

March 14, 2012

Greg Krueger
Development Director
2815 2nd Avenue North
Downtown Billings 59101

Dear Greg;

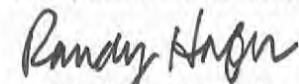
On behalf of the Tracy Lofts Development Venture, L.L.C., Mike and Cara Schaer, Greg and Martha McDowell, and my wife, Janna, I am pleased to submit information in support of our grant application for the new Tracy Lofts Building redevelopment located at 2600 Montana Avenue, Billings. We believe we have an exciting, innovative concept for redeveloping another of the great old structures in Billings and a solid, carefully considered plan to accomplish the project. The Tracy Loft plan for the 2600 Montana Avenue building represents a wonderful opportunity for adding (19) loft style apartments to the downtown Billings market. Since the first project of this type, One South Broadway was completed in 2001, until the most recent completion of the Swift Lofts at 2605 Minnesota Avenue, Billings has added over 100 new or remodeled living units in the downtown area. The increased presence of people living downtown has helped to reinvigorate downtown Billings.

We are submitting for you review and information a complete package of information about the project and financing. General Partners Mike and Cara Schaer are providing the building, General Partners Greg and Martha McDowell are providing start-up capital, and General Partners Randy and Janna Hafer are providing the development to get the project off the ground and move it to successful completion. We have tabulated a total of \$531,085 for the amount eligible for improvements as per the T.I.F. Gap Funding Criteria Program Guidelines. However, we are only requesting \$125,000 to fill the gap between our permanent financing and the final project cost. The level of assistance required would represent a 13:1 private to public leverage, far exceeding the 5:1 leverage ratio required. Additional financing details are outlined in the application as requested as well as a thorough project description.

We are very excited about the possibilities this project represents for continued redevelopment in downtown Billings. Thank you for your careful consideration of this proposal. Please do not hesitate to contact me, with any questions you might have or for any additional information.

Sincerely,

Tracy Lofts Development Venture, L.L.C.



Randy & Janna Hafer
General Partners



Mike & Cara Schaer
General Partners



Greg & Martha McDowell
General Partners

DOWNTOWN BILLINGS PARTNERSHIP, INC.
DOWNTOWN TAX INCREMENT FINANCING (TIF) APPLICATION
(Please see separate document for instructions)

Project Name: Tracy Lofts Date Submitted: 3/14/12

APPLICANT INFORMATION

1. Name: Tracy Lofts Development Venture, L.L.P. (partner: Randy Hafer)
2. Address: P.O. Box 2203 Billings 59103; 2720 Minnesota Ave. Billings 59101
3. Telephone Number: (406) 896-0250

PROJECT INFORMATION

1. Building Address: 2600 Montana Ave.
2. Legal Description: MRL R.R. Lease - Definite Term Lease Land No. 501, 624
3. Ownership: Tracy Lofts Development Venture, L.L.P.
Address: P.O. Box 2203 Billings, MT 59103
4. If property is not owned by the Applicant, list leasehold interests: (Attach evidentiary materials.)
Name: N/A
Address: _____
5. Existing/Proposed Businesses: (19) High-performance loft-style apartments
Business Description: Residential Loft Apartment Units, project anticipated to be historic tax credit certified & LEED for Homes Platinum certified.
1. Employment: Existing FTE Jobs 0
New Permanent FTE Jobs created by project 0 Construction FTE Jobs 15-20
2. Architectural Firm: High Plains Architects, P.C.
Address: 2720 Minnesota Avenue Billings 59101
Representative: Randy Hafer
3. Description of Project: (Attach narrative explanation.)
4. Rehabilitation/construction Plans (Attach schematics, site and landscaping plans.)
5. Project Schedule: (Attach time line or schedule through completion.)

PROJECT COSTS

Land and Site Improvements (Itemized)

- | | |
|---------------------------------|-------------------------------------|
| 1. Equity in Land and Buildings | \$ <u>300,000</u> (owned by L.L.P.) |
| 2. | \$ _____ |
| 3. | \$ _____ |
| 4. | \$ _____ |

Subtotal \$ 300,000 (not included in total below)

Construction/Rehabilitation Costs (Use general construction trade divisions)

- | | | | |
|----------------------|-------------------|--------------------------|---------|
| 1. General | \$ <u>173,076</u> | 11. Equipment | 3,029 |
| 2. Site Construction | \$ <u>132,887</u> | 12. Furnishings | 1,454 |
| 3. Concrete | \$ <u>73,140</u> | 13. Special Construction | 1,298 |
| 4. Masonry | \$ <u>9,800</u> | 14. Mechanical | 365,281 |
| 5. Metals | \$ <u>23,677</u> | 15. Electrical | 88,101 |
| 6. Wood & Plastics | \$ <u>180,898</u> | 16. Contingencies | 100,000 |
| 7. Thermal Moisture | \$ <u>77,539</u> | 17. G.C. Fee | 73,608 |
| 8. Doors & Windows | \$ <u>157,070</u> | 18. Owner Furnished | 100,000 |
| 9. Finishes | \$ <u>184,056</u> | | |
| 10. Specialties | \$ <u>5,086</u> | | |

Subtotal \$ 1,750,000

Fees

- | | |
|-------------------------------------|-------------------|
| 1. Architectural design/Supervision | \$ <u>160,000</u> |
| 2. Permits _____ | \$ <u>13,484</u> |
| _____ | \$ _____ |
| 3. Other fees <u>LEED/HTC</u> | \$ <u>29,000</u> |

Subtotal \$ 202,484

Total Project Development Costs **\$ 1,952,484**

PROJECT FINANCING

Please complete Sources of Funds detail and summarize below.

Developer Equity

Cash Invested	\$ <u>250,000</u>
Land & Buildings	\$ <u>300,000 (owned by L.L.C.)</u>
Other (Specify) <u>T.I.F. Grant</u>	\$ <u>125,000</u>
	\$ _____
Subtotal	\$ <u>675,000</u>

Lender Commitments (Attach evidence i.e. Letters of Credit or other documentation.)

Lender	Loan Amount	Interest	Term	Payment/Period
<u>F.I.B.</u>	\$ <u>1,369,500</u>	4.51 %	currently * <u>20</u> yrs	\$ <u>8,671.53</u> /Month
<u>City - RLF</u>	\$ <u>250,000</u>	<u>5</u> %	<u>20</u> yrs	\$ <u>1,649.89</u> /Month
Total Loan Amount				\$ <u>10,321.42</u> /month

* Rate = Federal Home Loan Bank rate + 3.00 %; to be set

TIF Request @ closing of permanent loan

• See Attached

Eligible Improvements (See Narrative) (See Attachment A and A1 of Instructions)

\$ _____	
\$ _____	
\$ _____	
\$ _____	
\$ _____	
\$ _____	
Subtotal	\$ _____

Sources of Funds Summary (Post totals from above.)

Developer Equity (cash)	\$ <u>250,000</u>
Lender Commitments	\$ <u>1,369,500</u>
TIF Request	\$ <u>125,000</u>
Other Funds (Specify) <u>RLF</u>	\$ <u>250,000</u>

Total Project Financing \$ 1,994,500

* of the proposed \$31,085 of 3
 "Eligible Improvements", Tracy Loft Development Venture, L.L.P.
 is requesting a T.I.F. Gap Funding Grant of \$125,000.

**DEVELOPER STATEMENT OF QUALIFICATIONS
AND FINANCIAL RESPONSIBILITY**

Applicant

1. Name: Tracy Lofts Development Venture, L.L.P.

Address: P.O. Box 2203 Billings, MT 59103

2. If the applicant is not an individual doing business under his/her own name, the applicant has the status indicated below and is organized or operating under the laws of _____.

3. _____ A corporation
_____ A nonprofit or charitable institution or corporation
 A partnership known as Tracy Lofts Development Venture, L.L.P.
_____ Other (explain) _____

Date of organization: _____

4. Names, address, title of position (if any), and nature and extent of the interest of the officers and principal members, principal shareholders, investors, or partners of the applicant.

<u>Name and Address</u>	<u>Nature and Extent of Interest</u>
Mike & Cara Schaer	Partner
Greg & Martha McDowell	Partner
Randy & Janna Hafer	Partner

Financial Condition

1. Provide a current financial statement for each private entity involved in the project. Documentation of financial capacity may include net worth statements, balance sheets, or profit and loss statements.
2. Has the applicant or any individual or entity affiliated with the development of this project been adjudged bankrupt, either voluntary or involuntary, within the past ten years?
No Yes _____ If yes, give date, place, and under what name

3. Has the applicant or any individual or entity affiliated with the development of this project been indicted for or convicted of any felony within the past 10 years?

No Yes _____ If yes, give the date, charge, place, court and action taken for each case.

CONSTRUCTION CONTRACTOR

1. Identify the construction contractor or builder who will undertake this project.

Name:

Fisher Construction, Inc.

Address:

235 Moore Lane Billings, MT 59101

2. Has such contractor or builder ever failed to qualify as a responsible bidder, refused to enter into a contract after an award has been made, or failed to complete a construction or development contract within the last 10 years? No Yes _____ If yes, explain.

CERTIFICATION

I (we), Mike & Cara Schaer, Greg & Martha McDowell, Randy & Janna Hafer (please print), certify that the statements and estimates within this Application as well as any and all documentation submitted as attachments to this Application or under separate cover are true and correct to the best of my (our) knowledge and belief.

Signature Randy Hafer

Signature Greg McDowell

Title GENERAL PARTNER

Title Partner

Address 651 N. 26th ST

Address 640 Poly Drive

BILLINGS, MT 59101

Billings MT 59102

Date 3/15/12

Date 3-20-12

SIGNATURE Michael Schaer

TITLE Partner

ADDRESS 1109 N. 32nd St.

Billings, MT 59101

DATE 3-19-12

TRACY LOFTS DEVELOPMENT VENTURE, L.L.P.

P.O. Box 2203, Billings, MT 59103

3. Description of Project:

From Billings' earliest days, warehouses were located in the area around railroad tracks in the heart of downtown. This warehouse district grew and became denser as the town became larger and the business base expanded. By the early 20th century, there was a whole array of warehouses holding all the goods that the growing city's population demanded. Built in 1919, the George L. Tracy building is representative of the last wave of warehouse construction to occur along the Minnesota Avenue-Montana Avenue business corridor.

The George L. Tracy building is a two-story warehouse building rectangular in massing and constructed of red brick and a heavy timber frame. It sits on the railroad right-of-way on the south side of Montana Avenue. The primary façade faces north onto Montana Avenue, the rear is outfitted with loading docks and faces the railroad tracks. The main entry is placed at the center of the primary façade and is accentuated with sandstone quoins and a cornice bearing the inscription "Geo L Tracy." On the south façade a black ghost sign remains reading: GAMBLE-ROBINSON CO. /FRUIT AND GROCERIES in white and yellow. The interior of the building has changed very little over time. It retains an open plan with exposed brick walls, heavy timber post and beam structure, concrete and wood floors, and a cedar ceiling on the second floor. The building itself is one of the best preserved of its kind and serves as a good example of this type of building. Nevertheless, the building has been vacant for many years other than for storage purposes. Many of the windows are currently boarded from inside and some windows are broken or missing.

The Tracy Lofts Development Venture, L.L.P. will update and remodel all three levels of the building into nineteen (19) loft-style apartments. The loft-style rental apartments – studio (9 units), one bedroom (7 units), two bedrooms (3 units) - vary in size from 585 sq. ft. to 1,290 sq. ft. All of the apartments will contain loft style-finishes, which include: colored concrete floors with radiant heating and cooling, and open loft ceilings. Egress issues have also been addressed.

Included in the T.I.F. Gap Funding Criteria Program Guidelines under Attachment B, is a synopsis of the Downtown Billings Framework Plan. The Tracy Lofts Development specifically responds to and addresses a number of key issues including:

- Reduce gaps and the lack of connection between the core of Downtown and the surrounding neighborhoods caused by the discontinuity of land uses.
- Increase the downtown residential population to bring the area alive after office hours.
- Address the psychological factors that make walking a few blocks seem inconvenient and unpleasant.
- Encourage greater efforts toward historic preservation and renovation to create a sense of historic permanence.

In addition, the Framework Plan establishes a set of Goals to create a clear vision of what Downtown Billings wants to become. The Tracy Lofts Development aims “to preserve and complement this heritage, create active business, residential and pedestrian environments, connect the Historic District with the other Downtown districts and the South Side neighborhood, and encourage property development in a manner appropriate to the district’s historic character.” Finally, among the listed Framework Plan Components is Housing. The intent is to develop a range of housing options for downtown, specifically encouraging the development of multi-family and loft-style housing units. Tracy brings 19 new, up-and-coming residential loft units to the downtown scene.

Preservation-focused tax incentive programs exist at the federal, state, and local levels. In general, they counter private and public land-use policies favoring the demolition and new construction, while providing financial benefits to building owners who might otherwise feel burdened by preservation projects. The historic rehabilitation tax credit is the nation’s largest federal incentive promoting urban revitalization through private investment in reusing historic buildings. The credit allows the owner of the certified historic structure to receive federal income tax credit equal to 20% of the amount spent on qualified rehabilitation costs. Since it was enacted in 1976, the credit has been widely used as an effective tool for transforming vacant and underutilized buildings into safe, decent, and -in many cases – affordable places to live and do business. More than half of the states in the country (including Montana) have enacted laws that afford tax relief to owners of historic buildings. The state tax credit is modeled after the federal rehabilitation tax credit and is calculated at 25% of the federal credit. These tax credits are only available for income producing properties. Since the George L. Tracy building is located in the Montana Avenue Historic District, the project has been designed to meet the Secretary of Interior’s Standards for the Preservation of Historic Buildings and to qualify for Historic Preservation Tax Credits.

LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performances all across the metrics that matter most: energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations, and maintenance solutions. LEED is flexible enough to apply to all building types – commercial as well as residential – and for both new construction and significant retrofit. The Tracy Lofts project has been designed to the highest standards of energy efficiency and is anticipating LEED Certification at the Platinum level.

TRACY LOFTS DEVELOPMENT VENTURE, L.L.P.

P.O. Box 2203, Billings, MT 59103

TIF Request

Eligible Improvements

Site Construction-

- Site preparation including interior demolition – \$102,158
- Utility services (street excavation for new water service) - \$20,000 #4
- Partial sidewalk replacement in front of building – \$960

Masonry-

- Exterior masonry repairs – \$9,800 #1

Doors & Windows-

- Doors (rear exterior) - \$1500
- Entrances & storefronts (new front entry) – \$2,940
- Windows (repair, restore, or replace all exterior windows) – \$86,431 #2-3

Mechanical-

- Fire sprinklers – \$26,861
- Plumbing infrastructure including new water service – \$120,000 #4
- HVAC infrastructure – \$47,200

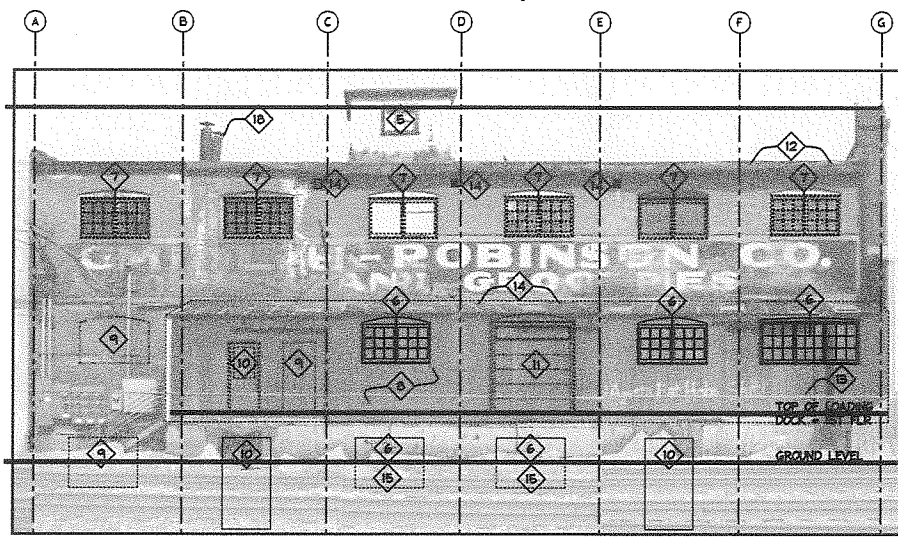
Electrical-

- Electric infrastructure including new service – \$44,050

Other-

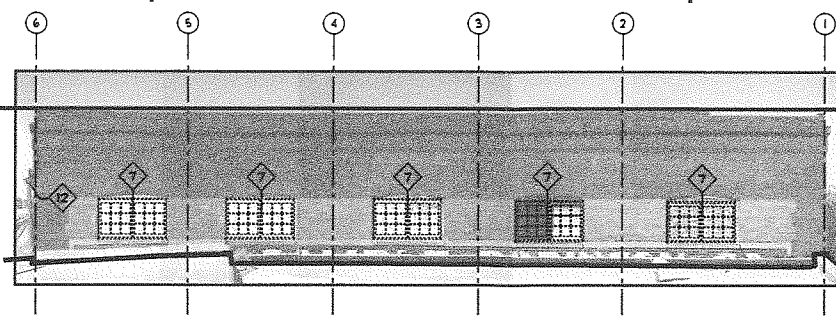
- Permit Fee – \$3,775
- G.C. Fee – \$20,610
- Architect & Engineer Fee (for work listed above) – \$44,800

Total Amount: \$531,085



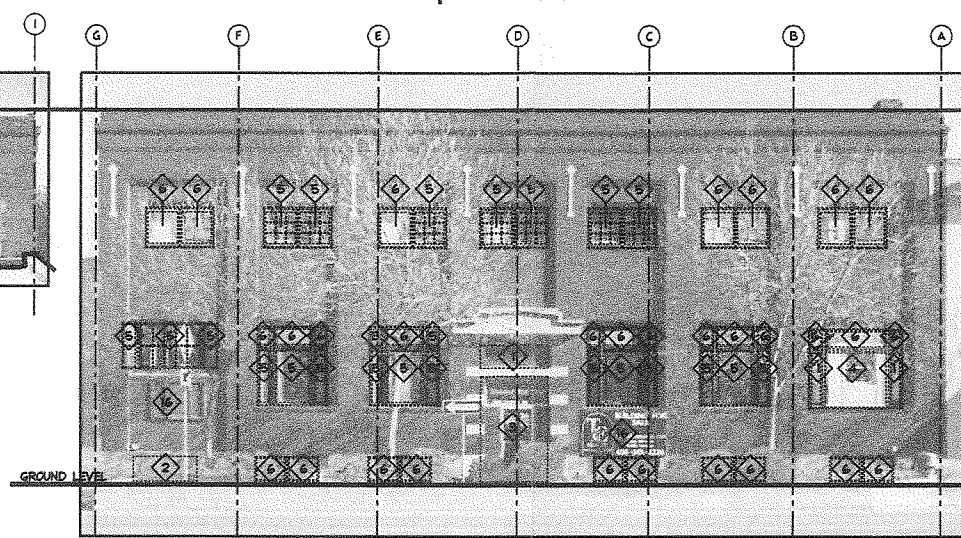
6 SOUTH ELEVATION - DEMOLITION

A4.1



2 EAST ELEVATION - DEMOLITION

A4.1



9 NORTH ELEVATION - DEMOLITION

A4.1

DEMOLITION NOTES

- 1 REMOVE PLYWOOD INFILL FROM EXISTING FRAME/SASH. PROTECT EXISTING GLAZING AND FRAME/SASH. REFURBISH FRAME & SASH.
- 2 REMOVE EXISTING CLAY TILE AND PARING AT THIS LOCATION. MAKE NEW OPENING FOR NEW WINDOW ASSEMBLY. (PHASE 2 WORK)
- 3 REMOVE EXISTING STOREFRONT DOOR AND TRANSOM ASSEMBLY FOR REPLACEMENT. (PHASE 2 WORK)
- 4 REMOVE EXISTING PLYWOOD INFILL AND WINDOW ASSEMBLY.
- 5 REMOVE EXISTING SASH. PROTECT FRAME/SASH FOR REFURBISHMENT AND REINSTALLATION.
- 6 REMOVE PLYWOOD FROM EXISTING FRAME/SASH. REMOVE EXISTING SASHES. PROTECT EXISTING FRAME/SASH FOR REFURBISHMENT & REINSTALLATION.
- 7 REMOVE PLYWOOD AND EXISTING SASH. KEEP EXISTING FRAME INTACT AND PROTECT FOR REFURBISHMENT. SALVAGE (1) SASH TO USE AS TEMPLATE FOR REPLACEMENT SASHES.
- 8 REMOVE GALVANIZED CORRUGATED SIDING, CORRUGATED SHED ROOF, AND FRAMING. SALVAGE MATERIALS & STOCKPILE ON SITE FOR REUSE.
- 9 CUT BRICK INFILL AND REMOVE MASONRY TO PREPARE FOR INSTALLATION OF NEW WINDOW/DOOR. SEE WINDOW/DOOR SCHEDULE. SALVAGE BRICKS FOR LATER REUSE. (PHASE 2 WORK)

- 10 REMOVE EXISTING MTL. DOOR, FRAME, AND HARDWARE ASSEMBLY. SALVAGE ALL DOOR ASSEMBLY MATERIALS. (PHASE 2 WORK)
- 11 REMOVE EXISTING OVERHEAD DOOR ASSEMBLY AND FRAMING. (PHASE 2 WORK)
- 12 REMOVE EXISTING METAL GUTTER AND ROTTED FACIA.
- 13 EXISTING FENCE (IN FOREGROUND) TO REMAIN.
- 14 CLEAN EXISTING OPENINGS.
- 15 ENLARGE EXISTING OPENING; SEE 6/A4.1 AND 6/A4.2. (PHASE 2 WORK)
- 16 REMOVE SIGNAGE AND FURRING STRIPS FROM BRICK FACADE.
- 17 REMOVE AND SALVAGE SHEET OF PLY
- 18 REMOVE MTL. FLUES AND ROOF HATCH; REFER TO 17/A4.2 FOR ADD'L INFO.

NOTE: REFERENCE DEMOLITION PLANS (DA2.0, DA2.1, & DA2.2) FOR ADD'L INFORMATION.

CONSTRUCTION NOTES

- 1 TUCK POINTING & MISC. MASONRY REPAIR AS REQUIRED AT EXISTING BRICK. COORDINATE EXTENT OF WORK WITH ARCHITECT. (ALLOW \$5,000)
- 2 REFER TO DETAIL 7/A4.2. FIX AND SEAL TRANSOM UNITS IN PLACE.
- 3 REFER TO DETAIL 6/A4.2. NEW WOOD WINDOW TO MATCH ORIGINAL; REPAIR, PREP & PAINT EXTERIOR AND INTERIOR FRAMES.
- 4 NEW DOOR ASSEMBLY, TYPE A-2 - SEE DOOR SCHEDULE. (PHASE 2 WORK)
- 5 REPAIR EXISTING STONE LINTEL. PREP & FILL CRACKS WITH ELASTOMERIC SEALANT (ALLOW \$1,500)
- 6 REFER TO DETAIL 6/A4.2 & 17/A4.2. REMOVE EXISTING GLASS FROM SASH AND ROUTE SASH TO FIT WITH NEW 3/4" INSULATED GLASS. REPAIR EXISTING SASHES & FRAMES AS REQUIRED. PREP & PAINT EXTERIOR AND INTERIOR SASHES AND FRAMES.
- 7 REINSTALL FRAME. PREP & PAINT. (NOTE: FRAME LOCATED ON 2ND FLOOR)

***GENERAL PAINTING NOTES FOR EXISTING WINDOW FRAMES AND SASHES: PRESSURE WASH, SCRAPE, & PAINT (2 COATS) ALL EXISTING WINDOW FRAMES.

- 8 REFER TO DETAIL 7/A4.2. REPLACE BROKEN OR MISSING EXTERIOR GLAZING.
- 9 REPAIR, PREP & PAINT EXTERIOR SASH & FRAME. REPLACE EXTERIOR GLAZING WHERE REQUIRED. REINSTALL SINGLE PANE GLAZING.
- 10 INFILL EXISTING OPENING WITH BRICK TO MATCH ORIGINAL; RECESSES 1" FROM FACE OF EXISTING WALL.
- 11 USE SIDING FROM NORTH ELEVATION TO PATCH AND REPAIR EAST, SOUTH, AND WEST ELEVATIONS. USE RELOCATED GALVANIZED CORRUGATED SIDING TO REPLACE NORTH ELEVATION SIDING.
- 12 REFER TO DETAIL 11/A4.2. REMOVE EXISTING GUTTER AND ROTTED FACIA. INSTALL NEW GUTTER PER MECH DWGS FOR RAINWATER CATCHMENT SYSTEM.
- 13 USE BRICK REMOVED FROM NEW OPENING TO CONSTRUCT NEW BRICK SILL OR TO REPAIR OTHER SILLS AS NEEDED. (PHASE 2 WORK)

WINDOW TYPE DESIGNATION - SEE 6/A4.2 FOR TYPES AND DIMENSIONS.

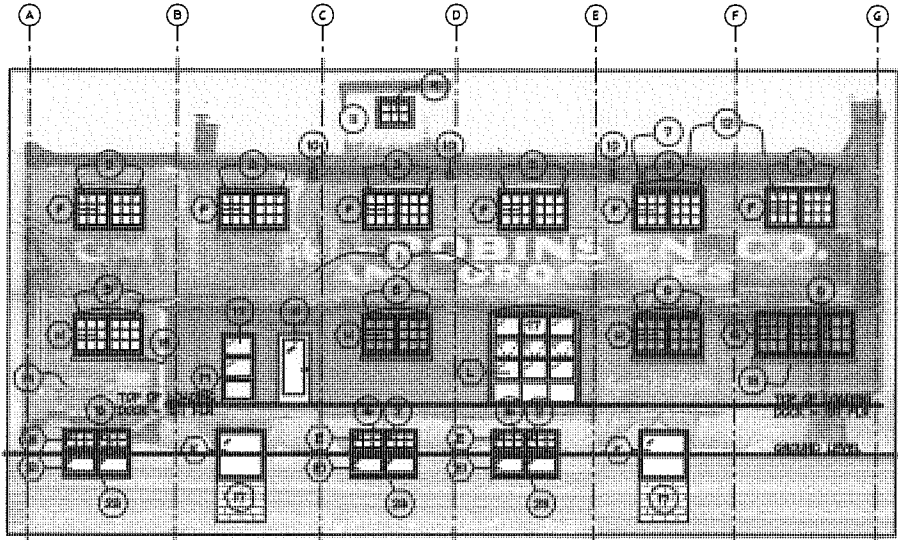
- 14 ELECTRICAL SERVICE AND METERS, SEE ELECTRICAL.
- 15 LIGHT FIXTURES, SEE ELECTRICAL.
- 16 FIX AND SEAL UNIT IN PLACE.
- 17 NEW INFILL WINDOW (PHASE 2 WORK)
- 18 ALL GLAZING TO BE TEMPERED.
- 19 FABRICATE & INSTALL MATCHING IRON GRATE.
- 20 FUR-CUT OPENING WITH 2X4 CONSTRUCTION. REUSE SHEET OF PLY AS SHEATHING, COVER WITH TAR PAPER AND CLAD NEW WALL WITH SALVAGED PRESSED TIN FROM NORTH SIDE OF ELEVATOR HOUSING. PREP TIN SURFACE AND PAINT.
- 21 REATTACH PRESSED TIN SHEATHING, PREP AND PAINT.
- 22 PROVIDE NEW ROOF MEMBRANE.
- 23 REFER TO DETAIL 6/A4.2 & CORRESPONDING ELEVATIONS. NEW WOOD WINDOW; REPAIR, PREP & PAINT EXTERIOR AND INTERIOR FRAMES.
- 24 SALVAGE SASH FROM ROOM B02-3 AND USE IN ROOM B01-2. ROOM B02-3 TO RECEIVE NEW SASH. REFER TO DETAIL 7/A4.2 & 16/A4.2.

11 ELEVATION DEMOLITION NOTES

A4.1

13 CONSTRUCTION NOTES

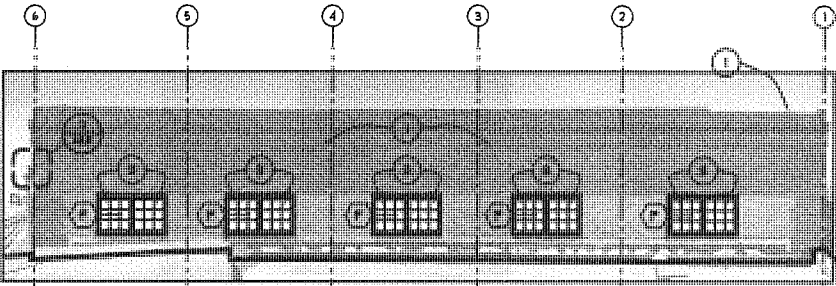
A4.1



16 SOUTH ELEVATION - CONSTRUCTION

A4.1

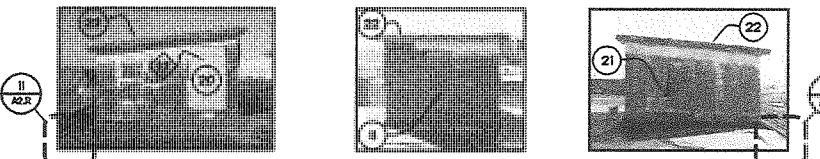
1/8"=1'-0"



17 EAST ELEVATION - CONSTRUCTION

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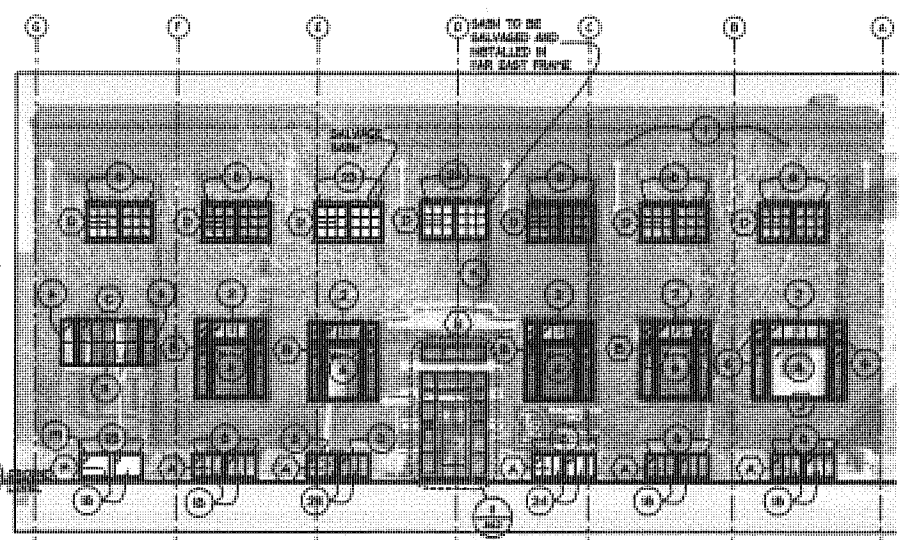
1/8"=1'-0"



18 ELEVATOR PENTHOUSE - DEMO AND CONSTRUCTION

A4.1

1/8"=1'-0"



19 NORTH ELEVATION - CONSTRUCTION

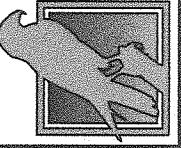
A4.1

1/8"=1'-0"

1

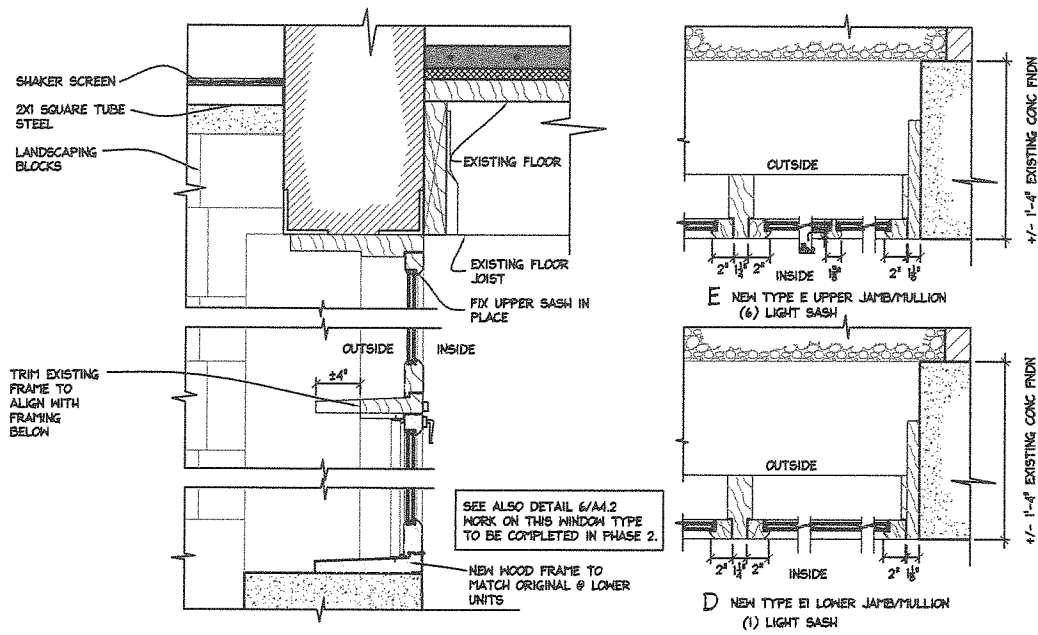
DRAWING: EXTERIOR ELEVATIONS - REMODEL
PROJECT: TRACY LOFTS
OWNER: TRACY LOFTS DEVELOPMENT VENTURE

HIGH PLAINS ARCHITECTS
Eric Anderson
Phone: (408) 887-0200 • Fax: (408) 887-0205
2700 Central Expressway, Suite 200
Folsom, CA 95630 • www.highplainsarchitects.com

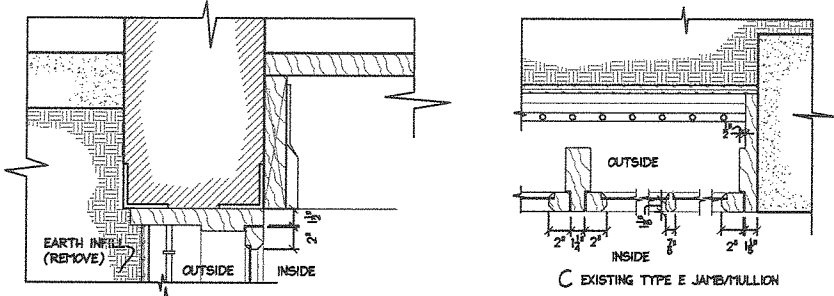


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PROJECT#: 20343_03
DATE: 12.1.11
REVISED:

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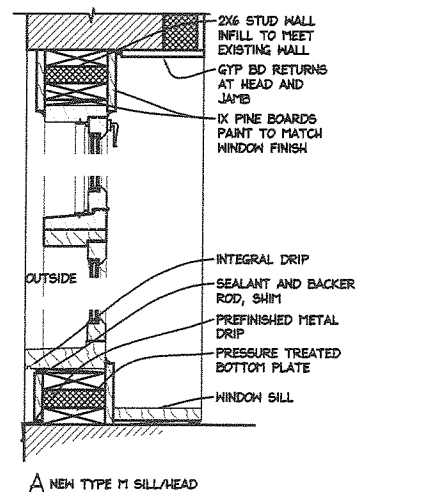


B NEW TYPE EI SILL/HEAD



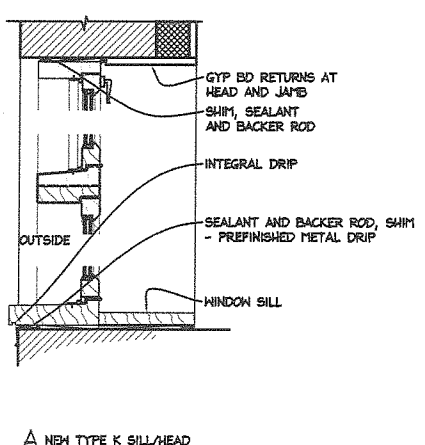
A EXISTING TYPE E SILL/HEAD

11 WINDOW TYPES "E" & "EI"
A4.3 1 1/2" = 1'-0"



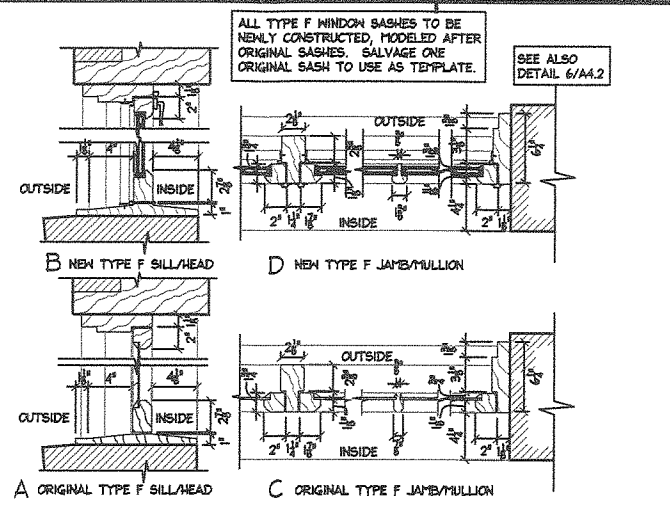
A NEW TYPE M SILL/HEAD

16 WINDOW TYPES "M"
A4.3 1 1/2" = 1'-0"

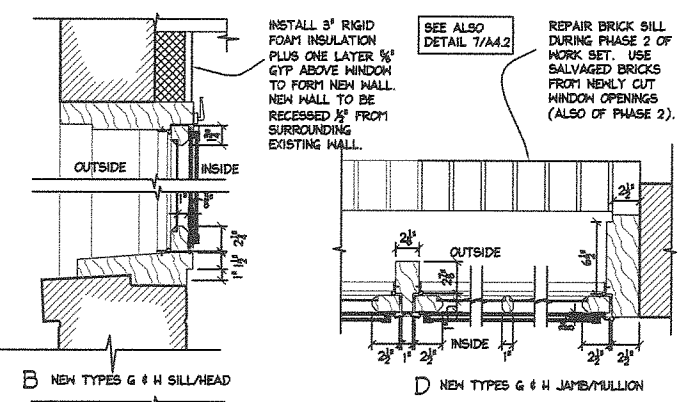


A NEW TYPE K SILL/HEAD

17 WINDOW TYPES "K"
A4.3 1 1/2" = 1'-0"



3 WINDOW TYPE "F"
A4.3 1 1/2" = 1'-0"



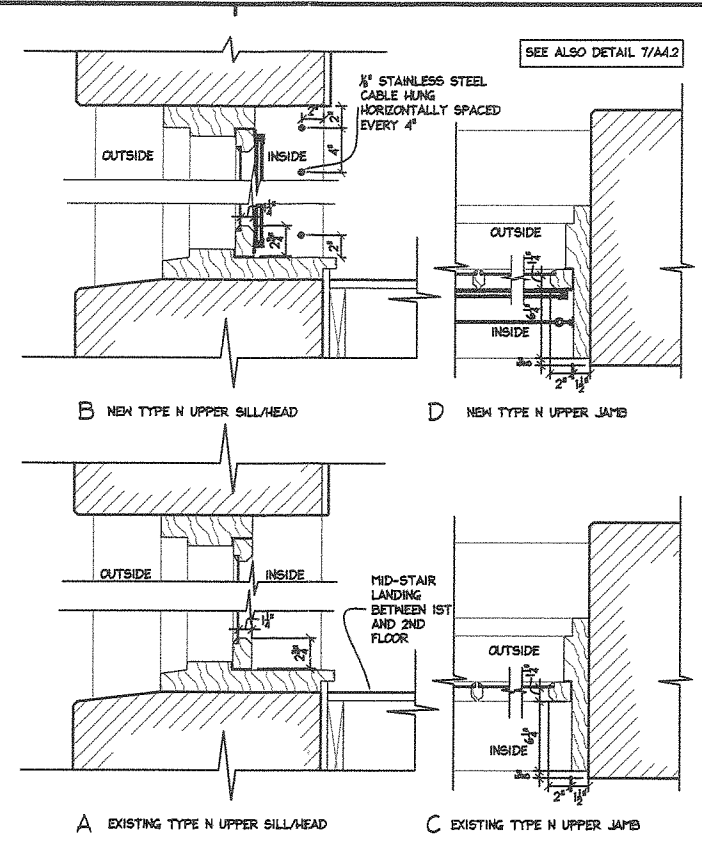
B NEW TYPES G & H SILL/HEAD

D NEW TYPES G & H JAMB/MULLION

A EXISTING TYPES G & H SILL/HEAD

C EXISTING TYPES G & H JAMB/MULLION

13 WINDOW TYPES "G" & "H"
A4.3 1 1/2" = 1'-0"



B NEW TYPE N UPPER SILL/HEAD

D NEW TYPE N UPPER JAMB

A EXISTING TYPE N UPPER SILL/HEAD

C EXISTING TYPE N UPPER JAMB

9 WINDOW TYPE "N"
A4.3 1 1/2" = 1'-0"

3

DRAWING: WINDOW DETAILS
PROJECT: TRACY LOFTS - PHASE 1
OWNER: TRACY LOFTS DEVELOPMENT VENTURE

HIGH PLAINS ARCHITECTS
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DRAWN BY: KF, JDS
PROJECT #: 20343.03
DATE: 12.1.11
REVISED:

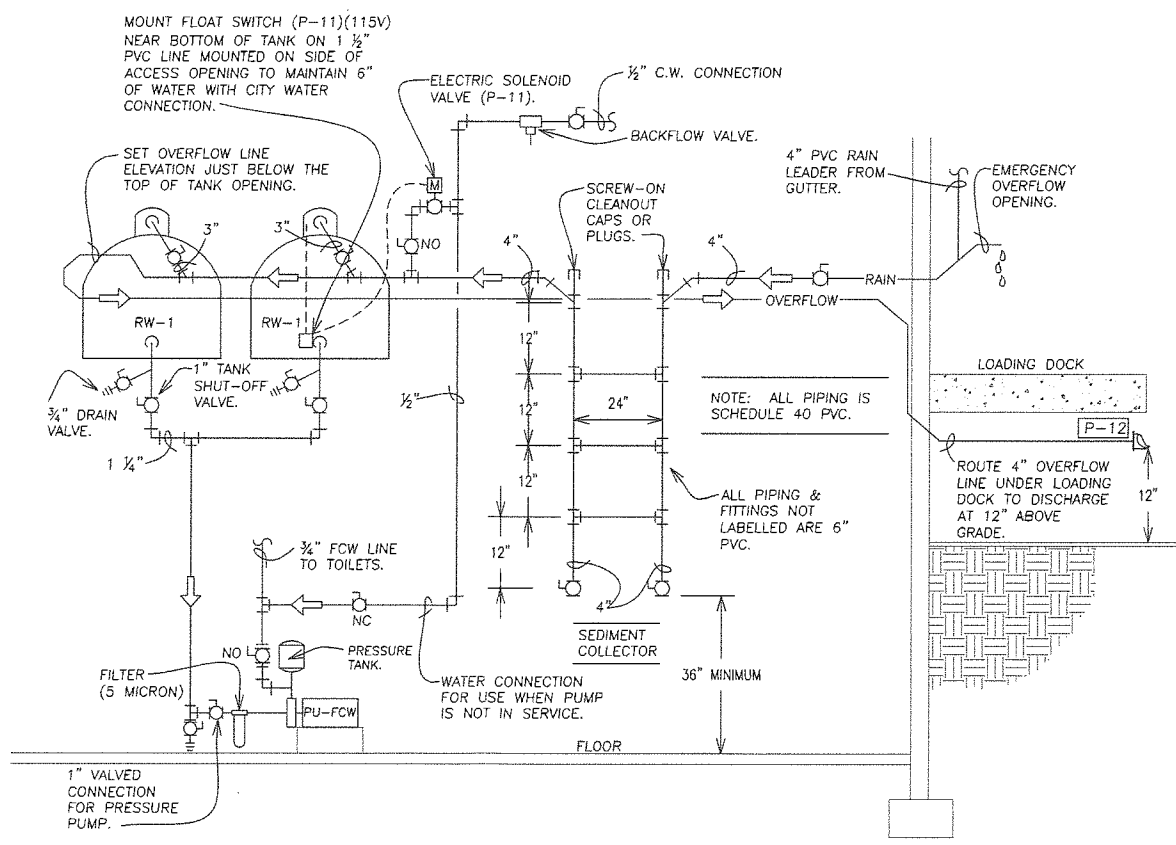
A4.3

SPECIFICATIONS

ITEM	DESCRIPTION
<p>CODES & PERMITS: ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING THE BUILDING CODE, PLUMBING CODE, MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER APPLICABLE RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.</p> <p>DRAWINGS & MEASUREMENTS: THE DRAWINGS INDICATE GENERAL ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDUITS, PIPING, SIZES AND LOCATIONS. DO NOT SCALE DRAWINGS TO OBTAIN EXACT DIMENSIONS. CONTACT ARCHITECT OR ENGINEER IF ANY QUESTIONS ARISE OR FOR CLARIFICATION.</p>	
PIPING	<p>DOMESTIC HOT & COLD, FLUSHING COLD (FC) PIPING: EQUAL TO WIRSSO PEX (POTABLE) POLYETHYLENE 1/2", 3/4", 1" SIZES. LARGER SIZE MAY BE PEX OR 1/2" COPPER TUBE.</p> <p>INSULATE ALL BOILER WATER, (HCR & HCS), DOMESTIC HOT WATER AND HOT WATER RETURN LINES WITH 3/4" THICK, POLYETHYLENE FOAM (THERMA-CEL) OR FIBERGLASS INSULATION.</p> <p>HCS, HCR & RADIANT LOOP PIPING: EQUAL TO WIRSSO PEX (OXYGEN BARRIER) POLYETHYLENE. BOILER PIPING SHALL BE "L" COPPER TUBE.</p> <p>GAS PIPING: SCHEDULE 40, BLACK STEEL OR APPROVED CORRUGATED STAINLESS.</p> <p>RAINWATER PIPING: SCHEDULE 40 PVC, INSULATE WITH 1" THICK FIBERGLASS WITH VAPOR BARRIER JACKET.</p> <p>WASTE & VENT PIPING: SCHEDULE 40 PVC, EXCEPT WHERE EXPOSED WASTE PIPING. EXPOSED WASTE PIPING SHALL BE "NO HUB" CAST IRON TO REDUCE THE SOUND OF THE WASTE WATER.</p> <p>PROVIDE PIPE IDENTIFICATION LABELLING WITH FLOW DIRECTION THRU OUT THE BUILDING.</p>
WATER SPECIALTIES	<p>RAINWATER TANKS (RW-1): EQUAL TO PLASTIC-WART.COM MODEL NO. TCS5891W, 65" DIA 89" HIGH, POLY TANK WITH ACCESS OPENING, 2500 GALS. VERIFY ACCESS INTO AND THRU BUILDING BEFORE PURCHASING.</p> <p>EXPANSION TANKS: (EXP) EQUAL TO SPARCO #1X-12, (POTABLE WATER) (EX-1) EQUAL TO AMTRIL #109 WITH FILL-TROL, (EX-2) EQUAL TO ANTRIL #110 WITH FILL-TROL.</p> <p>BALL VALVES: BRONZE OR BRASS BALL VALVE.</p> <p>CHECK VALVES: BRONZE EQUAL TO NIBCO T480, LINE SIZE SPRING TYPE.</p> <p>TEMPERING VALVE EQUAL TO WATTS SERIES H170L-W2-1 1/2" SIZE, 120°F.</p> <p>THERMOMETERS: EQUAL TO SPARCO NO. C1161, 2" DIA., PROVIDE BRASS THERMOWELL.</p> <p>AIR PURGER & VENT: EQUAL TO TACO #VPTX SERIES OF LINE SIZE.</p> <p>FLOW BALANCING VALVES (B): EQUAL TO TACO ACCU-FLOW OF LINE SIZE.</p> <p>STRAINERS: LINE SIZE, 40 MESH.</p> <p>BACKFLOW PREVENTOR: WATTS NO. 0090T, 1/2" SIZE.</p>
PUMPS (PU-X)	<p>PU-Z: EQUAL TO TACO MODEL D07-FC, CAST IRON FLANGE, 115V, .71 AMPS, 1/2 HP, 2 GPM @ 10 FT. HEAD. PROVIDE 3/4" SIZE FLANGE SHUT-OFF VALVES.</p> <p>PU-HB1 & HB2: EQUAL TO TACO MODEL D014, CAST IRON FLANGE, 115V, 2.0 AMPS, 1/2 HP, 28 GPM @ 8 FT. HEAD. PROVIDE 1 1/2" SIZE FLANGE SHUT-OFF VALVES. (PUMP PROVIDED WITH SPECIFIED BOILER).</p> <p>PU-HC1 & HC2: EQUAL TO TACO MODEL D011, CAST IRON FLANGE, 115V, 1.76 AMPS, 1/2 HP, 18 GPM @ 14 FT. HEAD. PROVIDE 1 1/2" SIZE FLANGE SHUT-OFF VALVES.</p> <p>PU-EV: EQUAL TO TACO MODEL 2400-30, CAST IRON FLANGE, 115V, 2.0 AMPS, 1/6 HP, 35 GPM @ 14 FT. HEAD. PROVIDE 2" SIZE FLANGE SHUT-OFF VALVES.</p> <p>PU-HHR: EQUAL TO TACO MODEL D06FC, BRONZE, INTEGRAL FLOW CHECK VALVE, 115V, .52 AMPS, 1/6 HP, 1.5 GPM @ 7 FT. HEAD.</p> <p>PU-SOL: TO BE PROVIDED WITH SOLAR HOT WATER SYSTEM. ESTIMATE MAXIMUM SIZE 115V, 4 AMPS.</p> <p>PU-FW: EQUAL TO GRANGER NO. 4HE29, 115/230V, 1/2 HP, 7.5 GPM @ 50 PSI, 6 GALLON TANK. PROVIDE NO. 3BU37 (5 MICRON) FILTER ON PUMP INLET.</p>
BOILERS & HOT WATER HEATERS	<p>HB-1 & 2: EQUAL TO WEL-MCLAIN ULTRA 230, NATURAL GAS, 230 MBH, AFUE=92%, 3" PVC VENT, 3/4" GAS CONNECTION, 115 VOLTS, 10 AMPS. PROVIDE CONCENTRIC VENT KIT AND ALL NECESSARY OPERATING AND SAFETY CONTROLS REQUIRED BY STATE STANDARDS. TYPICALLY THIS WOULD INCLUDE A FLOW SWITCH AND MASTER POWER SWITCH NEAR MECHANICAL ROOM EXIT DOOR. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS. BOILER PUMP (HB1 & HB2) IS PROVIDED WITH BOILER. BOILER SHALL BE PROVIDED WITH AN OUTDOOR SENSOR AND CONTROLS TO VARY WATER TEMPERATURES WITH OUTDOOR TEMPERATURES.</p> <p>HC-1 & HC-2: EQUAL TO WEL-MCLAIN GOLD INDIRECT WATER HEATER MODEL GOLD PLUS, STAINLESS STEEL, 119 GALLONS, 42 SQ. FT. HEAT EXCHANGER, 465 CFM (FIRST HOUR AT 115 F) WITH 200F BOILER WATER.</p> <p>ST-1: PROVIDED WITH THE SOLAR WATER HEATER KIT.</p>
CHILLER (CH-X)	<p>CH-1: (AIR COOLED WATER CHILLER WITH REMOTE EVAPORATOR) EQUAL TO MQUAY MODEL NO. AG28M, NOMINAL 16 TONS, COOL 35 GPM FROM 55°F TO 55°F @ 10' P.D., (10.8 EER), R-407C REFRIGERANT, SINGLE POINT POWER CONNECTION, PROVIDE CIRCUIT BREAKER/DISCONNECT SWITCH, ALL OPERATING CONTROLS, ALARMS, REMOTE INTERFACE PANEL, REFRIGERANT PIPING SHALL BE SIZED BY MANUFACTURER TO MATCH SITE LOCATION AND ELEVATION. VERIFY ELECTRICAL SERVICE AT 200V/3 PH. MINIMUM CIRCUIT AMPS=82, BREAKER SIZE=110 AMPS. PROVIDE LOCKERED PROTECTION PANELS AND VIBRATION ISOLATORS. PROVIDE FACTORY APPROVED START-UP AND INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS. 1,300 POUNDS-OPERATING WT.</p>
EXHAUST FANS (EF-X) ELECTRIC HEATER (HT-X)	<p>EF-1: EQUAL TO BROAN NO. 0TXE080, 120V, .4 AMPS, 80 CFM, 6" EXHAUST DUCT. PROVIDE LUTRON #MA-TS300 TIMER SWITCH.</p> <p>EF-2: EQUAL TO BROAN NO. L150, 120V 1.3 AMPS, 140 CFM @ 25" S.P., 6" EXHAUST DUCT. PROVIDE NO. 57V SPEED CONTROL SWITCH.</p> <p>EF-3: EQUAL TO BROAN NO. 0TXE110, 120V, .4 AMPS, 110 CFM, 6" EXHAUST DUCT. PROVIDE LUTRON #MA-TS300 TIMER SWITCH.</p> <p>EF-4: EQUAL TO BROAN MODEL NO. H080, 80 CFM, 120V, .6 AMPS, 4" EXHAUST DUCT. PROVIDE LUTRON #MA-TS300-EE TIMER SWITCH AND A HUMIDISTAT WIRED IN PARALLEL TO TIMER SWITCH.</p> <p>BE-1: DRYER BOOSTER FAN EQUAL TO GRANGER NO. 4Y435, 120V, .72 AMPS, 150 CFM @ 2" S.P., 4". PROVIDE PRESSURE SWITCH FOR OPERATION.</p> <p>SE-1: EQUAL TO BROAN NO. L106L, 120V, 1.1 AMPS, 97 CFM @ 25" S.P., 6" DUCT, NO. 9611 ADAPTER FILLING. PROVIDE BOTH A NO. 57V SPEED CONTROL SWITCH AND WIRE IN SERIES WITH LUTRON #MA-TS300 TIMER SWITCH.</p>
SOLAR HOT WATER	<p>EQUAL TO THE FOLLOWING COMPLETE KITS AND COMPONENTS MANUFACTURED BY HELIOWAY, INC. & AVAILABLE FROM SOLARDIRECT.COM WHICH INCLUDES: 4 028410 COLLECTORS, SIZE 4'X10', BLIND UNIONS, HEAT TRANSFER APPLIANCE, PUMPS, CONTROLS, EXPANSION TANK, PRESSURE GAUGE, PRESSURE RELIEF VALVE, 2 THERMOMETERS PRELUBRICATED AND PREWIRED WITH PLUG-IN ELECTRIC CORD, TWO-120 GALLON STORAGE TANKS, TILTING MOUNTING RACK KIT, AND ANTI-FREEZE SOLUTION. PROVIDE PIPING WITH INSULATION. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS. PROVIDE 5 YEAR MANUFACTURER WARRANTY.</p>
DUCTWORK	<p>ROUND & RECTANGULAR EXHAUST: GALVANIZED SHEETMETAL, PAINT FLAT BLACK ALL SHEETMETAL VISIBLE THRU GRILLES AND REGISTERS. PROVIDE FOR PREMIUM CAULK (NON-VOC) ON ALL EXHAUST DUCT JOINTS AND SEAMS.</p>
AIR DEVICES (AD-X)	<p>AD-1: ROOF JACK - EQUAL TO BROAN NO. 611, 8" ALUMINUM W/FLASHING FOR MOUNTING ON FLAT MEMBRANE ROOF.</p> <p>AD-2: ROOF JACK - EQUAL TO BROAN NO. 612, 12" ALUMINUM W/FLASHING FOR MOUNTING ON FLAT MEMBRANE ROOF.</p> <p>AD-3: OUTSIDE AIR - MOTORIZED DAMPER EQUAL TO RUSKIN NO. CDRS25, 4", WITH 120 VOLT OPERATOR.</p> <p>AD-4: DRYER ROOF JACK - EQUAL TO AMERICAN ALDES NO. 22041, 4", GALVANIZED, GRAVITY DAMPER FOR FLAT ROOF.</p>
CONTROLS	<p>PU-Z: (HEATING/COOLING ZONE PUMPS) PROVIDE A LOW VOLTAGE (24 VOLT) PROGRAMMABLE THERMOSTAT EQUAL TO WHITE-ROGERS MODEL 1Z78-1S1. PROVIDE A 2-RELAY CONTROLLER EQUAL TO A TACO NO. SR502, WITH FIRST RELAY TO SWITCH ON PUMP FOR HEATING AND SECOND RELAY TO SWITCH ON PUMP FOR COOLING. PROVIDE MOUNTING HART NO. 106333101, MODEL 039308600, 24 VOLT, AUTOMATIC CHANGEOVER SWITCH FOR EACH ZONE PUMP AND THERMOSTAT.</p> <p>BOILERS (HB-1 & HB-2): THE SENSOR LOCATED IN THE RESPECTIVE INDIRECT WATER HEATER SHALL CONTROL THE OPERATION OF EACH BOILER TO MAINTAIN THE SETPOINT TEMPERATURE. HB-2 BOILER WATER TEMPERATURE SHALL VARY WITH OUTDOOR TEMPERATURE.</p> <p>CHILLER & EVAPORATOR PUMP (PU-EV): SHALL BE PROVIDED WITH OPERATING CONTROLS BY MANUFACTURER AND INTERFACE WITH MASTER CONTROLLER DESCRIBED BELOW. THE SYSTEM SHALL OPERATE TO MAINTAIN A 55°F (HC-1) TANK TEMPERATURE WHEN ENABLED BY OUTDOOR TEMPERATURE.</p> <p>SOLAR HOT WATER SYSTEM: SHALL BE PROVIDED WITH ALL OPERATING CONTROLS AND SENSORS INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.</p> <p>SUPPLY FAN & MOTORIZED DAMPER (SF-1 & AD-3): SHALL BE PROVIDED WITH THE FAN SPEED CONTROL AND TIMER SWITCH SPECIFIED. DAMPER SHALL OPEN WHEN FAN OPERATES.</p> <p>HEAT/COOLING PUMPS (PU-HC1 & PU-HC2): SHALL BE CONTROLLED BY THE MASTER CONTROLLER DESCRIBED BELOW.</p> <p>MASTERCONTROLLER: THE MASTER CONTROLLER SHALL BE A DIGITAL DEVICE PROGRAMMED TO ACCOMPLISH THE FOLLOWING SEQUENCES WITH ALL SETPOINTS BEING ADJUSTABLE.</p> <p>HEATING BOILER (HB-2) SHALL BE ALLOWED TO OPERATE ONLY WHEN THE OUTSIDE TEMPERATURE (SENSOR LOCATED ON THE NORTH SIDE OF THE BUILDING) IS BELOW 50°F (ADJUSTABLE). THE HC-1 INDIRECT WATER HEATER SETPOINT TEMPERATURE SHALL VARY WITH OUTDOOR TEMPERATURE.</p> <p>CHILLER (CH-1) AND EVAPORATOR PUMP (PU-EV) SHALL BE ALLOWED TO OPERATE ONLY WHEN THE OUTSIDE TEMPERATURE IS ABOVE 75°F.</p> <p>THE 2 HEATING/COOLING SYSTEM PUMPS (HC-1 & HC-2) SHALL OPERATE IN SEQUENCE BASED ON OUTDOOR TEMPERATURE AND ALTERNATE THE LEAD/LAG ON A MONTHLY BASIS. THE LEAD PUMP SHALL OPERATE FOR HEATING WHEN THE OUTDOOR TEMPERATURE IS BELOW 60°F. THE LAG PUMP SHALL OPERATE WHEN THE OUTDOOR TEMPERATURE FALLS BELOW 20°F. THE LEAD PUMP SHALL OPERATE FOR COOLING WHEN THE OUTDOOR TEMPERATURE EXCEEDS 75°. THE LAG PUMP SHALL OPERATE WHEN THE OUTDOOR TEMPERATURE EXCEEDS 90°F.</p> <p>THE MASTER CONTROLLER SHALL BE A PRODUCT OF AND INSTALLED BY FOLLOWING APPROVED CONTROL CONTRACTORS: MECHANICAL TECHNOLOGY INC., CONTROL SYSTEM INTEGRATORS, ENCODE CORPORATION.</p>

FIRE SPRINKLER SPECIFICATIONS

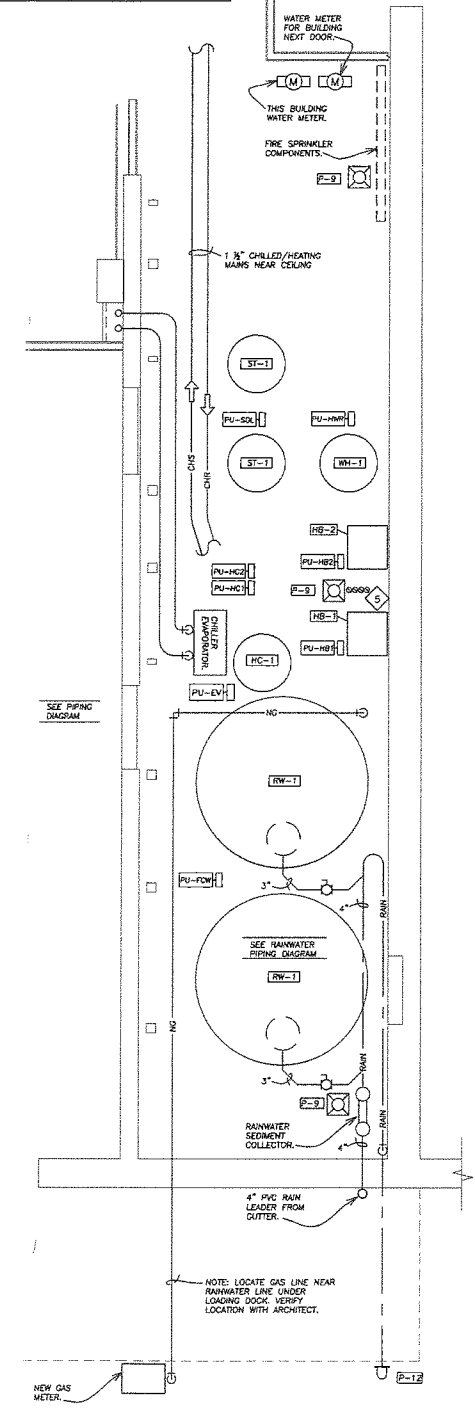
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AUTOMATIC FIRE SPRINKLER SYSTEM	<p>SCOPE OF WORK: THE INTENT OF THESE SPECIFICATIONS AND THE ACCOMPANYING DRAWINGS ARE TO DESCRIBE THE SYSTEMS TO BE INSTALLED, INCLUDING ALL MATERIALS AND NECESSARY LABOR, AND SUCH WORK DETAILS OF WORK OF MATERIALS NOT SPECIFICALLY MENTIONED OR SHOWN BUT NECESSARY FOR SUCCESSFUL COMPLETION OF THE INSTALLATION, THE WORK TO BE PERFORMED SHALL INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING SYSTEMS AND APPARATUS:</p> <p style="text-align: center;">AUTOMATIC FIRE SPRINKLER SYSTEM - WET SYSTEM FOR THE 13 R CLASSIFICATION PROJECT.</p> <p>SPRINKLER SYSTEM: PRODUCT OF A MONTANA LICENSED SPRINKLER CONTRACTOR. FURNISH AND INSTALL A FIRE PROTECTION AUTOMATIC SPRINKLER SYSTEM COMPLETE WITH ALL RELATED ITEMS IN ACCORDANCE WITH THE LATEST STANDARDS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS, NFPA REQUIREMENTS AND SYSTEM SHALL BE ACCEPTABLE TO THE INSURANCE SERVICE OFFICE OF MONTANA. WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING: AN OVERHEAD SPRINKLER SYSTEM FOR ALL AREAS OF THE NEW BUILDING INCLUDING THE ATTIC.</p> <p>MINIMUM DESIGN: ALL PIPING MAINS SHALL BE LOCATED AS HIGH AS PRACTICAL AND EXPOSED ONLY WHEN NECESSARY. THE RUNOUTS SHALL RISE UP FROM THE EXPOSED MAIN INTO THE JOIST SPACES AND RUN ABOVE THE SHEETROCK CEILING WITH THE SPRINKLER HEADS DOWN TOWARD THE CEILING. THE EXPOSED PIPING MUST BE RUN BETWEEN STRUCTURAL BEAMS OR RIGHT TO BOTTOM OF BEAM WHEN PASSING UNDER. PIPING MUST BE RUN SO AS TO PROVIDE MINIMUM INTERFERENCE WITH LIGHTING FIXTURES, DUCTS, STORAGE UNITS, OTHER PIPING, ETC., SHALL BE NEW, FREE FROM DUST, CLEAN AND HAVE ONE SHOP COAT OF RUST INHIBITING PAINT OR FACTORY LAQUOR COAT. HEADS IN AREAS OF EXPOSED PIPE MAY BE PENDANT OR UPRIGHT TYPE.</p> <p>DRAWINGS: PROVIDE LAYOUT DRAWINGS OF COMPLETE OVERHEAD SPRINKLER SYSTEM INDICATING RELATIONSHIP OF ALL OTHER OVERHEAD ITEMS INCLUDING CEILING AIR DIFFUSERS, DUCTS LIGHT FIXTURES, ETC.</p> <p>LOCATION OF RISERS, PIPING, ETC.: SHALL FULFILL ALL FUNCTIONAL REQUIREMENTS AND BE IN ACCORD WITH RESTRICTIONS SET FORTH HEREIN BEFORE. COMPLETE DETAILS AND SECTIONS AS REQUIRED TO CLEARLY DEFINE AND CLARIFY THE DESIGN INDICATED BY THE AFORESAID LAYOUT PLAN. SUBMIT ALL SHOP DRAWINGS TO THE INSURANCE SERVICES OFFICE OF MONTANA AND LOCAL CITY OFFICIALS FOR ACCEPTANCE PRIOR TO SUBMITTING TO ENGINEER.</p> <p>CONTRACTOR SHALL DETERMINE FIRE SPRINKLER SERVICE SIZE REQUIRED.</p> <p>INSTALLATION: FABRICATION AND INSTALLATION SHALL BE BY EXPERIENCED WORKMEN REGULARLY ENGAGED IN THE WORK. CUTTING OF STRUCTURAL MEMBERS FOR PASSAGE OF SPRINKLER PIPES OR HANGERS IS PROHIBITED UNLESS APPROVED BY THE ARCHITECT. WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS OR OTHER BUILDING CONSTRUCTION, SLEEVES MUST BE USED. WHERE EXPOSED PIPING PASSES THROUGH FINISHED WORK, CHROME PLATED, SLIT WALL PLATES OR ESCUTCHEONS SHALL BE INSTALLED TO FIT SNUGLY AROUND PIPING. WHERE FINISH IS NOT A PROBLEM, A SUITABLE PLATE SHALL BE PROVIDED AT EACH HOLE TO ASSURE EFFECTIVENESS OF CONSTRUCTION AS FIRE STOP. ALL OPENINGS FOR PIPING SHALL BE ANTICIPATED AND INDICATED ON THE SHOP DRAWINGS. NO WET SYSTEM PIPING SHALL BE EXPOSED TO FREEZING CONDITIONS. AFTER COMPLETION OF ALL INSTALLATION, TESTS, ETC., THE SPRINKLER CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION OF THE SPRINKLER SYSTEM.</p> <p>PROVIDE A FIRE DEPARTMENT SANSER FITTING MOUNTED ON THE BUILDING FOR USE WITH THIS SYSTEM.</p> <p>PROVIDE AN EXTERIOR ALARM BELL WITH THE SPRINKLER SYSTEM.</p> <p>PROVIDE AN ELECTRICALLY OPERATED ALARM AND CONTROL FOR A REMOTE ALARM SYSTEM BY OWNER.</p> <p>PROVIDE ON THE WALL NEAR MAIN SPRINKLER VALVE A CABINET CONTAINING EXTRA SPRINKLER HEADS OF EACH TYPE AND WRENCH SUITABLE FOR EACH TYPE AS REQUIRED BY THE NFPA.</p> <p>LOCATE SPRINKLER SYSTEM TEST VALVES, AS REQUIRED, AT JANITOR'S SINKS OR MECHANICAL ROOM FLOOR DRAINS.</p> <p>WARRANTY: THE SPRINKLER CONTRACTOR SHALL PROVIDE A LETTER SIGNED BY THE FIRE SPRINKLER SYSTEM DESIGN ENGINEER AND FIRE SPRINKLER COMPANY OWNER CERTIFYING THAT THE DESIGN AND INSTALLATION MEET THE CURRENT REQUIREMENTS OF NFPA. THE SYSTEM WARRANTY SHALL BE FOR A MINIMUM OF 2 YEARS.</p>
SITE PRESSURE & FLOW DATA FROM THE CITY RECORDS.	<p>FLOW DATA 2007 65 PSI STATIC 47 PSI RESIDUAL 1.150 + GPM 12" MAIN</p>



12 RAINWATER STORAGE SYSTEM DETAIL
MO.1 NO SCALE

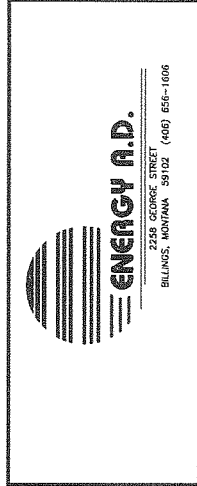
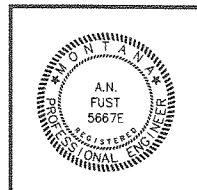
TRACY BUILDING

HEATING & COOLING LOAD CALCULATIONS			
PEAK OUTSIDE AIR LOAD IS 380 CFM @ 20 CFM/APARTMENT.			
HEAT LOAD CALCULATIONS:			
ENVELOPE	= 8 BTU/FT ² (17,928)	=	144,000 BTUH
OUTSIDE AIR	= 90' ΔT (380 CFM)	=	36,200 BTUH
		HEAT LOAD	= 178,200 BTUH
COOLING LOAD CALCULATIONS:			
ENVELOPE	= 3 BTU/FT ² (17,928)	=	53,800 BTUH
LIGHTS	= 1 WATT/FT ² = 1,825(3,413)	=	61,180 BTUH
38 PERSONS	= 400 BTUH/PERSON	=	15,200 BTUH
EQUIPMENT	= 14 KW(3,413)	=	47,800 BTUH
OUTSIDE AIR	= 380 CFM(30' ΔT)	=	11,400 BTUH
		COOLING LOAD	= 189,390 BTUH



15 BASEMENT MECHANICAL ROOM
MO.1 SCALE: 1/4" = 1'-0"

4



DRAWING: SPECS AND DETAILS
 PROJECT: TRACY LOFTS
 OWNER: TRACY LOFTS DEVELOPMENT VENTURE

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MO.1