TO ENSURE THAT ALL MATERIALS ARE NON-COMBUSTIBLE AND HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50.
- 16. COORDINATE WITH THE G.C. TO PROVIDE ACCESS PANELS AS REQUIRED TO ACCESS VALVES, DAMPERS, CONTROL DEVICES, ETC. REQUIRED FOR THE PROPER MAINTENANCE OF THE MECHANICAL SYSTEMS.
- 17. COORDINATE WITH G.C. TO PATCH ROOFING, ROOF DECK, AND FLASHINGS AS REQ'D WITH NEW MATERIALS AND FLASHINGS FOR ALL NEW ROOF PENETRATIONS.

- 18. PATCH OPENINGS IN DUCTS WHICH ARE TO REMAIN ACTIVE AND HAVE HAD SECTION REMOVED. ALSO REPAIR DUCT INSULATION SO THAT IT IS CONTINUOUS.
- 19. DO NOT RUN DUCTWORK ABOVE ELECTRICAL PANELS OR EQUIPMENT. COORDINATE WITH THE E.C. FOR LOCATIONS PRIOR TO THE START OF WORK.
- 20. THERMOSTATS, TEMPERATURE SENSORS, SWITCHES, OR OTHER CONTROL DEVICES SHALL BE MOUNTED AT 48" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
- 21. PROVIDE PLASTIC LAMINATED EQUIPMENT LABELS FOR THE NEW EQUIPMENT. LABEL ALL THE THERMOSTATS, SWITCHES, MOTOR STARTERS, ETC. INDICATING WHICH SYSTEM THEY CONTROL.
- 22. ALL DUCTWORK SHALL BE 24 GAUGE GALVANIZED SHEET METAL MINIMUM. WORK SHALL BE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITION. ALL DUCTWORK SHALL BE 2 IN WG PRESSURE CLASS MINIMUM.
- 23. ALL DUCTWORK JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, SHALL BE SEALED WITH WELDS, GASKETS, OR MASTIC ADHESIVE. MASTICS SHALL BE LISTED IN ACCORDANCE WITH UL 181A.
- 24. DUCTWORK DIMENSIONS LISTED ON THE DRAWINGS ARE CLEAR, INSIDE DIMENSIONS. WHERE DUCT LINER IS SPECIFIED, INCREASE THE OUTSIDE SHEET METAL DIMENSIONS TO PROVIDE THE CLEAR INSIDE DIMENSIONS SPECIFIED.
- 28. PROVIDE FLEXIBLE DUCT CONNECTIONS TO THE SUPPLY AND RETURN OF ALL MOTOR DRIVEN EQUIPMENT.
- 29. PROVIDE DUCT TRANSITIONS AS REQUIRED TO CONNECT THE DUCTS TO THE EQUIPMENT CONNECTIONS.
- 30. ELBOWS SHALL HAVE A MINIMUM RADIUS OF 1-1/2 TIMES CENTERLINE DUCT WIDTH. WHERE RECTANGULAR ELBOWS ARE USED. PROVIDE TURNING VANES.
- 31. PROVIDE DUCT TRANSITIONS AS REQUIRED TO CONNECT THE DUCTS TO THE EQUIPMENT CONNECTIONS. INCREASE DUCT SIZES GRADUALLY. NOT EXCEEDING 15° DIVERGENCE WHEREVER POSSIBLE: MAXIMUM 30° DIVERGENCE UPSTREAM OF EQUIPMENT AND 45° CONVERGENCE DOWNSTREAM.
- 32. ALL PENETRATIONS THROUGH THE FLOORS AND WALLS SHALL BE SLEEVED WITH GALVANIZED STEEL SLEEVES SHALL BE LARGE ENOUGH TO ALLOW FOR INSULATION TO BE CONTINUOUS THROUGH THE SLEEVE. APPLY SEALANT TO BOTH SIDES OF PENETRATION TO COMPLETELY FILL ANNULAR SPACE.
- 33. WHERE DUCTS PENETRATE A FIRE RATED ASSEMBLY PACK THE VOID WITH BACKING MATERIAL AND SEAL WITH UL LISTED FIRE CAULK TO MEET THE FIRE RATING OF ASSEMBLY PENETRATED. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND TYPES OF FIRE RATED ASSEMBLIES.
- 34. ALL AIR SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SHOWN. THE BALANCING FIRM SHALL EITHER BE AABC OR NEBB CERTIFIED AND SHALL SUBMIT A BALANCE REPORT TO THE ENGINEER FOR REVIEW.
- 35. THE MECHANICAL CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR ALL THE MECHANICAL EQUIPMENT SCHEDULED. SUBMITTALS SHALL BE IN ELECTRONIC PDF FORMAT AND SENT VIA EMAIL TO THE ENGINEER. IF THE CONTRACTOR WANTS TO USE A MANUFACTURER NOT LISTED, THEY SHALL PROVIDE DOCUMENTATION TO THE ENGINEER FOR APPROVAL. ALL EQUIPMENT SUBMITTALS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO THE START OF WORK.
- 36. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH (1) COPY OF ALL OPERATIONAL AND MAINTENANCE (0&M) MANUALS FOR EACH PIECE OF MECHANICAL EQUIPMENT. THE MANUAL SHALL INCLUDE: THE CONTRACTOR'S CONTACT INFORMATION, THE MANUFACTURER'S PUBLISHED O&M INSTRUCTIONS, THE APPROVED SUBMITTAL DRAWINGS, AND THE FINAL APPROVED TEST & BALANCE REPORT. COMBINE ALL THE MANUALS IN A 3-RING BINDER INDEXED FOR EACH PIECE OF EQUIPMENT. ALSO PROVIDE THE OWNER WITH THE ENTIRE O&M MANUAL IN PDF FORMAT.
- 37. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH (1) FULL SIZE SET OF THE AS-BUILT MECHANICAL DRAWINGS WHICH SHALL SHOW THE ACTUAL LOCATIONS OF DUCTWORK, DAMPERS, GRDs, OR ANY OTHER DEVIATIONS FROM THE DESIGN DRAWINGS.
- 38. THE CONTRACTOR SHALL PROVIDE OWNER TRAINING ON THE OPERATION AND MAINTENANCE OF THE MECHANICAL EQUIPMENT INCLUDING CONTROLS.

#### EXHAUST FAN SCHEDULE WEIGHT TAG MAKE & MODEL CFM DD/BD FRPM VOLTAGE CONTROL REMARKS (IN WC) (LBS) POWER CONTROL 1/15 HP GREENHECK G-060-VG 115/60/1

1.) UL-705 LISTED 2.) EC MOTOR WITH SPEED CONTROL 3.) 16" TALL ROOF CURB 4.) AMCA CERTIFIED GRAVITY BACKDRAFT DAMPER 5.) WEATHERPROOF DISCONNECT 6.) BIRD SCREEN 7.) OR EQUAL BY LOREN COOK OR TWIN CITY FAN

A.) BASE BID: ON WITH LIGHTS, COORDINATE W/ E.C. FOR WIRING BID ALTERNATE #2: EXHAUST FAN TO BE CONTROLLED BY THE EXISTING BAS. SEE BID ALTERNATE NOTES, THIS SHEET.

#### GRILLES, REGISTERS, AND DIFFUSER SCHEDULE

	TAG	MAKE & MODEL	DUTY	DAMPER	MOUNTING	CONSTRUCTION	COLOR	DESCRIPTION
	EG-1	PRICE PDDR	EXHAUST	NO	GYP. CEILING	STEEL	WHITE	12"x12" PERFORATED EXHAUST GRILLE. SEE PLANS FOR NECK SIZE.
- I								

ACCEPTABLE ALTERNATE MANUFACTURERS INCLUDE KRUEGER, NAILOR, AND TITUS

#### SHEET INDEX:

MECHANICAL NOTES, LEGENDS, & SCHEDULES

MECHANICAL PLANS

MECHANICA	L LEGEND	ABBREVI	ATIONS
	EXISTING DUCTWORK  DUCTWORK DEMOLITION  NEW DUCTWORK (SHADED)  FLEX DUCTWORK  DUCT ELBOW DN, DUCT ELBOW UP  DUCT RISERS (SUPPLY, RETURN, EXHAUST)  90° ELBOW W/ TURNING VANES AND 45° HIGH-EFF TAKE-OFF  MANUAL BALANCING DAMPER  TEMPERATURE SENSOR  POINT OF CONNECTION  LIMIT OF DEMOLITION	AFF BLW CD CLG DN (E) EA EC EF IFGC IMC IPC (N) OBD OA POC RA (REL) RG SA SD TA TAB TSTAT TYP W/ W/O	ABOVE FINISHED FLOOR BELOW CEILING DIFFUSER CEILING DOWN EXISTING EXHAUST AIR ELECTRICAL CONTRACTOR EXHAUST FAN INTERNATIONAL FUEL GAS CODE INTERNATIONAL MECHANICAL CODE INTERNATIONAL PLUMBING CODE NEW OPPOSED BLADE DAMPER OUTSIDE AIR POINT OF CONNECTION RETURN AIR RELOCATED RETURN GRILLE SUPPLY AIR SIDEWALL DIFFUSER TRANSFER AIR TEST & BALANCE CONTRACTOR THERMOSTAT TYPICAL WITH WITHOUT
		, 5	

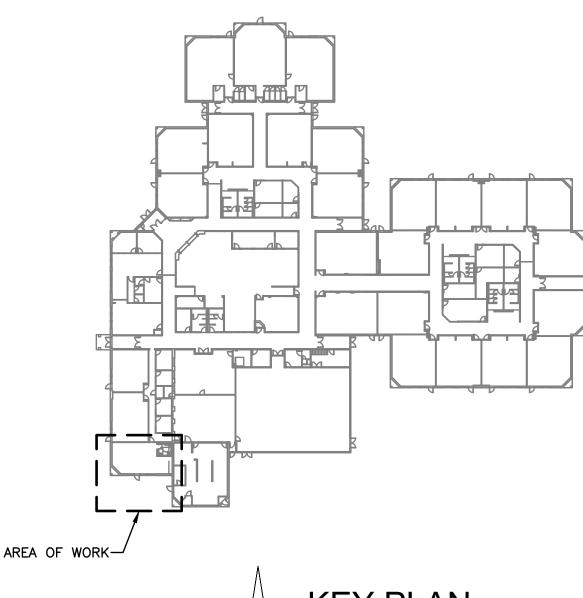


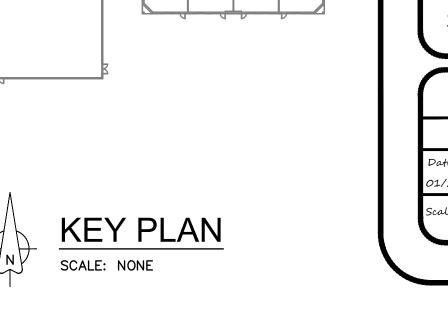
BASE BID: NEW RESTROOM EXHAUST FAN TO BE CONTROLLED ON WITH THE LIGHTS USING A TIME DELAY RELAY THAT WILL RUN FOR 15 MINUTES AFTER OCCUPANCY.

BID ALTERNATE #2:

1. NEW RESTROOM EXHAUST FAN TO BE CONTROLLED BY THE EXISTING BUILDING DDC SYSTEM IN LIEU OF THE STAND-ALONE SWITCHES. SYSTEM TO INCLUDE NEW START/STOP COMMAND, FAN STATUS, AND ALARM TO BAS CONSOLE. NEW EXHAUST FAN USER DEFINED OCCUPANCY SCHEDULE TO BE ADDED TO THE CURRENT OCCUPANCY SCHEDULE OF THE BUILDING.

THE EXISTING BUILDING DDC SYSTEM IS A SCHNEIDER ELECTRIC SYSTEM AND THE APPROVED VENDOR IS LONG BUILDING TECHNOLOGIES.





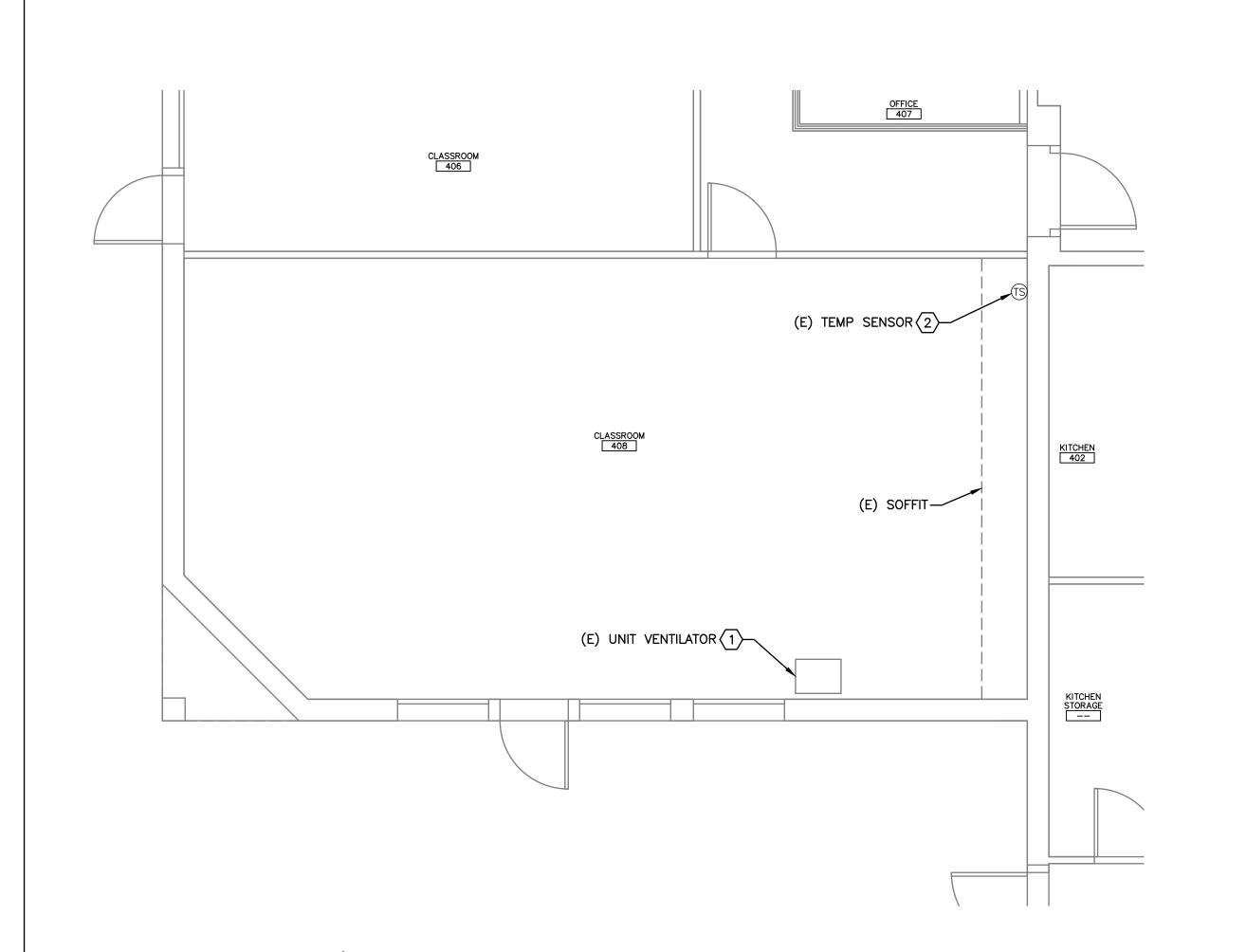


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Sheet Title: NOTES, LEGEND, & SCHEDULES EC REST ROOM PERMIT SET Sheet

# # FLAG NOTES: 1. EXISTING MECHANICAL WORK TO REMAIN AS IS. REMOVE EXISTING TEMPERATURE SENSOR AND RELOCATE AS INDICATED ON THE PLAN. SEE BID ALTERNATE NOTES ON SHEET M001.. DESIGNPOIN ENGINEERING 3. COORDINATE W/ G.C. FOR A ¾" DOOR UNDERCUT. EA DUCT UP TO NEW ROOF MOUNTED EXHAUST FAN. COORDINATE W/ G.C. FOR NEW ROOF PENETRATION. OFFICE 407 ON ROOF $\setminus$ 6/6 EA UP(4)— TOILET RM. (REL) TEMP SENSOR 2 NOT VALID UNLESS SIGNED & DATED No. Revision <u>EG-1</u>\_/ 6/6 (E) SOFFIT— (E) UNIT VENTILATOR— Sheet Title: MECHANICAL PLAN EC REST ROOM PERMIT SET Sheet AREA OF WORK-MECHANICAL REMODEL PLAN KEY PLAN SCALE: NONE

CLASSROOM 406



MECHANICAL DEMOLITION PLAN

VERIFICATION OF EXISTING CONDITIONS. "IN AS MUCH AS THE REMODELING AND/OR REHABILITATION OF THE EXISTING BUILDING REQUIRES THAT CERTAIN ASSUMPTIONS BE MADE REGARDING EXISTING CONDITIONS, AND BECAUSE SOME OF THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF THE BUILDING, THE GENERAL CONTRACTOR AGREES THAT, EXCEPT FOR NEGLIGENCE ON THAT PART OF THE DESIGN PROFESSIONAL THE CONTRACTOR WILL HOLD HARMLESS, INDEMNIFY AND DEFEND THE DESIGN PROFESSIONAL FROM AND AGAINST ANY AND ALL CLAIMS ARISING OUT OF THE PROFESSIONAL SERVICES PROVIDED."

ANY ELECTRICAL ITEMS SHOWN OR NOT SHOWN ON THE PLANS, OR WHERE CIRCUITS ARE REMOVED BY DEMOLITION, SHALL UPON COMPLETION OF REMODEL WORK BE LEFT IN WORKING CONDITION.

ALL PHASES OF THE ELECTRICAL WORK SHALL BE COORDINATED WITH THE ARCHITECT. WORK SHALL BE DONE IN A FASHION TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO THE OWNER.

IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW ALL DRAWINGS FOR WORK UNDER THIS CONTRACT. NO EXTRAS WILL BE ALLOWED FOR WORK SHOWN ON MECHANICAL AND ARCHITECTURAL DRAWINGS.

ELECTRICAL DEVICES NOTED TO BE REMOVED SHALL BE REMOVED BACK TO A POINT WHERE EXISTING CONDUIT CAN BE ABANDONED IN CONCEALED SPACES. REMOVE ALL WIRING FROM ABANDONED CONDUIT. ALL BOXES TO BE REMOVED SHALL BE TAKEN OUT OF WALLS AND HAVE HOLES REFINISHED TO MATCH WALL

ELECTRICAL CONTRACTOR SHALL NOT DEFACE ANY AREAS OF THE BUILDING WHERE REMODELING IS NOT BEING DONE.

THE ELECTRICAL CONTRACTOR SHALL BE ON SITE DURING ALL ELECTRICAL INSPECTIONS. NO ADDITIONAL FEES OR OVERTIME WILL BE PAID FOR AFTER HOURS INSPECTIONS.

RACEWAYS: ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. CONDUIT SHALL NOT BE EXPOSED IN FINISHED AREAS (EXCLUDES MECHANICAL ROOMS, STORAGE CLOSETS, AND SIMILAR AREAS). EXPOSED RACEWAYS SHALL BE SURFACE RACEWAYS PER SPECIFICATIONS.

O. ROUTING OF EXISTING CONCEALED CONDUIT NOT KNOWN. LOCATION DETERMINED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL RECIRCUIT AS NOTED UTILIZING ANY EXISTING CONDUIT. HE SHALL REMOVE EXISTING WIRE AND REPULL NEW. ALL NEW CONDUIT ADDED SHALL BE CONCEALED WHEREVER

 SURFACE RACEWAY: WHEREVER CONCEALED CONDUIT IN FINISHED AREAS IS NOT POSSIBLE, ELECTRICAL CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAYS EQUAL TO WIREMOLD. RUN SURFACE RACEWAYS IN CORNER OF WALL AND CEILING. ALL RACEWAYS THAT ARE EXPOSED SHALL BE APPROVED BY ARCHITECT PRIOR TO ROUGH-IN.

12. TERMINATING AND SPLICING: MAKE ALL JOINTS AND SPLICES IN BRANCH CIRCUIT WIRING WITH APPROVED SOLDERLESS TOOL APPLIED OR TWIST-ON CONNECTORS. IN THE VARIOUS BOXES, GUTTERS, AND SIMILAR LOCATIONS, BUT NOT IN RACEWAYS. LEAVE SUFFICIENT SLACK TO PERMIT TWO (2) OR MORE SPLICES OR JOINTS TO BE REMADE IN CASE OF FAULT.

13. MC CABLE, AC CABLE, AND NM CABLE (ROMEX) WILL NOT BE ALLOWED ON THIS

4. ELECTRICAL CONTRACTOR SHALL RECEIVE, FROM SYSTEM SUPPLIERS, ALL WIRING DIAGRAMS FOR ALL EQUIPMENT, PRIOR TO ANY ROUGH-IN, TO ASSURE PROPER ELECTRICAL CHARACTERISTICS ARE PROVIDED. ELECTRICAL CONTRACTOR SHALL PROVIDE ARCHITECT WRITTEN NOTIFICATION PRIOR TO ROUGH-IN, THAT ALL WIRING DIAGRAMS HAVE BEEN RECEIVED AND REVIEWED FOR CORRECTNESS. ANY INCORRECT WIRING OR DEVICES INSTALLED BY ELECTRICAL CONTRACTOR WITHOUT WIRING DIAGRAMS SHALL BE CORRECTED AT ELECTRICAL CONTRACTOR'S EXPENSE.

15. ELECTRICAL CONTRACTOR SHALL RECEIVE. FROM MECHANICAL CONTRACTOR. ALL WIRING DIAGRAMS AND SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT, PRIOR PHASE, HORSEPOWER, AMPERE, KILOWATTS AND ETC. ARE PROVIDED. ELECTRICAL CONTRACTOR SHALL PROVIDE ARCHITECT WRITTEN NOTIFICATION PRIOR TO ANY ROUGH-IN, THAT ALL WIRING DIAGRAMS AND SHOP DRAWINGS HAVE BEEN RECEIVED AND REVIEWED FOR CORRECTNESS. ANY INCORRECT WIRING OR DEVICES INSTALLED BY ELECTRICAL CONTRACTOR WITHOUT WIRING DIAGRAMS SHALL BE CORRECTED AT ELECTRICAL CONTRACTOR'S EXPENSE.

6. COORDINATE WITH MECHANICAL CONTRACTOR LOCATION AND INSTALLATION OF ANY ELECTRICAL CONTROLS FOR MECHANICAL UNITS AND PROVIDE 120V CIRCUIT AS REQUIRED.

7. ALL EXISTING AND NEW SMOKE DETECTORS IN OR NEAR AREAS BEING REMODELED SHALL BE BAGGED OR REMOVED. IF REMOVED, STORE IN A SEALED BAG UNTIL ALL REMODELING WORK IS COMPLETE. IF SMOKE DETECTORS ARE NOT BAGGED OR REMOVED THEY SHALL BE REPLACED WITH NEW DETECTORS AT CONTRACTOR'S EXPENSE WHEN THE PROJECT IS COMPLETED.

18. EXACT ELECTRICAL DEMOLITION REQUIREMENTS NOT SHOWN ON THE DRAWINGS. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO DETERMINE EXACT DEMOLITION WORK TO BE DONE AND SHALL INCLUDE ALL DEMOLITION COSTS IN THEIR BID.

19. ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL DEVICE LOCATIONS IN ALL CASEWORK WITH ARCHITECTURAL CASEWORK DETAILS PRIOR TO ANY ROUGH-IN.

20. THE CONTRACTOR SHALL COORDINATE ALL ELECTRICAL DEVICE LOCATIONS WITH THE ARCHITECTURAL PLANS, ELEVATIONS, AND DIAGRAMS.

21. ELECTRICAL CONTRACTOR SHALL VERIFY FINAL LOCATIONS OF ALL SINKS WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN. ANY ELECTRICAL DEVICES LOCATED ABOVE COUNTER AND BEHIND FINAL SINK LOCATIONS SHALL BE SHIFTED A MINIMUM OF 6" TO EITHER SIDE OF SINK. ANY ELECTRICAL DEVICES LEFT BEHIND SINK AT TIME OF FINAL ELECTRICAL OBSERVATION SHALL BE RELOCATED AT ELECTRICAL CONTRACTOR'S EXPENSE.

GENERAL CONSTRUCTION NOTES

22. BACK TO BACK RECEPTACLES ARE NOT PERMITTED. MAINTAIN SEPARATION OF AT LEAST ONE STUD - REFER TO ARCHITECTURAL ACOUSTICAL DETAILS. IF BOXES ARE WITHIN 24" OF EACH OTHER IN A FIRE RATED WALL A FIRE BARRIER MOLDABLE PUTTY (3M OR EQUIVALENT) SHALL BE USED.

23. FEED THROUGH GFCI PROTECTION OF RECEPTACLES IS ACCEPTABLE ONLY WHERE RECEPTACLES ARE IN SAME ROOM AND DRAWINGS DO NOT INDICATE OTHERWISE.

24. PROVIDE BLANK COVER PLATES AND INSTALL THEM ON ALL UNUSED ROUGH-INS. 25. INSTALL PIGTAIL AT ALL RECEPTACLES FOR FINAL CONNECTIONS.

26. ALL NEW ELECTRICAL ITEMS SHOWN ON EXISTING WALLS AND CEILINGS SHALL BE FLUSH MOUNTED UNLESS NOTED OTHERWISE. CUT AND PATCH EXISTING WALLS AND CEILINGS TO CONCEAL ALL MOUNTING BOXES AND CONDUITS.

27. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH GC TO MAINTAIN FIRE RATINGS FOR ALL CONDUIT PENETRATIONS, INCLUDING CONDUIT SLEEVES, THROUGH FIRE RATED CONSTRUCTION. THIS INCLUDES SEALING ALL SPARE CONDUITS (SPECIAL SYSTEMS, ETC.).

28. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MEASURE THE HORIZONTAL AND VERTICAL DIMENSIONS OF HIS WORK BEFORE INSTALLATION AND COORDINATE THESE DIMENSIONS WITH OTHER CONTRACTORS IMMEDIATELY. IF CEILING HEIGHTS ARE AFFECTED, NOTIFY THE OTHER CONTRACTORS AND THE ARCHITECT IMMEDIATELY, FAILURE TO DO SO WILL RESULT IN REJECTION OF INSTALLED WORK AND REINSTALLATION OF PROPERLY LOCATED AND COORDINATED WORK WILL BE AT THIS CONTRACTOR'S EXPENSE.

29. LIGHT FIXTURES AND DEVICES IN 1-HOUR FIRE RATED CEILINGS MUST BE 'TENTED'. TENTING WILL BE PERFORMED BY OTHERS (EC TO COORDINATE WITH GC). COORDINATE HEIGHT REQUIRED FOR ADDITIONAL TENTING WITH CEILING AND MECHANICAL CONTRACTORS. REFER TO ARCHITECTURAL DRAWINGS.

30. FIXTURE WHIPS SHALL BE SUPPORTED ABOVE ACCESSIBLE CEILING. LAYING FIXTURE WHIPS ON TOP OF THE GRID OR SUPPORTING USING THE FIXTURE HANGERS IS NOT ALLOWED. FIXTURE WHIPS SHALL NOT CONTACT PLUMBING

31. RELOCATIONS: OWNER RESERVES THE RIGHT TO RELOCATE ANY ELECTRICAL DEVICE, UP TO A DISTANCE OF 12'-0", BEFORE INSTALLATION WITHOUT EXTRA CHARGE FROM ELECTRICAL CONTRACTOR.

32. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. EXACT LOCATION OF ALL SYSTEMS AND EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH OTHER TRADES PRIOR TO ANY INSTALLATION. WHERE EXACT LOCATIONS ARE NECESSARY, THEY ARE DIMENSIONED ON THESE DRAWINGS. WHERE THERE IS A QUESTION OF ADEQUATE CLEARANCE OR COORDINATION BETWEEN TRADES, THIS CONTRACTOR SHALL PREPARE SHOP DRAWINGS FOR ENGINEER'S REVIEW. ON ALL SPECIAL SYSTEMS REQUIRING DRAWINGS BY LICENSED INSTALLATION CONTRACTORS, SUCH AS FIRE PROTECTION, SUCH DRAWINGS SHALL BE SUBMITTED WITHIN 30 DAYS AFTER AWARD OF CONTRACT.

33. EMT CONDUIT FITTINGS: DRY LOCATIONS ALL EMT COUPLERS AND CONNECTORS SHALL BE STEEL SET SCREW TYPE. DIE CAST FITTINGS SHALL NOT BE USED ON THIS PROJECT. DAMP/WET LOCATIONS, USE STEEL COMPRESSION GLAND TYPE COUPLER AND CONNECTORS.

34. ALL WIRING INCLUDING SPECIAL SYSTEMS/LOW VOLTAGE THAT IS IN AN EXPOSED CEILING AREA SHALL BE IN CONDUIT. ALL SPLICES SHALL BE IN J-BOXES.

35. ACCESS PANELS REQUIRED BY THE ELECTRICAL CONTRACTOR SHALL BE PROVIDED BY THE ELECTRICAL BID CONTRACTOR, THEN TURNED OVER TO THE APPROPRIATE TRADE FOR INSTALLATION. SEE ARCHITECTURAL SPECIFICATION.

36. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE GENERAL CONTRACTOR TO OBTAIN ACTUAL ROOM NAMES AND NUMBERS. DESIGNATED BY THE OWNER/ARCHITECT AT THE COMPLETION OF THE PROJECT. ACTUAL ROOM NAMES AND NUMBERS SHALL BE USED ON ALL PANEL SCHEDULES, COMPUTER PROGRAMMING, GRAPHIC PLAQUES, SOUND SYSTEMS, TELEPHONE SYSTEM. INTERCOMS, FIRE ALARMS, SECURITY SYSTEMS, CATV SYSTEMS, AND SIMILAR.

TO ANY ROUGH-IN, TO ASSURE PROPER ELECTRICAL CHARACTERISTICS, VOLTAGE, 37. CONTRACTOR SHALL NOT FASTEN, ATTACH OR HANG ANY MATERIAL FROM THE ROOF DECK. ALL CONDUITS, JUNCTION BOXES, FIXTURES, DEVICES AND EQUIPMENT SHALL BE HUNG FROM THE STRUCTURAL STEEL FRAME AND SHALL BE PLACED WITH A MINIMUM CLEARANCE PER 2017 NEC BELOW THE ROOF DECK. WIRING AND CONDUITS SHALL NOT BE PLACED WITHIN THE RIBS OF THE ROOF DECK. CONTRACTOR SHALL NOT LOOSEN, REMOVE OR CUT ANY ROOFING SYSTEM FASTENERS PROTRUDING THROUGH THE ROOF DECK.

> 38. ALL ELECTRICAL DEVICES, CONDUIT, J-BOXES, CABLE SUPPORTS, ETC. THAT ARE REQUIRED TO BE SUPPORTED ABOVE THE GRID CEILINGS SHALL BE SUPPORTED FROM THE STRUCTURE VIA THREADED RODS, ALL AREAS

39. MULTI-WIRE BRANCH CIRCUITS ARE NOT PERMITTED U.O.N. ON DRAWINGS. WHERE THEY ARE INSTALLED THEY SHALL BE COMMON TRIP OR HAVE HANDLE TIES AS REQUIRED BY N.E.C.

40. SWITCHES AND RECEPTACLES SHALL BE IDENTIFIED AS TO PANEL AND CIRCUIT BREAKER FED FROM. LABEL COVERPLATE ON FRONT PER SPECIFICATION AND ON BACK WITH PERMANENT INK ENSURE NO BLEED THROUGH.

41. THESE DRAWINGS ARE SUBJECT TO AN APPROVAL OF THE BUILDING DEPARTMENT, FIRE MARSHAL, UTILITY COMPANY, AND OTHER AGENCIES AUTHORITY HAVING JURISDICTION (AHJ). BY THE ACT OF SUBMITTING A BID PROPOSAL FOR WORK, THE CONTRACTOR HAS REVIEWED THE PLANS THOROUGHLY AND ACCEPTS FULL RESPONSIBILITY OF PLAN CORRECTIONS AND ASSOCIATED CONSTRUCTION COSTS REQUIRED BY AHJ.

42. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.

ELECTRICAL ABBREVIATIONS MCB MAIN CIRCUIT BREAKER ABOVE COUNTER AFF MDP ABOVE FINISHED FLOOR MAIN DISTRIBUTION PANEL MECH ABOVE FINISHED GRADE MECHANICAL AMP. INTERRUPTING CAPACITY MLO MAIN LUG ONLY ALUMINUM MOUNTED **ANNUNCIATOR** NEW ARCHITECT NON FUSED BELOW FINISHED GRADE N.T.S. NOT TO SCALE NIGHT LIGHT BREAKER воттом PUSH BUTTON BAKED WHITE ENAMEL PHOTO CELL CONDUIT PHASE CASA COLOR AS SELECTED BY ARCHITECT PANEL CATV CABLE TELEVISION POTENTIAL TRANSFORMER CKT CIRCUIT POWER CLG CEILING RECEPT, RECEPTACLE RCPT. CURRENT TRANSFORMER REC CU COPPER RELOCATE DISC DISCONNECT RAIN TIGHT, NEMA 3R DOWN SHORT CIRCUIT AVAILABLE **DPDT** DOUBLE POLE DOUBLE THROW SURFACE MOUNT DOUBLE POLE SINGLE THROW SPC SPACE ELECTRICAL CONTRACTOR SPD SURGE PROTECTION DEVICE ELEC ELECTRICAL SPDT SINGLE POLE DOUBLE THROW **EMERGENCY SPST** SINGLE POLE SINGLE THROW EMT ELECTRICAL METALLIC TUBING SPARE **EWC** ELECTRICAL WATER COOLER SSL SOLID-STATE LIGHTING EXIST, EX, EXISTING SWITCH T-STAT **THERMOSTAT FUSED** TO BE DETERMINED **FLOOR** TIME CLOCK FLUOR FLUORESCENT TELEPHONE TERMINAL BACKBOARD GENERAL CONTRACTOR **TYPICAL** GFI GROUND FAULT INTERRUPTER U.O.N. UNLESS OTHERWISE NOTED GALVANIZED RIGID CONDUIT UNDER COUNTER GROUND VOLTS HAND-OFF-AUTO **VOLT-AMPERES** HEAT TRACE VOLTS-ALTERNATING CURRENT ISOLATED GROUND VARIABLE FREQUENCY DRIVE J-BOX JUNCTION BOX LIGHT-EMITTING DIODE LOC LOCATION WITHOUT LIGHTING WIRE GUARD

> NOTE: THIS IS A COMPREHENSIVE LEGEND AND ABBREVIATIONS LIST AND ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS.

**WEATHERPROOF** 

TRANSFORMER

XFMR

4/4/4/4 EXISTING CIRCUIT RUN TO BE REMOVED — — CIRCUIT RUN: EXPOSED ---- CIRCUIT RUN: UNDERFLOOR ——UG—— CIRCUIT RUN: UNDERGROUND CIRCUIT RUN: WALLS OR CEILING O CIRCUIT TURNS UP CIRCUIT TURNS DOWN — T — UNDERGROUND TELEPHONE RUN — P — UNDERGROUND SECONDARY OR PRIMARY SERVICE — G — GROUND BUS ----PS---- PLUG STRIP AS NOTED — LV — LOW VOLTAGE CIRCUIT ■■■ MOISTURE OR EXPLOSION PROOF SEAL HOME RUN (PROVIDE DEDICATED NEUTRALS MULTI-WIRE BRANCH CIRCUITS NOT ALLOWED) A - PANEL DESIGNATION 1,3,5 - CIRCUIT NUMBER, 6 CONDUCTORS U.O.N. **TRANSFORMER** ⇉ **WEATHERHEAD** MAIN DISTRIBUTION PANEL - SWITCH AND FUSE CIRCUIT BREAKER 4 CT'S **GROUND ELECTRICAL PANEL** TELEPHONE TERMINAL BOARD CONTACT - NORMALLY CLOSED (NC) CONTACT - NORMALLY OPEN (NO) LIGHTING OUTLET: CEILING RECESSED LIGHTING OUTLET: CEILING SURFACE A - FIXTURE TYPE, b - SWITCHING LIGHTING OUTLET: WALL MOUNTED SPOT LIGHT PORCELAIN KEYLESS P&S110 W/ 150W A21 LAMP - pc (PULL CHAIN) FLUORESCENT/LED FIXTURE: SURFACE FLUORESCENT FIXTURE/LED: SUSPENDED DIRECT/INDIRECT FLUORESCENT/LED FIXTURE: RECESSED IN DRYWALL FLUORESCENT/LED FIXTURE: RECESSED IN GRID FLUORESCENT/LED FIXTURE: RECESSED IN GRID DIRECT/INDIRECT

FLUORESCENT/LED FIXTURE: RECESSED IN GRID

FLUORESCENT/LED FIXTURE: WALL MOUNTED

INDICATES NIGHT LIGHT OR EMERGENCY CIRCUIT

INDICATES NIGHT LIGHT OR EMERGENCY CIRCUIT

EMERGENCY BATTERY WITH NO LAMPS(HEADS)

PARABOLIC (U.O.N.)

FLUORESCENT/LED STRIP

TRACK LIGHTING FIXTURE

EXIT SIGN: CEILING MOUNTED

EMERGENCY BATTERY WITH LAMPS

EXIT SIGN: WALL MOUNTED

REMOTE EMERGENCY LIGHTS

REMOTE INDICATING LIGHT

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FLAG NOTE

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MECHANICAL EQUIPMENT SYMBOL

EXISTING CIRCUIT RUN TO REMAIN

INDICATES EXISTING DEVICE TO REMAIN

INDICATES EXISTING DEVICE TO BE REMOVED

SPECIAL EQUIPMENT SYMBOL

INDICATES AIMING DIRECTION

ELECTRICAL LEGEND NOTE: ALL SWITCHES SHALL BE MOUNTED AT 48" AFF TO TOP OF BOX (U.O.N.) SINGLE POLE SWITCH, 20 AMP U.O.N. DOUBLE POLE SWITCH, 20 AMP U.O.N. 3 - WAY SWITCH, 20 AMP U.O.N. SINGLE POLE SWITCH, 20 AMP U.O.N. 3 - THREE WAY, a - SWITCHING 4 - WAY SWITCH, 20 AMP U.O.N. KEYED SWITCH, 20 AMP U.O.N. PILOT SWITCH, 20 AMP U.O.N. SWITCH ON, LIGHT ON SWITCH WITH THERMAL OVERLOAD, 20 AMP U.O.N. DIGITAL TIMER SWITCH SWITCH VARIABLE SPEED \$<sub>LV</sub> SWITCH LOW VOLTAGE DIMMER SWITCH AS NOTED, 20 AMP U.O.N. COMBINATION SWITCH/RECEPTACLE SINGLE RECEPTACLE, + 16" AFF TO BOTTOM OF BOX (U.O.N) DUPLEX RECEPTACLE, + 16" AFF TO BOTTOM OF BOX (U.O.N) DUPLEX RECEPTACLE, INDIVIDUAL GROUND FAULT RECEPTACLE DOUBLE DUPLEX RECEPTACLE, + 16" AFF TO BOTTOM OF BOX (U.O.N) DUPLEX RECEPTACLE, SPLIT WIRED TELEPHONE OUTLET, + 16" AFF TO BOTTOM OF BOX (U.O.N.)

<u>(S</u>

P

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W - WALL OUTLET, + 54" AFF (U.O.N.) P - PAYPHONE, + 40" AFF (U.O.N.) X DENOTES # OF JACKS DATA OUTLET. + 16" AFF TO BOTTOM OF BOX (U.O.N.) X DENOTES # OF JACKS

DATA/VOICE OUTLET. + 16" AFF TO BOTTOM OF BOX (U.O.N.) SPECIAL PURPOSE OUTLET AS NOTED, + 16" AFF TO BOTTOM OF BOX (U.O.N.)

FLUSH FLOOR TELEPHONE OUTLET S - SURFACE PEDESTAL FLUSH FLOOR DUPLEX OUTLET S - SURFACE PEDESTAL MULTI-CELL FLOOR BOX

J-BOX: CEILING J-BOX: WALL

EMERGENCY POWER OFF (MUSHROOM HEAD) MOTOR OUTLET AND CONNECTION MAGNETIC STARTER OR CONTACTOR

DISCONNECT SWITCH DISCONNECT SWITCH NF - NON-FUSED

FIRE-SMOKE DAMPER/SMOKE DAMPER LIGHTING CONTROL STATION

OCCUPANCY SENSOR VACANCY SENSOR PHOTO CELL - ELECTRIC

(C) OR [C] CONTACTOR RELAY

 $\mathcal{N} \bigcirc$  $\bigcirc$  $\mathcal{C}$ \_\_\_  $\geq$  $\triangleleft$  $\bigcirc$  $\overline{\phantom{a}}$ 

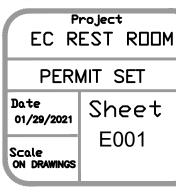
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No. Revision Date

Sheet Title: GENERAL CONSTRUCTION NOTES AND LEGEND



& ASSOCIATES, LLC ELECTRICAL ENGINEERS 4645 W. 18TH ST, SUITE #20 GREELEY, COLORADO 80634



GENERAL CONSTRUCTION NOTES AND LEGEND

E101 DEMOLITION AND NEW ELECTRICAL PLANS E201

ELECTRICAL SPECIFICATIONS

LIQUID TIGHT FLEXIBLE CONDUIT

MECHANICAL CONTRACTOR

- 19	LOAD SUMMARY			
EXISTING LOAD REMOVED				
	LOAD	QTY		TOTAL
LIGHTING (2-LAMP FLUORESCENT)	65 W	2 EA	=	-130 W
RECEPTACLES	180 W	2 EA	=	-360 W
TOTAL			=	-490 W
NEW LOAD ADDED				
	LOAD	QTY		TOTAL
TYPE 'A'	29 W	1 EA	=	29 W
TYPE 'B'	14 W	1 EA	=	14 W
EXHAUST FAN	50 W	1 EA	=	50 W
RECEPTACLE	180 W	1 EA	=	180 W
TOTAL			=	273 W
TOTAL LOAD REMOVED THIS PROJECT			=	-217 W

TO PANEL 'LA'

| \|

		LIGHTING	FIXTURE SC	HEDULE				
TYPE	LAMPS	DESCRIPTION	FINISH	MOUNTING	MANUFACT.	CATALOG #	VOLT.	NOTES
А	LED 29W 3000 LUMENS 3500K 83 CRI	37" LED WALL SCONCE, 0-10V DIMMING.	GRAPHITE METALLIC	WALL	SHARPER	605-37-W-L4/835-UNV-GRM-2VTB	120/277	
В		6" LENSED LED DOWNLIGHT, MEDIUM 60 DEGREE BEAM ANGLE, 0-10V DIMMING.	SEMI- SPECULAR	RECESSED	HALO	HC615D010-HM612835-61MDH	120/277	
NOTES:	PSD ECE RR REMOI	DEL						

LIGHTING	G FIXTURE SC	HEDULE				
	FINISH	MOUNTING	MANUFACT.	CATALOG #	VOLT.	NOTES
	GRAPHITE METALLIC	WALL	SHARPER	605-37-W-L4/835-UNV-GRM-2VTB	120/277	
M ANGLE,	SEMI- SPECULAR	RECESSED	HALO	HC615D010-HM612835-61MDH	120/277	

1> EXHAUST FAN ON ROOF, 120V, 50W. COORDINA	
ALL ROOF PENETRATIONS WITH GC. COORDINATE CONTROLS WITH MECHANICAL. BASE BID: CONTROL WITH RESTROOM LIGHTS. BID ALTERNATE #2: CONTROL VIA EXISTING DDC SYSTEM.	

WITH RESTROOM LIGHTS. BID ALTERNATE #2: CONTROL VIA EXISTING DDC SYSTEM. RE-CIRCUIT EXISTING LIGHTING TO REMAIN TO EXISTING LOCAL LIGHTING CIRCUIT.

CONNECT NEW RECEPTACLE TO CIRCUIT FEEDING RECEPTACLES REMOVED DURING DEMOLITION.

CONNECT NEW LIGHTING FIXTURES TO UNSWITCHED PORTION OF EXISTING CLASSROOM LIGHTING CIRCUIT TO REMAIN.

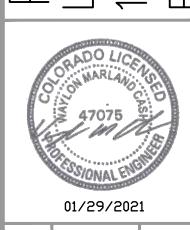
PROVIDE CEILING MOUNTED JUNCTION BOX WITH ROUND PLASTER RING AND 1/2"C. TO ABOVE ACCESSIBLE CEILING FOR STROBE LIGHT. COORDINATE WITH F/A CONTRACTOR.

PROVIDE JUNCTION BOX WITH BLANK COVER PLATE AND 1/2"C. TO ABOVE ACCESSIBLE CEILING FOR





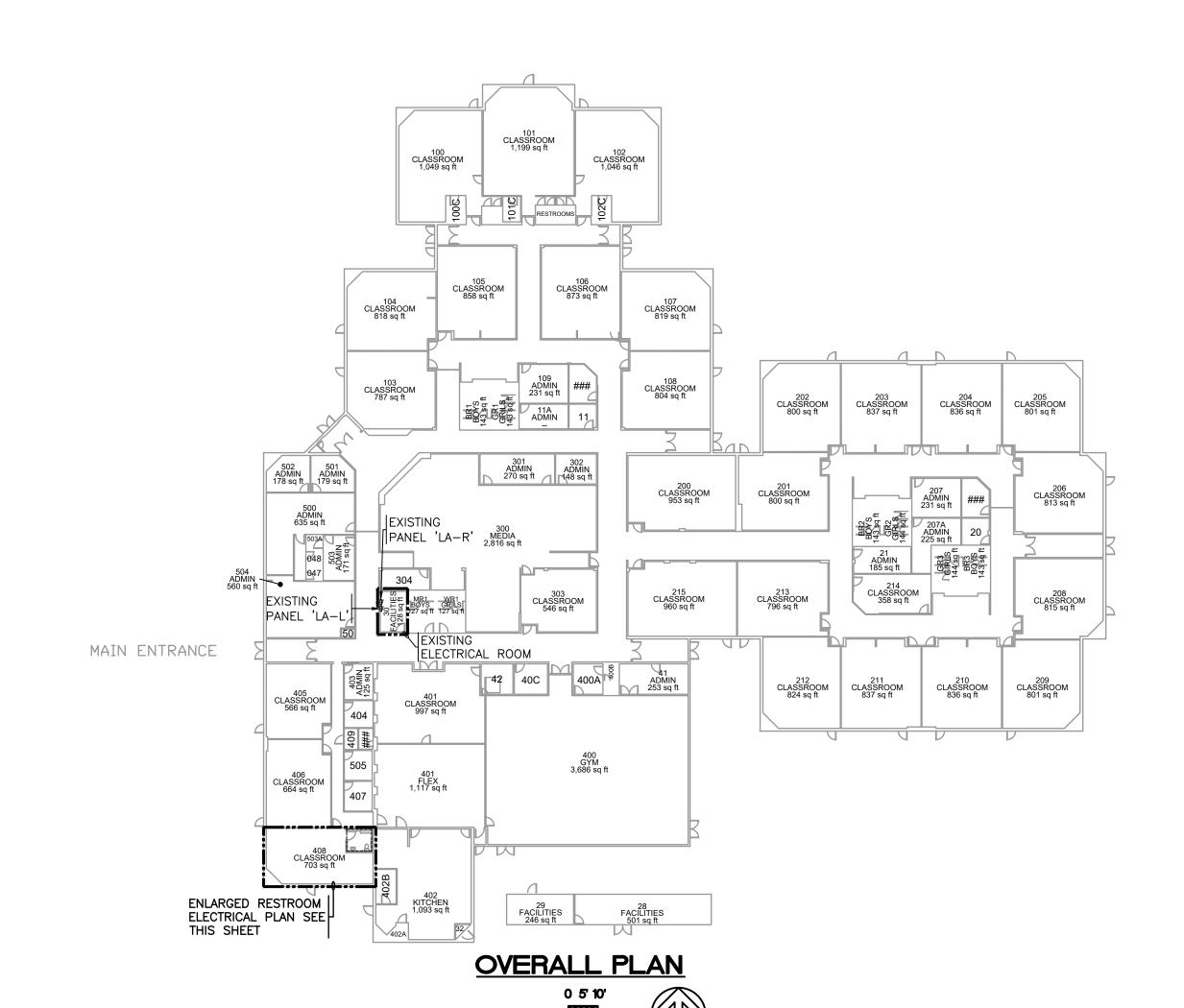
POUDRE LAUREL EI 1000 LOCU FORT COLI



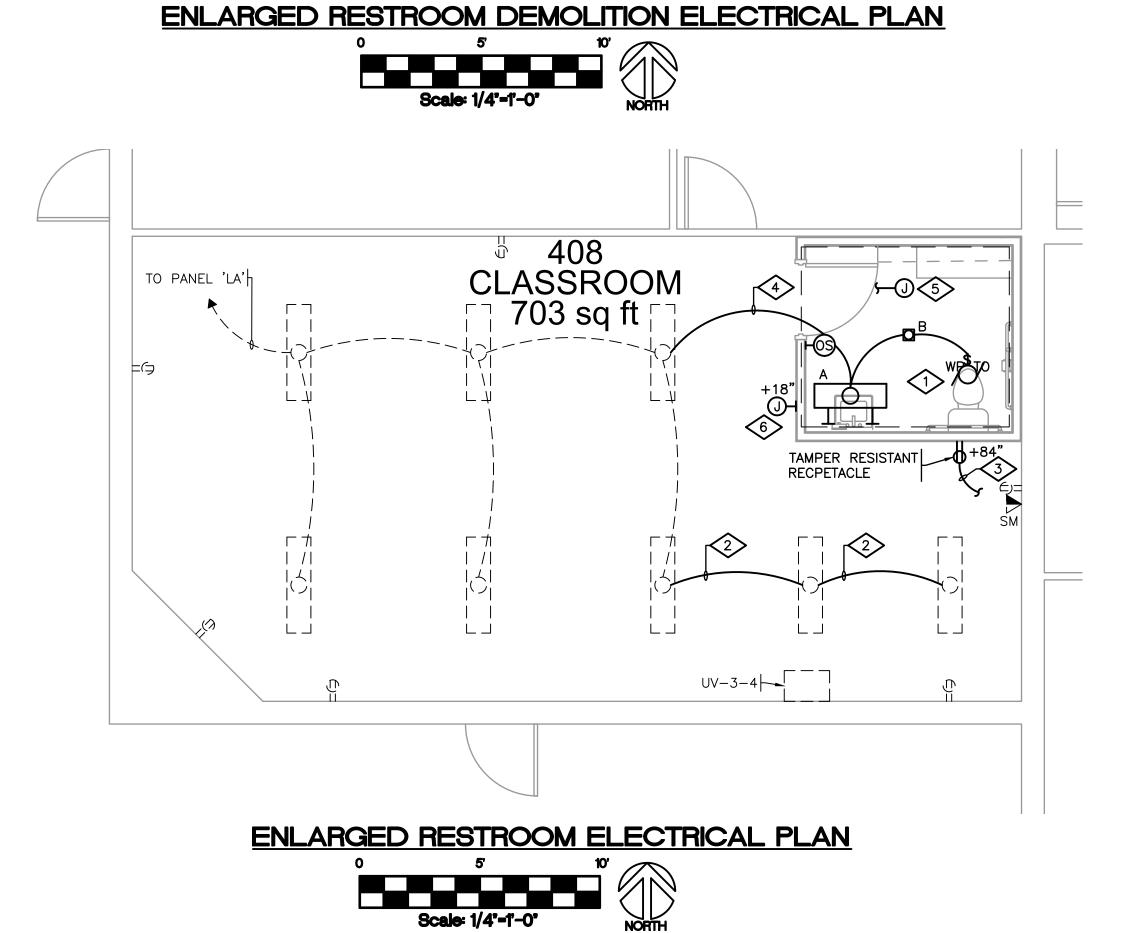
	01/29/202	
10.	Revision	Date

Sheet Title: DEMOLITION AND NEW ELECTRICAL PLANS

EC REST ROOM PERMIT SET Sheet 01/29/2021 E101



Scale: 1/32'-1'-0' NORTH



408 CLASSROOM 77 703 sq ft

UV-3-4

1.2 CODES AND REGULATIONS: A. Comply with all applicable state and local codes, regulations and ordinances, and the latest applicable requirements of the National Electrical Code (NEC) of the NFPA, as interpreted by the local inspection authority that shall have final jurisdiction. The Authority Having Jurisdiction (AHJ) is the State of Colorado. B. Comply also with all OSHA requirements and directives.

1.3 EXAMINATION OF PREMISES:

A. Examine the premises prior to bidding and become fully familiar with existing conditions. 1.4 PERMITS:

A. Secure and pay for all permits, fees, taxes, licenses and inspections in connection with the electrical work.

1.5 DRAWINGS AND SPECIFICATIONS: A. Drawings are diagrammatic and indicate general arrangement of electrical work. Locations are approximate and

shall be subject to minor modifications as directed by Engineer. B. Contractor shall be responsible for exact fitting of all materials, equipment, etc., in building. All dimensions shall be

C. Refer to Architectural, Structural, and Mechanical Drawings and Specifications, as part of this set, and be

responsible for all information contained therein as affects the electrical work. D. Instructions such as "provide..." shall mean "Contractor shall be responsible for the furnishing and installing of new..., complete in every respect."

PART 2 - PRODUCTS 2.1 STANDARDS:

A. All material shall be new and shall be listed by Underwriters Laboratories Incorporated (UL listed) for the purpose intended and shall bear the UL label. Damaged or defective materials shall be replaced. All materials shall comply with the latest NEMA standards.

PART 3 - EXECUTION 3.1 SHOP DRAWINGS:

A. Furnish electronic (pdf) sets of Shop Drawings to Architect for the following:

 Control Equipment. 2. Distribution Equipment.

3. Light Fixtures

B. All materials and equipment shall be approved prior to beginning work.

C. Receipt within 30 days after award of contract.

D. Shop Drawings, including:

1. Catalog data specifically for equipment to be used.

2. See shop drawing requirements in General Provisions.

Electrical Contractor shall provide shop drawing approval stamps on all equipment supplied by them prior to Engineer's shop drawing approval. The Electrical Contractor to check for conformance with the design of the project and compliance with the information given in the contract documents. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site; fabrication process and techniques of

3.2 RECORD DRAWINGS:

A. Maintain a complete set of Electrical Drawings at the job site with all changes in the work marked thereon in a

B. Electrical Contractor shall provide architect at completion of project a complete set of as-built drawings showing all changes in work marked there on including all system wiring diagrams.

3.3 COORDINATION: A. Order the progress of the work so as to conform to the progress of other trades. Coordinate all electrical installations

and rough-ins as required.

A. Provide a competent foreman on the job at all times. All work shall be accomplished in a manner which is neat, workmanlike, of first quality, and compatible with good commercial practices and standards. Provide competent workmen who are skilled as electricians.

3.5 INSTALLATION: A. Install all equipment and materials in accordance with information as indicated on drawings and in full accord with

Manufacturer's recommendations.

3.6 CUTTING AND PATCHING: A. Provide all cutting, channeling, chasing, drilling, etc., operations as may be required for electrical work. In general, all such operations shall be held to a minimum

B. All patching and painting shall be done by Contractor.

3.7 CONSTRUCTION POWER AND LIGHTING: A. Provide construction power and lighting for construction as required. Energy costs will be paid by Owner. All temporary facilities shall be properly grounded, shall comply with NEC and OSHA requirements, and shall have

3.8 SECONDARY SERVICE:

A. Power for distribution within the building is available from the secondary side of a pad mount transformer supplied by the local power company. This service shall be 3 phase, 4 wire, 120/208 volt, 60 Hertz alternating current for normal power and lighting requirements. General arrangement of the service equipment is shown on drawings. Equipment shall be as specified herein.

3.9 REMODEL WORK: A. Electrical Contractor shall remove all wiring devices, light fixtures, etc., which are indicated to be removed. In general, symbols which are dashed indicate existing devices which are to remain. Symbols which are dashed and are crosshatched indicate existing devices which are to be removed. Devices which are to be removed may require

reworking conduit and wiring in order to maintain service to other devices. If removed devices are on walls or

ceilings which are to remain, blank coverplates are to be installed on outlet boxes. B. Where remodeling interferes with circuits in areas which are otherwise undisturbed, circuits shall be reworked as

C. Existing devices and circuiting which are shown are indicated only for informational purposes. Electrical Contractor shall visit the site and shall verify conditions as they exist and shall remove, relocate and/or rework any electrical equipment or circuits affected (whether indicated or not) due to removal or reworking of existing walls, ceilings, etc. Electrical Contractor shall familiarize himself with all work to be done by other trades by studying Architectural, Structural, Mechanical and Plumbing Drawings.

D. Coordinate routing of all conduits with Mechanical and Plumbing Contractors in order to avoid conflicts with ducts,

E. Lighting fixtures removed and reused shall be cleaned and reconditioned by Contractor prior to reinstallation.

Provide new lamps, lens, ballasts, etc., as required to restore fixtures to operational condition. F. All equipment, fixtures, devices, etc., which are removed shall be delivered to Owner for disposition. All items which are removed and not wanted by Owner and which are not reused shall become the property of Electrical

Contractor and shall be removed from site G. The cost of cutting and patching necessary for the installation or removal of electrical work shall be included in the Electrical Contract. Coordinate with General Contractor.

H. Electrical Contractor shall remove and replace lighting fixtures; rework, relocate and replace conduit and wiring and do other work required by the installation of new ductwork, piping, etc., above existing ceiling. Coordinate with

3.10 GUARANTEE: A. Guarantee all materials, labor, workmanship and successful operation of all equipment installed under this contract for a period of two years from date of final acceptance. Repair or replace, at no expense to Owner, all defects which

may arise during this time due to inferior or defective materials, equipment, or workmanship. 3.11 SUBSTITUTIONS: A. The intent of Specifications is to establish quality standards of materials and equipment installed. Specific items are identified by Manufacturer, trade name or catalog designation. Should Contractor propose to furnish materials and equipment other than those specified as permitted by "or approved equal" clauses, he or she shall submit a written request in duplicate, at least five calendar days prior to bidding date, for any or all substitutions. Request shall be

accompanied with complete descriptive and technical data and all other information deemed necessary by Engineer for evaluation. Substitutions submitted for approval shall list items as specified with the alternate substitution. B. Where substitutions alter the design, conduit, wiring or space requirements indicated on drawings, Contractor shall include items of cost for the revised design and construction.

C. Substitutions sent by fax machine will not be acceptable and will not be reviewed.

other Contractors and verify the extent of the work.

3.12 OUTAGES: A. Coordinate all electrical service outages with Owner and General Contractor. Plan all work so that duration of outage is kept to an absolute minimum. Provide temporary wiring as necessary and as required in order to maintain continuous service for Owner's operation where outage must be accomplished during a time when power is deemed necessary by Owner, or when outage is to be of an extended duration, maximum 6 hours. All outage time and scheduling of same shall be as approved by Owner and shall conform to Owner's schedules.

3.13 DELIVERY AND STORAGE OF MATERIALS: A. Make provisions for delivery and safe storage of all materials and make the required arrangements with other Contractors on the job for the introduction into the building of equipment too large to pass through finished

B. Where materials are indicated to be furnished by others to Contractor for installation, these materials shall be checked and their delivery properly receipted. Assume full responsibility for the storage and safe keeping of said materials from time of delivery until final acceptance.

A. Electrical Contractor shall be available to Owner for additional hook up to lights, equipment, etc., on time and material.

END OF SECTION 16010

3.14 AVAILABLE TO OWNER:

SECTION 16100 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL 1.1 STANDARDS:

A. All materials shall be new, shall be UL listed for the purpose intended, and shall bear the UL label. Damaged or defective materials shall be replaced. All materials shall comply with latest NEMA standards. PART 2 - PRODUCTS

2.4 SAFETY SWITCHES:

A. Provide fusible and non-fusible heavy duty type disconnect switches where shown and required. Switches shall be horsepower rated, quick make, and quick-break, by same manufacturer as panelboards. 2.7 FUSES

A. Provide sizes, classes and types of fuses as indicated for all fused safety switches. All fuses 0-600 amps shall have the Class "R" rejection feature. Verify actual load current of all motors prior to ordering fuses and provide fuses of sizes as recommended by Manufacturer. Generally, motor fuses shall be the dual element type and shall be set at 110 percent of full load amps, or 125 percent where required for heavy duty usage or high ambient temperatures. Fuses shall be the power voltage rating to match circuit characteristics in which installed. Fuses indicated on drawings are those of Bussmann Co., equal by Gould Shawmut or Littel Fuse.

2.8 SPARE FUSES A. Provide three spare fuses of each size and type installed. Place in a metal cabinet adjacent to main distribution equipment. Cabinet shall be wall mounted, shall have a hinged door and latch, and shall be labeled "SPARE FUSES" on cover.

2.9 NAMEPLATES A. Provide 1 x 3 inch laminated plastic nameplates (1/4 inch high white letters; black background for normal power equipment, red background for emergency power equipment) for all switches, panelboards, controllers, etc., in main

distribution switchboards and sub-distribution panelboards. Nameplates shall be permanently attached to equipment with two screws. Provide blank nameplates for all spares.

B. Multiple Gang Light Switches: Provide engraved coverplates 1/8 inch lettering black filled on all switch plates two and more ganged. Lettering shall indicate area served. C. Light switches/receptacles (all): Provide panel and circuit Kroy labels on front of coverplate and label with marker

on inside panel cover and circuit also. D. Label all mechanical equipment, safety switches, and starters, etc., with raised letter tape. Nameplates and labels

shall indicate the general areas and type of electrical load served by each circuit. E. Neatly label all Junction box coverplates as to their function. Use a permanent ink pen. Labeling shall be lights, smoke detector power, elevator control, fire alarm, receptacles, etc. Labeling shall be done on J-boxes that are above accessible ceiling and in storage rooms and maintenance areas, etc. Do not label J-boxes in public view.

2.10 NM-NONMETALLIC SHEATHED CABLE NOT ALLOWED ON THIS PROJECT: 2.11 CONDUCTORS:

A. Provide a complete system of conductors for all raceway systems. All conductors shall be rated 600V, and shall be of a manufacturer subscribing to applicable IPCEA and NEMA standards and practices. Conductors shall be of sizes and types as indicated, and as required by NEC for specific uses. Where quantities of conductors in a raceway system are not specifically indicated, provide number as required to maintain function, control and number of circuits as indicated. All conductors shall be UL listed and approved, and shall conform to the following:

1. Minimum wire size shall be #12 AWG copper except for control or signal circuits which may be #14 AWG 2. Unless otherwise indicated, all wiring for branch circuits shall be copper #12 AWG in 1/2" conduit, protected

by 20 ampere circuit breakers. See Voltage Drop.

3. Voltage Drop: If distance from panel to first outlet is 75 feet or greater (for 120V circuits), #10 shall be installed from circuit breaker to every device in circuit.

4. Wire sizes #10 AWG copper and smaller shall be solid; #8 AWG copper and larger shall be stranded. 5. The following insulation standards shall apply: a. All feeder conductors shall be type THWN, XHHW or RHW.

b. Other conductors shall be per NEC THHN/THWN copper unless noted otherwise, Article 310. c. Type THHN/THWN copper for exterior runs in conduit.

6. Motor wiring for power shall be stranded. B. Aluminum conductors shall not be used on this project

C. The use of MC cable, AC (Armored Cable), NM Cable (Romex), or flexible conduit shall not be used for branch circuits or feeders.

2.12 CONDUITS: A. Conduits shall be provided for all wiring runs as shown and specified. All sizes shall be per NEC. Use GRC where required by code, utility company, for mechanical protection and as shown. Type IMC may be used in lieu of GRC where permitted. Use EMT for all other runs. Provide approved couplings and connectors for all connections. Final

connections to motors and other vibrating or rotating equipment shall be made in LTF flexible conduit.

B. Heavywall, type II, rigid, Schedule 40 PVC: 1. For all wiring runs in or under the floor slab which is in contact with the ground.

2. For all wiring runs buried underground, unless otherwise indicated.

3. Do not use Schedule 40 or 80 PVC above ground. Conduit sizes 1" and smaller use schedule 80 PVC elbows and conduit sizes 1 1/4" and larger use GRC tar coated elbows to max. 6" above grade then change to EMT conduit. Note: Provide expansion joints in accordance with Manufacturer's recommendations.

C. Use approved type couplings and connectors in all conduit runs and make all joints tight. Provide insulated bushings for all terminations in pipe size 1 1/4" and larger. Provide all steel set screw couplings and connectors for all other conduits. Provide expansion fitting and bonding conductors for all runs which cross building expansion joints. Provide waterproof steel compression gland couplings and connections for all runs in wet locations such as exposed to weather, buried in slabs, etc.

D. All spare conduit shall be EMT with pull string. Label all spare conduits on the ends as to where it originates and terminates. Install pull string in each empty conduit. (Exception: it is not necessary to label spare conduits directly above an electrical panel.)

2.13 SUPPORTS AND HANGERS:

A. Provide supports and hangers as necessary and as required to insure a good and substantial installation. Support raceways, fixtures, cabinets, boxes, etc., on approved types of trapeze hangers or wall brackets as manufactured by Unistrut or acceptable equal. Provide steel hanger rods securely fastened to or through the building structure for all trapezes, etc. Do not suspend from mechanical piping or ductwork. Perforated plumber's straps or wire will not be

B. Obtain Architect's approval for the use of powder powered fasteners and use only in locations as he may direct. 2.14 OUTLETS:

A. Outlets shall be galvanized steel or zinc pressed steel outlet boxes for all locations except where otherwise indicated or where cast metal boxes are required by NEC. Boxes are to be 4" square or octagonal, 2 1/8" Depth minimum. Provide plaster or tile rings for all flush outlets installed where wood, drywall, tile, plaster, etc., types of finishes are applied. All outlets for exterior application shall be cast, weatherproof type, with gasket and case coverplate. Tile boxes of extra depth may be used for interior, dry applications where masonry block or brick walls constitute the finished wall surface. In any event, provide outlet boxes of proper type and design for the particular

fixture or device to be installed. Boxes shall be as manufactured by Steel City or acceptable equal. B. Surface mounted boxes shall be cast metal weatherproof, with grounding terminal, threaded hubs, and shall be similar and equal to Crouse-Hinds design Type FD or FS.

C. Pull Boxes: Provide pull boxes in raceway runs as required by NEC and job conditions. Install in accessible

D. Surface Raceway: Surface raceway boxes same manufacturer as surface raceway.

2.15 LIGHTING EQUIPMENT A. General: Provide all lighting equipment and lamps as shown on drawings and as called for in these Specifications. Provide all such equipment fully complete and prewired. Install all equipment in a secure and substantial manner, and in full accord with Manufacturer's recommendations. Provide all such miscellaneous installation equipment such as support, hangers, yokes, flanges, etc., as is necessary. Provide 1-1/2 inch spacer, finished, factory approved type, between tops of fluorescent fixtures and combustible ceiling materials as required by code. Provide for aiming

of all adjustable lighting fixtures as directed by Architect; exterior fixtures shall be adjusted at night. B. Fixtures (Luminaries): All fixtures exposed to weather or cold temperatures shall be weatherproof and suitable for efficient operation at temperatures and conditions concerned. All fixtures shall bear UL label for its particular application, or as indicated; 32 watt super T8 fluorescent shall be rapid start; 20 watt shall be trigger start. Install surface or pendant mounted luminaires true and straight. Provide plaster frames or similar type devices compatible with ceiling construction for all recessed fixtures.

2.16 DEVICES AND PLATES:

A. Receptacles: Provide the following flush receptacle devices where indicated and required. Verify color with Architect prior to installation. All devices to be Specification Grade with screw type terminals. Provide as shown or acceptable equal. Provide tamper-resistant in special education and kindergarten, and where required by NEC.

Leviton-5263-White

TayMac-503-S1G, A4

1. Devices: a. 20A-3W, grd, duplex dedicated outlet b. W.P. lift lid, duplex For GFI TayMac S2GA4

Leviton-6899-White c. Ground Fault 20 amp 2. Switches a. 20A switches Leviton-1221-White

minimum 3/16 inch shafts, master keyed, to lock disconnect doors

b. 3-way switches Leviton-1223-White Coverplates a. Finished and unfinished areas are to provide smooth steel White finished coverplates.

A. All exterior mounted disconnects 12 feet and less above finished grade shall have padlocks; master laminated type

3.4 CONDUCTORS:

A. Conductors shall be continuous from outlet to outlet or J-box. Splices shall be held to a minimum. Where necessary, splice in readily accessible pull box, J-box, or outlet box. The joint insulation value shall equal that of the

conductor. Splices and connections shall be made in an approved manner. B. Install wiring in the raceway systems only after the conduit run has been completed and after such time as conduits have been thoroughly cleaned and dried.

C. Enclose underground/exterior conductors in conduit schedule 40 PVC. All secondary and exterior branch circuit conductors to be buried a minimum of 30 inches below finished grade. Provide 2 inches of sand fill above and below conductors and install electrical marker tape 6 inches above all runs.

D. Wire and cable No. 6 and smaller shall be factory color coded. Where factory color is not available, or where on short runs factory color coding is not practical, mark conductors on each end and in J-boxes or pull boxes with 1" band of colored pressure sensitive plastic tape or by the use of brilliant waterproof lacquer properly applied. Colors for each phase and the neutral shall be consistent throughout the system.

1. The following color code prevails for all service, feeder and branch circuits:

Neutral White for 120V Ground Green Phase A Black for 120/208V

Phase B Red for 120/208V

Phase C Blue for 120/208V E. Wire and cable shall be the proper size to fit under lug landings in accordance with UL listing. Where larger wire and cable is used for voltage drop, etc., and will not fit under UL lug listings, Electrical Contractor shall provide proper wire and cable size under lugs and either pigtail to larger wire and cable or use power tap blocks. Provide

insulation value equal to the wire and cable being used. F. High Compression Termination: Provide high compression terminations for connecting smaller conductors to larger for voltage drop issues as shown on drawings. H-type compression tap connectors shall be for copper combinations, sized for correct conductor installation using 15 ton and 12 ton head tools per manufacturer UL listed. Manufacturer Thomas and Betts. Compression taps series 63100 with high compression tool. Provide shop drawings. Provide

interlocking insulating hard covers and secure with tape sealant per manufacturer, UL listed. Manufacturer Thomas and Betts Series HTCX00 (H-Tap Insulating Hard Covers), and HSTS25 Series. Provide shop drawings. G. Terminations Exterior

non-hygroscopic material, with ribs or wings for easy grip and vibration-absorbing retention fingers. Inside shall be a non-setting, non-conductive, fire-retardant silicone sealant that eliminates the possibility of corrosion and flashover. The connector shall have a plated, conical, square-wire spring to draw in conductors securely as

1. Terminations shall be silicone filled safety connectors. Connector body shall consist of color-coded shell of

2. Connectors shall be King Technology's Model King-1, 2, 3, 4, 5, 6, and/or 9 wire connectors for pressure-type locations or accepted equal.

H. Provide cable wraps (nylon ty wraps) around branch circuit bundles and feeder bundles in all switchboards. panelboards, and loadcenters. I. All feeders and branch circuits rated below 600 volts shall be megger tested between phase conductors and between

phase conductors and ground, using a 1,000-volt megger. Tests shall be made upon completion of all connections and splices and insertion of all overcurrent devices. Tests shall indicate free from short circuits and grounds. 3.5 CONDUCTOR NEUTRAL APPLICATIONS A. Neutrals: Copper, same size as phase conductor, derating neutrals not allowed.

B. Feeder neutrals to lighting or computer panels shall be 200 percent. C. Provide separate Neutral conductors for each 15 or 20 amp (120 or 277V) single pole breaker, the following

application: 1. Lighting circuits.

2. Computer circuits.

3. Kitchen circuits. 4. Electronic equipment.

5. All circuits using common raceway or provide tie handles on branch circuit breaker per NEC 2008.

A. Slab on grade: Conduits shall not be located in slab but 6" below, thus cutting of slab will not damage conductors

B. All conduits shall be installed concealed in finished areas. Exposed conduits will be permitted only at surface

cabinets, in mechanical equipment rooms, and as otherwise permitted by Architect. C. Route all conduits either parallel or perpendicular to walls and structural members, always avoiding proximity to sources of heat such as flues, hot water lines, etc. Runs which are buried below the floor slab or underground may be run direct (angular) to fullest practical extent. Locate raceways so as not to endanger the strength of any structural members. All runs pertinent to the building structural system shall be installed only when and in manner as approved by Architect. Actual conduit runs are not necessarily indicated, but are to be installed in the most feasible manner compatible with building construction and work of other crafts. Outlets shown connected together

must be wired on the same circuit. D. All bends to be made by the use of an approved bending tool. Cut all conduits square and ream all cuts to remove burrs. Exercise all necessary precautions during the construction period to prevent entry or accumulation of moisture, dust, concrete, and all foreign matter into the raceway system. Clean and dry all raceways prior to pulling

E. Secure all raceway systems in building structure in a rigid and secure manner using approved type fasteners such as "Caddy Clips" or similar type of other manufacturer. The use of wire, plumber's straps, etc., will not be permitted. Locations and spacing of fasteners shall be as required by NEC.

F. Conduit hangers, clamps, light fixtures, supports, nails, etc., shall be fastened to joists or beams only. Do not support from bottom of roof decking or mechanical ductwork. G. Notching of wood studs (where used) for conduit routing shall not be allowed. Drill center of studs if hole gets

be subject to his authorized Roofing Contractor. General Contractor shall pay all such costs directly to Roofing I. Conduits penetrating through fire-rated walls and floor slabs shall be sealed against the spread of fire and products

H. All roof penetrations done by Electrical Contractor must conform to General Contractor's standard criteria and shall

of combustion with smoke-rating of the floor or wall through which conduits pass. See Drawings for additional

C. Mount all weatherproof (WP) outlets vertically.

International Building Code.

END OF SECTION 16100

closer than 1" to face of studs. Provide 3/16" steel protective plates.

3.7 WIRING ABOVE SUSPENDED CEILINGS A. Approved Class II wiring systems such as controls, telephone, intercom, TV, Fire Alarm, etc., may be routed without conduit on bridal rings, (5 feet on center and neatly trained) where above suspended accessible ceiling systems unless otherwise indicated. Where wiring runs occur in inaccessible construction such as underfloor, in walls, above gypsum board ceilings, etc., provide all necessary outlets and conduits stubbed into nearest accessible suspended ceiling space. Wiring in all exposed areas shall be routed in conduit such as, exposed ceiling, surface mounted on walls and etc. All conduit stubs shall be tagged. Where suspended ceiling plenums are used for transportation of environmental air and where required by local inspection authority, all Class II wiring runs shall be enclosed in an approved raceway system or approved return plenum cable on bridal ring system. This shall include all systems such as telephone, data, etc., even though this Contractor is not providing the cables or

conductors. Refer to Article 300-22 of NEC 2017 B. Where suspended ceiling plenums are used for transportation of environmental air and where required by local inspection authority, all Class II wiring runs shall be enclosed in an approved raceway system or Teflon cable approved for return air plenum application. This shall include all systems such as telephone, etc., even though this Contractor is not providing cables or conductors. Refer to Article 300-22 of NEC.

A. Install all outlets in a secure and substantial manner and locate so as to be compatible with space, construction and equipment requirements, and with the work of other trades. Verify final outlet locations with Architect prior to installation. Install all outlets plumb and in accessible locations. Flush outlets are to be installed with front of box or ring flush with finished surface. All outlets are to be installed flush unless used in conjunction with exposed conduit system or unless otherwise indicated. If outlets are not installed plumb, flush, level or in approved locations,

relocate or reset and refinish at no additional cost to Owner. B. Lighting outlets: Install flush wall or ceiling outlets to accommodate type of fixture to be installed. Provide 3/8" no-bolt fixture stud in all outlets where required by weight of fixture.

D. J-boxes shall not be stacked atop or use of multiple extension rings on each other to form single J-boxes. Single J-boxes shall be used of proper size per NEC. 3.9 LIGHTING EQUIPMENT A. Recessed fixtures shall be connected from a J-box above the ceiling with flexible conduit. The supply conductors to

openings in ceilings for outlets or recessed fixtures so that fixture or trim completely covers the openings when B. Recessed fixtures in suspended T bar grid ceilings: Overall dimensions of fixtures to be recessed with grid ceiling must be such that they will fit without distortion to the T bars. No field modification of fixtures will be allowed. Install fixtures only after such time as all adjacent T bars have been installed and supported from the superstructure at each corner of the fixture. Provide bar hangers supported from and secured to adjacent T bars to support

recessed fixtures shall be in accordance with Manufacturer's label or as specified, whichever is more stringent. Cut

however, to ceiling framing member as required by NEC 410 16. 3.10 COVERPLATES A. Install oversized or "mistake plates" for any outlet where standard sized plate will not cover rough in opening. Provide ganged plates for combination devices and multiple device installation as required. Install plates with holes

incandescent fixtures. Fixtures must not be supported from ceiling panels. Fixture must be securely fastened,

sized to accommodate cable to be installed for all telephone and computer outlets. B. Provide blank coverplate for all unused outlet boxes, i.e. voice, data, and power outlets at time of final observation. 3.11 FIRE PENETRATIONS A. Provide fire rated stops to maintain fire ratings of walls, ceilings and floors.

B. Conduits may penetrate the walls, ceilings, floors or partitions provided fire stopping is provided per current

SECTION 16400 - ELECTRICAL SYSTEMS

PART 1 - GENERAL 1.1 Furnish and install a complete electrical system as shown on drawings and specifications.

PART 2 - PRODUCTS 2.2 GROUNDING SYSTEM:

A. Ground the entire electrical distribution system, including all raceways, outlets, fixtures, equipment, etc., in full accord with NEC. B. Provide separate grounding conductor in all raceways. C. Provide separate grounding jumper from the grounding screw of all receptacle devices to the metallic box in which

mounted. Jumper may attach to box with a separate grounding screw or clip device. Jumpers may be eliminated if

approved self-grounding devices are used. D. Provide separate bonding conductor, bare copper, for runs of flexible conduit where required by NEC.

E. Provide separate grounding conductor in all runs to exterior lighting standards, such as post lights, signs, etc. F. All conductors used for grounding and bonding purposes shall be copper, insulated green, only.

END OF SECTION 16400

SECTION 16900 - ELECTRICAL COMPLETION

PART 1 - GENERAL 1.1 GENERAL:

A. The entire electrical system shall be left in first-class workable operating condition and all work shall be complete. PART 2 - PRODUCTS 2.1 DIRECTORY CARDS:

A. Provide labels and neatly typed directory cards for all new and existing panelboards and loadcenters. Directory cards shall indicate the general area and type of electrical load served by each circuit.

PART 3 - EXECUTION 3.1 CLEAN UP: A. Remove all materials, scrap, etc., relative to the electrical installation and leave the premises in a clean, orderly

B. Clean all electrical equipment and materials of all foreign matter. Clean all light fixtures using only methods and materials as recommended by Manufacturer. ACCEPTANCE DEMONSTRATION:

A. Upon completion of the work, at a time to be designated by Architect, Contractor shall demonstrate to Owner the operation of the entire electrical installation, including any and all special systems provided under this contract.

condition. Any costs to Owner for clean-up of the site will be charged against Contractor.

3.3 TEMPORARY WIRING: A. Remove all temporary wiring, outlets, etc., complete.

3.4 DRAWINGS: A. Deliver Record Drawings to Owner.

END OF SECTION 16900

CRUMPTON

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Sheet Title: **ELECTRICAL** 

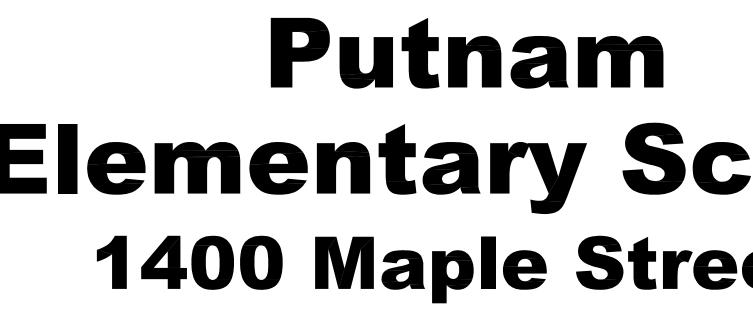
Project EC REST ROOM PERMIT SET Sheet 01/29/202 E201

SPECIFICATIONS

 $\Box$  $\bigcirc$  $\sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum$  $\geq$  $\bigcirc$ 



# A Renovation for:



Elementary School 1400 Maple Street

**Fort Collins** 

Kenney & Lee

architecture group, inc.

land • Colorado (970) 663-0548

## ABBREVIATIONS

GLASS ADJUSTABLE BOTTOM OF FTG. HORIZONTAL BLDG BUILDING LONG LIGHT BLOCK MB MACHINE BOLT BOTTOM OF STL. ML MICRO-LAM CABINET MTL METAL CAST-IN-PLACE NIC NOT IN CONTRACT CEILING OC ON CENTER CLEAR OHC OVERHEAD CABINET CMU CONC. MASONRY P TOP PLATE CONC CONCRETE OR PROPERTY LINE CONT CONTINUOUS PT PRESSURE TREATED CONN CONNECTION RAD RADIUS COUNTERSINK R&S ROD AND SHELF DOUBLE S&P SHELF AND POLE DOUGLAS-FIR SHELF DIAMETER SIM SIMILAR DOWN SQUARE DRAWING STL STEEL EACH TOF TOP OF FOUNDATION EACH FACE TOS TOP OF SLAB EQUAL TOW TOP OF WALL EACH SIDE TS TUBE STEEL EACH WAY TYP TYPICAL FLOOR DRAIN UNO UNLESS NOTED FOUNDATION OTHERWISE FINISH FLOOR VERTICAL MD MOOD FLOOR WWF WELDED WIRE FIELD NAIL FABRIC

## CONSULTANTS

#### ARCHITECT

KENNEY LEE ARCHITECTURE GROUP, INC. ATTN: KRIS LEE 209 EAST FOURTH STREET LOVELAND, COLORADO 80537 (970)663-0548

#### OWNER

POUDRE SCHOOL DISTRICT ATTN: JASON LEE 2445 LAPORTE AVE. FORT COLLINS, COLORADO 80521 (970) 490-3017

#### M. P. E. ENGINEER

PIVOTAL ENGINEERING WEST, LLC 1355 GREENRIDGE RD, SUITE B WINDSOR, COLORADO 80550 (516) 547-5714

responsibility for all consequences arising out of such changes.

## CODE SUMMARY

CODE REQUIREMENTS HAVE REMAINED CONSISTENT WITH THE ORIGINAL BUILDING CONSTRUCTION INCLUDING OCCUPANCY GROUP AND CONSTRUCTION TYPE.

THIS PROJECT SHALL COMPLY WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE, 2018 INTERNATIONAL MECHANICAL CODE, 2018 INTERNATIONAL PLUMBING CODE, 2017 N.E.C., 2018 INTERNATIONAL FIRE CODE, ALL APPLICABLE LOCAL ORDINANCES AND REQUIREMENTS, & 2017 ANSI A117.1 STANDARDS

TYPE OF CONSTRUCTION TYPE II B (NON-SPRINKLERED) OCCUPANCY CLASSIFICATION PER CHAPTER 3

MAXIMUM BUILDING HEIGHT & NO. OF STORIES PER TABLE 504.3 & 504.4 E GROUP: 15' AND THREE STORIES ALLOWED (NO CHANGE IN HEIGHT OR AREA)

OCCUPANCY SEPARATION PER TABLE 508.4

E / E (NONE REQUIRED)

NOTICE: DUTY OF COOPERATION - Release of these plans contemplates further cooperation among the owner, his contractor, and the architect. Design and construction are complex. Although the architect and his consultants have performed their services with due care and diligence,

they cannot guarantee perfection. Communication is imperfect, and every contingency cannot be anticipated. Any ambiguity or discrepancy

and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility

for all consequences. Changes made from the plans without the consent of the architect are unauthorized, and shall relieve the architect of

discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding

# Colorado

# SHEET INDEX

FINISH SCHEDULE / DETAILS

MECHANICAL, ELEC.

M-1.0 PLUMBING & MECHANICAL FLOOR PLANS & SCHEDULES GENERAL MECHANICAL NOTES &

OUTLINE SPECS

E-0.1 LEGEND, NOTES, SPECIFICATIONS & SCHEDULES

E-1.0 LIGHTING & POWER PLAN





FROM THIS SET.

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sheet A1.0

NOTE: THIS SET IS NULL & VOID SHOULD SHT. ALO BE OMITTED

## DEMOLITION PLAN KEY NOTES

- REMOVE ALL EXISTING WALLS, DOORS, WINDOWS, ETC. AT ALL AREAS INDICATED.
- CONTRACTOR TO INVENTORY AND INSPECT FOR REUSE.
  PROPERLY TERMINATE ALL ELECTRICAL CONNECTIONS.
  TEMPORARILY RETAIN ONE PANEL AND SERVICE TO OPERATE THE EXISTING LIGHTS FOR CONSTRUCTION LIGHTING.
- REMOVE ALL FLOORING IN THIS AREA TO THE LIMITS OF ADJACENT CONSTRUCTION. VERIFY W/ FACILITIES FOR EXTENT OF FLOORING REPLACEMENT
- ALL LIGHT FIXTURES IN OPEN SPACE TO REMAIN UNTIL GENERAL CONTRACTOR INSTRUCTS REMOVAL. CONTINUE TO PROVIDE ELECTRICAL SERVICE TO LIGHTS.
- ANY FIRE LINES TO BE REMOVED OR ALTERED MUST BE DONE BY A LICENSED FIRE SPRINKLER CONTRACTOR ONLY AS DESIGN/BUILD. SPRINKLER HEADS TO MATCH EXISTING. WORK TO BE COMPLETED OFF HOURS AFTER 5:00, VERIFY DATE W/ OWNER.
- DEMO CONTRACTOR MUST LOCATE ALL UNDERSLAB ELECTRICAL & PLUMBING LINES AND/OR CONDUIT PRIOR TO ANY SLAB SAWCUTTING WORK.
- EXISTING FURNITURE TO BE REMOVED AND STOCKED PER POUDRE SCHOOL FACILITIES INSTRUCTION. (N.I.C.)
- ANY ALL ASBESTOS TESTING AND ABATEMENT TO BE PERFORMED BY POUDRE SCHOOL FACILITIES. GENERAL CONTRACTOR TO COORDINATE EXTENTS OF WORK.
- REMOVE EXISTING LOCKERS AS SHOWN AND REFINISH NEW EXPOSED END

#### GENERAL DEMO NOTES

I. DEMO. SUB-CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO STARTING CONSTRUCTION IN AREA CONCERNED. DO NOT SCALE DRAWINGS.

2. GENERAL CONTRACTOR SHALL PERFORM DEMOLITION IN MANNER REQUIRED TO MAXIMIZE EFFICIENCY OF INTEGRATION WITH REQUIRED NEW CONSTRUCTION AND/OR PATCHING. CONTRACTOR SHALL REMOVE ITEMS IN A WORKMANSHIP LIKE MANNER SO AS TO ENSURE THAT ADJACENT CONSTRUCTION SHALL REMAIN INTACT.

3. PRIOR TO COMMENCING CONSTRUCTION GENERAL CONTRACTOR SHALL CONFIRM EXTENT OF ACCEPTED ALTERNATES AS ALTERNATES MAY REVISE SCOPE OF DEMOLITION REQUIRED IN BUILDING.

4. ALL DEMOLITION WORK AND LOCATION IDENTIFIED ON THE DEMOLITION PLANS, ARE DIAGRAMMATIC IN NATURE. NOT ALL REQUIRED DEMOLITION WORK HAS BEEN NOTED ON THE DRAWINGS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXISTING ITEMS REQUIRED FOR THE COMPLETION OF THE WORK INDICATED IN THE CONSTRUCTION DOCUMENTS OR DAMAGED AS A RESULT OF THE CONSTRUCTION PROCESS.

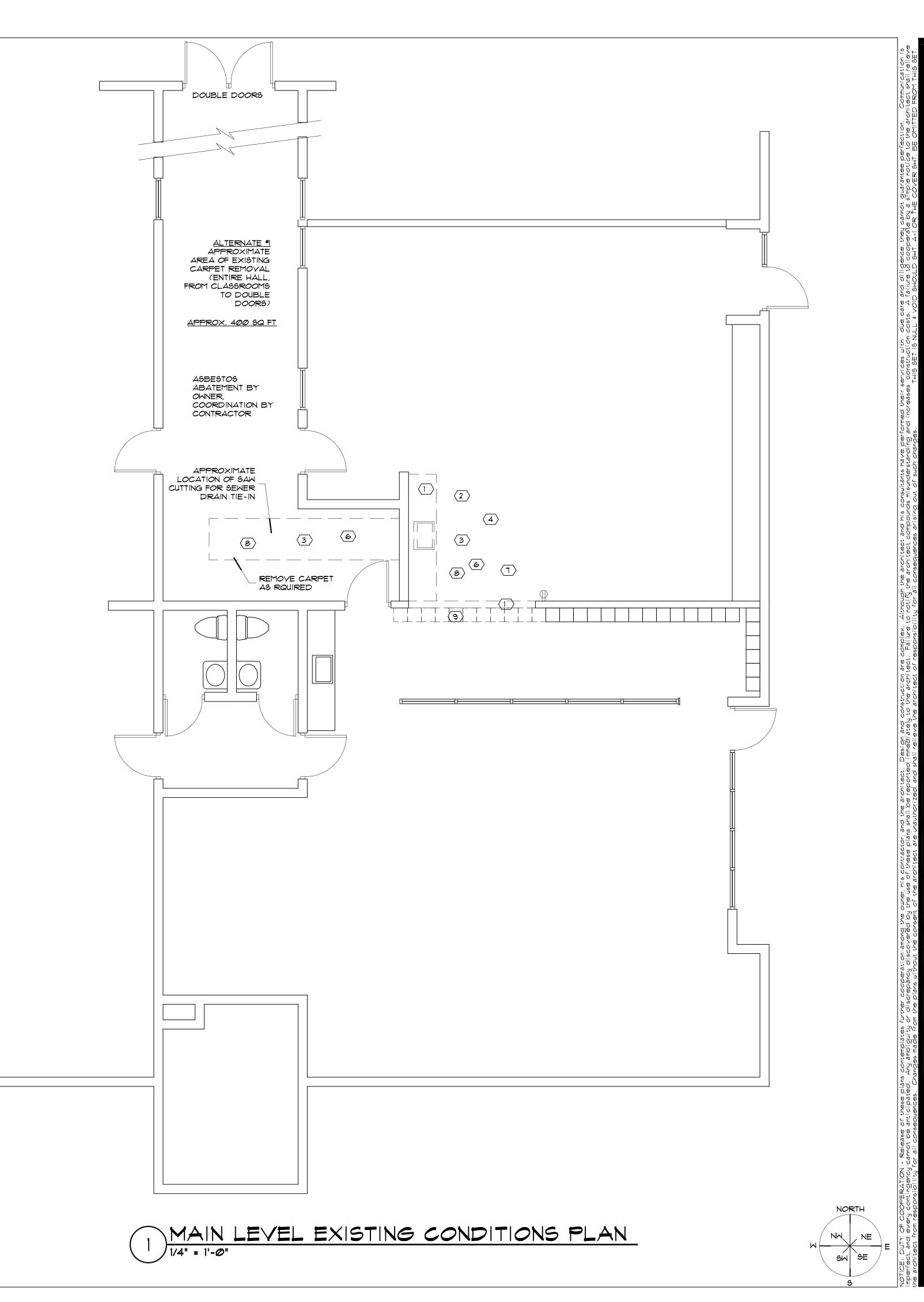
5. RUBBLE CONSTRUCTION DEBRIS AND ANY CONTAMINATED OR HAZARDOUS MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE. ALL MATERIAL DISPOSAL COST SHALL BE INCLUDED AS A PART OF THE BID ITEMS FOR SITE DEMOLITION WORK.

6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE PRESENCE AND LOCATIONS OF ALL EXISTING UTILITIES IN THE AREA OF THE WORK PRIOR TO THE START OF DEMOLITION AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL PRESERVE INTACT ALL CULVERTS, UNDERGROUND CONDUITS, AND CABLES ENCOUNTERED DURING CONSTRUCTION (EXCEPT THOSE UTILITIES SCHEDULED FOR REMOVAL OR ABANDONMENT.)

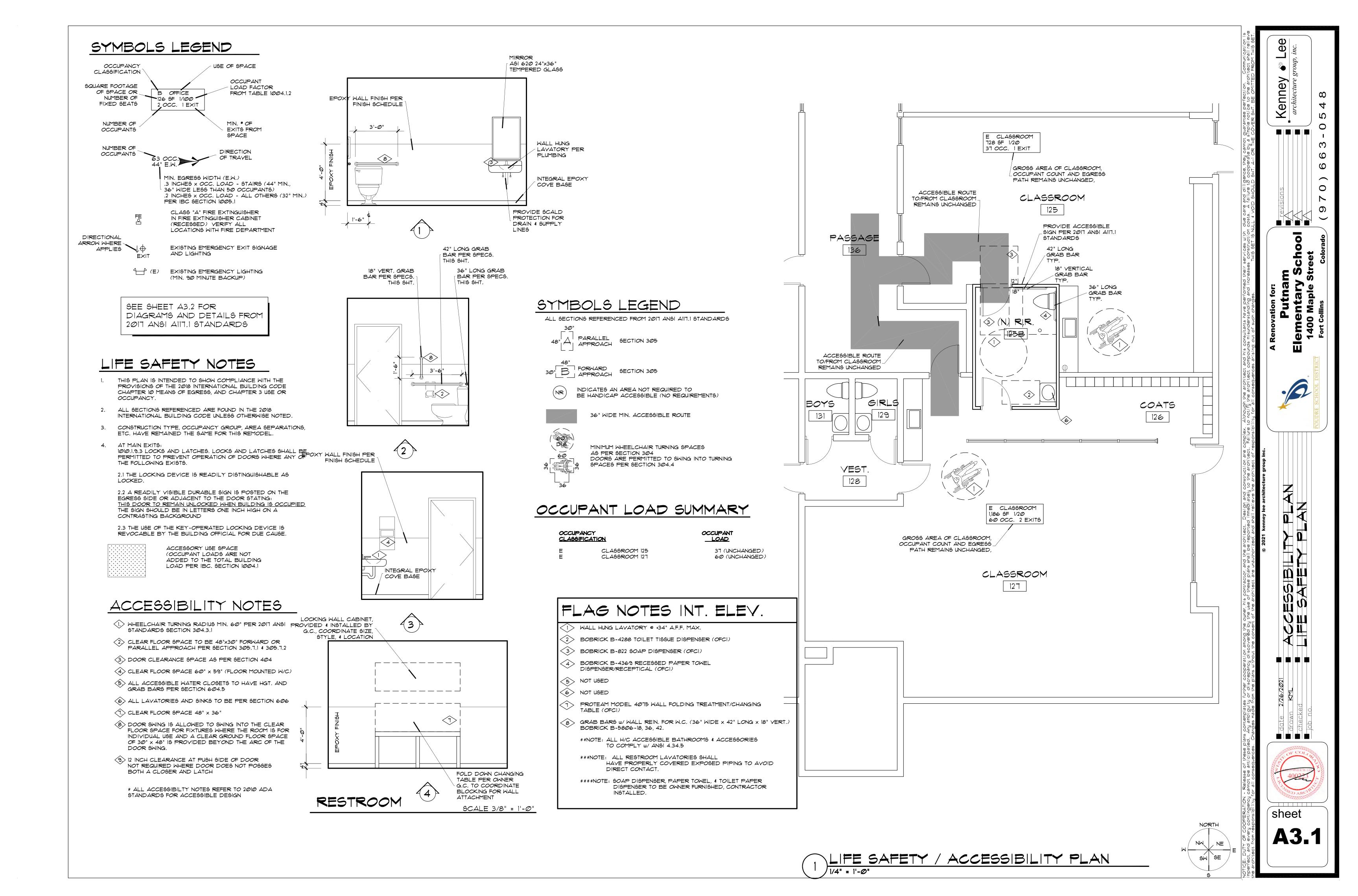
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES, STRUCTURES, & LANDSCAPE AREAS WHICH ARE CAUSED AS A RESULT OF THE CONSTRUCTION WORK. THE CONTRACTOR SHALL HOLD THE OWNER HARMLESS FROM ANY LIABILITY OR EXPENSE FOR INJURIES RESULTING FROM SUCH DAMAGES.

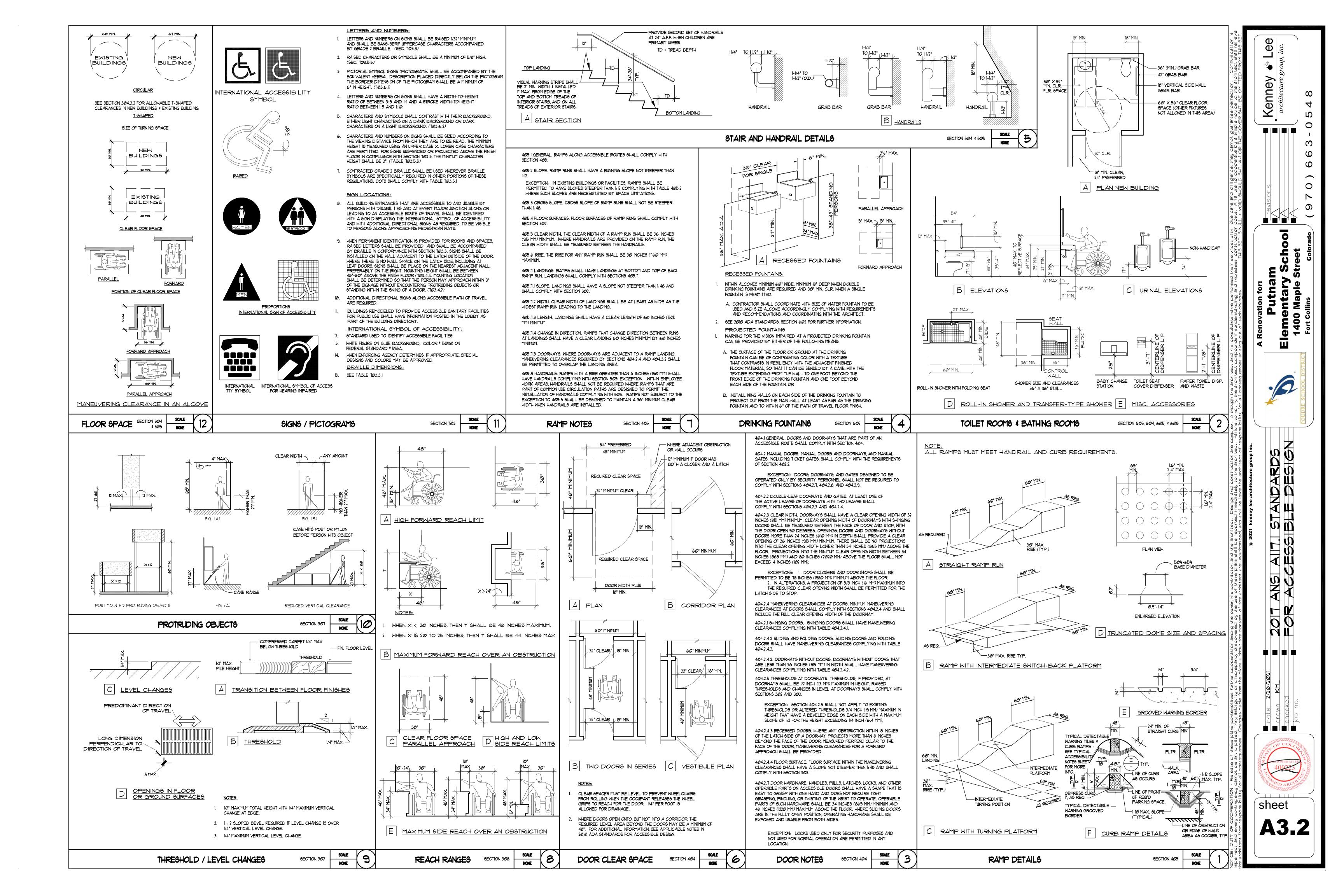
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COMMUNICATING WITH THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES NOT SHOWN ON THE PLANS. ITEMS ON THE PLANS MIGHT NOT SHOW ACTUAL CONDITIONS ONCE DEMOLITION BEGINS. ANY BEARING CONDITIONS NOT KNOWN MUST BE BROUGHT TO THE ATTENTION OF ARCHITECT AND ENGINEER.

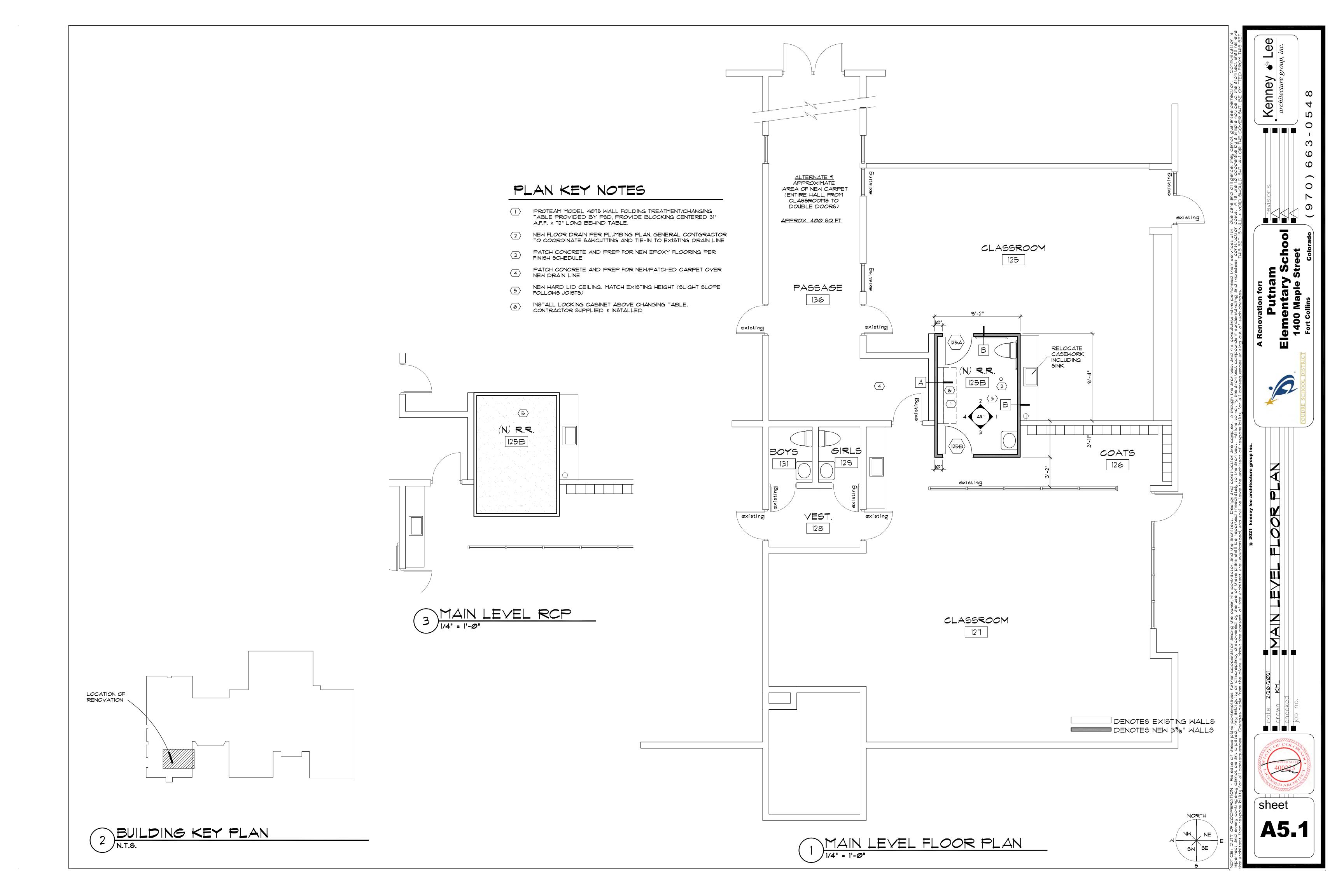
LOCATION OF RENOVATION



**E** 94







GROUP 1 HINGES: 3 EACH SBBL US32D IVE LOCK SET: PRIVACY ND405RH 0626, 6 PIN CORE KICKEPLATE: 8400 10"x34" US32D IVE DOOR STOP: WS407 CCV US32D IVE RUBBER DOOR SILENCERS

TYPE

HOLLOW METAL FRAME

CORE

NOTE: SEE FLOOR PLANS FOR ALL DOOR SWING DIRECTIONS, TYP.

1 3/4" THK. SOLID

(MATCH EXISTING)

CLEAR MAPLE

N	EW D	OOR	SCH	HEDULE	
SYM.	SI	ZE HGT.	) }_ }_	HARDWARE GROUP	NOTES
1254	3'-Ø"	7'-⊘"	1	1	PAINT DOOR FRAME TO MATCH EXISTING FRAMES
125B	3'-Ø"	7'-⊘"	1	1	PAINT DOOR FRAME TO MATCH EXISTING FRAMES

FLOOR	FINISH	LEGEND

FLR-1

FLR-1

ROOM

NAME

125B (N) ADA R.R.

RM.

NO.

<u>CARPET</u> MANUFACTURER: TANDUS, MANNINGTON OR MOWHAWK COLLECTION: MATCH EXISTING DESIGN: MATCH EXISTING COLOR: MATCH EXISTING

INTERIOR FINISH SCHEDULE

FLR-1

SIZE: BROADLOOM SHEET GOOD

BAS SPARTACOTE DURA-A-FLEX, DEX-O-TEX DECOR EPOXY FLOORING SYSTEM OR APPROVED EQUAL

RESINOUS FLOOR POLYASPARTIC COATING (DECORATIVE BROADCAST EPOXY FLOORING SYSTEM USING COLORED QUARTZ OR PAINT CHIP ONLY)

EPOXY FLOOR
POURED ACRYLIC FLOOR W/INTEGRAL 4" COVE BASE

### FINISH SPECIFICATIONS

#### <u>WALL FINISH</u> FIELD COLOR WALL-1

| WALL-1/2 | WALL-1/2 | WALL-1/2 | CLG-1

(1) COAT WHITE PRIMER, DU-1507 PRO-MAX (2) COATS PAINTED GYP. BD. TEXTURE: GYPSUM ASSOCIATION LEVEL 4 FINISH COLOR: SEMI-GLOSS LATEX, ZERO PLUS

CLG. HGT.

REMARKS

8'-0" WALL-2 TO 4'-4" A.F.F. PATCH CPT-1 AS NECESSARY

#### EPOXY WALL FINISH MALL-2

BAS SPARTACOTE DURA-A-FLEX, DEX-O-TEX DECOR EPOXY FLOORING SYSTEM OR APPROVED EQUAL COLOR: TBD

SEE INTERIOR ELEVATION FOR HEIGHT & LOCATION

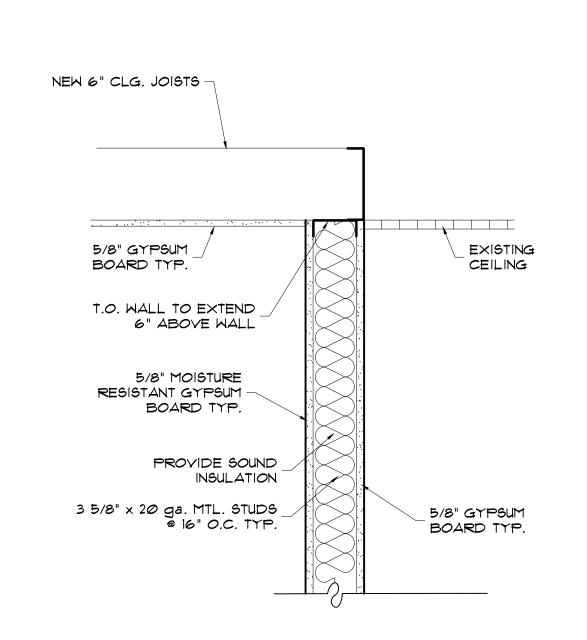
## CEILING FINISH

#### CEILING FINISH FIELD COLOR

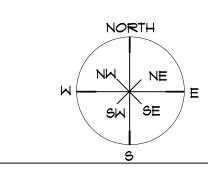
(1) COAT WHITE PRIMER, DU-1507 PRO-MAX (2) COATS PAINTED GYP. BD. TEXTURE: GYPSUM ASSOCIATION LEVEL 4 FINISH COLOR: SEMI-GLOSS LATEX, ZERO PLUS

# NEW 6" CLG. JOISTS 5/8" GYPSUM BOARD TYP. 5/8" MOISTURE RESISTANT GYPSUM BOARD TYP. PROVIDE SOUND INSULATION \_ 3 5/8" x 20 ga. MTL. STUDS @ 16" O.C. TYP. EXISTING CMU WALL SECTION

3 % METAL PARTITION 1 1/2"=1'-Ø"



B) 3 % METAL PARTITION 1 1/2"=1'-Ø"



Kenney 

0

Str Putnar
Putnar
Elementary
1400 Maple S
Fort Collins







(THIS SHEET ONLY)

EXTEND 6"ØE.A. DUCT UP THROUGH ROOF WITH FLASHING, STORM COLLAR AND WEATER CAP.

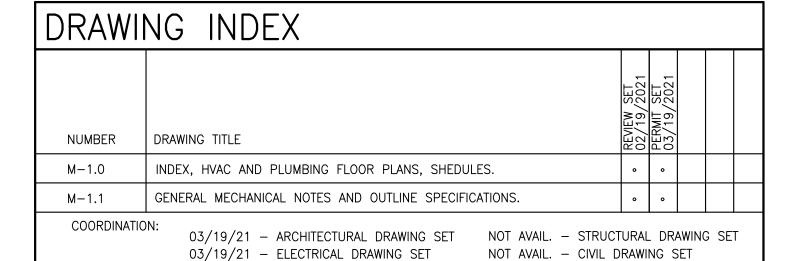
UNDER-CUT DOOR 1" FOR FREE-AIR MOVEMENT.

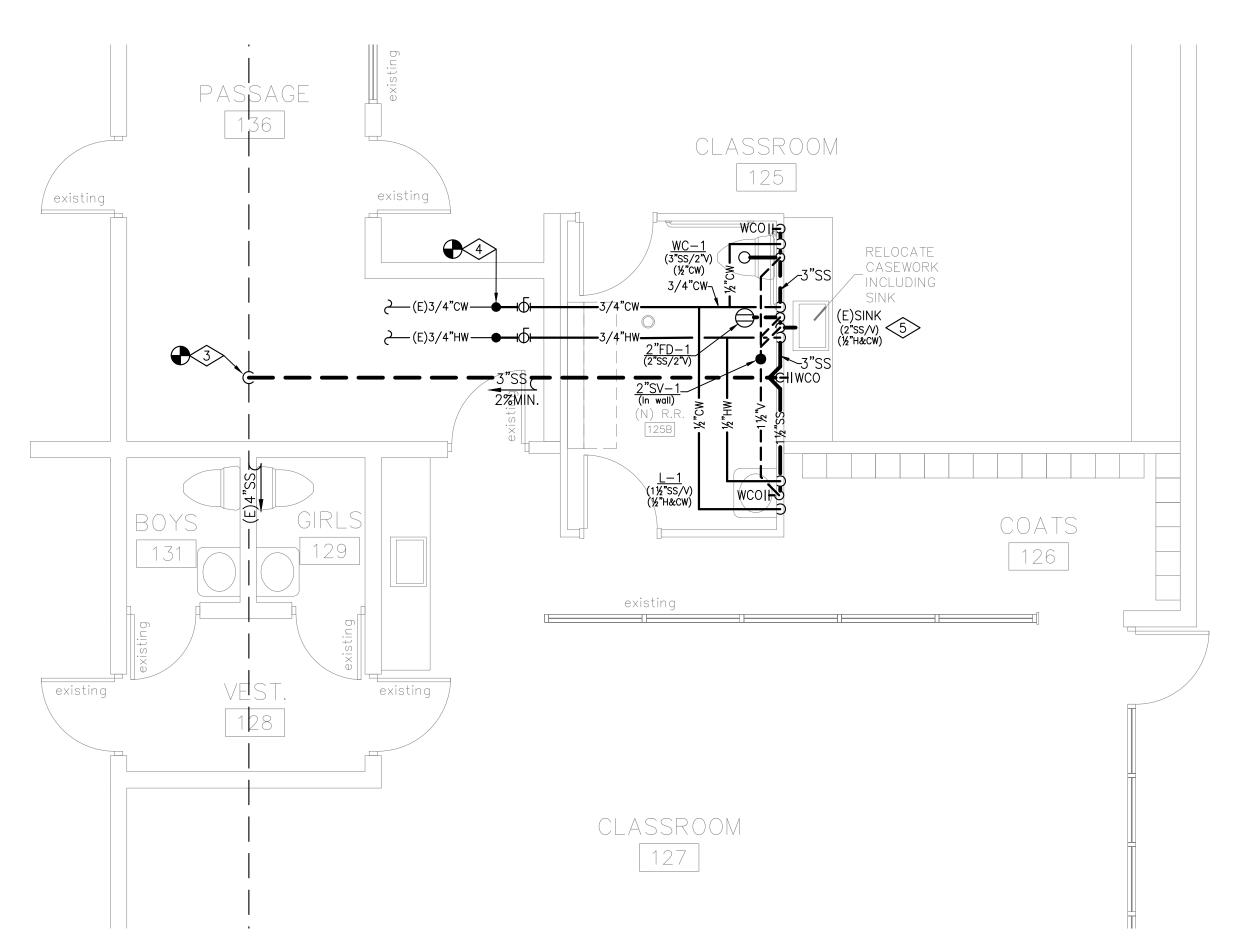
CONNECT NEW 3"SS TO EXISTING 4"SS, FIELD VERIFY REQUIREMENTS.

CONNECT NEW 3/4"H&CW TO EXISTING H&CW, PROVIDE BALL VALVE. FIELD VERIFY REQUIREMENTS.

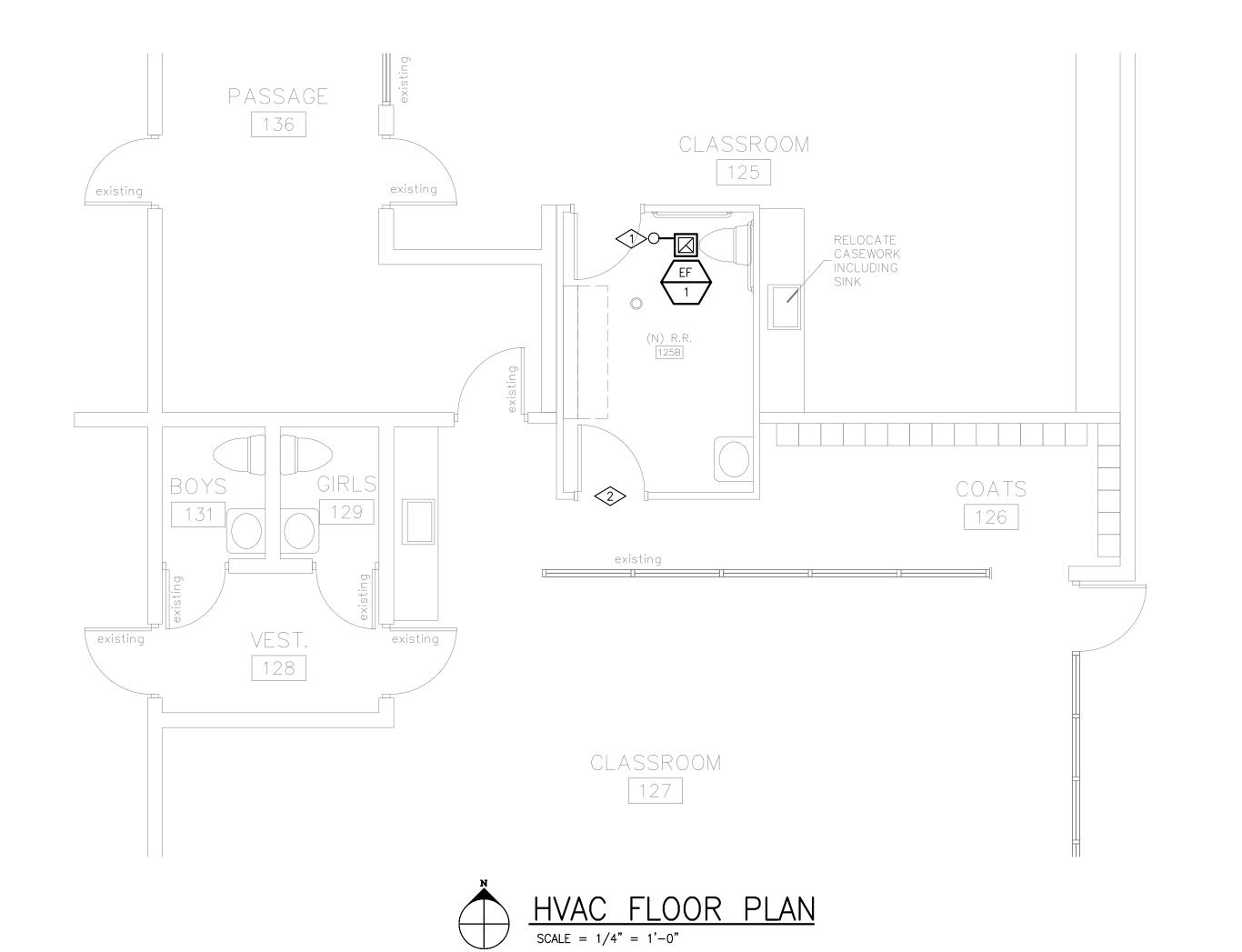
CONNECT NEW 1/2"H&CW, 2"SS&V TO RELOCATED EXISTING SINK, FIELD VERIFY REQUIREMENTS.

> INSTALL NEW HOT WATER RECIRCULATION PUMP P-1. PROVIDE ISOLATION AND CHECK VALVES. CONNECT 3/4"HWC TO CW PIPING AT INLET TO WATER HEATER.





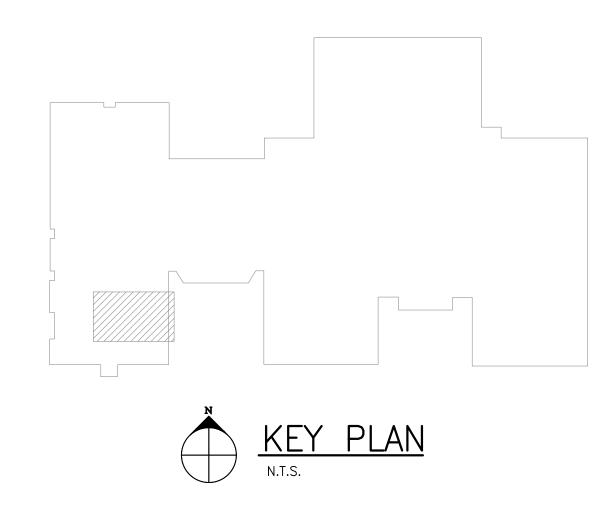




	IBING FIXTURE SCHEDULE
TAG	DESCRIPTION
WC-1	WATER CLOSET (HANDICAP) KOHLER, HIGHLINE, MODEL K-3999, 17 INCH RIM HEIGHT FLOOR MOUNTED TANK TYPE, ELONGATED BOWL, GRAVITY FLUSH, 1.28 GALLONS CLASS 5, SIPHON JET ACTION, VITREOUS CHINA. BENEKE SEAT MODEL 527-SS, OPEN FRONT, CHECK HINGES. ANGLE SUPPLY WITH LOOSE KEY STOP, RISER, COUPLING NUTS ESCUCHEONS, CHROME FINISH. (ADA/ANSI) 3"SS, 2"V, ½"CW. (OR APPROVED EQUAL)
L-1	LAVATORY (HANDICAP)  KOHLER, GREENWICH, MODEL K-2032, 20"x18" WALL HUNG, WHITE VITREOUS CHINA, 4" CENTERS, WITH CHICAGO FAUCET MODEL 802 VACP FAUCET, 0.5 GPM AERATOR, OPEN GRID DRAIN, TAILPIECE, LOOSE KEY STOPS, COUPLING NUTS, ESCUTCHEONS. ADA/ANSI APPROVED INSULATION ON TAILPIECE, P-TRAP, ANGLE VALVES, AND CW/HW AS MANUFACTURED BY TRUEBRO, INC., ASSE 1070 APPROVED TEMPERING VALVE. CHROME FINISH FITTINGS. 1½"SS, 1½"V, ½"CW, ½"HW. (OR APPROVED EQUAL)
FD-1	FLOOR DRAIN PROSET, MODEL T(X)5630-F-P, 5 INCH DIAMETER NICKEL BRONZE STRAINER, PVC BODY WITH FLASHING CLAMP, INTEGRAL 'TRAP-GUARD' ACCESSORY. REFER TO FLOOR PLANS FOR SIZES. (OR APPROVED EQUAL)
SV-1	STUDOR VENT (AIR ADMITTANCE VALVE) STUDOR MINI VENT, 2"V. PROVIDE VENTILATED ACCESS DOOR WHERE REQUIRED. (OR APPROVED EQUAL)
WCO	WALL CLEANOUT  ZURN MODEL ZN01446 WITH SMOOTH STAINLESS STEEL ACCESS COVER AND SECURING SCREW.  (OR APPROVED EQUAL)
FCO	FLOOR CLEANOUT ZURN, MODEL ZN-1400 WITH NICKEL BRONZE TOP IN FINISHED AREAS. (OR APPROVED EQUAL)

NOTE: ITEMS LISTED ARE DESIGN BASIS ONLY, EQUALS WILL BE CONSIDERED AT EQUIPMENT SUBMITTAL PHASE OF PROJECT.

FA	N SCI	HEDUL	E															
								FAN DATA					МОТО	R DATA				
TAG	LOCATION	SERVICE	MANUF.	MODEL	TOTAL CFM	E.S.P. (IN W.G.)	TYPE	DIAM. (IN)	MAX RPM	MAX SONES	MOUNT	DRIVE	H.P.	F.L.A.	VOLTS/PH	OP. WT. (LBS)	OPTIONS	TAG
EF-1	CEILING	RESTROOM 125B	COOK	GC-124	70	0.25	CENTRIF.		900	1.7	CEILING	DIRECT	65W		120/1	15.0	A,B,C	EF-1
FACTOR'	Y INSTALLED (	OPTIONS:			FIEL	) INSTALLE	D OPTIONS:											
	CKDRAFT DAMF CONNECT SWI						NTED SPEED ) BE CONTR					– 15MIN.	RUN-TIM	E MIN.				





7355 Greenridge Rd., Suite B Windsor, CO 80550 www.pivotalengwest.com

NDEX & SCHEDULES

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Kenney

date 3/19/2021 drawn vr checked

36652 03-19-21

sheet

WEST Last M-1.0

- 1. ALL WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THESE OUTLINE SPECIFICATIONS WILL BE EXECUTED UNDER CONTRACTS BETWEEN OWNER, GENERAL CONTRACTOR AND MECHANICAL CONTRACTORS. COORDINATE WITH THE WORK BY OTHERS IN THE REVIEW OF SHOP DRAWINGS AND THE EXACT LOCATION OF ROUGH-INS FOR THEIR EQUIPMENT. COOPERATE IN THE SCHEDULING OF WORK AND IN THE USE OF SPACE. COORDINATE WORK AND RELATED ITEMS SUCH AS ROUGH-IN, BLOCKING AND STRUCTURAL SUPPORTS, GROUTING, ELECTRICAL ROUGH-IN, MECHANICAL ROUGH-IN, ETC.
- 2. THE MECHANICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PATENT RIGHTS, AND LICENSES THAT ARE REQUIRED FOR PERFORMING THE WORK UNDER ALL LAWS, ORDINANCES, RULES AND REGULATIONS, OR ORDERS OF ANY OFFICER AND/OR GOVERNING BODY, HAVING JURISDICTION FOR THE WORK SHOWN HEREIN. THE CONTRACTOR SHALL GIVE ALL NOTICES NECESSARY IN CONNECTION WITH, PAY ALL FEES RELATING TO AND ALL COSTS AND EXPENSES INCURRED ON ACCOUNT OF THE WORK SHOWN HEREIN. NO WORK SHALL BE COVERED BEFORE INSPECTION BY THE JURISDICTIONAL INSPECTOR AND THE OWNER'S REPRESENTATIVE. POST PERMITS AS REQUIRED.
- 3. PRECAUTIONS SHALL BE EXERCISED AT ALL TIMES TO CONTROL DUST CREATED AS A RESULT OF ANY OPERATIONS DURING THE CONSTRUCTION PERIOD. IF SERIOUS PROBLEMS ARISE DUE TO AIR BORNE DUST, AND WHEN DIRECTED BY OWNER, OPERATIONS CAUSING SUCH PROBLEMS SHALL BE TEMPORARILY DISCONTINUED AND NECESSARY STEPS TAKEN TO CONTROL THE DUST. MAINTAIN GOOD HOUSEKEEPING PRACTICES TO REDUCE THE RISK OF FIRE DAMAGE AND INJURY TO WORKMEN. ALL SCRAP MATERIALS, RUBBISH AND TRASH SHALL BE REMOVED DAILY FROM IN AND ABOUT THE WORK AREA AND SHALL NOT BE PERMITTED TO BE SCATTERED TO ADJACENT AREAS. A FIRE EXTINGUISHER SHALL BE AVAILABLE AT EACH LOCATION WHERE CUTTING OR WELDING IS BEING PERFORMED. WHERE ELECTRIC OR GAS WELDING OR CUTTING WORK IS DONE, INTERPOSED SHIELDS OF INCOMBUSTIBLE MATERIAL SHALL BE USED TO PROTECT AGAINST FIRE DAMAGE DUE TO SPARKS AND HOT METAL. WHEN TEMPORARY HEATING DEVICES ARE USED, A WATCHMAN SHALL BE PRESENT TO COVER PERIODS WHEN OTHER WORKMEN ARE NOT ON THE PREMISES.
- 4. THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC, SHOWING CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE MECHANICAL WORK AND ITS INTERFACE WITH OTHER WORK. SUCH ESTABLISHMENT IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACT DOCUMENTS INDICATE THE AVAILABLE INFORMATION ON EXISTING UTILITIES AND SERVICES, AND ON NEW SERVICES TO BE PROVIDED TO THE PROJECT BY UTILITY COMPANIES AND AGENCIES.
- 5. THE EQUIPMENT AND MATERIALS INDICATED ON THE CONTRACT DOCUMENTS REPRESENT A STANDARD OF QUALITY TO BE MAINTAINED. SUBSTITUTIONS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND UNUSED AND INSTALLED BY ONLY QUALIFIED PERSONNEL. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, IN ADDITION TO ANY STATE AND LOCAL CODES THAT MAY APPLY. WORKMANSHIP: ALL LABOR SHALL BE CAREFULLY SKILLED FOR THIS KIND OF WORK, THOROUGH IN ALL RESPECTS AND UNDER THE DIRECTION OF A COMPETENT FOREMAN.
- GENERAL SUBMITTAL REQUIREMENTS: COORDINATE SUBMITTALS SO THAT WORK WILL NOT BE DELAYED BY SUBMITTALS. NO EXTENSION OF TIME WILL BE ALLOWED BECAUSE OF FAILURE TO PROPERLY COORDINATE AND SEQUENCE SUBMITTALS. DO NOT SUBMIT PRODUCT DATA, OR ALLOW ITS USE ON THE PROJECT, UNTIL COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS HAS BEEN CONFIRMED BY THE CONTRACTOR. SUBMITTAL IS FOR INFORMATION AND RECORD, UNLESS OTHERWISE INDICATED. PROVIDE PERMANENT MARKING ON EACH SUBMITTAL TO IDENTIFY USE, PROJECT, DATE, CONTRACTOR, SUBCONTRACTOR SUBMITTAL NAME AND SIMILAR INFORMATION TO DISTINGUISH IT FROM OTHER SUBMITTALS. INDICATE ANY PORTIONS OF WORK WHICH DEVIATE FROM THE CONTRACT DOCUMENTS. EXPLAIN THE REASONS FOR THE DEVIATIONS. SHOW HOW SUCH DEVIATIONS COORDINATE WITH INTERFACING PORTIONS OF OTHER WORK. SHOW CONTRACTORS EXECUTED REVIEW AND APPROVAL MARKING. PROVIDE SPACE FOR ENGINEERS "ACTION" MARKING, SUBMITTALS WHICH ARE RECEIVED FROM SOURCES OTHER THAN THROUGH CONTRACTORS OFFICE WILL BE RETURNED "WITHOUT ACTION." EXCEPT AS OTHERWISE INDICATED, ELECTRONIC SUBMITTALS. WHERE A REQUIRED SUBMITTAL RELATES TO AN OPERATIONAL ITEM OF EQUIPMENT USED IN MORE THAN ONE SYSTEM INCREASE THE NUMBER OF FINAL COPIES AS NECESSARY TO COMPLETE THE MAINTENANCE MANUALS FOR EACH SYSTEM. PROVIDE A PRELIMINARY, TWO-COPY SUBMITTAL FOR AUTOMATIC TEMPERATURE CONTROLS AND, WHEN PRODUCT DATA IS REQUIRED OR DESIRED BY CONTRACTOR, FOR SELECTION OF OPTIONS BY ENGINEER. PROVIDE ADDITIONAL DISTRIBUTION OF SUBMITTALS, NOT INCLUDED IN FOREGOING COPY SUBMITTAL REQUIREMENTS TO SUBCONTRACTORS, SUPPLIERS, FABRICATORS, INSTALLERS, GOVERNING AUTHORITIES AND OTHERS AS NECESSARY FOR PROPER PERFORMANCE OF WORK. INCLUDE SUCH COPIES IN TRANSMITTAL TO ENGINEER WHERE REQUIRED RECEIVE "ACTION" MARKING BEFORE FINAL DISTRIBUTION. SHOW SUCH DISTRIBUTIONS ON TRANSMITTAL FORMS.
- 7. EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL HAVE A PERMANENT LABEL CLEARLY INDICATING THE MAINTENANCE TO BE PERFORMED TO MAINTAIN THE EQUIPMENT IN EFFICIENT OPERATING CONDITION. EQUIPMENT SUPPLIERS SHALL FURNISH THE FULL AND PARTIAL INPUT AND OUTPUT CAPACITIES TO ENABLE THE DETERMINATION OF COMPLIANCE WITH THE ENERGY CONSERVATION CODE.
- 8. SUBMIT THREE TYPED AND BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS PRIOR TO SCHEDULING SYSTEMS DEMONSTRATION FOR THE OWNER. MANUALS SHALL HAVE INDEX WITH TAB DIVIDERS FOR EACH MAJOR EQUIPMENT SECTION TO FACILITATE LOCATING INFORMATION ON A SPECIFIC PIECE OF EQUIPMENT. ALPHABETICAL LIST OF SYSTEM COMPONENTS, WITH THE NAME, ADDRESS AND 24 HOUR TELEPHONE NUMBER OF THE COMPANY RESPONSIBLE FOR SERVICING EACH ITEM DURING THE FIRST YEAR OF OPERATION.
- 9. DELIVERY AND STORAGE OF MATERIALS: PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNERS REPRESENTATIVE PROTECT ALL MATERIALS AND EQUIPMENT FROM DAMAGE AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. REPLACE ALL DAMAGED AND DEFECTIVE WORK BEFORE FILING APPLICATION FOR FINAL ACCEPTANCE.
- 10. BEFORE SUBMITTING HIS BID, THE CONTRACTOR FOR THE WORK SHOWN HEREIN SHALL CAREFULLY STUDY ALL DRAWINGS, AND SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES. HE SHALL DEFINITELY DETERMINE IN ADVANCE, THE METHODS OF INSTALLATION AND CONNECTING THE APPARATUS AND THE MEANS TO BE PROVIDED FOR GETTING THE EQUIPMENT INTO PLACE, AFTER AWARD OF THE CONTRACT, NO SUBSEQUENT ALLOWANCES WILL BE MADE TO THE CONTRACTOR DUE TO HIS FAILURE TO COMPLY WITH THE ABOVE REQUIREMENTS AND ANY OTHER CONDITIONS AFFECTING THE INSTALLATION AND COMPLETION OF ALL WORK.
- 11. ACCURATELY RECORD ALL CHANGES TO THE CONTRACT DOCUMENTS ON ONE SET OF DRAWINGS. TRANSMIT THE INFORMATION TO THE ENGINEER.
- 12. FURNISH WRITTEN CERTIFIED GUARANTEE, IN ACCEPTANCE FORM, TO THE OWNER AGAINST DEFECTIVE WORKMANSHIP, MATERIALS AND OPERATING EQUIPMENT. IN ADDITION TO THE GUARANTEES REQUIRED ELSEWHERE. ALL WORK, MATERIALS AND EQUIPMENT PROVIDED UNDER THE MECHANICAL SECTIONS SHALL BE GUARANTEED FOR A PERIOD OF (1) YEAR FROM THE DAY OF ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR UNDER THIS GUARANTEE, SHALL BE RESPONSIBLE FOR ALL DAMAGE TO ANY PART OF THE PREMISES CAUSED BY EQUIPMENT AND MATERIALS FURNISHED UNDER THIS SECTION. PROVIDE CERTIFICATES FOR ALL EQUIPMENT HAVING WARRANTIES IN EXCESS OF 1 YEAR.
- 13. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH CURRENT SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY, THE NATIONAL ELECTRIC CODE, LOCAL BUILDING CODES, THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL FUEL GAS CODE, THE INTERNATIONAL BUILDING CODE AND OTHER APPLICABLE CODES, THE CITY OF FORT COLLINS, LAWS OR REGULATIONS OF BODIES LAWFULLY EMPOWERED AND HAVING JURISDICTION OVER THIS PROJECT. NOTHING IN THE PLANS OR THESE SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- 14. RESOLVE ALL QUESTIONS, DISCREPANCIES OR CONFLICTS WITH ENGINEER BEFORE ANY EQUIPMENT IS ORDERED, MATERIALS FABRICATED OR SYSTEMS INSTALLED.
- 15. PROVIDE IDENTIFICATION TAGS FOR ALL SCHEDULED EQUIPMENT.
- 16. COORDINATE THE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES AND PROVIDE OFFSETS AS NECESSARY TO ACCOMMODATE STRUCTURE AND OTHER TRADES.
- 17. PROVIDE ACCESS PANELS IN CEILINGS AND/OR DUCTWORK WHERE REQUIRED FOR ACCESS TO ALL MOTORS, CONTROLS, FIRE DAMPERS, SMOKE/FIRE DAMPERS, VALVES, AND BALANCING DAMPERS.
- 18. LEVEL ALL EQUIPMENT CURBS/BASES PRIOR TO INSTALLATION OF ANY EQUIPMENT.
- 19. SEAL ALL WALL AND ROOF PENETRATIONS WATERTIGHT WITH SILICONE CAULKING AND BACKER ROD. U.L. CLASSIFIED AND FM APPROVED SEALANTS SHALL BE USED AT ALL PENETRATIONS OF RATED WALLS, CEILINGS AND FLOORS. PENETRATIONS OF THE ROOFING MEMBRANE SHALL BE COMPLETED BY A QUALIFIED ROOFING CONTRACTOR TO MAINTAIN THE INTEGRITY OF THE ROOFING SYSTEM AND RELATED EXISTING WARRANTIES.
- 20. COORDINATE ALL THE MISCELLANEOUS SUPPORT AND FRAMING REQUIRED FOR THE MECHANICAL EQUIPMENT, PROVIDED BY OTHERS.
- 21. COORDINATE AND VERIFY ALL OPENINGS IN STRUCTURAL WALLS, ABOVE CEILINGS, AND FLOORS WITH THE STRUCTURAL CONTRACTOR.
- 22. ALL SUPPLY AND RETURN DUCTWORK UNLESS SPECIFICALLY INDICATED SHALL BE IN ASTM A527 LOCK FRAMING QUALITY GALVANIZED SHEET METAL WITH ASTM A525 G90 ZINC COATING INSTALLED IN ACCORDANCE WITH CHAPTER 6 OF THE 2015 IMC AND THE SMACNA DUCT CONSTRUCTION STANDARDS, FOR PRESSURE CLASS "A" FOR 3" SP AND ABOVE, CLASS "B" FOR 2" TO 3" SP AND CLASS "C" FOR 0.5" TO 2" SP, WITH "HARD CAST" SEALED JOINTS. THE USE OF PRESSURE SENSITIVE TAPE WILL NOT BE ACCEPTABLE. DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS.
- 23. EXTERNALLY INSULATE ALL RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK WITH MINIMUM 1.5"Ib DENSITY FIBERGLASS. ALL INSULATION SHALL HAVE MINIMUM INSTALLED "R" VALUE OF 8.0, FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS AND BE RATED FOR OPERATING TEMPERATURES UP TO 250°F. LINE ALL EXHAUST, SUPPLY & RETURN DUCTWORK FOR 15 LF FROM FAN. DUCT LINERS SHALL HAVE AN ACRYLIC COATING ON SURFACE IN CONTACT WITH THE AIR STREAM. DUCT WRAP SHALL HAVE AN ALUMINUM FOIL FACING.
- 24. ALL ROUND SA & RA DUCTS TO BE INSULATED WITH 1-1/2" "INSULSLEEVE" THAT HAS A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX NOT MORE THAN 50 (ASTM E 84) WITH VAPOR BARRIER (R VALUE = 12.0). DO NOT INSULATE EXPOSED SPIRAL DUCTWORK AND FITTINGS.
- 25. ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, DEMISING WALLS TO HAVE APPROVED AUTOMATIC FIRE DAMPERS OR TO PROVIDE APPROPRIATE FIRE RATED SHAFTS FOR ALL SUCH PENETRATIONS. VERIFY WITH I.B.C/I.M.C AND RESPECTIVE CITY.
- 26. ALL CONCEALED, ROUND SUPPLY AIR DUCTS 12" AND SMALLER SHALL BE GALVANIZED SHEET METAL SNAP-LOCK.
  ROUND SUPPLY DUCT GREATER THAN 12" SHALL BE GALVANIZED SHEET METAL SPIRAL. INSULATED FLEXIBLEDUCT MAY BE
  USED FOR THE CONNECTION TO THE AIR OUTLET PROVIDED THE LENGTH OF THE FLEXIBLE DUCT DOES NOT EXCEED 6 LINEAR FEET.
- 27. ALL BRANCH DUCT CONNECTIONS TO AIR OUTLETS AND AIR INLETS SHALL BE THE SAME SIZE AS THE DEVICE NECK UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

- 28. PROVIDE EQUIPMENT VIBRATION ISOLATION FROM STRUCTURE AND ASSOCIATED DUCT/PIPE SYSTEMS.
- 29. ALL BALANCING SHALL BE COMPLETED BY AN INDEPENDENT QUALIFIED AND CERTIFIED TECHNICIAN (TABB, NEBB OR SIMILAR) WITH FIVE (5) OR MORE YEARS EXPERIENCE IN TESTING, ADJUSTING, AND BALANCING HVAC AND HYDRONIC SYSTEMS. ADJUST VALVES AND DAMPERS AS NECESSARY TO OBTAIN AIR AND WATER QUANTITIES SHOWN. PROVIDE COMPLETE WRITTEN TEST AND BALANCE REPORT INDICATING QUANTITIES AT INLET AND OUTLET. USE VOLUME DAMPERS FOR ALL REGISTERS FOR BALANCING OF THE SYSTEMS. AIR DISTRIBUTION SHALL BE BALANCED FOR WITHIN 5% OF INDICATED VALUES.
- 30. EXAMINE THE AREAS TO BE EXCAVATED AND THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. REMOVE ALL ROCK AND BOULDERS FROM EXCAVATION BEFORE INSTALLING MECHANICAL WORK. SLOPE SIDES OF EXCAVATIONS AS REQUIRED FOR STABILITY, OR PROVIDE NECESSARY SHORING. LOCATE AND PROTECT EXISTING UTILITIES AND OTHER UNDERGROUND WORK IN A MANNER WHICH WILL ENSURE THAT NO DAMAGE OR SERVICE INTERRUPTION WILL RESULT FROM EXCAVATING AND BACKFILLING. DO NOT INSTALL MECHANICAL WORK ON FROZEN EXCAVATION BASES OR SUB-BASES. MAINTAIN DRY EXCAVATIONS FOR MECHANICAL WORK BY REMOVING WATER. PROTECT EXCAVATIONS FROM INFLOW OF SURFACE WATER. PUMP MINOR INFLOW OF GROUND WATER FROM EXCAVATIONS. STORE EXCAVATED MATERIAL (TEMPORARILY) NEAR THE EXCAVATION. RETAIN EXCAVATED MATERIAL WHICH COMPLIES WITH THE REQUIREMENTS FOR BACKFILL MATERIAL. DO NOT BACKFILL UNTIL INSTALLED MECHANICAL WORK HAS BEEN TESTED AND ACCEPTED. CONDITION BACKFILL MATERIAL BY EITHER DRYING OR ADDING WATER UNIFORMLY, TO FACILITATE COMPACTION TO ACCEPTABLE DENSITIES. BACKFILL TO ELEVATIONS MATCHING ADJACENT GRADES. BACKFILL EXCAVATIONS IN 8" HIGH COURSES OF BACKFILL MATERIAL, UNIFORMLY COMPACTED USING POWER-DRIVEN OR HAND-OPERATED COMPACTION EQUIPMENT.
- 31. COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE OPENINGS THROUGH CONCRETE FOR PIPE PENETRATION AND SIMILAR SERVICES BY CORE DRILLING AND SAWING. REVIEW THE PROPOSED CUTTING WITH THE INSTALLER OF THE WORK TO BE CUT, AND COMPLY WITH HIS RECOMMENDATIONS TO MINIMIZE DAMAGE.
- 32. INSTALL IONIZATION TYPE SMOKE DETECTOR AND SAMPLING TUBE IN THE RETURN AIR DUCT FROM THE RTU'S (IF/WHERE INDICATED ON THE DRAWINGS). THE DETECTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND SHALL HAVE AN AUXILIARY SET OF CONTACTS FOR CONNECTION TO THE FIRE ALARM SYSTEM. THE DETECTOR SHALL BE WIRED TO SHUT DOWN THE UNITS SUPPLY FAN.
- 33. ALL DUCT, PIPING AND EQUIPMENT LOCATIONS INDICATED ON THESE DOCUMENTS ARE FOR REFERENCE ONLY AND SHALL BE USED AS A GUIDE. ALL ELEVATIONS AND FLOOR TO FLOOR HEIGHTS SHALL BE VERIFIED PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY DUCT OR PIPING SYSTEM.
- 34. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL REQUIREMENTS FOR ALL CUTTING AND PATCHING OF EXISTING FACILITIES TO BE COMPLETED BY THE GENERAL CONTRACTOR OR OTHERS.
- 35. USE ADJUSTABLE PIPE HANGERS ON SUSPENDED PIPE. ISOLATE HANGERS COMING IN CONTACT WITH BARE COPPER PIPE WITH DIELECTRIC HANGER LINERS. PROVIDE SUPPORTS BETWEEN PIPING AND BUILDING STRUCTURE WHERE NECESSARY TO PREVENT SWAYING. CONFORM TO THE INTERNATIONAL PLUMBING AND MECHANICAL CODE FOR HANGER SIZES AND SPACING. DO NOT SUPPORT PIPE FROM OTHER PIPE OR DUCT SYSTEMS. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED MOVEMENT OF PIPING SYSTEM AND TO PERMIT PROPER MOVEMENT BETWEEN PIPE ANCHORS.
- 36. INSTALL PIPE, TUBE AND FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY-LEAKPROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH A MINIMUM OF JOINTS AND COUPLINGS, BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY, MAINTENANCE OR REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES BY USE OF REDUCING FITTINGS. INSTALL PIPING WITHOUT SPRINGING OR FORCING. SUPPORT PIPING INDEPENDENTLY AT EQUIPMENT SO ITS WEIGHT WILL NOT BE SUPPORTED BY THE EQUIPMENT. FURNISH ALL DEVICES NECESSARY FOR FINAL CONNECTION, INCLUDING BUT NOT LIMITED TO TAIL PIECES, STOPS AND SUPPLIES. LOCATE PIPING RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY. AVOID DIAGONAL RUNS WHEREVER POSSIBLE. ORIENT HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. HOLD PIPING CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS AND OTHER STRUCTURAL AND PERMANENT-ENCLOSURE ELEMENTS OF THE BUILDING. LIMIT CLEARANCE OF 0.5" WHERE FURRING IS SHOWN FOR ENCLOSURE OR CONCEALMENT OF PIPING, BUT ALLOW FOR INSULATION THICKNESS, IF ANY. WHERE POSSIBLE, LOCATE INSULATED PIPING FOR 1.0" CLEARANCE OUTSIDE INSULATION. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL PIPING FROM VIEW BY LOCATING IN COLUMN ENCLOSURES, IN HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED CEILINGS.
- 37. FLUSH OUT PIPING SYSTEMS WITH CLEAN WATER BEFORE PROCEEDING WITH THE REQUIRED TESTS. PROVIDE TEMPORARY EQUIPMENT FOR TESTING, INCLUDING PUMP AND GAUGES. TEST PIPING SYSTEM BEFORE INSULATION IS INSTALLED WHEREVER FEASIBLE. TEST EACH NATURAL SECTION OF EACH PIPING SYSTEM INDEPENDENTLY, BUT DO NOT USE PIPING SYSTEM VALVES TO ISOLATE SECTIONS WHERE TEST PRESSURE EXCEEDS VALVE PRESSURE RATING. FILL EACH SECTION OF WATER, DRAIN OR VENT PIPING WITH WATER AND PRESSURIZE FOR TWO HOURS AT 150% OF OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR PRESSURE PIPING AND TEN FEET FOR DRAIN AND VENT PIPING. TEST FAILS IF LEAKAGE IS OBSERVED OR IF PRESSURE DROP EXCEEDS 5% OF TEST PRESSURE. REPAIR PIPING SYSTEMS SECTIONS WHICH FAIL BY DISASSEMBLY AND RE-INSTALLATIONS, USING NEW MATERIALS TO THE EXTENT REQUIRED TO OVERCOME LEAKAGE. DO NOT USE CHEMICALS, STOP—LEAK COMPOUNDS, MASTICS OR OTHER TEMPORARY REPAIR METHODS. AFTER TESTING AND REPAIR WORK HAVE BEEN COMPLETED, DRAIN TEST WATER FROM PIPING SYSTEMS.
- 38. FILL ALL DOMESTIC WATER LINES WITH A CHLORINE WATER SOLUTION OF 50 PARTS PER MILLION, MINIMUM. HOLD SOLUTION IN PIPE FOR AT LEAST 24 HOURS. OPEN AND CLOSE ALL VALVES 3 TIMES DURING CHLORINATION. WASTE CHLORINE SOLUTION FROM EACH OUTLET. MEASURE SOLUTION AT END. IF NOT 10 PPM, REPEAT. ALL NEW POTABLE WATER SYSTEMS SHALL BE CLEANED AS HEREIN SPECIFIED PRIOR TO TESTING OR APPLICATION OF INSULATION. COMPLY WITH CITY OF FORT COLLINS CO STANDARDS OR LARIMER COUNTY DEPARTMENT OF HEALTH REQUIREMENTS, WHICHEVER IS MORE STRINGENT.
- 39. BALL VALVES 1" AND SMALLER: NO THREADED VALVES NIBCO S585 OR EQUAL (SOLDERED ENDS). RATED FOR 150 PSI NON—SHOCK WOG 2—PIECE CAST BRONZE BODIES, TFE SEAT, FULL PORT, BRONZE TRIM, BLOWOUT PROOF STEMS BRASS/BRONZE BALL. VALVE ENDS SHALL HAVE FULL DEPTH ANSI THREADS OR EXTENDED SOLDER CONNECTIONS.

  CHECK VALVES 2 1/2" AND SMALLER: NO THREADED VALVES NIBCO S413 OR EQUAL (SOLDERED ENDS). Y—PATTERN HORIZONTAL SWING—TYPE, CLASS 125, RATED FOR 200 PSI WOG BRONZE ASTM B—62 BODY
- 40. INSTALL VALVES WITH STEMS POINTING UP, AND AS CLOSE TO VERTICAL AS POSSIBLE. INSTALL VALVES AT EACH PIECE OF EQUIPMENT, FIXTURE OR APPLIANCE SO THAT THE SUPPLY AND RETURN SERVICES CAN BE SHUT OFF TO REMOVE THE ITEM WITHOUT DISTURBING THE PIPING SYSTEM. INSTALL VALVES WHERE REQUIRED FOR PROPER OPERATION OF PIPING AND EQUIPMENT, INCLUDING VALVES IN BRANCH LINES TO ISOLATE SECTIONS OF PIPING WHERE BRANCH FLOW IS MORE THAN 10% OF THE TOTAL

WITH TFE SEAT DISC.

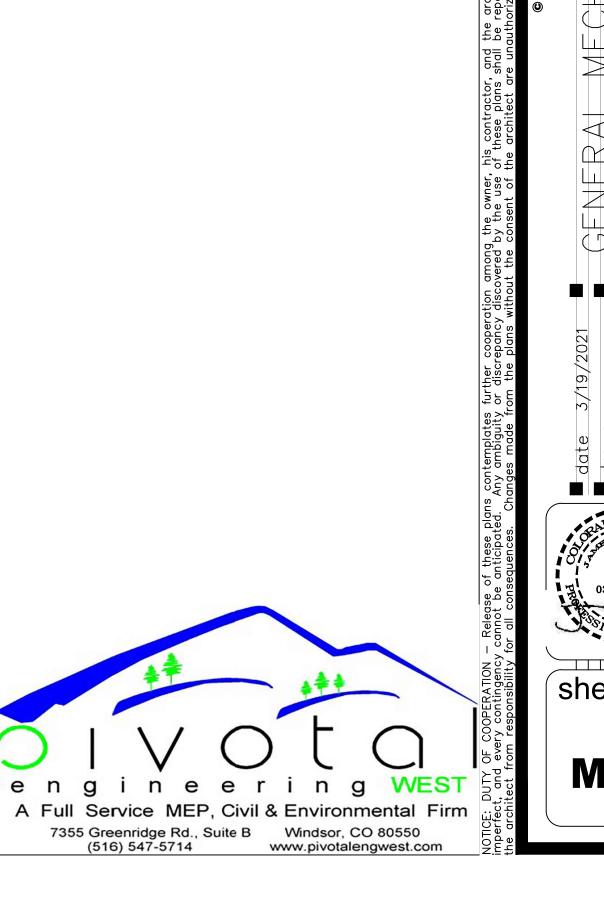
- 41. NATURAL GAS PIPING ABOVE GROUND 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL SCREWED WITH 150 LB. MALLEABLE IRON, THREADED FITTINGS. NATURAL GAS ABOVE GROUND OVER 2" SHALL BE SCHEDULE 40 BLACK STEEL, PLAIN END WITH STANDARD WEIGHT, BUTT WELD FITTINGS. REMOVE CUTTING AND THREADING BURRS BEFORE ASSEMBLING PIPING. DO NOT INSTALL DEFECTIVE PIPING OR FITTINGS. DO NOT USE PIPE WITH THREADS WHICH ARE CHIPPED, STRIPPED OR DAMAGED. USE TEFLON TAPE ON MALE PIPE THREADS. PLUG EACH GAS OUTLET INCLUDING VALVES WITH A THREADED PLUG OR CAP, IMMEDIATELY AFTER INSTALLATION, AND RETAIN UNTIL CONTINUING PIPING OR EQUIPMENT CONNECTION IS COMPLETED. AFTER ROUGH—IN OR PRIOR TO INITIAL OPERATION, TEST AND PURGE GAS PIPING IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODE. TEST PIPING SYSTEM AT 100 PSIG. REPAIR OR REPLACE PIPING AS REQUIRED TO ELIMINATE LEAKS AND RETEST. AFTER EQUIPMENT INSTALLATION, TEST ALL PIPING AND VALVES UP TO GAS REGULATOR WITH "U" TUBE MANOMETER AT 10 PSIG. PAINT ALL PIPING EXPOSED TO THE ELEMENTS.
- 42. DOMESTIC WATER PIPING:

  ABOVE GROUND INSIDE BUILDINGS, SIZE 4" AND UNDER SHALL BE COPPER TUBE, HARD TEMPER,
  TYPE "L" PIPE WITH WROUGHT COPPER, OR CAST BRONZE FITTINGS AND ANTIMONY FREE AND LEAD
  FREE SOLDER. BELOW GROUND, SIZE 2" AND UNDER SHALL BE COPPER TUBE, ANNEALED, TYPE "K"
  PIPE WITH WROUGHT COPPER, BRAZED FITTINGS. PRESS—ON FITTINGS ARE APPROVED.

  DOMESTIC WATER PIPING OPTION:
  POTABLE HOT AND COLD WATER DISTRIBUTION PIPING SHALL BE CROSSLINKED POLYETHYLENE (PEX) TUBING AND
  ASTM F1960 COLD EXPANSION FITTINGS. (DESIGN BASIS: WIRSBO 'AQUAPEX' TUBING AND 'ProPEX' FITTINGS.)
- 43. SOIL AND VENT PIPING: ABOVE AND BELOW GROUND SHALL BE SOLID CORE SCHEDULE 40 PVC WITH SOLVENT GLUED FITTINGS AND JOINTS. IF LOCATED IN A RETURN AIR PLENUM SHALL BE CAST IRON NO HUB NEOPRENE GASKET AND STAINLESS STEEL SLEEVE JOINT.
- 44. STORM/ROOF DRAINAGE PIPING: ABOVE GROUND SHALL BE CAST IRON NO HUB NEOPRENE GASKET AND STAINLESS STEEL SLEEVE JOINT. BELOW GROUND SHALL BE SCHEDULE 40 PVC WITH SOLVENT GLUED FITTINGS AND JOINTS.
- 45. INSTALL FULL SIZE CONDENSATE DRAIN WITH TRAP SEAL DEPTH EQUAL TO 1.5 x UNIT TOTAL STATIC PRESSURE FOR EACH COOLING COIL.

\*\*\*PROVIDE FULLY SUPPORTED COPPER STUB-OUTS FROM MAIN ARE REQUIRED.

46. CLEAN AND DRY PIPE SURFACES PRIOR TO INSULATING. EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED. INSTALL PROTECTIVE SHEETMETAL SHIELD AROUND BOTTOM HALF OF PIPE INSULATION AT EACH PIPE SUPPORT SUFFICIENT TO PREVENT CRUSHING OF THE INSULATION. AT CONTRACTORS OPTION, INSTALL PRE-MANUFACTURED HEAVY DENSITY PIPE SHIELDS IN LIEU OF PIPE INSULATION AT EACH PIPE SUPPORT. EXCEPT AS NOTED, COVER VALVES, FLANGES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. DO NOT COVER VALVE OPERATORS, THREADED OR SOLDER JOINT STRAINERS OR BLOWDOWN END OF STRAINERS. MARK LOCATION OF UNIONS AND FLANGES COVERED BY INSULATION WITH PERMANENT PAINT OR INK, PAINTED STENCIL OR APPROVED LABEL. MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON INSULATION OF COLD PIPES AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. INSULATE BETWEEN PIPE AND PIPE SADDLES. ON UNDERGROUND PIPE INSULATION, INSTALL UNICELLULAR INSULATION ON PIPE WITHOUT SLITTING INSULATION. SEAL ALL TRANSVERSE JOINTS WITH ADHESIVE. PROVIDE COMPOSITE INSTALLATION (INSULATION, JACKET, COVERING, SEALER, MASTIC AND ADHESIVE) COMPLYING WITH THE FOLLOWING: FLAME SPREAD: 25 OR LESS. SMOKE DEVELOPED: 50 OR LESS. METHOD: ASTM E84 (NFPA 255). FIBERGLASS PIPE INSULATION: SCHULLER MICRO-LOK 850, HEAVY DENSITY PIPE INSULATION WITH AP-T JACKET. FIBERGLASS FITTING INSULATION: SCHULLER "ZESTON" FITTING COVERS WITH FACTORY-CUT FIBERGLASS INSULATION INSERT. DOMESTIC HOT WATER PIPING (ABOVE GRADE): 2" AND SMALLER PIPING: 1" FIBERGLASS, 2-1/2" AND LARGER PIPING: 1-1/2" FIBERGLASS, RUNOUT PIPING UP TO 2" NOT EXCEEDING 12 FEET IN LENGTH: 1/2" FIBERGLASS. DOMESTIC COLD WATER PIPING (ABOVE GRADE): ALL SIZES = 1/2" FIBERGLASS. ROOF DRAIN BOWLS AND DOWN LEADERS: 1" FIBERGLASS.





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#### ELECTRICAL SPECIFICATIONS

The scope of the work covered herein consists of furnishing all labor, materials, necessary equipment and services to complete the Electrical Work and related work in full accordance as indicated on the drawings, as specified herein or both and subject to the terms and conditions of the Contract.

#### 2. <u>Codes, Rules, Permits, Fees</u>

Electrical Contractor is generally responsible to insure all work, both old and new, complies with the NEC and any applicable local and state codes and ordinances.

#### 3. <u>Drawings</u>

Drawings are diagrammatic and indicate the general arrangement of systems and work included in the contract. Drawings are not to be scaled. The Architectural drawings and details shall be examined for exact location of fixtures and equipment. Any conflict shall be immediately brought to the attention of the Architect or Engineer before proceeding with the work.

#### 4. Shop Drawings

Materials or products specified herein and/or indicated on drawings by trade name, manufacturer's name or catalog number shall be provided as specified.

#### 5. <u>Cooperation With Other Trades</u>

The Subcontractor shall give full cooperation to other trades and shall furnish in writing to the contractor, with copies to the Engineer, any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay. Coordinate all conduit runs and equipment with other trades. Verify nameplate electrical data of actual equipment furnished by others before beginning installation.

#### 6. <u>Cutting</u>, <u>Patching</u>, <u>And Finishing</u>

The Electrical Contractor shall do all cutting, drilling, etc. required for work under this section of the specifications, inside the building.

#### 7. Excavation And Backfilling

The Subcontractor shall do all trench and pit excavating and backfilling required for work under this section of the specifications, inside and outside the building, all required shoring, bracing, pumping and all protection for safety of persons and property.

#### 8. <u>Material And Workmanship</u>

All materials and apparatus required for the work shall be new unless indicated otherwise on the plans.

Electrical Contractor shall provide and install all electrical as shown, verifying all mounting heights and exact locations of all wall-mounted electrical devices with architect prior to rough-in.

Connections and junction boxes to equipment are diagrammatic. Verify exact location of connection to specific equipment and devices.

#### 9. <u>Panelboards</u>

Panels shall be as manufactured by Square—D, G.E., Siemens or equivalent of sizes, ratings, and requirements shown on the plans. Panels shall be of dead front construction. All bussing shall be as specified on panel schedules.

#### Multi-pole breakers shall have a single handle to trip all poles at once.

A laminated black plastic with white lettering plastic nameplates with the identification number as shown on the panel schedule shall be mounted on the outside of the door with sheet metal screws. Nameplate size shall be 3" wide X = 1-1/2" high with 1/2" high engraving. Provide a completed circuit directory, typed and mounted in a clear plastic sleeve, on the interior of the panel door.

#### 10. <u>Grounding</u>

Provide a complete grounding network for the entire electrical system to comply with NEC requirements. All conduits shall have a ground wire installed. A conduit ground shall not be used.

#### 11. <u>Disconnect Switches</u>

Equipment disconnect switches shall be Square-D, G.E., Siemens heavy duty of the type and rating on the plans. Fuses shall be provided of the appropriate type and rating for the equipment to be served.

#### 12. <u>Miscellaneous Equipment</u>

Switches — All general use lighting (SPST toggle with or without pilot) switches to be rated 20A., 120-277V. as manufactured by Leviton, Lutron, P & S, or equivalent. Coordinate color with Owner/Architect.

Receptacles — All general use duplex receptacles to be rated 20A., 120V as manufactured by Leviton, Lutron, P & S, or equivalent. Coordinate color with Owner/Architect. Receptacles in patient care areas shall be hospital grade and red in color when on the critical branch. Label all cover plates with serving circuits.

Conductors — All conductors shall be rated 600V, copper, type THWN, XHHW/THHN. Where indicated aluminum conductors may be used and shall be type THHW/XHHW. Conductors of #8 AWG and larger shall be stranded. HCF listed cables are permitted in patient care areas per NEC 517.

Lighting fixtures — Lighting fixtures shall be as indicated on the fixture schedule or approved equals.

#### 13. <u>Conduit</u>

Conduit shall be EMT, GRC, SCH. 40 PVC, SCH. 80 PVC, liquid tight metal flexible, or metal flexible.

GRC shall be used at exposed exterior locations and for panel feeders. Flex shall be used for connection to all fixed equipment, except in damp or wet locations, where liquid tight metal flexible shall be used. EMT shall be used at all exposed interior locations. All remaining locations may use PVC.

HCF listed cables are permitted in patient care areas per NEC 517.

Insulating bushings with double lock—nuts shall be used for entrance of 1-1/4" or larger into enclosures.

Sizes indicated are minimums, larger sizes may be used to facilitate wire pulls, etc.

#### 14. <u>Network And Access Cabling</u>

Provide a 2' x 4' x 3/4" fire resistant plywood backboard for telephone distribution. A terminated bus bar shall be installed adjacent to the backboard. Install empty conduit(s) as indicated on the plans with pullwire installed for the telephone service entrance.

A 3/4" conduit shall be routed from all data outlets to the ceiling space. Terminate conduit in ceiling space with a 90 degree bend and bushing at end of conduit. Extend conduit to nearest accessible ceiling space if no access to the ceiling space above the outlet is present. Provide a conduit path through all obstructions to the backboard.

15. <u>Equipment Furnished By Others</u> Electrical Contractor shall provide conduit, wire and disconnect switches indicated on drawings, to connect electrical equipment supplied by others which shall include both new and relocation of existing equipment. All final electrical connections are to be by electrical contractor.

#### 16. <u>Record Drawings</u>

The Contractor shall keep accurate records of actual construction including device locations and conduit runs if different from the plans.

The Contractor shall provide the owner with a reproducible set of plans of the complete electrical and special systems as installed. The scale on these drawings shall be no smaller than the scale used on the original plans.

#### 17. <u>Testing</u>

Final tests shall be made only after the Engineer is satisfied that all work has been completed.

Acceptance testing of electrical gear shall be in accordance with NEC 517 and NETA STD ATS -Acceptance Testing Standards for Electrical Power Distribution Equipment and Systems.

#### 18. <u>Final Acceptance</u>

After testing, a final inspection shall be made by the Engineer and other authorized persons with the

Final acceptance of the project shall not prejudice the Owner's right to require replacement and/or repair

Electrical Contractor.

any defective work or materials.

# **LEGEND**

DUPLEX RECEPTACLE (120 V) DEDICATED DUPLEX RECEPTACLE (120V) \$2 DOUBLE-POLE SWITCH WEATHERPROOF RECEPTACLE GROUND FAULT RECEPTACLE ISOLATED GROUND RECEPTACLE SWITCHED RECEPTACLE HALF SWITCHED RECEPTACLE DOUBLE DUPLEX RECEPTACLE

FLUSH FLOOR RECEPTACLE, DUPLEX DOOD DIMMER SWITCH (WATTAGE SHOWN) SPECIAL EQUIPMENT RECEPTACLE LOCKING RECEPTACLE FLUSH FLOOR TELEPHONE OUTLET DATA, TELEPHONE, OR FAX OUTLET 

© CEILING OCCUPANCY SENSOR TELEPOWER POLE (T=telephone, P=power, C=computer)

CIRCUIT UP

PLUGMOLD

WM---

РМ---

CIRCUIT DOWN

JUNCTION BOX

CIRCUITRY and RACEWAYS SOUND and SIGNAL SPEAKER VOLUME CONTROL BUZZER HOME RUN (with circuit numbers) CHIME END OF CONDUIT RUN TELEVISION ANTENNA OUTLET END OF RUN, CAP AND STAKE MICROPHONE OUTLET "RUN CONTINUES" INDICATION VI INTERCOM OUTLET WIREMOLD (2-Channel)

CONTROL ① THERMOSTAT (line voltage U.O.N. furnished by DIV. 15 U.O.N.) HUMIDISTAT (line voltage U.O.N. furnished by DIV. 15 U.O.N.) ⊖PC PHOTOCELL (voltage as required) TIME CLOCK (24 hour U.O.N.)

KEY SWITCH PUSHBUTTON STATION (number of \$wp WEATHERPROOF SWITCH TIME SWITCH buttons indicated) LIGHTING CONTACTOR IRRIGATION CONTROLLER LIGHT SENSOR S WALL OCCUPANCY SENSOR OSD WALL DIMMER / OCCUPANCY SENSOR

**SWITCHES** 

VNCNURSE CALL

SINGLE-POLE SWITCH

THREE-WAY SWITCH

SWITCH WITH PILOT LIGHT

FOUR-WAY SWITCH

**DESIGNATIONS** REVISION NOTE # FLAG NOTE ⟨#⟩ KEY NOTE #) FEEDER NUMBER UON UNLESS OTHERWISE NOTED WP DEVICE DESIGNATED WEATHER PROOF AC DEVICE ABOVE COUNTER CLG DEVICE IN CEILING

AFF ABOVE FINISHED FLOOR

(R) EXISTING TO BE RELOCATED

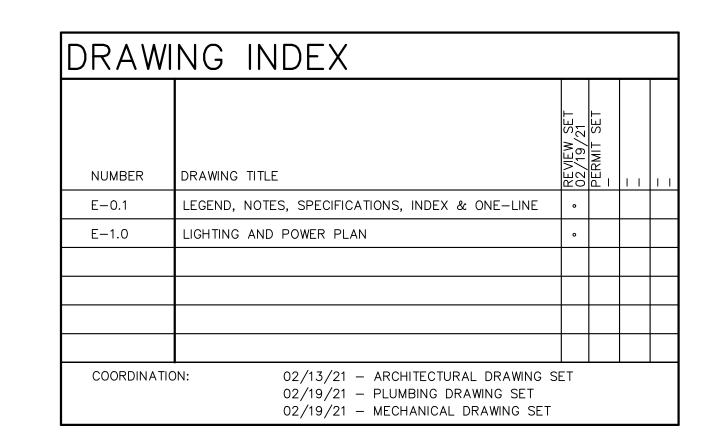
(D) EXISTING TO BE REMOVED

(E) EXISTING TO REMAIN

FLR DEVICE IN FLOOR

MOUNTING HEIGHTS . CENTERLINE DIMENSIONS ARE TO CENTER OF DEVICE WITH TRIM. ADJUST BACKBOX LOCATION AS REQUIRED. KEY HEIGHT HEIGHT KEY 80" ALL MOUNTING HEIGHTS SHALL CONFORM TO 48" MAX 8"A.C. Н THE LATEST EDITION OF THE AMERICANS WITH DISABILITIES ACT, (ADA). 46" MAX 48" MAX J 48" MAX K 78" MAX DIMENSIONS APPLY UNLESS OTHERWISE NOTED 18" MIN 80"-96" Ε 4" MIN 3" MIN М N 6" MIN  $\odot$ EQUIP. —FC—F €-Ф**▲**△ ╎<del>╷</del>┈╚┼┼┈♥Ф▼▽╵

DEVICE MOUNTING HEIGHT DETAIL



KEY NOTES

(THIS SHEET ONLY)

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Tag	Lamps	Description	Manufacturer	Part No.	Voltage	Notes
L	8.9W LED	6" Diam. Recessed Down Light	Lithonia	LDN6 35/07 LO6 AR LSS MVOLT GZ10	120	1
W2	12.2W LED	2' Wall Bracket	Lithonia	WL2 12L MVOLT EZ1 LP835	120	1

MECHANICAL EQUIPMENT & MOTOR SCHEDULE													
KEY	EQUIPMENT	CHARACTERISTICS				CIRCUIT				PROTECTION			
		HP	RLA/FLA	Watts	PH	Volts	MCA	MOCP	Breaker	Switch	Fuse	Disconnect at unit	
EF-1	Exhaust Fan		0.5	65	1	120	0.7	20	20			Integral	
NOTES													
1													



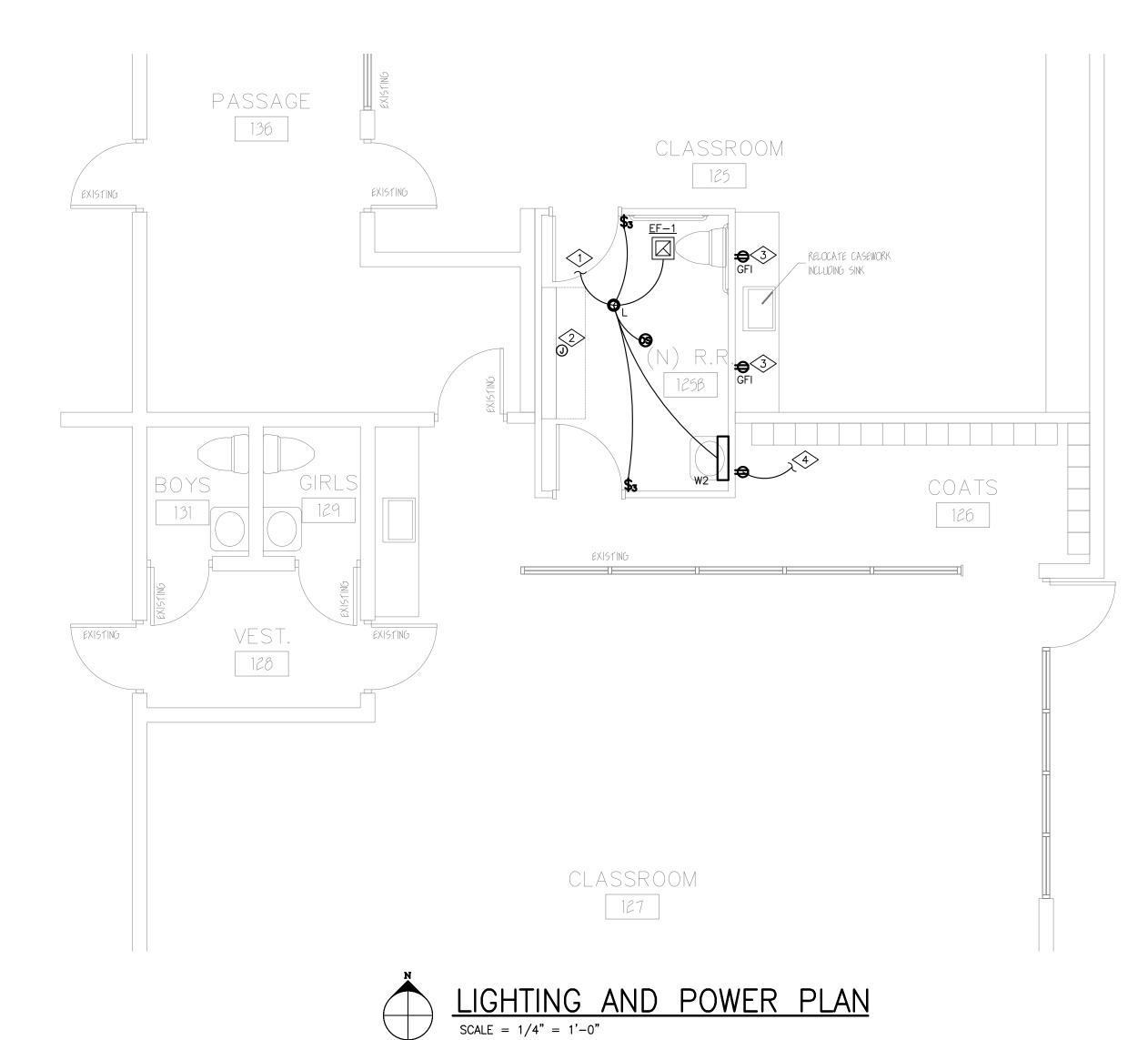
## DEMO NOTES

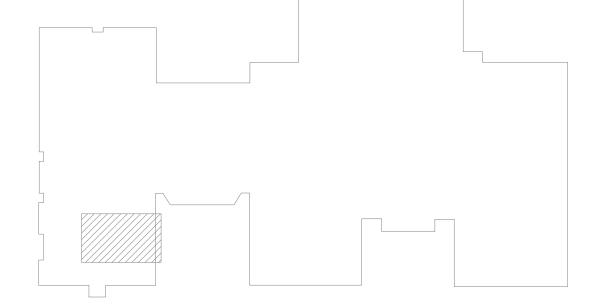
- REMOVE EXISTING LIGHT FIXTURE.
- REMOVE EXISTING DATA BOX AND RECEPTACLES. MAINTAIN INTEGRITY OF CIRCUIT DOWN STREAM.
- REMOVE EXISTING RECEPTACLE SERVING COUNTER TOP. FIELD VERIFY EXACT LOCATIONS AND QUANTITY.
- EXISTING LIGHT FIXTURE MAY NEED TO BE REMOVED TO ALLOW NEW WALL CONSTRUCTION. E.C. TO FIELD VERIFY AND REMOVE IF NEEDED.

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## KEY NOTES

- CONNECT TO EXISTING LIGHTING CIRCUIT, UPSTREAM OF LOCAL CLASSROOM 125 SWITCHING.
- PROVIDE J-BOX WITH CONDUIT STUBBED TO ACCESSIBLE CEILING SPACE FOR FIRE ALARM HORN / STROBE. COORDINATE EXACT LOCATION WITH G.C. AND OWNER. CABLING BY OTHERS.
- RELOCATED COUNTER TOP RECEPTACLES. RECONNECT TO EXISTING CIRCUIT. FIELD VERIFY EXACT LOCATIONS AND QUANTITY.
- CONNECT TO NEAREST AVAILABLE 120V RECEPTACLE CIRCUIT SERVING AREA. DOCUMENT CIRCUIT NUMBER ON RECORD DRAWINGS.







#### GENERAL NOTES:

- CONNECT ALL EXIT AND EM LIGHTS TO CIRCUITS SHOWN AHEAD OF LOCAL SWITCHING.
- 2. LUMINAIRES DENOTED "NL" SHALL BE CONNECTED AHEAD OF LOCAL SWITCHING.
- 3. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LIGHTING FIXTURE LOCATIONS.
- 4. REFER TO MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT.
- 5. ALL CONDUCTORS SHALL BE COPPER AND #12 UNLESS OTHERWISE NOTED.
- 6. ALL SWITCHES, CONVENIENCE RECEPTACLES, AND PLATES SHALL BE WHITE NONMETALLIC UNLESS NOTED. CONFIRM COLOR WITH ARCHITECT PRIOR TO ORDERING DEVICES.
- 7. INSTALL, WHERE REQUIRED BY JURISDICTION, MANUFACTURE APPROVED SEALING KITS ON ALL RECESSED CANS INSTALLED IN INSULATED CAVITIES.
- 8. LABEL ALL JUNCTION BOXES WITH CIRCUIT NUMBERING DURING ROUGH—IN OF CONDUIT SYSTEM.
- 9. PROVIDE POWER FOR VVT'S AS REQUIRED BY M.C.. (REFER TO MECHANICAL PLANS)
- 10. COPIES OF ALL INSTALLATION, OPERATIONAL AND MAINTENANCE MATERIALS ARE TO BE SAVED PROVIDED TO THE PROJECT MANAGER FOR ASSEMBLY AND DELIVERY TO THE CONTRACTOR AND OWNER.
- 11. THE ELECTRICAL CONTRACTOR JOB FORMAN SHALL DOCUMENT ALL UNDERGROUND FEEDERS AS WELL AS ANY DEVIATIONS TO THE CONSTRUCTION DOCUMENTS ON THE RECORD DRAWINGS. SHOW DIMENSIONS ONLY WHEN ACCURACY CAN BE ASSURED.
- 12. COORDINATE EXACT RECEPTACLE LOCATIONS WITH ARCHITECTURAL DRAWINGS.



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