



Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

REQUEST FOR PROPOSAL
COVER PAGE

RFP Number:	7174-20
RFP Title:	Boulder County Housing Authority Exterior Repairs
Optional Site Visit:	Bidders may visit the sites, please contact 720-864-6400 forty-eight hours in advance of any physical inspections of the buildings. Please adhere to the State guidelines regarding face coverings and maintaining proper social distancing.
RFP Questions Due:	October 14, 2020 – 2:00 p.m.
Submittal Due Date:	October 27, 2020 – 2:00 p.m.
Email Address:	purchasing@bouldercounty.org
Documents included in this package:	Proposal Instructions Terms and Conditions Specifications Insurance and W-9 Requirements Submittal Checklist Evaluation Criteria Sustainability Questionnaire Signature Page Sample Contract



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PROPOSAL INSTRUCTIONS

1. Purpose/Background

Boulder County Housing Authority is seeking qualified vendors for roofing replacement, painting, and exterior siding replacement. These properties are owned and operated by Boulder County Housing Authority and are located throughout the portfolio varying in size and scope. Please refer to Section 00 01 10 for specific project details, sheet A100 for site maps and subsequent detail pages for specific locations.

2. Optional Site Visits

Bidders may visit the sites, please contact 720-864-6400 forty-eight hours in advance of any physical inspections of the buildings.

During onsite visits the guidelines are as follows:

- Nothing can change hands. No documents, business cards, sign in sheets, etc.
- All participants are required to wear face coverings at all times.
- All participants are required to maintain at least 6 feet of physical distancing at all times.
- Group sizes must stay within recommended guidelines as issued by the state and local authorities.
- Participants will be allowed to take photos or videos of the site in order to review with subs.
- In order to keep a level playing field, and in the interest of transparency, no discussion is allowed during onsite visits. ANYTHING that is discussed during the course of visits must be submitted in writing to the bid.

3. Written Inquiries

All inquiries regarding this RFP will be submitted via email to the Boulder County Purchasing Office at purchasing@bouldercounty.org on or before **2:00 p.m. October 14, 2020**. A response from the county to all inquiries will be posted and sent via email no later than **October 20, 2020**.

Please do not contact any other county department or personnel with questions or for information regarding this solicitation.

4. Submittal Instructions

Submittals are due at the email box only, listed below, for time and date recording on or before **2:00 p.m. Mountain Time on October 27, 2020**.

Please note that email responses to this solicitation are required, but are limited to a maximum of 50MB capacity. NO ZIP FILES OR LINKS TO EXTERNAL SITES ALLOWED. Electronic submittals must be received in the email box listed below. Submittals sent to any other box will NOT be forwarded or accepted. This email box is only accessed on the due date of your questions or proposals. Please use the Delivery Receipt option to verify receipt of your email. It is the sole responsibility of the proposer to ensure their documents are received before the deadline specified above. Boulder County does not accept responsibility under any circumstance for delayed or failed email or mailed submittals.

Email purchasing@bouldercounty.org; identified as **RFP # 7174-20** in the subject line.

All RFPs must be received, and time and date recorded by authorized county staff by the above due date and time. Sole responsibility rests with the proposer to see that their RFP response is received on time at the stated location(s). Any responses received after due date and time will be returned to the proposer.

The Boulder County Housing Authority Board reserves the right to reject any and all responses, to waive any informalities or irregularities therein, and to accept the proposal that, in the opinion of the Board, is in the best interest of the Board and of the County of Boulder, State of Colorado.

Americans with Disabilities Act (ADA): If you need special services provided for under the Americans with Disabilities Act, contact the ADA Coordinator or the Human Resources office at (303) 441-3525 at least 48 hours before the scheduled event.



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TERMS AND CONDITIONS

1. Proposers are expected to examine the drawing, specifications, schedule of delivery, and all instructions. Failure to do so will be at the proposer's risk.
2. Each proposer will furnish the information required in the Request for Proposals.
3. The Contract/Purchase Order will be awarded to that responsible proposer whose submittal, conforming to the Request for Proposals, will be most advantageous to the County of Boulder, price and other factors considered.
4. The Boulder County Housing Authority and County of Boulder reserve the right to reject any or all proposals and to waive informalities and minor irregularities in proposals received, and to accept any portion of or all items proposed if deemed in the best interest of the County of Boulder to do so.
5. No submittal will be withdrawn for a period of thirty (30) days subsequent to the opening of proposals without the consent of the County Purchasing Agent or delegated representative.
6. A signed purchase order or contract furnished to the successful proposer results in a binding contract without further action by either party.
7. Late or unsigned proposals will not be accepted or considered. It is the responsibility of proposers to ensure that the proposal arrives at the Boulder County Information Desk prior to the time indicated in the "Request for Proposals."
8. The proposed price will be exclusive of any Federal or State taxes from which the County of Boulder is exempt by law.
9. Any interpretation, correction or change of the RFP documents will be made by Addendum. Interpretations, corrections and changes of the RFP documents made in any other manner will not be binding, and proposer will not rely upon such interpretations,

corrections and changes. The County's Representative will not be responsible for oral clarification.

10. Confidential/Proprietary Information: Proposals submitted in response to this "Request for Proposals" and any resulting contract are subject to the provisions of the Colorado Public (Open) Records Act, 24-72-201 et.seq., C.R.S., as amended. Any restrictions on the use or inspection of material contained within the proposal and any resulting contract will be clearly stated in the proposal itself. Confidential/proprietary information must be readily identified, marked and separated/packaged from the rest of the proposal. **Co-mingling of confidential/proprietary and other information is NOT acceptable. Neither a proposal, in its entirety, nor proposal price information will be considered confidential/proprietary. Any information that will be included in any resulting contract cannot be considered confidential.**

The Boulder County Attorney's Office retains sole authority for determining whether the Colorado Open Records Act requires or permits Boulder County to disclose proposal or bid documents, or any information contained therein, pursuant to an open records request.

11. Boulder County promotes the purchase/leasing of energy efficient, materials efficient and reduced toxic level products where availability, quality and budget constraints allow. Proposers are expected whenever possible to provide products that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency with power management features enabled. Proposers are encouraged to offer products and equipment with post-consumer recycled-content materials. Products should be packaged and delivered with a minimum amount of recycled packaging that adequately protects the product but is not excessive.
12. Pursuant to Colorado law (House Bill 1292), in any bidding process for public works in which a bid is received from a non-resident bidder who is from a state that provides a percentage bidding preference, a comparable percentage disadvantage will be applied to the bid of that bidder. Bidders may obtain additional information from the Department of Personnel's website: <http://www.colorado.gov/dpa/>.



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SPECIFICATIONS

BOULDER COUNTY HOUSING AUTHORITY (BCHA) **Exterior Repairs**

Issued for Bid Documents

Boulder County, Colorado

September 18, 2020

Terracon Project No.: F6206082



Prepared for Owner:

Boulder County Housing Authority (BCHA)

P.O. Box 471

Boulder, Colorado 80306

Prepared by:

Terracon Inc. 10625 W. I-70 Frontage Rd. N. Suite 3 Wheat Ridge, Colorado 80033



**BOULDER COUNTY HOUSING AUTHORITY EXTERIOR REPAIRS
BOULDER COUNTY, COLORADO
F6206082**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Colorado.

Signature: Kathryn Gromowski, P.E., RBEC

Registered Number: P.E. #49209

**ISSUED FOR BIDDING -
NOT FOR CONSTRUCTION**



SECTION 00 01 10

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END OF SECTION 00 01 10

SECTION 00 41 01

BID FORM

PROJECT IDENTIFICATION: Boulder County Housing Authority Exterior Repairs

THIS BID IS SUBMITTED TO: Boulder County Housing Authority

A. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

B. This Bid shall remain subject to acceptance for sixty (60) days after the day of Bid opening.

C. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

1. Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date _____ Number _____

Date _____ Number _____

Date _____ Number _____

Date _____ Number _____

2. Bidder has familiarized itself with the nature and extent of the Contract Documents proposed Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

3. Bidder has given Engineer written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder.

4. This Bid is genuine and not made in the interest of, or on behalf of, any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

1.2 POSSIBLE CHANGES IN QUANTITY OF WORK

A. Bidder understands that the quantities specified herein for the repairs are approximate and that actual quantities in the field may increase or decrease from the quantities estimated. Bidder hereby agrees to perform all quantities of Work as either increased or decreased, as required by the Engineer in accordance with the provisions of the Construction Documents. The final payment to the Bidder shall be based on the Lump Sum/Unit Prices bid and the

actual quantities completed (for items that are not lump sum).

1.3 QUANTITIES

A. Approximate quantities for the items of repair shown on the drawings are as follows:

Item No.	DESCRIPTION	UNITS	QTY (1)	UNIT PRICE (2)	EXTENSION (1) x (2) =
1.1	Cottonwood – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
1.2	Cottonwood – Mansard Reroofing	L.S.	1	\$	\$
1.3	Cottonwood – Low-Slope Roof Repairs	L.S.	1	\$	\$
2.1	St. Clair – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
2.2	St. Clair – Reroofing & Gutters	L.S.	1	\$	\$
3.1	Emery – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
3.2	Emery – Reroofing & Gutters	L.S.	1	\$	\$
3.3	Emery – Siding/WRB Replacement	L.S.	1	\$	\$
4.1	Cambridge – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
4.2	Cambridge – Reroofing, Ventilation, & Gutters/Downspouts	L.S.	1	\$	\$
5.1	Geneseo – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
5.2	Cambridge – Reroofing, Ventilation, & Gutters/Downspouts	L.S.	1	\$	\$
6.1	Avalon – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
6.2	Avalon – Siding/WRB Replacement	L.S.	1	\$	\$
7.1	Lafayette Villas I – Mobilization, Gen. Conditions, Permits, OH&P,	L.S.	1	\$	\$
7.2	Lafayette Villas I – Reroofing, Gutters, & Skylights	L.S.	1	\$	\$
8.1	Lafayette Villas I – Mobilization, Gen. Conditions, Permits, OH&P,	L.S.	1	\$	\$
8.2	Lafayette Villas I – Reroofing & Gutters	L.S.	1	\$	\$
9.1	Rodeo – Mobilization, Gen. Conditions, Permits, OH&P, & Fees	L.S.	1	\$	\$
9.2	Rodeo – Reroofing, Ventilation, & Gutters	L.S.	1	\$	\$
GRAND TOTAL				\$	

Description of Abbreviations:

L.F. = Lineal Feet

L.S. = Lump Sum

S.F. = Square Feet

EA = Each

B. The Total Bid for the Boulder County Housing Authority Exterior Repairs is:

TOTAL BID _____

_____ (Use words)

\$ _____ (Use figures)

Bidder agrees that the Work on this building will be completed within _____ calendar days after receiving the Notice to Proceed. Contractor should bid this project assuming that Owner requires that at least two crews working on the repair project simultaneously. The contractor should submit a schedule for the repair project at the time of bid submission.

C. Communications concerning this Bid shall be addressed to (Contractor):

Submitted on _____ 20 _____

D. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions provided by the Owner.

E. We plan to sub-contract the following items of work (please list):

Description	Sub-contractor	Value

1.4 ALTERNATES

- 1. Alternate #1: Replacement of low-slope roofing systems at Cottonwood site, including all associated work, flashing, and edge alterations.

Amount: \$ _____

Amount is an **ADD / DEDUCT** (circle one) compared to base bid.

Alternate #1 **ADDS / SUBTRACTS** (circle one) _____ calendar days to the projected project schedule.

- 2. Alternate #2: Installation of gutter guards at replacement gutters.

Amount: \$ _____

Amount is an **ADD / DEDUCT** (circle one) compared to base bid.

Alternate #1 **ADDS / SUBTRACTS** (circle one) _____ calendar days to the projected project schedule.

1.5 UNIT PRICES

- 1. Unit Price 1: Replacement roof sheathing, per 4-foot by 8-foot sheet of plywood, thickness and type to match existing. For bidding purposes, assume nominally 1/2" thick, exterior grade oriented strand board (OSB).

Amount: \$ _____ per EA

- 2. Unit Price 2: Replacement wall sheathing, per 4-foot by 8-foot sheet of plywood, thickness and type to match existing. For bidding purposes, assume nominally 1/2" thick, exterior grade oriented strand board (OSB).

Amount: \$ _____ per EA

1.6 SIGNATURES

- A. If Bidder is an Individual

By _____ (SEAL)
(Individual's Name)

doing business as _____

Business Address: _____

Phone No.: _____

B. If Bidder is a Partnership

By _____ (SEAL)
(Firm Name)

(General Partner)

Business Address: _____

Phone No.: _____

C. If Bidder is a Corporation

By _____ (Corporate SEAL)
(Corporation Name)

(State/Province of Incorporation)

By _____
(Name of Person Authorized to Sign)

(Title)

Attest _____
(Secretary)

Business Address: _____

Phone No.: _____

END OF SECTION 00 41 01

SECTION 00 41 02

**CONTRACTOR'S QUALIFICATION
FORM**

1.1 GENERAL

A. Submitted by: Firm Name _____

B. Have members of this organization operated under former names/businesses?
Yes____ No____

If "yes," list name, type of entity, and names of Contractor, owners or partners.

C. Other than the officers listed on the AIA305 document, how many full-time office employees does your company employ? _____

D. How many full-time, permanent field employees does your company employ? _____

1.2 EXPERIENCE

A. Please list the type and number of projects your firm has constructed which were subject to the Owner Guidelines and other regulatory agency construction requirements:

Type	Number
New Construction - Prime	
New Construction - Subcontractor	
Renovations - Prime	
Renovation - Subcontractor	

B. Section 3.5 of the AIA Document A305 requires a list of projects your organization has completed in the last five years. PLEASE NOTE THAT IN ORDER FOR A CONTRACTOR'S BID TO BE CONSIDERED ACCEPTABLE, THE BIDDER MUST LIST AT LEAST THREE (3) PROJECTS (PLEASE HIGHLIGHT THOSE PROJECTS IN YOUR LIST) OF SIMILAR NATURE AND SCOPE WITHIN A FIFTY (50) MILE RADIUS OF THE SUBJECT PROPOSED PROJECT THAT HAVE BEEN SUCCESSFULLY COMPLETED BY THE BIDDER. FURTHER, LETTERS OF REFERENCE FROM THE OWNERS OF EACH LISTED PROJECT DESCRIBING THEIR EXPERIENCE WITH YOUR COMPANY MAY BE REQUIRED BEFORE THE PROJECT IS AWARDED.

- C. Has your company ever been adjudged in or FILED a petition for bankruptcy?
Yes____ No____
- D. Within the last five (5) years, has your company been assessed liquidated damages for failure to complete a project within the contractually allotted time?
Yes____ No____
- E. Within the last three (3) years, has your company received a final order for willful and/or repeated violation(s) issued by the United States Occupational Safety and Health Administration (OSHA) or by the Colorado Department of Labor and Employment or any other governmental agency? Yes____ No____
- F. Have any Performance or Payment Bond claims ever been paid by any surety on behalf of your company? Yes____ No____
- G. On a separate page, briefly describe your approach to project staffing, scheduling, monitoring, and control to ensure that all appropriate safety measures are being employed and that the project will be completed in a timely manner. Include how your company will keep the Owner informed of any and all concerns related to the schedule.
- H. Does your firm have a written quality control program that would be available upon request? Yes____ No____
- I. **Change Order History:** Describe in an attachment each instance within the last five (5) years where change orders applied for during construction amounted in the aggregate to more than five percent (5%) of the contract price for any building which your firm constructed, or in which actual construction costs exceeded the contract price by more than five percent (5%).
- J. **Manufacturer's Certification:** Each bidder must provide a letter of certification from the manufacturer of the product they intend to use.

1.3 FINANCIAL

- A. Has your bonding company changed in the last 3 years (if yes, why)?
Yes____ No____
- B. Is your surety company licensed to do business in Boulder, Colorado?
Yes____ No____
- C. What is the total bonding capacity of your firm? _____
- D. What is your current bond amount in use? _____
- E. What is the individual job bonding capacity of your firm? _____
- F. What is the maximum you have bonded on any single project? _____
- G. What is your average annual volume for the past five years? _____
- H. What is your company's current backlog (total value of work in progress and under contract)? _____

1.4 EMPLOYEE QUALIFICATION

- A. On a separate page, provide an organizational chart of project personnel for a project similar to the one for which you are bidding.
- B. Include resumes of your key personnel who may staff this project. Provide at least three (3) project-related references for each proposed team member. Include a resume for the project field superintendent.

1.5 SAFETY

- A. Provide a 4-year history of your company’s Workers’ Compensation Experience Modification Rate (EMR)

<u>YEAR</u>	<u>EMR</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Does your company have a written safety program that would be available upon request?

Yes _____ No _____

- C. On a separate sheet, list all incidents that occurred during the past five (5) years where there was property damaged or where anyone (other than one of your employees) was injured during the period that you were working on a jobsite. This list should only include damages and/or injuries that were attributable to your company and/or one of your sub-contractors.

The undersigned certified under oath that the information provided herein is true and sufficiently complete so as not to be misleading. This form shall serve as an addendum to the required AIA Document A305.

COMPANY NAME: _____

BY (signature): _____

BY (please print): _____

TITLE: _____

DATE: _____

Note: If by a corporation, this document must have the signature required by its bylaws.

END OF SECTION 00 41 02

SECTION 00 41 04

SUBSTITUTION REQUEST

1.1 GENERAL

This questionnaire is part of the substitution requirements specified in Section 01 25 00; submit the answers to the following questions to the Engineer:

TO: Terracon Consulting, Inc.

10625 W. I-70 Frontage Rd.

N Ste 3

Wheat Ridge, CO 80033

Telephone: (303) 423-

3300

Email: kade.gromowski@terracon.com

- A. On a separate sheet, **fully** answer the following questions in this format:
1. Title of Project and RFB number.
 2. Specified Item to be removed [**state section (s) where product is specified**].
 3. Proposed Substitute - Attach complete description, catalogue, specification data, and laboratory test if applicable.
 4. What effect will substitution have on dimensions, gauges, weights, etc. indicated in Contract Documents?
 5. What effect will substitution have on wiring, piping, ductwork, etc., indicated in Contract Documents?
 6. What effect will substitution have on other trades?
 7. What effect will substitution have on construction schedule?
 8. What are the differences in quality and performance between proposed substitute and specified product?
 9. State whether the manufacturer of the proposed substitute offers the same or different guarantees as the manufacturer of the specified product. Thoroughly explain any differences.
 10. What is the availability of maintenance services and replacement materials for the proposed substitute?

11. List the names, addresses and phone numbers of fabricators and suppliers for proposed substitute.

12. What effect would the substitute have on the cost of the Work?
13. Are there license fees and/or royalties pending on the proposed substitute?
14. You (the undersigned) understand that you will be responsible for any additional studies, investigations, submittals, redesign, and/or analysis by the Engineer caused by the requested substitutions.

SUBMITTED BY: (Supplier or Subcontractor)

Firm: _____

Address: _____

Signature: _____

Telephone Number: _____ Date _____

REVIEWED AND APPROVED for Subcontractors by (General Contractor)

Firm: _____

Address: _____

Signature: _____

Telephone Number: _____ Date _____

END OF SECTION 00 41 04

SECTION 00 41 09

FORM OF AGREEMENT - SAMPLE

1.1 GENERAL

- A. Reference the attached sample contract for use between Owner and Contractor.

END OF SECTION 00 41 09

SECTION 01 10 00

SUMMARY OF THE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section.
- B. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.

1.2 ACCESS TO THE SITE

- A. The Contractor shall be granted access to the site by the Owner during the days and times established in the Owner's Requirements.

1.3 SUMMARY OF SCOPE OF WORK

- A. The scope of work varies by building but will include some portion of the work described below.
- B. Base Bid
 - 1. Roofing
 - a. Remove and replace existing asphalt shingle roofing, underlayment, and appurtenances. Replacement includes:
 - i. Removal, replacement, and reflashng of all penetration and vent flashing and accessories.
 - ii. Replacement of flashing at roof to wall transitions in accordance with the drawings.
 - iii. Replacement of attic vents and/or ridge vents.
 - iv. Replacement of heat tape.
 - v. Replacement underlayment to include ice and water shield, installed to extend 2-foot minimum upslope of the exterior wall.
 - b. At Cottonwood site, removal of existing wood shakes and replacement with asphalt shingles, including underlayment and all appurtenances.
 - c. At Cottonwood site, repair tears in existing low-slope EPDM membrane at membrane perimeter.
 - d. At Cottonwood site, replacement of fascia.

- e. Removal and replacement of gutters as required to perform the work.
 - i. Where existing downspouts are not indicated for replacement, connect new gutters to existing downspouts.
- f. Removal and replacement of existing downspouts where indicated.
- g. Removal and replacement of existing skylights where indicated.
- h. At 501 West Geneseo Street, removal of existing solar panels and associated equipment.
- i. Providing code-compliant ventilation at Cambridge and Rodeo sites.

2. Elevations

- a. Remove and replace existing siding/cladding where indicated, including underlying weather resistive barrier and flashings.

C. Alternate #1

- 1. At Cottonwood site, remove and replace existing EPDM membrane. Replacement includes:
 - a. Removal and disposal of existing ballast, membrane, and insulation.
 - b. Installation of new, fully adhered insulation, coverboard, and membrane. New insulation to meet energy code requirements.
 - c. Reflashing of all penetrations, to include raising of existing penetrations if required for reflashing.
 - d. Build-up of roof perimeters to accommodate insulation thickness, including new fascia metals as required at built-up perimeters.

D. Alternate #2

- 1. Installing gutter guards at all replacement gutters.

1.4 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limit indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways, loading areas, alleys, and entrances serving premises clear and available to Owner, Owner's employees,

tenants, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

- a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.5 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8 a.m. to 5 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than two days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.

- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Restricted Substances: Use of tobacco products and other controlled on Project site is not permitted.
- F. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1.7 WORK UNDER DIVISIONS OF THE SPECIFICATIONS THAT HAVE BEEN OMITTED

- A. There are several sections of a typical specification that are used to address specific construction situations. As many of these are not being utilized for this project, those specification divisions have either been limited to the items included in the Scope of Work, or omitted altogether.
- B. All Work associated with these summarized or omitted Sections shall be performed in full compliance with the standard of care appropriate for each item, in accordance with the requirements of the authority having jurisdiction, consistent with the industry standard of care, and in a manner that is consistent with the recommendations of the national trade organizations associated with each item of Work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 10 00

SECTION 01 25 00

SUBSTITUTIONS

PART 1 - GENERAL

1.1 GENERAL

- A. Drawings and general provisions of the Contract apply to this Section.
- B. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.
- C. This Section includes the requirements for requesting approval of proposed substitutions. The requirements of this section govern the use of "Substitution Request Form."

1.2 LIMITATIONS ON SUBSTITUTIONS

- A. Substitutions will not be considered when indicated on shop drawings or product data submittals without separate formal requests complying with "submittal procedures" specified in this section.
- B. Substitution will not be considered unless submitted through the Contractor.
- C. The Contractor, at no expense to the Owner, shall pay additional studies, investigations, submittals, redesign and / or analysis by the Engineer caused by the requested substitutions to the Owner.
- D. Substitute products shall not be ordered or installed without written acceptance.
- E. Only one request for substitution for each product will be considered. If the Engineer does not accept substitution, provide the specified product.
- F. Engineer's decision shall be final concerning the acceptability of all substitutions.

1.3 REQUESTS FOR SUBSTITUTIONS:

- A. Contractor's Representation:
 - 1. Request of substitution constitutes a representation that the Contractor has investigated the proposed product and has determined that it is equal to or superior in all respects to the specified product.
 - 2. Request for substitution constitutes a representation that the Contractor will provide same warranty for substitution as for the specified product. Contractor's warranty shall be in writing guaranteeing all substituted products have same or superior performance as the product specified.
 - a. Request for substitution constitutes a representation that the Contractor will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

- b. Request for substitution constitutes a representation that the Contractor waives all claims for additional costs related to substitutions that consequently become apparent.
 - c. Request for substitution constitutes a Contractor's representation that the cost data is complete and includes all related cost under this Contract, but excludes any approved Engineer's design fees required by substitution.
 - d. Request for substitution constitutes a representation that the Contractor has thoroughly investigated the proposed substitute to determine if license fees and royalties are pending in the proposed substitute.
3. Requests for substitutions shall be submitted in pdf format. Each submittal request shall be complete with data substantiating compliance of proposed substitution with requirements of Contract Documents including the following information:
- a. Project title.
 - b. Identification of product specified including Specifications Section and Paragraph number.
 - c. Identification of proposed substitute complete with manufacturer's name and address, trade name of product, and model or catalogue number. Include product data.
 - d. List of fabricator and supplier (with address and phone number) for proposed substitute.
 - e. The effect of substitution on dimensions, material thickness, etc. indicated in Contract documents.
 - f. The effect of substitution on other trades.
 - g. The effect of substitution on construction schedule.
 - h. Differences in quality and performance between specified product and proposed substitute.
 - i. Comparison of Manufacturer's guarantees of specified product and proposed substitute.
 - j. Availability of maintenance services and replacement materials for proposed substitute.
 - k. Cost data comparing proposed substitute with specified product, and amount of net change to Contract Sum.

END OF SECTION 01 25 00

SECTION 01 30 01

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 MEETINGS AND COMMUNICATION

- A. Attend all meetings called by Owner, Owner's Representative, or Engineer.
- B. Communicate with Engineer at least 24 hours in advance of progress meetings of items to be added to the agenda.
- C. Engineer is the designated administrator of the Contract Documents and should be contacted prior to other parties for communication other than coordination of Work.
- D. Most project communication will use electronic mail; Contractor must maintain an email address/account during the Project.

1.2 SCHEDULE

- A. Divide the Work into zones/phases, and identify each zone/phase with the unique identification number. Submit zones/phases on a drawing to Engineer.
- B. Submit a schedule showing projected future and actual start and completion dates for each zone/phase.
- C. Submit an updated schedule each time the previously submitted schedule becomes incorrect, or with each application for payment whichever is shorter.

1.3 LAVATORIES

- A. Contractor to provide temporary lavatory facilities for duration of the project. Coordinate location of temporary facilities with the Owner's Representative.

1.4 CIVILITY

- A. Ensure that personnel remain reasonably quiet during operating hours. Except in an emergency, do not shout from elevated locations.
- B. Recreational radios are not permitted on the site.
- C. No profanity, alcoholic beverages, or intoxication are permitted on the site.
- D. Congregate only in areas designated by the Property Contact for personnel breaks and lunches.
- E. Smoking is permitted ONLY in the designated break area, which is to be designated by the Owner. Provide waste disposal receptacle for disposal of cigarette butts and other miscellaneous trash within designated area. If personnel are observed not using the designated location or fail to use proper disposal methods, all smoking and tobacco use will be prohibited for the remainder of the project.

F. No firearms are permitted on the site, concealed or otherwise.

1.5 STORAGE

- A. Coordinate location of temporary storage with Owner's Representative.
- B. Any materials or equipment remaining on site, including in the designated storage area, after Final Completion become the property of the Owner, without requiring a bill of sale or notification to the Contractor.

1.6 PARKING

- A. Coordinate parking with Owner's Representative before commencing work.
- B. Do not leave Contractor vehicles on site overnight without Owner Representative's written consent.

1.7 TRASH DISPOSAL

- A. Do not use Owner's trash disposal systems. Provide and maintain temporary dumpster to be located as determined by Owner's Representative.
- B. Daily clean-up of working areas is required. Construction debris and personal trash must be cleaned at the end of each working day.

1.8 CODES, ORDINANCES, AND FEES

- A. Perform work in strict accordance with applicable codes, standards, and ordinances of agencies having jurisdiction over the Work or Site.
- B. Obtain and PAY FOR construction related permits, including building permits, traffic lane, or sidewalk closure permits, or utility taps and hook-ups if required. No additional compensation or increase in Contract Time will be made for the permit process.

END OF SECTION 01 30 01

SECTION 01 33 00

SUBMITTALS AND MOCK-UPS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals:
 - 1. Where required by the Specifications, Contractor shall submit descriptive information that will enable Engineer to determine whether Contractor's proposed materials, equipment, and Work methods are in general conformance to the design concept and in accordance with the Drawings and Specifications. The information submitted may consist of drawings, specifications, descriptive data, certificates, samples, test results, product data, and such other information, all as specifically required in the Drawings and Specifications. In some instances, specified submittal information describes some, but not all features of the material, equipment, or Work method.

1.2 GENERAL

- A. Drawings and general provisions of the Contract apply to this Section.
- B. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.

1.3 SUBMITTAL LOG

- A. The Contractor shall maintain a Submittal Log identified with project Name and File Number showing the title of each submittal, date of submittal, date returned, and status.

1.4 SUBMITTALS (GENERAL)

- A. Initial Submittal: Submit complete submittals by section and subcontractor trade prior to start of construction. Submittals requiring a long lead time for manufacture or fabrication shall be submitted as soon as possible after award.
- B. Resubmissions: Shall be combined with all applicable resubmissions within the same section.
- C. Submissions requiring further existing condition verification shall be scheduled to be submitted at a later applicable date. Submit a schedule of these items and intended dates.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
- B. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 3. A cover sheet, provided by the engineer, shall be filled out in its entirety and be the first page of each individual submission item.
- C. Options: Identify options requiring selection by Engineer and/or Owner.
- D. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- E. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

- F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.
- H. Contractor's comments on submittals shall not be in red ink.
- I. Should Contractor propose any item on the shop drawings or incorporate an item into the Work which subsequently proves to be defective or otherwise unsatisfactory, (regardless of Engineer's preliminary review) Contractor shall, at Contractor's own expense, replace the item with another item that will perform satisfactorily.

1.6 SCHEDULE OF VALUES

- A. The Schedule of Values shall be organized to match the Scope of Work by Unit list. Submit the proposed Schedule of Values prior to commencing Work.

1.7 APPLICATION FOR PAYMENT

- A. The form for application shall be AIA Documents G702 Application and Certification and G703 Continuation Sheet, unless required otherwise by the contract. Any substitution to the specified form shall be approved of in writing by the Engineer prior to submitting the first application for payment.
- B. Submit the Applications for Payment to the Engineer in accordance with the schedule established by Conditions of the Contract Agreement between the Owner and Contractor.
- C. The Continuation Sheets for the application shall be itemized with the line items and values of the Schedule of Values accepted by the Engineer prior to submitting the first application for payment.
- D. Submit the original and an updated progress schedule to the Engineer electronically, with each application for payment, in pdf format.
- E. When the Engineer finds the Application properly completed and correct, he will transmit the certificate for payment to the Owner, with a copy to the Contractor.

1.8 CHANGE ORDER PROCEDURES

- A. Change Orders shall be prepared by the Contractor. A detailed breakdown of cost, provided by the contractor is required. Signatures by all parties signing the original agreement form are required on each Change Order.

1.9 PROJECT SITE LAYOUT

- A. Contractor shall submit within seven (7) days after the effective date of the Notice to Proceed, a layout of the Project site including fences, roads, parking, buildings, storage areas, drainage plans, temporary building layouts, and temporary utility locations.

1.10 PROTECTION PLAN

- A. Contractor shall submit protection plan inclusive of protecting existing finishes and other existing conditions from construction damage.

1.11 CONTRACT CLOSE-OUT SUBMITTALS

- A. See Division 01 Section “Contract Close-out” hereinafter for submittals and procedures required for contract closeout.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data is not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. Submit Product Data before or concurrent with Samples.

- C. Samples, General: Submit physical (not electronic) Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample
 - b. Product name and name of manufacturer
 - c. Sample source
 - d. Number and title of applicable Specification Section
 - e. Specification paragraph number and generic name of each item.
 3. Provide corresponding electronic submittal of Sample transmittal on the Project Web Site, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 5. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 6. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- D. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
1. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
- E. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing

color, texture, and pattern; color range sets; and components used for independent testing and inspection.

1. Number of Samples: Submit three sets of Samples. Engineer will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - b. If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

- F. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in the following format:
 - a. PDF electronic file.

- G. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

- H. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

- I. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

- J. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

- K. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

- L. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- M. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

END OF SECTION 01 33 00

SUBMITTAL COVER PAGE

The undersigned Contractor(s) shall fill out and staple this Submittal Cover Page for each submitted data sheet, sample, shop drawing, or any other item submitted to the Architect/Engineer. All items in the Submittal Log list will require a Submittal Cover Page.

PROJECT _____ No. _____

ADDRESS _____

CONTRACTOR (contact)

ARCHITECT/ENGINEER (contact)

ADDRESS

ADDRESS

PHONE NO. _____

PHONE NO. _____

DATE _____

ITEM SUBMITTED _____

MANUFACTURER/RESPONSIBLE _____

SUBMITTED BY _____

SPECIFICATION LOCATION (Section/Article/Paragraph/Subparagraph – must meet Submittal Log)

ARCHITECT/ENGINEER'S NOTES

CONTRACTOR'S STAMP

Boulder County, Colorado
SUBMITTALS AND MOCK-UPS

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Requirements of this Section apply to, and are a component of, each section of the specifications.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.
 - 1. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - a. NFPA 241 (2009) Standard for Safeguarding Construction, Alteration, and Demolition Operations
 - b. NFPA 70 (2008; AMD 1 2008) National Electrical Code - 2008 Edition
 - 2. U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)
 - a. MUTCD (2000) Manual of Uniform Traffic Control Devices

1.3 SUBMITTALS

- A. Submit the following in accordance with Division 01 Section "Submittal Procedures":
 - 1. SD-01 Preconstruction Submittals
 - a. Divide the Work into zones/phases, and identify each zone/phases with the unique identification number. Submit zones/phases on a drawing to Engineer showing projected future and actual start and completion dates for each zone/phase.
 - b. Traffic control plan
 - c. Utility requirements and use plan for electrical, water, and sewer use required for project completion.

PART 2 - PRODUCTS

2.1 TEMPORARY TRAFFIC CONTROL

- A. Barricades
 - 1. Erect and maintain temporary barricades to limit public access to hazardous areas. Whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic barricades will be

required, the Owner's Representative must be notified at least three (3) calendar days in advance. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

B. Fencing

1. Enclose the Contractor lay-down area with an 8-foot high chain link fence and gates with brown, UV light resistant, plastic fabric mesh netting (similar to tennis court or other screening). Remove the fence upon completion and acceptance of the work. Intent is to block (screen) public view of the lay-down area and to provide additional security for stored materials.

2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 EMPLOYEE PARKING

- A. Contractor employees will park privately owned vehicles in areas designated by the Owner. This area will be within reasonable walking distance of the construction site. Contractor employee parking must not interfere with existing and established parking requirements of the Owner.

3.2 AVAILABILITY AND USE OF UTILITY SERVICES

A. Temporary Utilities

1. Provide temporary utilities required for construction, including electrical, HVAC, and plumbing as required (unless otherwise approved for use of existing facilities). Materials may be new or used, must be adequate for the required usage, not create unsafe conditions, and not violate applicable codes and standards.

B. Fire Protection

1. Provide temporary fire protection equipment for the protection of personnel and property during construction. Remove debris and flammable materials daily to minimize potential hazards.

3.3 TRAFFIC PROVISIONS

A. Maintenance of Traffic

1. Conduct operations in a manner that will not close any thoroughfare or interfere in any way with traffic on roads or alleys except with written plan and written permission of the Authority Having Jurisdiction (AHJ). The plan must be in accordance with State and local regulations.
2. Contractor may move oversized and slow-moving vehicles to the worksite provided requirements of the local authority have been met.

3. Conduct work so as to minimize obstruction of traffic, and maintain traffic on at least half of the roadway width at all times. Obtain written approval from the Owner prior to starting any activity that will obstruct traffic.
4. Provide, erect, and maintain, at contractor's expense, lights, barriers, signals, passageways, detours, and other items, that may be required.

B. Protection of Traffic

1. Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Owner.
2. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment the work, and the erection and maintenance of adequate warning, danger, and direction signs, will be as required by the State and local authorities having jurisdiction.
3. Protect the traveling public from damage to person and property. Minimize the interference with public traffic on roads selected for hauling material to and from the site. Investigate the adequacy of existing roads and their allowable load limit. Contractor is responsible for the repair of any damage to roads caused by construction operations.

C. Rush Hour Restrictions

1. Do not interfere with the peak traffic flows preceding and during normal operations without notification to and written approval by the Owner.

D. Dust Control

1. Dust control methods and procedures must be approved by the Owner. Treat dust abatement on access roads with applications of calcium chloride, water sprinklers, or similar methods or treatment.

3.4 CONTRACTOR'S TEMPORARY FACILITIES

A. Administrative Field Offices

1. Provide and maintain administrative field office facilities within the construction area at the designated site. Owner's facilities will not be available to the Contractor's personnel.

B. Storage Area

1. Construct a temporary 6-foot high chain link fence around trailers and materials. Include plastic strip inserts or privacy screen fabric, so that visibility through the fence is obstructed. Do not place or store trailers, materials, or equipment outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Owner away from the vicinity of the construction site but within the installation boundaries. Trailers, equipment, or materials must not be open to public view with the exception of those items which are in support of ongoing work on any given day. Do not stockpile materials outside the fence

in preparation for the next day's work. Park mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment within the fenced area at the end of each work day.

2. Maintenance of Storage Area

- a. Keep fencing in a state of good repair and proper alignment. Grassed or unpaved areas, which are not established roadways, will be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways, should the Contractor elect to traverse them with construction equipment or other vehicles; gravel gradation will be at the Contractor's discretion. Mow and maintain grass located within the boundaries of the construction site for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers will be edged or trimmed neatly.

3. Security Provisions

- a. Provide adequate outside security lighting at the Contractor's temporary facilities. The Contractor will be responsible for the security of its own equipment; in addition, the Contractor will notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

4. Weather Protection of Temporary Facilities and Stored Materials

- a. Take necessary precautions to ensure that roof openings and other critical openings in the building are monitored carefully. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

5. Building and Site Storm Protection

- a. When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby property. Precautions must include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby property.

C. CLEANUP

- 1. Remove construction debris, waste materials, packaging material and the like from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways must be cleaned away. Store within the fenced area described above or at the supplemental storage area any materials resulting from demolition activities which are salvageable. Neatly stack stored materials not in trailers, whether new or salvaged.

D. RESTORATION OF STORAGE AREA

1. Upon completion of the project remove the bulletin board, signs, barricades, and any other temporary products from the site. After removal of trailers, materials, and equipment from within the fenced area, remove the fence that will become the property of the Contractor. Restore to the original or better condition, areas used by the Contractor for the storage of equipment or material, or other use. Gravel used to traverse grassed areas must be removed and the area restored to its original condition, including repairs to existing irrigation systems, top soil, and sod as necessary.

END OF SECTION 01 50 00

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section.

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Installation of the Work.
 - 2. Progress cleaning.
 - 3. Starting and adjusting.
 - 4. Protection of installed construction.

1.3 EXAMINATION

- A. Restoration and rehabilitation documents are not representative of all existing conditions. Modification of issued details may be the result of existing conditions either not shown in the drawings, or as exposed.
- B. The contractor shall field verify conditions and dimensions at areas of work, and conditions required to access the areas of work.
- C. Submit all variations showing field verifications and deviations to the documents to Engineer in advance.

1.4 QUALITY ASSURANCE

- A. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The contractor shall be responsible for photographic documentation of the existing conditions and repair any and all damages caused by the contractor to their original conditions.
 - 1. If photographic documentation is not performed, Contractor may be liable for any damage to existing surfaces to remain identified in the area of work, regardless of whether the damage pre-dated the construction activities. Contractor would be required to restore any identified damage to a condition acceptable to Engineer and Owner/Owner's Representative.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Protection is required at all areas of work and paths of travel. Submit a protection plan, including proposed materials temporarily installed for the purpose of protection.
- B. Verification of Existing Drainage:
 - 1. Verify that existing roof drains within the project limit are not blocked, and drainage pipes to the storm outlet. Visually inspect existing drains.

- C. Contractor shall utilize suitable cover to protect wall surfaces to prevent damage that may result from operations. Special measures of protection may be required for windows, doorways, walkways, docks, etc.
- D. The contractor shall provide protection from objectionable dust and wind-blown or falling debris from the following, but not limited to, areas: project site, adjoining property, building interior and air intakes. During installations that release VOC's and/or odor, provide filtering at intakes and coordinate adjustments to the set points or shut-down as is required for the type of work being performed.
- E. Contractor shall take necessary precautions to protect the building grounds from damage during construction due to construction access.
- F. The contractor is responsible for any and all mechanical, electrical, and plumbing to be temporarily relocated to allow access to the work intended to be repaired followed by reinstallation of the equipment to its original condition. If such work is determined to be required for the project, notify Engineer and Owner/Owner's Representative.
- G. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

3.3 EXECUTION

- A. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- B. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
 - 1. Damage as a result of construction or construction traffic shall be repaired at no cost to the owner.
- D. Repair or remove and replace damaged, defective, or nonconforming Work.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

3.4 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 FINAL CLEANING

- A. Restore and clean areas accessed during construction or impacted by construction to their pre-construction existing condition.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CLOSEOUT SUBMITTALS

- A. Submit the following closeout materials in one submission via email to the engineer and owner.
 - 1. Warranties required by the technical Specification Sections.
 - 2. Signed and completed punchlist with photo verification.
 - 3. Return Permits, Parking Passes, Keys, and/or badges.
 - 4. Submit operations and maintenance manuals.

END OF SECTION 01 70 00

SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 GENERAL

- A. Comply with the requirements stated in Conditions of the Contract and in the Specifications for administrative procedures, fiscal provisions, and legal submittals to close out the Work.

1.2 FINAL OBSERVATION:

- A. When the Contractor determines the work is complete, he shall submit a written certification that:
1. Contract Documents have been reviewed.
 2. The Work has been inspected by a qualified person authorized by the contractor for compliance with Contract Documents.
 3. The Work has been inspected by a Material Manufacturer's Representative where appropriate.
 4. The Work has been completed in accordance with the Contract Documents, and all deficiencies noted by the Material Manufacturer's Representative and the Contractor's Representative have been corrected.
 5. The Work is completed and ready for final observation.
- B. Within a reasonable time after receipt of certification, the Engineer will schedule a final observation. The Owner's Representative, the Material Manufacturer's Representative (where appropriate), the Contractor, and the Engineer will meet at the project to verify satisfactory completion.
- C. When the Engineer finds the work acceptable under the Contract Documents, he shall request the Contractor to make the closeout submittals.

1.3 CONTRACTOR'S CLOSE-OUT SUBMITTAL TO THE ENGINEER:

- A. The Closeout submittal shall be complete and submitted to the Engineer as a single package, and it shall contain:
1. Release of Liens from all subcontractors and material suppliers.
 2. Executed Manufacturer's Warranty (where applicable)
 3. Application for Final Payment using AIA Documents G702 Application and Certification and G703 Continuation Sheet, or other documents required by contract (if applicable).

END OF SECTION 01 77 00

SECTION 07 31 00

ASPHALT SHINGLE ROOFING SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Asphalt roofing shingles.
- B. Leak barrier and roof deck protection.
- C. Metal flashing associated with shingle roofing.
- D. Gutters and Downspouts
- E. Gutter Guards
- F. Attic ventilation.
- G. Heat tape.
- H. Skylights.

1.2 REFERENCE STANDARDS

- A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
- B. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.

REFERENCED STANDARDS	
American Society for Testing and Materials (ASTM)	
ASTM A 653/A 653M	Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
ASTM B 209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM D 3018	Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules
ASTM D 3161	Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method)
ASTM D 3462	Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules

REFERENCED STANDARDS	
ASTM D 4586	Standard Specification for Asphalt Roof Cement, Asbestos- Free
ASTM D 7158	Standard Test Method for Wind-Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method)
ASTM E 903	Standard Test Method for Solar Absorptance, Reflectance, and Transmission of Materials Using Integrating Spheres
Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306)	
UL 790	Tests for Fire Resistance of Roof Covering Materials
UL 997	Wind Resistance of Prepared Roof Covering Materials
UL 2218	Impact Resistance of Prepared Roof Covering Materials
Asphalt Roofing Manufacturers Association (ARMA)	
Sheet Metal and Air Conditioning Contractors National Association, 1nc. (SMACNA) - Architectural Sheet Metal Manual	
National Roofing Contractors Association (NRCA) – Roofing Manual	
American Society of Civil Engineers (ASCE)	
ASCE 7	Minimum Design Loads for Buildings and Other Structures

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Submit copies of manufacturer’s product data sheets, detail drawings and samples for each type of roofing product.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide all primary roofing products, including shingles, underlayment, leak barrier, and ventilation, by a single manufacturer.

- B. Installer Qualifications: Installer must be approved for installation of all roofing products to be installed under this section.

1.6 REGULATORY REQUIREMENTS

- A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- B. Install all roofing products in accordance with all federal, state and local building codes.
- C. All work shall be performed in a manner consistent with current OSHA guidelines.

1.7 PREINSTALLATION MEETING

- A. General: will take place for all roof systems together.
- B. Timing: The meeting shall take place at the start of the roofing installation, no more than 2 weeks into the roofing project.
- C. Attendees: Meeting to be called for by manufacturer's certified contractor. Meeting's mandatory attendees shall include the certified contractor and the manufacturer's representative.
- D. Topics: Certified contractor and manufacturer's representative shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store all products in manufacturer's unopened, labeled packaging until they are ready for installation.
- B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F (43 degrees C); do not store near steam pipes, radiators, or in direct sunlight.
- C. Store bundles on a flat surface. Maximum stacking height shall not exceed manufacturer's recommendations. Store all rolls on end.
- D. Store and dispose of solvent-based materials in accordance with all federal, state and local regulations.

1.9 WEATHER CONDITIONS

- A. Remove only as much roofing in a day as can be fully replaced during that same day.
- B. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturer's recommendations. Except for special circumstances, removal of roofing should not occur on days where the chance of precipitation exceeds 40% according to the National Weather Service.

1.10 WARRANTY

- A. Provide to the owner a manufacturer's warranty covering:

1. Roofs installed by a contractor holding the manufacturer's highest-available contractor certification.
2. Manufacturing defects: 100% coverage for materials and labor for:
 - a. 40 years with the first 20 years non- prorated.
3. Workmanship errors: 100% coverage for workmanship errors for:
 - a. 20 years.
4. Warranted against algae discoloration for 10 years.
5. Warranted for 110 miles-per-hour (mph) wind speed, minimum.
 - a. Note that this is a code requirement for City of Longmont, but is required for all sites for this project.
6. Full roof installations using the following products that are either manufactured by the shingle manufacturer, or approved by the shingle manufacture for use in their warranted system.
 - a. Base layer of roofing felt/underlayment.
 - b. Self-adhered underlayment in valleys and around dormers, sidewalls, firewalls, chimneys, plumbing vents, and skylights.
 - c. Pre-cut starter strip products (only those with factory applied adhesive) at the eaves and rakes with 6-nails per strip.
 - d. Ridge ventilation with minimum net free ventilation area of 1 sq ft per 150 sq ft of ceiling area is required.
 - i. If ventilation area at the eaves is at least equal to that provided at the ridge, total required minimum net free ventilation area can be reduced to 1 sq ft per 300 sq ft of ceiling area.
 - e. You must use ridge cap shingles or shingles that correspond to the shingle product you are installing.
 - f. You must use eligible shingles.
 - g. New metal flashings must be installed. Metal drip edge must be used at eaves and at rake edges.
7. The cost of the warranty, including any required manufacturer's inspections shall be included in the bid price.
8. A start-up meeting shall be held with the roofing installer and a manufacturer's technical representative(s) in attendance, and the manufacturer's technical representative(s) shall conduct at least 3 interim inspections and one inspection upon substantial completion.

- B. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: GAF®, 1361 Alps Rd. Wayne NJ 07470. Tel: 1-973-628-3000.
- B. Approved Manufacturers:
 - 1. GAF
 - 2. Owens Corning
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00.

2.2 SHINGLES

- A. Basis of Design: Timberline® Ultra HD Lifetime High Definition Shingles, by GAF®.
 - 1. Super-heavyweight, granule surfaced, self-sealing asphalt shingle with a fiberglass reinforced core and integral algae discoloration protection, with a 5-5/8-inch exposure.
 - 2. UL 790 Class A rated with UL 997 Wind Resistance Label;
 - 3. ASTM D 7158, Class H;
 - 4. ASTM D 3161, Type 1;
 - 5. ASTM D 3018, Type 1;
 - 6. ASTM D 3462;
 - 7. CSA A123.5-98;
 - 8. AC438;
- B. Approved Products:
 - 1. Timberline Ultra HD by GAF (Basis of Design)
 - 2. TruDefinition Duration by Owens Corning
- C. Color: As selected by Owner from manufacturers' full range.

2.3 HIP AND RIDGE SHINGLES

- A. High profile self-sealing hip and ridge cap shingle matching the color of selected roof shingle.
 - 1. Basis of Design: Timbertex® Premium Ridge Cap Shingles, by GAF®.

2.4 STARTER STRIP

- A. Self-sealing starter shingle designed for premium roof shingles.
 - 1. Basis of Design: WeatherBlocker™ Eave/Rake Starter Strip by GAF®.

2.5 LEAK BARRIER

- A. Self-adhering, self-sealing, bituminous leak barrier surfaced with fine, skid-resistant granules.
 - 1. Basis of Design: WeatherWatch® Leak Barrier, by GAF®.

2.6 SHINGLE UNDERLAYMENT

- A. Breathable, ultraviolet (UV) stabilized polypropylene underlayment.
 - 1. Meets or exceeds ASTM D226.
 - 2. Approved by UL and ICC.
 - 3. Basis of Design: Deck Armor™ Underlayment by GAF®.

2.7 ROOFING CEMENT

- A. Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.8 ROOF ACCESSORIES

- A. Exterior acrylic rust resistant aerosol roof accessory paint.
 - 1. Basis of Design: Shingle-Match™ Roof Accessory Paint by GAF®.

2.9 ATTIC VENTILATION

- A. Ridge Vents
 - 1. Rigid plastic ridge ventilator designed to allow the passage of hot air out of attics.
 - a. For use in conjunction with eave/ soffit intake ventilation products.
 - b. Provides 18.0 sq inches (11613 sq.mm/m) in Net Free Ventilation Area per lineal foot.
 - c. Basis of Design: Cobra® Rigid Vent 3™ ridge vent (includes 3” (76mm) galvanized ring shank nails), by GAF®
- B. Attic Vents
 - 1. Galvanized steel or aluminum slant-back hood roof louver designed to allow the passage of hot air out of attics.

- a. For use in conjunction with eave/ soffit intake ventilation products.
 - b. Provide 50.0 sq inches (32,258 sq.mm) in Net Free Ventilation Area per vent, minimum.
 - c. Basis of Design: Cobra® Rigid Vent 3™ ridge vent (includes 3” (76mm) galvanized ring shank nails), by GAF®
- C. Fascia and Soffit/Under Eave Vents
- 1. Use fascia and under soffit eave vents to match existing vents. Ensure that the net free ventilation area of the soffits is equal to or greater than that of the ridge vents.
 - 2. Basis of Design: MasterFlow™ EAP Soffit Vent by GAF®.

2.10 NAILS

- A. Standard round wire, zinc-coated steel or aluminum; 10 to 12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through plywood or oriented strand board by at least 1/8 inch (3.18mm).

2.11 METAL FLASHING

- A. 24 gauge hot-dip galvanized steel sheet, complying with ASTM A 653/A 653M, G90/Z275.

2.12 GUTTERS AND DOWNSPOUTS

- A. 24 ga. Minimum prefinished steel: Kynar 500 fluoropolymer coating factory applied to 24-gauge galvanized steel, ASTM A653
 - 1. Shape and size to match existing, with the following minimums:
 - a. 5” minimum Width for Rectangular and K-Style Gutters
 - b. 2” by 3” minimum for Rectangular Downspouts
 - 2. Color as selected by Owner from manufacturer’s standard colors.
 - a. For bidding purposes, assume color to match existing.

2.13 GUTTER GUARDS

- A. Stainless steel micro-mesh gutter cover intended to prevent debris accumulation in gutters.
- B. Acceptable Products:
 - 1. Basis of Design Product: Raptor Gutter Guard by GutterGlove
 - 2. No substitutions acceptable.

2.14 HEAT TAPE

- A. UL-listed, electrical self-regulating heating cable for the purposes of deicing roof surfaces.
- B. Acceptable Manufacturers:
 - 1. nVent Raychem
 - 2. Approved Equivalent

2.15 SKYLIGHTS

- A. Acrylic, double-dome, curb-mounted, fixed skylights with translucent domes.
- B. Acceptable Manufacturers:
 - 1. Velux
 - 2. Wasco
 - 3. Approved Equivalent

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until the roof deck has been properly prepared.
- B. If roof deck preparation is the responsibility of another installer, notify the engineer or building owner of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Remove all existing roofing down to the roof deck.
- B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.
- C. Replace damaged or deteriorated deck with new materials of equal thickness and type. Secure new decking with 8d nails spaced 6-inches on center around perimeter of sheet and 12-inches on center in the field.
- D. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.
- E. At areas that receive eave protection membrane, fill knotholes and cracks with latex filler.
- F. Install crickets on the upslope side of all penetrations and/or curbs which exceed 20-inches in width, including all chimneys.

3.3 INSTALLATION OF UNDERLAYMENTS

- A. General:
1. Install using methods recommended by manufacturer and in accordance with local building codes.
 2. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
- B. Eaves:
1. Install eave edge metal flashing tight with fascia boards; lap joints 2 inches (51mm) and seal with plastic cement or high quality urethane sealant; nail at the top of the flange.
 2. Install leak barrier up the slope from eave edge a full 36 inches (914mm) minimum, or as required to extend a minimum of 24 inches (610 mm) upslope of the exterior wall. Lap ends 6 inches (152mm) and bond.
- C. Valleys:
1. Install protection membrane at least 36 inches (914mm) wide and centered on the valley. Lap ends 6 inches (152mm) and seal.
 2. Where not otherwise indicated, install closed cut valleys in accordance with all shingle manufacturer's requirements.
 3. Where valleys are indicated to be "open valleys", install metal flashing over leak barrier before roof deck protection is installed; DO NOT nail through the flashing. Secure the flashing by nailing at 18 inches (457 mm) on center just beyond edge of flashing so that nail heads hold down the edge.
- D. Hips and Ridges:
1. Install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots will not be covered.
- E. Roof Deck:
1. Install one layer of roof deck protection over the entire area not protected by leak barrier at the eaves or valley. Install sheets horizontally so water sheds and nail in place.
 - a. On roofs sloped at more than 4:12, lap horizontal edges at least 2 inches (51mm) and at least 2 inches (51mm) over eaves protection membrane.
 - b. On roofs sloped between 2:12 and 4:12, lap horizontal edges at least 19 inches (482 mm) and at least 19 inches (482mm) over eaves protection membrane.
 2. Lap ends at least 4 inches (102 mm). Stagger end laps of each layer at least 36 inches (914 mm).

3. Lap roof deck protection over leak barrier in valley at least 6 inches (152mm).

F. Penetrations:

1. Vent pipes: Install a 24 inch (610 mm) square piece of eave protection membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install eave protection membrane extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Skylights and roof hatches: Install eave protection membrane from under the built-in counterflashing and 12 inches (305mm) on to the roof surface lapping over roof deck underlayment.
4. Rake Edges: Install metal edge flashing over eave protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (51mm) and seal with plastic cement; secure with nails.

3.4 INSTALLATION OF STARTER SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes.
2. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

B. Refer to manufacturer's application instructions for the selected starter strip shingles.

C. Placement and Nailing:

1. Install starter strip containing sealant or cement shingles to underlayment and each other in a 4" (102mm) width of asphalt plastic roof cement.
2. Place starter strip shingles 1/4" – 3/4" (6 – 19mm) over eave and rake edges to provide drip edge.
3. Nail approximately 1-1/2" – 3" (38 – 76mm) above the butt edge of the shingle.
4. Rake starter course should overlap eave edge starter strip at least 3" (76mm).

3.5 INSTALLATION OF SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes.
2. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

3. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
4. Handle carefully in hot weather to avoid scuffing the surfacing, or damaging the shingle edges.

B. Placement and Nailing:

1. Beginning with the starter strip, trim shingles so that they "nest" within the shingle located beneath it. This procedure will yield a first course that is typically 3 inch (76mm) to 4 inch (102mm) rather than a fully exposed shingle.
2. Laterally, offset the new shingles from the existing keyways, to avoid waves or depressions caused by excessive dips in the roofing materials.
3. Using the bottom of the tab on installed shingles, align subsequent courses.
4. Secure with 6 nails per shingle per manufacturer's instructions or local codes.
5. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
6. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

C. Valleys

1. Install valleys using the "closed cut valley" method, unless noted otherwise.
 - a. Run the first course of shingles from the higher roof slope across the valley at least 12 inches (305mm).
 - b. Run succeeding courses of shingles from the lower roof slope across the valley at least 12 inches (305mm) and nail not closer than 6 inches (152mm) to center of valley.
 - c. Run shingles from the upper roof slope into the valley and trim 2 inches (51mm) from the center line.

D. Penetrations

1. All penetrations are to be flashed according to manufacturer's, ARMA and NRCA application instructions and construction details.

E. Skylights and Roof Hatches

1. Consult the manufacturer of the skylight or roof hatch for specific installation recommendations.
2. Skylights and roof hatches shall be installed with pre-fabricated metal flashings specifically designed for the application of the unit.

3.6 INSTALLATION OF ATTIC VENTILATION

A. General

1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.
2. Net free ventilating area shall not be less than 1/150th of the area of the space ventilated.

B. Ridge / Soffit ventilation

1. Install ridge vent along the entire length of ridges where specified or as required to achieve minimum required ventilation.
2. Cut continuous vent slots through the sheathing, stopping 6 inches (152mm) from each end of the ridge.
3. On roofs without ridge board, make a slot 1 inch (25mm) wide, on either side of the peak (2 inch (51mm) overall).
4. On roofs with ridge board, make two slots 1-3/4 inches (44.5mm) wide, one on each side of the peak (3 1/2 inch (89mm) overall).
5. Install ridge vent material along the full length of the ridge, including uncut areas.
6. Butt ends of ridge vent material and join using roofing cement.
7. Install eave vents in sufficient quantity to equal or exceed the ridge vent area. Ensure eave vents are provided with proper baffling to prevent insulation from blocking eave vents. Additionally, if truss heel blocking will impede ventilation, contact Engineer for direction.

C. Roof and Gable Louvers:

1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.
2. Install a 24-inch (610mm) square of leak barrier, centered around the hole for roof louvers.
3. Install according to manufacturer's instructions for flashing vent penetrations.
4. Install eave vents in sufficient quantity to equal or exceed the exhaust vent area, calculated as specified by manufacturer.

3.7 INSTALLATION OF GUTTERS, DOWNSPOUTS, AND GUTTER GUARDS

- A. Install gutters and downspouts in accordance with all manufacturer's installation requirements and the requirements of the Architectural Sheet Metal Manual (SMACNA) at locations depicted on the drawings.

- B. Following gutter installation, install gutter guards in accordance with all manufacturer's installation requirements at locations depicted on the drawings.

3.8 INSTALLATION OF HEAT TAPE

- A. Install heat tape in accordance with all manufacturer's installation requirements at locations depicted on the drawings.

3.9 PROTECTION

- A. Protect installed products from foot traffic until completion of the project.
- B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

END OF SECTION 07 31 00

SECTION 07 46 01

CEMENT BOARD SIDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section.
- B. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.

1.2 SUMMARY

- A. Furnish materials, labor, equipment, and services necessary for and incidental to the execution and completion of the following:
 - 1. Fiber cement lap siding, panels, shingle, trim, fascia, moulding and accessories.
 - 2. Weather resistive barrier and accessories.
 - 3. Self-adhered flashings.
 - 4. Metal flashings associated with siding.
 - 5. Sealants associated with siding.

1.3 REFERENCE STANDARDS

- A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
- B. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.

REFERENCED STANDARDS	
American Society for Testing and Materials (ASTM)	
ASTM A653	Standard Specification for Steel Sheet, Zinc-Coated (galvanized) or Zinc-Iron Alloy-Coated (galvannealed) by the Hot-Dip Process
ASTM C920	Standard Specification for Elastomeric Joint Sealants
ASTM C1186	Specification for Flat Fiber-Cement Sheets
ASTM C1193	Standard Guide for Use of Joint Sealants
ASTM D882	Test Method for Tensile Properties of Thin Plastic Sheetings
ASTM D1117	Standard Guide for Evaluating Non-woven Fabrics

REFERENCED STANDARDS	
ASTM D1970	Standard Specifications for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
ASTM D3359	Test Method for Measuring Adhesion by Tape Test, Tool and Tape
ASTM D3652	Standard Test Method for Thickness of Pressure-Sensitive Tapes
ASTM E84	Test Method for Surface Burning Characteristics of Building Materials
ASTM E96	Test Method for Water Vapor Transmission of Materials
ASTM E136	Test Method for Behavior of Materials in a Vertical Tube Furnace
ASTM E1677	Specification for Air Retarder Material or System for Framed Building Walls
ASTM E2112	Standard Practice for Installation of Exterior Windows, Doors, and Skylights
ASTM E2178	Test Method for Air Permeance of Building Materials
Sheet Metal and Air Conditioning Contractors National Association, 1nc. (SMACNA) - Architectural Sheet Metal Manual	

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials and/or conditions which are outside the scope of the standard details and specifications provided by the manufacturer. Shop drawings are to show the extent and type of each material, including any required fastening and fastener types.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.
- B. Source Responsibility: The provided exterior wall system, including the weather-resistive barrier (and accessories), self-adhered flashings, metal flashings, sealants, and siding/trim products shall be manufactured by a single manufacturer, or by as few manufacturers as is practical. Regardless of number of manufacturers, all products shall be acceptable to the siding manufacturer in order to provide the required warranties, and shall be compatible with each other.
- C. Sheet metal items not specifically noted on the Drawings or in the specification shall be in accordance with recommendations of The Architectural Sheet Metal Manual published by Sheet Metal and Air-Conditioning Contractors National Association, Inc. (SMACNA).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation, in compliance with all manufacturer's requirements for product storage and handling.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- D. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting and surface damage. Store color-coated sheet metal in manner that will protect it from exposure to UV effects, until the time of installation. Avoid damage to the finished surface during fabrication, transport, and installation.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Ensure the building interior is protected from water infiltration throughout the duration of the project.

1.8 WARRANTY

- A. Siding Products Warranty:
 - 1. Lap siding: Limited, non-pro-rated product warranty, 30 years.
 - 2. Soffit panels: Limited, non-pro-rated product warranty, 30 years.
 - 3. Shingle-type lap siding: Limited, non-pro-rated product warranty, 30 years.
 - 4. Trim boards: Limited, product warranty, 15 years.
- B. Weather-Resistive Barrier Product Warranty:

1. Limited Weatherization Warranty, 10 years.
- C. Self-Adhered Flashings Product Warranty:
 1. Manufacturer's standard product warranty, 5 years.
- D. Sealants Product Warranty:
 1. Manufacturer's standard product warranty, 5 years. Workmanship Warranty: Application limited warranty for 2 years.
- E. Metals Product Warranty:
 1. Manufacturer's written product and finish warranty, 20 years

PART 2 - PRODUCTS

2.1 SIDING

- A. Fiber cement siding products suitable for application on vertical walls and primed for painted finish.
 1. Performance Characteristics:
 - a. ASTM C 1186 Type A Grade II.
 - b. ASTM E 136: noncombustible material.
 - c. ASTM E 84: Flame Spread Index = 0, Smoke Developed Index = 5.
 2. Acceptable Manufacturers:
 - a. James Hardie Building Products, Inc. (Basis of Design)
 - b. Allura
 - c. Approved Equivalent
 3. Basis of Design Products:
 - a. Lap Siding: HardiePlank HZ5
 - b. Shingle-style Siding: HardieShingle HZ5
 - c. Trim: 5/4 HardieTrim HZ5

2.2 SIDING ACCESSORIES

- A. Wood Framing Fasteners: 8d box ring common corrosion resistant nails.

2.3 WEATHER-RESISTIVE BARRIER

- A. Provide spunbonded polyolefin, non-woven, non-perforated, weather barrier and related assembly components.
 - 1. Minimum Performance Characteristics:
 - a. Water Vapor Transmission: 15 perms, when tested in accordance with ASTM E96-05, Method A.
 - b. Water Penetration Resistance: 250 cm when tested in accordance with AATCC Test Method 127.
 - c. Basis Weight: 1.8 oz/yd², when tested in accordance with TAPPI Test Method T-410.
 - d. Air Resistance: 1200 seconds, when tested in accordance with TAPPI Test Method T-460.
 - e. Tear Resistance: 8/6 lbs, when tested in accordance with ASTM D1117.
 - 2. Acceptable Products:
 - a. HardieWrap by James Hardie Building Products, Inc. (Basis of Design)
 - b. Tyvek CommercialWrap by Dupont
 - c. Barricade Wrap Plus by Barricade Building Products
 - d. No substitutions accepted

2.4 WEATHER RESISTIVE BARRIER ACCESSORIES

- A. Manufacturer's standard seam tape.
- B. Manufacturer's required fasteners. Provide caps with all fasteners, unless specifically prohibited by manufacturer's requirements.

2.5 SELF-ADHERED FLASHING

- A. Black colored rubberized asphalt adhesive integrally bonded to polyethylene. Membrane shall be interleaved with silicone-coated release paper until installed.
 - 1. Performance Requirements:
 - a. Meets or exceeds the requirements set forth in AAMA 711-13 voluntary specification for self-adhered flashing Level 2 requirement for elevated temperature exposure.
 - b. Meets or exceeds the requirements set forth in ASTM E2112 for Flashing Exterior Windows and Doors
 - c. Water Penetration around Nails: ASTM D1970 Section 7.9, modified per section 5.2.1 of AAMA 711 voluntary specification – Pass 1.2 in head of water

- d. Thickness: ASTM 3652 – Min 20 mils
- 2. Acceptable Products:
 - a. HardieWrap by James Hardie Building Products, Inc. (Basis of Design)
 - b. StraightFlash by DuPont
 - c. Vycor Plus by GCP Applied Technologies, Inc.
 - d. Approved Equivalent

2.6 SELF-ADHERED FLASHING ACCESSORIES:

- A. Primer:
 - 1. Description: Water-based primer which imparts an aggressive, high tack finish on the treated substrate.
 - a. Flash Point: No flash to boiling point
 - b. Solvent Type: Water
 - c. VOC Content: Not to exceed 10 g/L
 - d. Application Temperature: -4°C (25°F) and above
 - e. Freezing point (as packaged): -7°C (21°F)

2.7 SEALANTS

- A. Single-component polyurethane sealant for use in building façade joints and at joints between dissimilar materials.
 - 1. Performance Requirements:
 - a. ASTM C920 compliant
 - b. Color selected and approved by Owner
 - 2. Acceptable Products:
 - a. Sikaflex 1c by Sika Corporation
 - b. MasterSeal NP-1 by BASF Corporation
 - c. Approved Equivalent
 - 3. Provide sealant tests of compatibility and staining of surrounding construction.
 - 4. Non-sag sealants shall be used for vertical joints and cove/fillet beads.

2.8 SEALANT ACCESSORIES

- A. Backer Rod: ASTM C1330, Type B, bi-cellular material with surface skin, non-staining, non-gassing, rod with 25 to 50 percent greater diameter than the width of the joint. Backer rod shall be compatible with sealant and recommended by the sealant manufacturer.
- B. Primer: Provide non-staining, quick-drying type and consistency recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate and field tests.
- C. Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are notharmful to substrates and adjacent nonporous materials.
- D. Masking Tape: Provide non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints.
- E. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back surface of joint. Provide self-adhesive tape where applicable.

2.9 METAL FLASHINGS

- A. Color-coated steel: Kynar 500 fluoropolymer coating factory applied to 24-gauge galvanized steel, ASTM A653.
 - 1. Color shall be selected by owner from the manufacturer's standard colors.
 - 2. Acceptable materials:
 - a. ColorKlad by Ryerson
 - b. Pac-Clad by Petersen Aluminum Corporation
 - c. Approved equal.
 - 3. Fabrication:
 - a. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated and in accordance with Aluminum Association Aluminum Sheet Metal Work in Building Construction. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
 - b. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - c. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

- d. Form pieces in 8 ft maximum lengths. Make allowance for expansion at joints.
- e. Hem exposed edges on underside 1/2". Miter and seal corners with sealant.
- f. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

2.10 METAL FLASHING ACCESSORIES

- A. Fasteners are to be composed of the same material as the flashings. Exposed fasteners through sheet metal shall match new sheet metal color.
 - 1. Zinc or cadmium plated for galvanized steel.
 - 2. Fasteners exposed to the weather shall have EPDM washers under heads to ensure watertightness.
 - a. EPDM bonded washers:
 - i. Fabco Fastening System Weath-R-Seal Bonded Washers
 - ii. Best Materials EPDM Sealing Washers
 - iii. Approved equal
- B. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.
- C. Dissimilar metals:
 - 1. Where dissimilar materials occur, provide written notification to the Engineer.
 - 2. Coating for Dissimilar Metals: Bitumastic paint or as required to be compatible with adjacent materials and finishes. Coordinate requirements with paint systems and coatings furnished under Division 09 Section "Painting".
- D. Metal Accessories: Sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gauge as required for performance.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another trade, notify the Engineer of unsatisfactory preparation before proceeding.

- C. Installation of materials implies that Contractor has inspected and accepts the existing conditions.
- D. Nominal 2-inch by 4-inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codex. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 - 1. Install water-resistive barriers and claddings to dry surfaces.
 - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
 - 3. Protect siding from other trades.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier as required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

3.3 WEATHER BARRIER INSTALLATION

- A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.
- B. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.
- C. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface. Maintain weather barrier plumb and level.
- D. Where applicable, extend bottom roll edge over sill plate interface 2" to 3" minimum. Seal weather barrier with sealant or tape. Shingle weather barrier over back edge of thru-wall flashings and seal weather barrier to flashing with sealant or tape. Ensure weeps are not blocked.
- E. Subsequent layers shall overlap lower layers a minimum of 6 inches horizontally in a shingling manner.
- F. Window and Door Openings: Extend weather barrier completely over openings.
- G. Weather Barrier Attachment:
 - 1. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, space 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

3.4 WEATHER RESISTIVE BARRIER SEAMING

- A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.
- B. Seal any tears or cuts as recommended by weather barrier manufacturer.

3.5 OPENING PREPARATION

- A. Flush cut weather barrier at edge of sheathing around full perimeter of opening.
- B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.
- C. Cut weather barrier in an “I-cut” pattern.
 - 1. Cut weather barrier horizontally along the bottom and top of the window opening.
 - 2. From the top center of the window opening, cut weather barrier vertically down to the sill.
 - 3. Cut off side and bottom weather barrier flaps into window opening and fasten.
- D. Cut a head flap at 45-degree angle in the weather barrier membrane at window head to expose 8 inches of sheathing. Temporarily secure weather barrier membrane flap away from sheathing with tape.

3.6 OPENING FLASHING

- A. General installation requirements for self-adhered flashings:
 - 1. Precut pieces of flashing to easily handled lengths for each location.
 - 2. Remove silicone-coated release paper and position flashing carefully before placing it against the surface.
 - 3. When properly positioned, place against surface by pressing firmly into place by hand roller. Fully adhere flashing to substrate to prevent water from migrating under flashing.
 - 4. Do not expose flashing membrane to sunlight for more than the manufacturer’s stated maximum UV exposure limit prior to enclosure.
- B. Cut 9-inch wide self-adhering flashing a minimum of 18 inches longer than width of sill rough opening. Apply primer as recommended by the manufacturer.
- C. At windows, tuck under existing window sill flange (at flanged windows), or align with edge of sill opening (at non-flanged windows).
- D. Apply 9-inch wide strips of self-adhered flashing at jambs. At flanged windows, fully overlap mounting flange. At non-flanged windows, align flashing with interior edge of jamb framing. Extend jamb flashing 9-inches above top of rough opening and below bottom edge of sill flashing.

- E. Install head flashing metal, as required by ASTM E2112, window manufacturer's installation instructions, and/or siding manufacturer's requirements, whichever is most stringent. Do not use pieces of flashing metal less than 2-feet in length.
- F. Apply 9-inch wide strip of self-adhered flashing as head flashing, overlapping the mounting flange (at flanged windows) or with the bottom edge aligned with the top of the rough opening (at non-flanged windows). Head flashing should extend 1-inch beyond outside edges of both jamb flashings, and shall lap over the vertical leg of the head flashing metal.
- G. On exterior, install backer-rod in joint between window frame and flashed rough framing. Apply sealant at jambs and head, leaving sill unsealed. Apply sealants in accordance with sealant manufacturer's instructions and ASTM C1193.
- H. Position weather barrier head flap across head flashing. Adhere using 4-inch wide self-adhering flashing over the 45-degree seams.
- I. Tape head flap in accordance with manufacturer recommendations.

3.7 LAP AND SHINGLE SIDING INSTALLATION

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.
- C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- D. Align vertical joints of the planks over framing members.
- E. Maintain clearance between siding and adjacent finished grade.
- F. Locate splices at least one stud cavity away from window and door openings. Stagger splices between adjacent siding boards a minimum of two stud cavities.

3.8 SIDING TRIM INSTALLATION

- A. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- B. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- C. Maintain clearance between trim and adjacent finished grade.
- D. Trim inside corner with a single board trim both sides of corner.

- E. Outside Corner Board: Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
- F. Allow 1/8-inch gap between trim and siding.
- G. Seal gap with specified sealant. Tool all sealants concave.
- H. Shim frieze board as required to align with corner trim.

3.9 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION 07 46 01

SECTION 07 53 23

ETHYLENE PROPYLENE DIENE MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Roofing manufacturer's requirements for the specified warranty.
 - 2. Nailers and Wood Products
 - 3. Insulation
 - 4. Cover Board
 - 5. Elastomeric membrane roofing
 - 6. Other roofing-related items specified or identified on the drawings or otherwise necessary to provide a complete weatherproof roofing system.
- B. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.
- C. Comply with the published recommendations and instructions of the roofing membrane manufacturer.
- D. Commencement of work by the Contractor shall constitute acknowledgement by the Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer.

1.2 REFERENCES

- A. General:
 - 1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
 - 2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 1177/C 1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
 - 2. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

3. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
 4. ASTM D 4637 - Standard Specification for EPDM Sheet used in Single-Ply Roof Membrane
 5. ASTM D 4811 - Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
 6. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 7. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C
- C. American National Standards Institute and Single Ply Roofing Institute (ANSI/SPRI):
1. ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal
- D. American Society of Civil Engineers (ASCE):
1. ASCE 7-05 Minimum Design Loads for Buildings and Other Structures
- E. National Roofing Contractor's Association (NRCA):
1. Roofing and Waterproofing Manual: Membrane Roof Systems

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation procedures for each product:
1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.
 2. Installation Instructions: Provide manufacturer's instructions to installer, marked up to show exactly how all components will be installed; where instructions allow installation options, clearly indicate which option will be used.
- B. Shop Drawings:
1. Submit shop drawings for the tapered insulation layout. Submit to the roof manufacturer for approval.
 2. Submit securement/adhesion ribbon patterns for wind uplift resistance.
- C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

- D. Pre-Installation Notice: Copy to show that manufacturer's required Pre-Installation Notice (PIN) has been accepted and approved by the manufacturer.
- E. Warranty: Sample warranty forms specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.
- F. Certification:
 - 1. Written verification that Contractor is acceptable to manufacturer of accepted roofing system.
 - 2. Manufacturer's certification that roof system meets specified warranty requirements.
 - 3. Certification of work progress inspection. Refer to Quality Assurance Article below.
- G. Closeout Submittals:
 - 1. General: Comply with Requirements of Section 01 77 00 - Contract Closeout.
 - 2. Special Project Warranty: Provide specified warranty for the Project, executed by the authorized agent of the Manufacturer.
 - 3. Roofing Maintenance Instructions. Provide a manual of manufacturer's recommendations for maintenance of installed roofing systems.
 - 4. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.4 PRE-INSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Before beginning installation of new roofing materials, conduct conference at Project site.
 - 1. Meet with Owner, Engineer, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.

6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures during and after roofing installation.
10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Roofing installer shall have the following:
 1. Current roofing master contractor status with approved roofing manufacturer, such as Firestone.
 2. At least five years' experience in installing specified system.
 3. Upon request installer shall submit work experience and evidence of financial responsibility. Refer to Contractors Qualifications.
- B. Maintain a full-time supervisor/foreman who is on the job-site at all times during installation. Foreman must have a minimum five (5) years of experience with the installation of a similar system to that specified.
- C. Source Limitation: Obtain components from a single manufacturer. Secondary products which cannot be supplied by the specified manufacturer shall be approved in writing by the primary manufacturer prior to bidding.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible. Labels shall include manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.
- E. Apply adhesives and sealants per the manufacturer's recommendations.
- F. Provide continuous protection of materials against wetting and moisture absorption, including storage of materials on elevated pallets or similar requirements.
- G. Keep combustible materials away from ignition sources, and do not store in direct sunlight.

1.7 PROJECT CONDITIONS

- A. Environmental Requirements: Wind velocity and temperature limitations shall be based on the Contractor's ability to apply materials in the specified manner. Splicing and seaming work shall not be conducted when ambient conditions cause condensation to form at splicing and seaming locations, when ambient temperature is below 0° F or when wind-chill factor is below -20° F.
- B. Protection:
 - 1. Prevent damage to new and existing materials, including protection from access equipment and other construction materials.
 - 2. Install temporary insulation seal-offs at completion of each day's work and completely remove upon resumption of work.
 - 3. Coordinate application of membrane to provide protection of underlying materials from wetting or other damage by the elements on a continuous basis.
 - 4. Completely install sheet metal sleeves, caps, or enclosures on a daily basis.
 - 5. Torches are not permitted on the roof.

1.8 WARRANTY

- A. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- B. Manufacturer's Warranty: Prior to acceptance of work, furnish the roof system manufacturer's written membrane warranty covering membrane, roof insulation, vapor retarder, cover boards, substrate boards, and membrane accessories. As a special warranty requirement, the roof manufacturer will repair any leaks caused by accidental damage to the membrane as a result of normal rooftop inspection, maintenance, or service.
 - 1. Warranty Period: Twenty (20) years after date of Substantial Completion.
 - 2. Limit of Liability: No dollar limitation.
 - a. Scope of Coverage: Repair leaks in the roofing system caused by:
 - i. Ordinary wear and tear of the elements.
 - ii. Manufacturing defect in manufacturer's brand materials.

- iii. Defective workmanship used to install these materials.
- iv. Damage due to winds up to 110 miles-per-hour (mph).
 - 1) Note that this is a code requirement for City of Longmont.
- b. Not Covered:
 - i. Damage due to winds in excess of the wind warranty limit stated above.
 - ii. Damage due to hurricanes or tornadoes with wind speeds exceeding those described above.
 - iii. Hail.
 - iv. Intentional damage.
 - v. Unintentional damage due to normal rooftop inspections, maintenance, or service.
- C. Installers Warranty: Prior to acceptance of the work, and in addition to the manufacturer's warranties, the Roofing Installer shall furnish a written five (5) year warranty covering all reroofing work specified herein.
 - 1. Warranty Period: Five (5) years after date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All products installed are to be approved by membrane manufacturer to meet requirements for the total system warranty specified, including the cover board. Documentation to be provided at the completion of Substantial Completion.

2.2 MANUFACTURERS

- A. Acceptable Manufacturers - Roofing System:
 - 1. Firestone Building Products Co., Carmel, IN. www.firestonebpc.com.
 - 2. Carlisle Syntec Systems, Carlisle PA. www.carlisesyntec.com
 - 3. Versico Roofing Systems, Carlisle PA. www.versico.com
 - 4. Johns Manville, Denver CO. www.JM.com
- B. Manufacturer of Insulation and Cover/Substrate Board: Same manufacturer as roof membrane, or acceptable to membrane manufacturer to provide the specified warranty.
- C. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane, or acceptable to membrane manufacturer to provide the specified warranty.

1. Metal roof edging products by other manufacturers are not acceptable.
 2. Field- or shop-fabricated metal roof edgings are not acceptable.
- D. Substitution Procedures: See Instructions to Bidders.
1. Submit evidence that the proposed substitution complies with the specified requirements.

2.3 EPDM MEMBRANE MATERIALS

- A. Roofing Membrane: Black cured synthetic single-ply membrane complying with ASTM D4637 composed of ethylene propylene diene terpolymer (EPDM) with the following properties:
1. Thickness: 0.060 inch (60 mils).
 2. Reinforcement: Polyester weft inserted scrim; membrane complying with ASTM D 4637 Type II.
 3. Nominal Thickness Tolerance: Plus/minus 10 percent.
 4. Sheet Width: Provide the widest available sheets to minimize field seaming.
 5. Color: Black
 6. Use of a sheet with factory-applied tape (FAT) is acceptable.
- B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
- C. Flashing Membrane: Self-curing, non-reinforced membrane composed of nonvulcanized EPDM rubber, complying with ASTM D 4811 Type II, and with the following properties:
1. Thickness: 0.055 inch.
 2. Color: Same as field membrane
- D. Self-Adhesive Flashing Membrane: Semi-cured 45 mil EPDM membrane laminated to 35 mil EPDM tape adhesive.
- E. Pre-Molded Pipe Flashings: EPDM, molded for quick adaptation to different sized pipes.
- F. Self-Adhesive Lap Splice Tape: 35 mil EPDM-based, formulated for compatibility with EPDM membrane and high-solids primer.
1. Use of membrane sheets with factory-applied tape is acceptable.
- G. Splice Adhesive: Synthetic polymer-based, formulated for compatibility with EPDM membrane and metal surfaces.

- H. Bonding Adhesive: Neoprene-based, formulated for compatibility with EPDM membrane and wide variety of substrate materials, including masonry, wood, and insulation facings.
- I. Adhesive Primer: Synthetic rubber based primer formulated for compatibility with EPDM membrane and tape adhesive, with VOC content less than 2.1 lb/gal (250 g/L).
- J. Low Rise Foam Adhesive: Two-component, low-rise polyurethane adhesive designed to attach polyisocyanurate insulation to a variety of acceptable substrates.
- K. Seam Edge Treatment: EPDM rubber-based sealant, formulated for sealing exposed edges of membrane at seams.
- L. Water Block Seal: Butyl rubber sealant for use between two surfaces, not exposed.
- M. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with Galvalume coating; corrosion-resistance meeting FM 4470 criteria.
 - 1. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches wide by 0.10 inch thick.

2.4 ROOF INSULATION AND COVER BOARD

- A. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with glass fiber reinforced facer both sides, complying with ASTM C 1289 Type II Class 1, dimensional stability of 2%, 24 hr. minimum cure time plus an additional 24 hours per inch, with the following additional characteristics:
 - 1. Thickness: As indicated elsewhere.
 - 2. Size: 48 inches by 96 inches, nominal.
 - 3. Thickness: 2 layers of 2.6" thick board (flatstock), plus tapered insulation as required
 - 4. LTTR-Value: 5.7 minimum per inch.
 - 5. Compressive Strength: 20 psi when tested in accordance with ASTM C 1289.
 - 6. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
 - 7. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
- B. Gypsum-Based Cover Board: Non-combustible, water resistant gypsum core with embedded glass mat facers, complying with ASTM C 1177/C 1177M, and with the following additional characteristics:
 - 1. Size: 48 inches by 96 inches, nominal.
 - 2. Thickness: 0.50 inch.
 - 3. Surface Water Absorption: 2.5 g, maximum, when tested in accordance with ASTM C 473.

4. Spanning Capability: Recommended by manufacturer for following minimum flute spans of 6 inches.
 5. Surface Burning Characteristics: Flame spread of 0, smoke developed of 0, when tested in accordance with ASTM E 84.
 6. Combustibility: Non-combustible, when tested in accordance with ASTM E 136.
 7. Mold Growth Resistance: Zero growth, when tested in accordance with ASTM D 3273 for minimum of 4 weeks.
 8. Basis of Design Product:
 - a. DensDeck Prime® manufactured by Georgia-Pacific. Cover board must be included in the roof system manufacturer's system warranty.
 - b. Approved equal.
 9. The specified gypsum-based cover board shall be utilized as a cover board mechanically attached to metal decking and fully adhered over the insulation at concrete decking. Note that this is an alternate to the base bid.
- C. Adhesive for Insulation Attachment: Type as required by roof membrane manufacturer for roofing system and warranty to be provided; use only adhesives furnished by roof membrane manufacturer.

2.5 WOOD AND PLYWOOD MATERIALS

- A. General
1. All preservative pressure treated wood products shall be clean and free of all surface deposits.
 2. Each piece shall be indelibly ink stamped with the Quality Mark of an approved independent third party inspection agency having a follow up testing and inspection service at the treating plant over the quality of the treated product, and whose service is certified by an approved overview agency such as SPIB (Southern Yellow Pine Inspection Bureau), or TPI (Timber Products Inspection).
 3. Quality Mark Stamp shall include the following in a legible format: logo of the overview agency, logo of the inspection agency, the quality standard to which treated, the retention of the preservative, the purpose for which the product has been treated, the word KDAT (Kiln dried After Treatment).
 4. All treated lumber products specified for structural uses shall bear an indelible ink stamp, signifying that the lumber has been marked by, or under the supervision of, an inspection agency certified by the ALSC and conforms to the requirements of the applicable grading rules.
 5. All treated plywood products specified shall bear an indelible ink stamp indicating conformance to a plywood grade description contained in the current issue of U.S. Products Standards PS 1.

6. All wood products shall be kiln dried after treatment (KDAT) to a maximum moisture content of 19% for lumber and 18% for plywood.
7. Treat the following lumber and/or plywood items used in this project as follows:
 - a. Wood blocking for roof edge nailers
 - b. Roof edge fascias
 - c. Roof equipment support curbs
 - d. Expansion joint curbs
 - e. Any other wood curbing or blocking coming into contact with, or incidental to the roofing system.
8. Acceptable Preservative Pressure Treatments: ACQ Pressure Treated Lumber and plywood as produced at Wood Protection Company, or approved equal.

B. Dimensional Lumber

1. Dimensional lumber products shall be manufactured from wood species Hem-Fir, Douglas Fir-Larch, or Southern Pine. Other species may be considered by Engineer upon request.
2. Dimensional lumber products shall be No. 2 grade or better, as graded by a recognized grading agency, unless noted otherwise.

C. Plywood/OSB

1. Each construction and industrial panel shall be identified with the appropriate trademark of the American Plywood Association, and shall meet the requirements of the latest edition of U.S. Product Standard PS 1 or APA PRP-108 Performance Standards.
2. All panels which have any edge or surface permanently exposed to the weather shall be classed "Exterior"
3. Panel thickness, grade, and Group Number of Span Rating shall be at least equal to that shown on the drawings. Application shall be in accordance with the recommendations of the American Plywood Association.
4. Roof sheathing shall bear the following designation "APA C-C PLUGGED, EXPOSURE DURABILITY CLASSIFICATION: Exterior". Note that this is not "CDX".
5. Sheathing permanently exposed to weather shall be classed "Exterior". Install with the long dimension or strength axis of the panel across supports, except where noted, and with panel continuous over two or more spans. Suitable edge support shall be provided where indicated on the drawings or in recommendations of the American Plywood Association by use of panel clips, tongue-and-groove edges, or lumber blocking between joists. Panel end joints shall occur over framing. Allow 1/8" spacing at panel ends and edges, unless otherwise recommended by the

panel manufacturer. Nail 6" O.C. along supported panel edges and 12" O.C. at intermediate supports, except that when supports are spaced 48" O.C. or more, space nails at 6" O.C. at all supports. Use 6d common nails for panels 1/2" and less and 8d nails for greater thickness, except that when panels are 1-1/8", use 8d ringshank or 10d common nails.

2.6 ACCESSORY MATERIALS

- A. Metal Accessories: Pre-finished steel, with Kynar or similar coating.
- B. Fasteners:
 - 1. Flashing to pressure-treated lumber: Stainless Steel or coated screws through 1" metal discs.

2.7 MISCELLANEOUS

- A. Adhesives, sealants, and surface cleaner: As recommended by the membrane manufacturer.
 - 1. Adhesives: Apply adhesives and sealants at room temperature 60 to 80 F. Expose only enough materials to colder temperatures that can be applied within these limits. Restore to room temperature when exposed to lower temperatures prior to use.
 - a. For insulation and cover boards specified as fully adhered: Low rise foam adhesive recommended by membrane manufacturer.
 - b. For membrane installation: Bonding adhesive recommended by membrane manufacturer.
- B. Seam tape: As recommended by the membrane manufacturer, minimum 6" wide. Provide manufacturer's recommended primer.
- C. Mastic: One-part, low viscosity, self-wetting butyl mastic.
- D. Membrane securement strip: Reinforced EPDM fastening strip, with 2" diameter metal plates.
- E. Termination bar: 1/8" x 1" aluminum with pre-drilled holes at 6" on-center

PART 3 - EXECUTION

3.1 GENERAL

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

- C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- D. Perform work using competent and properly equipped personnel.
- E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition at all times when work is stopped for the day.
- F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60°F to 80°F.
- G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 - 1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
 - 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
 - 3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
- H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.2 REMOVAL OF EXISTING

- A. Remove and discard existing materials that pertain to the Project (except those intended for reuse).
- B. Removal/relocation/modification of mechanical units and mechanical lines (i.e. conduit and piping):
 - 1. Electrical and/or mechanical extensions/connections found necessary shall be the Contractor's responsibility. Proper mechanical/electrical and ductwork extensions shall be provided where necessary by a licensed contractor to meet all state and local code requirements and to meet licensing requirements regarding the handling of chlorofluorocarbons (CFC's).
 - 2. Obtain and pay for all licenses and permits. Coordinate and request all inspections from authority having jurisdiction and submit certificates of inspection and final approval of the local inspection authority to the Engineer.

3. Verify with Engineer before permanent reinstallation of mechanical units. Perform a test run to ensure equipment is working properly after reinstallation.
4. Contractor is responsible to modify any mechanical equipment, piping, conduits, etc. as required to install new roof system and achieve 8" minimum flashing heights.

3.3 EXAMINATION

- A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Examine roof substrate to verify that it is properly sloped to drains.
- D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptance of project conditions and requirements.

3.4 PREPARATION

- A. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.
- B. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.
- C. Reset or replace existing fasteners for materials exposed but left in place that are loose, deformed, damaged, or corroded.
- D. Fill all surface voids in the immediate substrate that are greater than 1/4 inch wide with fill material acceptable to insulation and membrane manufacturer.
- E. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.
- F. Remove pitch or asphalt from surfaces to receive new membrane or flashing, or separate with 1/2" plywood.
- G. Torches will not be permitted on the roof.
- H. Prepare surfaces to receive expansion joint systems in accordance with manufacturer's product data and approved shop drawings.
 1. Clean surfaces adjacent to and including joints prior to installation. Repair surfaces as required to provide a smooth, even sound surface. Surfaces shall be free of debris, oils, dust or other deleterious materials.
- I. Build-up curbs, parapets, and/or roof edges as required to accommodate increased insulation height, to include installation of nailers or other similar materials.

1. All wood members are to be fastened using screws as specified.
 2. Where necessary, pre-drill holes to ensure no splitting of wooden members occurs. The use of self-drilling brass double concentric thread screws is permitted in lieu of pre-drilling.
 3. All nailers are to be installed straight and shimmed when necessary to ensure tight fit and finish. Contractor may reuse existing wood nailers where such nailers are not rotten or deteriorated and are in good repair. In such cases, however, nailers must be supplemented with additional blocking to raise nailing height flush with new insulation. Contractor shall rip lumber or otherwise add blocking so that blocking is 1/4" below height of insulation. "Step-ups" from insulation to nailers is not acceptable.
 4. When installing pieces in multiple components, end joints shall be staggered a minimum of 24". All joints are to be staggered in such a way that nowhere does a joint fall over a joint.
 5. All fastener requirements including size, frequency, pattern, and gauge shall meet the federal, state, or local codes or Factory Mutual, whichever is more stringent. Fiber cants may be used at walls except where wood blocking is needed to support scuppers, vertical wood nailers, curbs, or other mechanical or equipment supports.
- J. Shim materials only as approved by manufacturer.

3.5 INSULATION AND COVER BOARD INSTALLATION

- A. Install insulation in configuration and with attachment method(s) specified in the drawings.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch. Fill gaps greater than 1/4 inch with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch.
- E. Stagger joints between layers where multiple layers are used or where installed over existing insulation. Stagger joints a minimum of 25 percent of the board dimension.
- F. Install tapered insulation in accordance with Project and shop drawings.
- G. Adhesive Attachment: Apply in accordance with membrane manufacturer's instructions and recommendations; "walk-in" individual roof insulation and/or cover boards to obtain maximum adhesive contact.
 1. Adhesive shall be applied only to properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
 2. The minimum product temperature at time of application shall be 70°F. Adhesives shall not be applied when surface or ambient temperatures are below 40°F or above 110°F, or as indicated by manufacturer.

3. Insulation shall be set into a continuous 3/4" beads of adhesive with spacings as required to meet the specified uplift pressures for the selected low-rise foam adhesive product.
 4. To ensure that the insulation makes continuous contact with the adhesive during the critical set-up period, set the insulation board 4' x 4' (1.22 m x 1.22 m) maximum, immediately in fresh urethane adhesive before a skim coat develops. Immediately after setting each insulation board, weight each board using full pails of Bonding Adhesive (one weight at each corner and one weight in the center of the board) or other available source of weight that will not damage the roof insulation. Keep weight on the boards for a minimum of ten minutes.
 5. A second walking will be required after ten minutes to ensure maximum contact and bond strength.
 6. Walk down or otherwise weigh down insulation and cover board to provide complete contact with the adhesive and a flat, uniform surface to receive the membrane.
- H. Maximum moisture content of insulation at time of application shall be 4 percent of dry weight.
- I. Fill voids with insulation as shown on the Drawings.

3.6 SINGLE-PLY MEMBRANE INSTALLATION

- A. Position membrane roll at a location that will not overload deck structure. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
- B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
- C. Lap adjoining sheets a minimum of 6" and install a separation sheet over the insulation, 10" wide, centered at the lap. Laps shall be a minimum of 4' from any roof drain.
- D. Smoothly fold back half the membrane sheet without wrinkles or buckles. Apply adhesive evenly to both back of membrane and surface of substrate evenly without globs and puddles at the rate recommended by the manufacturer. Allow adhesive to dry until tacky, without stringing or sticking to a dry finger touch.
- E. Roll membrane into adhesive without wrinkles or buckles and brush down with a push broom to ensure complete contact.
- F. Fold back other half of membrane and repeat above procedures.
- G. Take special care to ensure that no bonding adhesive is applied to the splice area.
- H. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.
- I. Install membrane adhered to the substrate, with edge securement as specified.

- J. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.
- K. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
 - 1. Exceptions: Round pipe penetrations less than 18 inches in diameter and square penetrations less than 4 inches square.
 - 2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.
- L. Membrane splicing with seam tape:
 - 1. Apply primer in a thin, even coat to both membrane surfaces in splice area. Splice areas shall be uniform in color, streak-free, and free of globs or puddles. Allow to dry.
 - 2. Mark bottom membrane sheet 1/2" from the edge of the top sheet along the entire splice length.
 - 3. Unroll tape, align paper backing with marked line, and press tape down to bottom sheet using firm even hand pressure. Continue for length of splice.
 - 4. Pull paper backing from splice tape beneath the top sheet and allow the top sheet to fall freely onto the exposed tape.
 - 5. Press top sheet onto tape using firm even hand pressure across splice towards the splice edge.
 - 6. Immediately roll the splice with 2" wide steel roller using positive pressure. Roll across the splice edge, not parallel to it.
- M. Fasten membrane securement strip at 6" on-center.
- N. Bond an additional layer of membrane to the primary membrane with splicing adhesive beneath splashblocks and pipe supports. Provide manufacturer's protective mat over membrane beneath pavers.
- O. Install vent stack extensions where necessary to obtain minimum 12" flashing height above the surface of the membrane.

3.7 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details, in addition to the project documents.
- B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.

1. Follow roofing manufacturer's instructions.
 2. Remove protective plastic surface film immediately before installation.
 3. Install water block sealant under the membrane anchorage leg.
 4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
 5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
 6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
 7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.
- C. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches high above membrane surface.
1. Use the longest practical flashing pieces.
 2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
 3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
 4. Provide termination directly to the vertical substrate as shown on roof drawings.
- D. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.
1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical; otherwise use specified self-curing elastomeric flashing.
 2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2 inches deep, with at least 1 inch clearance from penetration, sloped to shed water.
 3. Structural Steel Tubing: If corner radii are greater than 1/4 inch and longest side of tube does not exceed 12 inches, flash as for pipes; otherwise, provide a standard curb with flashing.
 4. Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by manufacturer.
- E. Extend flashing a minimum of 6" beyond membrane securement strip on both sides.

- F. Thoroughly clean surface of membrane in the splice area with surface cleaner using clean rags.
- G. Use splicing adhesive applied at the manufacturer's recommended rate at locations where flashing is applied over EPDM membrane or metal.
- H. Use flashing adhesive applied at the manufacturer's recommended rate at locations where flashing is applied to substrate other than EPDM or metal.
- I. Apply adhesive to the flashing and to the surface to which the flashing is to be applied, allow the adhesive to become tacky such that it does not string or stick to a dry finger touch, and roll the flashing into place taking care to make full surface contact so bridging does not occur.
- J. Complete all splices to membrane before completing splices to other substrates.
- K. Use surface cleaner to clean the splice edge, minimum 1" either side of the edge, apply a bead of sealant to completely cover the splice edge, and feather onto sheets. Seal the same day installed, but no sooner than one hour after splice has been completed.
- L. At wood substrates, nail fasten the top of the flashing at a maximum of 12" on-center and seal the top edge with a bead of sealant. At concrete or masonry substrates, set flashing perimeter in minimum 1-1/2" wide bed of mastic and fasten with removable masonry anchors through continuous termination bar. Seal top edge to concrete/masonry with compatible sealant.
- M. Install preformed flashing sleeves in a similar manner to other flashings using mastic and clamping ring at top of sleeve.

3.8 ROOF DRAINAGE

- A. Replace gutters as indicated in the drawings. These items shall be replaced as required during reroofing.

3.9 SEAL-OFF

- A. Provide a watertight and wind resistant seal-off at the end of each day's work and prior to precipitation.

3.10 FIELD QUALITY CONTROL

- A. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- B. Withdrawal tests of fasteners and nailers may be required if attachment is in question.
- C. Samples of the flashing may be taken to determine the degree to which it has cured prior to installation.
- D. A sample of the completed splice may be required if in question, at a location selected by the Engineer. Patching of the test opening shall be by the Contractor using standard splicing methods.

- E. Field tests may be performed by Engineer to evaluate moisture content of installed materials.
- F. Application of the roof system will be checked by Contractor and may be checked by Engineer.
- G. Perform all corrections necessary for issuance of warranty.

3.11 CLEANING

- A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.
- B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.12 PROTECTION

- A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

END OF SECTION 07 53 23

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Surface preparation, priming, and painting.
- B. Related sections:
 - 1. Section 07 46 01 – Cement Board Siding

1.2 REFERENCES

- A. Code of Federal Regulations (CFR)
 - 1. 29 CFR 1910.1000, Air Contaminants
- B. Commercial Item Descriptions (CID)
 - 1. CID A-A-2904, Thinner, Paint, Mineral Spirits, Regular and Odorless
- C. Steel Structures Painting Council (SSPC)
 - 1. SSPC PA3, Safety in Paint Application (1995)
 - 2. SSPC SP1, Solvent Cleaning (1982)

1.3 SUBMITTALS

- A. Product Data - Provide for the following specified products:
 - 1. Primer, include manufacturer's application instructions and material safety data sheets (MSDS)
 - 2. Paint, include manufacturer's application instructions and material safety data sheets (MSDS)
- B. Sample:
 - 1. Submit color draw down samples of paint, min 12”x12”
- C. Warranty: Signed warranty (Close-out submittal)

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Paints shall be in sealed containers with legible manufacturer's identifying information.

- B. Store in accordance with manufacturer's written directions, and as a minimum, stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors, and at temperatures between 40 F to 95 F.
- C. Safety Methods: Apply coating materials using safety methods and equipment in accordance with the following:
 - 1. SSPC PA3
 - 2. 29 CFR 1910.1000
 - 3. Manufacturer's material safety data sheets (MSDS)
 - 4. To protect personnel from overexposure to toxic materials, conform to the guidance of the chemical manufacturer when using mineral spirits or other chemicals. Use recommended protective clothing and equipment to avoid exposure of skin, eyes, and respiratory system. Conduct work in manner to minimize exposure of building occupants and the general public.

1.5 PROJECT CONDITIONS

- A. Apply materials only in dry weather with no precipitation expected during the work period.
- B. For exterior coatings, do not apply materials when surface temperatures are less than 5° F above the dew point; or below 40° F for oil-based paints; below 50° F for latex paints; or above 95° F.

1.6 WARRANTY

- A. Submit manufacturer's standard warranty covering applied paints.

1.7 MOCK-UPS

- A. Prepare mock-up of concrete walls to demonstrate removal of existing coatings.
- B. Accepted mock-up panel is considered basis of quality for the finished work. Keep mock-up exposed to view for duration of concrete work.

PART 2 - PRODUCTS

2.1 EXTERIOR COATING SYSTEMS:

- A. Fiber Cement Siding System: Elastomeric painting system appropriate for application over existing fiber cement siding.
 - 1. General System
 - a. Cleaner: Coating Manufacturer's recommended cleaner
 - b. Primer Coat: Acrylic Primer acceptable for use on concrete surfaces at 2-3 dry mils, if required due to substrate pH. For bidding purposes, assume primer will be required.

- c. Intermediate Coat: Acrylic Latex Coating acceptable for use on primed surfaces at 5-7 dry mils.
- d. Finish Coat: Acrylic Latex Coating acceptable for use on primed surfaces at 5-7 dry mils.
 - i. Finish color and sheen selected by Owner from manufacturer's standard colors.
 - 1) For bidding purposes, assume a low-sheen finish with general colors as follows:
 - a. Color 1: Grey-white
 - b. Color 2: Blue
 - c. Color 3: Brown-orange
 - d. Color 4: Dark Red
 - e. Color 5: Light green
 - f. Color 6: Dark green

2. Acceptable Products:

- a. Sherwin Williams, www.sherwin-williams.com (Basis of Design)
 - i. Primer Coat: Loxon Concrete & Masonry Primer (if required)
 - ii. Intermediate Coat: Duration Exterior Acrylic Latex
 - iii. Finish Coat: Duration Exterior Acrylic Latex
- b. Approved Equivalent, Refer to Division 01 Specification Section "Product Substitution Procedures".

2.2 ACCESSORIES

- A. Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, brushes, rollers, sprayers, masking, and clean-up materials required per manufacturer's specifications.

PART 3 - EXECUTION

3.1 EXAMINATION AND PROTECTION

- A. Do not begin application of coatings until substrates have been properly examined and prepared. Notify Engineer and Owner of unsatisfactory conditions in writing before proceeding.
- B. Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

- C. Protect adjacent surfaces which are not to be painted, such as landscaping, windows, sidewalks, etc.

3.2 SURFACE PREPARATION

A. General:

1. Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.
2. Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.
3. Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods. Consult with painting system manufacturer for proper surface preparation techniques.

- B. The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.

- C. Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

1. Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised.

- D. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50°F, unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50°F or higher to use low temperature products.

E. Methods:

1. Siding: Must be clean and free of any loose material. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments such as Loxon.

3.3 APPLICATION

A. General

1. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendation.
2. Do not apply to wet or damp surfaces.
 - a. Test cementitious and/or porous substrates for moisture content prior to coating.
3. Apply coatings using methods recommended by manufacturer.
4. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
5. Apply coatings at spreading rate required to achieve the manufacturer's recommended dry film thickness.
6. Regardless of number of coats specified, apply as many coats as necessary for complete hide.

B. Priming: Apply primer as recommended by the paint manufacturer.

C. Painting:

1. Apply in accordance with SSPC PA 1. Thoroughly work coating materials into joints, crevices, and open spaces. Touch up damaged coatings before applying subsequent coats.
2. Drying time: Allow time between coats, as recommended by the manufacturer, to permit thorough drying, but not to present topcoat adhesion problems. Provide each coat in specified condition to receive next coat.
3. Primers and intermediate coats: Do not allow primers or intermediate coats to dry more than 30 days, or longer than recommended by the manufacturer, before applying subsequent coats. Follow manufacturer's recommendations for surface preparation if primers or intermediate coats are allowed to dry longer than recommended by manufacturers of subsequent coatings. Each coat shall cover surface of preceding coat or surface completely, and there shall be a visually perceptible difference in shades of successive coats.
4. Finished surfaces: Provide finished surfaces free from runs, drops, ridges, waves, laps, brush marks, and variations in colors.

- D. Equipment: Apply with approved brushes, rollers or spray equipment, unless specified otherwise. Spray areas made inaccessible to brushing by items such as ducts and other equipment.
- E. Thinning of Paints: Reduce paints to proper consistency by adding fresh paint, except when thinning is mandatory for the type of paint being used. Obtain written permission from the Engineer to use thinners. The written permission shall include quantities and types of thinners to use.
- F.

3.4 CLEANING AND PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.
- C. Remove excess materials adjacent to painted surfaces by means recommended by the paint manufacturer.
- D. Leave finished work in a neat, clean condition with no evidence of spillovers onto adjacent surfaces.

END OF SECTION 09 91 00

BOULDER COUNTY HOUSING AUTHORITY EXTERIOR REPAIRS



PROJECT TEAM

OWNER:

Boulder County Housing Authority (BCHA)

P.O. Box 471

Boulder, CO 80306

Contact: Michelle Alexander

malexander@bouldercounty.org

ENGINEER:

Terracon Consultants, Inc. (Terracon)

10625 W Interstate-70 Frontage Road North

Suite 3

Wheat Ridge, CO 80033

Contact: Kade Gromowski, P.E., RBEC

kade.gromowski@terracon.com

CONTRACTOR:

TBD

SHEET INDEX

SHEET No.	DESCRIPTION	SHEET No.	DESCRIPTION
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G001	GENERAL NOTES	A217	ROOF PLAN - LAFAYETTE VILLAS II
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A100	SITE MAP	A219	ROOF PLAN - LAFAYETTE VILLAS II
		A220	ROOF PLAN - LAFAYETTE VILLAS II
A200	ROOF PLAN - COTTONWOOD	A221	ROOF PLAN - RODEO
A201	ROOF PLAN - COTTONWOOD	A222	ROOF PLAN - RODEO
A202	ROOF PLAN - ST. CLAIR	A223	ROOF PLAN - RODEO
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A207	ROOF PLAN - GENESEO	A300	ELEVATIONS - EMERY
A208	ROOF PLAN - GENESEO	A301	ELEVATIONS - EMERY
A209	ROOF PLAN - AVALON	A302	ELEVATIONS - AVALON
A210	ROOF PLAN - AVALON	A303	ELEVATIONS - AVALON
A211	ROOF PLAN - LAFAYETTE VILLAS I	A304	ELEVATIONS - AVALON
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A213	ROOF PLAN - LAFAYETTE VILLAS I		
A214	ROOF PLAN - LAFAYETTE VILLAS I	A500	DETAILS
A215	ROOF PLAN - LAFAYETTE VILLAS I	A501	DETAILS

BCHA EXTERIOR REPAIRS

Boulder County Housing
Authority (BCHA) Various
Addresses
Boulder County,

ISSUED FOR
BIDDING -
NOT FOR
CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082

Issued for: Bidding

Date: 09/18/2020

Drawn By: K. Gromowski

Designed By: K. Gromowski

G000

COVER SHEET

A. DESIGN CRITERIA:

1. COTTONWOOD, ST. CLAIR, EMERY, AND CAMBRIDGE SITES:
 - a. 2018 INTERNATIONAL BUILDING CODE (IBC), WITH CITY OF LONGMONT AMENDMENTS
2. AVALON, LAFAYETTE VILLAS I, LAFAYETTE VILLAS II, AND GENESEO SITES:
 - a. 2015 INTERNATIONAL BUILDING CODE (IBC), WITH CITY OF LAFAYETTE AMENDMENTS
3. RODEO SITE:
 - a. 2012 INTERNATIONAL BUILDING CODE (IBC), WITH TOWN OF NEDERLAND AMENDMENTS

B. GENERAL NOTES:

1. THESE GENERAL NOTES APPLY UNLESS OTHERWISE SPECIFICALLY NOTED WITHIN THE PLANS, DETAILS AND SPECIFICATIONS. CONTRACTORS ARE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING FIELD CONDITIONS (DIMENSIONS, QUANTITIES, PENETRATIONS, ETC.) AND COORDINATING ALL PLANS AND DETAILS PRIOR TO STARTING THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. FABRICATION, CONSTRUCTION, WORKMANSHIP AND MATERIALS ARE TO COMPLY WITH THE MOST STRINGENT REQUIREMENTS. IF THERE IS A CONFLICT BETWEEN THE PLANS, DETAILS AND SPECIFICATIONS; USE THE MOST STRINGENT THAT MEETS THE APPLICABLE BUILDING, PLUMBING CODE, AND/OR OTHER APPLICABLE CODES AS WELL AS, INDUSTRY STANDARDS.
2. WORK COVERED IN THESE PLANS, DETAILS, AND SPECIFICATIONS INCLUDES THE PIECES, PARTS, FEATURES, COMPONENTS, AND TECHNIQUES FOR A COMPLETE ASSEMBLY NORMALLY ASSOCIATED WITH WORK OF THE TYPE BEING CONSTRUCTED, WHETHER OR NOT ALL SUCH PIECES, PARTS AND COMPONENTS ARE SHOWN ON THE PLANS AND DETAILS.
3. COMPLETE AND SUBMIT TO THE OWNERS REPRESENTATIVE A PRE-CONDITION LOG WITH PHOTOS AND VIDEO IF APPLICABLE TO DOCUMENT EXISTING CONDITIONS AND DAMAGE TO THE BUILDING PRIOR TO THE START OF WORK.
4. COMPLETE AND SUBMIT TO THE OWNERS REPRESENTATIVE A PRE-CONDITION PLAN OF THE LIGHTNING PROTECTION SYSTEM (IF PRESENT) AS INSTALLED PRIOR TO THE START OF WORK. INCLUDE CONNECTIONS, TIE-INS, TERMINALS AND PENETRATIONS. INCLUDE IN A SEPARATE COLOR THE REPAIR PLANS FOR THE SYSTEM TO BE CERTIFIED UPON COMPLETION. IDENTIFY THE LIGHTNING PROTECTION VERTICAL CABLE PENETRATIONS, TAG/MARK LIGHTNING PROTECTION TO ENSURE PROPER CONNECTION AND GROUNDING TO ENSURE DESIGN INTEGRITY OF THE LIGHTNING PROTECTION SYSTEM WHEN REINSTALLED.
5. ROOFING CONSTRUCTION, INCLUDING THE FASTENING OR ATTACHMENT OF WOOD BLOCKING, NAILERS, STEEL ANGLES, DECKING, AND SHEET METAL IS TO BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE DRAWINGS
6. WOOD BLOCKING AND LUMBER, EXCEPT PLYWOOD, IS TO BE KILN-DRIED AFTER TREATMENT (KDAT). WOOD BLOCKING AND LUMBER IS TO BE FASTENED WITH SCREWS AND NOT NAILS, WITH ALL JOINTS STAGGERED FROM CONTIGUOUS PIECES. FASTENERS PENETRATING OR COMING INTO CONTACT WITH TREATED LUMBER ARE TO BE STAINLESS STEEL UNLESS OTHERWISE STIPULATED HEREIN.
7. FURNISH AND INSTALL PLYWOOD IN ACCORDANCE WITH THE WRITTEN SPECIFICATIONS OF THE AMERICAN PLYWOOD ASSOCIATION (APA).
8. STAINLESS STEEL SCREWS WITH BONDED NEOPRENE WASHERS ARE TO BE USED TO SECURE FLASHINGS AND COUNTER FLASHINGS WHEN FASTENERS ARE TO BE EXPOSED TO THE ELEMENTS IN THE FINAL CONDITION.

9. WHERE NEW SHEET METAL COMPONENTS ARE REQUIRED, COMPLY WITH THE FOLLOWING REQUIREMENTS.
 - a. SHEET METAL WORK IS TO COMPLY WITH SMACNA AND ANSI/SPRI ES-1, WHETHER SHOWN ON THESE PLANS AND DETAILS OR NOT.
 - b. EXPOSED SHEET METAL EDGES ARE TO BE HEMMED.
 - c. SHEET METAL COMPONENT CORNERS, INTERSECTIONS, AND TERMINATIONS ARE TO HAVE EACH LEG EXTENDING AT LEAST 18 INCHES IN EACH DIRECTION AND BE MADE AS A SINGLE UNIT PIECE. JOINTS ARE TO BE SOLDERED EXCEPT IN THE CASE OF PREFINISHED METALS.
 - d. SHEET METAL RECEIVING AN ELASTOMERIC SEALANT IS TO BE PRIMED AS REQUIRED IN THE MANUFACTURER'S PRINTED SPECIFICATIONS. SEALANT COLORS ARE TO BE FROM MANUFACTURER'S STANDARD COLORS THAT MOST CLOSELY MATCH THE MATERIAL TO WHICH IT IS APPLIED.
11. PITCH PANS ARE NOT PERMITTED.
12. ROOF FLASHING TERMINATIONS ARE TO BE LOCATED TO A HEIGHT AND HAVE VERTICAL AND HORIZONTAL CLEARANCES AS DETAILED BY THE NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA).
13. PROTECT ROOF DRAINAGE MECHANISMS (DRAINS, SCUPPERS, DOWNSPOUTS, ETC.) DAILY DURING CONSTRUCTION TO PREVENT DEBRIS FROM GETTING INTO THE DRAINS AND DRAIN LINES. REMOVE THE PROTECTION AFTER EACH DAY'S ROOFING ACTIVITIES AND/OR PRIOR TO A RAIN EVENT TO PERMIT FREE FLOW OF DRAINAGE MECHANISMS.
14. ANY PENETRATION IN THE ROOF OR CURB CONSTRUCTED ON THE ROOF THAT IS LARGER THAN 12" SHALL HAVE A CRICKET INSTALLED ON THE "UP-SLOPE" SIDE OF THE PENETRATION/CURB.
15. FIELD MODIFY CRICKETS AS REQUIRED IN THE FIELD TO ELIMINATE PONDING WATER AT LOW SPOTS OR AROUND ROOF EQUIPMENT.
16. ROOFTOP EQUIPMENT MOUNTINGS, FLASHINGS, WOOD CURBS, AND MECHANICAL CURBS ARE TO BE LOCATED TO A HEIGHT, AND HAVE VERTICAL AND HORIZONTAL CLEARANCES AS DETAILED BY THE NATIONAL ROOFING CONTRACTORS' ASSOCIATIONS (NRCA) UNLESS OTHERWISE STIPULATED HEREIN. EQUIPMENT CURBS ARE TO EXTEND A MINIMUM OF 8" ABOVE THE PLANE OF THE FINISHED ROOF.
17. COORDINATE THE FOLLOWING WITH THE OWNER:
 - a. MOVEMENT, SHUT DOWN, OR TEMPORARY RELOCATION OF COMMUNICATION EQUIPMENT.
 - b. ALL MECHANICAL INTAKE VENTS MUST BE ADEQUATELY FILTERED TO PREVENT ALL FUMES FROM ROOFING MATERIALS AND MECHANIZED EQUIPMENT FROM ENTERING THE BUILDING. IF FILTERING IS NOT POSSIBLE, NO GASOLINE POWERED EQUIPMENT WILL BE ALLOWED ON THE ROOF.
18. CLEAN THE BUILDING, GROUNDS, AND ANY SURROUNDING STRUCTURES AND RESTORE THE LANDSCAPING TO THE ORIGINAL CONDITION USING APPROVED MATERIALS.
19. ELECTRICAL DISCONNECTS AND RE-CONNECTS: ALL ELECTRICAL DISCONNECTS AND RE-CONNECTS SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
20. ANY MECHANICAL, ELECTRICAL OR PLUMBING WORK SHALL BE COMPLETED BY A LICENSED SUBCONTRACTOR PRE-APPROVED BY THE OWNER.
21. ALL CRICKETS ARE TO BE 15" CRICKETS WITH A MINIMUM RESULTANT SLOPE OF 1/4" PER FOOT, UNLESS NOTED OTHERWISE.

C. PLANE/ELEVATION NOTES

1. UNLESS NOTED OTHERWISE THESE NOTES ARE APPLICABLE TO ALL PLANS/ELEVATIONS IN THIS SET OF DOCUMENTS.
2. DO NOT SCALE DRAWINGS.

3. FIELD VERIFY ALL DIMENSIONS AND LOCATIONS/QUANTITIES OF COMPONENTS.
4. CONTRACTOR IS RESPONSIBLE FOR FLASHING ALL PENETRATIONS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND/OR APPLICABLE INDUSTRY STANDARDS, REGARDLESS OF IF THE PENETRATIONS ARE DEPICTED ON THESE DRAWINGS. CONTRACTOR SHALL FIELD VERIFY PENETRATION QUANTITY AND TYPE.
5. AT ROOFS TO BE RE-ROOFED, CONTRACTOR IS RESPONSIBLE FOR REPLACING ALL FLUE VENT COVERS AND DRYER/FAN VENT COVERS, INCLUDING RE-CONNECTING VENT COVERS TO APPLICABLE DUCTWORK, REGARDLESS OF IF THE VENTS ARE DEPICTED ON THESE DRAWINGS OR NOT. CONTRACTOR SHALL FIELD VERIFY VENT COVER QUANTITY, SIZE, AND TYPE.
6. DO NOT REUSE EXISTING FLASHING METALS, INCLUDING STEP FLASHINGS AND VALLEY METALS, UNLESS SPECIFICALLY NOTED.
7. ALL REPLACEMENT GUTTERS SHALL SLOPE TOWARD DOWNSPOUTS 1/8" PER FOOT, MINIMUM.
8. WHERE EXISTING SIDING IS INSTALLED WITH LESS THAN 2-INCHES CLEARANCE BETWEEN THE TOP OF THE ROOF COVERING AND THE BOTTOM OF THE SIDING, CONTRACTOR SHALL NEATLY TRIM SIDING TO PROVIDE REQUIRED 2-INCH CLEARANCE. CONTRACTOR SHALL PAINT THE BOTTOM OF THE CUT SIDING WITH PAINT COLOR TO MATCH EXISTING.

D. ABBREVIATED SUMMARY OF WORK:

1. REMOVE, DISCARD, AND REPLACE EXISTING ROOF COVERINGS AS INDICATED IN THE PROJECT DOCUMENTS. THIS INCLUDES REPLACEMENT OF UNDERLAYMENT, FLASHINGS, AND FLUE VENT CAPS, AS WELL AS REPLACEMENT AND REFLASHING OF DRYER/FAN VENT CAPS, ATTIC VENTS, DRIP EDGES, AND OTHER APPURTENANCES.
2. REMOVAL OF EXISTING GUTTERS/DOWNSPOUTS AS REQUIRED TO PERFORM THE WORK. REMOVED GUTTERS ARE TO BE REPLACED. SOME DOWNSPOUTS ARE TO BE REUSED, WHEREAS OTHERS ARE TO BE DISCARDED AND REPLACED IN KIND. REFER TO PLANS/ELEVATIONS FOR REQUIRED WORK.
3. AT COTTONWOOD SITE BUILDINGS, REMOVING, DISCARDING, AND REPLACING EXISTING FASCIA AND REPAIRING EXISTING EPDM ROOFS.
4. AT 501 W GENESEO ST, REMOVAL OF EXISTING SOLAR PANELS.
5. AT LAFAYETTE VILLAS I SITE, REMOVING, DISCARDING, AND REPLACING EXISTING SKYLIGHTS.
6. PROVIDING CODE-COMPLIANT ROOF VENTILATION AT CAMBRIDGE AND RODEO SITES.
7. WHERE INDICATED ON THESE DOCUMENTS, REMOVING, DISCARDING, AND REPLACING EXISTING SIDING/CLADDING AND WEATHER-RESISTIVE BARRIER. THIS INCLUDES REFLASHING OF ALL PENETRATIONS, INCLUDING DOORS AND WINDOWS, VENTS, HOSE BIBS, ELECTRICAL FIXTURES/RECEPTACLES, AND ANY OTHER COMPONENTS WHICH PENETRATE THE WEATHER-RESISTIVE BARRIER. THIS WORK ALSO INCLUDES ANY REQUIRED DISCONNECT/RECONNECT OF EXISTING MECHANICAL, ELECTRICAL, OR PLUMBING COMPONENTS REQUIRED TO PERFORM THIS SCOPE, AND PAINTING OF NEW SIDING. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME PAINT SCHEME OF NEW SIDING IS TO MATCH EXISTING.
8. **ALTERNATE #1:** REPLACE BALLASTED EPDM ROOFS AT COTTONWOOD SITE WITH FULLY ADHERED EPDM ROOFS.
9. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS.

E. STANDARD ABBREVIATIONS:

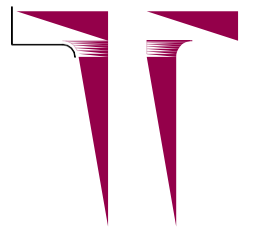
CONT	CONTINUOUS	NTS	NOT TO SCALE
DET	DETAIL	O.C.	ON CENTER
DIA	DIAMETER (OR Ø)	OPH	OPPOSITE HAND
DIM	DIMENSION	QTY	QUANTITY
DWG	DRAWING	REF	REFERENCE
EA	EACH	REQD	REQUIRED
EQ	EQUAL	REV	REVISION
EXT	EXTERIOR	SIM	SIMILAR
ELEV	ELEVATION	SPEC	SPECIFICATION
EXIST	EXISTING	STD	STANDARD
F.V.	FIELD VERIFY	THRU	THROUGH
INT	INTERIOR	TYP	TYPICAL
JT	JOINT	UNO	UNLESS NOTED OTHERWISE
MAX	MAXIMUM	V.I.F.	VERIFY IN FIELD
MIN	MINIMUM		
NIC	NOT IN CONTRACT		

F. STANDARD SYMBOLS:

SECTION CUT: DETAIL NUMBER
 X### SECTION CUT: SHEET NUMBER

ELEVATION: DETAIL NUMBER
 X### ELEVATION: SHEET NUMBER

X REPAIR KEY NOTE



Terracon

10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

BCHA EXTERIOR REPAIRS

Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

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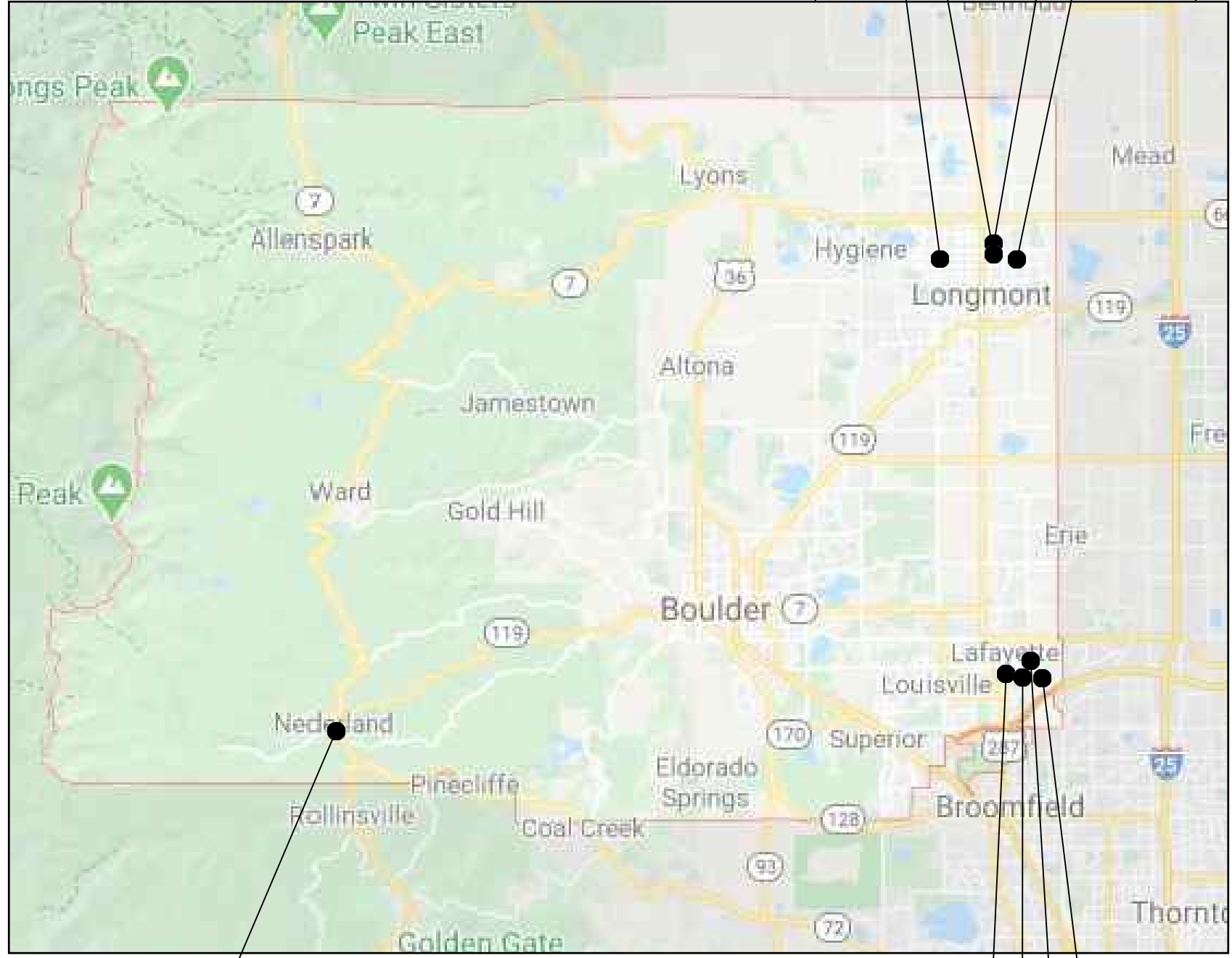
Rev.	Desc.	Date

Project No: F6206082
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 Drawn By: K. Gromowski
 Designed By: K. Gromowski

G001

GENERAL NOTES

3 / EMERY
 4 / CAMBRIDGE
 1 / COTTONWOOD
 2 / ST. CLAIR



1 / RODEO

8 / LAFAYETTE VILLA II
 7 / LAFAYETTE VILLA I
 6 / AVALON
 5 / GENESEO

BOULDER COUNTY

NORTH

SITE INDEX		
SITE No./NAME	ADDRESS	PLAN / ELEV.
1 / COTTONWOOD	1425 EMERY ST., LONGMONT, CO, 80501	A200
	1433 EMERY ST., LONGMONT, CO, 80501	A201
2 / ST. CLAIR	146 EAST ST. CLAIR, LONGMONT, CO 80501	A202
3 / EMERY	1410 EMERY CT., LONGMONT, CO 80501	A203
4 / CAMBRIDGE	1816 CAMBRIDGE DR, LONGMONT, CO 80501	A204
	1822 CAMBRIDGE DR, LONGMONT, CO 80501	A205
5 / GENESEO	501 WEST GENESEO ST., LAFAYETTE, CO 80026	A206
	515 WEST GENESEO ST., LAFAYETTE, CO 80026	A207
	517 WEST GENESEO ST., LAFAYETTE, CO 80026	A208
6 / AVALON	900/904 AVALON, LAFAYETTE, CO 80026	A209
	908 AVALON, LAFAYETTE, CO 80026	A210
7 / LAFAYETTE VILLA I	300 S. CARR AVE., UNITS A-F, LAFAYETTE, CO 80026	A211
	350 S. CARR AVE., UNITS A-F, LAFAYETTE, CO 80026	A212
	450 S. CARR AVE., UNITS A-F, LAFAYETTE, CO 80026	A213
	525 S. CARR AVE., UNITS A-F, LAFAYETTE, CO 80026	A214
8 / LAFAYETTE VILLA II	550 S. CARR AVE., UNITS A-F, LAFAYETTE, CO 80026	A215
	490/492 S. CARR AVE., LAFAYETTE, CO 80026	A216
	510/522 S. CARR AVE., LAFAYETTE, CO 80026	A217
	556/558 S. CARR AVE., LAFAYETTE, CO 80026	A218
9 / RODEO	520/522 S DOVER AVE, LAFAYETTE, CO 80026	A219
	550/552 S DOVER AVE, LAFAYETTE, CO 80026	A220
	421 RODEO CT., NEDERLAND, CO 80466	A221
	431 RODEO CT., NEDERLAND, CO 80466	A222
	439 RODEO CT., NEDERLAND, CO 80466	A223
	449 RODEO CT., NEDERLAND, CO 80466	A224
459 RODEO CT., NEDERLAND, CO 80466	A225	
	469 RODEO CT., NEDERLAND, CO 80466	A226



BCHA EXTERIOR REPAIRS
 Boulder County Housing Authority (BCHA) Various Addresses
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A100

OVERALL SITE PLAN

SIM,
TYP @ **1**
ALT #1 A500

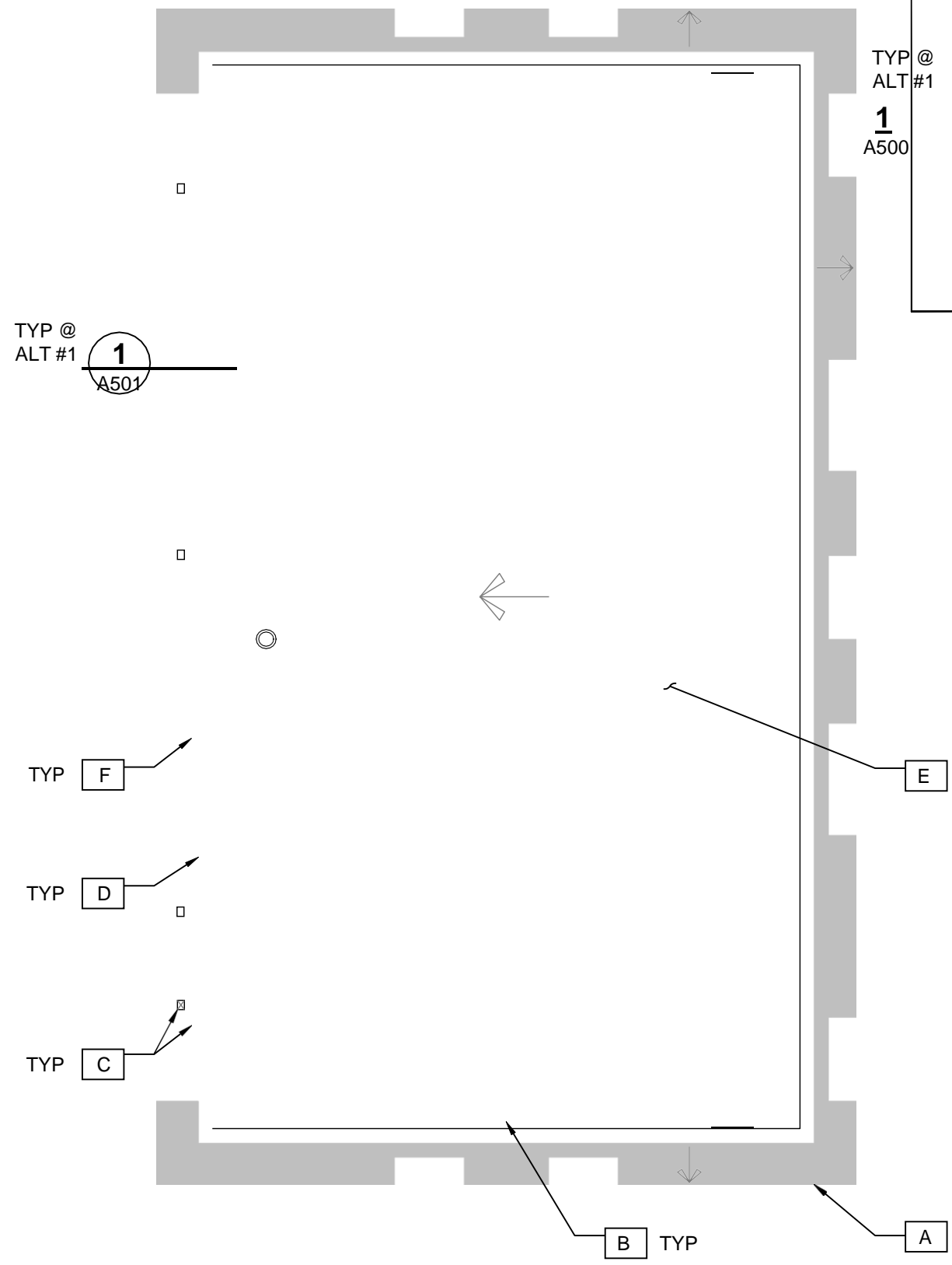
TYP @
ALT #1
1
A500

TYP @
ALT #1
1
A501

LEGEND

- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▭ EXISTING SLOPE

ALTERNATE #1



1 ROOF PLAN - 1425 EMERY ST.

Scale: 3/32" = 1'-0" NORTH

REPAIR KEY NOTES:

- A. REMOVE AND DISCARD EXISTING WOODSHAKES AT SHADED AREA. PROVIDE REPLACEMENT ASPHALT SHINGLE ROOF COVERING, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS (IF APPLICABLE), VALLEY METALS, FLUE VENTCAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. PATCH TEARS IN EPDM AT ROOF PERIMETER, APPROXIMATELY 16" O.C.
- C. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- D. REMOVE AND REPLACE EXISTING FASCIA, REFER TO SPECIFICATIONS FOR MATERIALS.
- E. **ALTERNATE #1:** REMOVE AND DISPOSE OF EXISTING BALLAST, COPING, EPDM MEMBRANE, AND TAPERED EPS INSULATION. INSTALL NEW, FULLY ADHERED TAPERED INSULATION WITH A MINIMUM R-VALUE OF R-30, FULLY ADHERED COVER BOARD, FULLY ADHERED EPDM MEMBRANE, AND COPING. FLASH ALL PENETRATIONS IN ACCORDANCE WITH MANUFACTURER'S 20-YEAR NDL DETAILS, EXTENDING PIPES AS REQUIRED TO PROVIDE MINIMUM FLASHING HEIGHT.
- F. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

- PLAN NOTES:**
- 1. REFER TO SHEET G001 FOR PLAN NOTES.



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

PROJECT SITE

10625 W. I-70 FRONTAGE RD. N., SUITE 3
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**PROJECT SITE -
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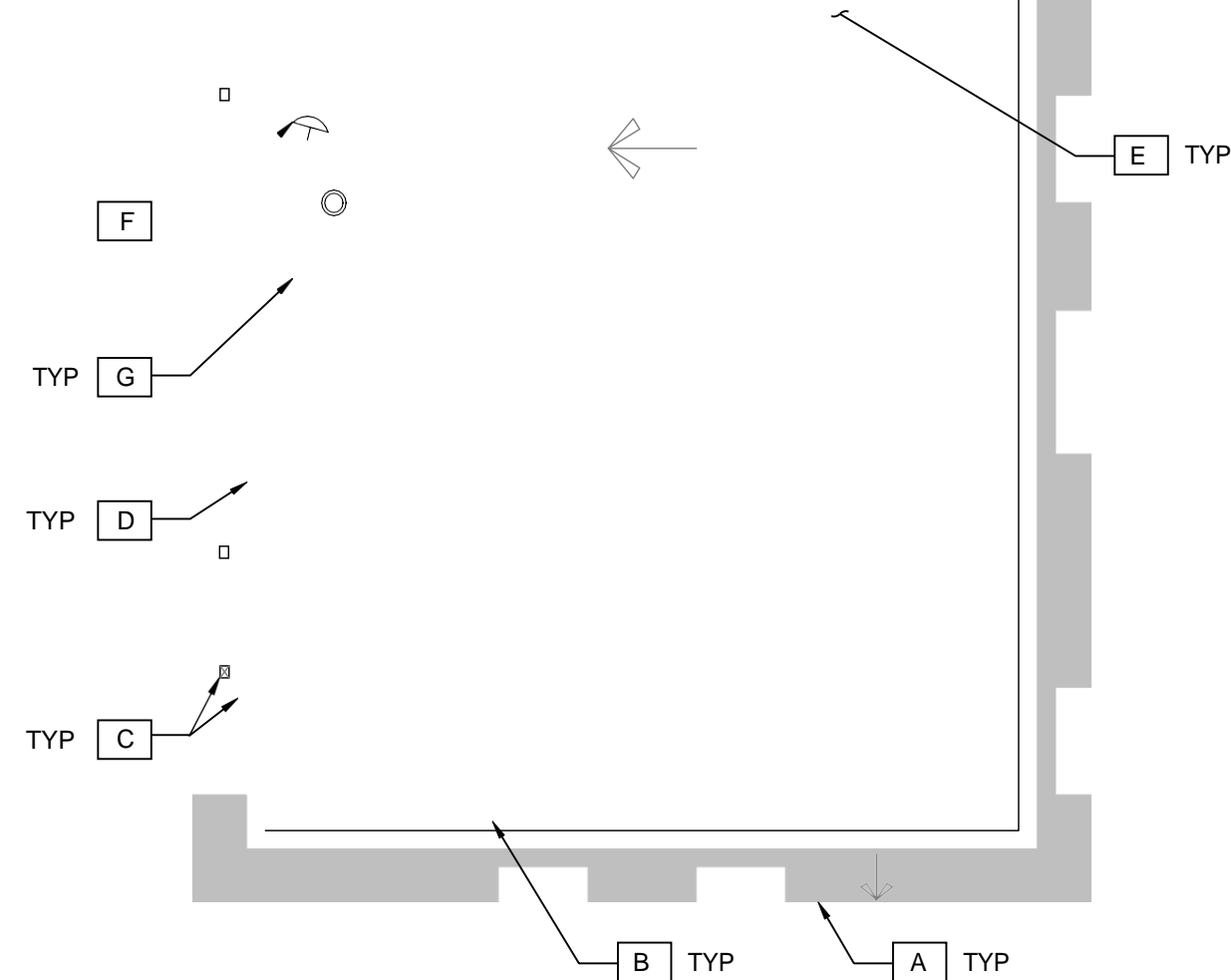
Project No: F6206082
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Drawn By: K. Gromowski
Designed By: K. Gromowski

A200

ROOF PLAN - COTTONWOOD

SIM,
TYP @ $\frac{1}{A500}$
ALT #1

TYP @
ALT #1 $\frac{1}{A501}$



1 ROOF PLAN - 1433 EMERY ST.

Scale: 3/32" = 1'-0" NORTH

LEGEND

- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- EXISTING SLOPE

ALTERNATE #1

REPAIR KEY NOTES:

- A. REMOVE AND DISCARD EXISTING WOOD SHAKES AT SHADED AREA. PROVIDE REPLACEMENT ASPHALT SHINGLE ROOF COVERING, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS (IF APPLICABLE), VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. PATCH TEARS IN EPDM AT ROOF PERIMETER, APPROXIMATELY 16" O.C.
- C. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
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- F. **ALTERNATE #1:** SATELLITE DISH TO BE REMOVED BY OWNER PRIOR TO WORK COMMENCEMENT.
- G. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES

1. REFER TO SHEET G001 FOR PLAN NOTES.



OVERALL SITE MAP (N.T.S.)

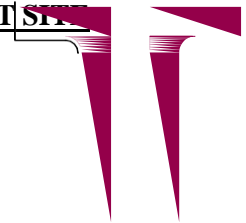
NORTH



SITE PLAN (N.T.S.)

NORTH

PROJECT SITE



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Addresses
Boulder County,

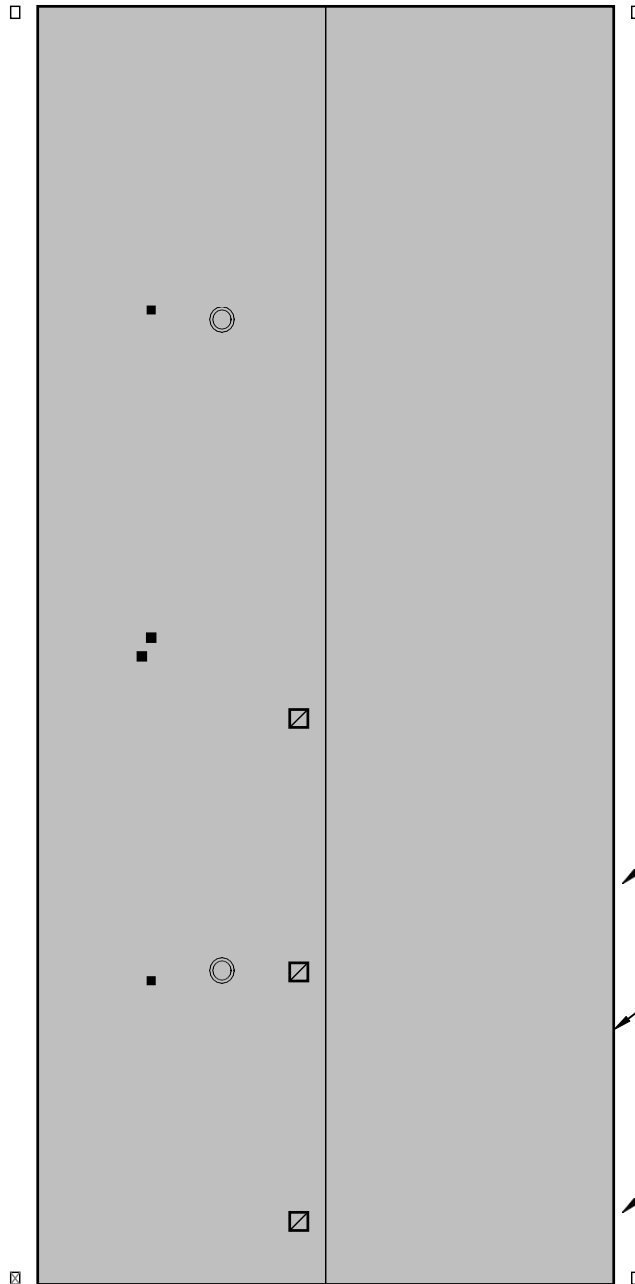
**ISSUED FOR
BIDDING -
NOT FOR
CONSTRUCTION**

Rev.	Desc.	Date

Project No: F6206082
Issued for: Bidding
Date: 09/18/2020
Drawn By: K. Gromowski
Designed By: K. Gromowski

A201

ROOF PLAN - COTTONWOOD



LEGEND

- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- ↗ EXISTING SLOPE

- REPAIR KEY NOTES:
- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
 - B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
 - C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
 - D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:
 1. REFER TO SHEET G001 FOR PLAN NOTES.

1 ROOF PLAN - 146 ST. CLAIR AVE

Scale: 3/32" = 1'-0" NORTH

PROJECT SITE

OVERALL SITE MAP (N.T.S.)

NORTH

PROJECT SITE - 146 ST. CLAIR AVE

SITE PLAN (N.T.S.)

NORTH

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

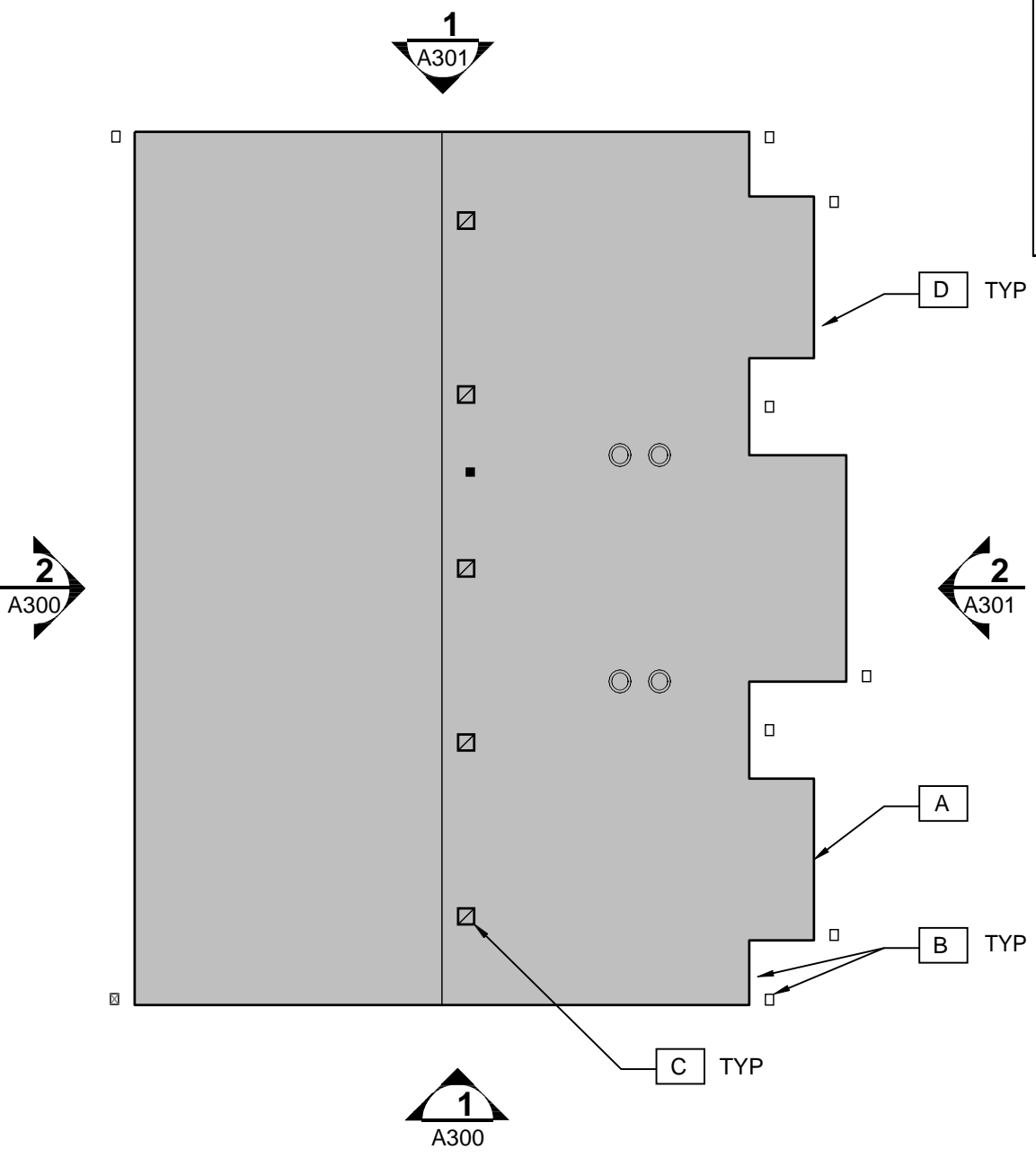
Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A202
 ROOF PLAN - ST. CLAIR

1 ROOF PLAN - 1410 EMERY ST.

Scale: 3/32" = 1'-0" NORTH



LEGEND

- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- ↗ EXISTING SLOPE

- REPAIR KEY NOTES:
- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
 - B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
 - C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
 - D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.
- PLAN NOTES:
1. REFER TO SHEET G001 FOR PLAN NOTES.

PROJECT SITE

OVERALL SITE MAP (N.T.S.)

NORTH

PROJECT SITE - 1410 EMERY ST.

SITE PLAN (N.T.S.)

NORTH

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A203
 ROOF PLAN - EMERY

BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

**PROJECT SITE -
 1816 CAMBRIDGE DR.**

ISSUED FOR
 BIDDING -
 NOT FOR
 CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A204

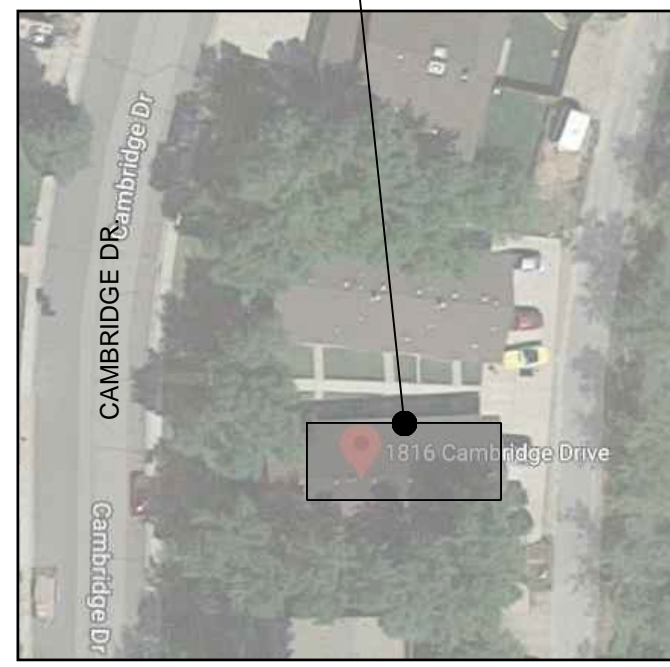
ROOF PLAN - CAMBRIDGE

PROJECT SITE



**OVERALL SITE MAP
 (N.T.S.)**

NORTH










SITE PLAN

(N.T.S.)

NORTH

LEGEND

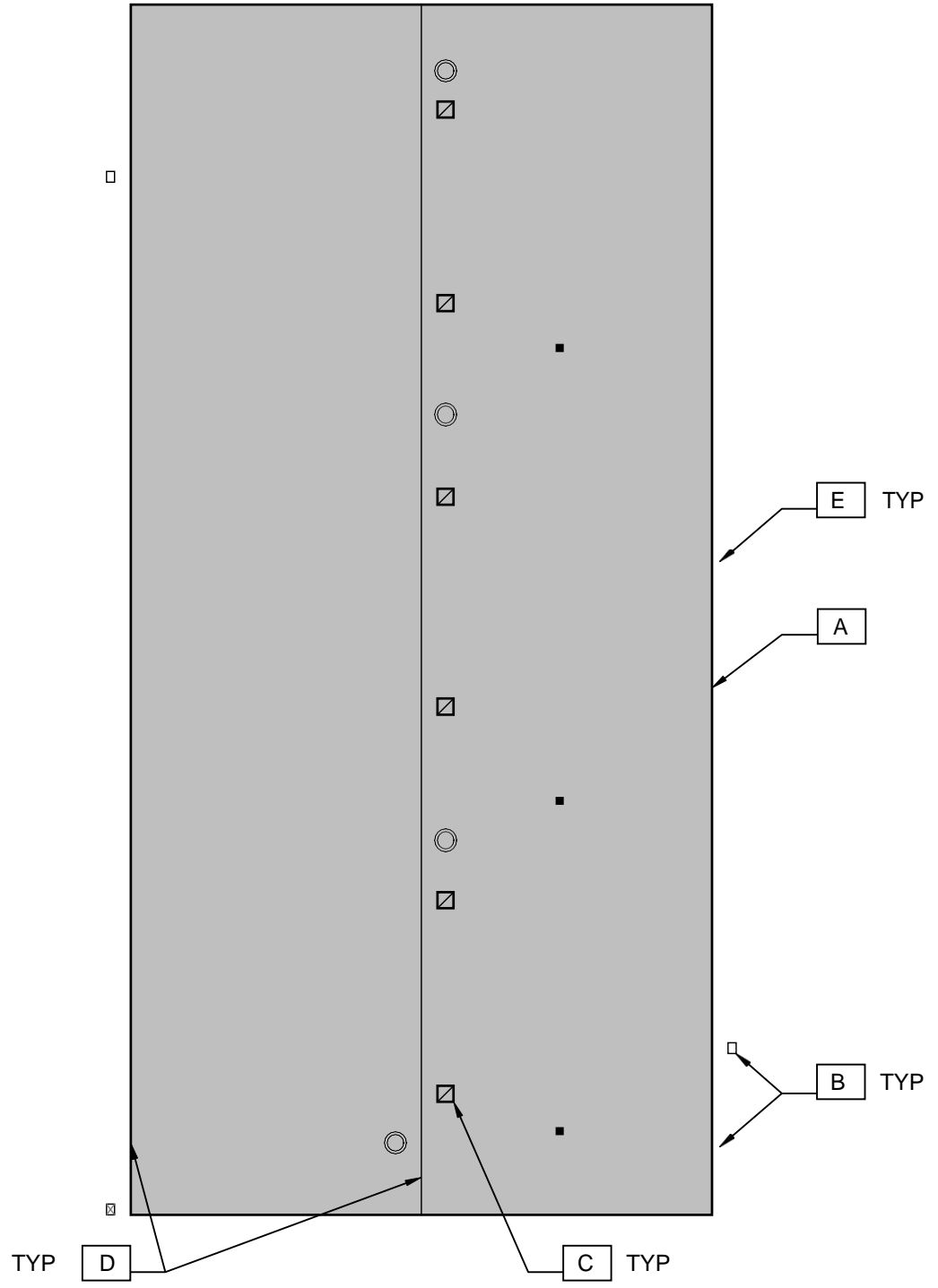
-  PENETRATION - PREFAB. BOOT
-  PENETRATION - FIELD FAB.
-  GUTTER
-  DOWNSPOUT
-  ATTIC VENT
-  DRYER/FAN VENT
-  EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE AND DISCARD EXISTING GUTTERS/DOWNSPOUTS. REPLACE WITH NEW GUTTERS/DOWNSPOUTS, TO MATCH EXISTING LAYOUT, TYPE, AND SIZE. REFER TO SPECIFICATIONS FOR MATERIALS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.

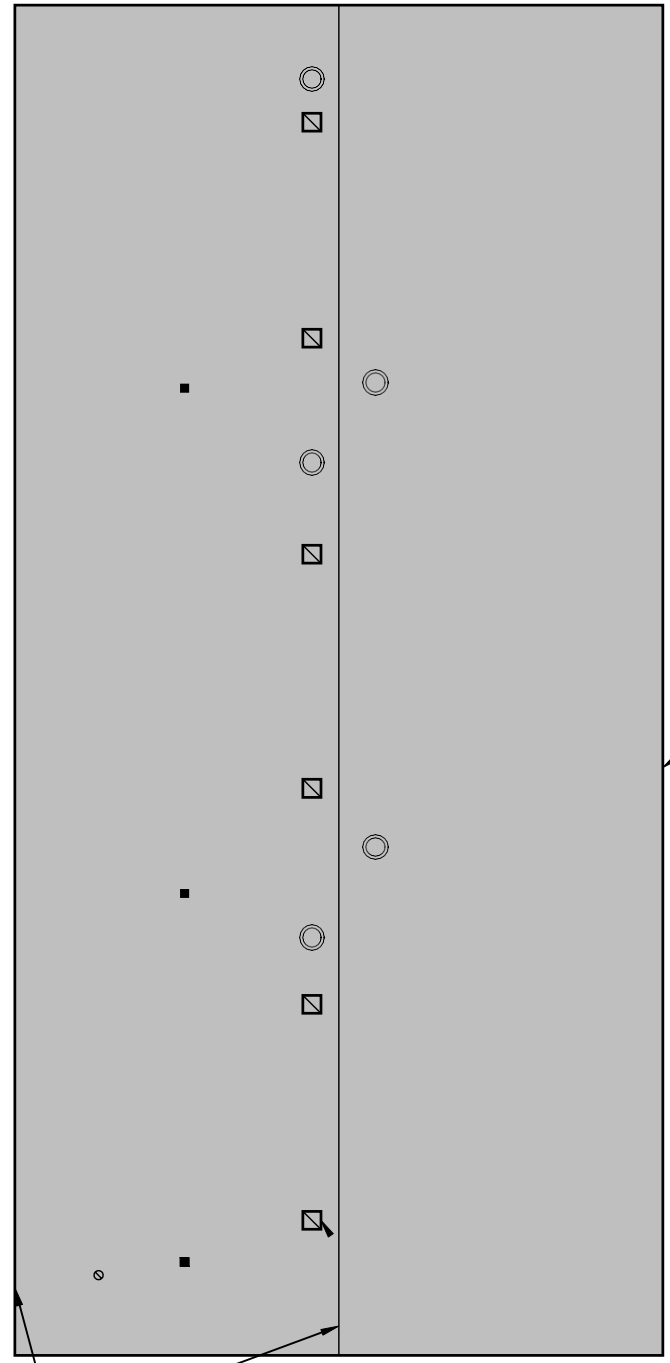


ROOF PLAN - 1816 CAMBRIDGE DR.

Scale: 3/32" = 1'-0"

NORTH

1



TYP [D] TYP [C] TYP [B] TYP [A] TYP [E]

LEGEND

- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▣ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

- REPAIR KEY NOTES:
- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
 - B. REMOVE AND DISCARD EXISTING GUTTERS/DOWNSPOUTS. REPLACE WITH NEW GUTTERS/DOWNSPOUTS, TO MATCH EXISTING LAYOUT, TYPE, AND SIZE. REFER TO SPECIFICATIONS FOR MATERIALS.
 - C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
 - D. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
 - E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:
1. REFER TO SHEET G001 FOR PLAN NOTES.

1 ROOF PLAN - 1822 CAMBRIDGE DR.

Scale: 3/32" = 1'-0" NORTH



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

PROJECT SITE - 1822 CAMBRIDGE DR.

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A205

ROOF PLAN - CAMBRIDGE

BCHA EXTERIOR REPAIRS

Boulder County Housing Authority (BCCHA) Various Addresses
Boulder County,

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

PROJECT SITE



**OVERALL SITE MAP
(N.T.S.)**

NORTH

PROJECT SITE -

501 W GENESEO ST.



**SITE PLAN
(N.T.S.)**

NORTH

LEGEND

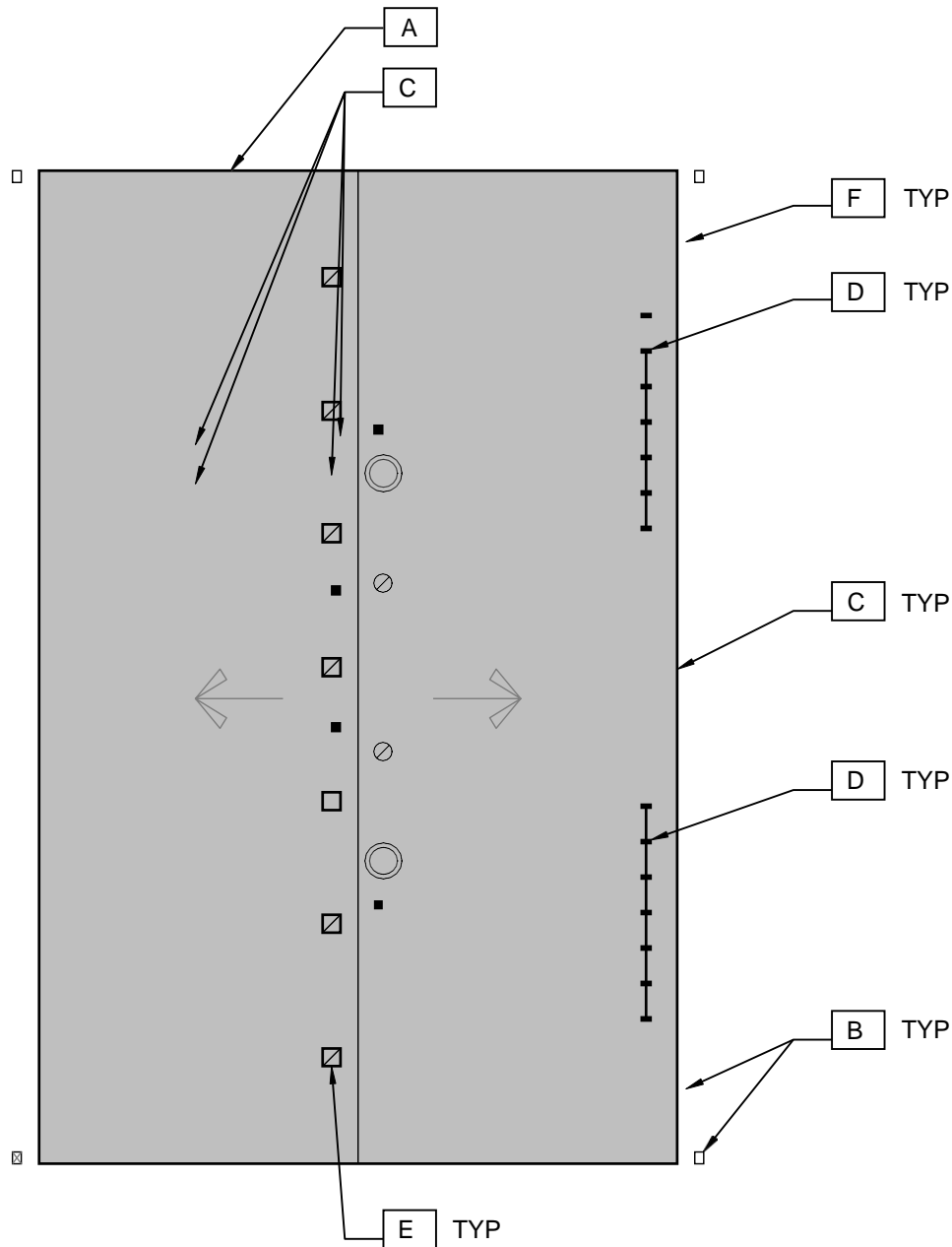
- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ ATTIC VENT
- DRYER/FAN VENT
- ➔ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE AND DISCARD EXISTING GUTTERS/DOWNSPOUTS. REPLACE WITH NEW GUTTERS/DOWNSPOUTS, TO MATCH EXISTING LAYOUT, TYPE, AND SIZE. REFER TO SPECIFICATIONS FOR MATERIALS.
- C. REMOVE EXISTING SOLAR PANELS, CONTROLS, AND ABOVE-ROOF CONDUIT. OWNER TO TAKE POSSESSION OF REMOVED PANELS, PROVIDE MINIMUM 24-HOUR NOTICE TO OWNER PRIOR TO REMOVING PANELS/EQUIPMENT.
- D. REFLASH EXISTING SNOW FENCES.
- E. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS
- F. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

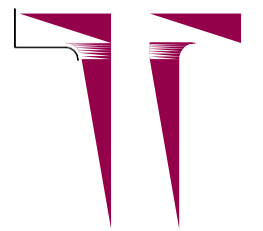
1. REFER TO SHEET G00 FOR PLAN NOTES.



1 ROOF PLAN - 501 W GENESEO ST.

Scale: 3/32" = 1'-0"

NORTH



Terracon

10625 W. I-70 FRONTAGE RD. N., SUITE 3
WHEAT RIDGE, CO 80033
PH. (303) 423-3300 FAX. (303) 423-3353
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BCHA EXTERIOR REPAIRS

Boulder County Housing
Authority (BCHA) Various
Addresses
Boulder County,

**ISSUED FOR
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CONSTRUCTION**

Rev.	Desc.	Date

Project No: F6206082
Issued for: Bidding
Date: 09/18/2020
Drawn By: K. Gromowski
Designed By: K. Gromowski

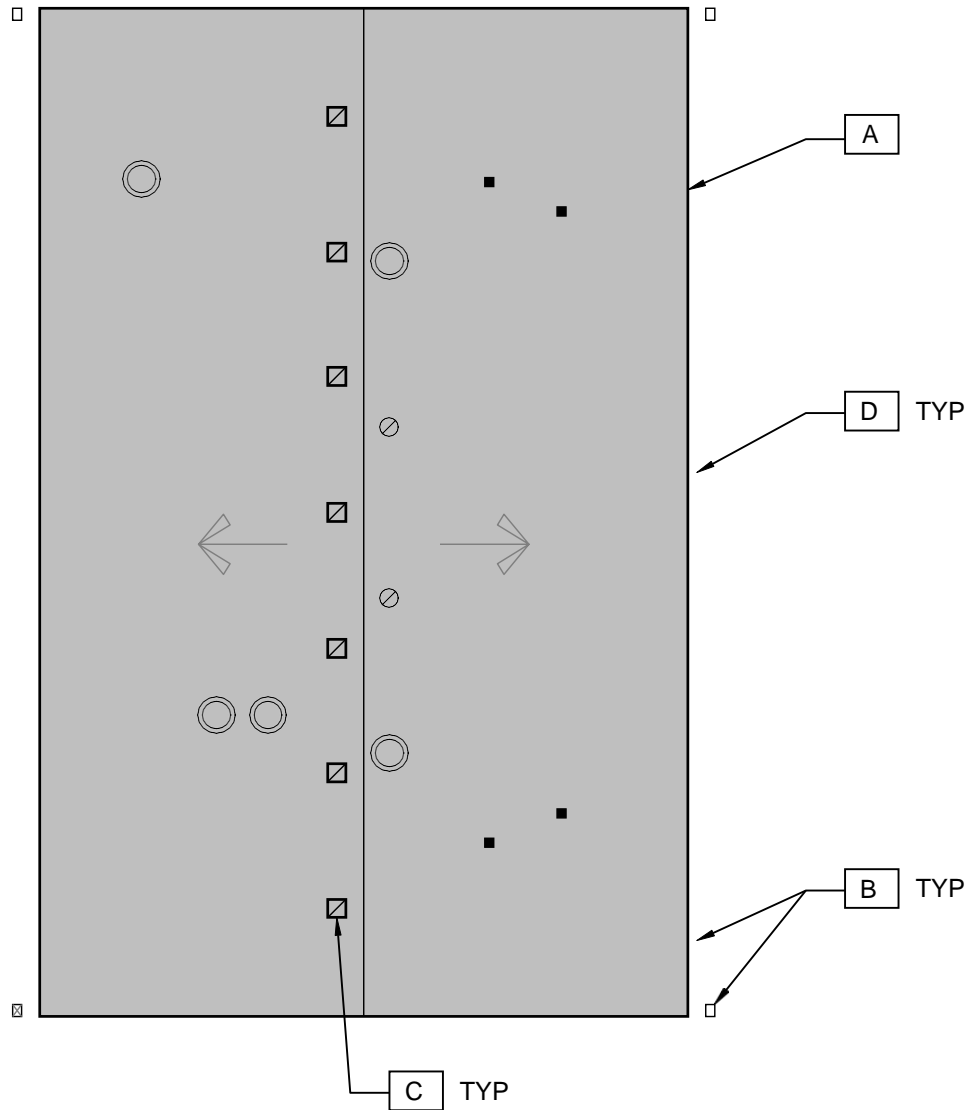
A206

ROOF PLAN - GENESEO

1 ROOF PLAN - 515 W GENESEO ST.

Scale: 3/32" = 1'-0"

NORTH



LEGEND

- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- ↔ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE AND DISCARD EXISTING GUTTERS/DOWNSPOUTS. REPLACE WITH NEW GUTTERS/DOWNSPOUTS, TO MATCH EXISTING LAYOUT, TYPE, AND SIZE. REFER TO SPECIFICATIONS FOR MATERIALS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS
- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.

PROJECT SITE

OVERALL SITE MAP (N.T.S.)

NORTH

PROJECT SITE - 515 W GENESEO ST.

SITE PLAN (N.T.S.)

NORTH

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A207
 ROOF PLAN - GENESEO

PROJECT SITE



**OVERALL SITE MAP
(N.T.S.)**

NORTH

PROJECT SITE -

517 W GENESEO ST



**SITE PLAN
(N.T.S.)**

NORTH

LEGEND

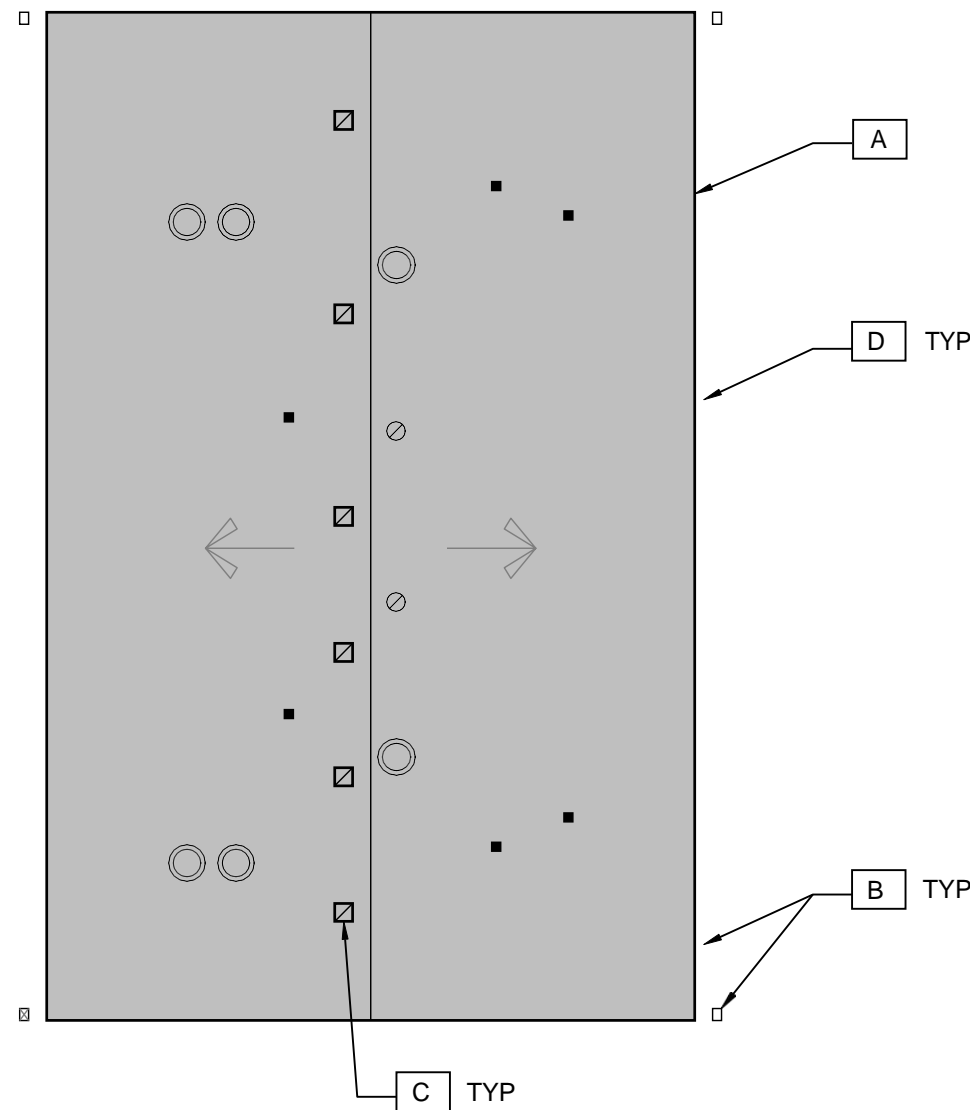
- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- ➔ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE AND DISCARD EXISTING GUTTERS/DOWNSPOUTS. REPLACE WITH NEW GUTTERS/DOWNSPOUTS, TO MATCH EXISTING LAYOUT, TYPE, AND SIZE. REFER TO SPECIFICATIONS FOR MATERIALS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

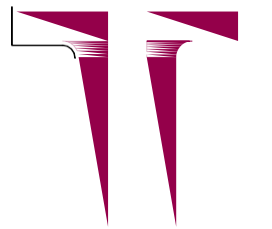
- 1. REFER TO SHEET G001 FOR PLANNOTES.



1 ROOF PLAN - 517 W GENESEO ST.

Scale: 3/32" = 1'-0"

NORTH



Terracon
10625 W. I-70 FRONTAGE RD. N., SUITE 3
WHEAT RIDGE, CO 80033
PH. (303) 423-3300 FAX. (303) 423-3353
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BCHA EXTERIOR REPAIRS

Boulder County Housing
Authority (BCHA) Various
Addresses
Boulder County,

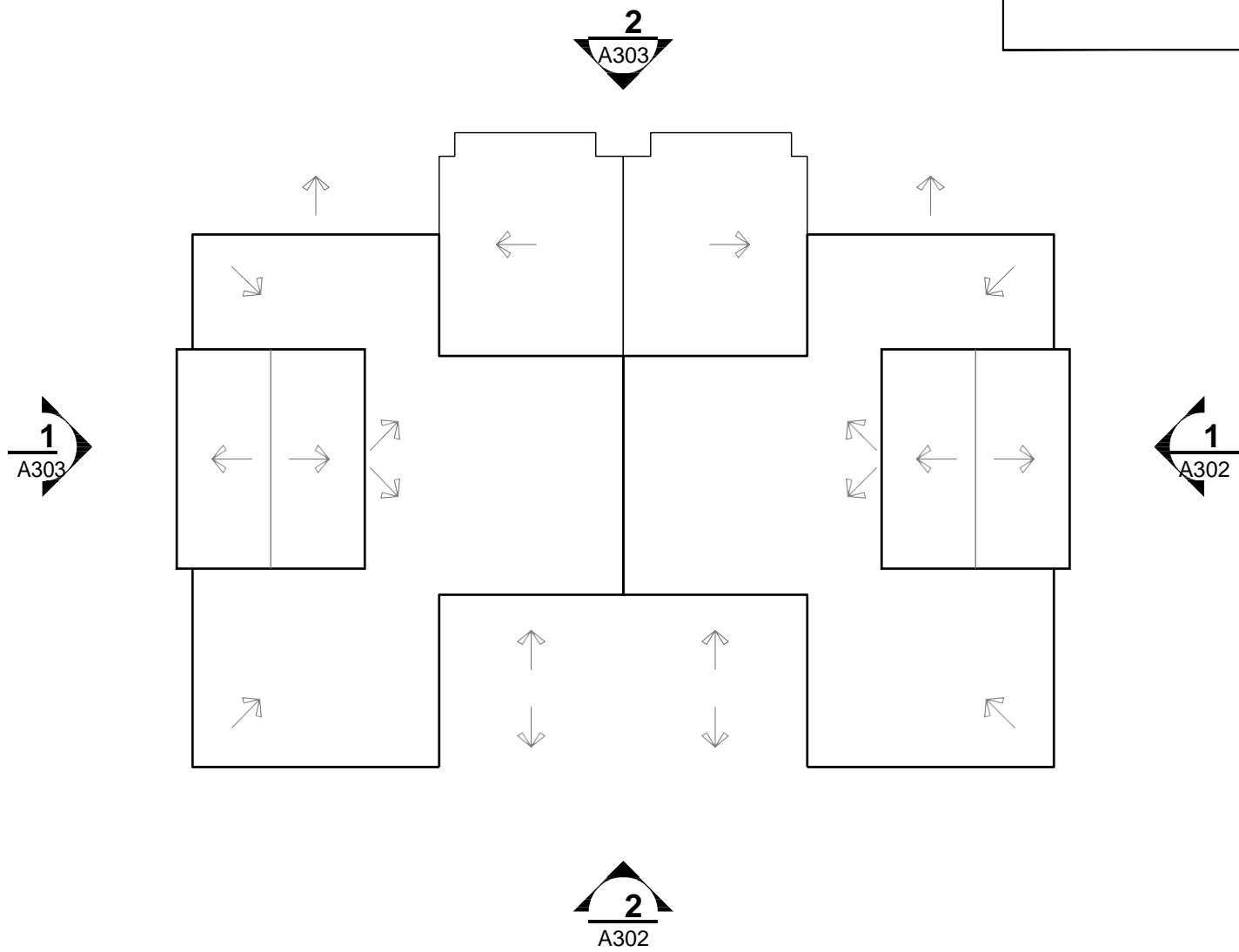
**ISSUED FOR
BIDDING -
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CONSTRUCTION**

Rev.	Desc.	Date

Project No: F6206082
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Drawn By: K. Gromowski
Designed By: K. Gromowski

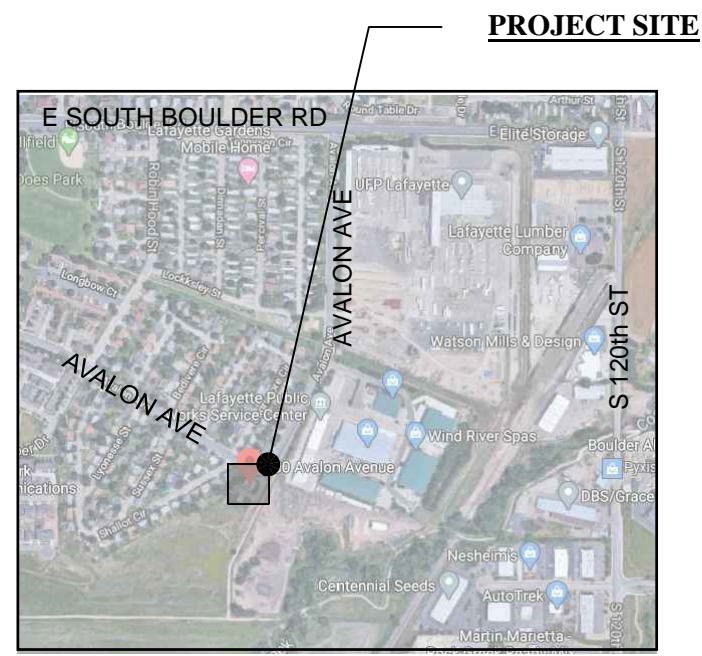
A208

ROOF PLAN - GENESEO



1 ROOF PLAN - 900/904 AVALON AVE.

Scale: 3/32"=1'-0" NORTH



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

PROJECT SITE

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

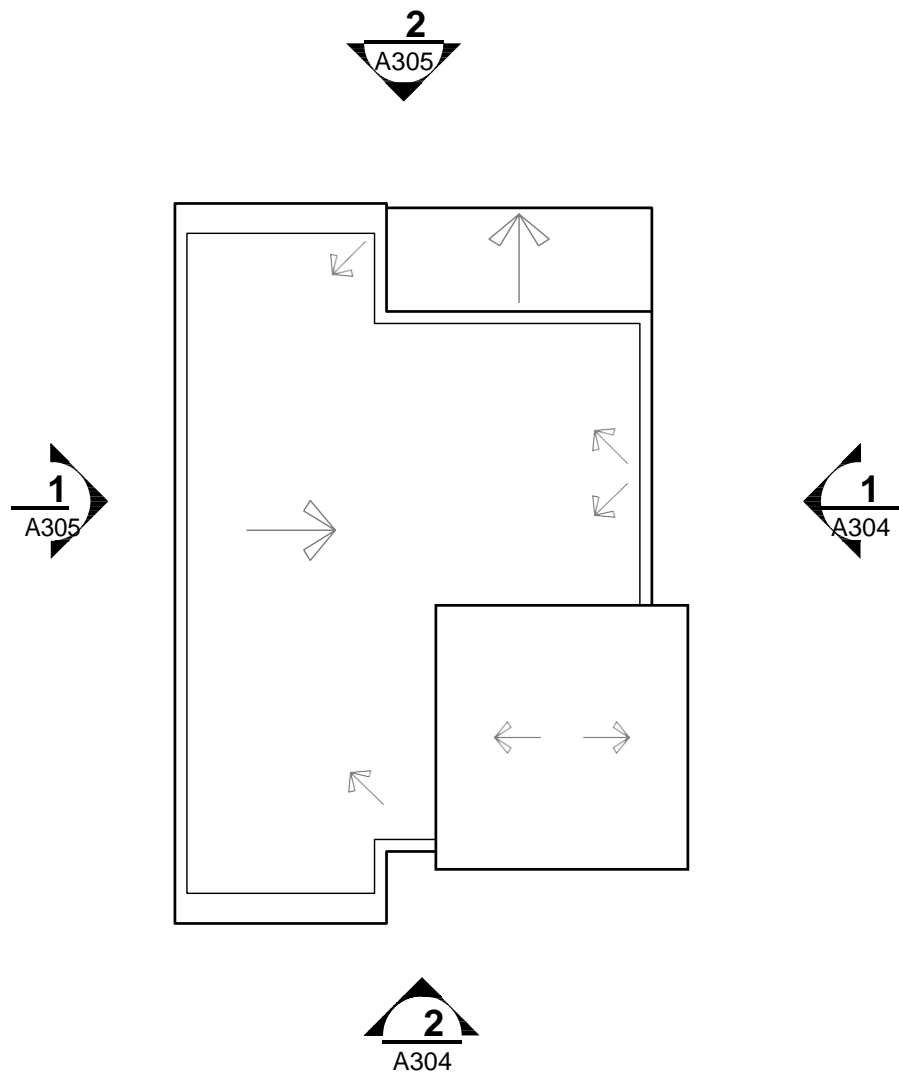
BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

**ISSUED FOR
 BIDDING -
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Rev.	Desc.	Date

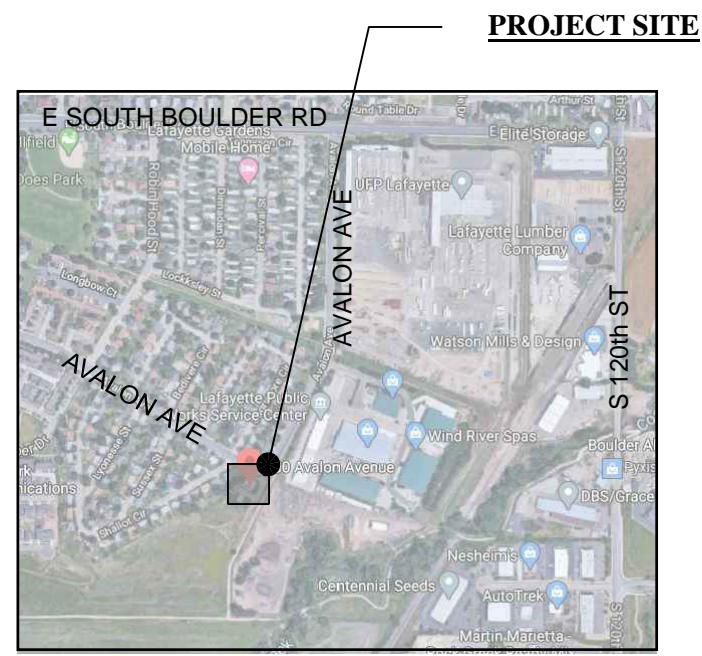
Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A209
 ROOF PLAN - AVALON



1 ROOF PLAN - 908 AVALON AVE.

Scale: 3/32" = 1'-0" NORTH



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

PROJECT SITE

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

**ISSUED FOR
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 CONSTRUCTION**

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A210
 ROOF PLAN - AVALON



BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR
 BIDDING -
 NOT FOR
 CONSTRUCTION

Rev.	Desc.	Date

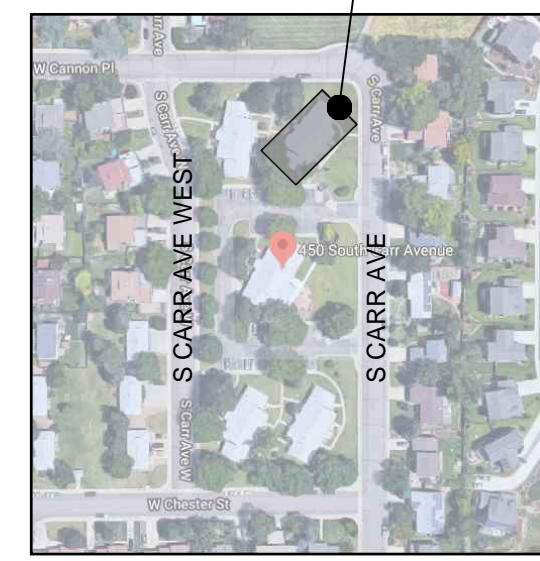
Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A211
 ROOF PLAN - L.V. I



OVERALL SITE MAP
 (N.T.S.)

NORTH



SITE PLAN
 (N.T.S.)

NORTH

LEGEND

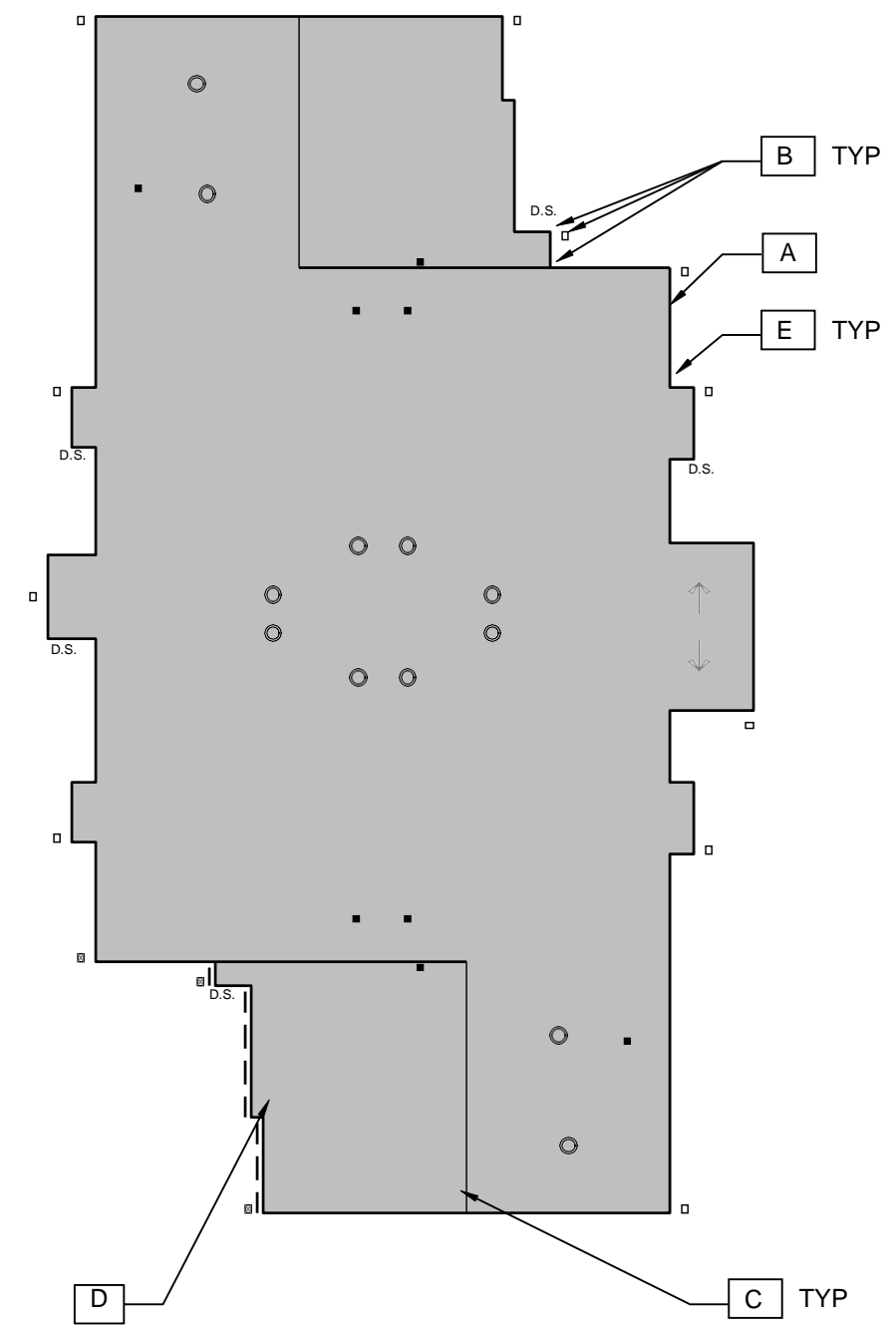
- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- HORIZONTAL DOWNSPOUT
- ▧ ATTIC VENT
- RIDGE VENT
- DRYER/FAN VENT
- ↗ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS/HORIZONTAL DOWNSPOUTS AS REQUIRED TO PERFORM THE WORK. RECONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING RIGID RIDGE VENT MATERIAL. REFER TO SPECIFICATIONS FOR MATERIALS.
- D. EXISTING HEAT TAPE, SHOWN CONCEPTUALLY, REMOVE, DISCARD, AND REPLACE DURING REROOFING. NEW HEAT TAPE TO MATCH EXISTING PATTERN AND VOLTAGE. REFER TO SPECIFICATIONS FOR MATERIALS.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.



1 ROOF PLAN - 300 S CARR AVE
 Scale: 1/16" = 1'-0"





BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR
 BIDDING -
 NOT FOR
 CONSTRUCTION

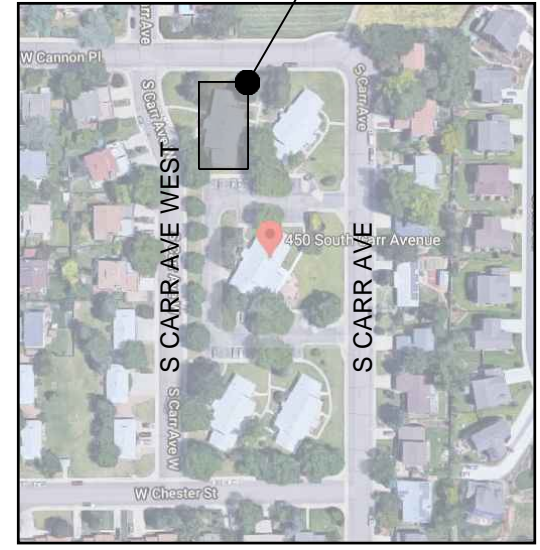
Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski
A212
 ROOF PLAN - L.V. I



OVERALL SITE MAP
 (N.T.S.)

NORTH



SITE PLAN
 (N.T.S.)

NORTH

LEGEND

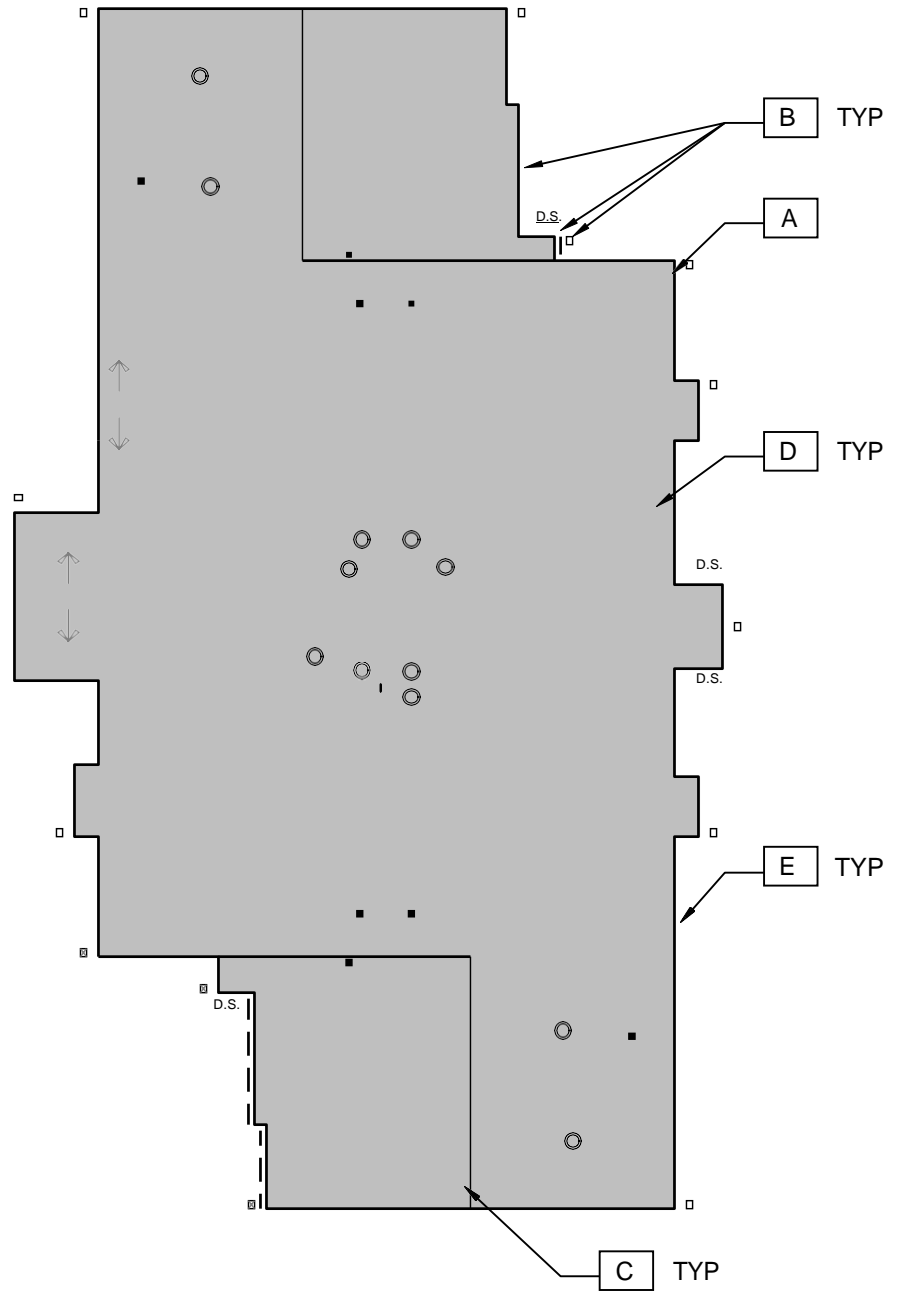
- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- D.S. HORIZONTAL DOWNSPOUT
- ▤ ATTIC VENT
- RIDGE VENT
- DRYER/FAN VENT
- EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS/ HORIZONTAL DOWNSPOUTS AS REQUIRED TO PERFORM THE WORK. RECONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING RIGID RIDGE VENT MATERIAL. REFER TO SPECIFICATIONS FOR MATERIALS.
- D. EXISTING HEAT TAPE, SHOWN CONCEPTUALLY, REMOVE, DISCARD, AND REPLACE DURING REROOFING. NW HEAT TAPE TO MATCH EXISTING PATTERN AND VOLTAGE. REFER TO SPECIFICATIONS FOR MATERIALS.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.



1 ROOF PLAN - 350 S CARR AVE
 Scale: 1/16" = 1'-0" NORTH

LEGEND

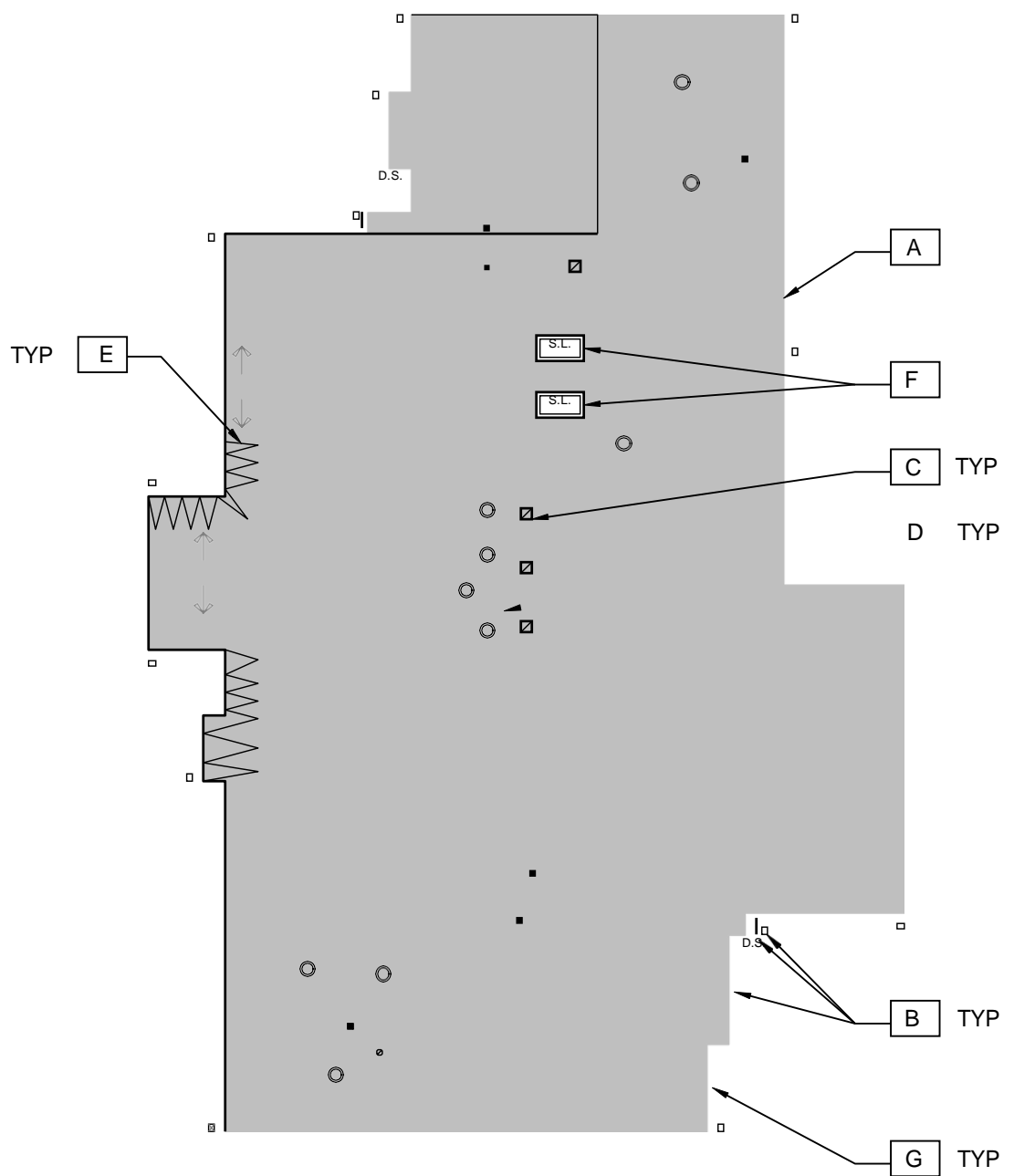
- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- D.S. HORIZONTAL DOWNSPOUT
- ▧ ATTIC VENT
- RIDGE VENT
- DRYER/FAN VENT
- ↗ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS/ HORIZONTAL DOWNSPOUTS AS REQUIRED TO PERFORM THE WORK. RECONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. REMOVE, DISCARD, AND REPLACE EXISTING RIGID RIDGE VENT MATERIAL. REFER TO SPECIFICATIONS FOR MATERIALS.
- E. EXISTING HEAT TAPE, SHOWN CONCEPTUALLY, REMOVE, DISCARD, AND REPLACE DURING REROOFING. NW HEAT TAPE TO MATCH EXISTING PATTERN AND VOLTAGE. REFER TO SPECIFICATIONS FOR MATERIALS.
- F. REMOVE, DISCARD, AND REPLACE EXISTING APPROXIMATELY 28" WIDE BY 52" LONG SKYLIGHTS, SIZE AND TYPE TO MATCH EXISTING. REFER TO SPECIFICATIONS FOR MATERIALS.
- G. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.



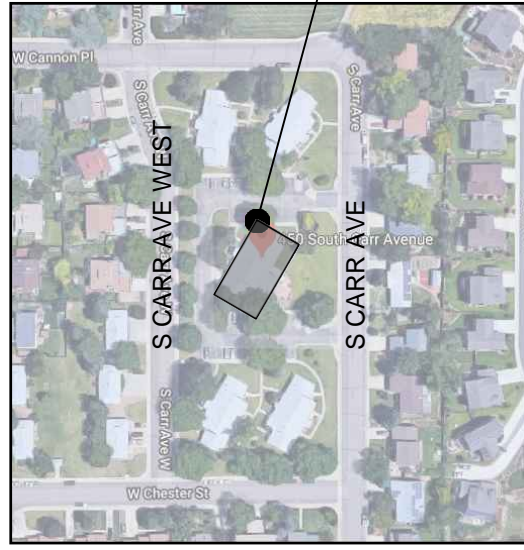
1 ROOF PLAN - 450 S CARR AVE

Scale: 1/16" = 1'-0"



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

PROJECT SITE

10625 W. I-70 FRONTAGE RD. N., SUITE 3
WHEAT RIDGE, CO 80033
PH. (303) 423-3300 FAX. (303) 423-3353
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BCHA EXTERIOR REPAIRS
Boulder County Housing Authority (BCHA) Various Addresses
Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
Issued for: Bidding
Date: 09/18/2020
Drawn By: K. Gromowski
Designed By: K. Gromowski

A213
ROOF PLAN - L.V. I

BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR
 BIDDING -
 NOT FOR
 CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A214
 ROOF PLAN - L.V. I



OVERALL SITE MAP
 (N.T.S.)

NORTH



SITE PLAN
 (N.T.S.)

NORTH

LEGEND

- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ HORIZONTAL DOWNSPOUT
- ⊠ ATTIC VENT
- ▬ RIDGE VENT
- DRYER/FAN VENT
- ➔ EXISTING SLOPE

REPAIR KEY NOTES:

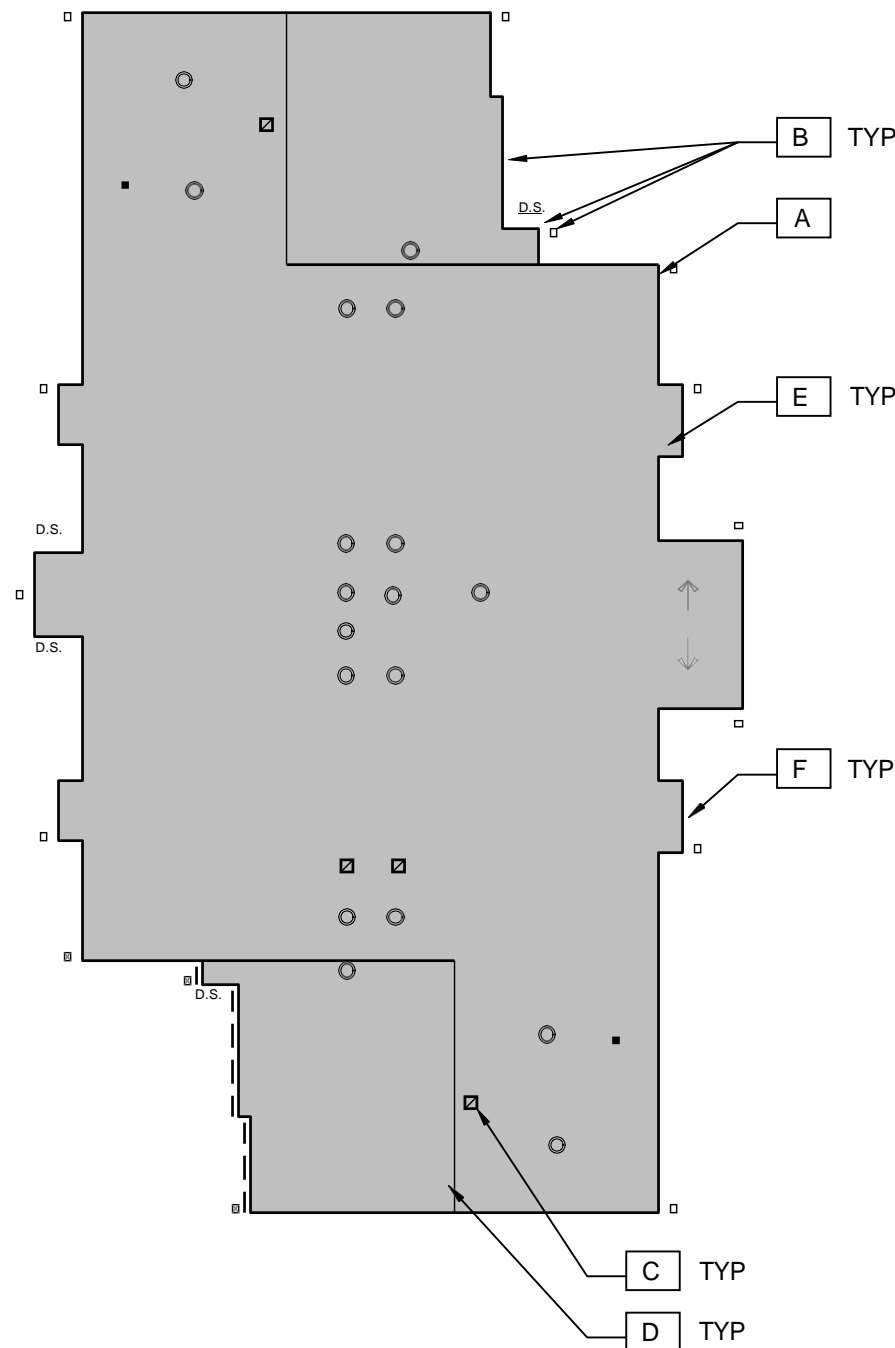
- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS/ HORIZONTAL DOWNSPOUTS AS REQUIRED TO PERFORM THE WORK. RECONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. REMOVE, DISCARD, AND REPLACE EXISTING RIGID RIDGE VENT MATERIAL. REFER TO SPECIFICATIONS FOR MATERIALS.
- E. EXISTING HEAT TAPE, SHOWN CONCEPTUALLY, REMOVE, DISCARD, AND REPLACE DURING REROOFING. NEW HEAT TAPE TO MATCH EXISTING PATTERN AND VOLTAGE. REFER TO SPECIFICATIONS FOR MATERIALS.
- F. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.



NORTH



1 ROOF PLAN - 525 S CARR AVE

Scale: 1/16"=1'-0"



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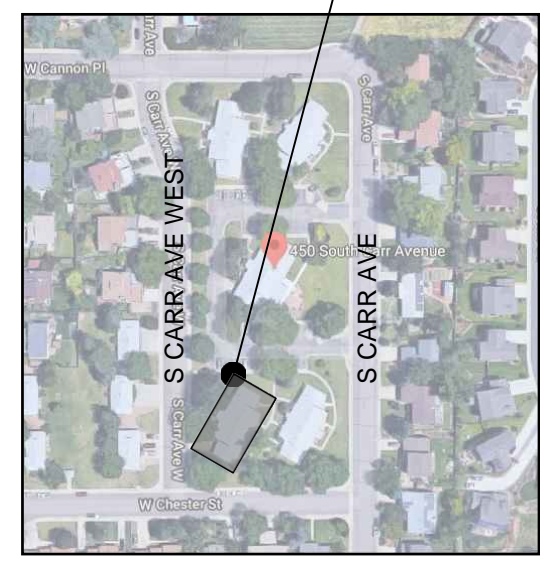
Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski
A215
 ROOF PLAN - L.V. I



OVERALL SITE MAP
 (N.T.S.)

NORTH



SITE PLAN
 (N.T.S.)

NORTH

LEGEND

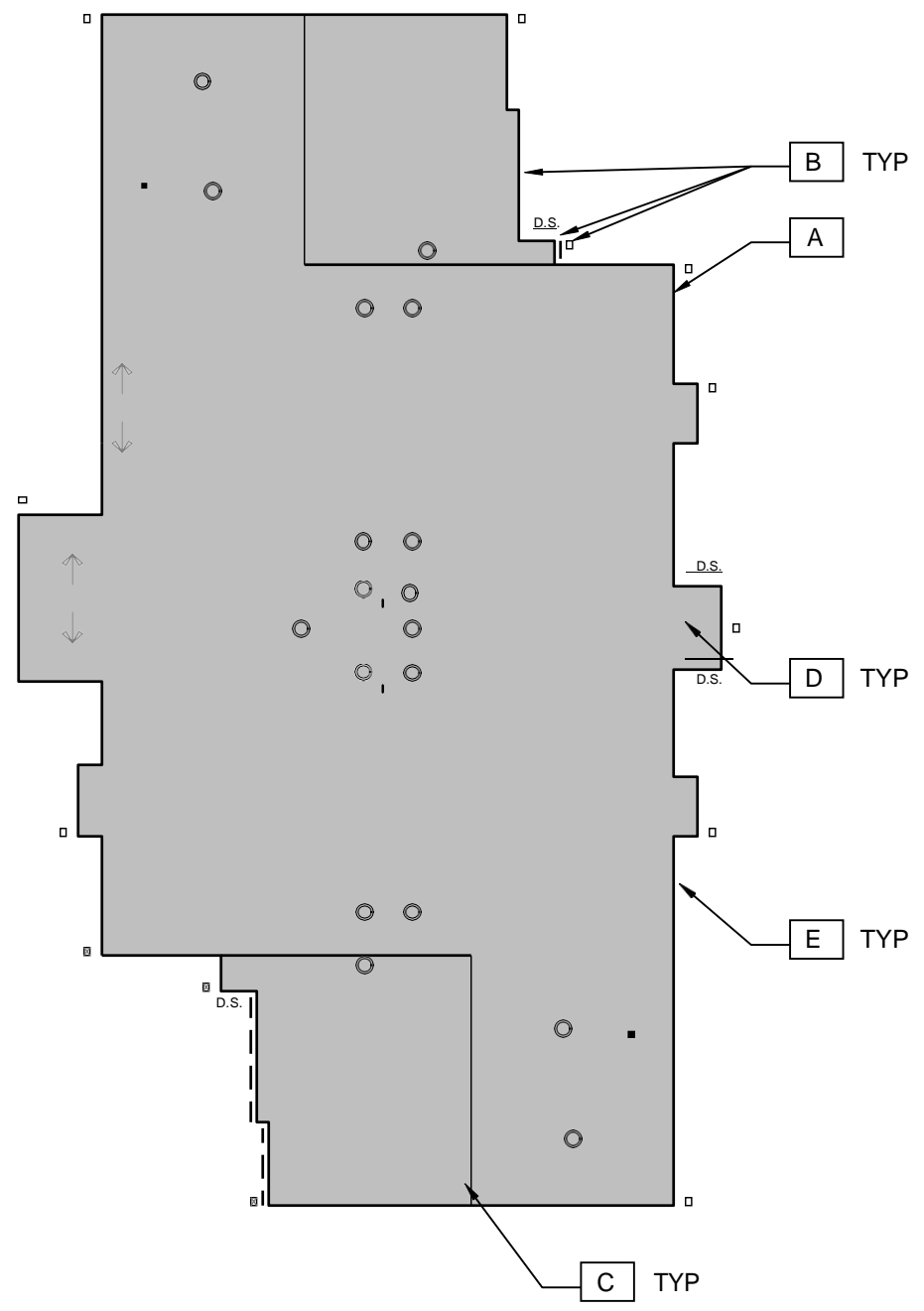
- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- D.S. HORIZONTAL DOWNSPOUT
- ▧ ATTIC VENT
- RIDGE VENT
- DRYER/FAN VENT
- ↗ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS/HORIZONTAL DOWNSPOUTS AS REQUIRED TO PERFORM THE WORK. RECONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING RIGID RIDGE VENT MATERIAL. REFER TO SPECIFICATIONS FOR MATERIALS.
- D. EXISTING HEAT TAPE, SHOWN CONCEPTUALLY, REMOVE, DISCARD, AND REPLACE DURING REROOFING. NW HEAT TAPE TO MATCH EXISTING PATTERN AND VOLTAGE. REFER TO SPECIFICATIONS FOR MATERIALS.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

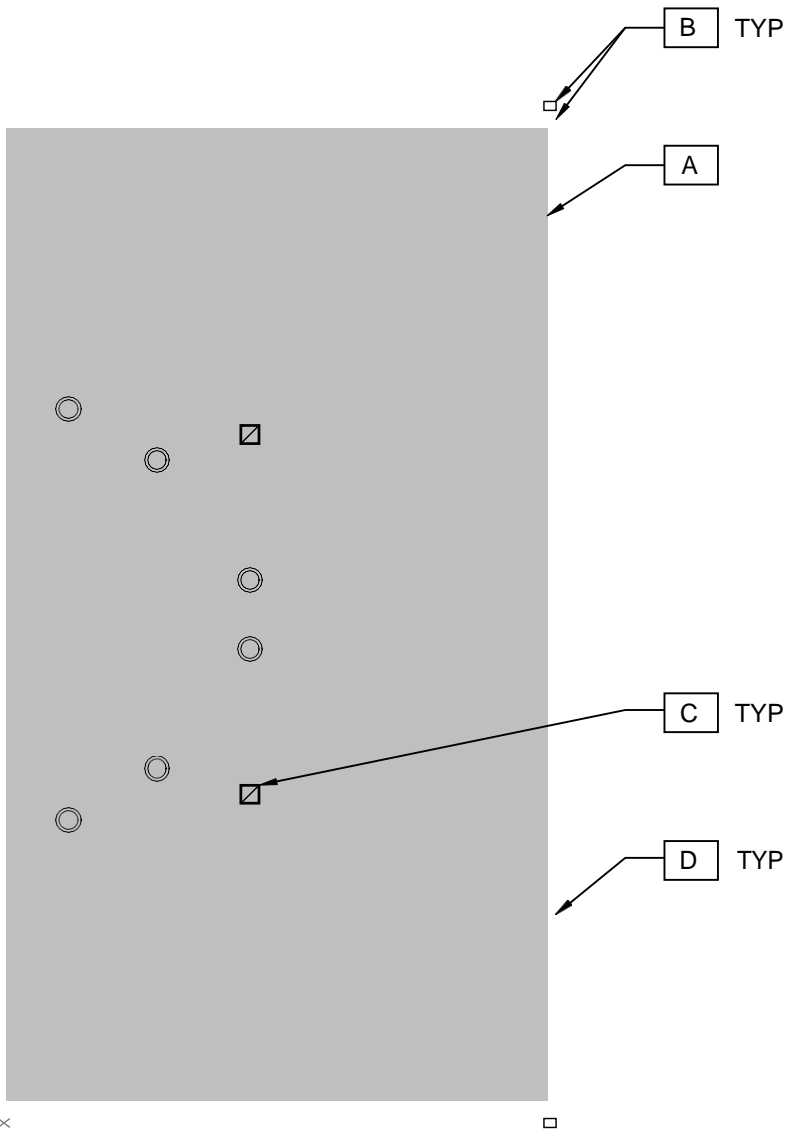
1. REFER TO SHEET G001 FOR PLANNOTES.



1 ROOF PLAN - 550 S CARR AVE

Scale: 1/16" = 1'-0"





LEGEND	
○	PENETRATION - PREFAB. BOOT
○	PENETRATION - FIELD FAB.
	GUTTER
⊠	DOWNSPOUT
▣	ATTIC VENT
■	DRYER/FAN VENT
→	EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
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- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

- PLAN NOTES:**
- 1. REFER TO SHEET G001 FOR PLANNOTES.

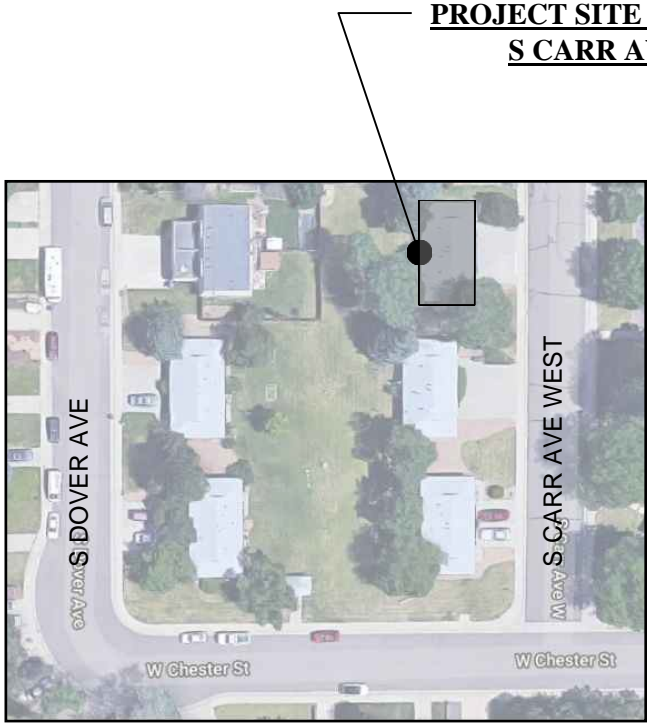
1 ROOF PLAN - 490/492 S CARR AVE

Scale: 3/32" = 1'-0" NORTH



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH



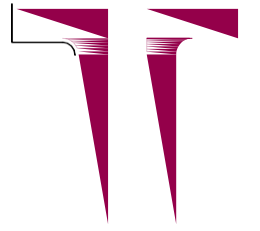
BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A216
 ROOF PLAN - L.V. II



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 10625 W. I-70 FRONTAGE RD. N., SUITE 3
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BCHA EXTERIOR REPAIRS

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 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A217

ROOF PLAN - L.V. II

PROJECT SITE



**OVERALL SITE MAP
 (N.T.S.)**

NORTH

**PROJECT SITE - 510/522
 S CARR AVE**



SITE PLAN (N.T.S.)

NORTH

LEGEND

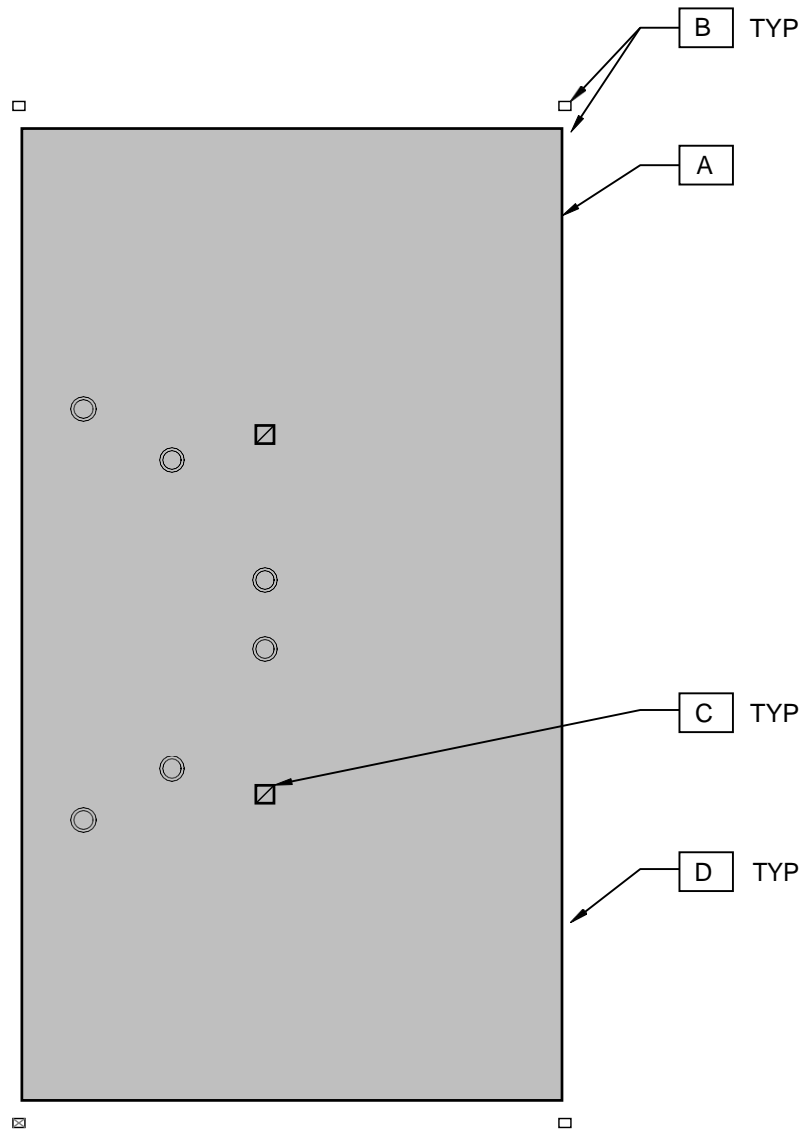
- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, VALLEY METALS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

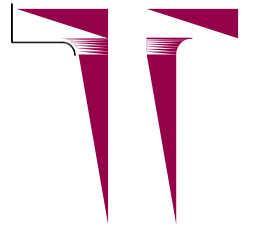
- 1. REFER TO SHEET G001 FOR PLANNOTES.



1 ROOF PLAN - 510/522 S CARR AVE

Scale: 3/32" = 1'-0"

NORTH



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BCHA EXTERIOR REPAIRS

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Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A218

ROOF PLAN - L.V. II

PROJECT SITE



**OVERALL SITE MAP
 (N.T.S.)**

NORTH

**PROJECT SITE - 556/558
 S CARR AVE**



**SITE PLAN
 (N.T.S.)**

NORTH

LEGEND

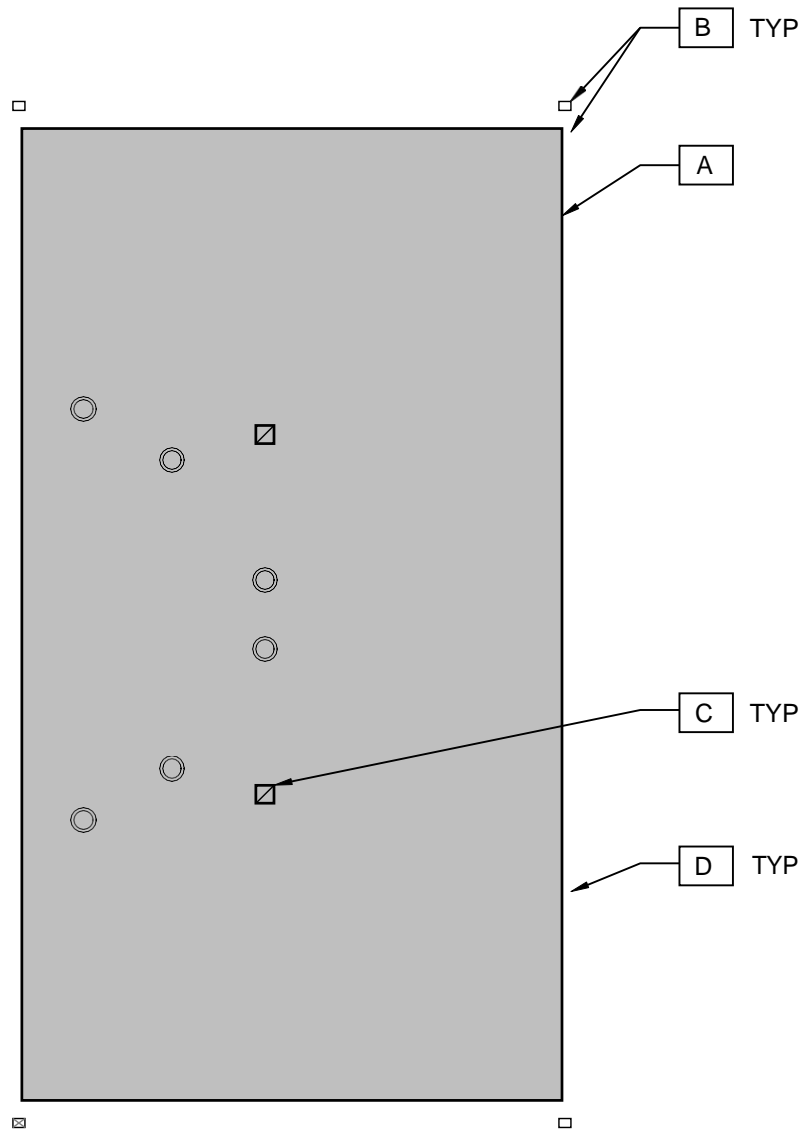
- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

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- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

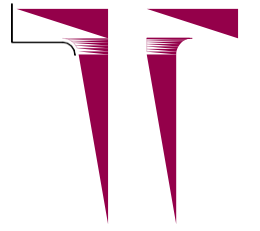
- 1. REFER TO SHEET G001 FOR PLAN NOTES.



1 ROOF PLAN - 556/558 S CARR AVE

Scale: 3/32" = 1'-0"

NORTH



Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
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BCHA EXTERIOR REPAIRS

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Rev.	Desc.	Date

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 Designed By: K. Gromowski

A219

ROOF PLAN - L.V. II

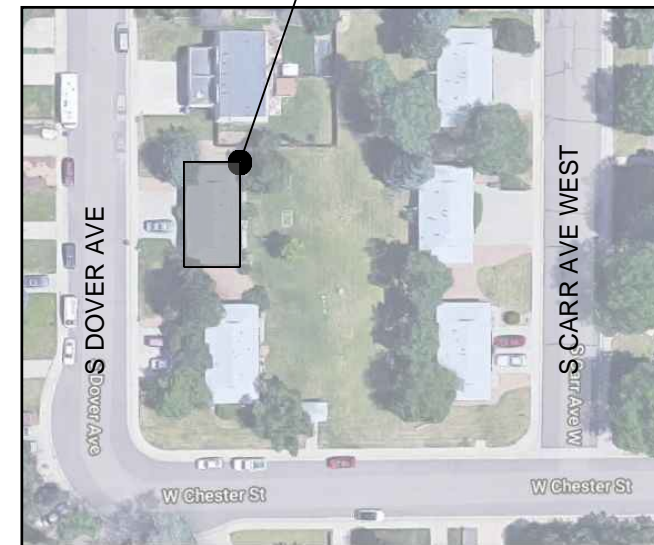
PROJECT SITE



**OVERALL SITE MAP
 (N.T.S.)**

NORTH

**PROJECT SITE - 520/522 S
 DOVER AVE**



**SITE PLAN
 (N.T.S.)**

NORTH

LEGEND

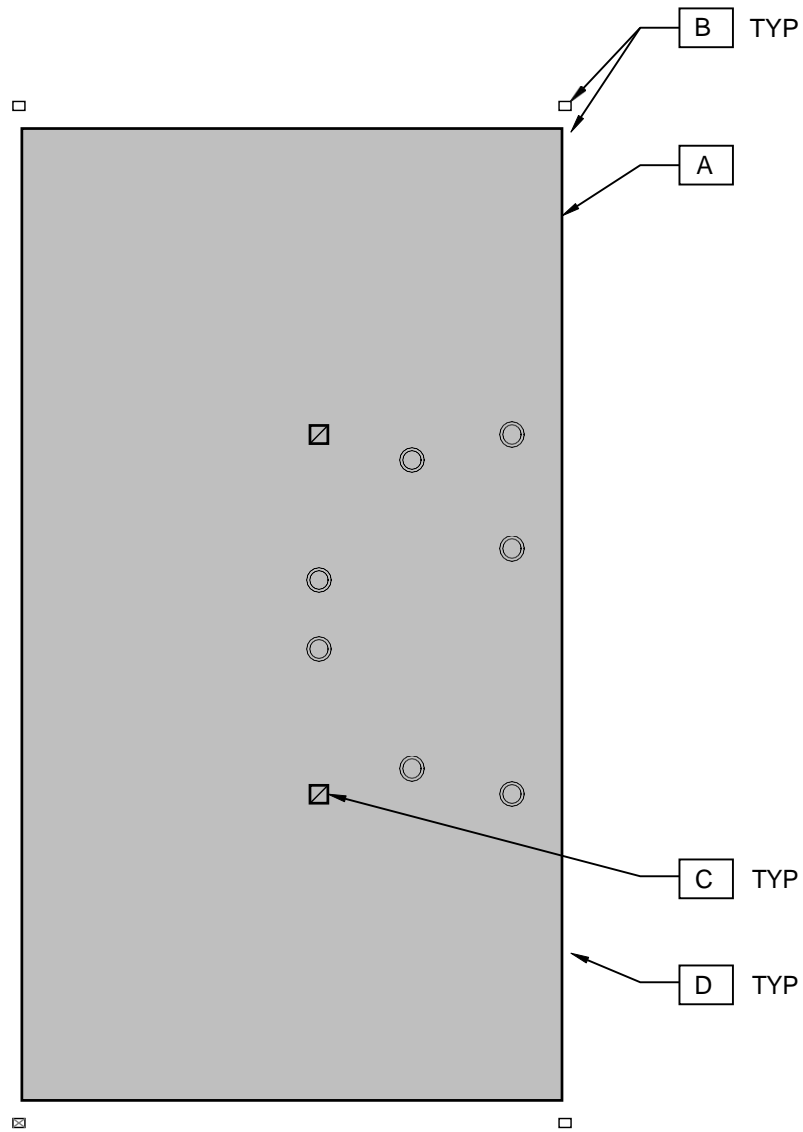
- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ☒ DOWNSPOUT
- ▣ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

REPAIR KEY NOTES:

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- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

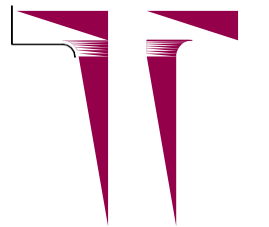
- 1. REFER TO SHEET G001 FOR PLAN NOTES.



1 ROOF PLAN - 520/522 S DOVER AVE

Scale: 3/32" = 1'-0"

NORTH



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BCHA EXTERIOR REPAIRS

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Rev.	Desc.	Date

Project No: F6206082
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 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A220

ROOF PLAN - L.V. II

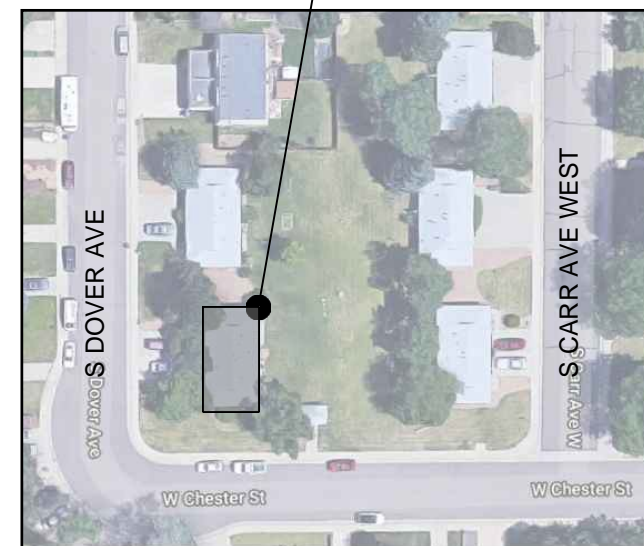
PROJECT SITE



**OVERALL SITE MAP
 (N.T.S.)**

NORTH

**PROJECT SITE - 550/552 S
 DOVER AVE**



**SITE PLAN
 (N.T.S.)**

NORTH

LEGEND

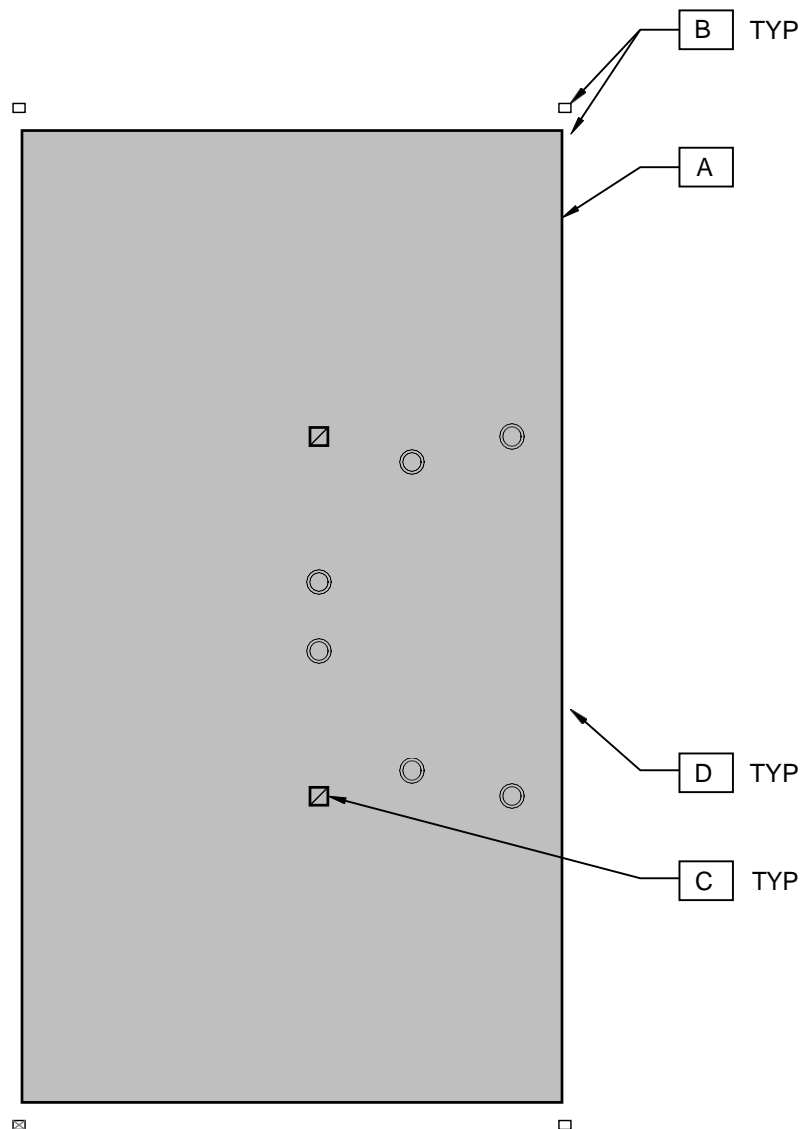
- PENETRATION - PREFAB. BOOT
- ⊙ PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ▧ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

REPAIR KEY NOTES:

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- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

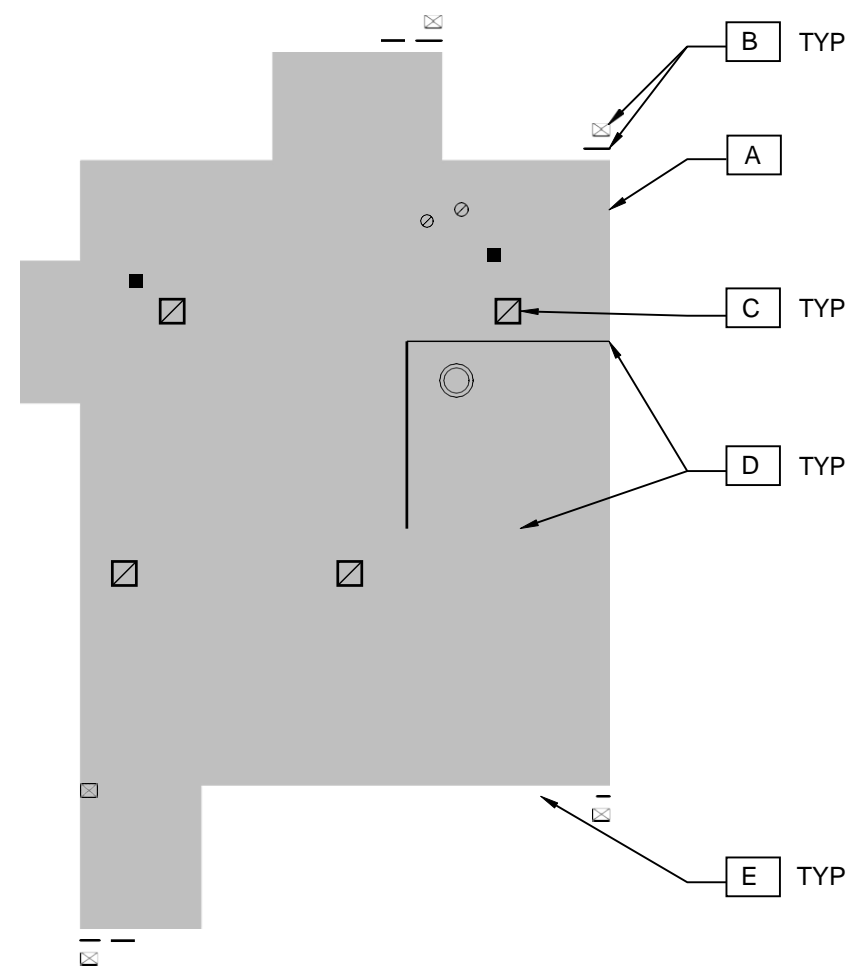
- 1. REFER TO SHEET G001 FOR PLAN NOTES.



1 ROOF PLAN - 550/552 S DOVER AVE

Scale: 3/32" = 1'-0"

NORTH



LEGEND

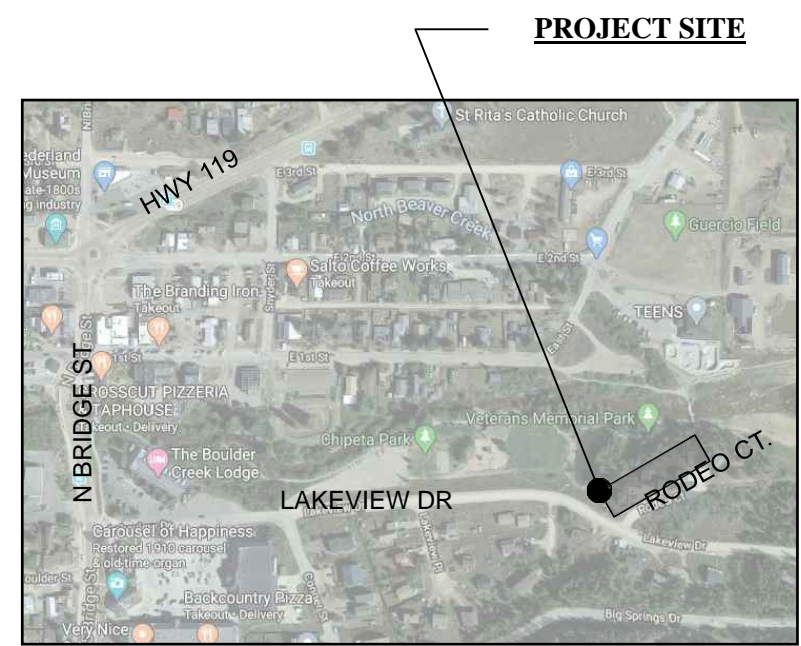
- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

REPAIR KEY NOTES:

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- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

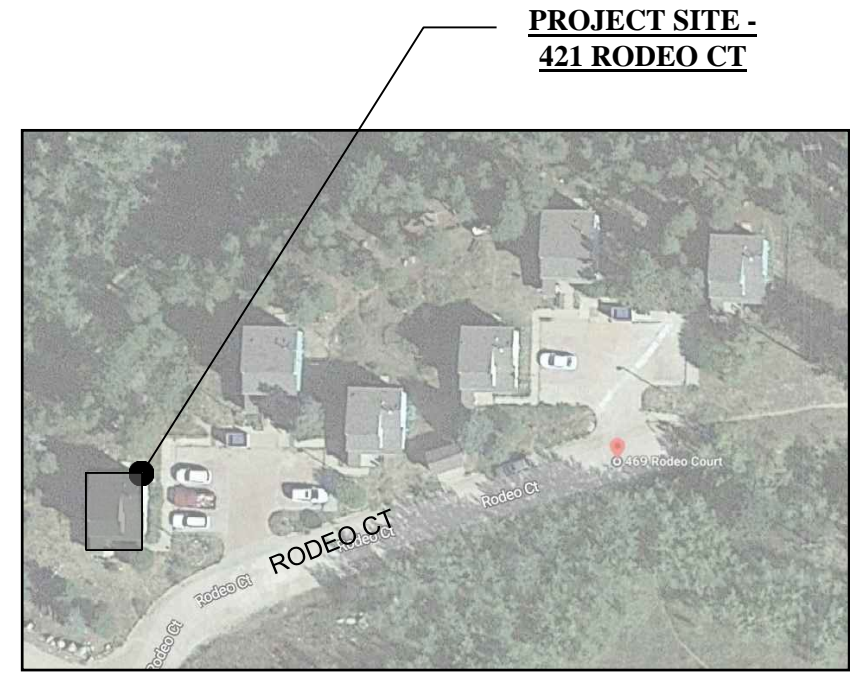
PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLANNOTES.



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

Terracon
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BCHA EXTERIOR REPAIRS

Boulder County Housing
 Authority (BCHA) Various
 Addresses
 Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

Project No: F6206082
 Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A221

ROOF PLAN - RODEO

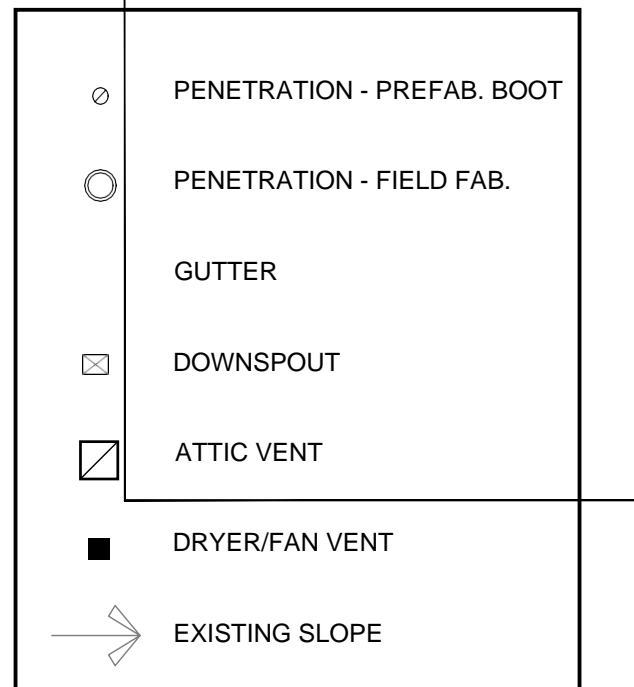
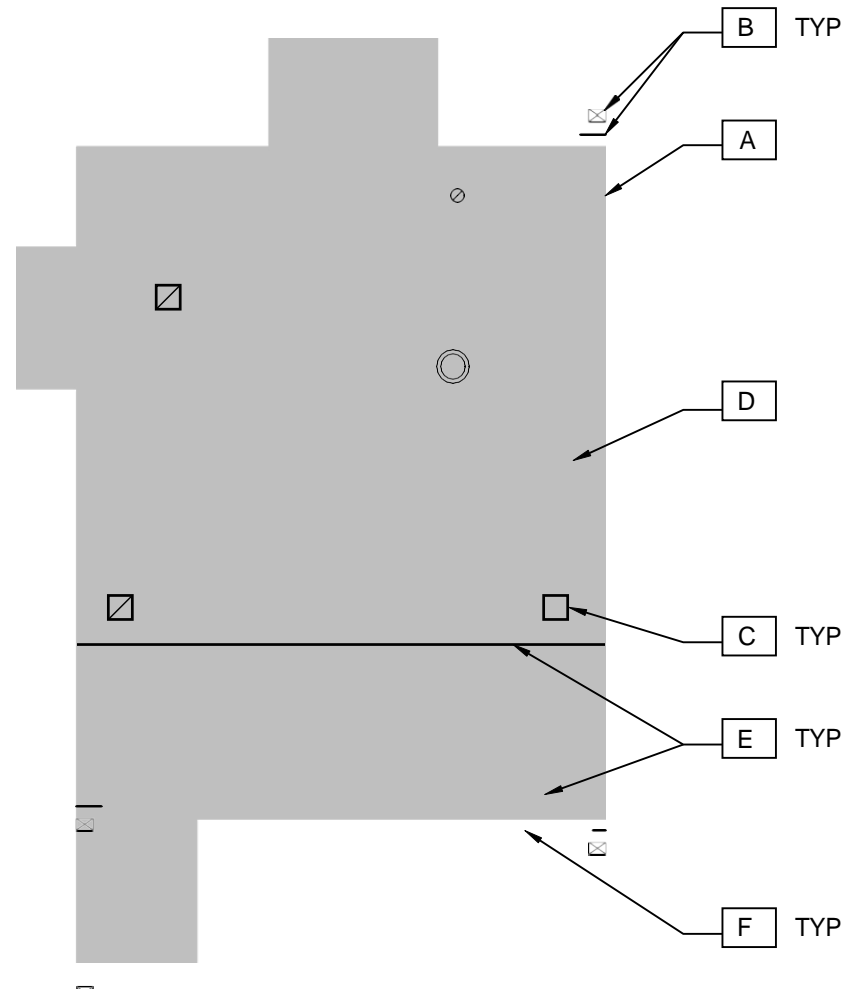
1 ROOF PLAN - 421 RODEO CT
 Scale: 1/8" = 1'-0" NORTH

1

ROOF PLAN - 431 RODEO CT

Scale: 1/8" = 1'-0"

NORTH



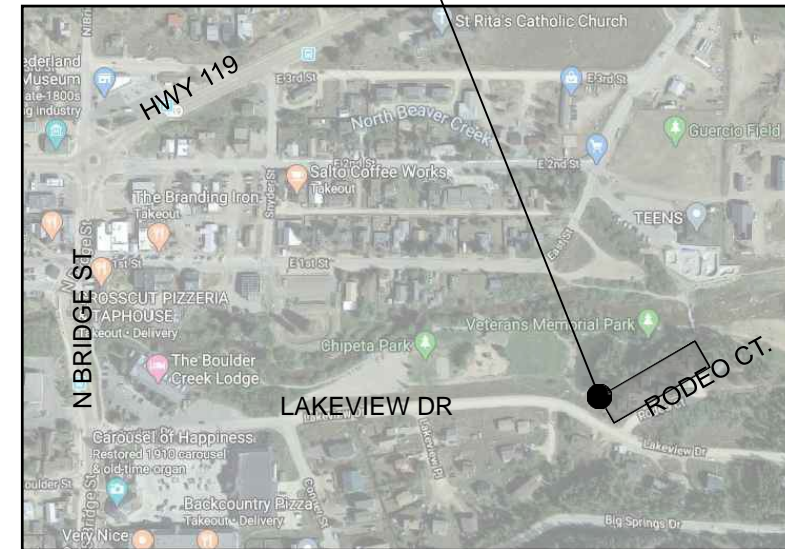
REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2- FEET MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. EXISTING ANTENNA, DETACH AND RESET.
- E. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
- F. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLAN NOTES.

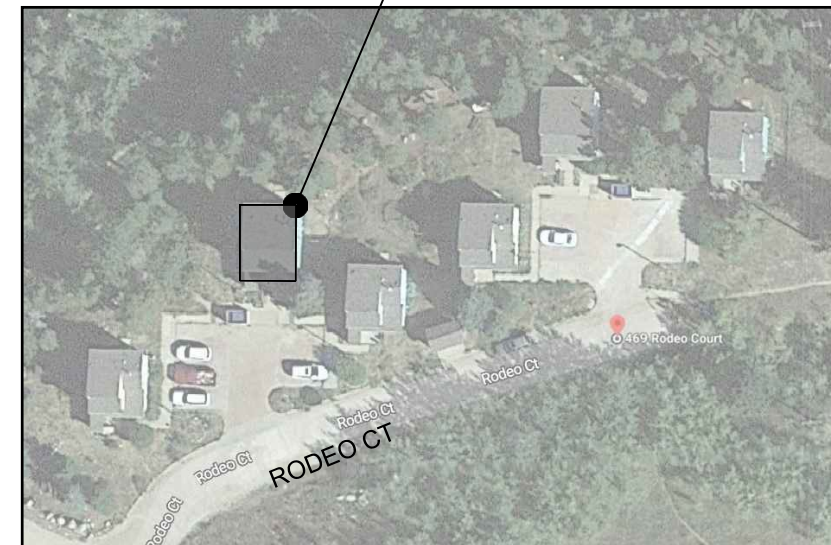
LEGEND PROJECT SITE



OVERALL SITE MAP (N.T.S.)

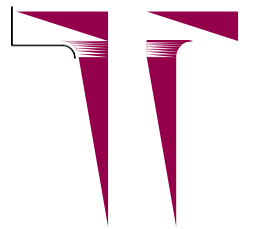
NORTH

PROJECT SITE - 431 RODEO CT



SITE PLAN (N.T.S.)

NORTH



Terracon

10625 W. I-70 FRONTAGE RD. N., SUITE 3
WHEAT RIDGE, CO 80033
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BCHA EXTERIOR REPAIRS

Boulder County Housing
Authority (BCHA) Various
Addresses
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Project No: F6206082
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Drawn By: K. Gromowski
Designed By: K. Gromowski

A222

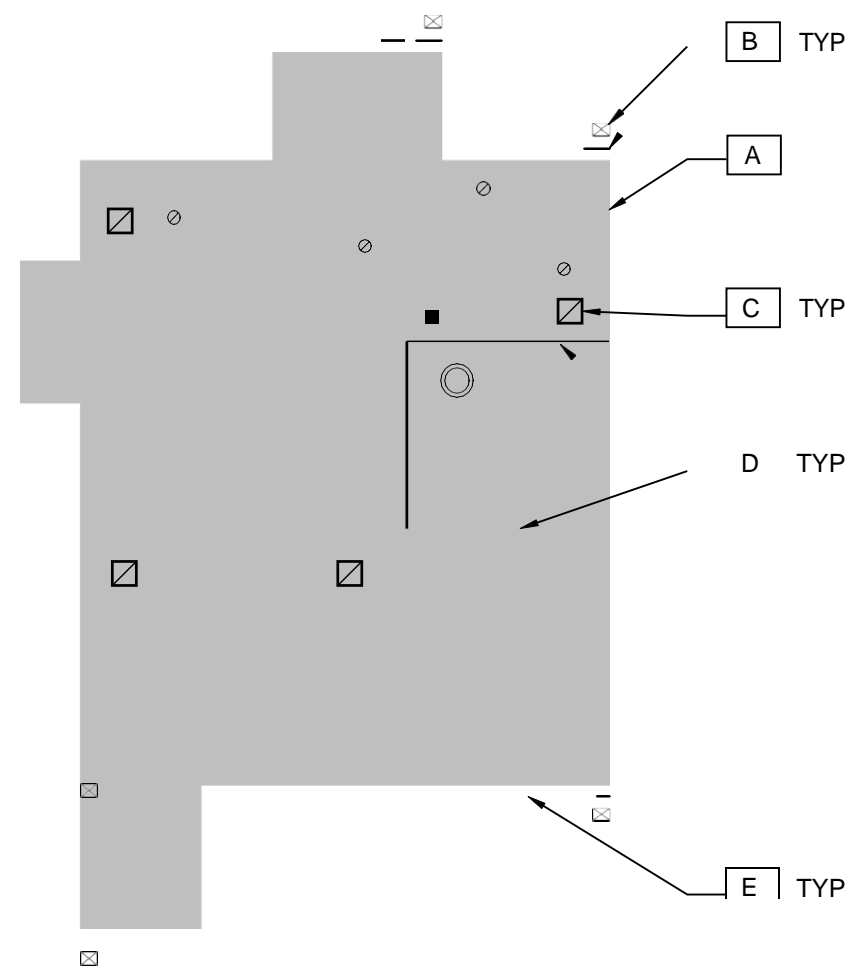
ROOF PLAN - RODEO

1

ROOF PLAN - 439 RODEO CT

Scale: 1/8"=1'-0"

NORTH



LEGEND

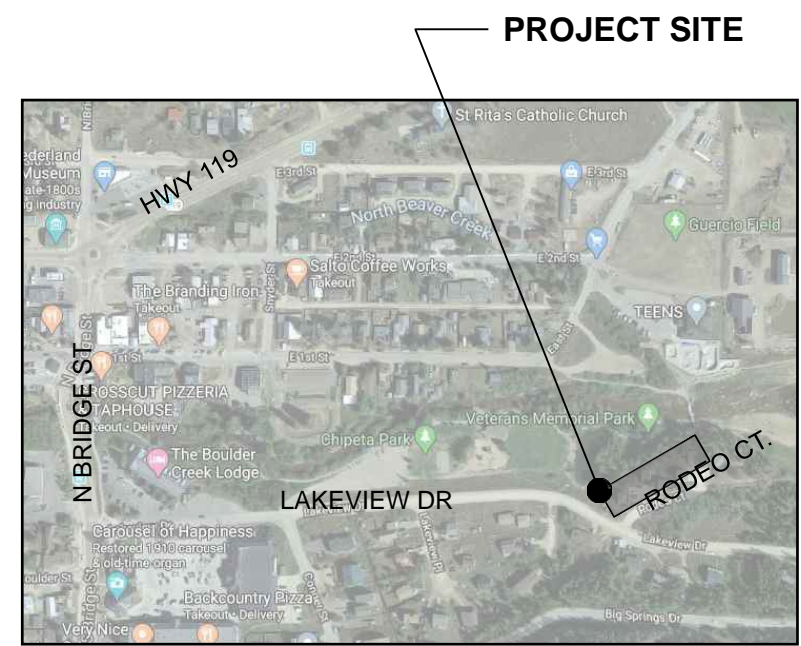
- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ ATTIC VENT
- DRYER/FAN VENT
- ➔ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

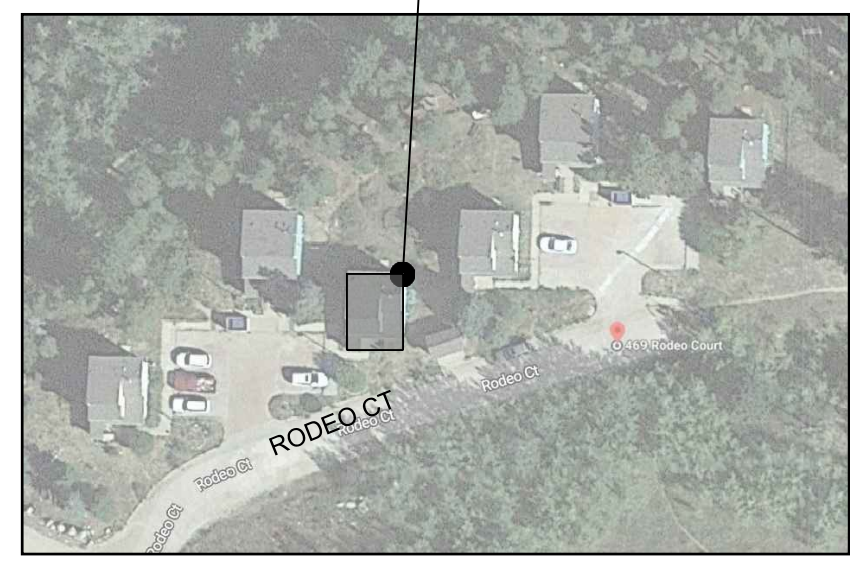
PLAN NOTES:

- 1. REFER TO SHEET G001 FOR PLAN NOTES.



OVERALL SITE MAP (N.T.S.)

NORTH



SITE PLAN (N.T.S.)

NORTH

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
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BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCHA) Various
 Addresses
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 Drawn By: K. Gromowski
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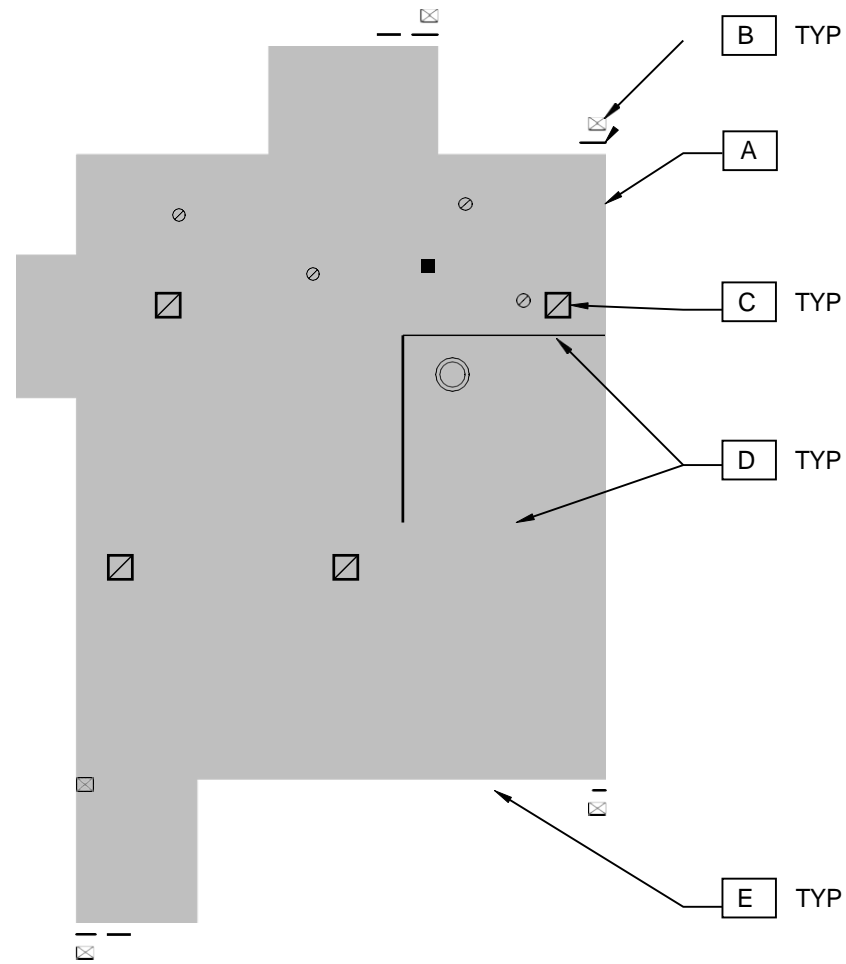
A223
 ROOF PLAN - RODEO

1

ROOF PLAN - 449 RODEO CT

Scale: 1/8" = 1'-0"

NORTH



LEGEND

- ⊙ PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

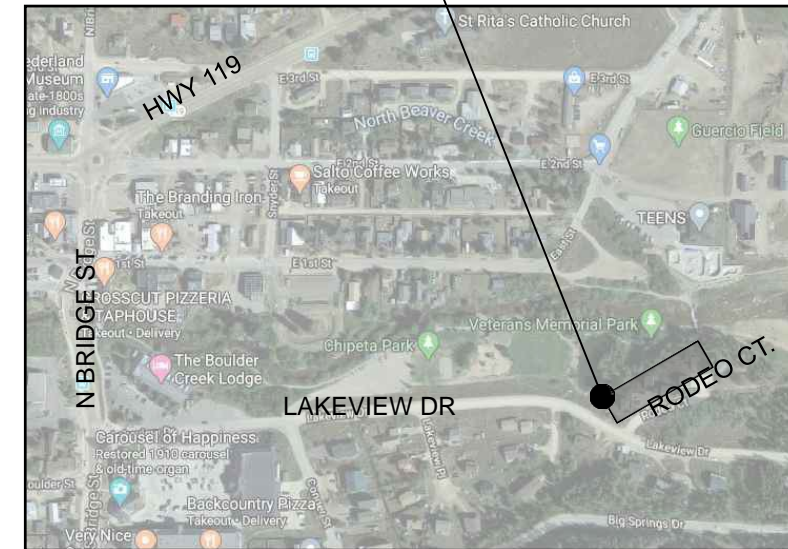
REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

1. REFER TO SHEET G001 FOR PLAN NOTES.

PROJECT SITE



OVERALL SITE MAP (N.T.S.)

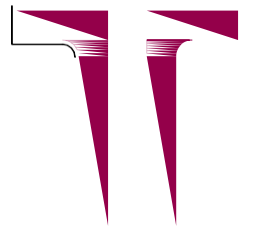
NORTH

PROJECT SITE - 449 RODEO CT



SITE PLAN (N.T.S.)

NORTH



Terracon

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BCHA EXTERIOR REPAIRS

Boulder County Housing
Authority (BCHA) Various
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Project No: F6206082
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Drawn By: K. Gromowski
Designed By: K. Gromowski

A224

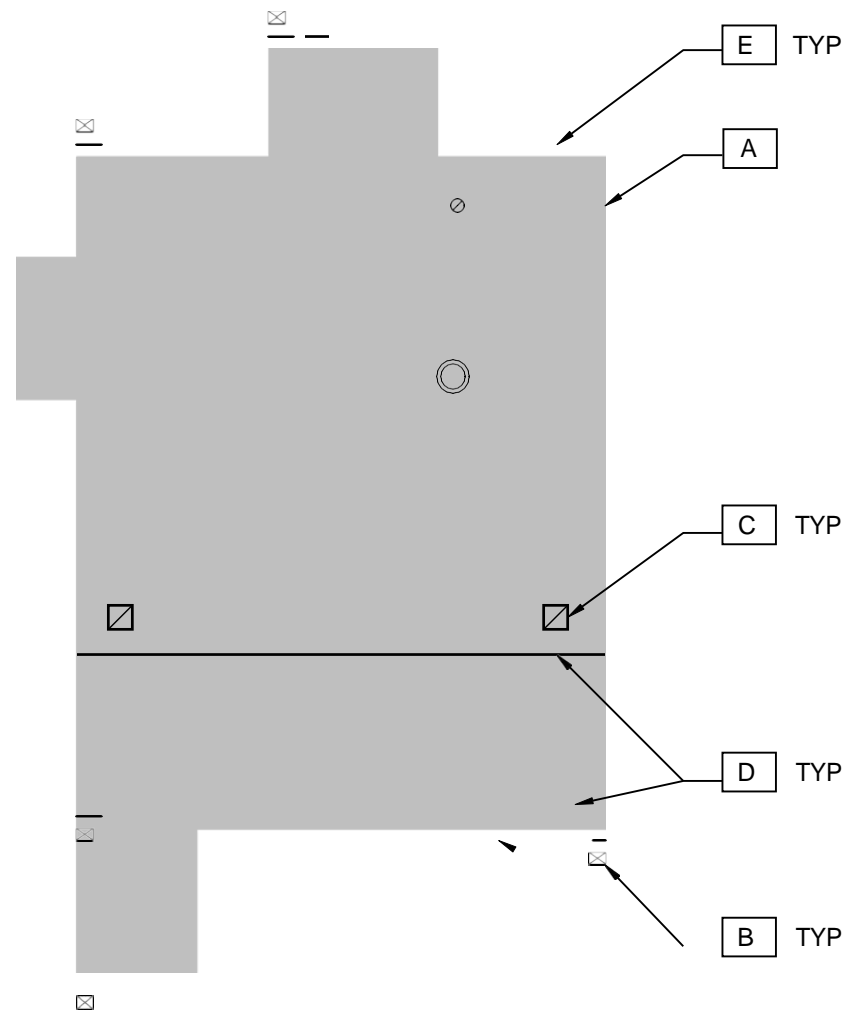
ROOF PLAN - RODEO

1

ROOF PLAN - 459 RODEO CT

Scale: 1/8" = 1'-0"

NORTH



LEGEND

- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ ATTIC VENT
- DRYER/FAN VENT
- ➔ EXISTING SLOPE

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
- B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
- C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
- D. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
- E. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

PLAN NOTES:

1. REFER TO SHEET G001 FOR PLAN NOTES.

PROJECT SITE



OVERALL SITE MAP (N.T.S.)

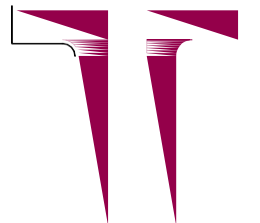
NORTH

PROJECT SITE - 459 RODEO CT



SITE PLAN (N.T.S.)

NORTH



Terracon

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BCHA EXTERIOR REPAIRS

Boulder County Housing
Authority (BCHA) Various
Addresses
Boulder County,

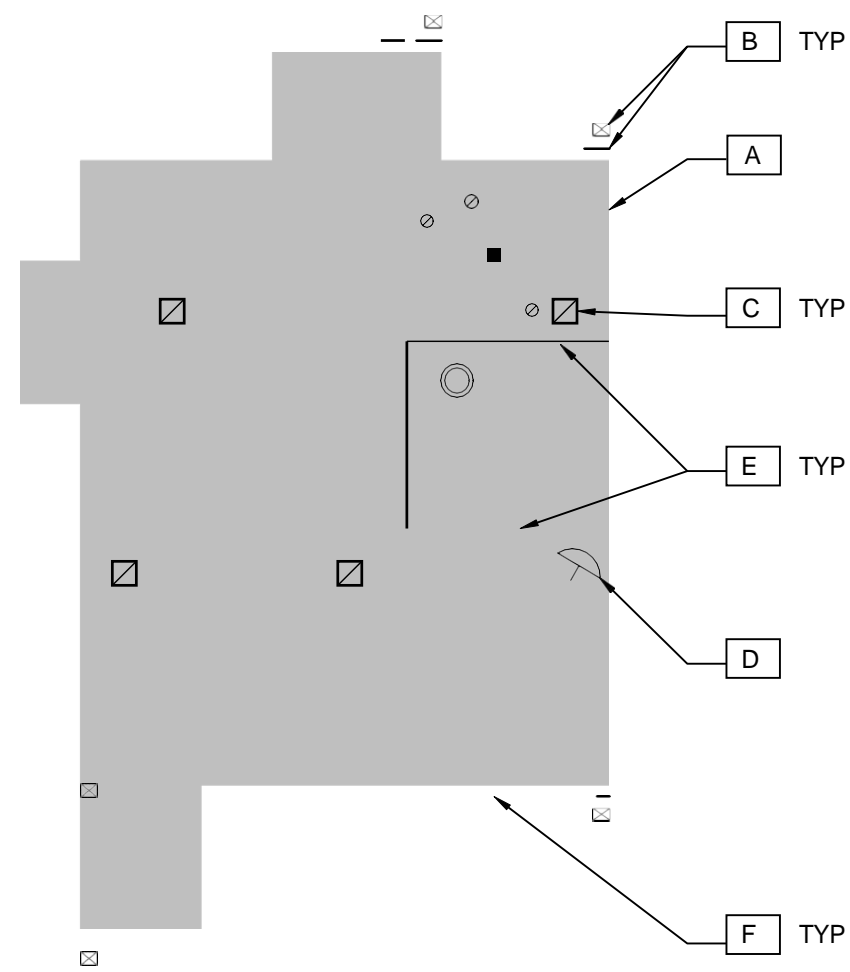
ISSUED FOR
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Rev.	Desc.	Date

Project No: F6206082
Issued for: Bidding
Date: 09/18/2020
Drawn By: K. Gromowski
Designed By: K. Gromowski

A225

ROOF PLAN - RODEO

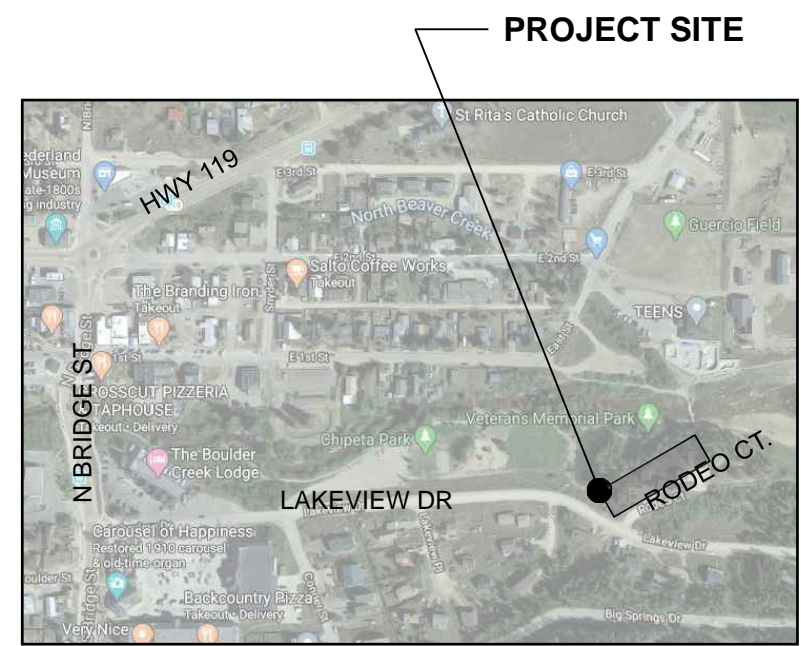


LEGEND

- PENETRATION - PREFAB. BOOT
- PENETRATION - FIELD FAB.
- GUTTER
- ⊠ DOWNSPOUT
- ⊠ ATTIC VENT
- DRYER/FAN VENT
- EXISTING SLOPE

- REPAIR KEY NOTES:
- A. REMOVE, DISCARD, AND REPLACE EXISTING SHINGLES, INCLUDING HIP/RIDGE SHINGLES, UNDERLAYMENT, PENETRATION FLASHINGS, STEP FLASHINGS, FLUE VENT CAPS, DRYER/FAN VENT CAPS, AND EDGE METALS, AT SHADED AREA. NEW UNDERLAYMENT TO INCLUDE ICE AND WATER SHIELD TO EXTEND 2-FOOT MINIMUM UPSLOPE OF EXTERIOR WALL. REFER TO SPECIFICATIONS FOR MATERIALS.
 - B. REMOVE, DISCARD, AND REPLACE EXISTING GUTTERS AS REQUIRED TO PERFORM THE WORK. CONNECT TO EXISTING DOWNSPOUTS.
 - C. REMOVE, DISCARD, AND REPLACE EXISTING ATTIC VENTS, REFER TO SPECIFICATIONS FOR MATERIALS.
 - D. EXISTING SATELLITE DISH, TO BE REMOVED BY OWNER PRIOR TO COMMENCEMENT OF THE WORK.
 - E. PROVIDE ADDITIONAL RIDGE, ATTIC, AND/OR SOFFIT VENTS AS REQUIRED TO PROVIDE NET FREE VENTILATION AREA IN ACCORDANCE WITH SECTION 1203.2 OF THE IBC. INSTALL ALL VENTILATION IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, INCLUDING ANY FLASHINGS, BAFFLES, ETC.
 - F. **ALTERNATE #2:** INSTALL GUTTER GUARDS AT REPLACEMENT GUTTERS, REFER TO SPECIFICATIONS FOR MATERIALS.

- PLAN NOTES:
1. REFER TO SHEET G001 FOR PLAN NOTES.



OVERALL SITE MAP (N.T.S.)

NORTH



PROJECT SITE - 469 RODEO CT

SITE PLAN (N.T.S.)

NORTH

Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
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BCHA EXTERIOR REPAIRS
 Boulder County Housing
 Authority (BCCHA) Various
 Addresses
 Boulder County,

ISSUED FOR BIDDING - NOT FOR CONSTRUCTION

Rev.	Desc.	Date

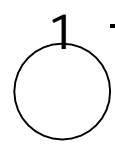
Project No: F6206082

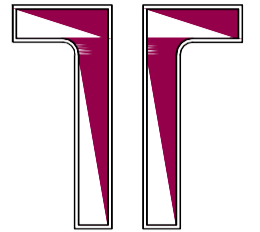
Issued for: Bidding
 Date: 09/18/2020
 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A226
 ROOF PLAN - RODEO

ROOF PLAN - 469 RODEO CT

Scale: 1/8" = 1'-0" NORTH





Terracon
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BCHA EXTERIOR REPAIRS

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Project No:	F6206082
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Drawn By:	K. Gromowski
Designed By:	K. Gromowski

4300
 ELEVATIONS - EMERY

LEGEND

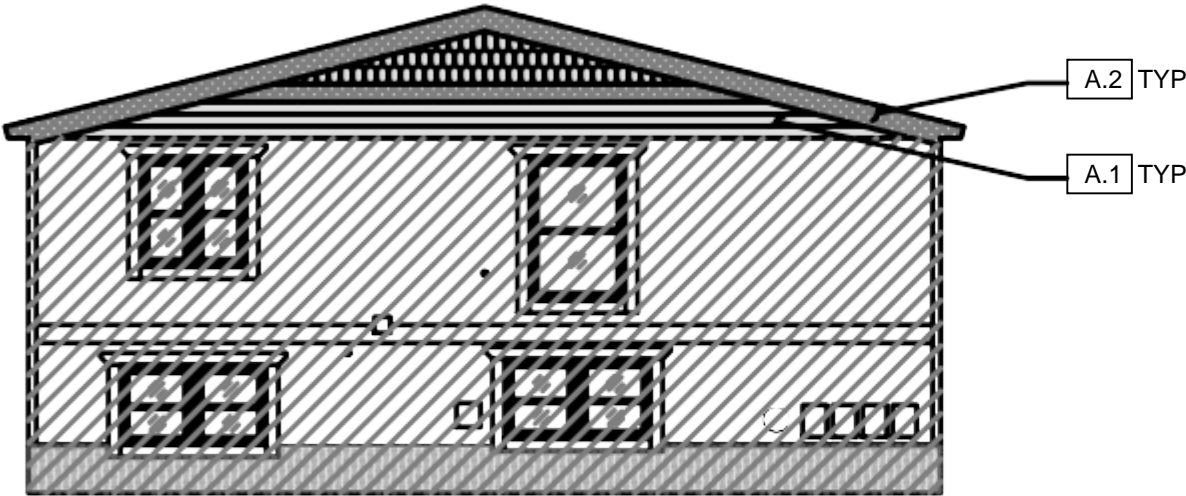
-  AREA NOT IN CONTRACT
-  BRICK
-  SIDING/TRIM, COLOR 1
-  SIDING/TRIM, COLOR 2

REPAIR KEY NOTES:

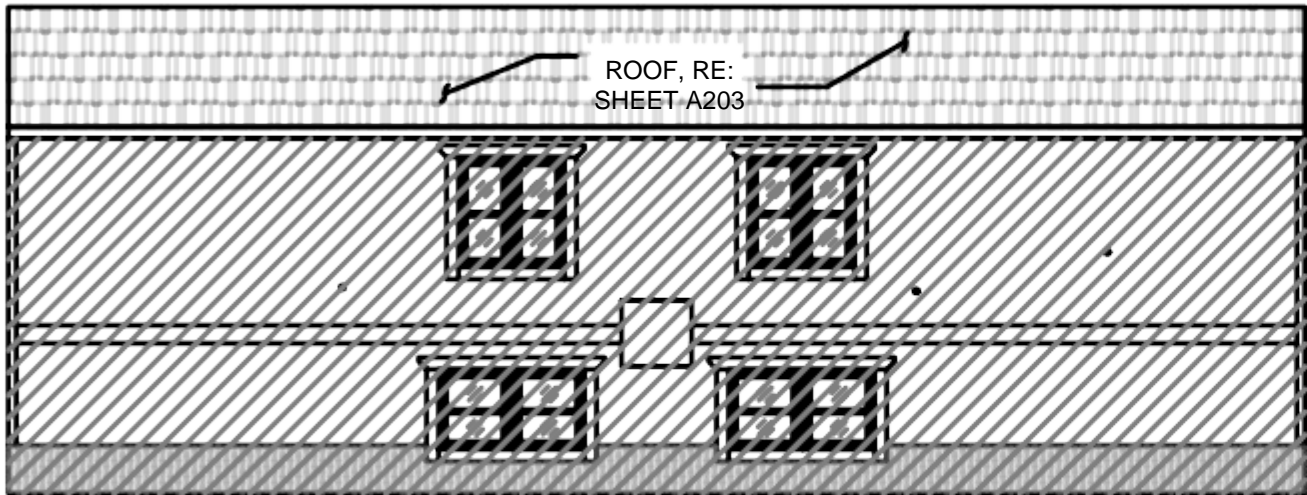
- A. REMOVE, DISCARD, AND REPLACE EXISTING SIDING AND TRIM, INCLUDING WEATHER-RESISTIVE BARRIER, PENETRATION FLASHINGS, AND WINDOW/DOOR FLASHINGS, AT SHADED AREA. PROVIDE TRIM BLOCK-OUTS FOR EACH PENETRATION. REFER TO SPECIFICATIONS FOR MATERIALS.
 1. FOLLOWING SIDING REPLACEMENT, PAINT SIDING/TRIM COLOR 1.
 2. FOLLOWING SIDING REPLACEMENT, PAINT SIDING/TRIM COLOR 2.

ELEVATION NOTES:

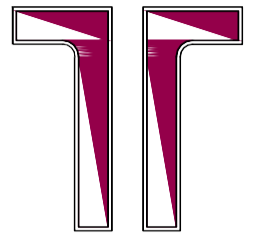
- 1. REFER TO SHEET G001 FOR ELEVATION NOTES.



1 WEST ELEVATION - 1410 EMERY CT
 Scale: 1/8"=1'-0"



2 NORTH ELEVATION - 1410 EMERY CT
 Scale: 1/8"=1'-0"



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

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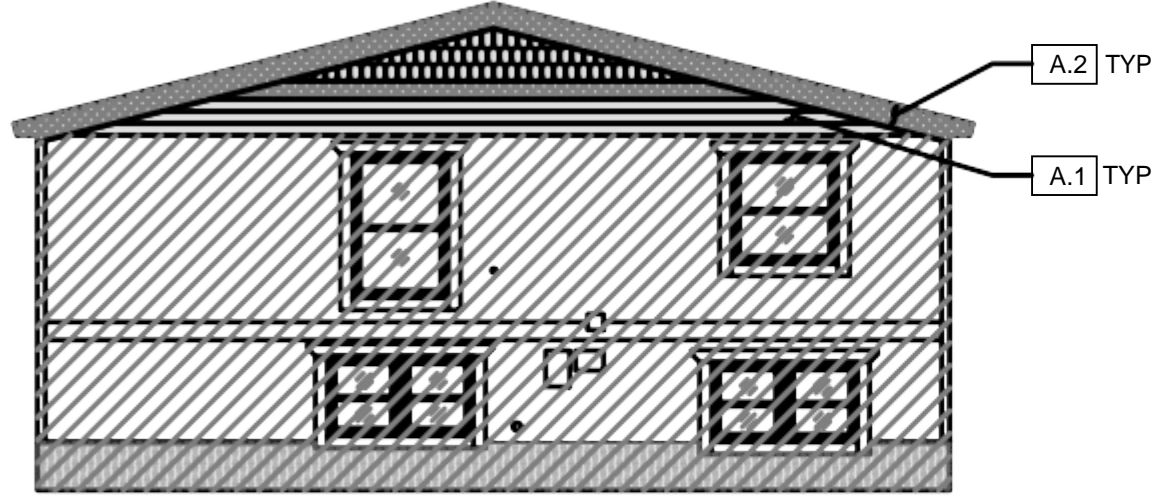
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ELEVATIONS - EMERY

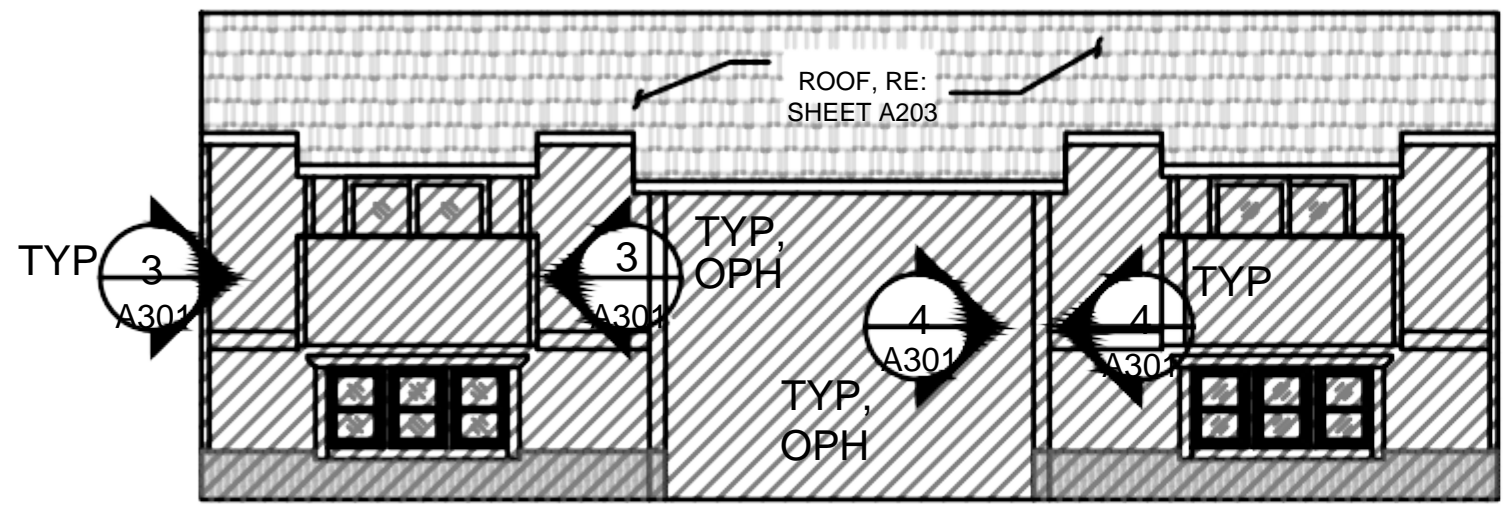
LEGEND

-  AREA NOT IN CONTRACT
-  BRICK
-  SIDING/TRIM, COLOR 1
-  SIDING/TRIM, COLOR 2

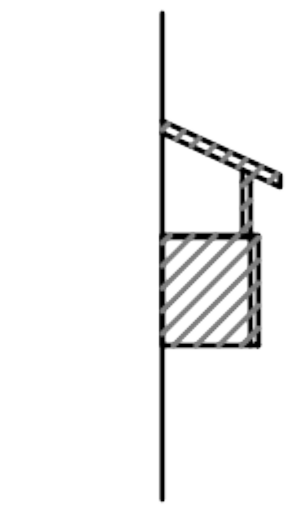
- REPAIR KEY NOTES:**
- A. REMOVE, DISCARD, AND REPLACE EXISTING SIDING AND TRIM, INCLUDING WEATHER-RESISTIVE BARRIER, PENETRATION FLASHINGS, AND WINDOW/DOOR FLASHINGS, AT SHADED AREA. PROVIDE TRIM BLOCK-OUTS FOR EACH PENETRATION. REFER TO SPECIFICATIONS FOR MATERIALS.
 1. FOLLOWING SIDING REPLACEMENT, PAINT SIDING/TRIM COLOR 1.
 2. FOLLOWING SIDING REPLACEMENT, PAINT SIDING/TRIM COLOR 2.
- ELEVATION NOTES:**
1. REFER TO SHEET G001 FOR ELEVATION NOTES.



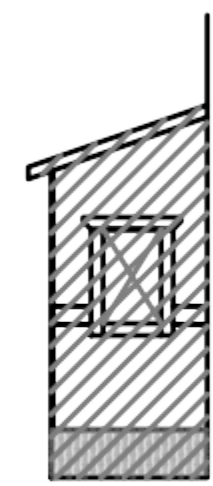
1 EAST ELEVATION - 1410 EMERY CT
 Scale: 1/8" = 1'-0"



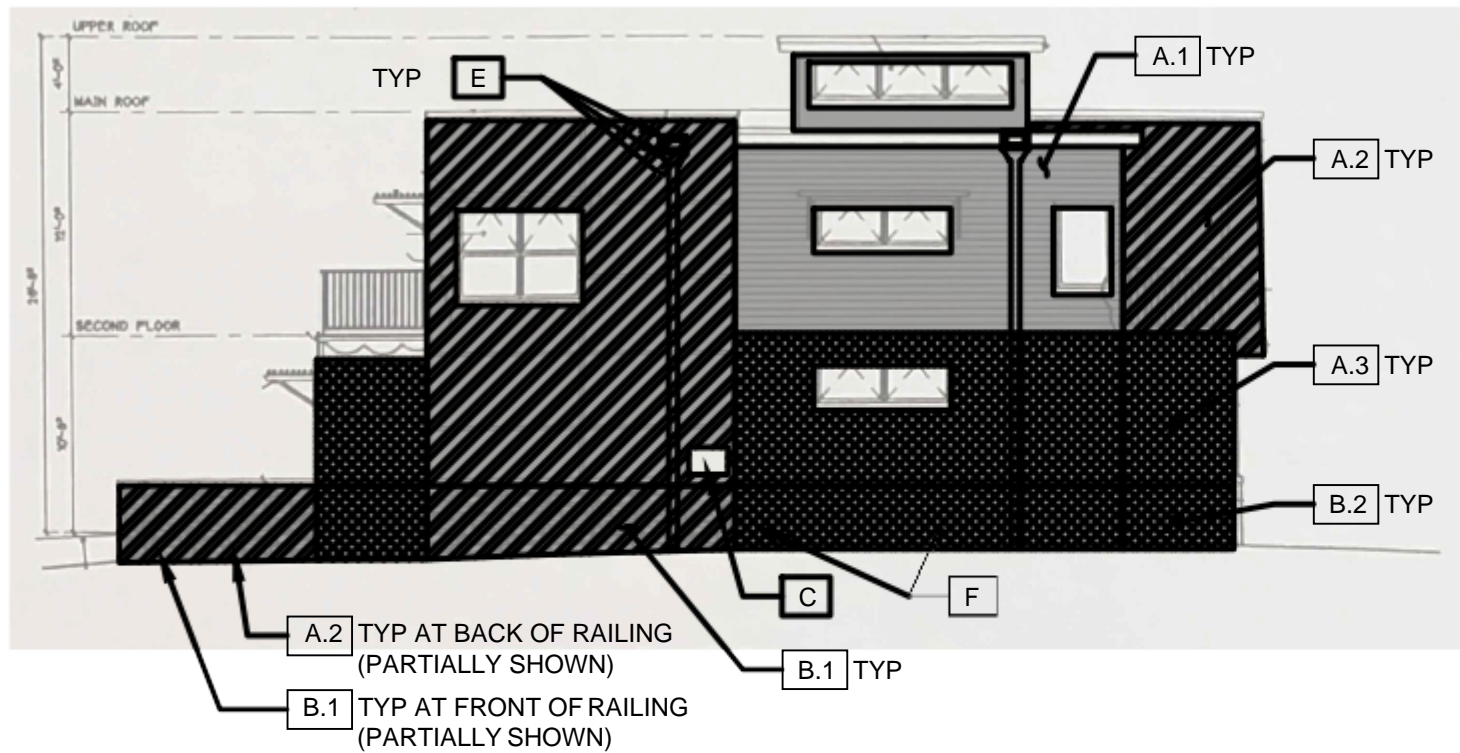
2 SOUTH ELEVATION - 1410 EMERY CT
 Scale: 1/8" = 1'-0"



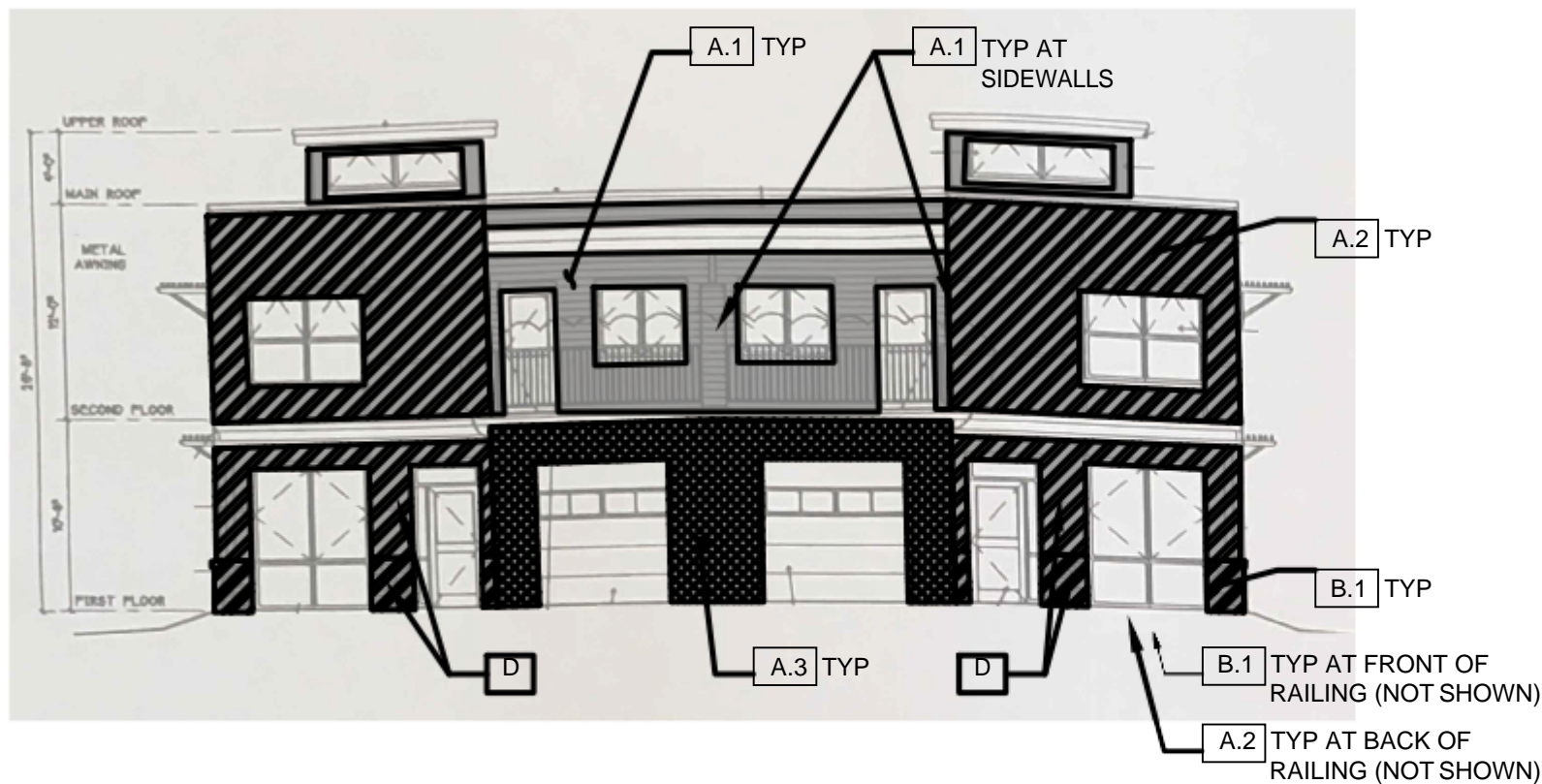
3 SIDE ELEV.
 Scale: 1/8" = 1'-0"



4 SIDE ELEV.
 Scale: 1/8" = 1'-0"



1 EAST ELEVATION - 900/904 AVALON AVE Scale: NTS



2 SOUTH ELEVATION - 900/904 AVALON AVE Scale: NTS

LEGEND

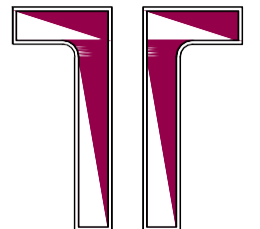
- AREA NOT IN CONTRACT
- 5" LAP SIDING (COLOR 3) WITH 4" TRIM (COLOR 4)
- 8" LAP SIDING (COLOR 3) WITH 4" TRIM (COLOR 4)
- 8" LAP SIDING (COLOR 5) WITH 4" TRIM (COLOR 6)

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SIDING AND TRIM, INCLUDING WEATHER-RESISTIVE BARRIER, PENETRATION FLASHINGS, AND WINDOW/DOOR FLASHINGS, AT SHADED AREA. TRIM LAYOUT AT WINDOW/DOOR PERIMETERS AND CORNERS TO MATCH EXISTING. PROVIDE TRIM BLOCK-OUTS FOR EACH PENETRATION. REFER TO SPECIFICATIONS FOR MATERIALS.
 1. FOLLOWING REPLACEMENT 5" LAP SIDING AND TRIM INSTALLATION, PAINT SIDING COLOR 3 AND TRIM COLOR 4.
 2. FOLLOWING REPLACEMENT 8" LAP SIDING AND TRIM INSTALLATION, PAINT SIDING COLOR 3 AND TRIM COLOR 4.
 3. FOLLOWING 8" LAP SIDING AND TRIM INSTALLATION, PAINT SIDING COLOR 5 AND TRIM COLOR 6.
- B. REMOVE, DISCARD, AND REPLACE EXISTING FAUX STONE CLADDING AND TRIM, INCLUDING WEATHER-RESISTIVE BARRIER, PENETRATION FLASHINGS, AND WINDOW/DOOR FLASHINGS, AT SHADED AREA. TRIM LAYOUT AT WINDOW/DOOR PERIMETERS AND CORNERS TO CONTINUE FROM SIDING ABOVE. PROVIDE TRIM BLOCK-OUTS FOR EACH PENETRATION. REFER TO SPECIFICATIONS FOR MATERIALS.
 1. FOLLOWING REPLACEMENT 8" LAP SIDING AND TRIM INSTALLATION, PAINT SIDING COLOR 3 AND TRIM COLOR 4.
 2. FOLLOWING 8" LAP SIDING AND TRIM INSTALLATION, PAINT SIDING COLOR 5 AND TRIM COLOR 6.
- C. EXISTING METER, SEAL/FLASH ANY ASSOCIATED PENETRATIONS TO THE WEATHER-RESISTIVE BARRIER.
- D. EXISTING ELECTRICAL FIXTURE/RECEPTACLE, DETACH AND RESET AS REQUIRED TO REPLACE SIDING/TRIM.
- E. EXISTING DOWNSPOUT, COLLECTOR HEAD, AND SCUPPER BEAUTY PLATE. DETACH AND RESET AS REQUIRED TO PERFORM THE WORK.
- F. EXISTING PENETRATION, FLASH TO WEATHER RESISTIVE BARRIER.

ELEVATION NOTES:

1. REFER TO SHEET G001 FOR ELEVATIONNOTES.



Terracon
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BCHA EXTERIOR REPAIRS

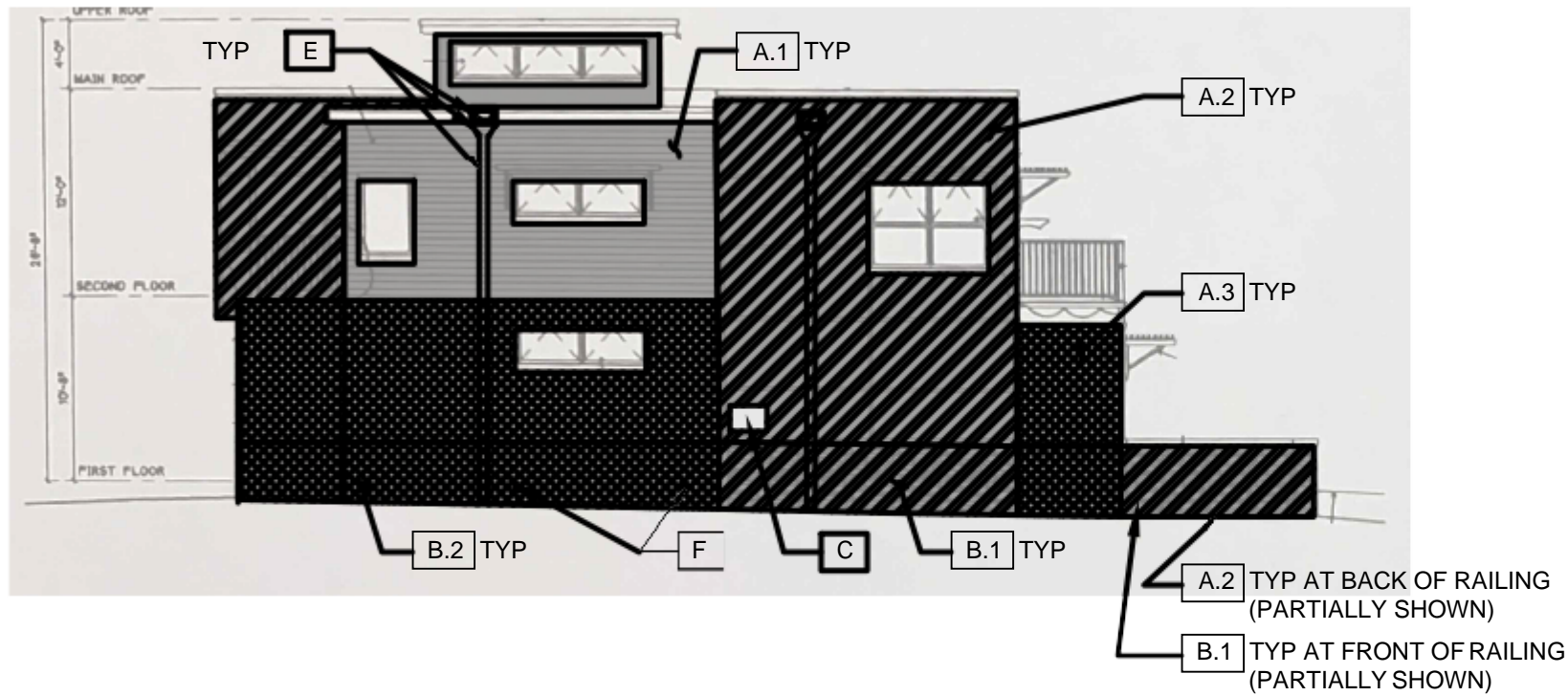
Boulder County Housing
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 NOT FOR
 CONSTRUCTION**





Rev.	Desc.	Date

Project No:	F6206082
Issued for:	Bidding
Date:	09/18/2020
Drawn By:	K. Gromowski
Designed By:	K. Gromowski

A302
 ELEVATIONS - AVALON



LEGEND

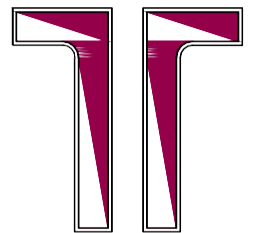
-  AREA NOT IN CONTRACT
-  5" LAP SIDING (COLOR 3) WITH 4" TRIM (COLOR 4)
-  8" LAP SIDING (COLOR 3) WITH 4" TRIM (COLOR 4)
-  8" LAP SIDING (COLOR 5) WITH 4" TRIM (COLOR 6)

REPAIR KEY NOTES:

- A. REMOVE, DISCARD, AND REPLACE EXISTING SIDING AND TRIM, INCLUDING WEATHER-RESISTIVE BARRIER, PENETRATION FLASHINGS, AND WINDOW/DOOR FLASHINGS, AT SHADED AREA. TRIM LAYOUT AT WINDOW/DOOR PERIMETERS AND CORNERS TO MATCH EXISTING. PROVIDE TRIM BLOCK-OUTS FOR EACH PENETRATION. REFER TO SPECIFICATIONS FOR MATERIALS.
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- F. EXISTING PENETRATION, FLASH TO WEATHER RESISTIVE BARRIER.

ELEVATION NOTES:

1. REFER TO SHEET G001 FOR ELEVATION NOTES.



Terracon
 10625 W. I-70 FRONTAGE RD. N., SUITE 3
 WHEAT RIDGE, CO 80033
 PH. (303) 423-3300 FAX. (303) 423-3353
 www.terracon.com

BCHA EXTERIOR REPAIRS

Boulder County Housing
 Authority (BCCHA) Various
 Addresses
 Boulder County,

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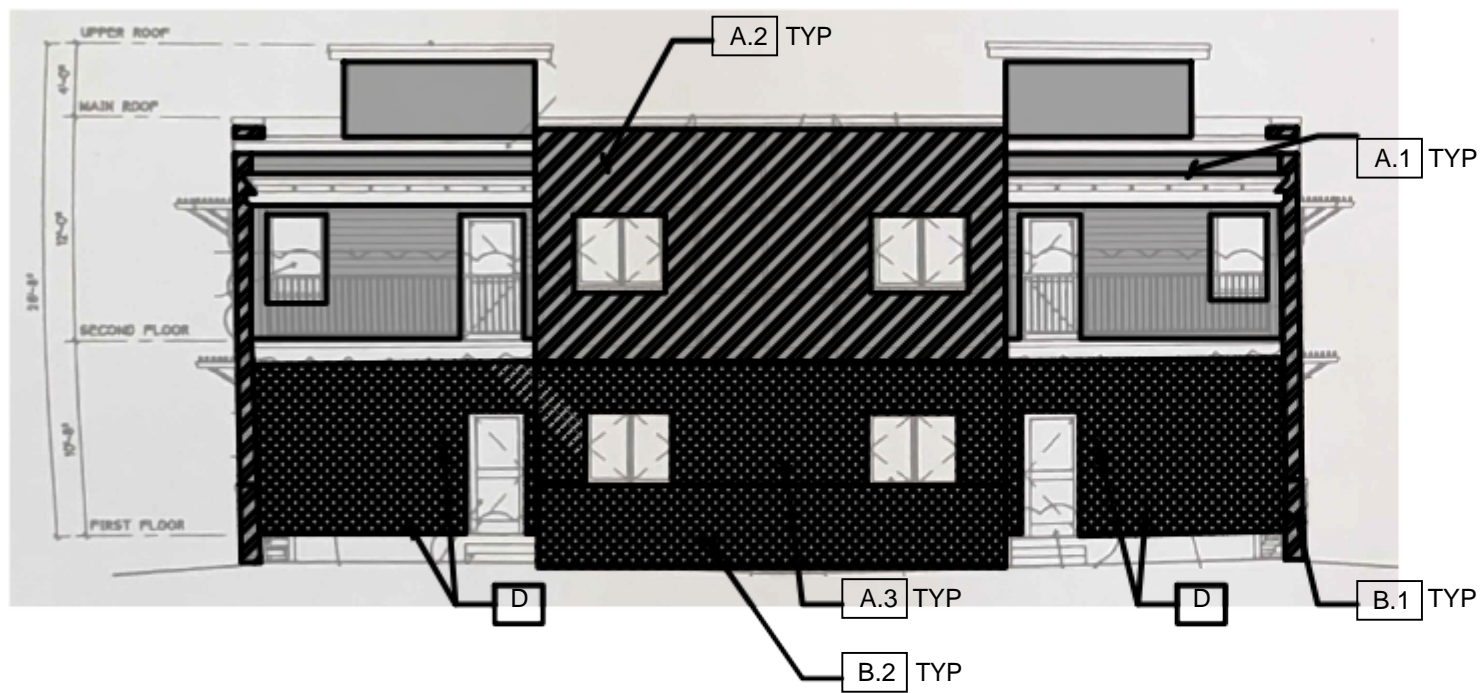
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ELEVATIONS - AVALON

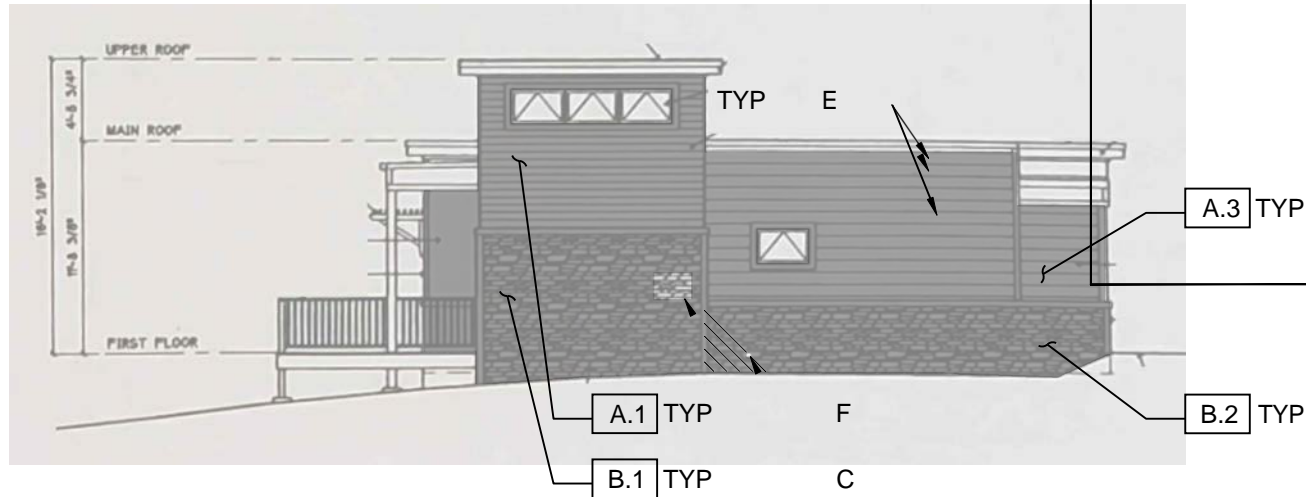
1 WEST ELEVATION - 900/904 AVALON AVE

Scale: NTS



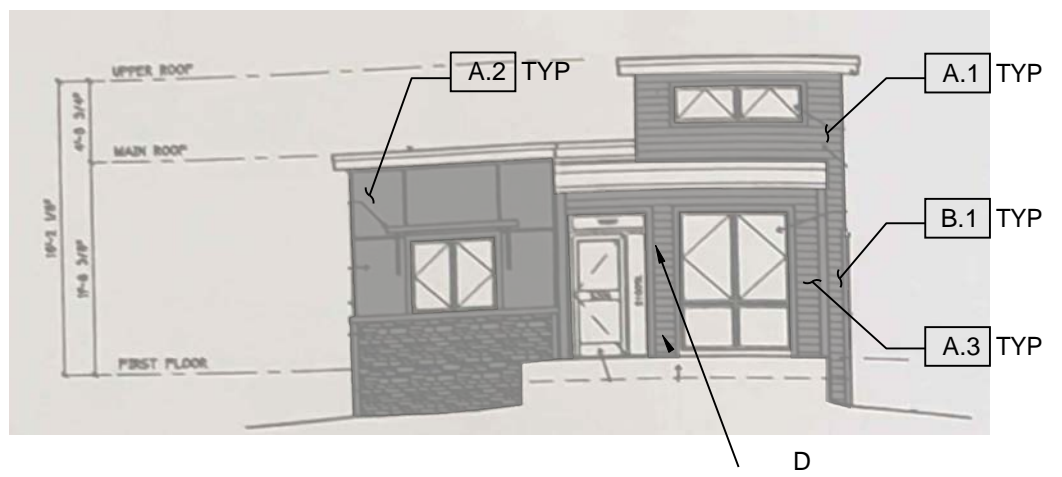
2 NORTH ELEVATION - 900/904 AVALON AVE

Scale: NTS



1 EAST ELEVATION - 908 AVALON AVE





Scale: NTS



2 SOUTH ELEVATION - 908 AVALON AVE

Scale: NTS

LEGEND

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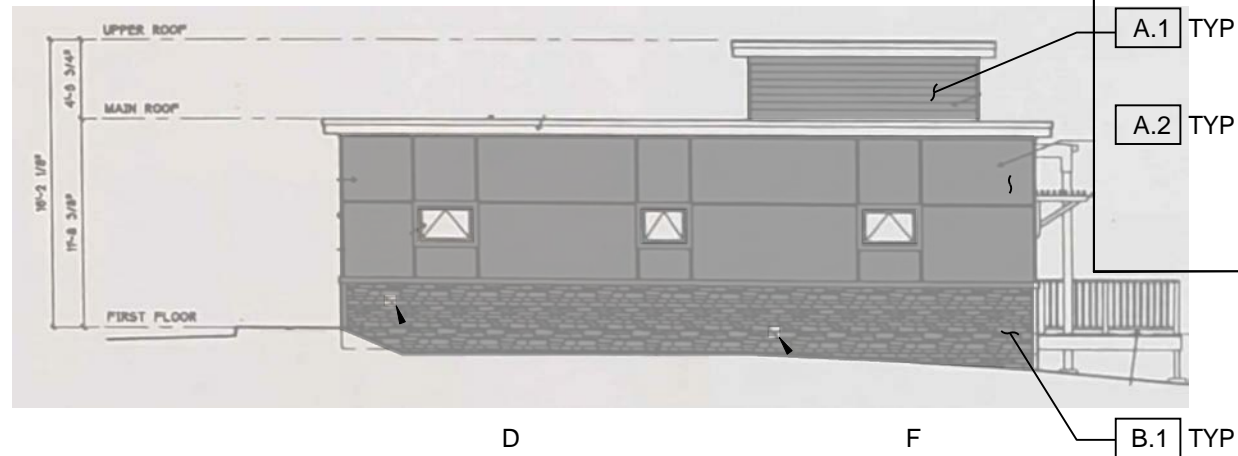
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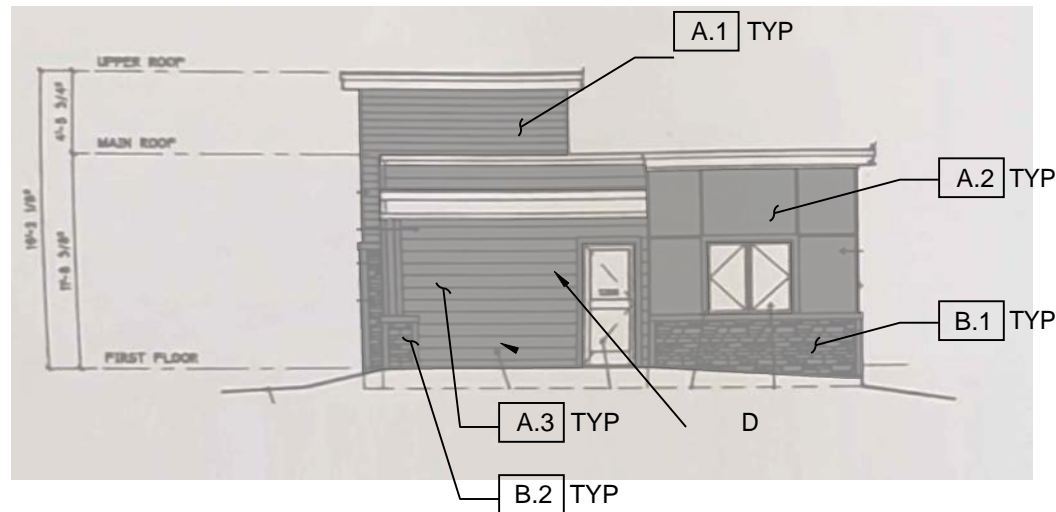
Project No: F6206082
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 Drawn By: K. Gromowski
 Designed By: K. Gromowski

A304
 ELEVATIONS - AVALON



1 WEST ELEVATION - 908 AVALON AVE




Scale: NTS



2 NORTH ELEVATION - 908 AVALON AVE

Scale: NTS

LEGEND

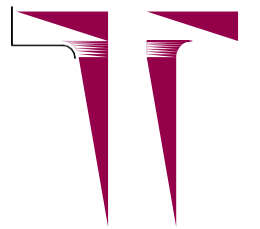
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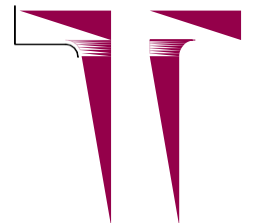
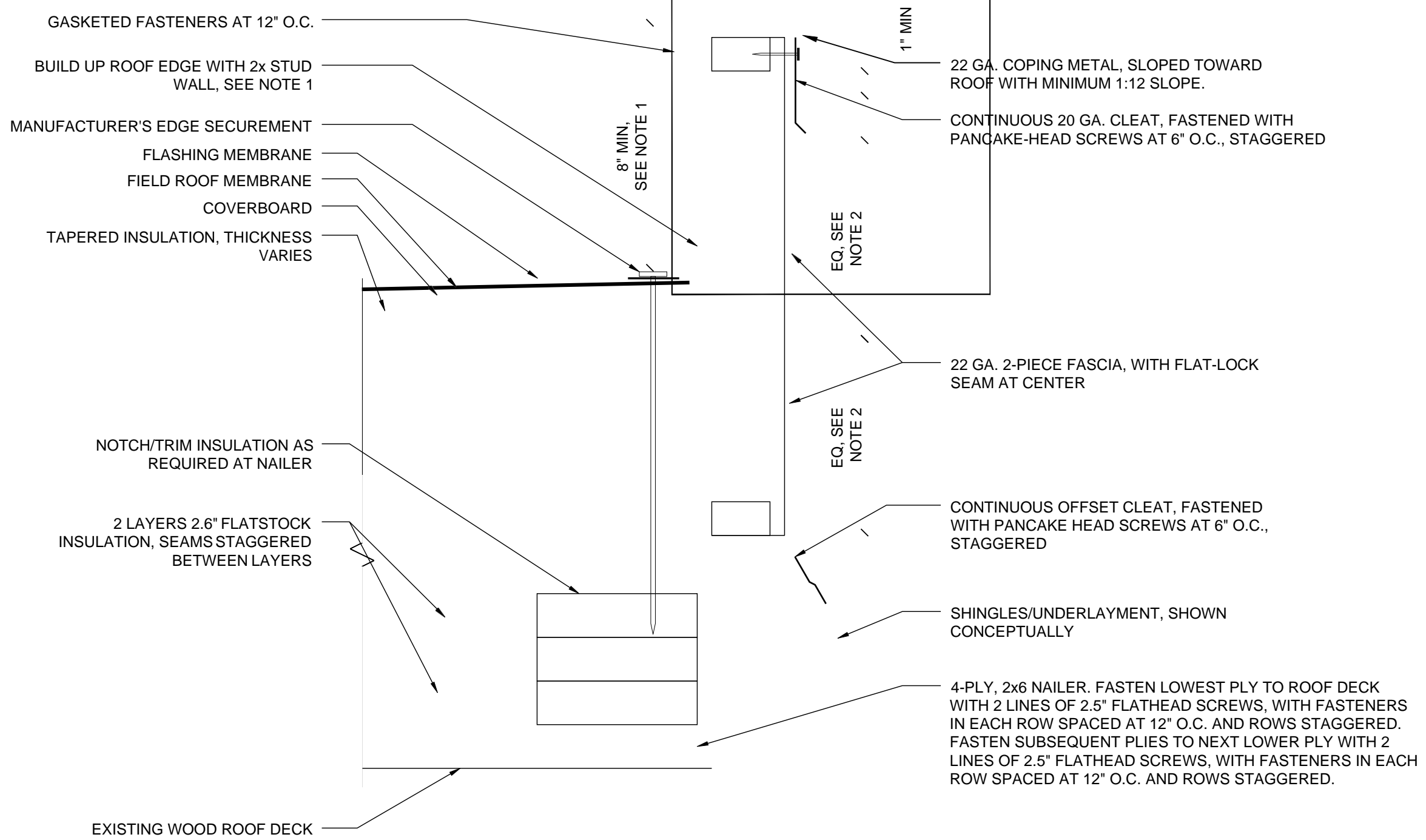
Date: 09/18/2020

Drawn By: K. Gromowski

Designed By: K. Gromowski

A305

ELEVATIONS - AVALON



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A500
 DETAILS

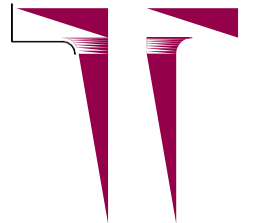
NOTES:

1. STUD WALL BUILD-UP AT ROOF EDGE TO BE A CONSISTENT HEIGHT AROUND ROOF PERIMETER, SUCH THAT THE REQUIRED 8" MINIMUM FREEBOARD IS ACHIEVED AT ALL LOCATIONS ON THE ROOF. BUILD STUD WALL WITH 2x LUMBER. FASTEN SILL PLATE TO EXISTING WALL WITH 1/2" Ø BY 2.5" LONG LAG SCREWS AT 32" O.C. WALL TO HAVE STUDS AT 16" O.C., AND TO BE SHEATHED ON BOTH SIDES WITH 1/2" NOMINAL THICKNESS OSB. AT THE SIDE OF THE WALL FACING THE LOW-SLOPE ROOF, EXTEND WALL SHEATHING TO THE TOP OF THE EXISTING ROOF DECK. FASTEN WALL SHEATHING WITH 8d NAILS AT 6" O.C. AT EDGES AND AT 12" O.C. IN THE FIELD OF THE SHEATHING.
2. DO NOT EXCEED 10" MAXIMUM FOR SINGLE PIECE OF FASCIA METAL.

1

COTTONWOOD - ALTERNATE #1 SECTION AT MANSARD ROOF

Scale: 3" = 1'-0"



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A501
DETAILS

DRIP EDGE FLASHING, FASTENED WITH TWO LINES OF PANCAKE HEAD SCREWS AT 6" O.C., STAGGERED

GUTTER AND GUTTER STRAPS, SHOWN CONCEPTUALLY. GUTTER SIZE AND TYPE TO MATCH EXISTING. REFER TO PLAN FOR ADDITIONAL REQUIREMENTS.

1" MIN

ADDITIONAL 22 GA. FASCIA METAL, FASTENED AT TOP EDGE WITH PANCAKE HEAD SCREWS AT 6" O.C.

CONTINUOUS 20 GA. CLEAT, FASTENED WITH PANCAKE HEAD SCREWS AT 6" O.C. STAGGERED

4-PLY, 2x6 NAILER. FASTEN LOWEST PLY TO ROOF DECK WITH 2 LINES OF 2.5" FLATHEAD SCREWS, WITH FASTENERS IN EACH ROW SPACED AT 12" O.C. AND ROWS STAGGERED. FASTEN SUBSEQUENT PLIES TO NEXT LOWER PLY WITH 2 LINES OF 2.5" FLATHEAD SCREWS, WITH FASTENERS IN EACH ROW SPACED AT 12" O.C. AND ROWS STAGGERED.

REPLACEMENT FASCIA, SIZE AND TYPE TO MATCH

EXISTING, SEE ROOF PLANS

STRIPPING PLY, WITH EDGE/LAP SEALANTS AS REQUIRED BY MANUFACTURER

FIELD ROOF MEMBRANE

COVERBOARD

TAPERED INSULATION, THICKNESS VARIES

2 LAYERS 2.6" FLATSTOCK INSULATION, SEAMS STAGGERED BETWEEN LAYERS

EXISTING STRUCTURE SURFACES

E #1 SECTION AT GUTTER

Scale: 3" = 1'-0"

EXISTING STRUCTURE SURFACE

**COTTON
WOOD -
ALTERNAT**



Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

INSURANCE AND W-9 REQUIREMENTS

INSURANCE REQUIREMENTS

General Liability \$1,000,000 Each Occurrence
 \$2,000,000 General Aggregate
 \$2,000,000 Products Completed Operations Aggregate
 3 years Products/Completed Operations

Excess or Umbrella Umbrella/Excess Liability insurance in the amount
 \$1,000,000.00, following form.

Automobile Liability \$1,000,000 Each Accident
 *Including Hired & Non-Owned Auto

Worker's Compensation and Employer's Liability

Workers' Compensation must be maintained with the statutory limits. Employer's Liability is required for minimum limits of \$100,000 Each Accident/\$500,000 Disease-Policy Limit/\$100,000 Disease-Each Employee.

Note that the above insurance amounts are the minimum required for this project. **Proof of current insurance must be provided with your proposal in the form of a sample certificate or your proposal will be deemed non-responsive.** If you require a waiver of insurance requirements (e.g. Workers' Compensation and sole proprietorships) you may request one in your response with an explanation.

Boulder County as Additional Insured: Boulder County shall be named as an additional insured for General Liability, Umbrella/Excess Liability, and Pollution Liability, as designated in this Contract. Additional insured shall be endorsed to the policy.

THE ADDITIONAL INSURED WORDING SHOULD BE AS FOLLOWS: County of

Boulder, State of Colorado, a body corporate and politic, is named as Additional Insureds.

In regards to General Liability, Umbrella/Excess Liability, and Pollution Liability: If any or all of these coverages are required above, additional insured status will be required at the time a contract is executed.

W-9 REQUIREMENT

Provide a copy of your business's W-9 with your proposal.



Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

SUBMITTAL SECTION

The proposer’s attention is especially called to the items listed below, which must be submitted in full as part of the PROPOSAL. Failure to submit any of the documents listed below as a part of your PROPOSAL, or failure to acknowledge any addendum in writing with your PROPOSAL, or submitting a proposal on any condition, limitation or provision not officially invited in this Request for Proposal (RFP) may be cause for rejection of the PROPOSAL.

THIS CHECKLIST MUST BE SUBMITTED AS PART OF YOUR PROPOSAL PACKAGE: Proposer will check each box indicating compliance:

INCLUDED	ITEM
	Name and Address of the Partners and Subcontractors if applicable
	A detailed project schedule with an all-inclusive total cost
	Information on the relevant experience of key personnel
	State your compliance with the Terms and Conditions in the Sample Contract contained in this RFP. Specifically list any deviations and provide justification for each deviation.
	Submit three references for similar projects your company has completed within the last three years and contact information
	Insurance Certificate
	W-9
	Sustainability Questionnaire
	Signature Page
	Addendum Acknowledgement(s) (If Applicable)



Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

EVALUATION CRITERIA

The proposals will be reviewed by a selection committee. The committee may request additional information from vendors or request interviews with one or more vendors. Final evaluation and selection may be based on, but not limited to, any or all of the following:

- Information Submitted in the proposal
- Qualifications and experience of the vendor
- Proposed pricing
- Proposed timeline
- Proposed materials

A scoring matrix with the order and priority of criteria to be used by the county in its evaluation and selection process is shown below:

Description	Points
Information Submitted in the proposal	5
Qualifications and experience of the vendor	5
Proposed pricing	5
Proposed timeline	5
Proposed materials	5
Total Possible	25



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SUSTAINABILITY QUESTIONNAIRE

Company Name: _____ Date: _____

This questionnaire is applicable to firms that provide services as well as those that provide goods. Please answer the questions to the best of your ability.

1. What sustainability certifications does your business have? Please check the items that apply:

- B-Corp
- Green Business Bureau
- Fair Trade USA
- Green C Certification
- None
- Other - describe any other certifications your company has related to sustainability.

2. Does your company have a sustainability vision/commitment/values statement or policy? Please check the items that apply:

- Our sustainability statement/policy describes our company's sustainability initiatives.
- We have formed an oversight committee to ensure the success of our sustainability policy.
- Our sustainability statement/policy describes how our company explores opportunities to work with communities, governments and non-governmental and professional organizations to help articulate, teach and advance the principles of sustainability.

- We are currently in the process of developing a sustainability statement/policy consistent with a commitment to promote environmental, economic, and social sustainability.
 - None
 - Other - Provide (or supply a link) your company's sustainability statement/policy.
-
-
-

3. What policies are in place to monitor and manage your supply chain regarding sustainability issues? Please select all that apply:

- We apply sustainability criteria when making purchasing decisions.
 - We partner with suppliers who share in our sustainability commitment and/or work with them to reduce the impact to the environment of our resource needs as well as improve worker conditions.
 - We purchase "green" (i.e. recyclable, reusable, non-toxic, compostable, fair trade and made from 100% post-consumer recycled materials) supplies, products, and materials.
 - We specify locally manufactured products in procuring goods.
 - We specify products that use the Electronic Products Environmental Assessment Tool (EPEAT) standards in procuring goods.
 - None.
 - Other – describe other ways your company monitors and manages your supply chain concerning environmental issues.
-
-
-

4. Does your company promote sustainable transportation in its operations? Please select all that apply:

- We own, rent, or lease electric fleet vehicles.
- We own, rent, or lease hybrid or natural gas fueled fleet vehicles.
- We encourage carpooling, public transportation, and using other alternative modes of transportation.
- We subsidize public transportation for employees.
- We have an established Green Transportation Plan (must describe below).
- We are developing a Green Transportation Plan (must describe below).
- We offer flexible hours, telecommuting, or a compressed work week.
- We utilize teleconference, video conference, WebEx or GoTo Meetings (or other similar conferencing services).

- None
- Other – describe other ways your company promotes sustainable transportation. If applicable, use this space to describe your company’s Green Transportation Plan (whether existing or in development).

5. What does your company do to minimize the environmental impacts associated with shipping? Please check the items that apply:

- We have established company policies and procedures that minimize the need for shipping in the first place (must describe below).
- We combine deliveries with customer visits.
- We consolidate deliveries.
- We use bike couriers for local delivery.
- We utilize electronic communications and electronic transfer of documents, such as e-mail, fax and Portable Document Format (PDF).
- We specify products that can be purchased locally within a 500-mile radius of the delivery location in procuring goods.
- We are currently evaluating what the company can do to minimize the environmental impacts associated with shipping (must describe below; no additional points awarded for providing this description).
- Our packaging/shipping materials are reusable.
- Our packaging/shipping materials are made from 100% post-consumer recycled materials.
- N/A
- Other – describe what your company does to minimize the environmental costs associated with shipping. If applicable, use this space to provide required description(s).

6. Has your company ever been cited for non-compliance of any law, regulation, ordinance, code, rule, standard, or policy regarding an environmental or safety issue? Please check the item that applies:

- No, my company HAS NOT been cited for non-compliance regarding an environmental or safety issue.

Yes, my company HAS been cited for non-compliance of an environmental or safety issue.

N/A State the reason, date and outcome of the citation:

7. What programs do you have, either in place or currently being planned, to promote resource efficiency? Examples include energy or waste audit programs. Please check the items that apply:

We have an established zero waste program.

We utilize a facilities energy management system.

We have adopted a climate action plan.

We have a water conservation program.

We have formed a sustainability committee to identify sustainable solutions for our company.

We are a member of various sustainability organizations.

We are recognized by peers and environmental organizations for providing leadership in Sustainability.

None

Other - what other programs do you have in place or planned for promoting resource.

Efficiency?

8. If your business's proposal involves the provision of a product, does the manufacturer of the product, whether your business or an outside entity, have a sustainability policy statement? Please check the item that applies:

No, the manufacturer of the product that I am proposing DOES NOT have a sustainability policy statement.

Yes, the manufacturer of the product that I am proposing HAS a sustainability policy statement.

Not applicable.

Provide Sustainability Policy Statement:

9. If your business's proposal involves the provision of a product, has the manufacturer of the product, whether your business or an outside entity, ever been cited for non-compliance of any law, regulation, ordinance, code, rule, standard, or policy regarding an environmental or safety issue? Please check the item that applies:

- No, the manufacturer of the product that I am proposing HAS NOT been cited for noncompliance regarding an environmental or safety issue.
- Yes, the manufacturer of the product that I am proposing HAS been cited for noncompliance regarding an environmental or safety issue.
- Not applicable.

Provide reason, date and outcome of the citation:

10. If your business's bid/proposal involves the provision of a product, has an environmental life-cycle analysis of the product that you are proposing been conducted by a certified testing organization, such as Green Seal, Energy Star, and Cradle to Cradle? Please check the item that applies.

- No, an environmental life-cycle analysis of the product that I am bidding/proposing HAS NOT been conducted by a certified testing organization, such as Green Seal.
- Yes, an environmental life-cycle analysis of the product that I am bidding/proposing HAS been conducted by a certified testing organization, such as Green Seal.
- Not applicable.

Provide certification:



Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
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SIGNATURE PAGE

Contact Information	Response
Company Name including DBA	
List Type of Organization (Corporation, Partnership, etc.)	
Name, Title, and Email Address of Person Authorized to Contract with Boulder County	
Company Address	
Company Phone Number	
Company Website	

By signing below, I certify that:

I am authorized to bid on my company's behalf.
 I am not currently an employee of Boulder County.
 None of my employees or agents is currently an employee of Boulder County.
 I am not related to any Boulder County employee or Elected Official.
 (Sole Proprietorships Only) I am not a Public Employees' Retirement Association (PERA) retiree.

**Signature of Person Authorized to Bid on
Company's Behalf**

Date

Note: If you cannot certify the above statements, please explain in a statement of explanation.

CONTRACT

DETAILS SUMMARY		
Oracle Contract Number		
Boulder County Housing Authority Contact Information		
Department	Boulder County Housing Authority (BCHA)	
Mailing Address	P.O. Box 471, Boulder, CO 80306	
Contract Contact	[Project Manager Name and Title] [Project Manager Email] HHScontracts@bouldercounty.org	
Invoice Contact	[Project Manager Email] HousingInvoices@bouldercounty.org	
Contractor Contact Information		
Contractor Name	[Contractor Name]	
Address	[Contractor Mailing Address]	
Contact	[Contractor Signatory Name and Title]	
Contact Email	[Contractor Signatory Email]	
Secondary Contact	[Secondary Contractor Contact, if applicable]	
Contract Term		
Start Date	[Start Date]	
Expiration Date	[End Date]	
Final End Date	[End Date plus 4 years]	
Contract Amount		
Contract Amount	[Contract Amount]	Choose an item.
Brief Description of Work		
[Brief Description of Work - write out abbreviations]		
[Remove the note below if this is NOT a continuing services contract.]Note: For Continuing Services Contracts, work shall be assigned on a project-by-project basis according to the terms of this Contract. The Contract Amount is a not-to-exceed amount for the Contract Term. The cost of services shall be established on a project-by-project basis consistent with the terms of this Contract.		
Contract Documents		
a. Formal Procurement (RFP/Bid/SOQ) No. [7174-20] (the "Bid Documents") [remove if not applicable]		
b. Contractor's proposal in response to the Bid Documents (the "Proposal") [remove if not applicable]		
c. Project Details, including project-specific terms and a Scope of Work, attached as Exhibit A (the "Scope of Work") [remove if not applicable]		
d. Fee Schedule, attached as Exhibit B (the "Fee Schedule") [remove if not applicable]		
e. [add any additional documents]		
AUTHORITY INTERNAL USE ONLY		
Purchasing Details		
Bid Number	[7174-20]	
BOCC Bid Award Date	[Date formal bid was approved by BOCC]	
Bid Process Used	Choose an item.	
Purchasing Notes	[Document quotes obtained. Provide justification if lowest-priced vendor was not selected.]	
COVID-19	No	
Contract Notes (Additional information not included above)		

THIS CONTRACT ("Contract") is entered into by and between the Housing Authority of the County of Boulder, Colorado, a public body, corporate and politic ("Boulder County Housing Authority" or

"Authority") and [Contractor Name] ("Contractor"). Authority and Contractor are each a "Party," and collectively the "Parties."

In consideration of the mutual covenants contained in this Contract, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Incorporation into Contract: The **Details Summary** is incorporated into this Contract. The **Contract Documents** are incorporated into this Contract by reference, except to the extent that the Proposal, if any is incorporated, contains any obligations placed upon Authority and not otherwise contained in this Contract.

2. Work to be Performed: Contractor will provide all labor and equipment and do all tasks necessary and incidental to performing the work as described in the **Details Summary** and **Contract Documents** (the "Work"). Contractor will perform the Work (i) in a good and workmanlike manner, (ii) at its own cost and expense, (iii) in accordance with recognized industry standards of care, skill and diligence for the type of work being performed, and (iv) in strict accordance with the Contract. Authority and its representatives shall have access to the Work at all times.

a. Contractor shall supervise and direct the Work and shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

b. Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services necessary for the proper execution and completion of the Work. Contractor warrants that all materials incorporated into the Work will be new unless otherwise specified.

c. Contractor shall at all times enforce good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to such person. Contractor shall initiate, maintain, and supervise all safety precautions and programs in connection with the Work to ensure safe conditions on the premises at all times. Contractor shall comply with all laws, regulations, ordinances, rules, and orders of any public authority bearing on the safety of persons and property. In the event that Authority notifies Contractor of any unsafe conditions or practices, Contractor shall immediately take all actions required to remediate them at no expense to Authority. Authority reserves the right to immediately suspend the Work in the event of imminent hazard, as determined by Authority.

d. At all times, Contractor shall keep the premises free from accumulation of waste materials or rubbish caused by Contractor's operations. Upon completion of the Work, Contractor shall remove all of its waste materials and rubbish from the premises, as well as its tools, construction equipment, machinery and surplus materials.

e. Contractor shall confine operations on the premises to areas permitted by law, ordinances, permits, this Contract, and as directed by Authority, including storage of any materials or equipment.

f. Any claim for an increase in the **Contract Amount** shall be made and generally described by Contractor in writing and delivered to Authority promptly, in no event later than thirty (30) days after the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered to Authority within sixty (60) days after such occurrence and shall be accompanied by Contractor's written statement that the amount claimed covers all known amounts to which Contractor is entitled as a result of the occurrence of said event. All claims for increase in the **Contract Amount** shall be determined by Authority if the Parties are unable to otherwise reach agreement on the claim.

g. Before ordering any materials or doing any Work, Contractor shall verify all measurements for the Work and shall be responsible for the correctness of same.

3. Term of Contract: The **Contract Term** begins on the **Start Date** and expires on the **Expiration Date**, unless terminated sooner. All the Work must be performed during the **Contract Term**.

4. Payment for Work Performed: In consideration of the Work performed by Contractor, and subject to conditions contained in this Contract, Authority will pay an amount not to exceed the **Contract Amount** to Contractor in accordance with the **Contract Documents**.

5. Invoicing: Contractor will promptly provide a copy of its Form W-9 and invoice template to Authority upon request. Contractor must submit an invoice to the Authority by the fifteenth (15th) day of the month for completion of any Work performed in the prior calendar month. All invoices submitted require the following components: Contractor's name and address (submitted W-9 address must match remit address), detailed description of services, dates of services, itemization of labor and materials costs, "Bill to: Boulder County Housing Authority" language, payment remittance address, payer, name and address, date of invoice, unique invoice number, and total amount due. Contractor must send all completed invoices to the **Invoice Contact** in the **Details Summary**. Authority may require delivery of invoices by email. Failure to submit invoices in a timely manner and in accordance with the terms of this Contract may cause a delay in payment. Authority may recoup any damages incurred because of Contractor's failure to submit invoices pursuant to the terms of this paragraph. Authority's acceptance or payment of an invoice will not constitute acceptance of any Work performed under this Contract.

6. Extra Time to Complete the Work (Additional Time only): If Contractor cannot complete the Work by the **Expiration Date**, Contractor may request extra time to complete the Work. Authority, in its sole discretion, may grant Contractor additional time to complete the Work by sending a written notice of extension to Contractor. An extension of time to complete the Work will not entitle Contractor to additional compensation from Authority.

7. Extension of Contract Term (Additional Time and Work): Upon mutual agreement of the Parties, this Contract may be extended until the **Final End Date**. During any extended **Contract Term**, the terms of this Contract will remain in full force and effect, unless otherwise amended in writing by the Parties. Where the Contractor will provide additional services for additional compensation beyond the initial **Contract Amount**, the Parties must execute a written amendment before the then-current **Expiration Date**. If necessary, the written amendment will incorporate an updated Scope of Work and updated Fee Schedule as exhibits. Contractor must provide a current Certificate of Insurance to the Authority that complies with the **Insurance Requirements** of this Contract, if any, prior to any extended **Contract Term**.

8. Schedule of Work: Authority may designate the hours (on a daily or weekly basis) during which Contractor may perform the Work, strictly for the purposes of minimizing inconvenience to the Authority and interference with Authority operations. Contractor will otherwise set its own work schedule. Contractor shall promptly notify Authority of any aspect of the Work that will not be delivered or accomplished according to the initial schedule.

9. Indemnity: Contractor will be liable for any damages to persons or property caused by or arising out of the actions, obligations, or omissions of Contractor, its employees, agents, representatives or other persons acting under Contractor's direction or control in performing or failing to perform the Work under this Contract. Contractor will indemnify and hold harmless Authority, Boulder County, its elected officials and appointed department heads, and its employees, agents and representatives (the "indemnified parties"), from any and all liability, claims, demands, actions, damages, losses, judgments, costs or expenses, including attorneys' fees, which may be made or brought or which may result against any of the indemnified parties as a result or on account of the actions or omissions of Contractor, its employees, agents or representatives, or other persons acting under Contractor's direction or control. This indemnification obligation will extend to claims based on Contractor's unauthorized use or disclosure of confidential information and intellectual property infringement. Authority and Boulder County will not be obligated to indemnify or defend Contractor under any circumstances. Contractor's obligations under this provision shall survive expiration or termination of this Contract. Nothing contained in this Contract or the

Contract Documents is intended to limit or restrict the indemnification rights or obligations of any Party under this provision, or damages available for breaches of the obligations herein.

10. Nondiscrimination: Contractor will comply with the Colorado Anti-Discrimination Act, C.R.S. § 24-34-401, et seq., as amended, and all applicable local, State and Federal laws concerning discrimination and unfair employment practices. Authority prohibits unlawful discrimination on the basis of race, color, religion, gender, gender identity, national origin, age 40 and over, disability, socio-economic status, sexual orientation, genetic information, or any other status protected by applicable Federal, State or local law. Contractor must require that its subcontractors, if any, similarly comply with all applicable laws concerning discrimination and unfair employment practices.

11. Information and Reports: Contractor will provide to authorized Authority, Boulder County, State, and Federal government representatives all information and reports that may be required for any purpose authorized by law. Contractor will permit access to such representatives to Contractor's facilities, books, records, accounts, and any other relevant sources of information. Where information required by a representative is in the exclusive possession of a person or entity other than Contractor, Contractor must so certify to the Authority and explain what efforts it has made to obtain the information.

12. Independent Contractor: Contractor is an independent contractor for all purposes in performing the Work. None of Contractor, its agents, personnel or subcontractors are employees of the Authority for any purpose, including the Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, the Colorado Workers' Compensation Act, the Colorado Unemployment Insurance Act, and the Public Employees Retirement Association. Accordingly, Authority will not withhold or pay any income tax, payroll tax, or retirement contribution of any kind on behalf of Contractor or Contractor's employees. As an independent contractor, Contractor is responsible for employing and directing such personnel and agents as it requires to perform the Work. Contractor will exercise complete authority over its personnel and agents and will be fully responsible for their actions.

13. Termination

a. Breach: Either Party's failure to perform any of its material obligations under this Contract, in whole or in part or in a timely or satisfactory manner, will be a breach. The institution of proceedings under any bankruptcy, insolvency, reorganization or similar law, by or against Contractor, or the appointment of a receiver or similar officer for Contractor or any of its property, which is not vacated or fully stayed within thirty (30) days after the institution of such proceeding, will also constitute a breach. In the event of a breach, the non-breaching Party may provide written notice of the breach to the other Party. If the breaching Party does not cure the breach, at its sole expense, as reasonably determined by the non-breaching Party in its sole discretion, within thirty (30) days after delivery of notice, the non-breaching Party may exercise any of its remedies provided under this Contract or at law, including immediate termination of this Contract.

b. Non-Appropriation: The other provisions of this Contract notwithstanding, Authority is prohibited by law from making commitments beyond the current fiscal year. Payment to Contractor beyond the current fiscal year is contingent on the appropriation and continuing availability of funding in any subsequent year. Authority has reason to believe that sufficient funds will be available for the full **Contract Term**. Where, however, funds are not allocated for any fiscal period beyond the current fiscal year, Authority may terminate this Contract without penalty by providing seven (7) days' written notice to Contractor.

c. Convenience: In addition to any other right to terminate under this Section 13, Authority may terminate this Contract, in whole or in part, for any or no reason, upon seven (7) days' advance written notice to Contractor.

14. Contractor Obligations upon Termination or Expiration: By the **Expiration Date** or effective date of termination, if earlier, Contractor must (1) remove from Authority property all of its personnel,

equipment, supplies, trash and any hazards created by Contractor, (2) protect any serviceable materials belonging to the Authority, and (3) take any other action necessary to leave a safe and healthful worksite. Any items remaining on Authority property after the Expiration Date or the effective date of termination, if earlier, will be deemed abandoned by Contractor.

15. Payable Costs in Event of Early Termination: If Authority terminates this Contract before the **Expiration Date**, Contractor's payments (and any damages associated with any lawsuit brought by Contractor) are limited to only (1) payment for Work satisfactorily executed and fully and finally completed, as determined by Authority in its sole discretion, prior to delivery of the notice to terminate, and (2) the reasonable and actual costs Contractor incurred in connection with performing the Work prior to delivery of the notice to terminate. Contractor explicitly waives all claims it may have against the Authority for any other compensation, such as anticipatory profits or any other consequential, special, incidental, punitive or indirect damages.

16. Remedies for Non-Performance: If Contractor fails to perform any of its obligations under this Contract, Authority may, at its sole discretion, exercise one or more of the following remedies (in addition to any other remedies provided by law or in this Contract), which shall survive expiration or termination of this Contract:

a. Suspend Performance: Authority may require that Contractor suspend performance of all or any portion of the Work pending necessary corrective action specified by the Authority and without entitling Contractor to an increase in compensation or extension of the performance schedule. Contractor must promptly stop performance and incurring costs upon delivery of a notice of suspension by the Authority.

b. Withhold Payment Pending Corrections: Authority may permit Contractor to correct any rejected Work at the Authority's discretion. Upon Authority's request, Contractor must correct rejected work at Contractor's sole expense within the time frame established by the Authority. Upon full and final completion of the corrections satisfactory to the Authority, Authority will remit payment to Contractor.

c. Deny Payment: Authority may deny payment for any Work that does not comply with the requirements of the Contract or that Contractor otherwise fails to provide or fully and finally complete, as determined by the Authority in its sole discretion. Upon Authority request, Contractor will promptly refund any amounts prepaid by the Authority with respect to such non-compliant Work.

d. Removal: Upon Authority's request, Contractor will remove any of its employees or agents from performance of the Work, if Authority, in its sole discretion, deems any such person to be incompetent, careless, unsuitable, or otherwise unacceptable.

17. Binding Arbitration Prohibited: Authority does not agree to binding arbitration by any extra-judicial body or person.

18. Conflicts of Interest: Contractor may not engage in any business or personal activities or practices or maintain any relationships that conflict in any way with the full performance of Contractor's obligations.

19. Notices: All notices provided under this Contract must be in writing and sent by Certified U.S. Mail (Return Receipt Requested), electronic mail, or hand-delivery to the other Party's **Contact** at the address specified in the **Details Summary**. For certified mailings, notice periods will begin to run on the day after the postmarked date of mailing. For electronic mail or hand-delivery, notice periods will begin to run on the date of delivery.

20. Statutory Requirements: This Contract is subject to all statutory requirements that are or may become applicable to counties or political subdivisions of the State of Colorado generally, including but not limited to: C.R.S. § 38-26-107, which requires withholding funds where the Authority receives a claim

for payment from a supplier or subcontractor of Contractor upon notice of final settlement (required for public works contracts that exceed \$150,000); C.R.S. § 8-17-101 et seq.; C.R.S. § 18-8-301, et seq.; and C.R.S. § 18-8-401, et seq.

21. Public Contracts for Services (C.R.S. §§ 8-17.5-101, et seq.): *The phrase “unauthorized worker” as used in this provision shall have the same and intended meaning as “illegal alien” as such phrase is used in C.R.S. §§ 8-17.5-101, et seq.* Contractor hereby certifies, warrants, and agrees that it does not knowingly employ or contract with an unauthorized worker who will perform work under this Contract and further certifies that it will confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Contract by participating in the E-Verify Program established under Pub. L. 104-28 or the department verification program established under C.R.S. § 8-17.5-102(5)(c). Contractor (i) shall not knowingly employ or contract with an unauthorized worker to perform work under this Contract; (ii) shall not enter into a contract with a subcontractor that fails to certify to the contractor that the subcontractor shall not knowingly employ or contract with an unauthorized worker to perform work under this Contract; (iii) has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Contract through participation in the E-Verify program or department program; (iv) is prohibited from using either the E-Verify program or department program procedures to undertake preemployment screening of job applicants while this Contract is being performed; and (v) shall comply with any reasonable request by the department made in the course of an investigation that the Colorado Department of Labor and Employment is undertaking pursuant to the authority established in C.R.S. § 8-17.5-102(5). If Contractor obtains actual knowledge that a subcontractor performing work under this Contract knowingly employs or contracts with an unauthorized worker, Contractor shall (a) notify the subcontractor and Authority within three (3) days that Contractor has actual knowledge that subcontractor is employing or contracting with an unauthorized worker; and (b) terminate the subcontract if, within three (3) days of receiving notice hereunder, subcontractor does not stop employing or contracting with the unauthorized worker; except that Contractor shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an unauthorized worker. Contractor's violation of this provision will constitute a material breach of this Contract, entitling the Authority to terminate the contract for breach. If this Contract is so terminated, Contractor shall be liable for actual and consequential damages to the Authority.

22. Entire Agreement/Binding Effect/Amendments: This Contract represents the complete agreement between the Parties and is fully binding upon them and their successors, heirs, and assigns, if any. This Contract terminates any prior agreements, whether written or oral in whole or in part, between the Parties relating to the Work. This Contract may be amended only by a written agreement signed by both Parties.

23. Assignment/Subcontractors: This Contract may not be assigned or subcontracted by Contractor without the prior written consent of the Authority. If Contractor subcontracts any of its obligations under this Contract, Contractor will remain liable to the Authority for those obligations and will also be responsible for subcontractor's performance under, and compliance with, this Contract. Contractor shall not contract with a person or entity to whom Authority has made a reasonable objection.

24. Governing Law/Venue: The laws of the State of Colorado govern the construction, interpretation, performance, and enforcement of this Contract. Any claim relating to this Contract or breach thereof may only be brought exclusively in the Courts of the 20th Judicial District of the State of Colorado and the applicable Colorado Appellate Courts.

25. Breach: The failure of either Party to exercise any of its rights under this Contract will not be deemed to be a waiver of such rights or a waiver of any breach of the Contract. All remedies available to a Party in this Contract are cumulative and in addition to every other remedy provided by law.

26. Severability: If any provision of this Contract becomes inoperable for any reason but the fundamental terms and conditions continue to be legal and enforceable, then the remainder of the Contract will continue to be operative and binding on the Parties.

27. Third-Party Beneficiary: Enforcement of the terms and conditions and all rights and obligations of this Contract are reserved to the Parties. Any other person receiving services or benefits under this Contract is an incidental beneficiary only and has no rights under this Contract. Notwithstanding, where the beneficiary **Department** is led by an Elected Official, such Elected Official shall be considered a third-party beneficiary.
28. Colorado Open Records Act: Authority may disclose any records that are subject to public release under the Colorado Open Records Act, C.R.S. § 24-72-200.1, et seq.
29. Conflict of Provisions: If there is any conflict between the terms of the main body of this Contract and the terms of any of the **Contract Documents**, the terms of the main body of the Contract will control.
30. Governmental Immunity: Nothing in this Contract shall be construed in any way to be a waiver of the Authority's and Boulder County's immunity protection under the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, et seq., as amended.
31. Representations and Warranties: Contractor represents and warrants the following:
- a. Execution of this Contract and performance thereof is within Contractor's duly authorized powers;
 - b. The individual executing this Contract is authorized to do so by Contractor;
 - c. Contractor is authorized to do business in the State of Colorado and is properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over the Work and the Contractor; and
 - d. Contractor and its subcontractors, if any, are financially solvent, able to pay all debts as they mature, and have sufficient working capital to complete the Work and perform all obligations under the Contract.
32. Legal Compliance: Contractor assumes full responsibility for obtaining and maintaining any permits and licenses required to perform the Work. Contractor is solely responsible for insuring that its performance under this Contract and the Work itself will comply with all Federal, State, and local laws, regulations, ordinances and codes. Contractor shall promptly notify Authority if any drawings or specifications are at variance with any laws, regulations, ordinances, or codes. If Contractor performs any Work contrary to such laws, regulations, ordinances, or codes, Contractor shall bear all costs arising therefrom. Authority approval of the Work or any aspect of Contractor's performance, such as drawings, specifications, plans, designs, or other Contractor-drafted documents, shall not be interpreted to mean that Contractor has satisfied its obligations under this Section.
33. Litigation Reporting: Contractor is not currently involved in any action before a court or other administrative decision-making body that could affect Contractor's ability to perform the Work. Contractor will promptly notify the Authority if Contractor is served with a pleading or other document in connection with any such action.
34. Tax Exemption: Authority is exempt from payment of Federal, State, and local government taxes. Contractor shall collect no tax from the Authority, and the Authority shall not be liable to pay any taxes imposed on Contractor. Authority shall provide its tax exemption status information to Contractor upon request.
35. Delegation of Authority: The Parties acknowledge that the Board of County Commissioners has delegated authority to the Department Head or Elected Official that leads the beneficiary **Department** and their designees to act on behalf of the Authority under the terms of this Contract, including but not limited to the authority to terminate this Contract.
36. Ownership of Work Product: All work product, property, data, documentation, information or materials conceived, discovered, developed or created by Contractor pursuant to this Contract ("Work Product") will be owned exclusively by the Authority. To the extent possible, any Work Product will be

deemed to be a work made for hire. Contractor unconditionally and irrevocably transfers and assigns to the Authority all right, title and interest in and to any Work Product.

37. Publicity Releases: Contractor will not refer to this Contract or the Authority in commercial advertising without prior written consent of the Authority. This provision shall survive expiration or termination of this Contract.

38. Execution by Counterparts; Electronic Signatures: This Contract may be executed in multiple counterparts, each of which will be deemed an original, but all of which will constitute one agreement. The Parties approve the use of electronic signatures, governed by the Uniform Electronic Transactions Act, C.R.S. §§ 24 71.3 101 to 121. The Parties will not deny the legal effect or enforceability of this Contract solely because it is in electronic form or because an electronic record was used in its creation. The Parties will not object to the admissibility of this Contract in the form of electronic record, or paper copy of an electronic document, or paper copy of a document bearing an electronic signature, because it is not in its original form or is not an original.

39. Limitation on Public Statements and Lobbying Activity. During the term of this Contract, Contractor may receive from the Authority its confidential data, work product, or other privileged or confidential information that is protected by law. To maintain the fact and appearance of absolute objectivity, Contractor shall not, without the prior written consent of the Authority, which shall not be unreasonably withheld, do any of the following: (a) disclose information obtained because of this contractual relationship to any third party; (b) lobby any State or Federal agency on any pending matter while this Contract is effective; or (c) make any public statements or appear at any time to give testimony at any public meeting on the subject matters regarding which Contractor is or was retained by the Authority. Authority may set reasonable conditions on any disclosure authorized by the Authority under this provision. Notwithstanding, Contractor may make disclosures as required by law, and to law enforcement officials in connection with any criminal justice investigation.

40. Sustainability: All construction, deconstruction, remodel, and office move projects are required to follow construction waste procedure modeled off of Boulder County BuildSmart Code, International Green Construction Code (IGCC), International Energy Conservation Code (IECC), and Leadership in Energy and Environmental Design (LEED) certification, as an effort to achieve maximum jobsite waste diversion, energy efficiency, and water conservation. All 'demolition projects' are to follow deconstruction procedures. Instead of demolition project materials being crushed and primarily sent to the landfill, these projects should be systematically dismantled, typically in the opposite order they were constructed, in order to maximize the salvage of materials. Any hazardous materials encountered should follow state and federal standards, and contractor shall leverage the Boulder County Hazardous Materials Management facility for hazardous materials. The development of a project diversion plan is encouraged to include material types and volume/weight estimations as well as planned destinations. Projects must track all jobsite waste.

41. Limitation of Liability: AUTHORITY AND BOULDER COUNTY SHALL NOT BE LIABLE TO CONTRACTOR FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO THIS CONTRACT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. AUTHORITY'S AGGREGATE LIABILITY, IF ANY, ARISING FROM OR RELATED TO THIS CONTRACT, WHETHER IN CONTRACT, OR IN TORT, OR OTHERWISE, IS LIMITED TO, AND SHALL NOT EXCEED, THE AMOUNTS PAID OR PAYABLE HEREUNDER BY AUTHORITY TO CONTRACTOR. ANY CONTRACTUAL LANGUAGE LIMITING CONTRACTOR'S LIABILITY SHALL BE VOID.

42. Authority Opportunity to Review: Contractor shall provide Authority with the opportunity to review and approve or take other appropriate action upon the Contractor's submittals, such as Shop Drawings, Product Data, and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents.

43. Notice to Proceed: The Parties agree that time is of the essence and work will begin after a "Notice to Proceed" has been issued by the Authority and in accordance with the terms therein.

44. Retainage: Authority may retain partial payment pending completion and Authority acceptance of the Work as satisfactory and fully and finally complete. For contracts that exceed \$150,000, the retention rate shall not exceed five percent (5%). C.R.S. § 24-91-103. Contractor is responsible for submitting a final invoice for any retainage held by Authority. If It becomes necessary for Authority to take over completion of the Work, all of the amounts owing to Contractor, including the withheld percentage, shall be applied: First, towards completion of the Work; second, towards performance of the withholding requirement set forth in C.R.S. § 38-26-107; third, to the surety furnishing bonds for the Work, to the extent such surety has incurred liability or expense in competing the Work or made payments pursuant to C.R.S. § 38-26-106; then, to Contractor. Such retained percentage as may be due to Contractor shall be due and payable as provided by C.R.S. § 38-26-107.

45. Bonds: Upon Authority's request, Contractor shall obtain and deliver to Authority payment and performance bonds each equal to 100% of the total Contract. Bonds shall be executed by a qualified corporate surety and must be acceptable to Authority. Authority reserves the right to accept other acceptable forms of surety in lieu of a bond, and to reduce the bond requirements set forth herein consistent with C.R.S. § 38-26-106.

46. Change Orders: If unforeseen modifications or changes are required, Contractor may submit a Change Order request to Authority, which must include a complete description, timeline, and fee schedule for the proposed work. Change Orders are not effective until approved by Authority in writing.

47. No Suspension or Debarment: Contractor certifies, and warrants for the duration of this Contract, that neither it nor its principals nor any of its subcontractors are debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this Contract by any Federal or State department or agency. Contractor shall comply, and shall require its subcontractors to comply, with subpart C of 2 C.F.R. § 180.

48. Permits/Licenses/Code Compliance: Prior to starting the Work, Contractor will identify and obtain, and maintain during this Contract, all permits and licenses necessary to perform the Work. Contractor shall comply with all State and local codes. Contractor is responsible for locating all public utilities, as necessary. Contractor shall require its subcontractors to comply with this provision. HVAC, roofing, and general contractors must be licensed through Boulder County Land Use. Electricians and plumbers must be licensed through the State and registered with Boulder County Land Use Building Safety and Inspection Division. Architects, Professional Engineers and Professional Land Surveyors must be fully-licensed through the State. All required permits and licenses must be provided to Authority prior to Contractor beginning the Work.

49. Stormwater Quality Protection Requirements: Contractor will take all measures necessary to prevent pollutants from entering storm drains and watercourses. To eliminate stormwater pollution, Contractor shall implement effective Best Management Practices (BMPs). BMPs include general good housekeeping practices, appropriate scheduling of activities, operational practices, maintenance procedures and other measures to prevent the discharge of pollutants directly or indirectly to the storm drain system. These BMPs shall be maintained for the duration of this Contract. Contractor shall also be responsible for proper disposal of all waste materials, including wastes generated by the implementation of BMPs. Contractor shall otherwise comply with the Federal Clean Water Act, Colorado Water Quality Control Act, and Boulder County's local Clean Water Act, Illegal Discharge Ordinance (No. 2012-4). For work performed in urbanized areas, Contractor must comply with the requirements of MS4 permit (COR090000), which is available through the Colorado Department of Public Health and Environment.

50. Guaranties and Warranties: Upon completion of the Work, Contractor will provide Authority with a written guaranty covering all labor, materials and workmanship incorporated into the Work for one (1)

year, or within any such longer period of time as may be prescribed by law, the specifications, or any other applicable special warranty required by the **Contract Documents**. Final payment upon full and final completion of the Work will not relieve Contractor of responsibility for faulty material or workmanship, which Authority may require Contractor to fix at Contractor's sole expense, in addition to Authority's other remedies. This provision shall apply to Work completed by Contractor's employees and subcontractors.

51. Final Payment: A final inspection of the Work shall be conducted by Authority. If a list of deficiencies results from such final inspection, Contractor shall promptly rectify all items appearing thereon before final payment will be made. When Authority indicates acceptance of the Work, Contractor may request final payment from Authority, including any retained amounts. Final payment shall be subject to C.R.S. § 38-26-107.

52. Notice of Final Settlement: Prior to remitting final payment to Contractor, Authority shall publish a Notice of Final Settlement in accordance with C.R.S. § 38-26-107. Final payment will be rendered in accordance with the statute and the other terms of this Contract. Final payment will not be rendered until Authority, in its sole discretion, determines full and final completion of the Work.

53. Geographic Information System (GIS) Data: Contractors agree that the following, specified data formats, shall be used and/or adhered to when submitting required data to the Authority:

a. All GIS data must be ArcGIS 10.x compatible. Shapefiles may be accepted with written, pre-approval, from the Authority.

b. All GIS data must have complete metadata, following Boulder County GIS Metadata Standards located at: <https://assets.bouldercounty.org/wpcontent/uploads/2018/03/metadata-standards-contractors.pdf>

c. All Computer Aided Design (CAD) files must have an assigned real world coordinate system to ensure compatible conversion into the County's GIS system, if necessary.

d. All spatial or georeferenced data will be provided to the Authority in the following coordinate system:

i. Name:
NAD 1983 HARN State Plane Colorado
North FIPS 0501 Feet

ii. Unit:
Foot US

iii. Projection:
Lambert Conformal Conic

iv. Horizontal Datum:
North American Datum 1983 HARN

v. Vertical Datum:
North American Vertical Datum 1988

vi. Spheroid:
GRS 1980

e. Contractors are responsible for capturing section corners or quarter corners for specific projects to be added into the Public Land Survey System (PLSS) project for updating the section corners, Contractors shall provide high-accuracy PLSS monument coordinates for each corner section or quarter corner section monument used as control points or that occur within the project area ("putting it on the cap") as is reasonable, depending on the difficulty to access the point. All positions to be collected shall be required to use (at a minimum) the Real-Time Kinematic (RTK) method.

54. State Specifications: The Standard Specifications for Road and Bridge Construction 2017, either in whole or as set forth in the Bid Documents, are expressly incorporated into this Contract by reference.

55. Determination of Unit Prices: Authority will determine the actual quantities and classifications of Unit Price Work performed by Contractor. The Parties will review the Authority's preliminary determinations before Authority renders a written decision thereon (by recommendation of an Application for Payment or otherwise), which shall be final and binding upon Contractor. The value of any Unit Price Work covered by a Change Order or claim for an increase or decrease in the Contract Amount shall be determined by applying the unit prices to the quantities of items.

a. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, the Parties agree that the Contract Amount includes the total cost of Unit Price Work, determined by multiplying the quantity of each item by its unit price. Initial quantity determinations are estimates, which must be adjusted to reflect actual quantities. Contractor shall make a claim in writing to Authority for any additional amounts owed where actual quantities exceed estimated quantities. Contractor shall provide such written claim within twenty (20) days of providing the items and shall be accompanied by supporting documentation. The written claim shall include a statement that the claimed amount covers all known amounts (direct, indirect and consequential) to which Contractor is owed. Authority shall only pay Contractor for actual quantities of items provided hereunder.

b. The Parties agree that each unit price adequately covers Contractor's overhead and profit for each item.

56. Records Retention/Access/Audits: Contractor shall maintain all records and documents pertaining to this Contract in accordance with the requirements prescribed by Authority. Such records shall be maintained for a period of five (5) calendar years after the date of Contractor's final payment from Authority under this Contract. Contractor agrees that Authority or their designated representative shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Contract as necessary and upon request, throughout the term of this Contract, and for five (5) calendar years after the date of the final payment hereunder. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Authority and Contractor acknowledge that protected information is exempt from this requirement without proper client release.

57. Legal Interpretation. Each Party recognizes that this Contract is legally binding and acknowledges that it has had the opportunity to consult with legal counsel of its choice about this Contract. The rule of construction providing that any ambiguities are resolved against the drafting Party will not apply in interpreting the terms of this Contract.

58. Insurance: Prior to commencing the Work, Contractor will provide a Certificate of Insurance to the Authority demonstrating adequate insurance coverage as required by this paragraph. All policies evidencing coverage required by the Contract will be issued by insurance companies satisfactory to the Authority. Contractor will forward Certificates of Insurance directly to the HHScontracts@bouldercounty.org.

a. Boulder County Housing Authority as Additional Insured: Boulder County Housing Authority, Boulder County, the State of Colorado, Aspinwall LLC, Josephine Commons LLC, MFPH Acquisitions LLC, Kestrel I, LLC and Tungsten Village LLC shall be named as an additional insured for General Liability, Umbrella/Excess Liability, and Pollution Liability, as designated in this Contract. Additional insured shall be endorsed to the policy.

THE ADDITIONAL INSURED WORDING SHOULD BE AS FOLLOWS: *Housing Authority of the County of Boulder, Colorado, a public body, corporate and politic; County of Boulder, State of Colorado, a body corporate and politic; the State of Colorado; Aspinwall, LLC, a Colorado limited liability company; Josephine Commons, LLC, a Colorado limited liability company; MFPH Acquisitions, LLC, a Colorado limited liability company; Kestrel I, LLC, a Colorado limited liability company, and Tungsten Village, LLC, a Colorado limited liability company, are named as Additional Insured.*

**Include those properties that are relevant to the contract. If it is possible that the contractor will do work at all sites, include all.*

b. Notice of Cancellation: Each insurance policy required by this Contract shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days' prior written notice has been given to the Authority except when cancellation is for non-payment of premium, then ten (10) days' prior notice may be given. If any insurance company refuses to provide the required notice, Contractor or its insurance broker shall notify the Authority any cancellation, suspension, or nonrenewal of any insurance policy within seven (7) days of receipt of insurers' notification to that effect.

c. Insurance Obligations of Authority: Authority is not required to maintain or procure any insurance coverage beyond the coverage maintained by the Authority in its standard course of business. Any insurance obligations placed on the Authority in any of the **Contract Documents** shall be null and void.

d. Deductible: Any and all deductibles contained in any insurance policy shall be assumed by and at the sole risk of Contractor.

e. Primacy of Coverage: Coverage required of Contractor and its subcontractors, if any, shall be primary over any insurance or self-insurance program carried by the Authority.

f. Subrogation Waiver: All insurance policies in any way related to this Contract secured or maintained by Contractor as required herein shall include clauses stating that each carrier shall waive all rights of recovery, under subrogation or otherwise, against Authority, its organizations, officers, agents, employees, and volunteers.

g. Requirements. For the entire duration of this Contract including any extended or renewed terms, and longer as may be required by this Contract, Contractor shall procure and maintain at its own expense, and without cost to the Authority, the following kinds and minimum amounts of insurance to insure the liability risks that Contractor has assumed under this Contract:

i. **Commercial General Liability**

Coverage should be provided on an Occurrence form, ISO CG0001 or equivalent. The policy shall be endorsed to include Additional Insured Owners, Lessees or Contractors endorsements CG 2038 (or equivalent), Designated Construction Project(s) General Aggregate Endorsement CG2503 (or equivalent) and Additional Insured Completed Operations for Owners, Lessees or Contractors CG 2037 (or equivalent). Minimum limits required of \$1,000,000 Each Occurrence, \$2,000,000 General Aggregate and \$2,000,000 Products/Completed Operations Aggregate. The Authority requires the Products/Completed Operations coverage to be provided 3 years after completion of construction. An endorsement must be included with the certificate.

ii. **Automobile Liability**

Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of the Contract. Minimum limits \$1,000,000 Each Accident.

iii. **Workers' Compensation and Employer's Liability**

Workers' Compensation must be maintained with the statutory limits. Employer's Liability is required for minimum limits of \$100,000 Each Accident/\$500,000 Disease-Policy Limit/\$100,000 Disease-Each Employee.

iv. **Umbrella / Excess Insurance**

Umbrella/Excess Liability insurance in the amount \$[X],000,000.00, following form.

Delete Instruction: This insurance is a broad, high-limit policy, which acts more than the underlying primary insurance policy. This coverage is designed to provide additional liability limits beyond the primary insurance limits and is triggered upon the underlying limits becoming exhausted. Umbrella / Excess insurance is most commonly required when an exposure to the County could potentially create liabilities in excess of the basic

insurance limits. The most common limits for these policies range from \$2,000,000 to \$5,000,000.

Delete Instruction: Please consult with Risk Management if you feel this coverage should be required.

Delete Instruction: IN ADDITION TO THE ABOVE, ONE OR MORE OF THE FOLLOWING FOUR (4) INSURANCE COVERAGES MAY BE REQUIRED. CONTACT RISK MANAGEMENT IF YOU HAVE QUESTIONS ABOUT WHICH INSURANCE COVERAGE TO INCLUDE. DELETE THIS INSTRUCTION (AND ANY INAPPLICABLE INSURANCE PARAGRAPHS) WHEN FINALIZING THE CONTRACT:

v. **Professional Liability (Errors and Omissions)**

Delete Instruction: All contractors required to be professionally certified by the State of Colorado (i.e., architects, engineers, doctors, nurses, etc.) and/or any consultants whose errors in judgment, planning, design, etc. could result in economic loss to the County must provide proof of professional liability coverage. This also applies to anyone managing or overseeing construction.

Professional liability coverage with minimum limits of \$1,000,000 Per Loss and \$1,000,000 Aggregate. Professional Liability provisions indemnifying for loss and expense resulting from errors, omission, mistakes or malpractice is acceptable and may be written on a claims-made basis. The contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning at the time work under this Contract is completed.

vi. **Pollution Liability**

Delete Instruction: This coverage is required whenever work under the contract involves pollution risk to the environment or losses caused by pollution conditions (including asbestos) that may arise from the operations of the Contractor described in the Contractor's scope of services.

Coverage pay for those sums the Contractor becomes legally obligated to pay as damages because of Bodily Injury, Property Damage or environmental Damage arising out of a pollution incident caused by the Contractor's work including Completed Operations. Coverage shall include emergency response expenses, pollution liability during transportation (if applicable) and at Non-Owned Waste Disposal Site (if applicable). The Minimum limits required are \$1,000,000 Per Occurrence/Loss and \$1,000,000 Policy Aggregate. If the coverage is written on a claims-made basis, the Contractor warrants that any retroactive date applicable to coverage under the policy precedes the effective date of this Contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of three (3) years beginning from the time that work under this contract is completed. Authority shall be named as an additional insured for ongoing operations and completed operations.

vii. **Third Party Commercial Crime Insurance / Third Party Fidelity Bond**

Delete Instruction: Crime / Third Party Fidelity covers the contractor and the contractor's employees when engaged in work for a client on behalf of the County. This coverage is for employee dishonesty, theft, embezzlement, forgery and alteration. Coverage is required when the contractor will be handling money or collecting fees on behalf of the County or when the contractor has access to client's personal property and/or documentation

The Crime limit shall be \$1,000,000 Per Loss and include an endorsement for "Employee Theft of Client Property". In order to provide coverage to Authority during the course of this contract, Commercial Crime policies must be endorsed to cover Third Party Fidelity. Third party fidelity

covers the vendor's employees when engaged in work for a client. In addition, the Authority will be listed as loss payee on the commercial crime coverage. This third-party coverage can also be provided by obtaining a third-party fidelity bond.

[Signature Page to Follow]

IN WITNESS WHEREOF, the Parties have executed and entered into this Contract as of the latter date indicated below.

SIGNED for and on behalf of Contractor	
Signature:	Date:
Name:	Title:
SIGNED for and on behalf of Boulder County Housing Authority	
Signature:	Date:
Name:	Title:
Attester Signature:	Date:
Name:	Title:
Approved as to Content and Form:	Date: