

# RENO OF EXISTING THREE FAMILY HOME

## 7 THORNLEY ST, DORCHESTER, MA 02125

LIST OF DRAWINGS

- TS- LIST OF DRAWINGS, ZONING CHART, EXISTING AND PROPOSED SITE PLAN
- PROPOSED SITE PLAN
- EXISTING SITE PLAN
- BWSC PLAN
- A1- PROPOSED BASEMENT AND FIRST FLOOR PLAN
- A2- PROPOSED SECOND AND THIRD FLOOR PLAN
- A3- PROPOSED ROOF FLOOR PLAN, AND BUILDING SECTION
- A4- PROPOSED FRONT, AND REAR ELEVATIONS
- A5- PROPOSED SIDE ELEVATION
- A6-PROPOSED SIDE ELEVATION
- A7- BUILDING SECTIONS, WALL TYPES WINDOW AND DOOR SCHEDULE
- A8- WALL SECTIONS ROOF DETAIL STAIR DETAIL

- S1- FOUNDATION AND FIRST FLOOR FRAMING
- S2- SECOND FLOOR AND THIRD FLOOR FRAMING
- S3- ROOF FRAMING AND SECTIONS
- S4- DETAILS

- FA1- PROPOSED BASEMENT AND FIRST FLOOR PLAN FIRE ALARM
- FA2- PROPOSED SECOND AND THIRD FLOOR PLAN FIRE ALARM
- FA3- PROPOSED ROOF FLOOR PLAN FIRE ALARM AND DETAILS
- FP1- PROPOSED BASEMENT AND FIRST FLOOR PLAN FIRE PROTECTIONS
- FP2- PROPOSED SECOND AND THIRD FLOOR PLAN PROTECTIONS
- FP3- PROPOSED ROOF FLOOR PLAN FIRE PROTECTIONS DETAILS

ATTACHMENTS

HERS RATING

Zoning Table		
7 THORNLEY ST		
Zoning Tables		
Dimensional Requirements		
Dimensional Regulations	Requirements for Residential Subdistrict 3D-3000	EXISTING THREE FAMILY
Lot Area	3000 SF	6,345 sq ft
Lot Width	30	80.00
Lot Frontage (cannot be less than lot Width)	30	80.00
Floor Area Ratio (Max.)	1.3 3000 sf	.66 4,161 SF
Building height (stories)	3	3
Building height (feet)	40'-0"	36'-0"±
Usable Open Space per Dwelling Unit	300 SF PER UNIT	1260 SF
Front Yard Depth	5'-0"	8'-0" NO CHANGE
Side Yard Depth	5'-0"	(L)-1'-11"-min." NO CHANGE (R)-4'-9"- min.
Rear Yard Depth	15'-0"	25'-0"
Rear yard Max. Occ. by Accessory Buildings	.25	N/A

\*Section 65-43. - Nonconformity as to Dimensional Requirements.  
A Building or use existing on the effective date of this Article and not conforming to the applicable dimensional requirements specified in other provisions of this Article may nevertheless be altered or enlarged, provided that such nonconformity is not increased and that any enlargement itself conforms to such dimensional requirements.

TOTAL SQUARE FOOTAGE BREAKDOWN 7 THORNLEY

1ST: 1,387 SF OF LIVING AREA

2ND: 1,387 SF OF LIVING AREA

3RD: 1,387 SF OF LIVING AREA

TOTAL: 4,161 SF OF LIVING AREA

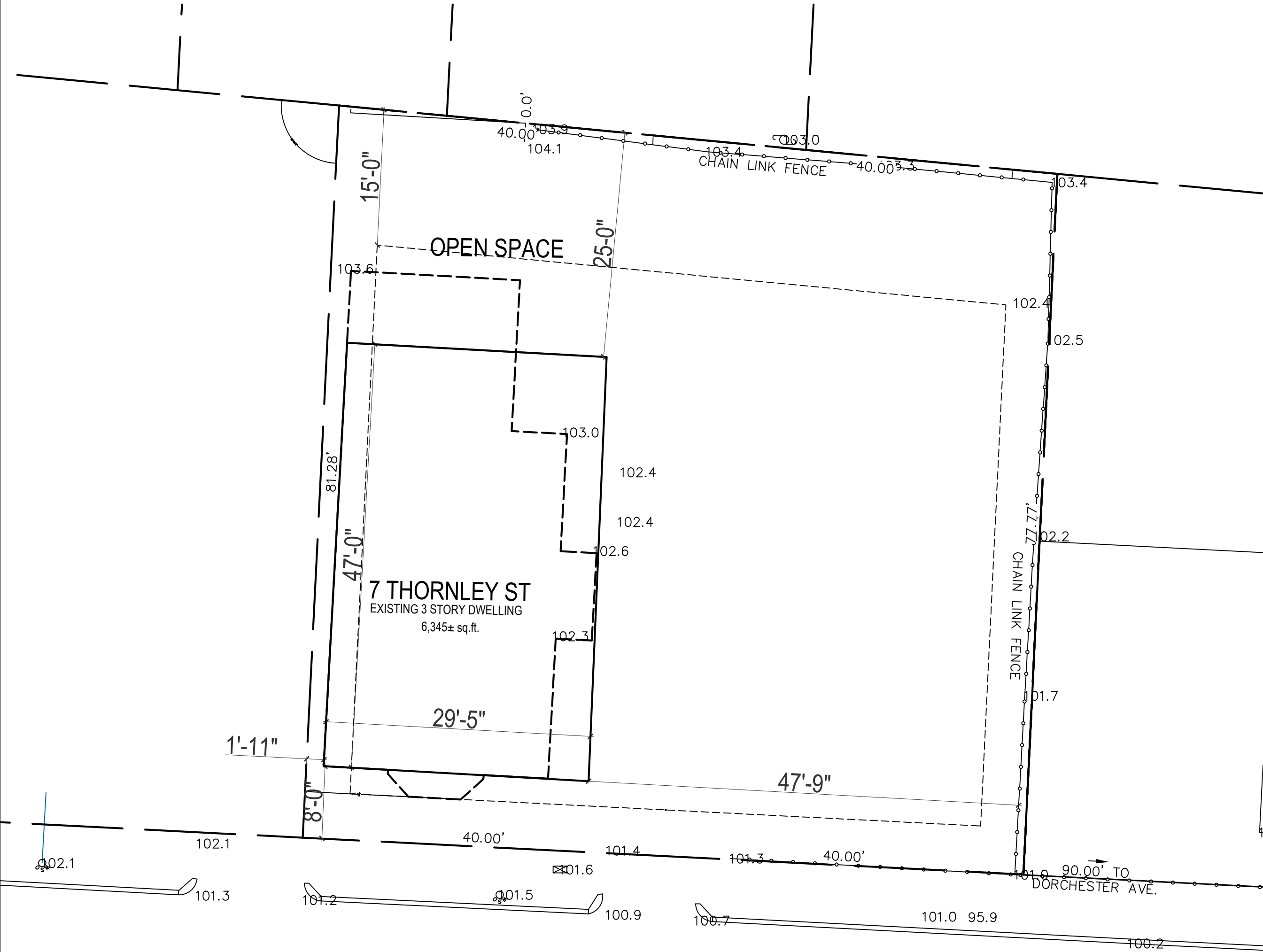
GENERAL NOTE-

-BUILDING WILL BE FULLY SPRINKLERED

-SEE FIRE ALARM PLANS FOR DEVICES

-M.E.P.S ARE DESIGN BUILD BY THE OWNER AND G.C. AND WILL BE COORDINATED WITH THE ARCHITECT AND HERS RATER-

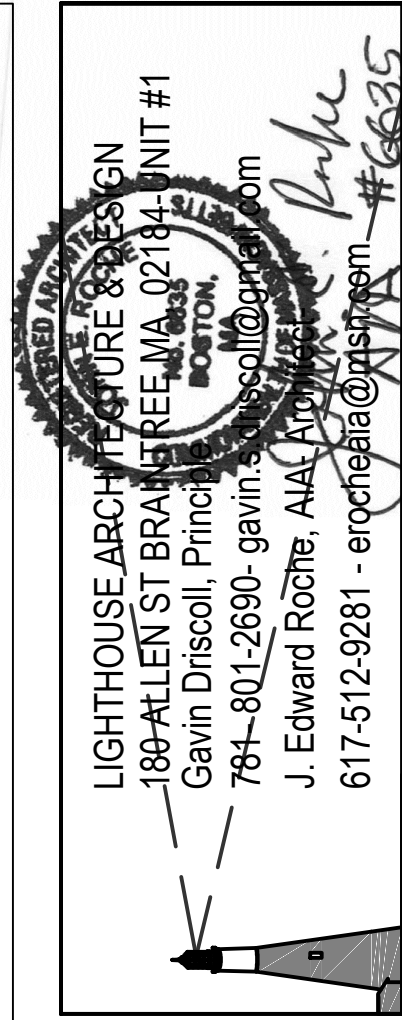
-SEE ATTACHED HERS RATING FOR INSULATION CALCULATIONS AND REQUIREMENT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE PLANS AND SETTING UP THE INSPECTORS WITH THE HERS RATING



PROPOSED LANDSCAPE PLAN  
1/4"=1'-0"

THORNLEY ST  
(40' R.O.W.)  
101.0  
101.2  
101.3  
101.5  
100.9  
100.7  
101.0  
95.9  
100.2

SEE SITE PLAN FOR OFFICIAL SETBACK



DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

TITLE SHEET  
ZONING

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

TS

GENERAL NOTE:  
VERIFY AND CONFIRM ALL CONDITIONS AND/OR DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS. NOTIFY ARCHITECT OF ANY INCONSISTENCIES FOR REVIEW AND APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.



1. WATER ACCOUNT NUMBER 1437996  
2. PARCEL NUMBER 2112  
3. WARD 13  
4. PROPERTY ADDRESS 7 THORNLEY ST  
5. NEIGHBORHOOD DORCHESTER  
6. ZIPCODE 02125  
7. OWNER ADDRESS 832 dorchester ave boston ma 02125  
8. OWNER TELEPHONE NO. 617-477-7733-Bobby Eliffe  
9. OCCUPANCY TYPE 3 FAMILY  
10. METER SIZE 5/8"  
11. METER INSIDE YES  
12. METER OUTSIDE NO  
13. CONSTRUCTION TYPE WOOD FRAME  
14. SEWERAGE FLOWS 110 GPD X 9 BEDROOMS= 990 GPD  
15. LAND USE CODE R3  
16. INFL. SYS. LAT./LONG. 42.314160, -71.057538

CUT & CAP EXISTING SEWER SERVICE@MAIN  
INSPECTED BY DATE  
CUT & CAP EXISTING WATER SERVICE@MAIN

INSPECTED BY DATE  
1" TYPE K COPPER DOMESTIC WATER SERVICE

INSPECTED BY DATE  
2" TYPE K COPPER FIRE SERVICE

INSPECTED BY DATE  
DOWNSPOUT INSTALLATION

INSPECTED BY DATE  
INFILTRATION SYSTEM INSTALLATION

INSPECTED BY DATE  
MINI CB INSTALLATION

#### DRAINAGE CALCULATIONS

IMPERVIOUS AREA = 1400 S.F. ROOF +4350 DRIVEWAY/PARKING  
INFILTRATE (STORE) 1" OF RUNOFF  
1/12 (5750 S.F.) = 479.2 CU. FT.

USE (5) CULTEC 330XLHD LEACH CHAMBERS - SEE DETAIL  
52.2 CU. FT. WITH 12 IN. CRUSHED STONE AROUND & 12" BASE  
52.2 CU. FT. x 5 = 261 CU. FT. CHAMBER VOLUME  
VOLUME COMPUTATION EXTERIOR CRUSHED STONE  
40.5 FT. x 8.33 FT. x 3.5 FT. = 1180.8 CU. FT.  
1180.8 CU. FT. - 261 CU. FT. (CHAMBER VOLUME) = 919.8 CU. FT.  
919.8 CU. FT. x 0.3 (VOIDS) = 275.9 CU. FT. VOLUME Voids STORAGE  
261 CU. FT. CHAMBER VOLUME + 275.9 CU. FT. Voids = 536.9 CU. FT.  
536.9 CU. FT. TOTAL STORAGE > 479.2 CU. FT. RUNOFF CALCULATION

6"SDR35 PVC SEWER SERVICE W/CLEANOUT

INSPECTED BY DATE  
SEWER DYE TEST

INSPECTED BY DATE

INSPECTED BY DATE

INSPECTED BY DATE

INSPECTED BY DATE

INSPECTED BY DATE

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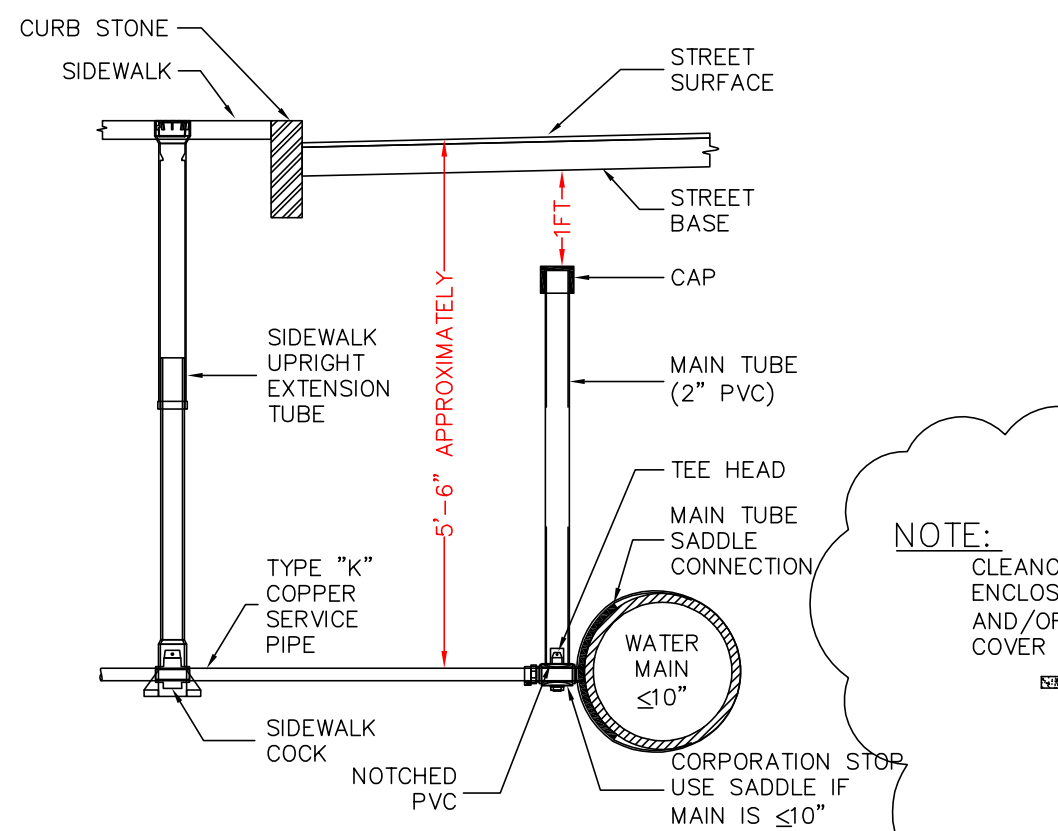
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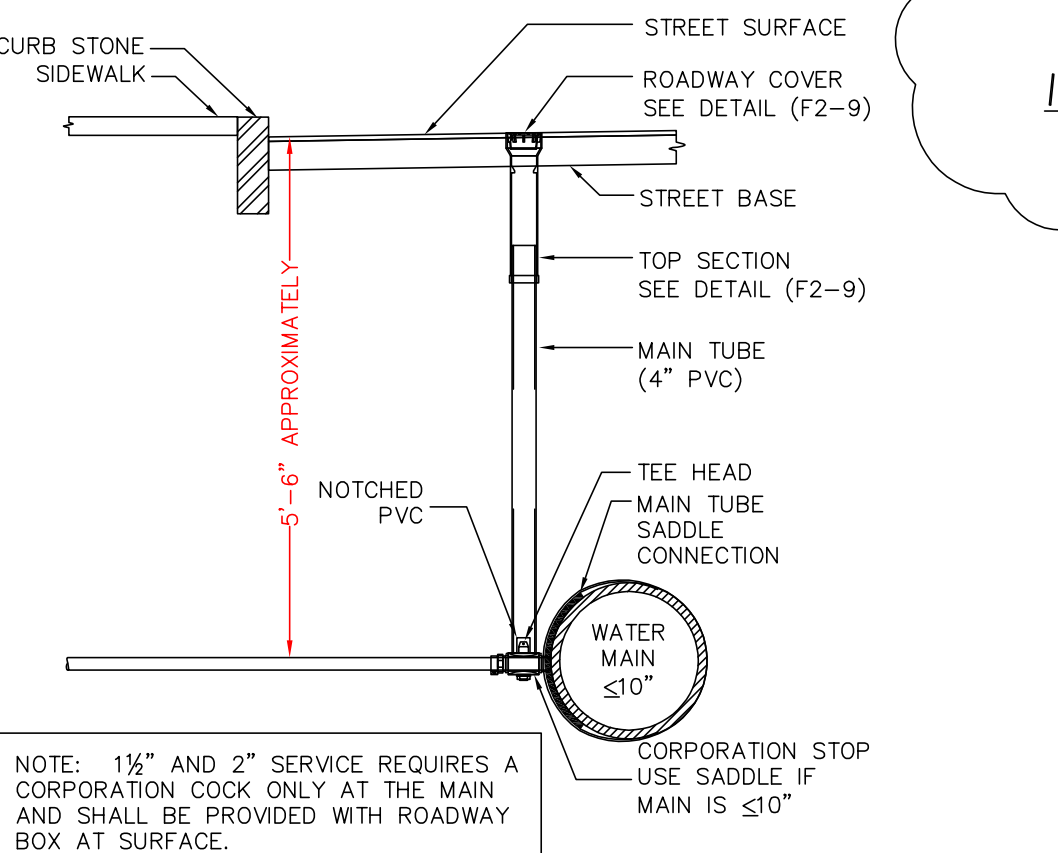
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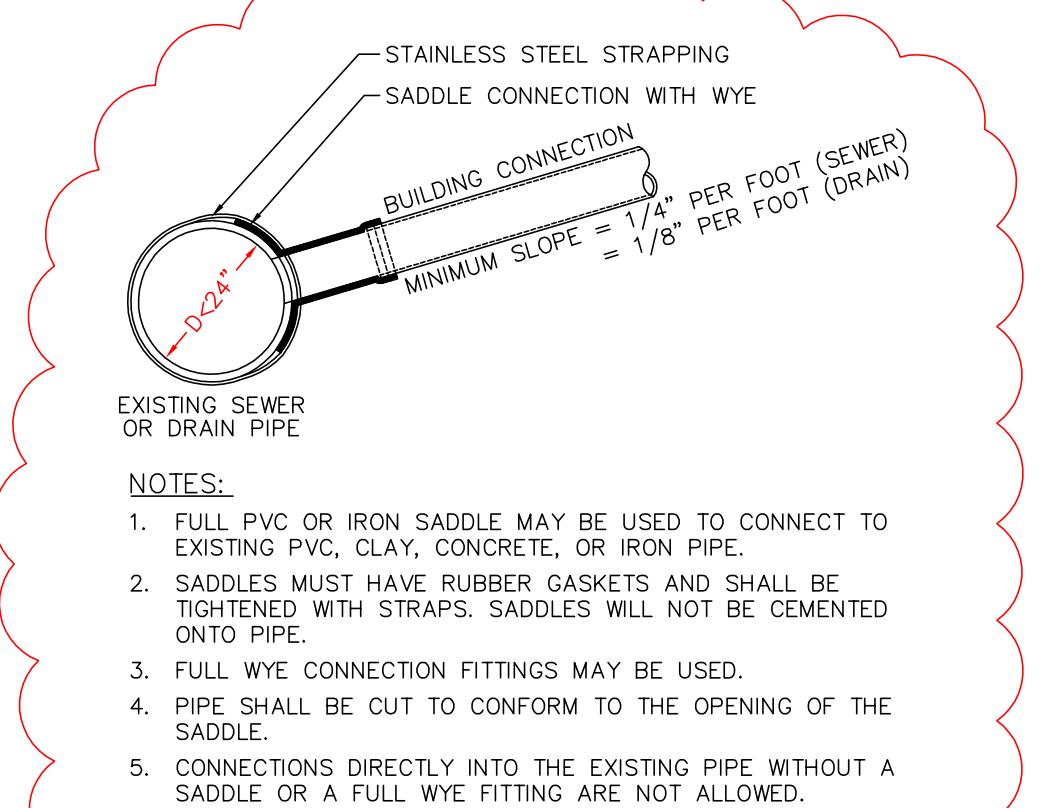
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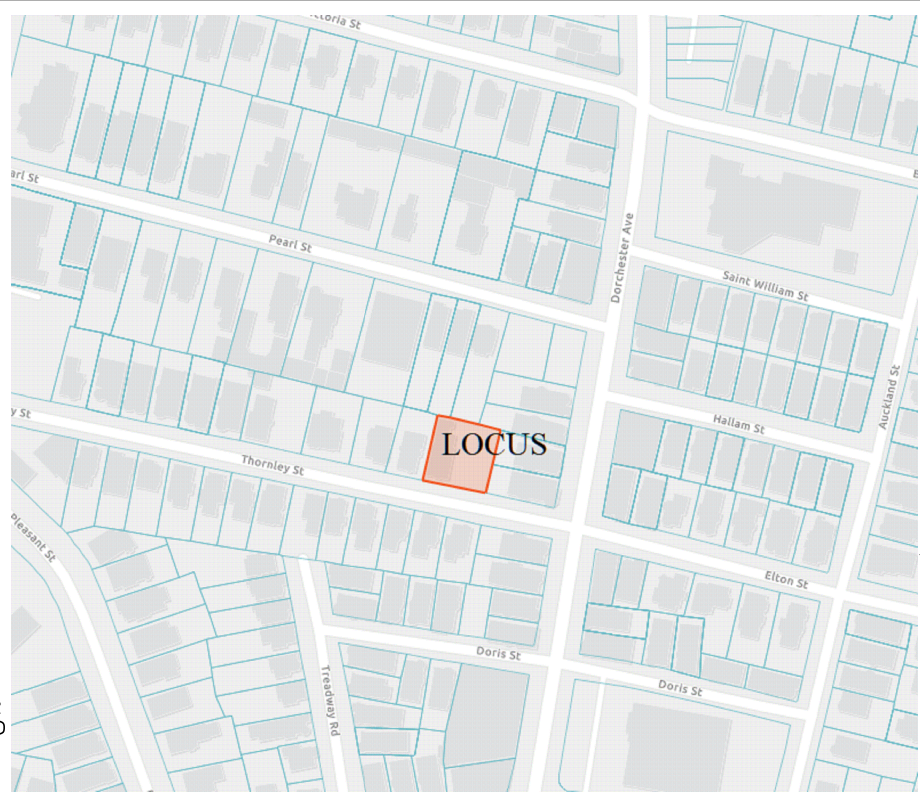
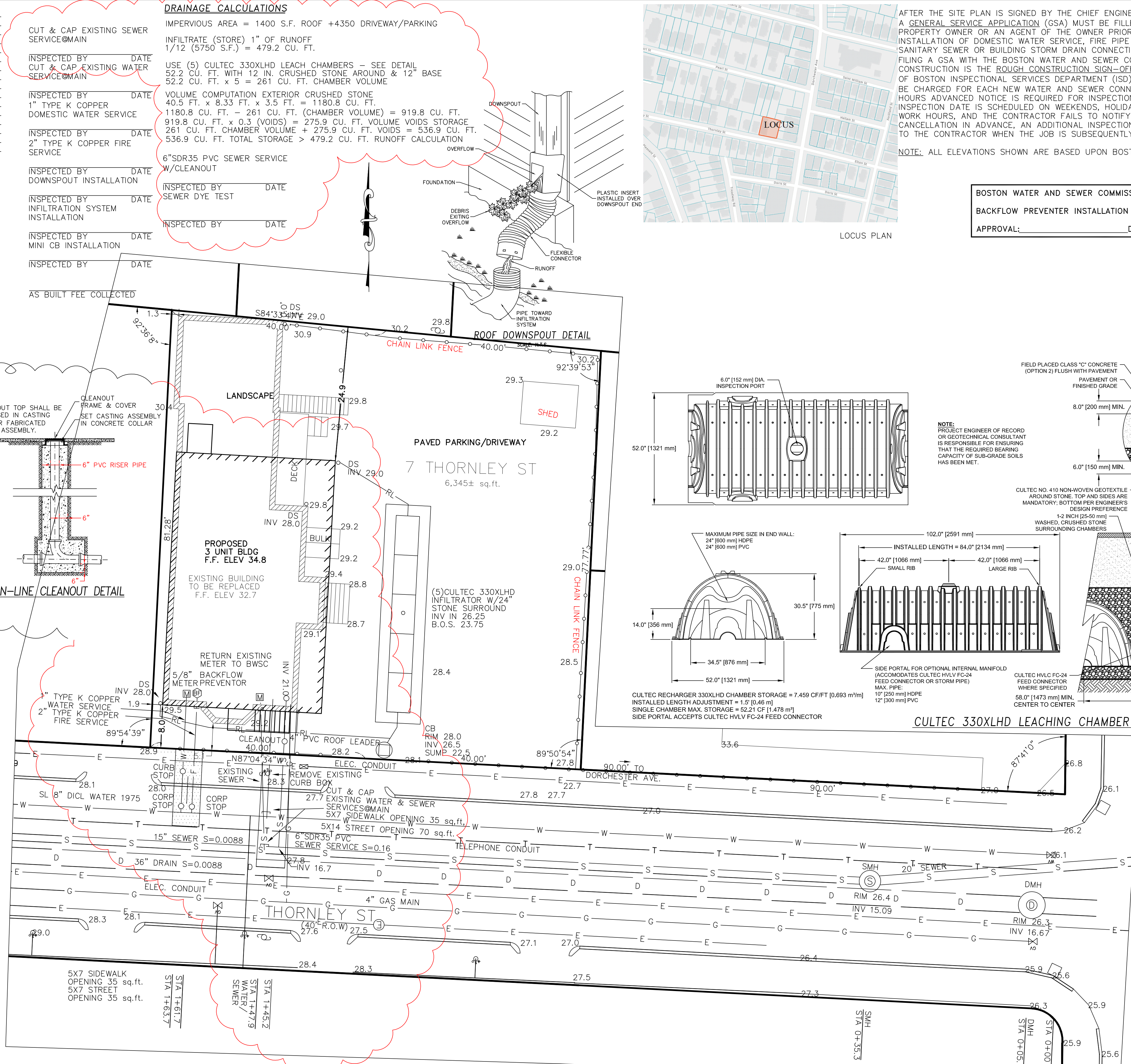
WATER SERVICE CONNECTION DETAIL



FIRE SERVICE CONNECTION DETAIL



SEWER SERVICE CONNECTION DETAIL



LOCUS PLAN

AFTER THE SITE PLAN IS SIGNED BY THE CHIEF ENGINEER OR THEIR DESIGNEE, A GENERAL SERVICE APPLICATION (GSA) MUST BE FILLED OUT AND SIGNED BY THE PROPERTY OWNER OR AN AGENT OF THE OWNER PRIOR TO THE TIME OF INSTALLATION OF DOMESTIC WATER SERVICE, FIRE PIPE SERVICE, BUILDING SANITARY SEWER OR BUILDING STORM DRAIN CONNECTIONS. A PREREQUISITE FOR FILING A GSA WITH THE BOSTON WATER AND SEWER COMMISSION (BWSC) FOR NEW CONSTRUCTION IS THE ROUGH CONSTRUCTION SIGN-OFF DOCUMENT FROM THE CITY OF BOSTON INSPECTIONAL SERVICES DEPARTMENT (ISD). AN INSPECTION FEE WILL BE CHARGED FOR EACH NEW WATER AND SEWER CONNECTION. TWENTY-FOUR (24) HOURS ADVANCED NOTICE IS REQUIRED FOR INSPECTION SCHEDULING. IF ANY INSPECTION DATE IS SCHEDULED ON WEEKENDS, HOLIDAYS, OR AFTER REGULAR WORK HOURS, AND THE CONTRACTOR FAILS TO NOTIFY THE BWSC INSPECTORS OF CANCELLATION IN ADVANCE, AN ADDITIONAL INSPECTION FEE WILL BE CHARGED TO THE CONTRACTOR WHEN THE JOB IS SUBSEQUENTLY RE-SCHEDULED.

NOTE: ALL ELEVATIONS SHOWN ARE BASED UPON BOSTON CITY BASE U.O.S.

BOSTON WATER AND SEWER COMMISSION  
BACKFLOW PREVENTER INSTALLATION  
APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_

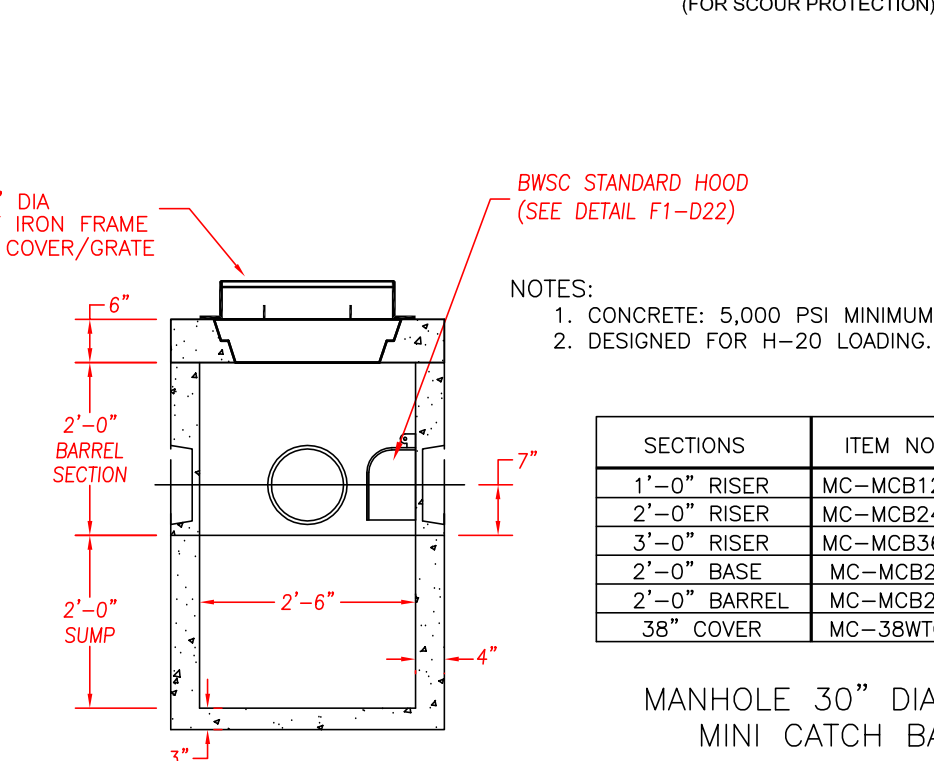
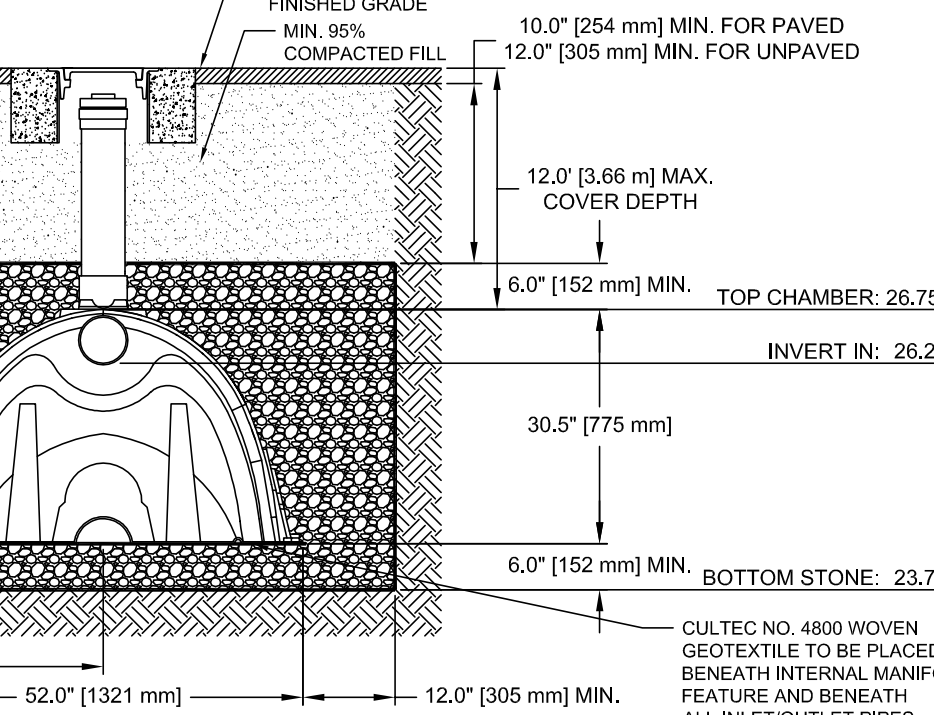
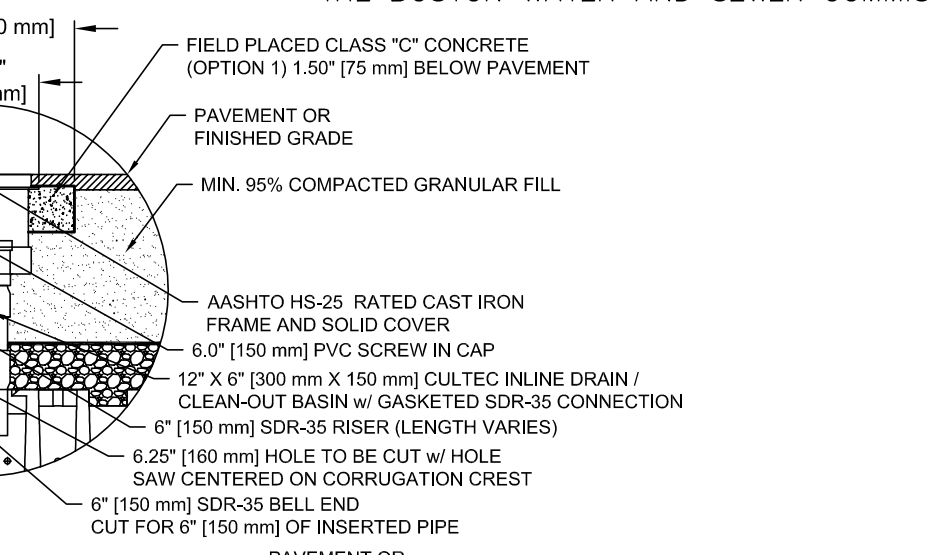
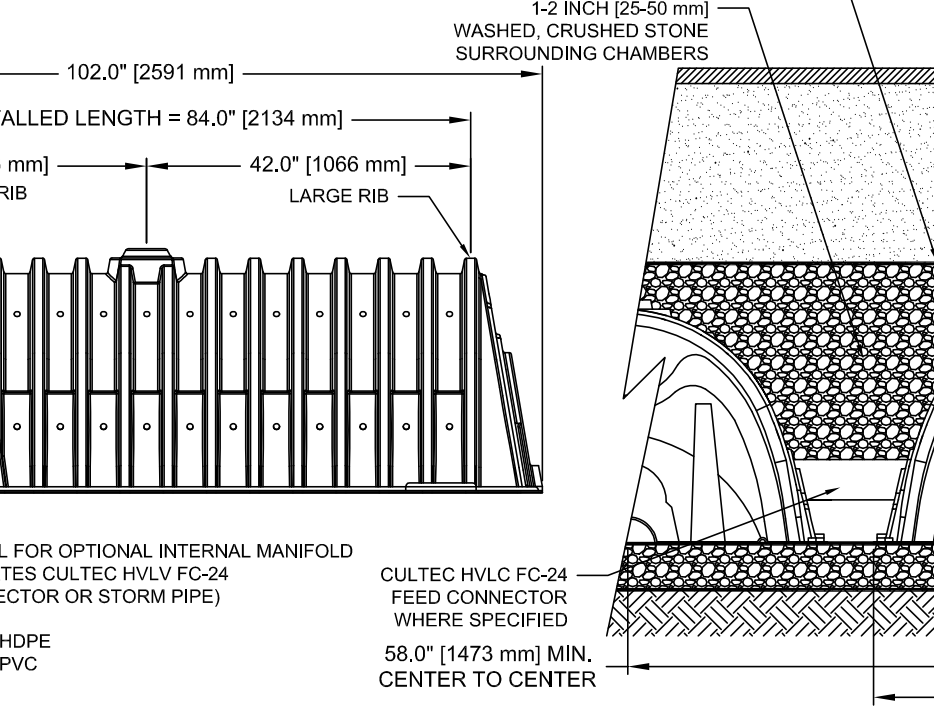
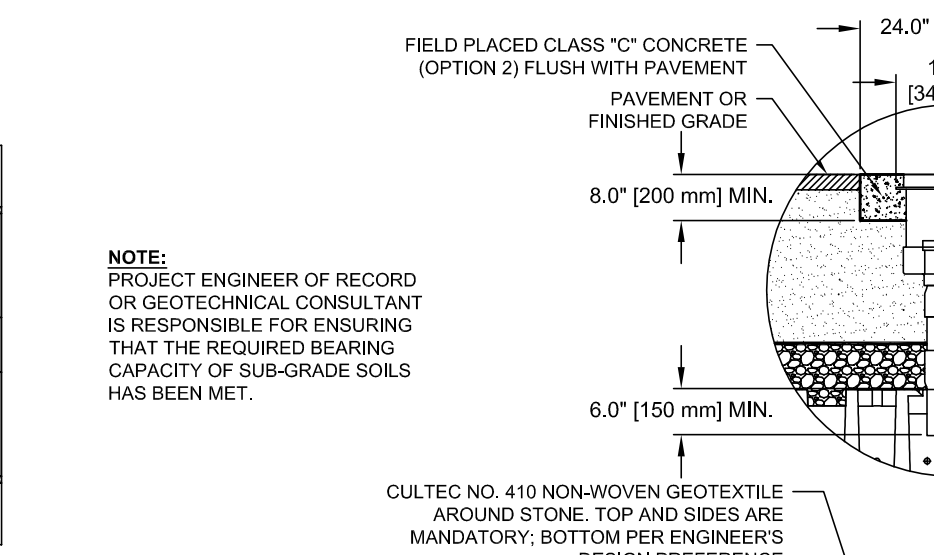
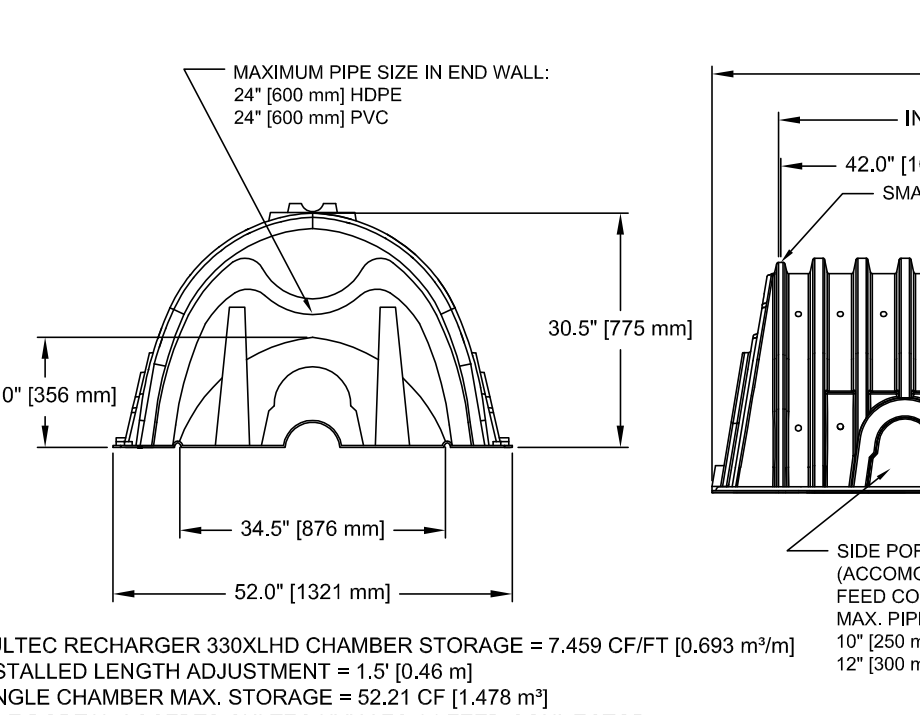
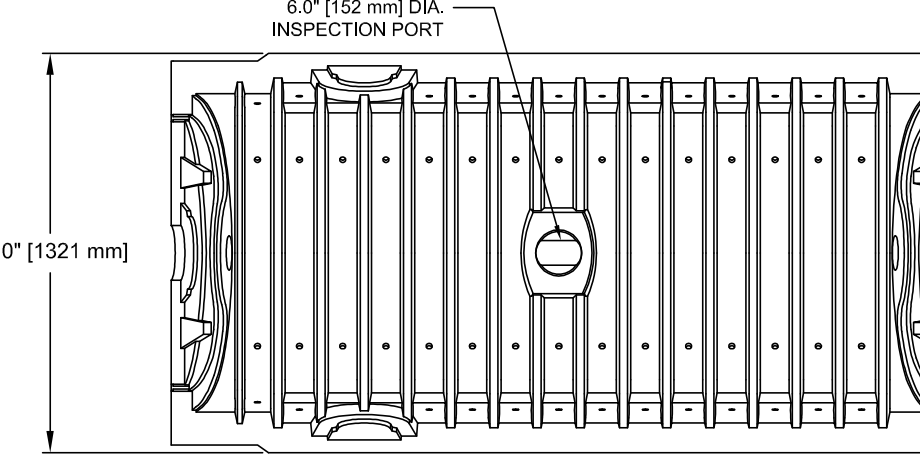
BOSTON WATER AND SEWER COMMISSION  
LOCATION APPROVED UNDER THE FOLLOWING CONDITIONS

REVIEWED AND APPROVED AS TO PROPOSED CONNECTION(S) TO EXISTING WATER AND SEWER FACILITIES AS SHOWN, FOR ISSUE OF BUILDING PERMIT ONLY. ADDITIONAL PERMITS MUST BE OBTAINED FROM BWSC PRIOR TO CONNECTION TO BWSC FACILITIES. SITE PLANS ARE VALID FOR A PERIOD OF ONE (1) YEAR FROM DATE OF APPROVAL.

JOHN P. SULLIVAN JR., P.E. DATE  
CHIEF ENGINEER

FOR BWSC ONLY

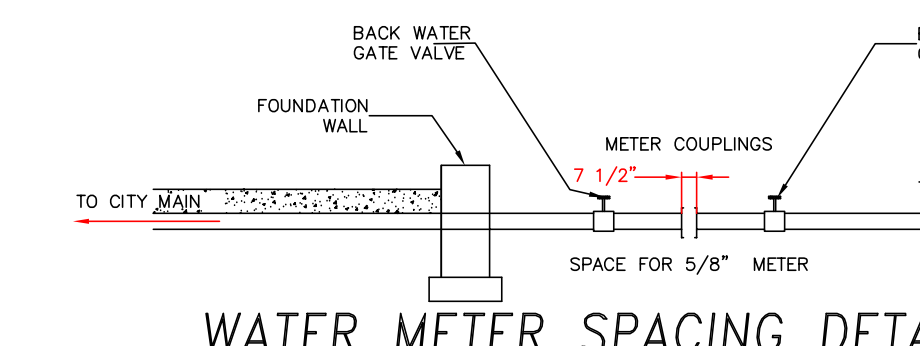
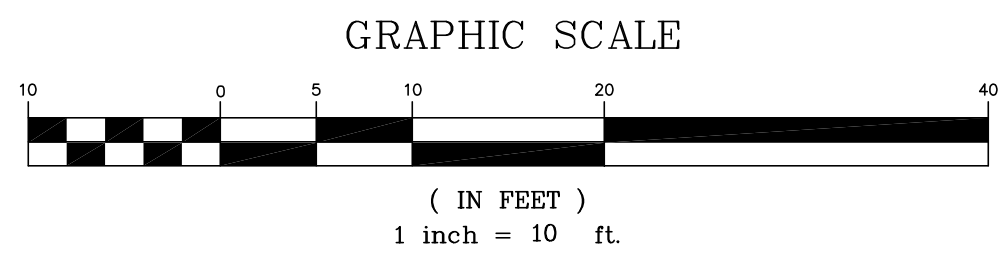
ALL WATER, SEWER, AND DRAIN SERVICE CONNECTIONS TO BOSTON WATER AND SEWER COMMISSION FACILITIES MUST BE PERFORMED BY A BONDED DRAIN LAYER, LICENSED BY THE BOSTON WATER AND SEWER COMMISSION.



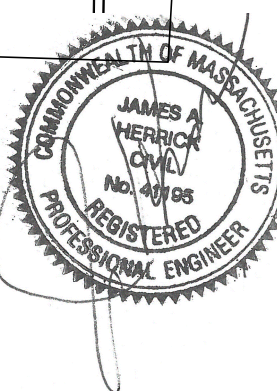
30" MINI CATCH BASIN DETAIL

SECTIONS	ITEM NO	WEIGHT
1'-0" RISER	MC-MCB12RH	440#
2'-0" RISER	MC-MCB24RH	880#
3'-0" RISER	MC-MCB36RH	1320#
2'-0" BASE	MC-MCB24SH	1175#
2'-0" BARREL	MC-MCB24BSH	880#
38" COVER	MC-38WTCB	585#

MANHOLE 30" DIA H-20 MINI CATCH BASIN



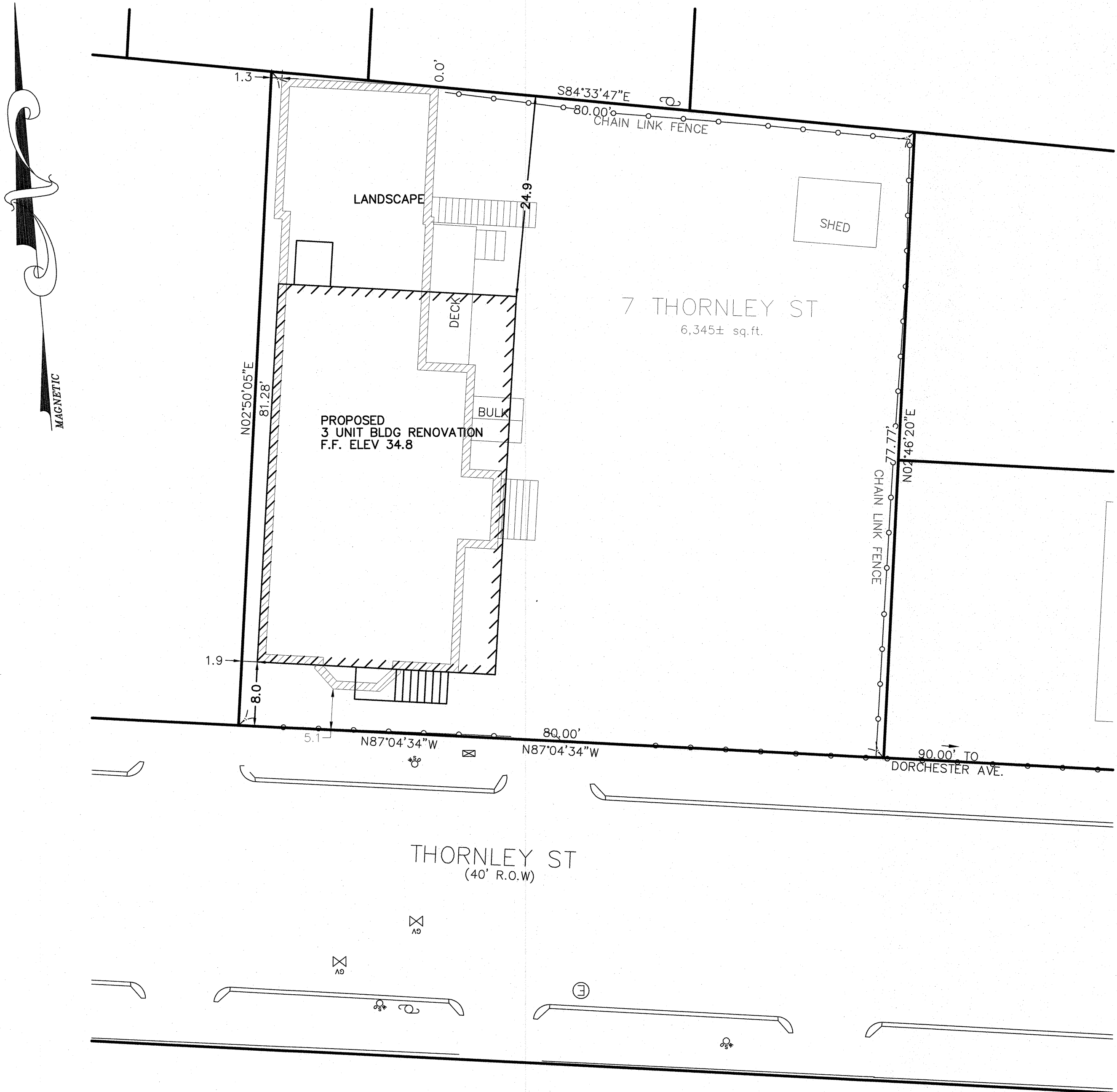
WATER METER SPACING DETAIL



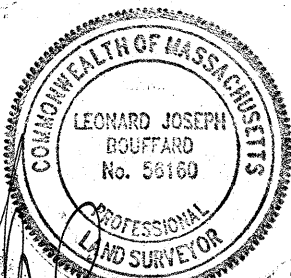
REVISION DUE TO BLDG CHANGE L.J.B. 10/21/2025  
SITE PLAN #25-321  
7 THORNLEY STREET  
DORCHESTER, MA  
FOR  
THORNLEY DOT LLC  
CIVIL ENVIRONMENTAL CONSULTANTS, LLC  
8 OAK STREET PEABODY, MA 01960 - (978) 531-1191  
SHEET NO: 1 OF 1 DATE: 10/21/2025 JOB: 4819  
DRAWN BY: L.J.B.



PARCELID:  
1302112000  
DEED:  
BOOK 71429 PAGE 332  
PLAN  
BOOK 1058 PAGE 270  
PLAN 146 OF 2025  
PLAN 252 OF 2020  
CITY OF BOSTON  
STREET LAYOUT  
L-9222  
L-963

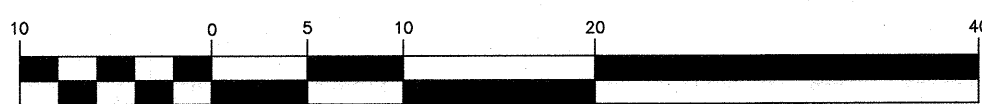


DRAWN BY: D.J.B./L.J.B.



LEONARD JOSEPH BOUFFARD P.L.S.

DATE \_\_\_\_\_

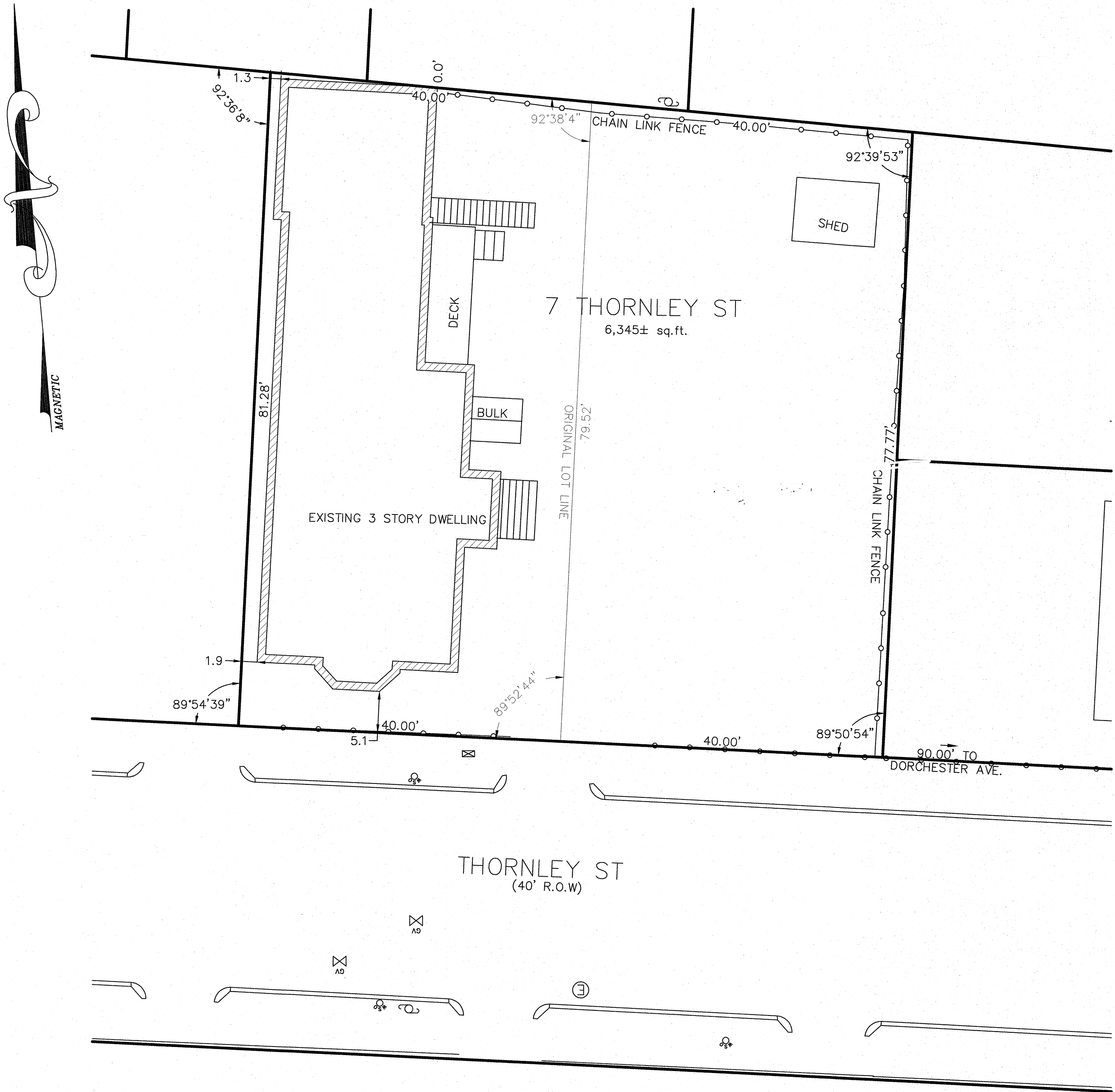


( IN FEET )  
1 inch = 10 ft.

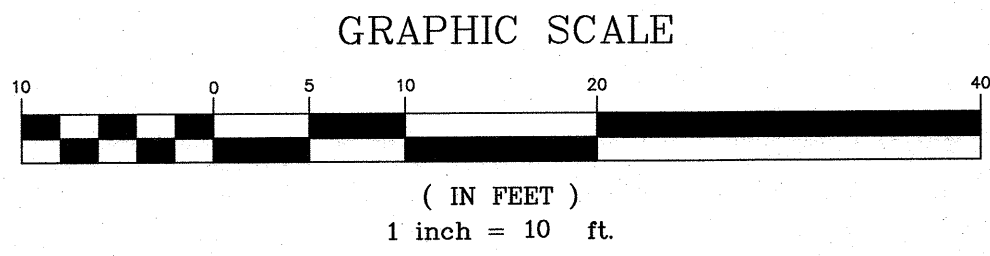


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BOOK 71429 PAGE 332  
PLAN  
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L-9222  
L-963



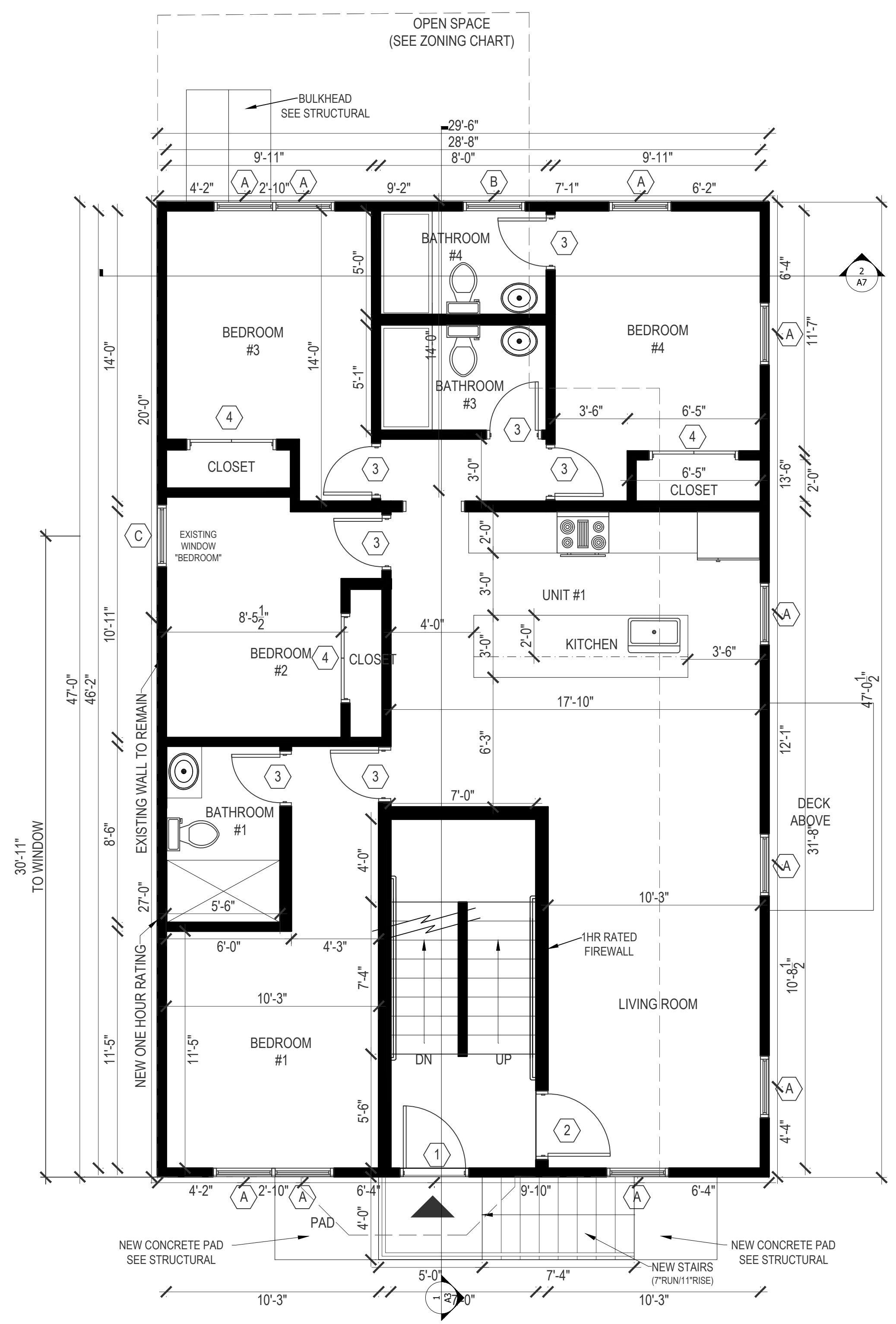
LEONARD JOSEPH BOUFFARD P.L.S. DATE 5-28-25



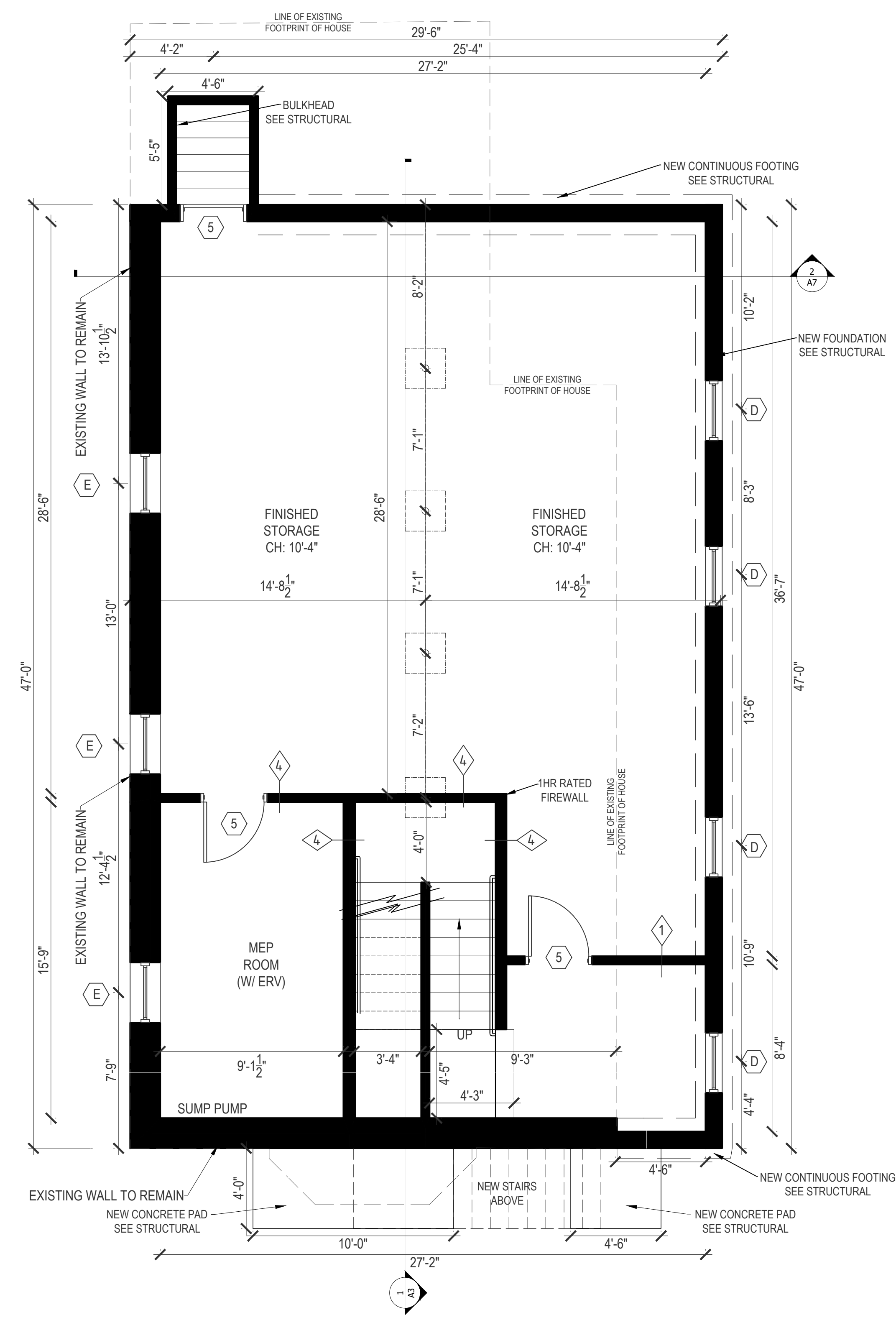
EXISTING SITE PLAN  
7 THORNLEY ST  
DORCHESTER, MA  
FOR  
THORNLEY DOT LLC  
CIVIL ENVIRONMENTAL CONSULTANTS  
8 OAK STREET PEABODY, MA 01960 978-531-1191

SHEET NO: 1 OF 1	DATE: 5/20/2025 JOB: 4819
DRAWN BY: D.J.B./L.J.B.	





PROPOSED 1ST FLOOR PLAN- 1,387 SF  
1/4"=1'-0"



PROPOSED BASEMENT FLOOR PLAN- 1387 SF- STORAGE/MEP  
1/4"=1'-0"

GENERAL NOTE:  
VERIFY AND CONFIRM ALL CONDITIONS AND/OR DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS NOTIFY ARCHITECT OF ANY INCONSISTENCIES FOR REVIEW AND APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.

LIGHTHOUSE ARCHITECTURE & DESIGN  
180 ALLEN ST BRANFEE MA 02124  
Gavin Driscoll, Principal  
781-801-2690 gavin.driscoll@lighthousearchitect.com  
J. Edward Roche, AIA  
617-512-9281 jroche@lighthousearchitect.com  
#6635

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

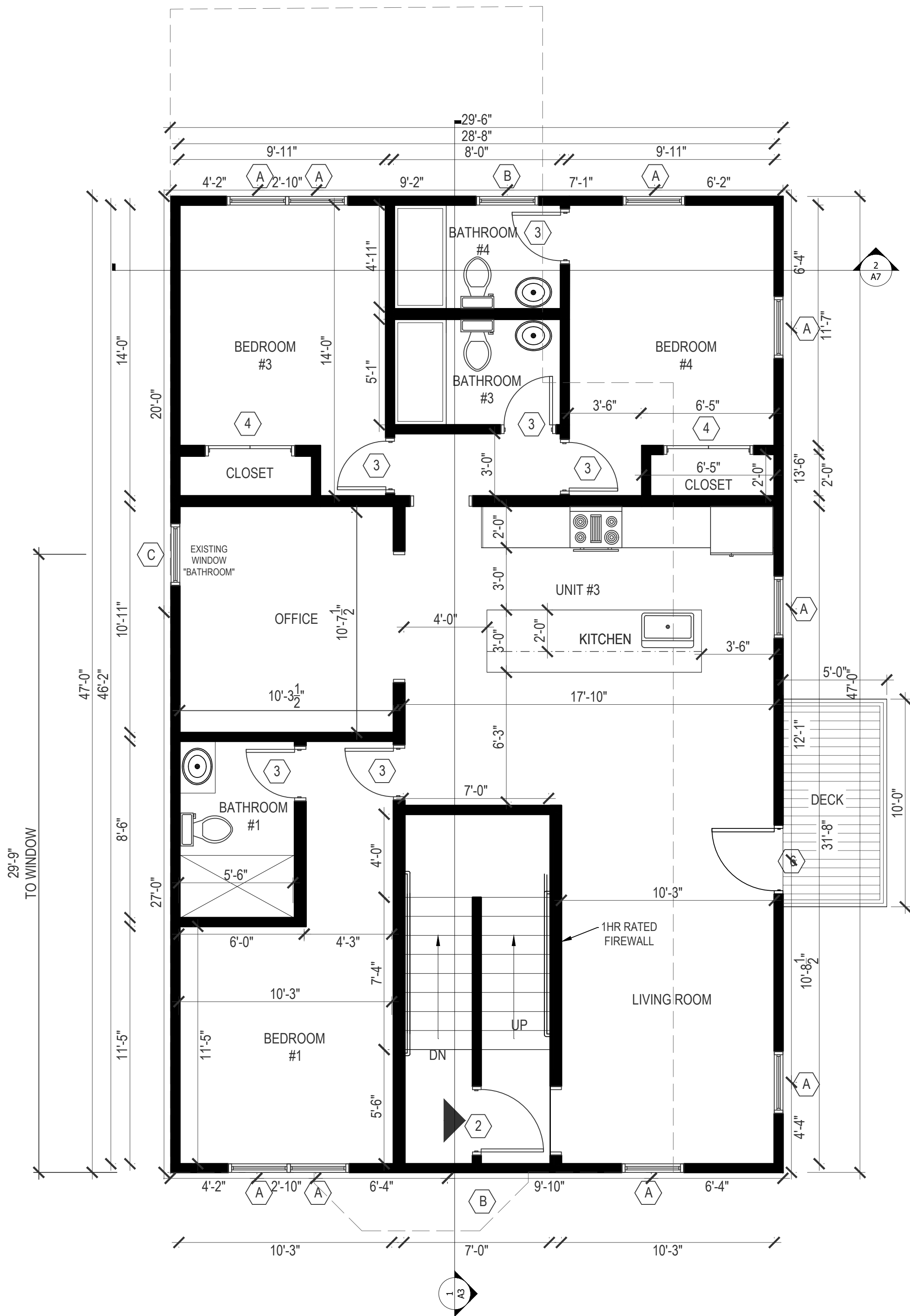
PROPOSED BASEMENT PLAN  
PROPOSED FIRST FLOOR

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

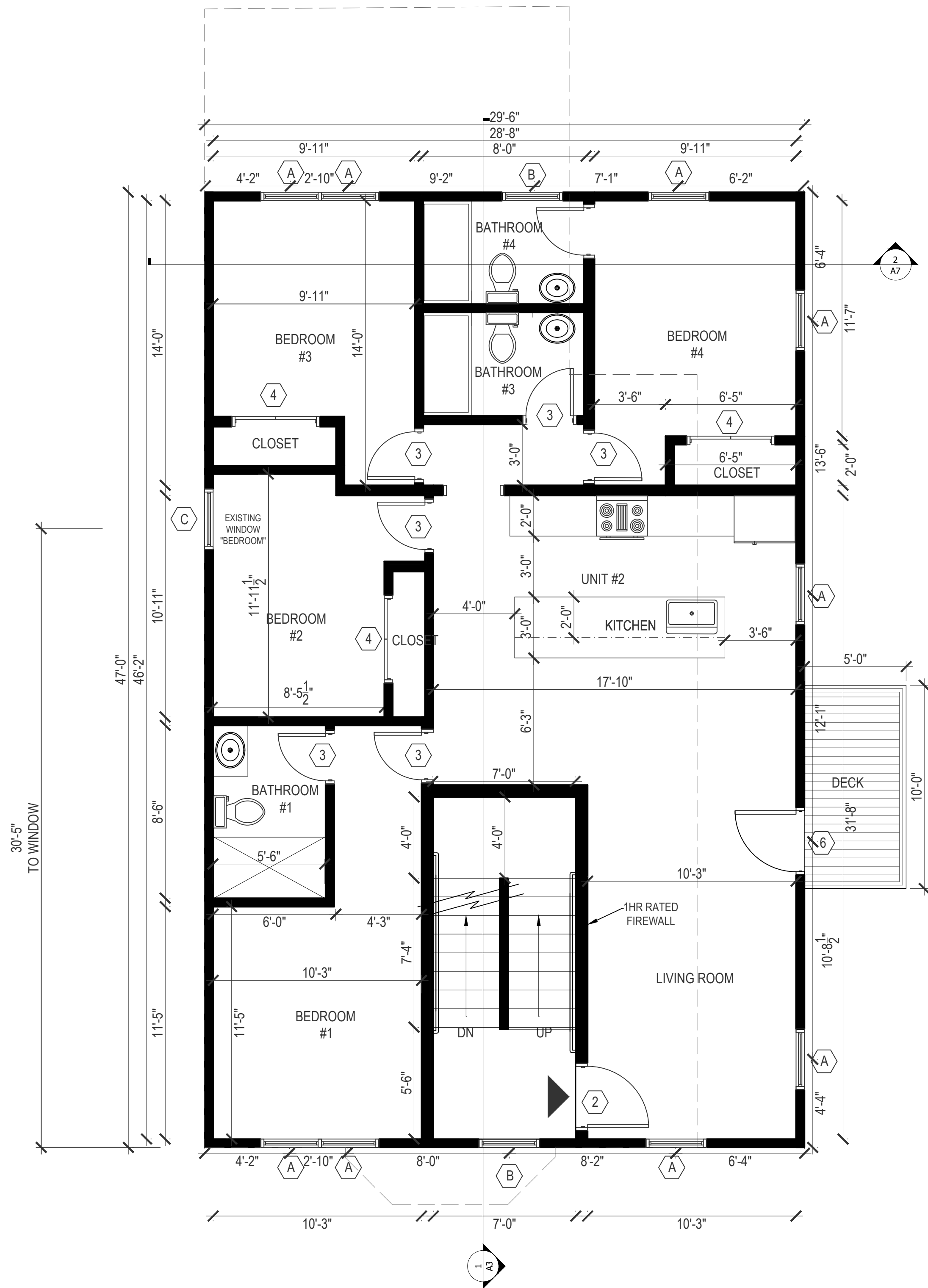
A1



PROPOSED THIRD FLOOR PLAN- 1,387SF  
1/4"=1'-0"



PROPOSED SECOND FLOOR PLAN- 1387 SF  
1/4"=1'-0"



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RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

PROPOSED 2ND FLOOR PLAN  
PROPOSED 3RD FLOOR PLAN

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

PROPOSED ARCHITECTURAL DESIGN

LIGHTHOUSE ARCHITECTURE & DESIGN

189 ALLEN ST BRANFEE MA 02124 UNIT #1

784-801-2690 - gavin@lighthousearchitect.com

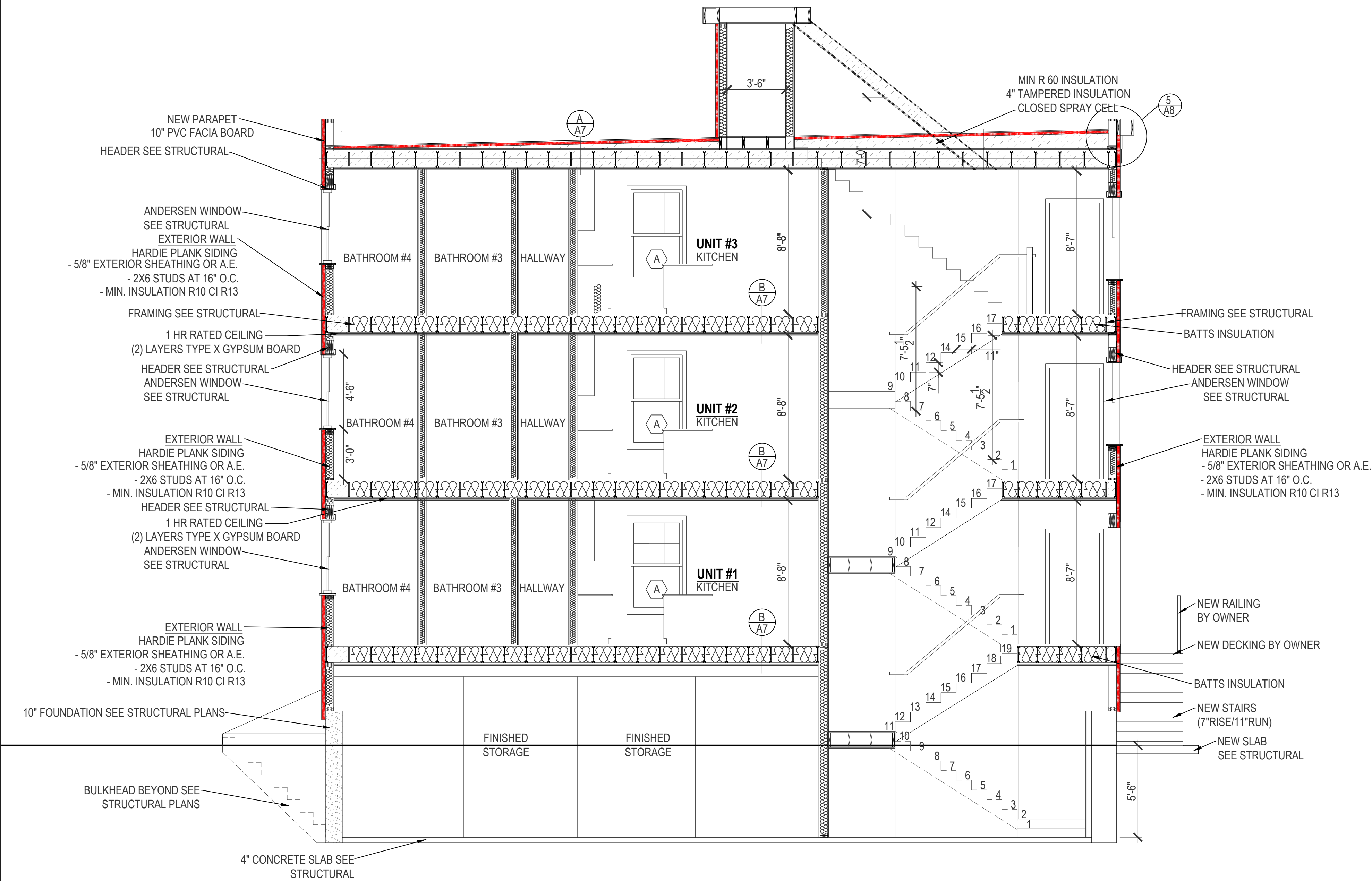
J. Edward Roche, AIA

617-512-9281 - erodroche@outlook.com

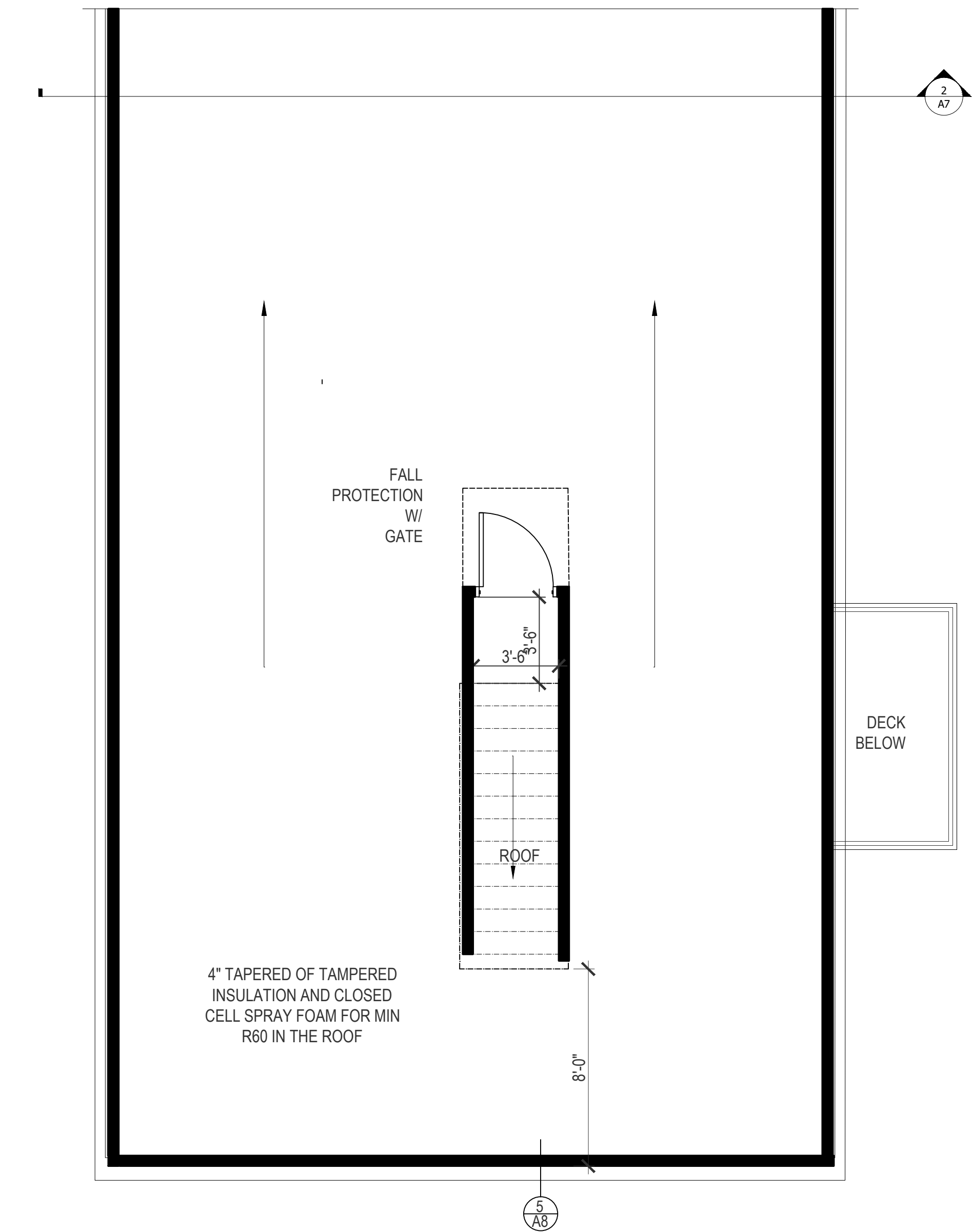
PROJECT #

6635





PROPOSED BUILDING SECTION 1  
1/4"=1'-0"



PROPOSED ROOF FLOOR PLAN-  
1/4"=1'-0"

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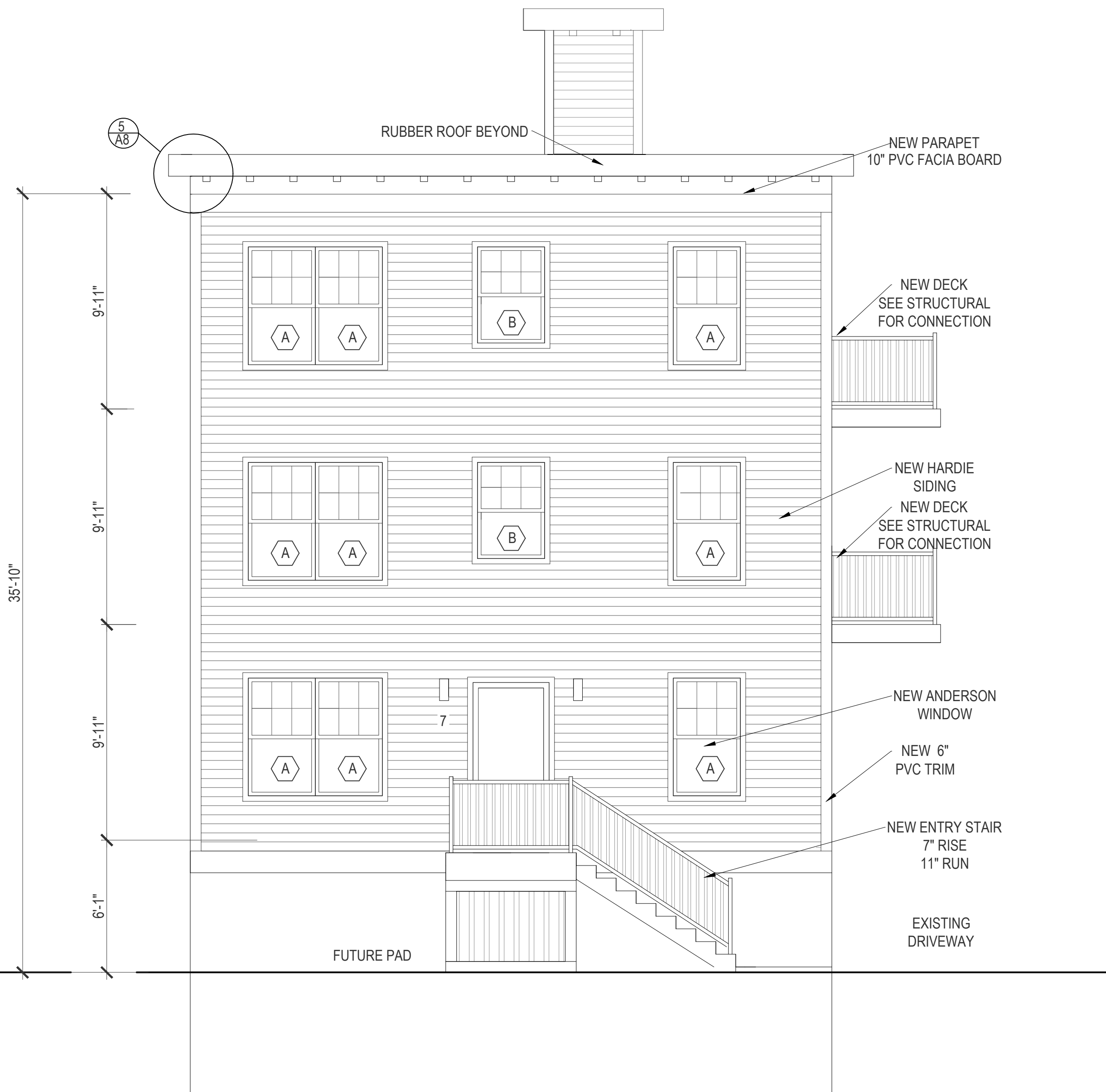
PROPOSED ROOF PLAN  
PROPOSED SECTION

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

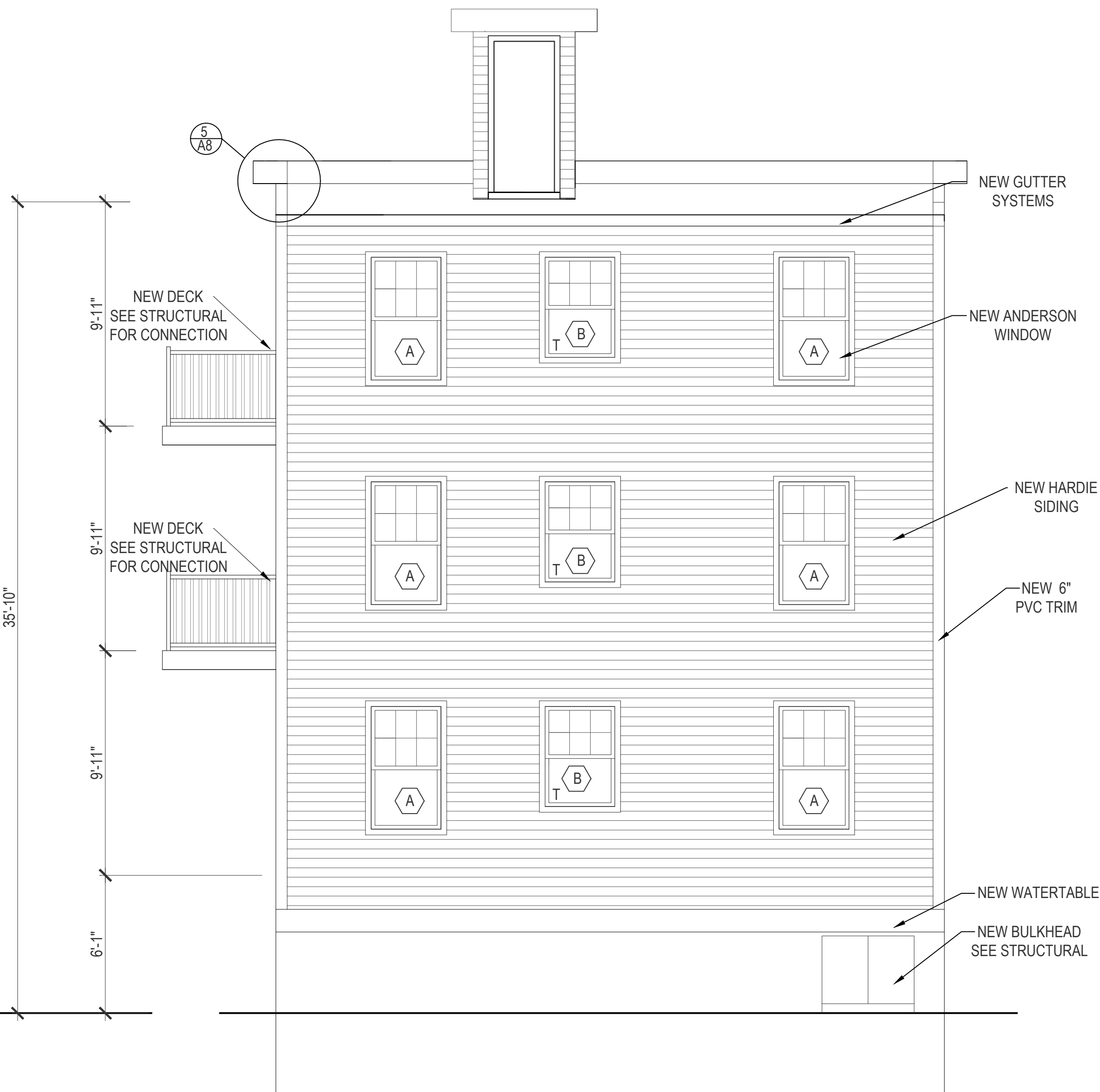
A3



PROPOSED FRONT ELEVATION  
1/4"=1'-0"



PROPOSED REAR ELEVATION  
1/4"=1'-0"



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PROPOSED FRONT AND REAR ELEVATION

DATE:	10/30/25
SCALE:	AS NOTED
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CHECKED BY:	JER

REGISTERED ARCHITECT  
STATE OF MASSACHUSETTS  
189-41 LEN ST BRANFEE MA 02124  
Gavin Discoli, Principal  
781-801-2690 - gavin@erocdesign.com  
J. Edward Roche, AIA  
617-512-9281 - erocdesign@gmail.com  
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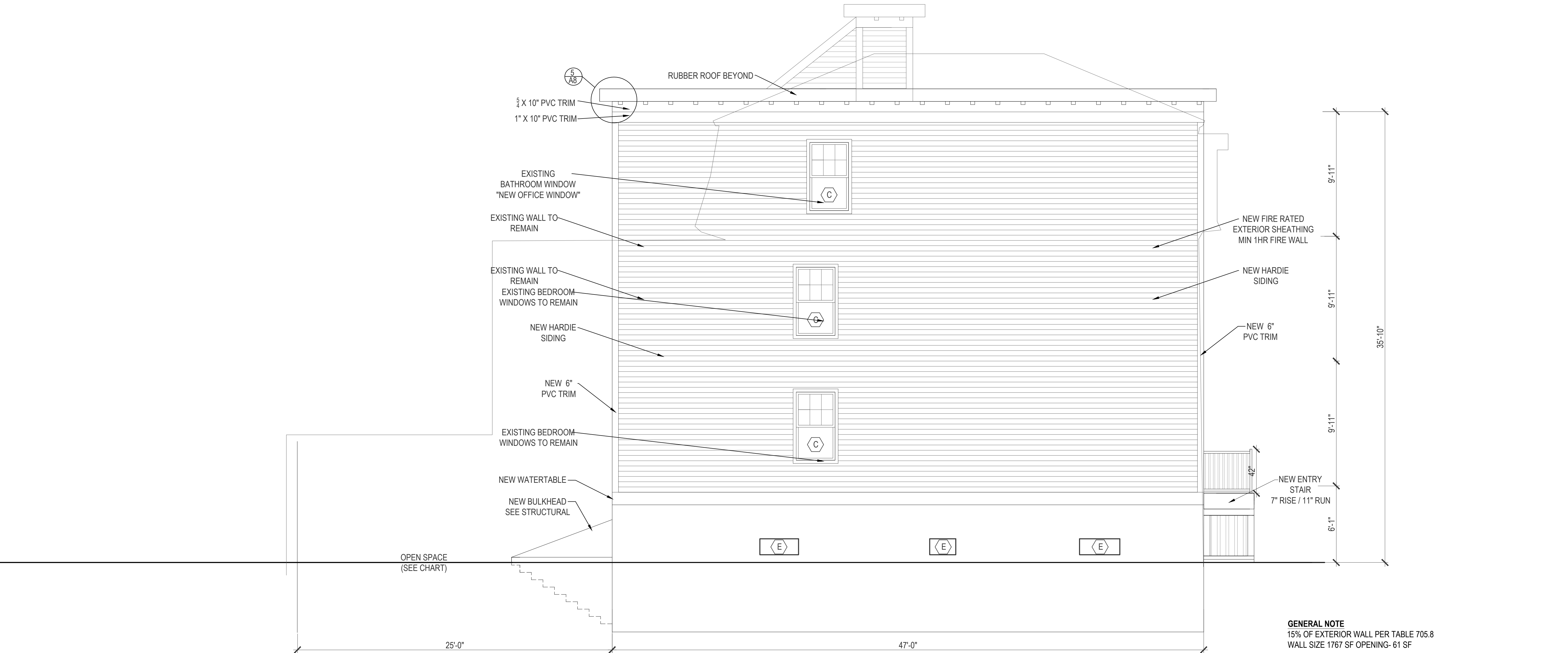
RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

PROPOSED RIGHT ELEVATION

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER







PROPOSED LEFT ELEVATION  
1/4"=1'-0"

**GENERAL NOTE**  
15% OF EXTERIOR WALL PER TABLE 705.8  
WALL SIZE 1767 SF OPENING- 61 SF  
3.4%  
PROTECTED OPNG. PER SEC. 705.8.2, FIRE WINDOW ASSEMBLY SHALL COMPLY  
W/SEC. 716.6 • 1-HR RATED EXTERIOR WALL • 3/4 HR MIN. FIRE WINDOW  
ASSEMBLY RATING • FIRE RATED GLAZING OH-45 OR W-60

**GENERAL NOTE:**  
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CONSTRUCTION.

REGISTERED ARCHITECT  
STATE OF MASSACHUSETTS  
189-ALLEN ST BRANFEE, MA 02124 UNIT #1  
Gavin Discoli, Principal  
781-801-2690 - gavin@discoliarchitect.com  
J. Edward Roche, AIA  
617-512-9281 - erocha@discoliarchitect.com  
#6635

Seal of Gavin Discoli, Registered Architect, State of Massachusetts, No. 189-ALLEN ST BRANFEE, MA 02124 UNIT #1.

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

PROPOSED LEFT ELEVATION

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

A6





*Manager M. de la Cruz*

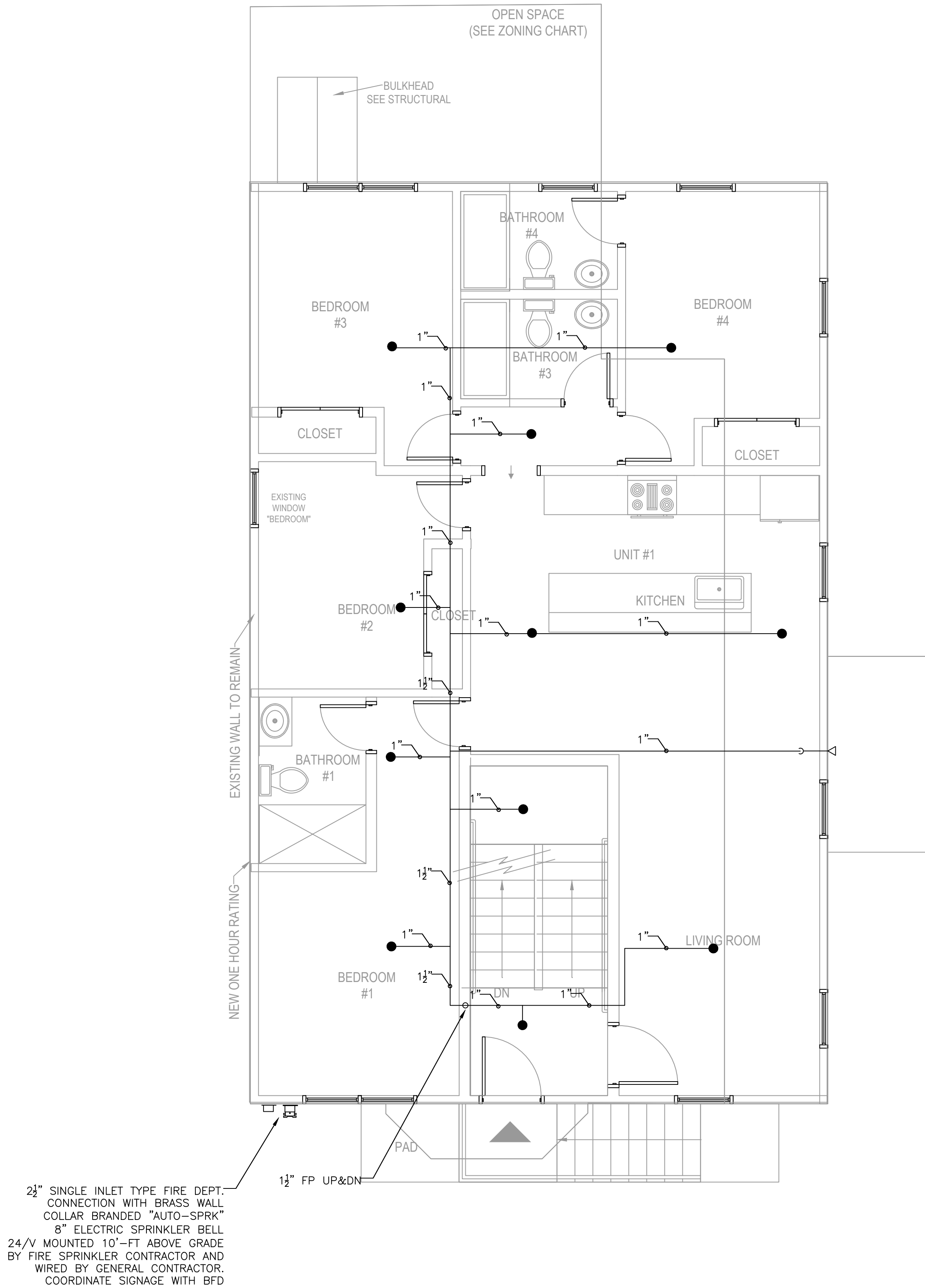
LIGHTHOUSE ARCHITECTURE & DESIGN  
189 ALLEN ST BRAintree MA, 02184-UNIT #1  
Gavin Driscoll, Principle  
781-801-2690 - gavin.s.driscoll@gmail.com  
J. Edward Roche, AIA, Architect  
617-512-9281 - erochea@msn.com

DATE:	11/03/2025
SCALE:	AS NOTED
DRAWN BY:	
CHECKED BY:	

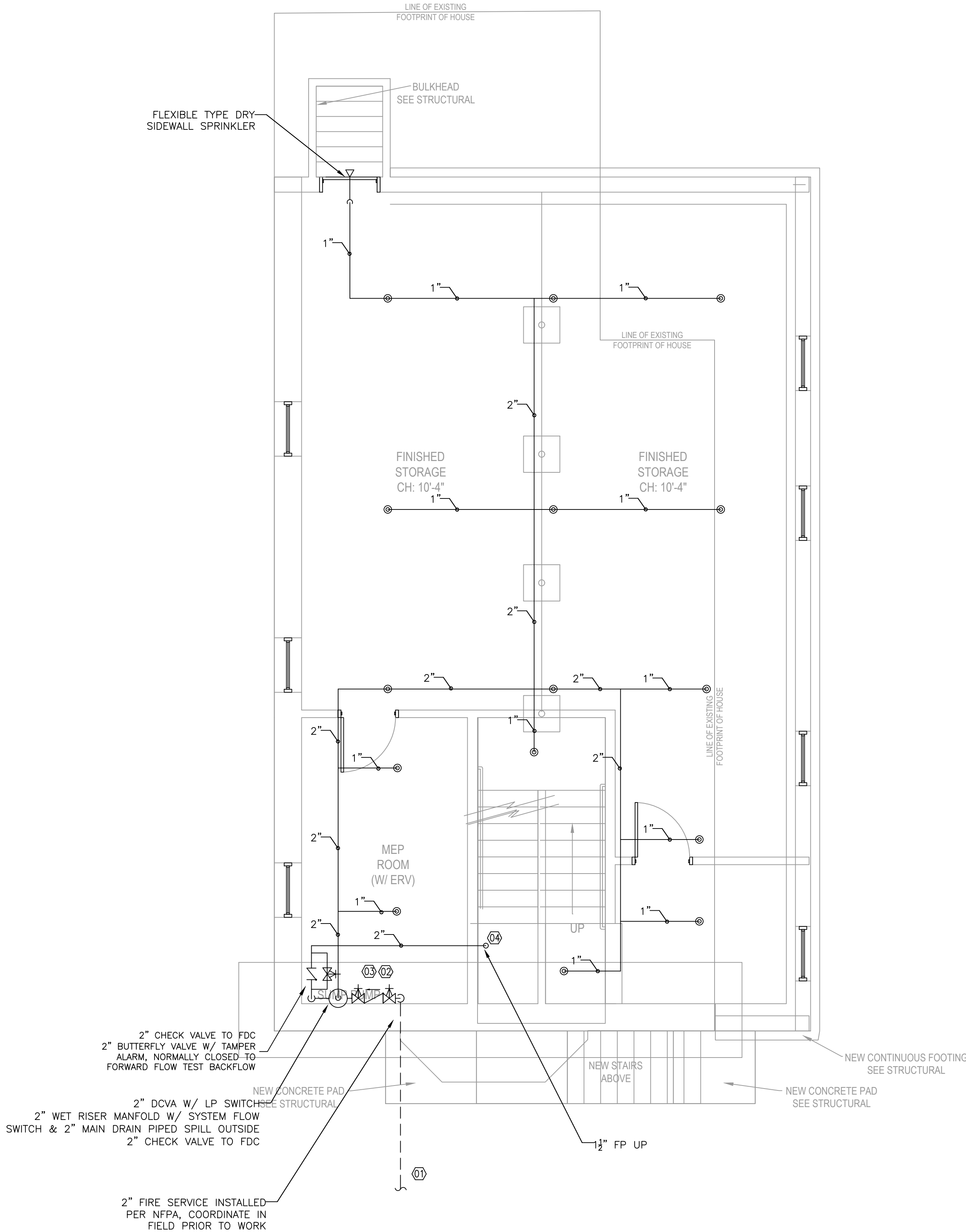
FIRE PROTECTION  
PROPOSED BASEMENT PLAN  
PROPOSED FIRST FLOOR

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

FP1



1 FIRST FLOOR PLAN  
1/4" = 1'-0"



2 BASEMENT PLAN  
1/4" = 1'-0"

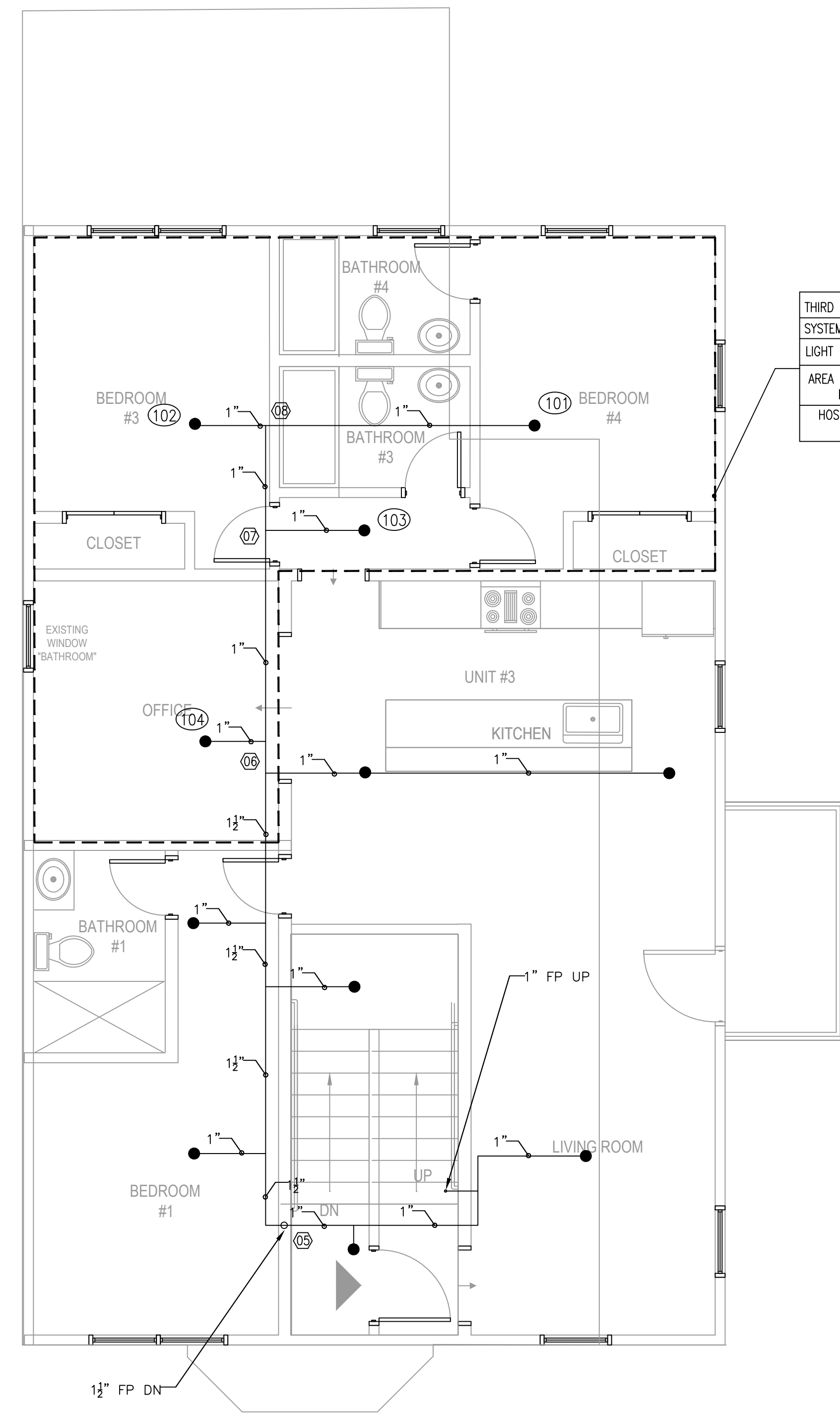
GENERAL NOTE:

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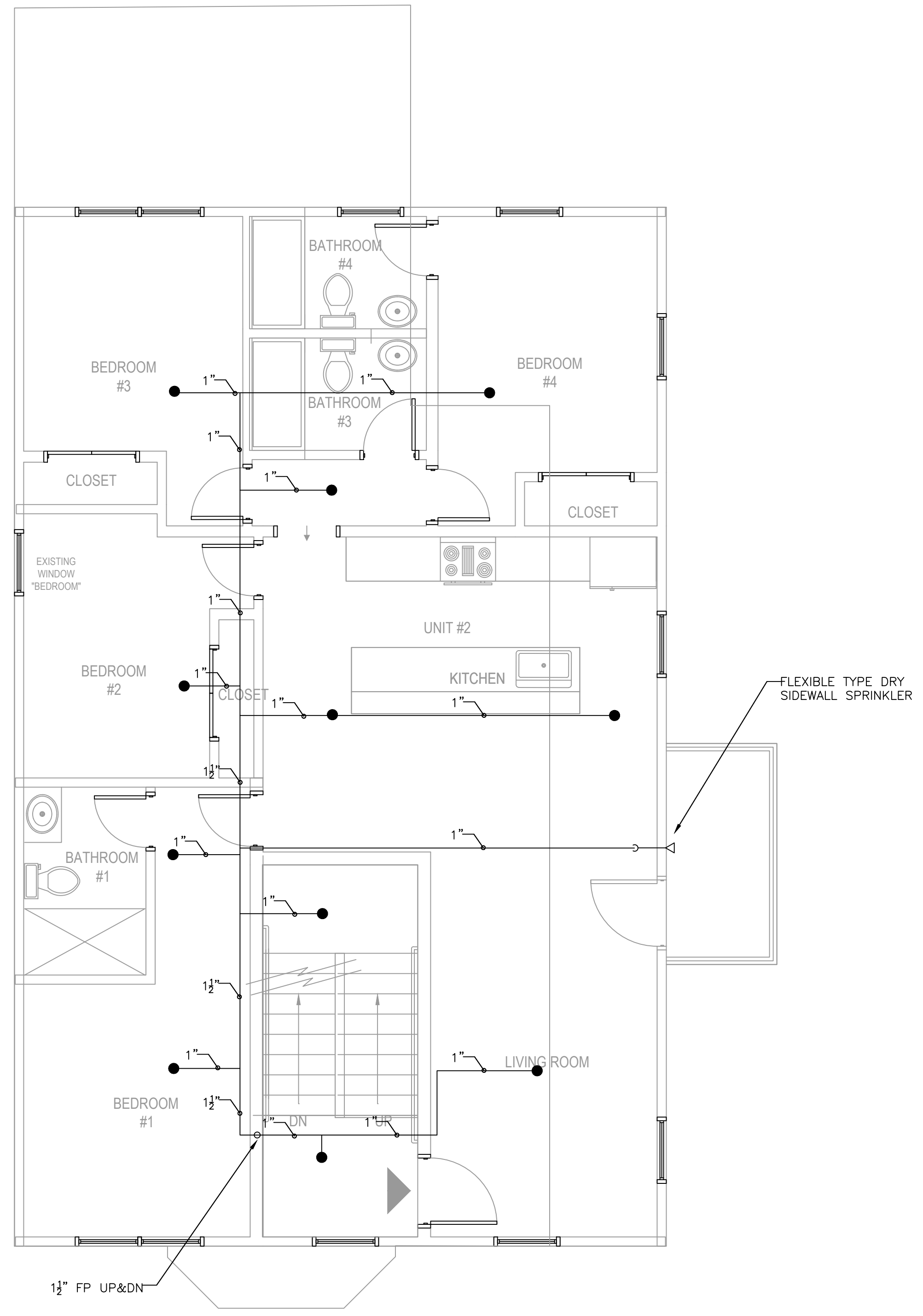


LIGHTHOUSE ARCHITECTURE & DESIGN  
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THIRD FLOOR RESIDENTIAL	
SYSTEM TYPE: AUTOMATIC-WET	
LIGHT HAZARD-NFPA13(R)	
AREA OF APPLICATION: FOUR HEADS	DENSITY: 0.05 GPM
HOSE ALLOWANCE 100 GPM	PROTECTION AREA 16'x16'

1 THIRD FLOOR PLAN  
1/4" = 1'-0"



2 SECOND FLOOR PLAN  
1/4" = 1'-0"

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DATE:	11/03/2025
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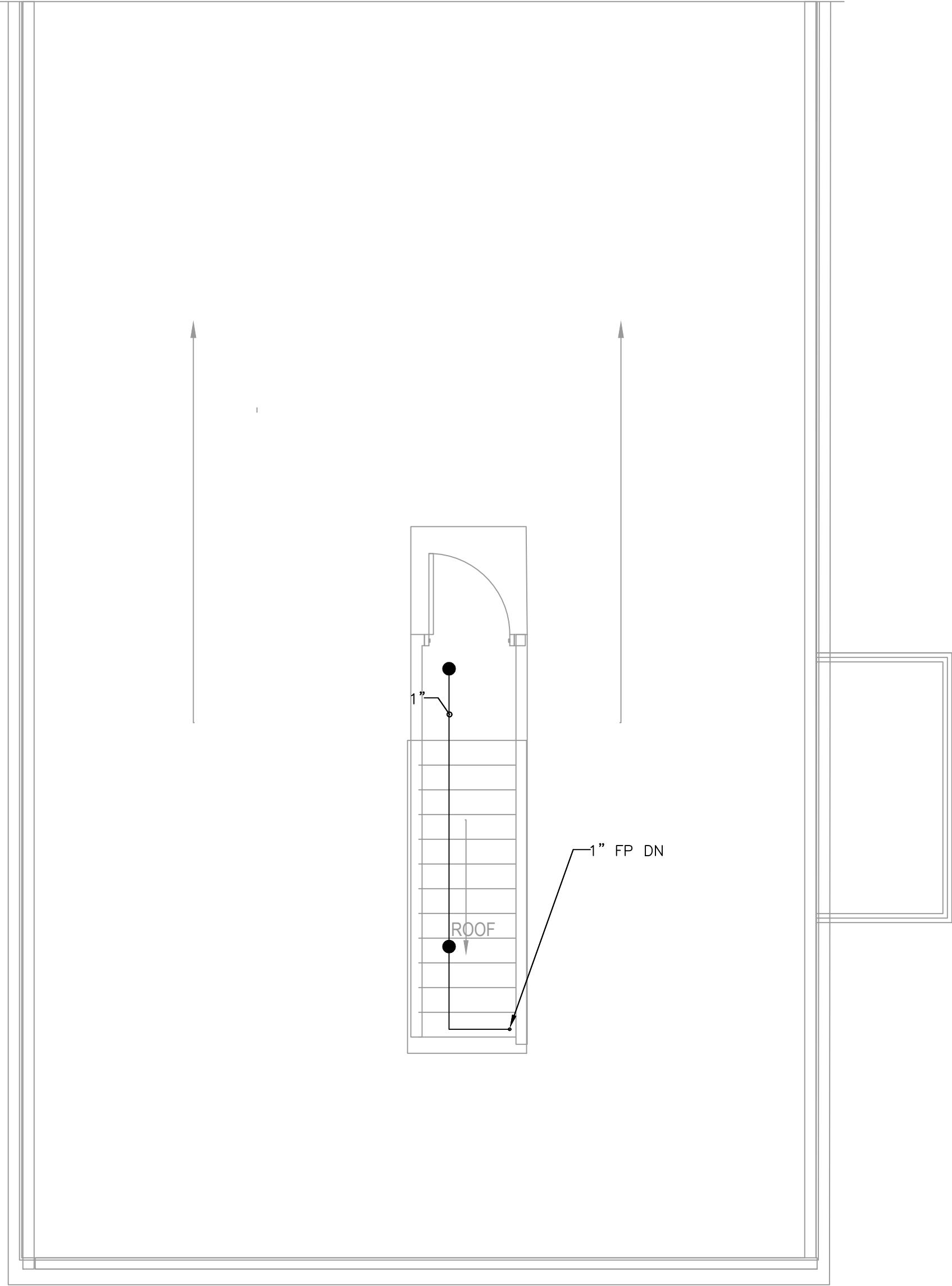
FIRE PROTECTION  
PROPOSED SECOND FLOOR PLAN  
PROPOSED THIRD FLOOR PLAN

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

FP2



1 ROOF PLAN  
1/4" = 1'-0"



ZADE ASSOCIATES LLC

CONSULTING ENGINEERS  
1 BILLINGS ROAD, QUINCY, MA 02171  
TEL. (617) 338-4406  
FAX. (617) 451-2540  
E-MAIL: Zade@ZadeEngineering.com



*Gavin Driscoll*



LIGHTHOUSE ARCHITECTURE & DESIGN  
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Gavin Driscoll, Principle  
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J. Edward Roche, AIA, Architect  
617-512-9281 - erochea@mslteen

DATE:	11/03/2025
SCALE:	AS NOTED
DRAWN BY:	gavin
CHECKED BY:	erochea

FIRE PROTECTION PROPOSED SECOND FLOOR PLAN PROPOSED THIRD FLOOR PLAN
--

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

FP3

GENERAL NOTE:  
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Navalier Wunderlich

**LIGHTHOUSE ARCHITECTURE & DESIGN**  
180-ALEXAN ST BRAINTREE MA, 02184-UNIT #1  
Gavin Driscoll, Principle  
781-801-2690- gavin.s.driscoll@gmail.com  
J. Edward Roche, AIA- Architect  
617-512-9281 - erocheaia@msrteam

11/03/2025

SCALE: AS NOTED

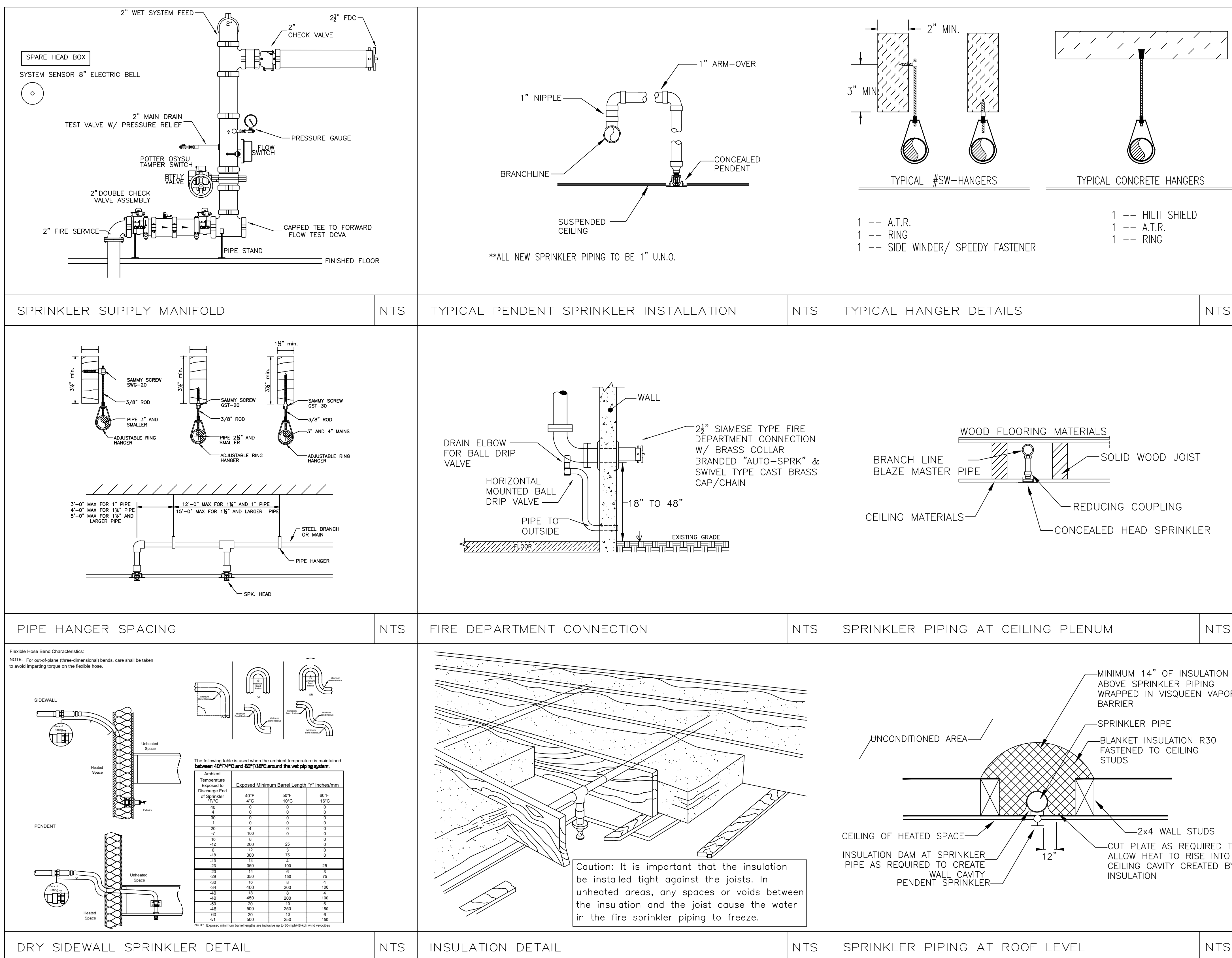
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CHECKED BY: \_\_\_\_\_

FIRE PROTECTION  
DETAILS & NOTES

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

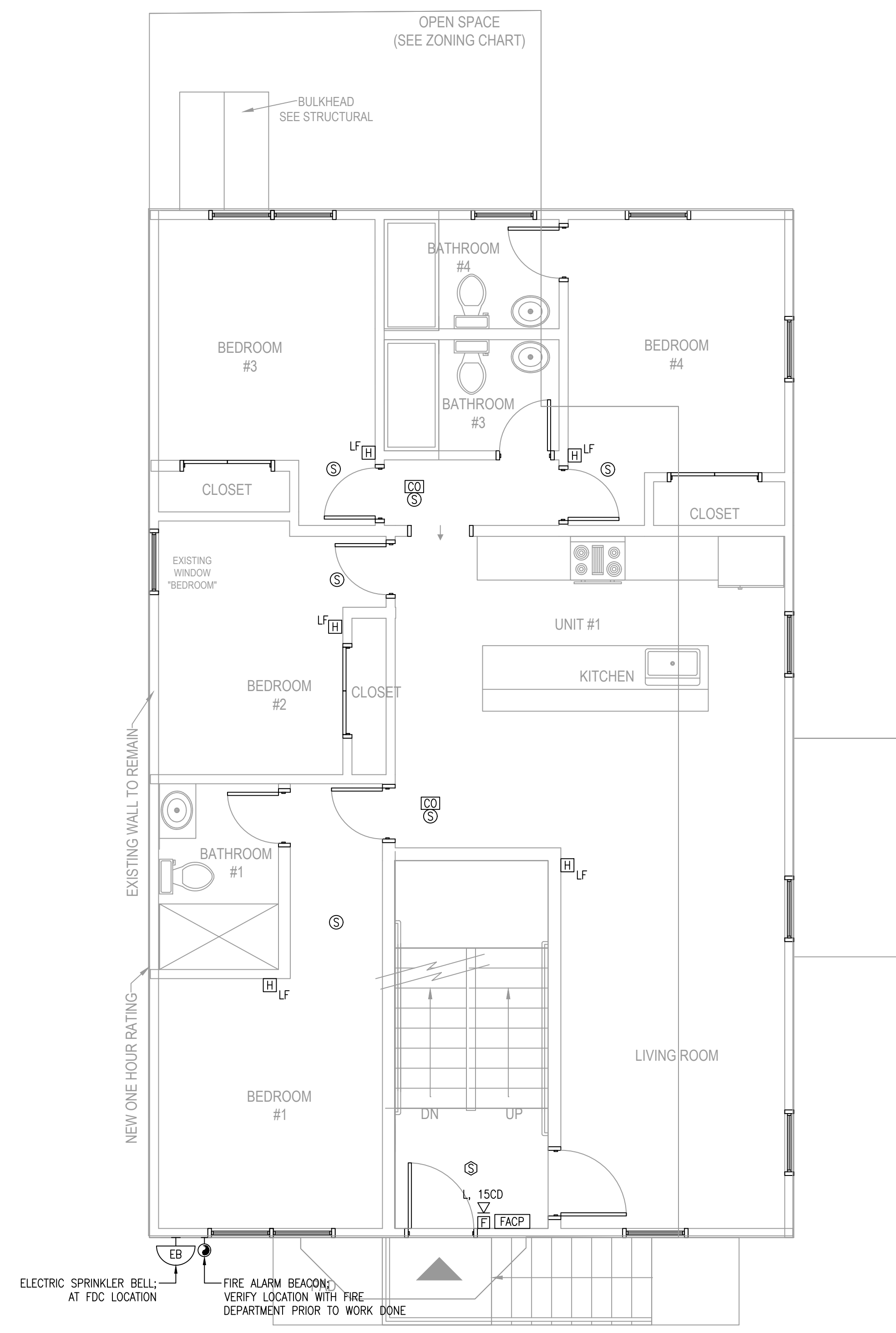
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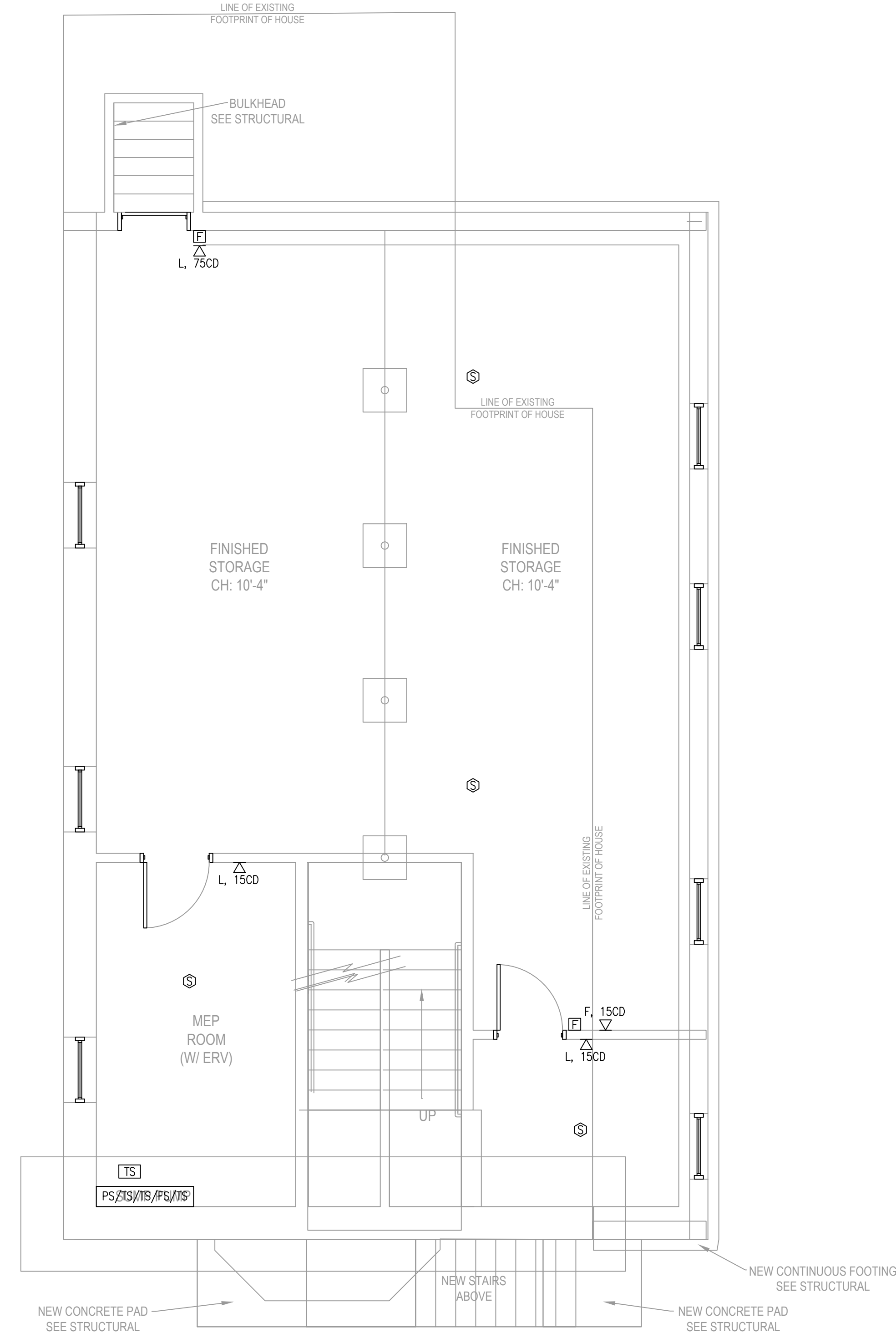
GENERAL NOTE:

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1 FIRST FLOOR PLAN  
1/4" = 1'-0"



2 BASEMENT PLAN  
1/4" = 1'-0"

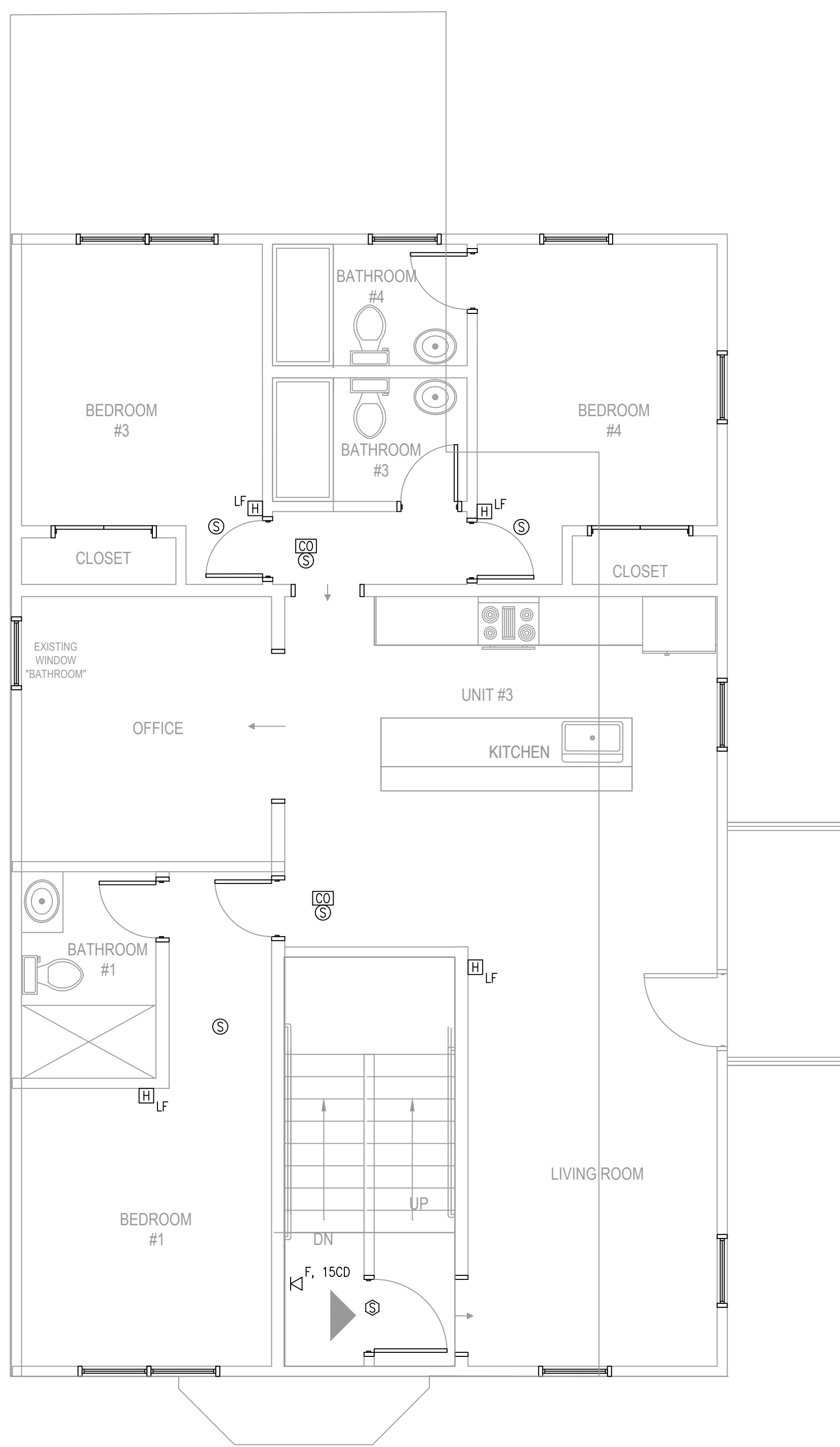
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ELECTRICAL  
PROPOSED BASEMENT PLAN  
PROPOSED FIRST FLOOR  
- FIRE ALARM

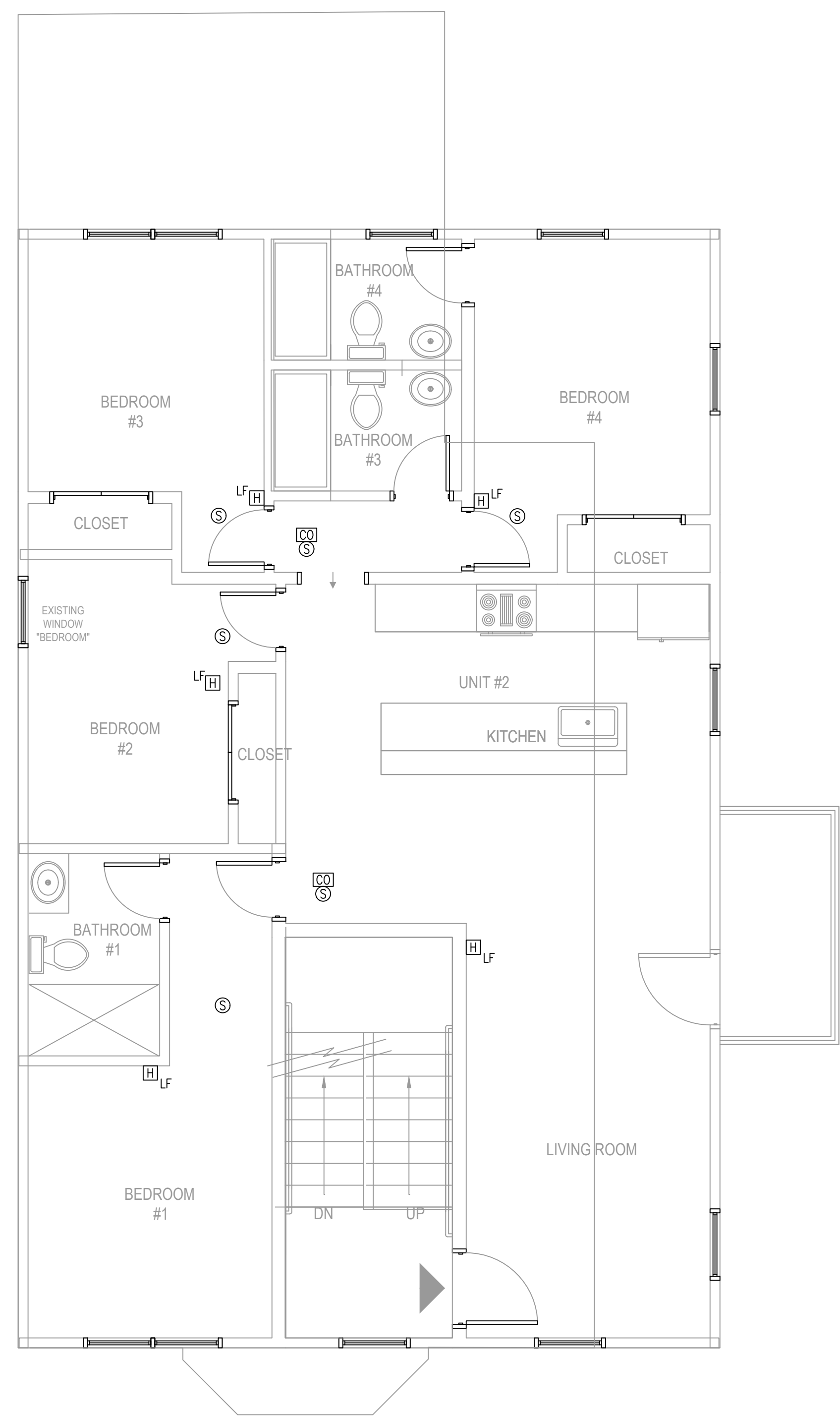
RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

FA1





1 THIRD FLOOR PLAN  
1/4" = 1'-0"



2 SECOND FLOOR PLAN  
1/4" = 1'-0"

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DRAWN BY:	
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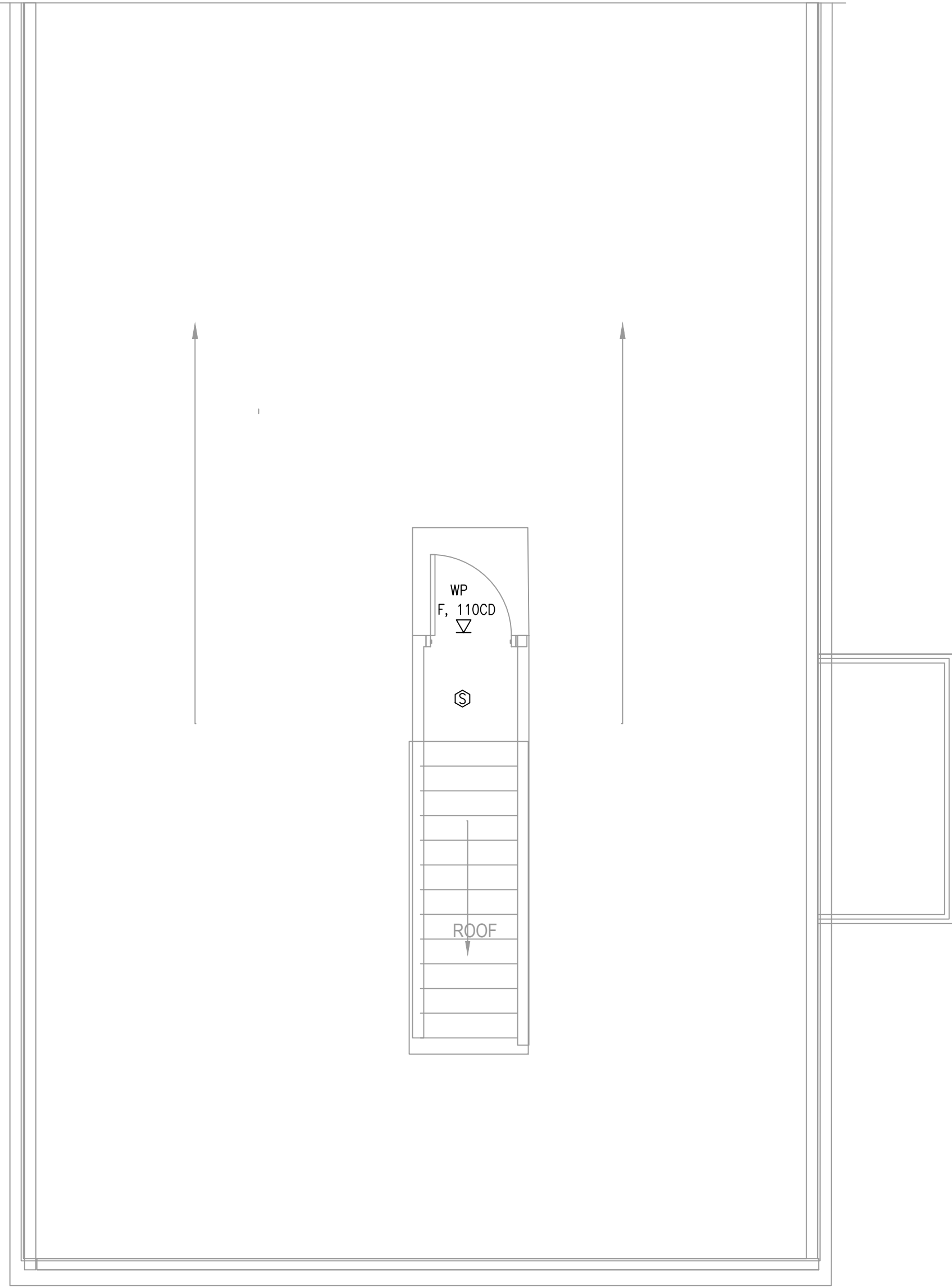
ELECTRICAL  
PROPOSED SECOND FLOOR PLAN  
PROPOSED THIRD FLOOR PLAN  
- FIRE ALARM

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

FA2



1 ROOF PLAN  
1/4" = 1'-0"



ZADE ASSOCIATES LLC

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*Matthew Driscoll*

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J. Edward Roche, AIA- Architect  
617-512-9281 - erochea@mslteam

DATE:	11/03/2025
SCALE:	AS NOTED
DRAWN BY:	MSL TEAM
CHECKED BY:	MSL TEAM

ELECTRICAL  
PROPOSED ROOF PLAN  
- FIRE ALARM

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

FA3

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Michael J. Zade

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 784-801-2690- gavin.s.driscoll@gmail.com  
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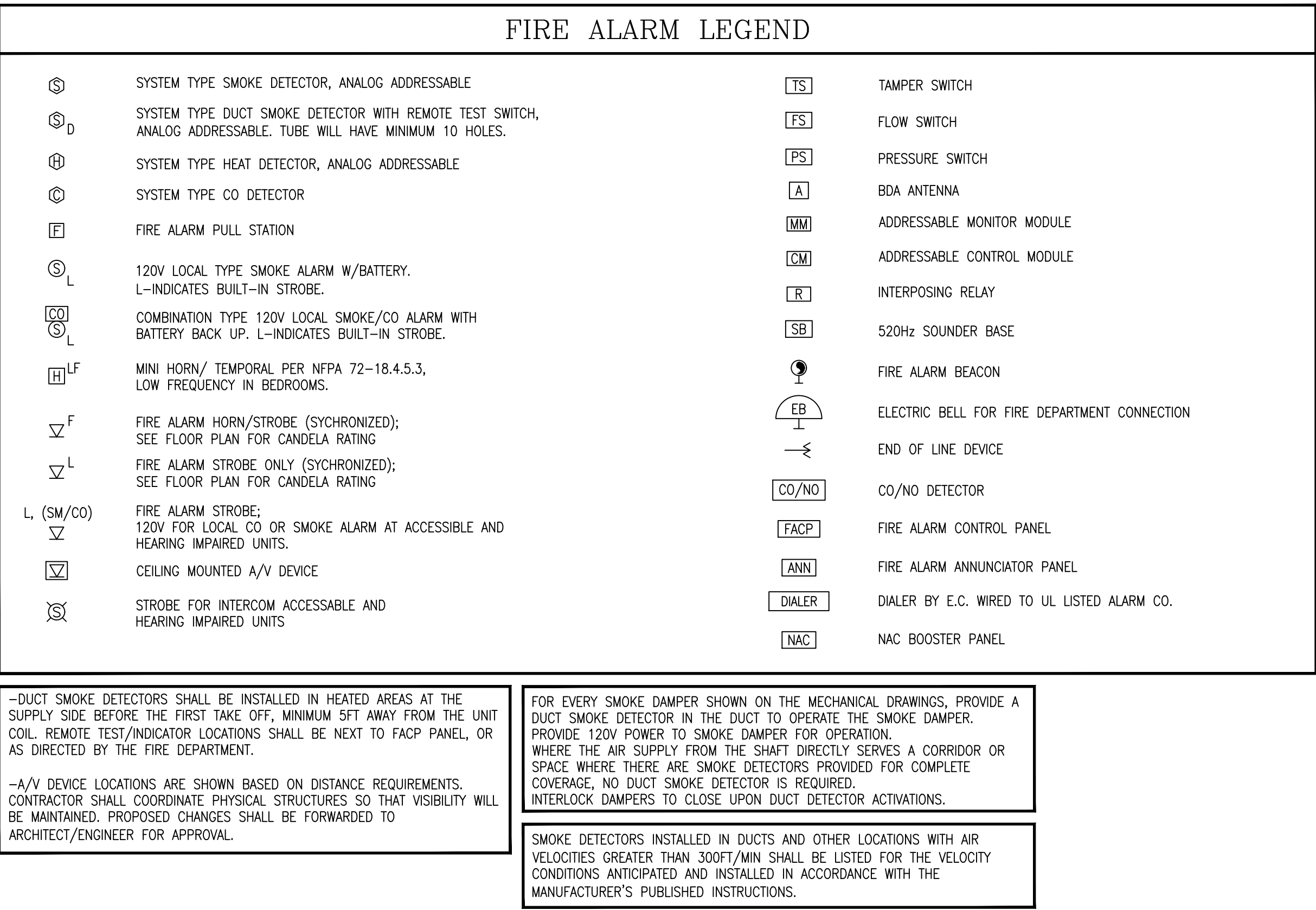
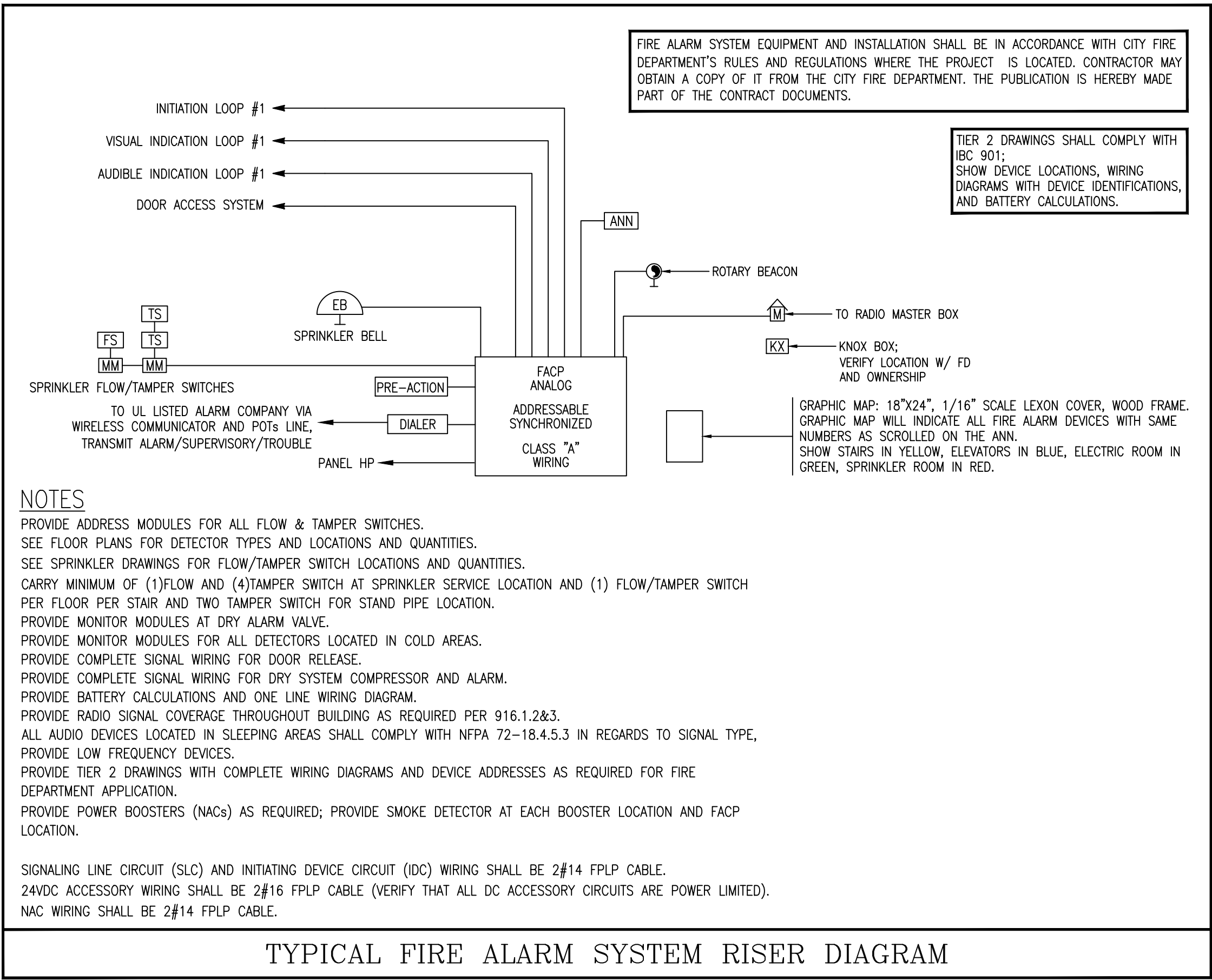
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FIRE ALARM  
 RISER & NOTES

RENO OF EXISTING THREE FAMILY HOME  
 7 THORNLEY ST, DORCHESTER, MA 02125

FA4



HORN/STROBE DEVICES:  
 THE ENTIRE STROBE LENS IS TO BE LOCATED NOT LESS THAN 80 INCHES A.F.F., AND NOT MORE THAN 96 INCHES A.F.F. DEVICES SHALL COMPLY WITH NFPA 72.

MANUAL PULL STATIONS SHALL BE INSTALLED NOT LESS THAN 42 INCHES A.F.F., AND NOT MORE THAN 48 INCHES A.F.F.

ALL BEDROOMS AND LIVING ROOMS SHALL BE WIRED FOR FUTURE STROBE.

ACCESSIBLE UNIT AND HEARING IMPAIRED FIRE ALARM NOTES, NOTES  
 SEE ARCHITECTURAL PLANS FOR NUMBER OF HANDICAP AND HEARING IMPAIRED UNITS AND LOCATIONS.  
 CARRY MINIMUM 5% OF TOTAL UNIT NUMBER.  
 IN EACH UNIT, PROVIDE:  
 --LOCAL TYPE SMOKE ALARM WITH BUILT IN STROBE/OR SEPARATE 120V STROBE IN EACH BEDROOM, AND OUTSIDE BEDROOM FOR LOCAL SMOKE ALARM.  
 --LOCAL TYPE STROBE IN EACH BEDROOM AND LIVING ROOM FOR CO ALARM.  
 --SYSTEM TYPE STROBE IN EACH BEDROOM AND LIVING ROOM.  
 --SYSTEM TYPE STROBE IN EACH BATHROOM.  
 --LOCAL TYPE STROBE IN EACH BATHROOM FOR LOCAL SMOKE ALARM.  
 --LOCAL TYPE STROBE IN EACH BATHROOM FOR CO ALARM.  
 --LOCAL TYPE CO ALARMS OUTSIDE BEDROOMS AND EVERY HABITABLE FLOOR LEVEL, STROBES ARE TO BE LOCATED IN BEDROOMS AND HABITABLE SPACES.

FIRE ALARM CONSTRUCTION NOTES  
 --LOCAL SMOKE DETECTORS SHALL BE WIRED FROM ARC-FAULT CIRCUITS.  
 --BACK TO BACK OUTLETS ON FIRE RATED WALLS SHALL BE INSTALLED TO MAINTAIN FIRE RATINGS, IF NECESSARY, USE FIRE RATED OUTLET BOXES.  
 --ALL FLOOR PENETRATIONS BY CABLES AND CONDUITS SHALL BE SEALED TO MAINTAIN FIRE RATINGS.  
 --RECESSED LIGHT FIXTURES INSTALLED ON FIRE RATED CEILINGS SHALL HAVE FIRE RATED HOODS ON TOP TO MAINTAIN FIRE RATING. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATED AREAS.

AUDIBLE DEVICES PROVIDED FOR THE SLEEPING AREAS TO AWAKEN OCCUPANTS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT COMPLIES WITH THE FOLLOWING:  
 (1) THE ALARM SIGNAL SHALL BE A SQUARE WAVE OR PROVIDE EQUIVALENT AWAKENING ABILITY.  
 (2) THE WAVE SHALL HAVE A FUNDAMENTAL FREQUENCY OF 520 HZ +/- 10 PERCENT.

IN DWELLING UNITS, PROVIDE SMOKE ALARMS:  
 --INSIDE EACH SLEEPING AREA, BEDROOM, OFFICE, OR SIMILAR SPACE.  
 --OUTSIDE OF EACH SLEEPING AREA, WITHIN 10' OF DOOR.  
 IN DWELLING UNITS, PROVIDE CARBON MONOXIDE ALARMS:  
 --OUTSIDE EACH SLEEPING AREA, WITHIN 10' OF DOOR.  
 --ON EVERY HABITABLE FLOOR.  
 --IN THE ROOM HOUSING THE GAS APPLIANCE.  
 ALARMS SHALL BE UL LISTED, AND HARD WIRED WITH BATTERY BACK-UP.

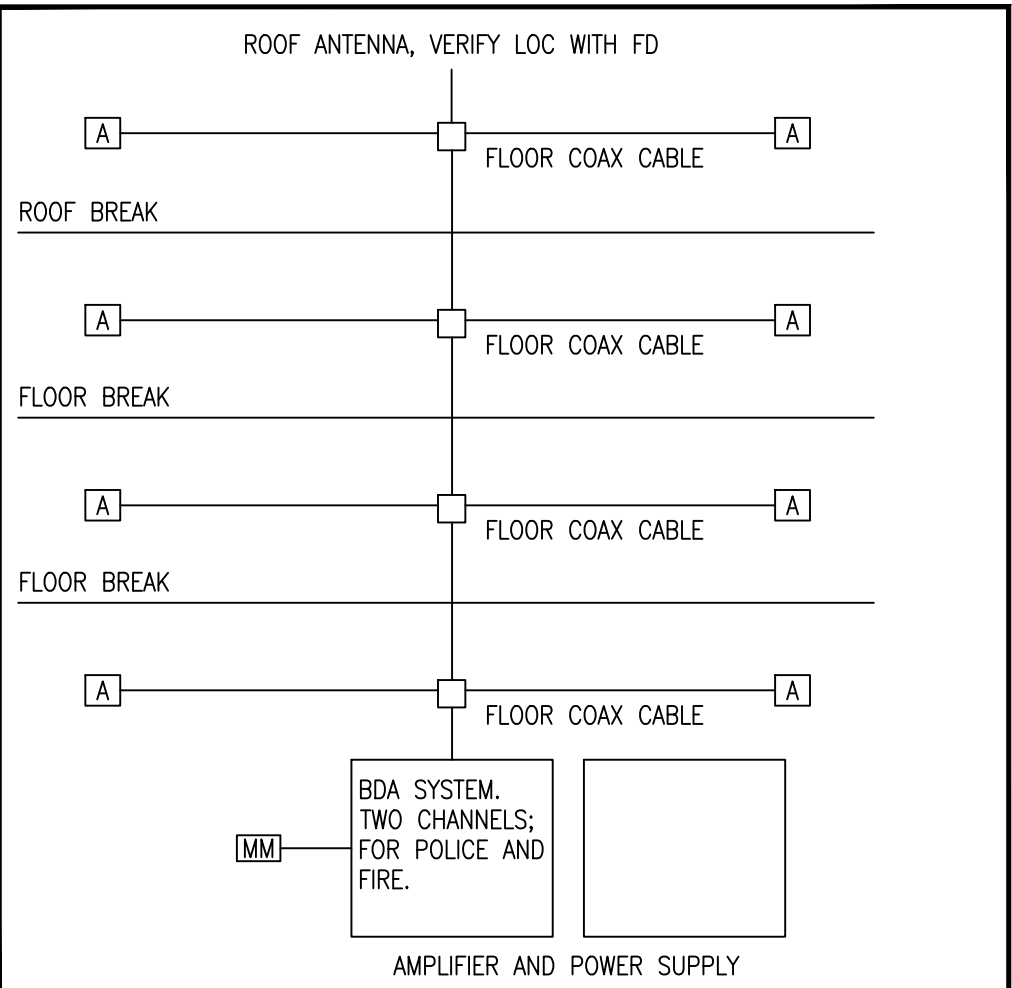
LOCATION(S) OF SMOKE AND CO ALARMS WITHIN DWELLING UNITS SHALL BE PER THE FOLLOWING:  
 FROM BATHROOM DOOR: 3FT  
 FROM HVAC DIFFUSERS: 3FT  
 FROM TIP OF CEILING FAN BLADES: 3FT  
 FROM COOKING EQUIPMENT:  
 PHOTOELECTRIC TYPE - 6FT  
 IONIZATION TYPE - 20FT

SMOKE ALARMS AND COMBINATION SMOKE/CO ALARMS IN EACH DWELLING UNIT SHALL BE INTERCONNECTED FOR MULTIPLE-STATION OPERATION WITHIN THAT DWELLING UNIT ONLY. INTERCONNECT WITH 2#16 FPLP CABLE.

ALL SYSTEM-TYPE CO DETECTORS MUST "LATCH" AT THE PANEL; THE RESPONDER TO A CO DETECTOR SUPERVISORY ALARM MUST BE LEAD TO MITIGATE THE CO ISSUE AT THE DETECTOR AND THEN CLEAR/RESET THE FIRE ALARM PANEL. THE CO SUPERVISORY ALARM CANNOT BE MITIGATED AT THE POINT LOCATION, BUT REQUIRES A COMPETENT RESPONDER TO ADDRESS THE PANEL IN THE FIRE COMMAND CENTER.

ALARM MONITORING SERVICE RECEIVES A SUPERVISORY CARBON MONOXIDE SIGNAL; THE WORDS "CARBON MONOXIDE" MUST BE PRESENT AT ALARM COMPANY, THE LETTERS "CO" ARE NOT ACCEPTABLE.

CARRY THE COST OF THE BDA SYSTEM IN ITS ENTIRETY, WITH ALL NECESSARY STRUCTURES AND RACEWAYS TO INSTALL A BDA SYSTEM PER IBC 916.1.2&3. UPON COMPLETION OF THE BUILDING, CONDUCT TEST BY THE MANUFACTURER TO SIZE THE REPEATER CAPACITIES AND COVERAGE REQUIREMENTS TO INSTALL BDA SYSTEM HEAD END EQUIPMENT TO MEET EMERGENCY SERVICES COMMUNICATION NEEDS, AS TO BE DETERMINED BY THE FD.  
 RUN CONDUITS IN 2HR RATED ENCLOSURE.  
 IF EQUIPMENT IS TO BE INSTALLED, IT WILL BE HOUSED IN A 2HR ENCLOSURE. OBTAIN LATEST FIRE DEPARTMENT REQUIREMENTS PRIOR TO PRICING.  
 INSTALLATION SHALL COMPLY CITY FIRE DEPARTMENT REQUIREMENTS.



SCHEMATIC BDA SYSTEM DIAGRAM

1	COMMON AREA SMOKE DETECTORS
2	COMMON AREA HEAT DETECTORS
3	COMMON AREA MANUAL PULL STATIONS
4	SPRINKLER MAIN FLOW
5	SPRINKLER FLOOR FLOW SWITCH
6	SPRINKLER TAMPER SWITCH ACTUATION
7	PRESSURE SWITCH ACTUATION
8	DRY ALARM ACTUATION
9	BDA SYSTEM, IF PRESENT
10	FIRE ALARM AC POWER FAILURE
11	FIRE ALARM SYSTEM LOW BATTERY
12	OPEN CIRCUIT OR GROUND FAULT
13	-
14	-
15	-
16	-

	ACTUATE COMMON ALARM SIGNAL	ACTUATE AUDIBLE ALARM-GLOBAL	ACTUATE COMMON SUPERVISORY SIGNAL ALARM	ACTUATE AUDIBLE SUPERVISORY ALARM	ACTUATE COMMON TROUBLE SIGNAL	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE APPROPRIATE LOCATION INDICATORS	ACTUATE ALL AUDIBLE EVACUATION SIGNALS	ACTUATE ALL VISIBLE ALARM SIGNALS	DISPLAY CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO SUPERVISORY STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISORY STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISORY STATION	ACTUATE EXTERIOR BEACON	ACTUATE SPRINKLER BELL				
1	●	●					●	●	●	●	●			●					
2	●	●					●	●	●	●	●			●					
3	●	●					●	●	●	●	●			●					
4	●	●					●	●	●	●	●			●					
5	●	●					●	●	●	●	●			●					
6	●	●	●				●	●	●	●	●			●					
7			●											●					
8	●	●	●				●	●	●	●	●			●					
9														●					
10					●	●					●								
11					●	●					●								
12					●	●					●								
13																			
14																			
15																			
16																			

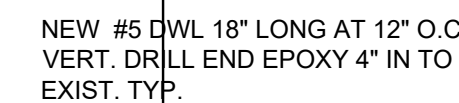
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**DRAWING NOTES:**

1.  INDICATES EXISTING FOUNDATION TO REMAIN

PROPOSED 3 FAMILY  
RENOVATION  
7 THORNLEY STREET  
DORECHESTER, MA 02125

**Choo  
& Company, Inc.**

One Billings Road Quincy, MA  
617-786-7727 fax  
617-786-7715

[illegible]

Drawing Name

FOUNDATION  
PLAN

Sheet No.

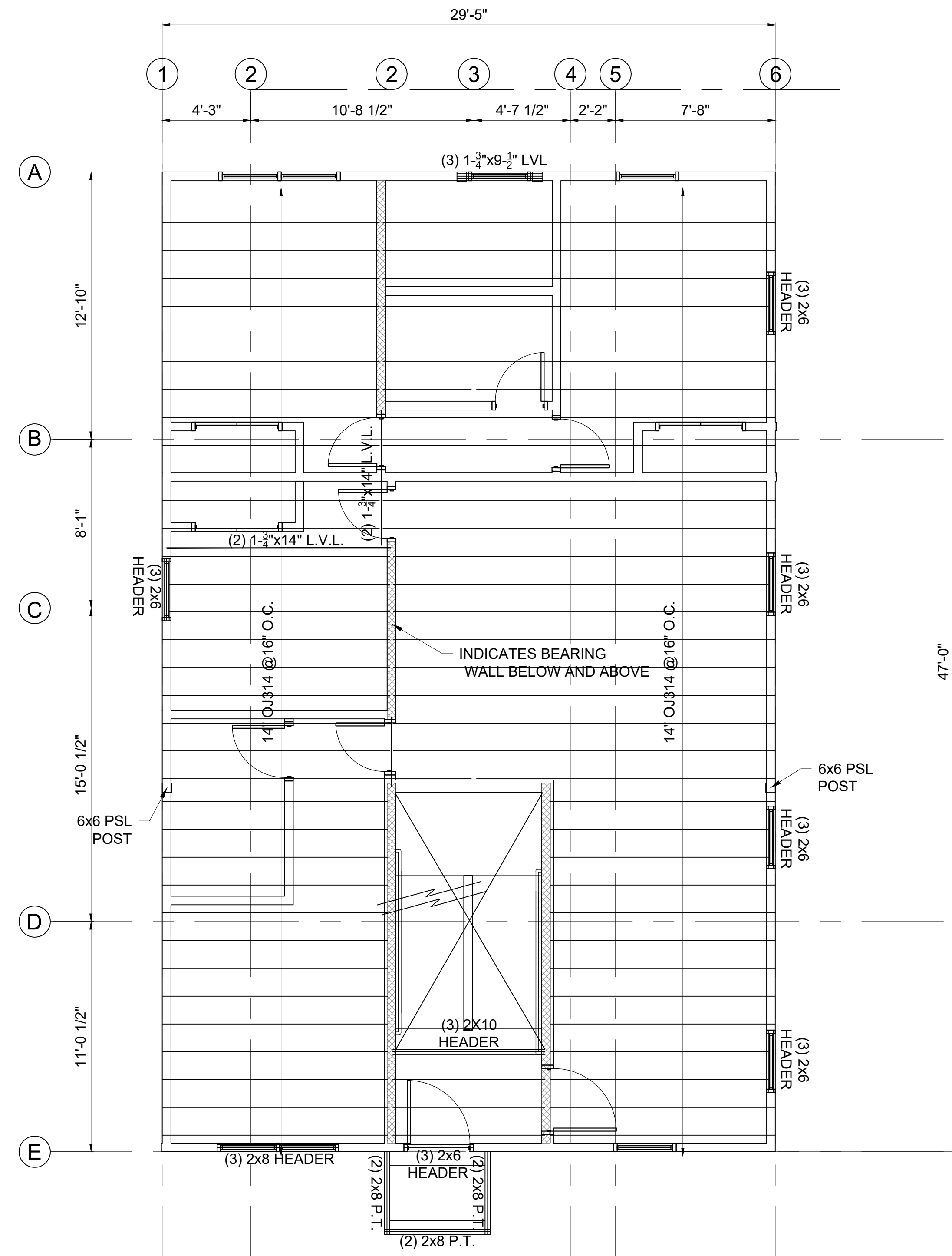
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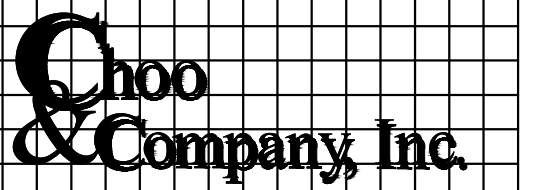


1 SECOND FLOOR FRAMING PLAN  
1/4" = 1'-0"

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

Location

PROPOSED 3 FAMILY  
RENOVATION  
7 THORNLEY STREET  
DORECHESTER, MA 02125



One Billings Road Quincy, MA  
617-786-7727 fax  
617-786-7715

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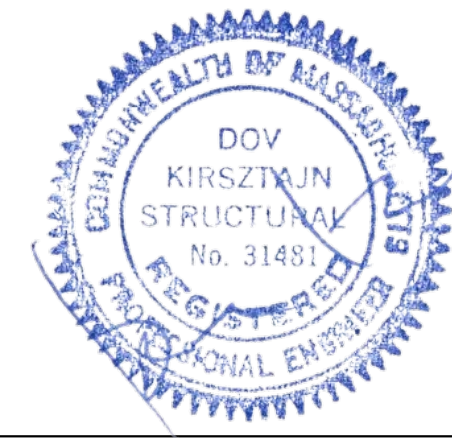
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Date: 07-18-2025  
Drawn By: MM

Drawing Name

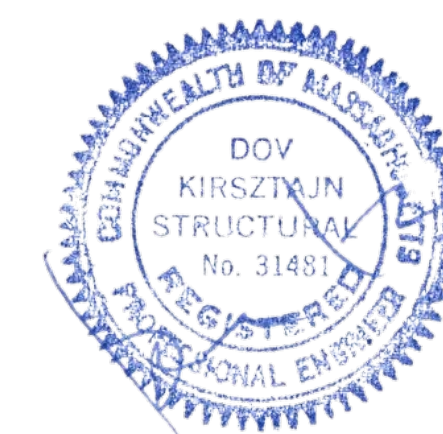
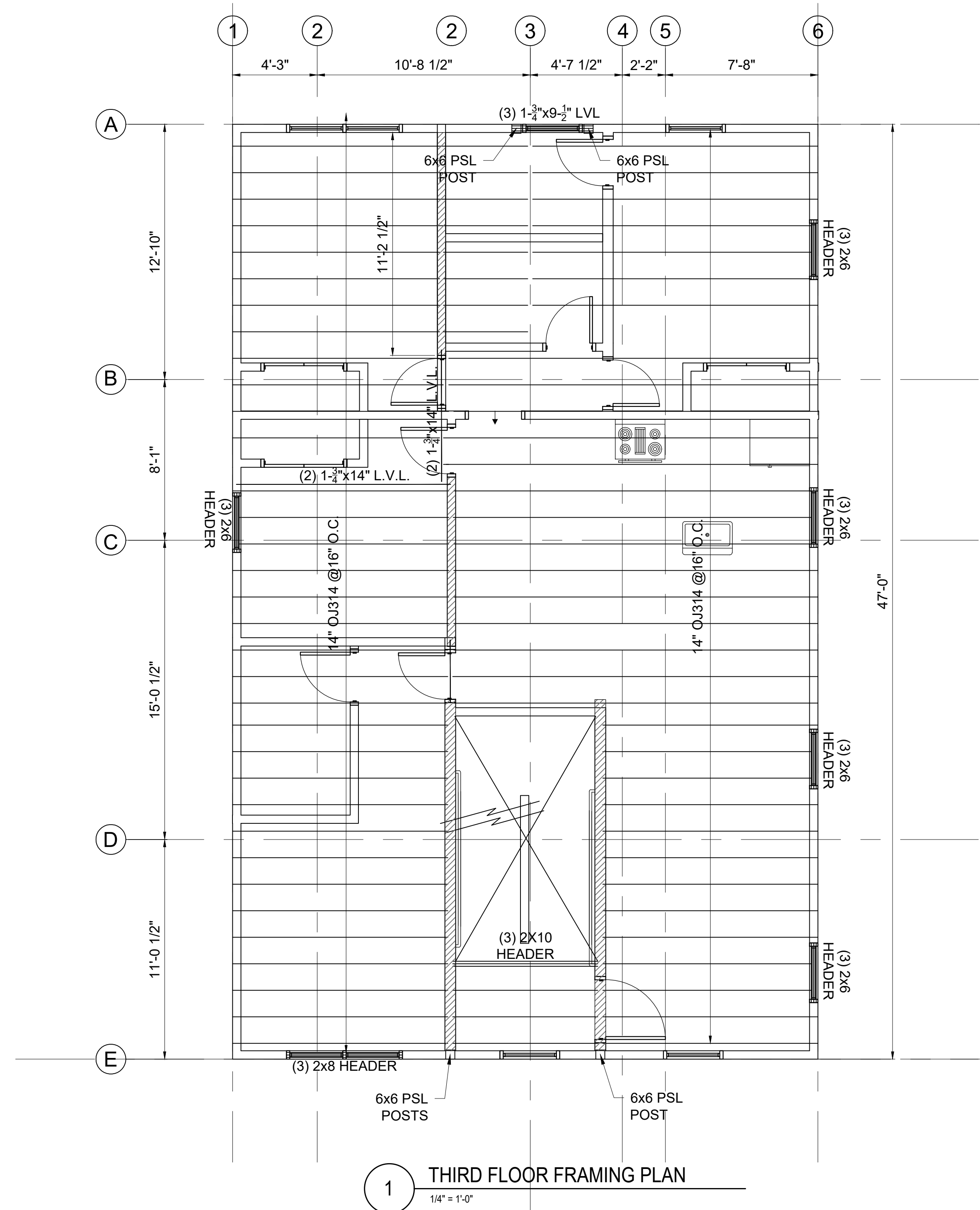
## SECOND FLOOR FRAMING PLAN

Sheet No.

S-1.3







Location

PROPOSED 3 FAMILY  
RENOVATION  
7 THORNLEY STREET  
DORECHESTER, MA 02125

Choo & Company, Inc.

One Billings Road Quincy, MA  
02176-7727  
tel 617-786-7727 fax 617-786-7715

No.	Description	Date

Project No:

2025132

Scale:

AS NOTED

Date:

07-18-2025

Drawn By:

MM

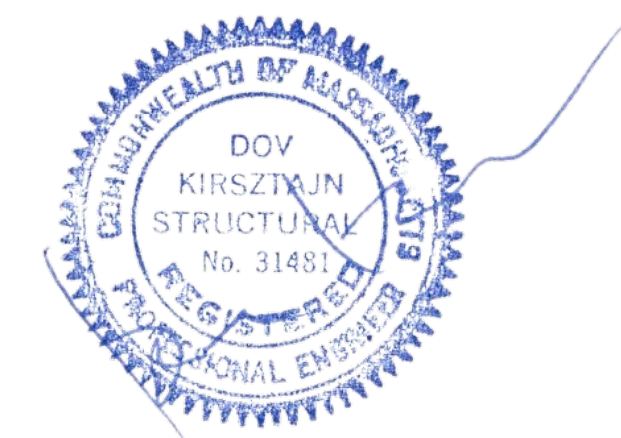
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THIRD FLOOR  
FRAMING PLAN

Sheet No.

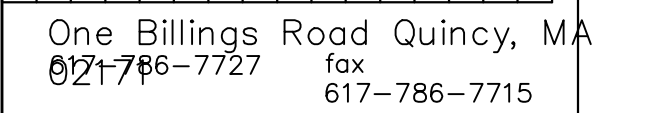
S-1.4





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

PROPOSED 3 FAMILY  
RENOVATION  
7 THORNLEY STREET  
DORCHESTER, MA 02125

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Drawing Name
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## ROOF FRAMING PLAN

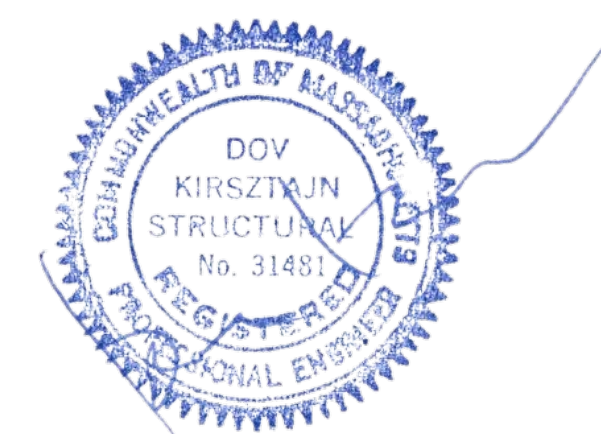
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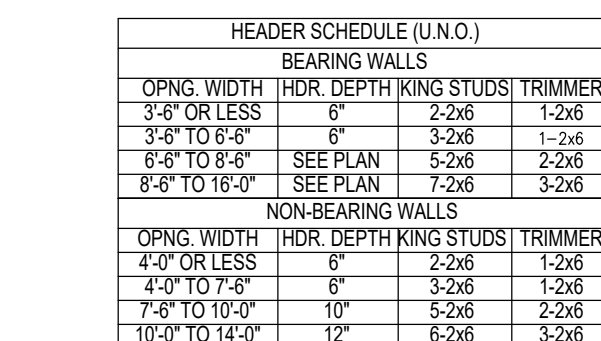
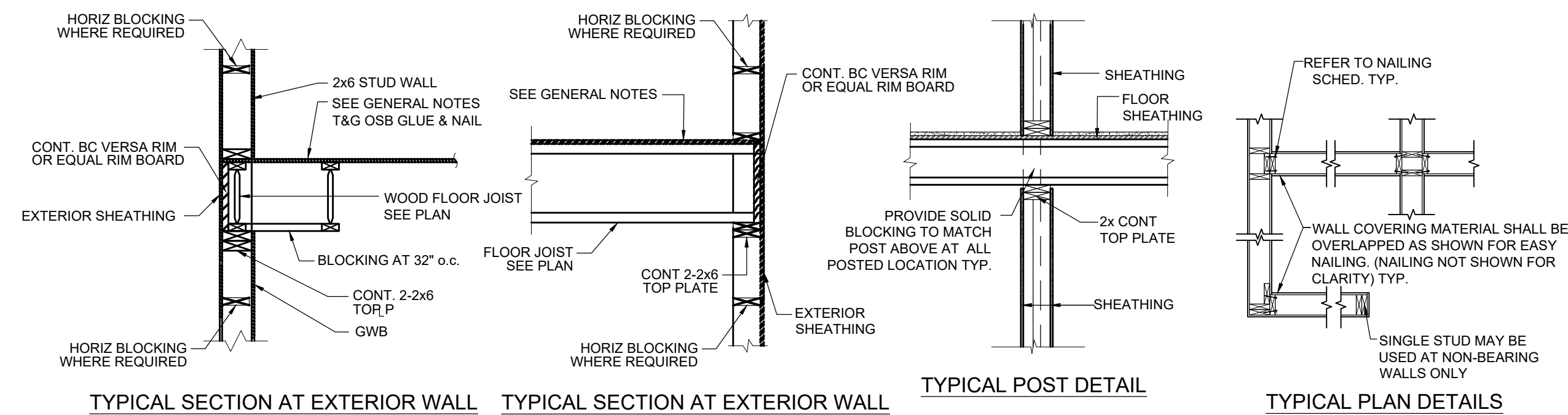




S-2.1





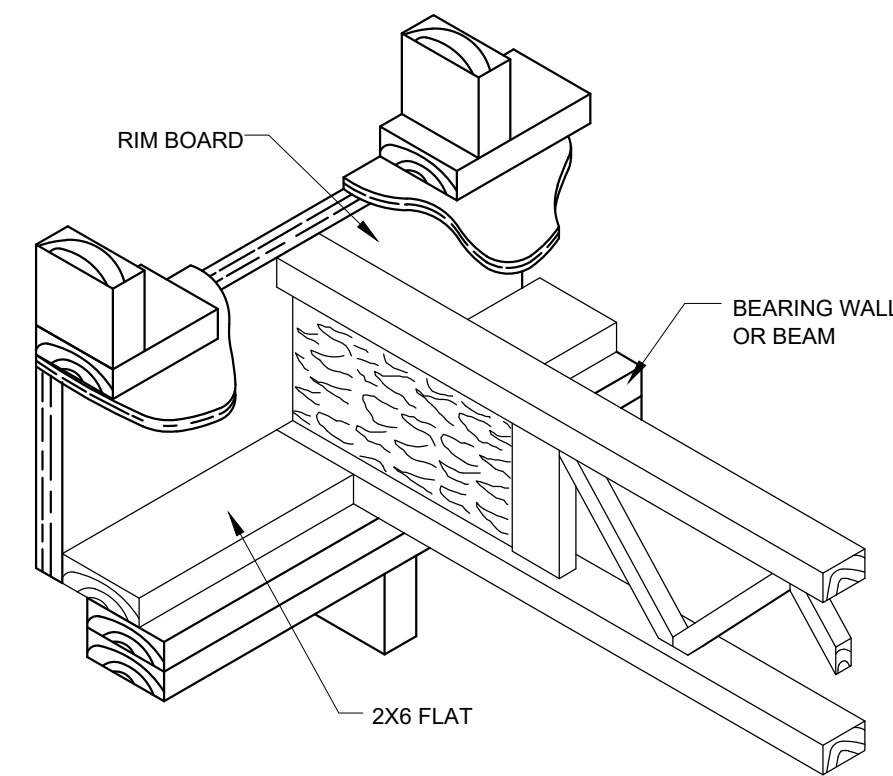


Seal of the Commonwealth of Massachusetts Professional Engineer. The seal is circular with a serrated outer edge. The text "COMMONWEALTH OF MASSACHUSETTS" is written along the top inner edge, and "PROFESSIONAL ENGINEER" is written along the bottom inner edge. In the center, the text reads: "DOV KIRSZTAJN STRUCTURAL No. 31481 REGISTERED".

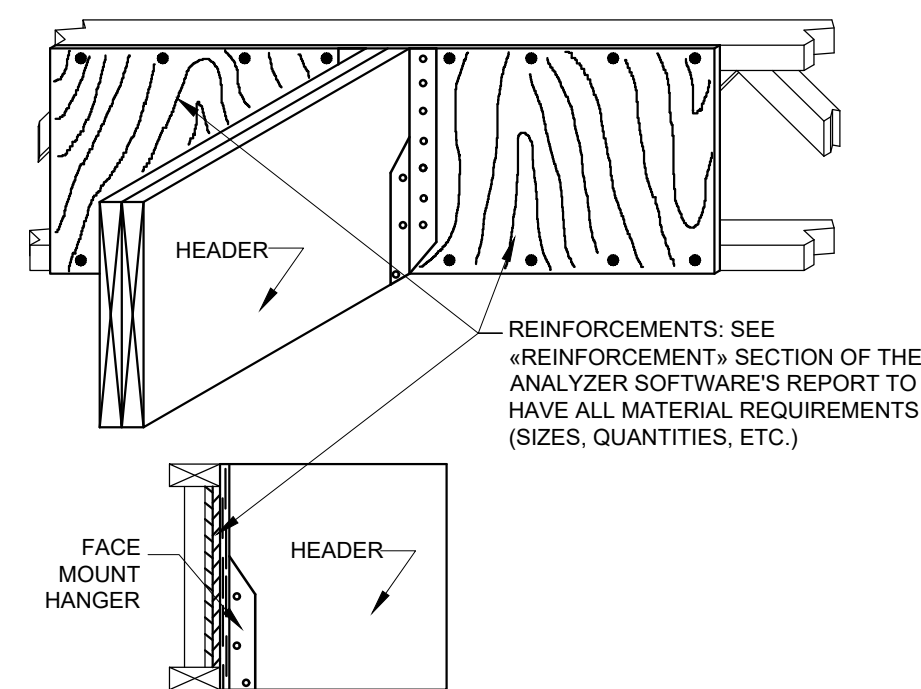
NOTE \*: SHINGLE NAILS SHALL PENETRATE NOT LESS THAN 3/4" INTO NAILING STRIPS, SHEATHING OR SUPPORTING CONSTRUCTION EXCEPT AS OTHERWISE

Location		
PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125		
		
One Billings Road Quincy, M. 021-786-7727 fax 617-786-7715		
No.	Description	Date
Project No: 2025132		
Scale: AS NOTED		
Date: 07-18-2025		
Drawn By: MM		
Drawing Name		
WOOD DETAILS		
Sheet No.		
S-2.2		

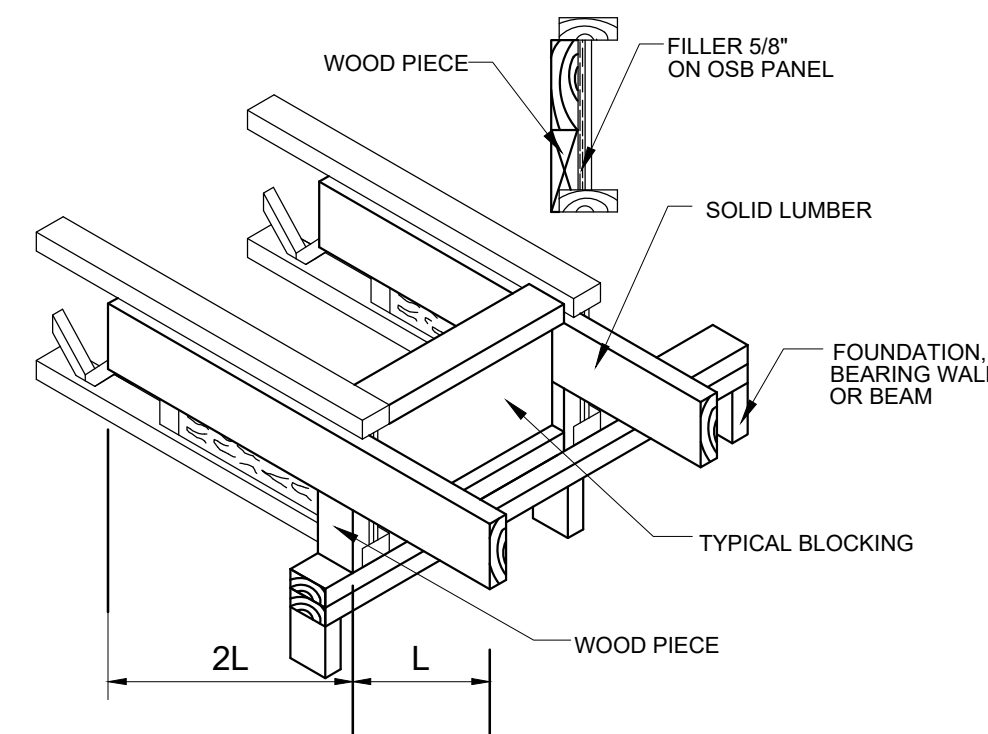




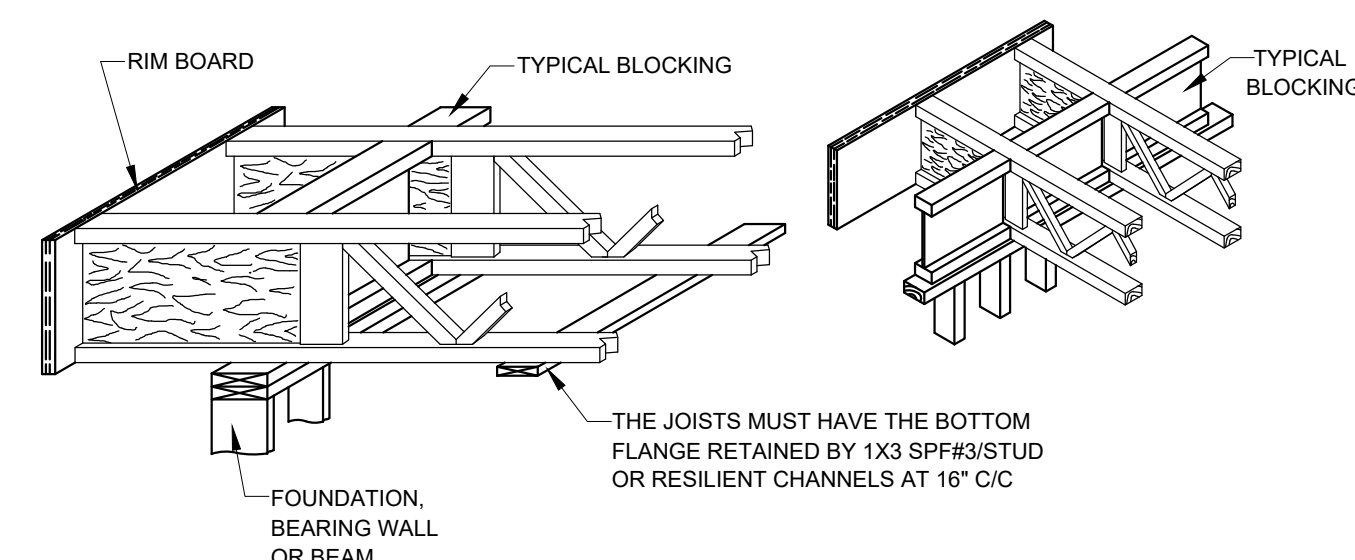
12 MULTIPLE LEVEL BRICK AT LOWER LEVEL  
1/2" = 1'-0"



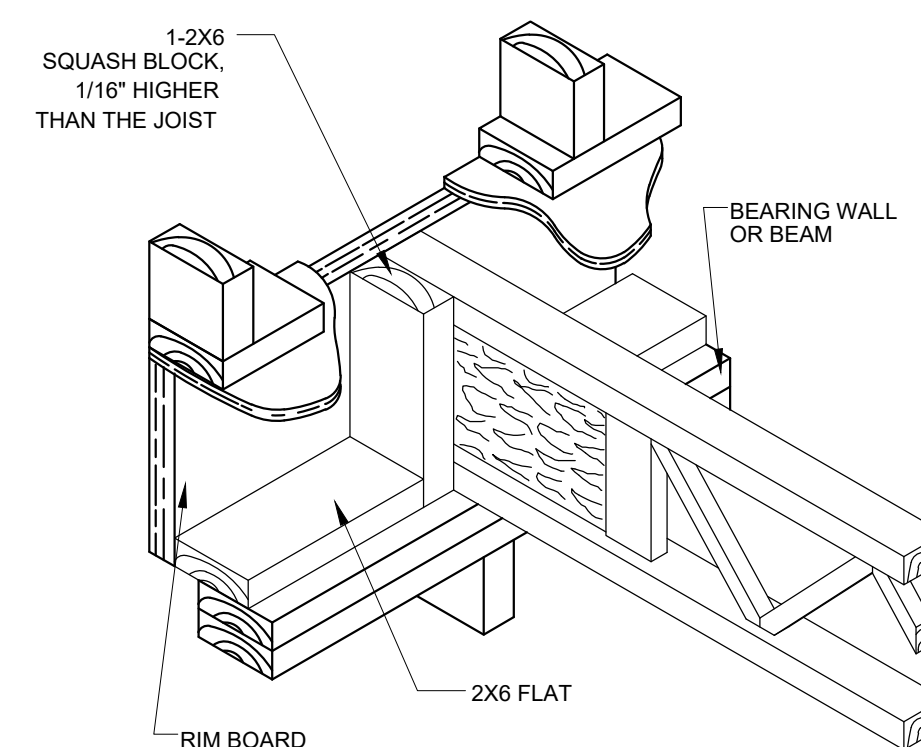
11 CANTILEVERED BALCONY  
1/2" = 1'-0"



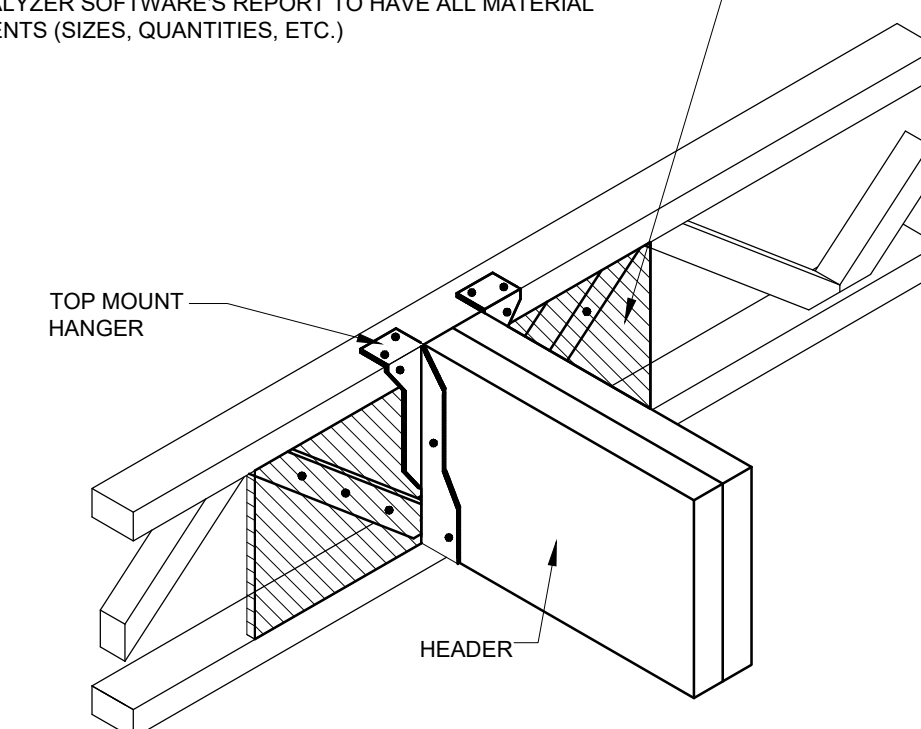
## 15 CONCENTRATED SIDE LOAD FACE MOUNT HANGER



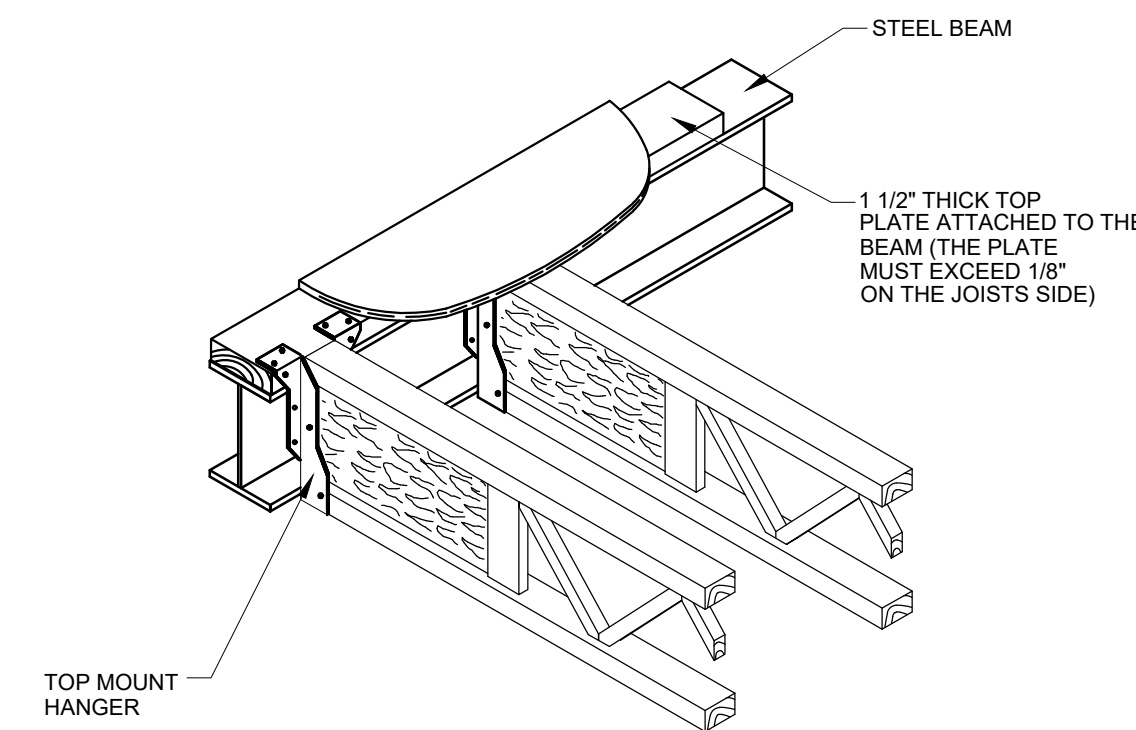
10 CONCENTRATED TOP LOAD  
 $1/2'' = 1'-0''$



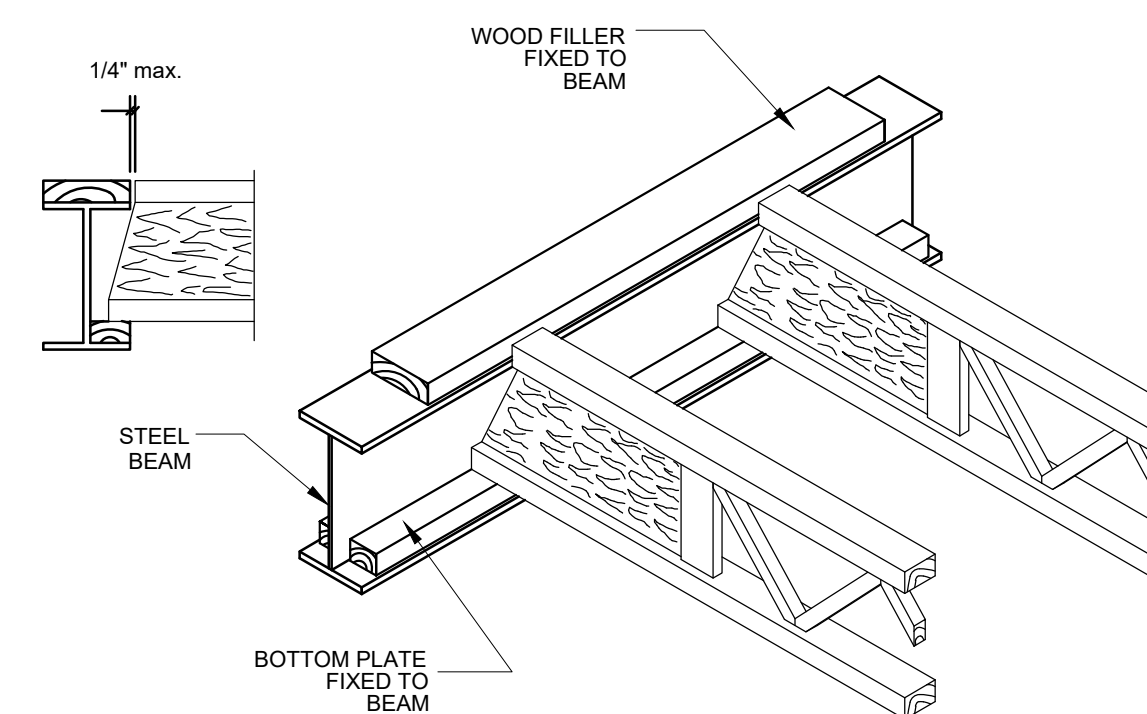
9 CONCENTRATED SIDE LOAD TOP MOUNT HANGER



13 MULTIPLE LEVEL BRICK AT LOWER LEVEL



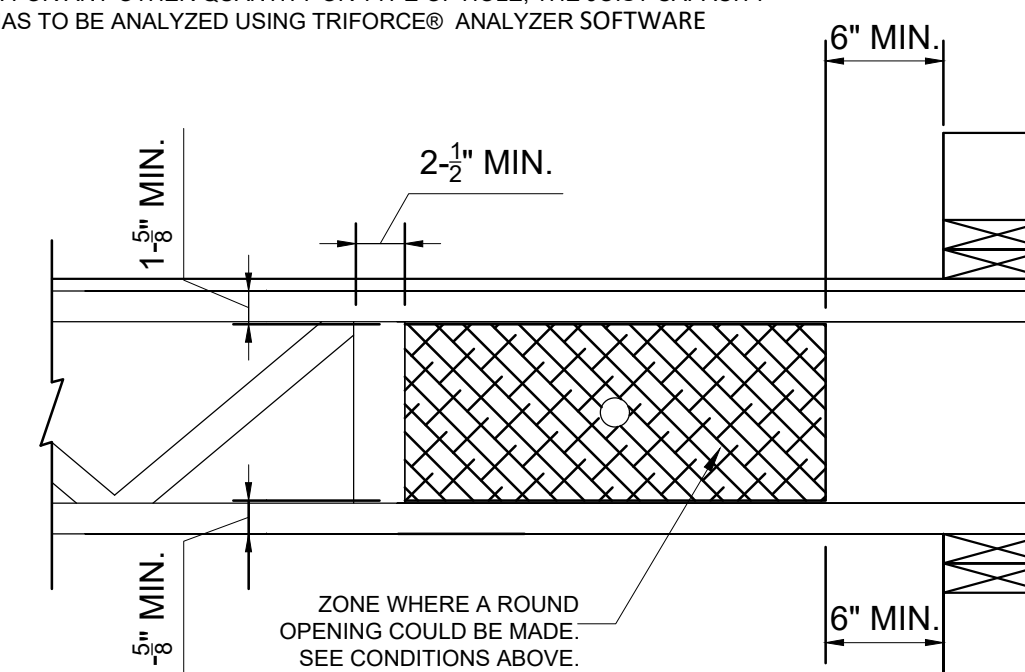
8 STEEL BEAM CONN. W/ TOP PLATE AND HANGER  
1/2" = 1'-0"



7 STEEL BEAM BOTTOM FLANGE BEARING HANGER  
1/2" = 1'-0"

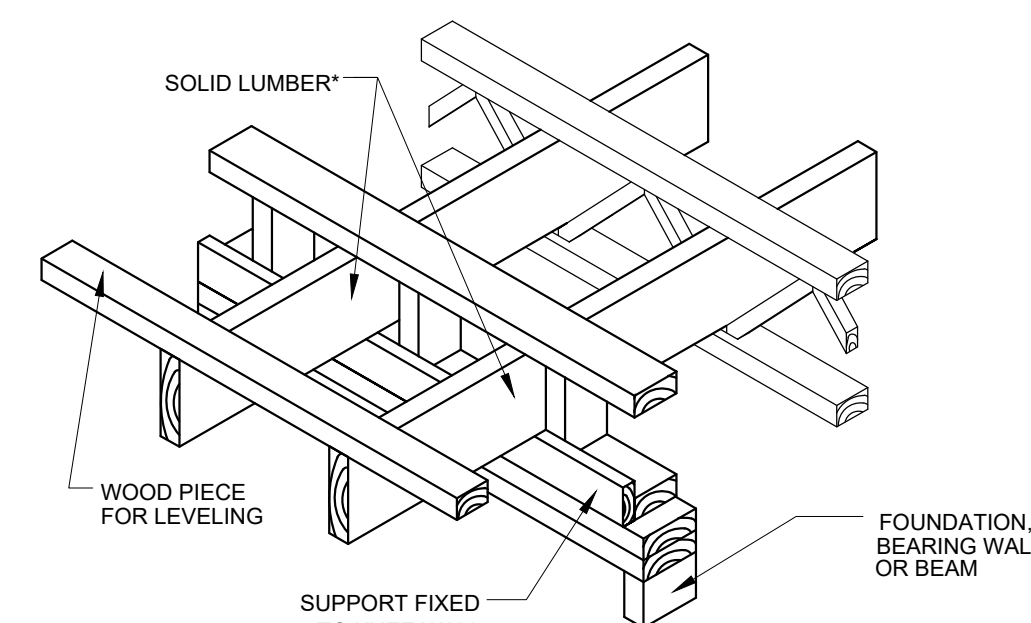
**CONDITIONS :**

1. ONE (1) ROUND HOLE OF 1.5" OR LESS DIAMETER CAN BE MADE IN THIS ZONE WITHOUT ANY ADJUSTMENT OF THE JOIST CAPACITY.
2. FOR ANY OTHER QUANTITY OR TYPE OF HOLE, THE JOIST CAPACITY HAS TO BE ANALYZED USING TRIFORMER® ANALYZER SOFTWARE

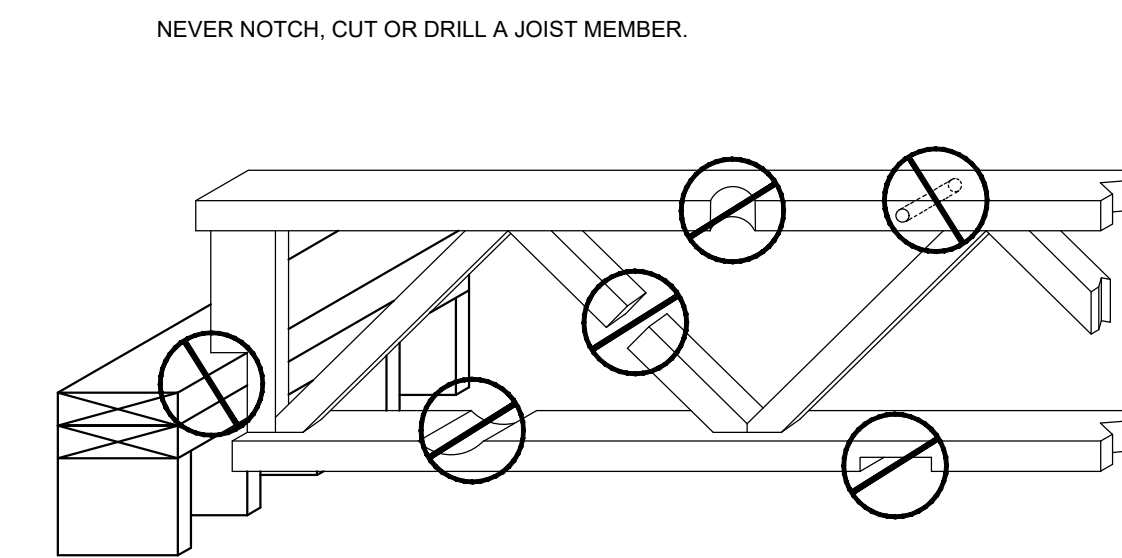


6 OPENINGS IN THE OSB END PANEL OF JOIST  
1/2" = 1'-0"

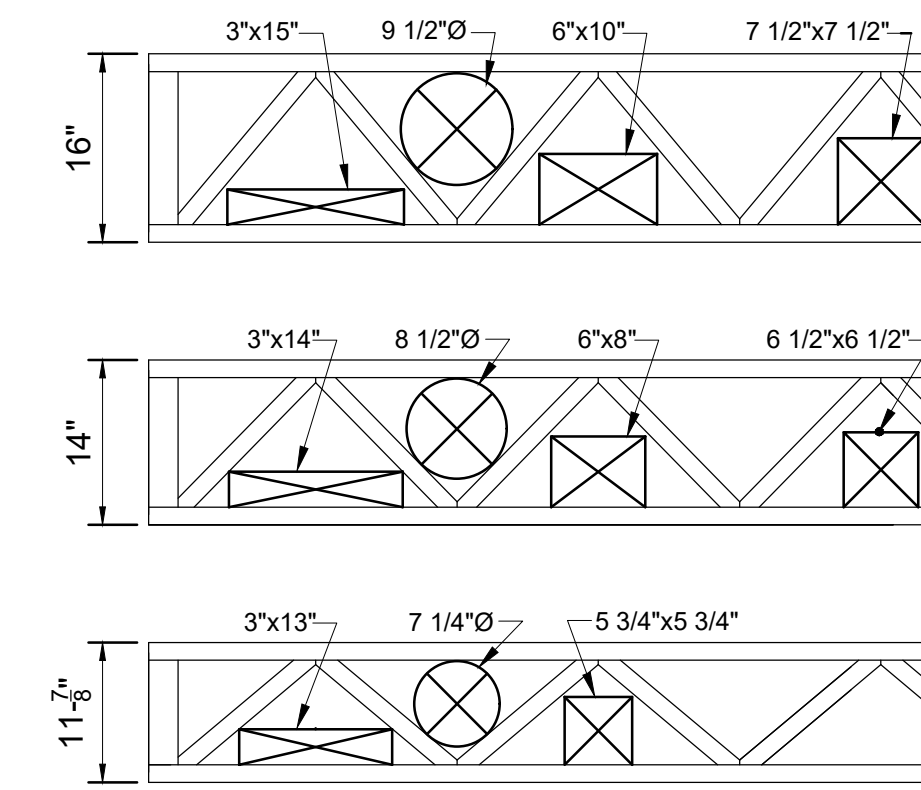
\*BLOCKING NOT ILLUSTRATED AT BEARING



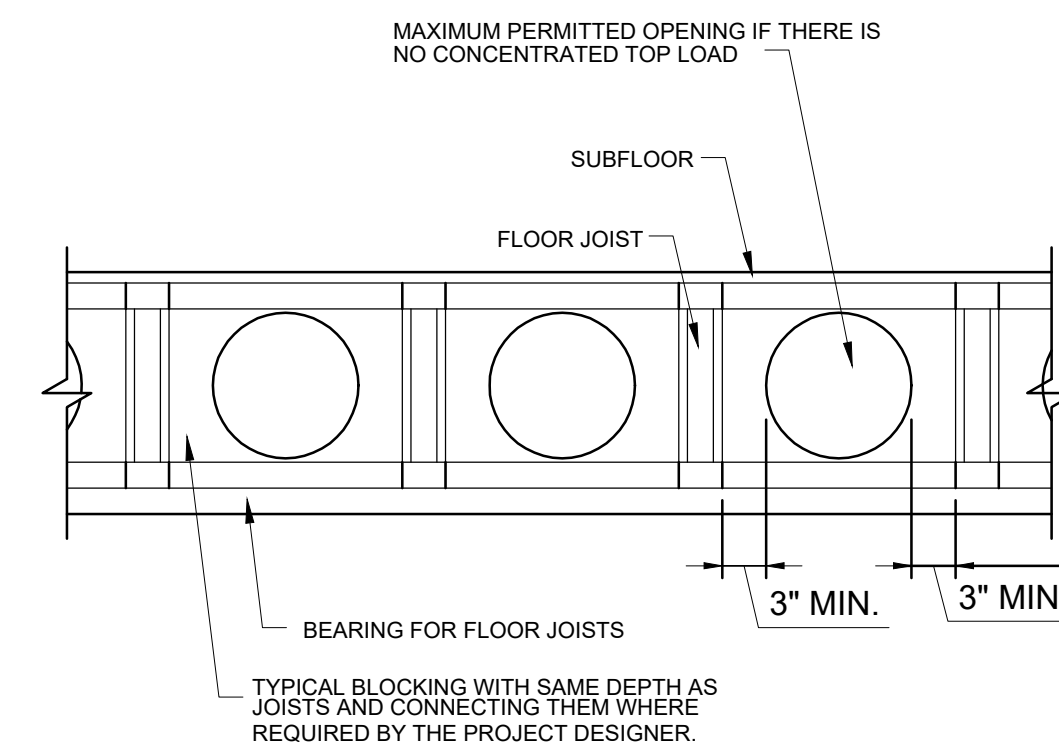
## 5 CANTILEVER PERPENDICULAR TO OPEN JOIST



## 4 CONDITIONS THAT ARE FORBIDDEN

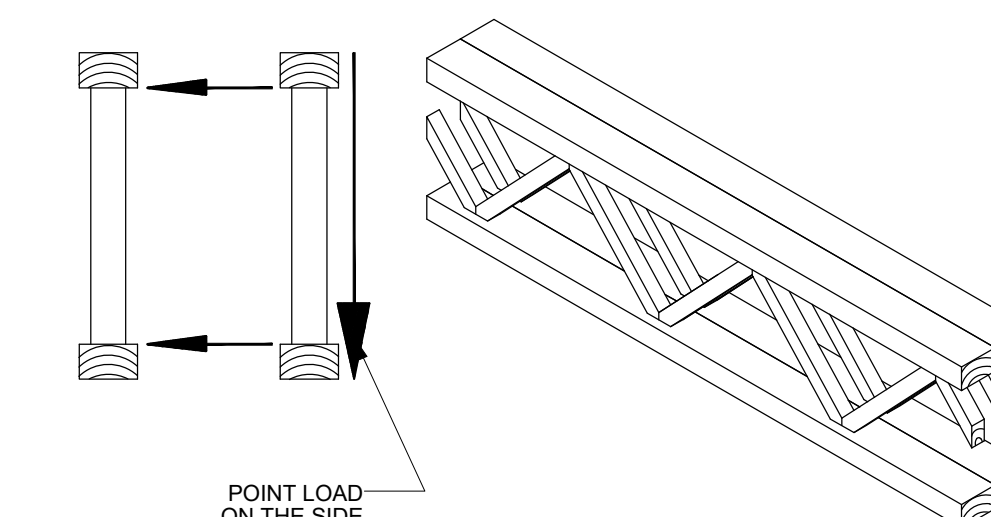


### 3 WOOD TRUSS MECHANICAL CLEARANCES



2 TYP. BLOCKING DETAIL  
1/2" = 1'-0"

INSTALL CONNECTORS ON THE TOP AND BOTTOM CHORD TO TRANSFER FROM THE FIRST PLY TO THE SECOND PLY, THE LOAD INDICATED IN MANUFACTURER'S «ANALYZER» SOFTWARE REPORT.



1 DOUBLED JOIST LOAD TRANSFER  
1/2" = 1'-0"

PROPOSED 3 FAMILY  
RENOVATION  
7 THORNLEY STREET  
DORCHESTER, MA 02125

**Choo  
& Company, Inc.**

One Billings Road Quincy, MA  
617-786-7727 fax  
617-786-7715

[illegible]

Project No: 2025132  
Scale: AS NOTED  
Date: 08-08-2025  
Drawn By: MM

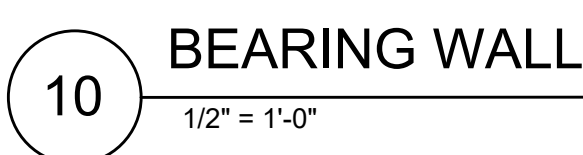
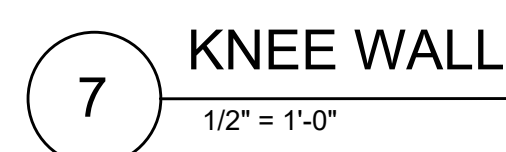
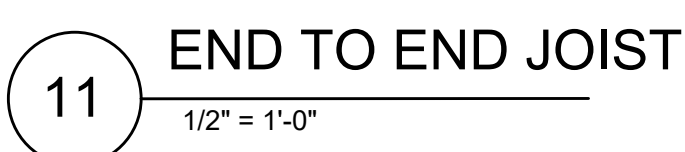
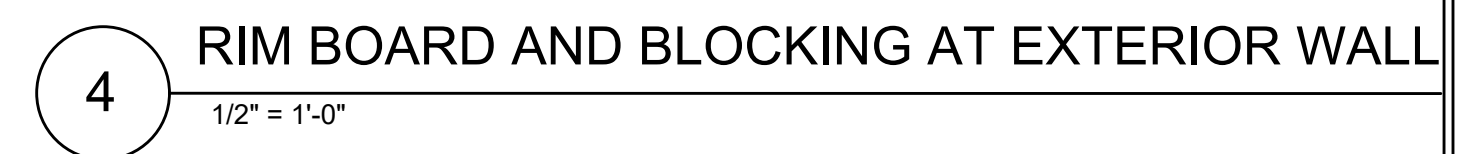
Drawing Name
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## WOOD DETAILS

Sheet No.

S-2.3





PROPOSED 3 FAMILY  
RENOVATION  
7 THORNLEY STREET  
DORECHESTER, MA 02125

**Choo  
& Company, Inc.**

One Billings Road Quincy, MA  
617-786-7727 fax  
617-786-7715

[illegible]

Project No: 2025132  
Scale: AS NOTED  
Date: 08-08-2025  
Drawn By: MM

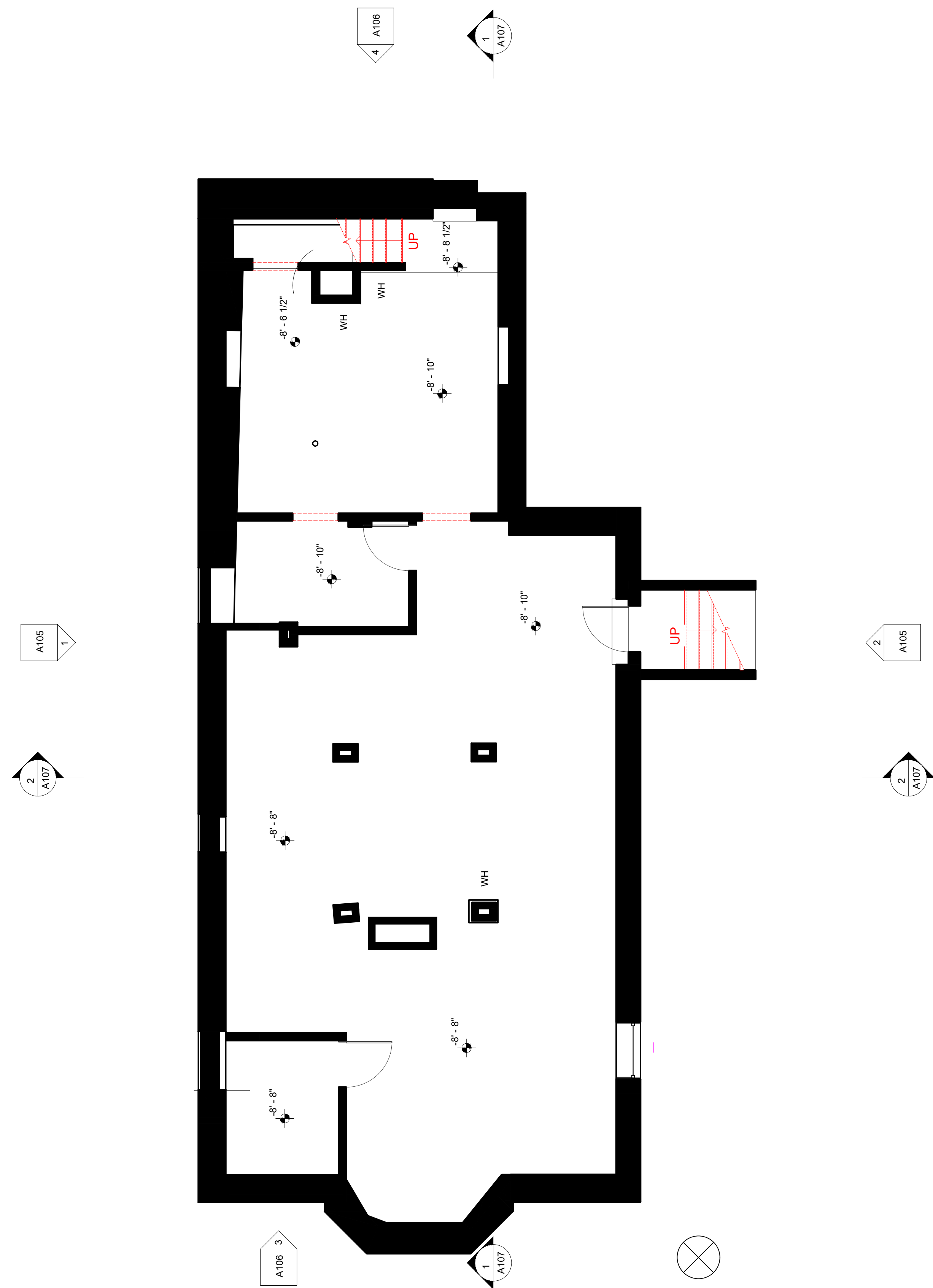
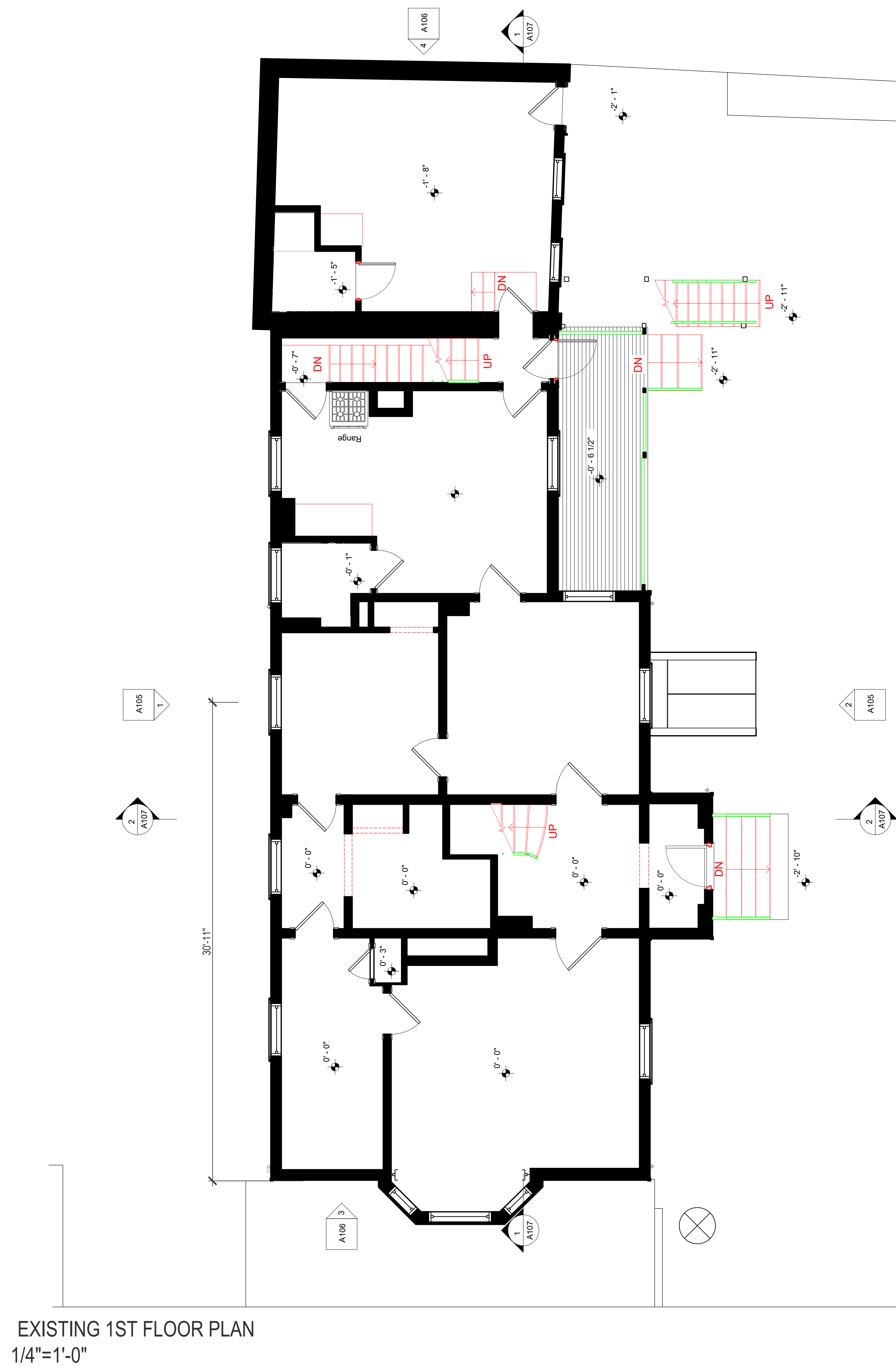
Drawing Name

## WOOD DETAILS

Sheet No.

S-2.4





GENERAL NOTE:

VERIFY AND CONFIRM ALL CONDITIONS AND/OR DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS. NOTIFY ARCHITECT OF ANY INCONSISTENCIES FOR REVIEW AND APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

EXISTING BASEMENT PLAN  
EXISTING FIRST FLOOR

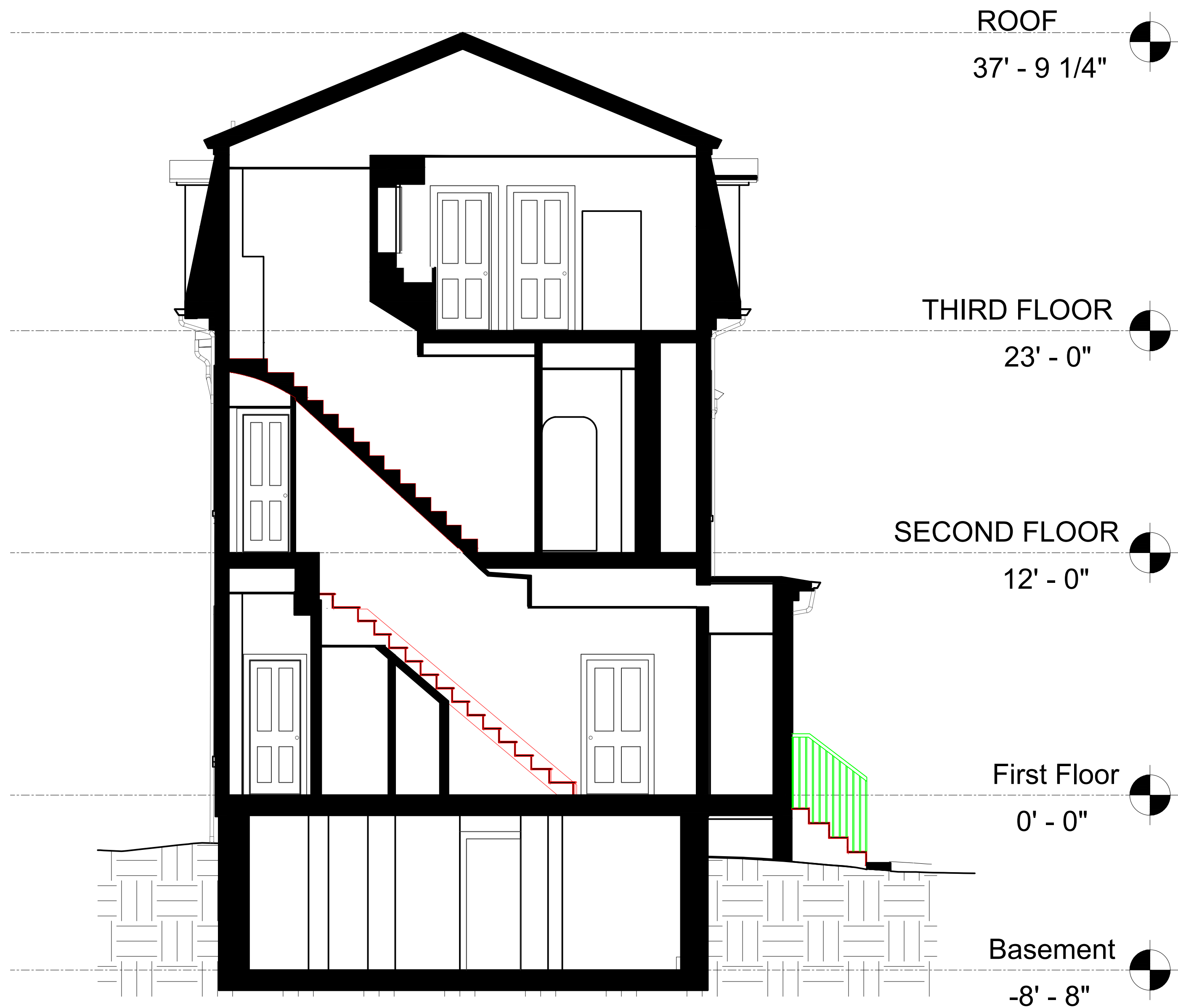
DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER



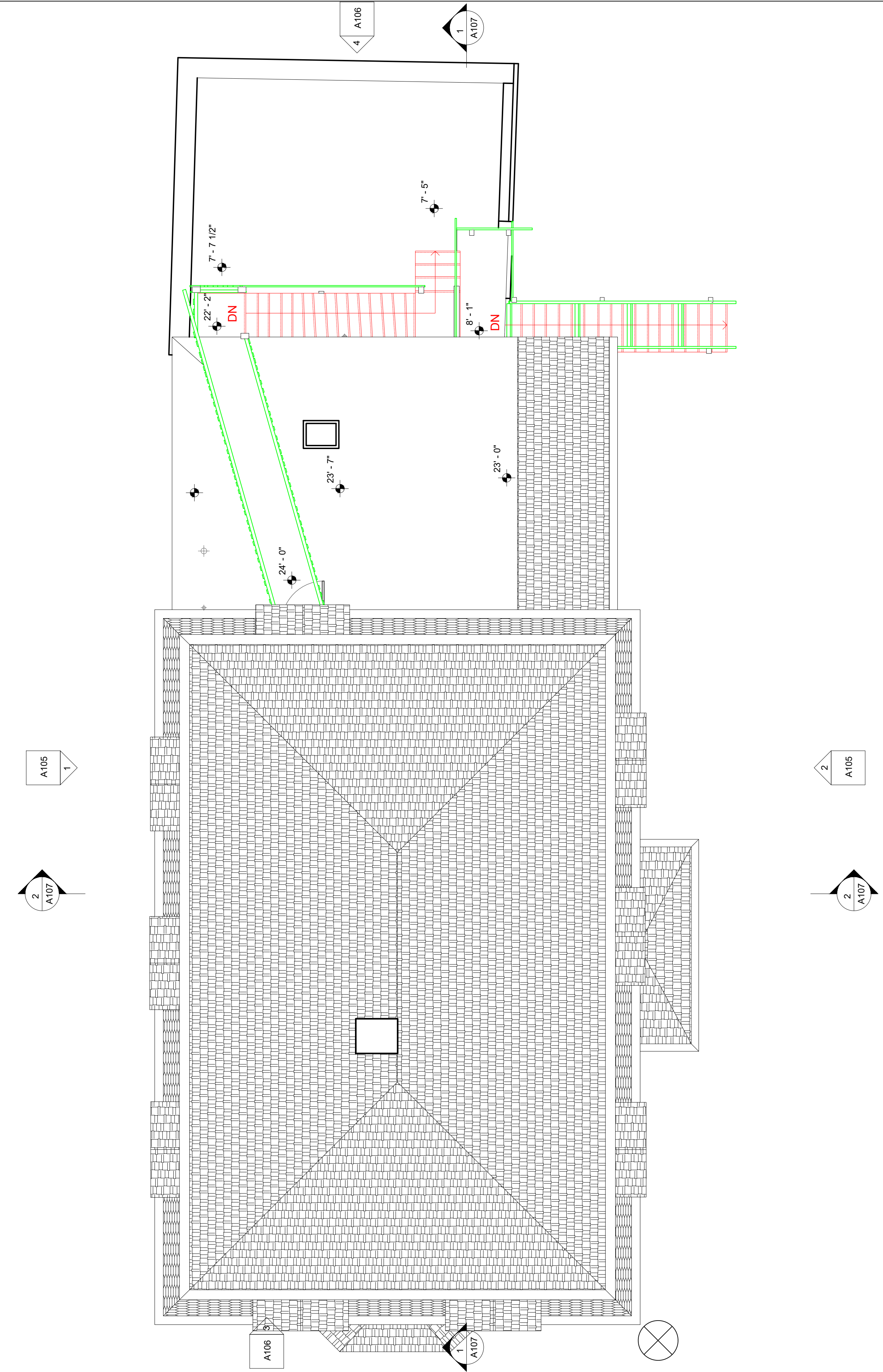








EXISTING SECTION #2  
1/4"=1'-0"



EXISTING ROOF FLOOR PLAN-  
1/4"=1'-0"

GENERAL NOTE:  
VERIFY AND CONFIRM ALL CONDITIONS AND/OR DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS. NOTIFY ARCHITECT OF ANY INCONSISTENCIES FOR REVIEW AND APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.

REGISTERED ARCHITECT  
STATE OF MASSACHUSETTS

J. Edward Roche, AIA  
No. 21845  
State of Massachusetts

LIGHTHOUSE ARCHITECTURE & DESIGN  
189 ALLEN ST. BOSTON, MA 02118  
Gavin Driscoll, Principal  
781-801-2690 - gavin@lighthousearch.com  
J. Edward Roche, AIA  
617-512-9281 - edroche@lighthousearch.com  
#6635

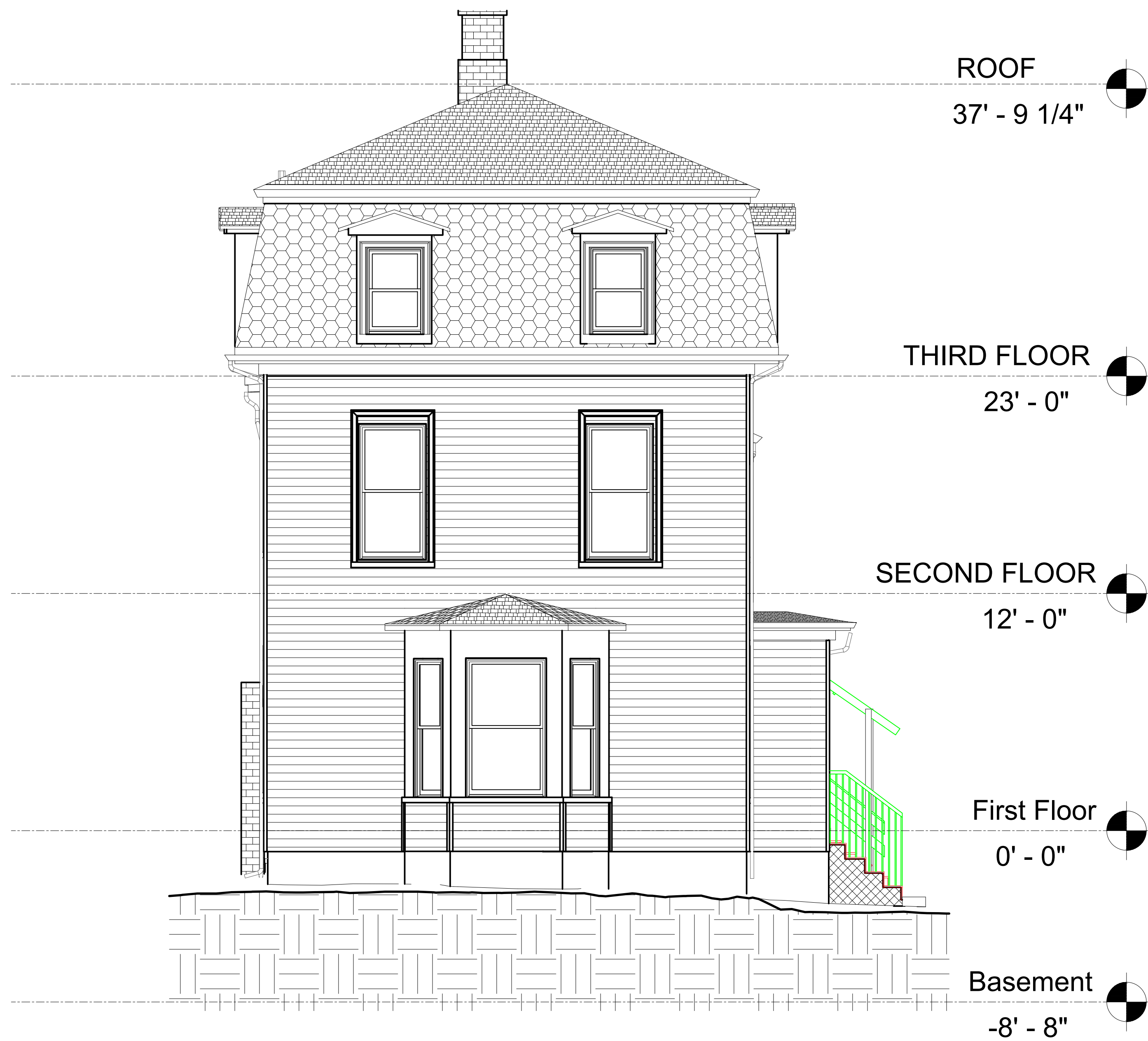
DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

EXISTING ROOF PLAN  
EXISTING SECTION #2

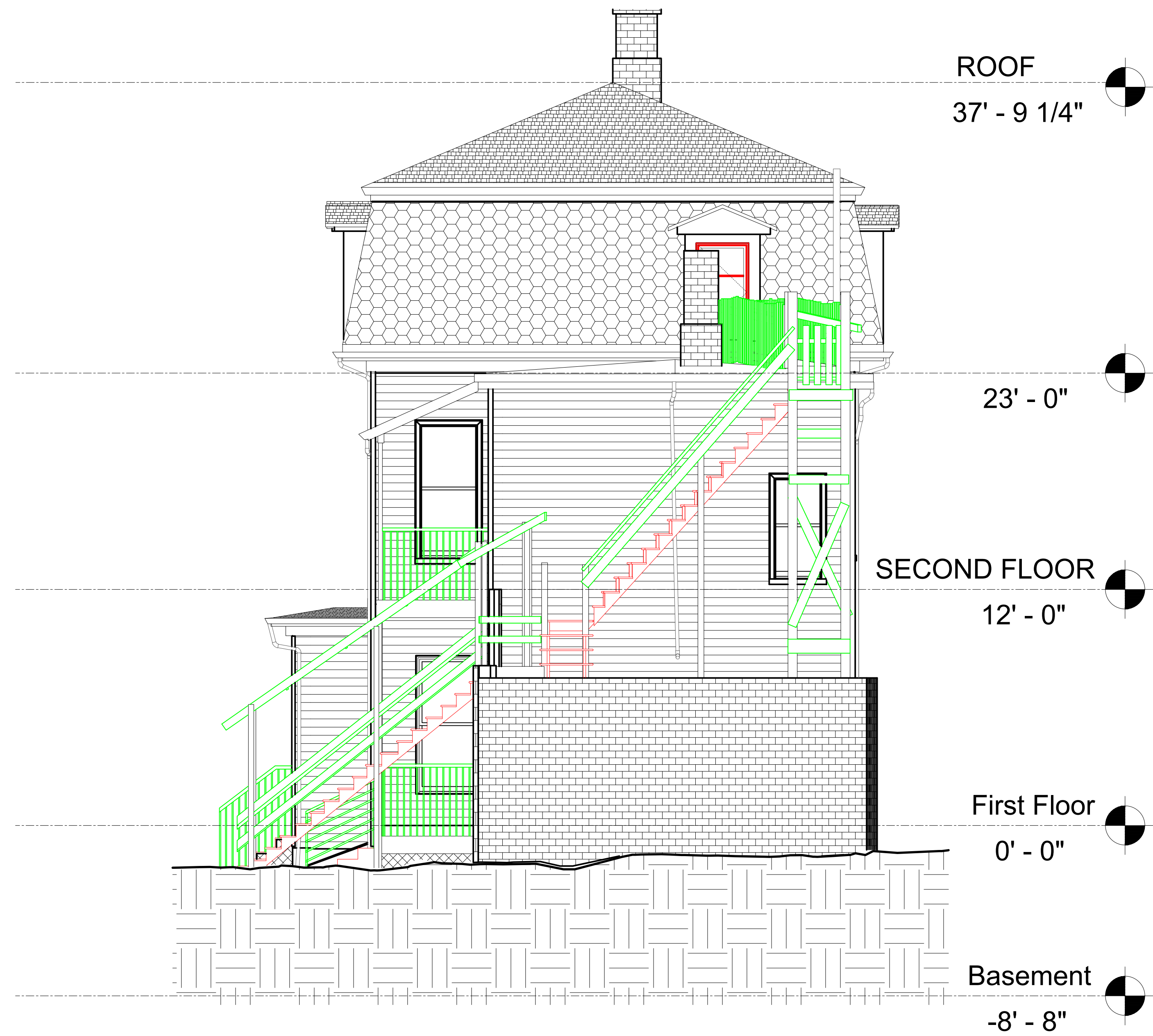
RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

EX3





EXISTING FRONT ELEVATION  
1/4"=1'-0"



EXISTING REAR ELEVATION  
1/4"=1'-0"

GENERAL NOTE:  
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LIGHTHOUSE ARCHITECTURE & DESIGN  
189 ALLEN ST BRANFORD, CT 06405  
Gavin Driscoll, Principal  
781-801-2690 - gavin@lighthousearch.com  
J. Edward Roche, AIA, 603-688-1111  
617-512-9281 - erod@lighthousearch.com

Seal of Gavin Driscoll, Principal, State of Connecticut, No. 21832.

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

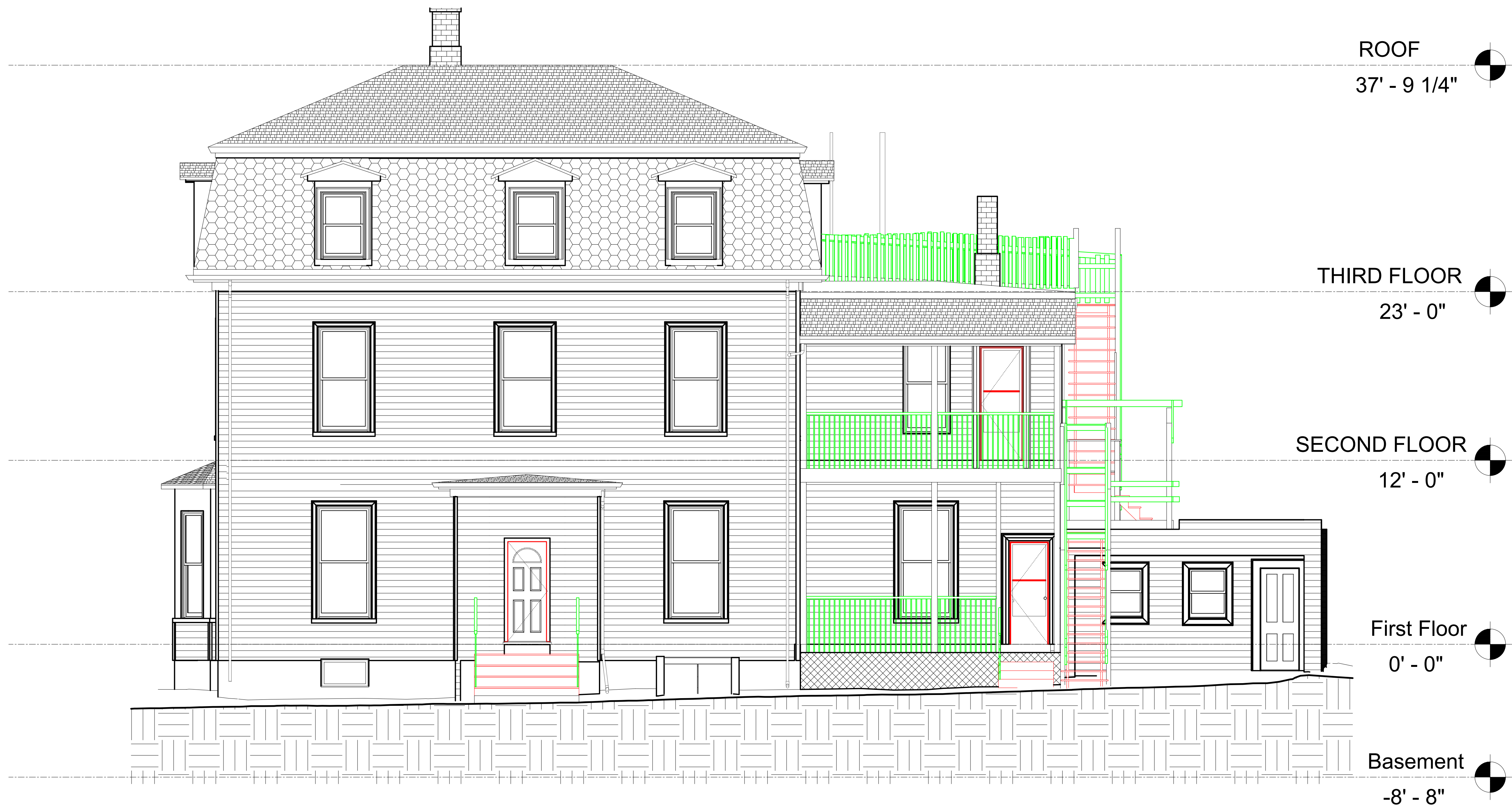
EXISTING FRONT AND REAR ELEVATION

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

EX4



EXISTING RIGHT ELEVATION  
1/4"=1'-0"



GENERAL NOTE:  
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RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

EXISTING RIGHT ELEVATION

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

REGISTERED ARCHITECT  
STATE OF MASSACHUSETTS  
180-41 LEN ST BRANFEE MA 02184  
Gavin Driscoll, Principal  
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J. Edward Roche, AIA  
617-512-9281 - erocha@ercha.com  
#6635

PROJECT #

6635

LIGHTHOUSE ARCHITECTURE & DESIGN  
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J. Edward Roche, AIA  
617-512-9281 - erocha@ercha.com  
#6635

PROJECT #

6635



REGISTERED ARCHITECT  
STATE OF MASSACHUSETTS  
189-ALLEN ST BRANCH, UNIT #1  
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781-801-2690 - gavin@lighthousearchitect.com  
J. Edward Roche, AIA  
617-512-9281 - eroch@lighthousearchitect.com  
#6635

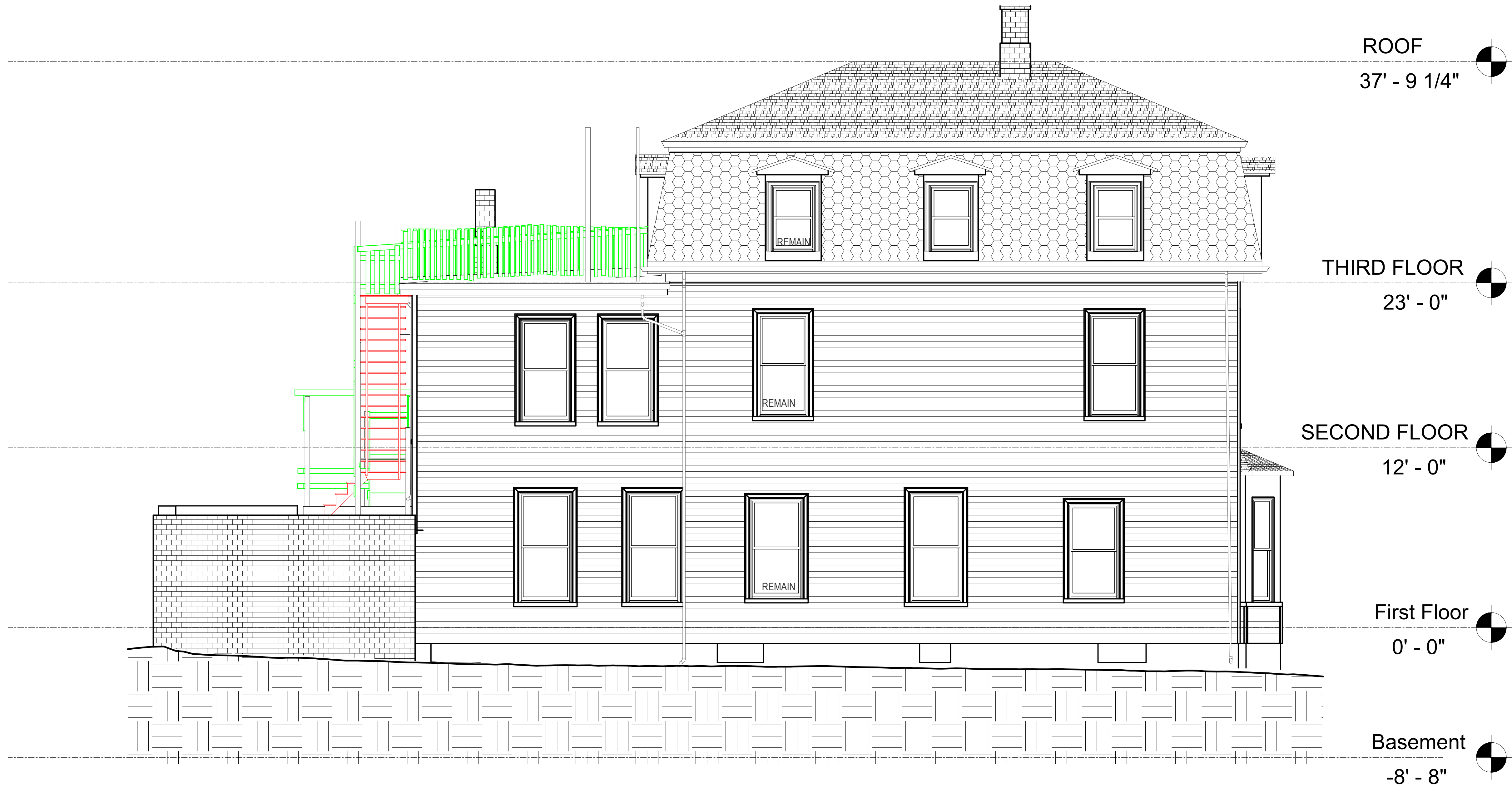
LIGHTHOUSE ARCHITECTURE & DESIGN  
189-ALLEN ST BRANCH, UNIT #1  
Gavin Driscoll, Principal  
781-801-2690 - gavin@lighthousearchitect.com  
J. Edward Roche, AIA  
617-512-9281 - eroch@lighthousearchitect.com  
#6635

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

EXISTING LEFT ELEVATION

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

EX6



EXISTING LEFT ELEVATION  
1/4"=1'-0"

GENERAL NOTE:  
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EXISTING SECTION  
1/4"=1'-0"

GENERAL NOTE:  
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SEALED  
ARCHITECT  
Gavin Driscoll  
J. Edward Roche, AIA  
617-512-9281 - erodrae@outlook.com

LIGHTHOUSE ARCHITECTURE & DESIGN  
189 ALLEN ST. BRAINTREE, MA 02141 UNIT #1  
Gavin Driscoll, Principal  
781-801-2690 - gavin@lighthousearchitect.com  
J. Edward Roche, AIA  
617-512-9281 - erodrae@outlook.com

DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

EXISTING SECTION #2

RENO OF EXISTING THREE FAMILY HOME  
7 THORNLEY ST, DORCHESTER, MA 02125

EX7



# INSPECTION SCHEDULE

---

*Please be aware of the building code that is being enforced in your town. Reaching the mandatory infiltration rates are difficult and require advanced air sealing. As a builder, you need to make sure your sub and insulation contractors do the proper and adequate air sealing to help ensure that your building passes final blower door testing.*

## 1. PRELIMINARY SITE INSPECTION – RECOMMENDED

This on-site visit is not required, but can be beneficial to identify any issues that could present a problem at the Final Inspection. Contact us when you anticipate the duct system being 100% roughed in. **All duct systems must be tested to receive rebates – maximum total duct leakage is 4% regardless of system location.**

Please retain 1 of each window type's NFRC label to properly model the fenestration values.

## 2. INSULATION INSPECTION – MANDATORY

In order to prevent issues at the final inspection which can delay obtaining your Certificate of Occupancy, contact our office to schedule the mandatory insulation inspection once the insulation work is complete, but before the wallboard goes up.

## 3. FINAL INSPECTION – MANDATORY

Contact our office to schedule the mandatory final inspection as your project nears completion. The Final Inspection includes a blower door, duct test (unless ducts have been previously tested), and flow test for all bath fans.

The following items must be present at the time of the final inspection:

- All insulation and major air sealing details completed
- Mechanical systems in place
- ERV/HRV installed and operational
- 24-HR bath fan control in place and power to the bath fans
- LEDs 75% energy efficient lighting
- Energy Star appliances in place
- EV Charging ready.
- Permanent utility meter(s) in place

**Re-inspections are invoiced at \$250 per visit. Failure to comply with incentive program requirements will result in a \$350 incentive fee repayment.** Home Energy Raters will be unable to facilitate any incentive applications if the insulation inspection was missed.



# HOME ENERGY RATERS



# Building Specification Summary

<b>Property</b> 7 Thornley St Unit 1 Dorchester, MA 02125  Thornley St 7 Unit 1 - vwY1DxNL Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100  <b>Builder</b> Walter Hunting Construction	<b>Inspection Status</b> Results are projected
---	--	---

## Building Information

Conditioned Area [ft²]	1,275.00
Conditioned Volume [ft³]	14,232.00
Thermal Boundary Area [ft²]	4,615.83
Number Of Bedrooms	4
Housing Type	Apartment, end unit

## Rating

HERS ERI	42
HERS ERI w/o PV	42

## Building Shell

Ceiling w/ Attic	None	Windows (largest)	U-Value: 0.3, SHGC: 0.3
Vaulted Ceiling	None	Window / Wall Ratio	0.11
Above Grade Walls	R23,FG+XPS,R13+2",6x16,G1; U-0.049	Window / Floor Ratio	0.14
Found. Walls	None	Infiltration	3 ACH50
Framed Floors	R15,MW,10x16,G1; R-15	Duct Lkg to Outside	52 CFM @ 25Pa (4.08 / 100 ft²)
Slabs	None	Total Duct Leakage	52 CFM @ 25Pa (Post-Construction)

## Mechanical Systems

Heating	Furnace • Natural Gas • 95 AFUE
Cooling	Air Conditioner • Electric • 14.7 SEER2
Water Heating	Residential Water Heater • Natural Gas • 0.95 UEF
Programmable Thermostat	Yes
Ventilation System	80 CFM • 44.6 Watts • ERV
Whole House Fan	N/A

## Lights and Appliances

Percent Interior LED	100%	Clothes Dryer Fuel	Electric
Percent Exterior LED	100%	Clothes Dryer CEF	3.4
Refrigerator (kWh/yr)	691.0	Clothes Washer LER (kWh/yr)	284.0
Dishwasher Efficiency	270 kWh	Clothes Washer Capacity	4.2
Ceiling Fan	None	Range/Oven Fuel	Natural Gas



# Building Summary

<b>Property</b> 7 Thornley St Unit 1 Dorchester, MA 02125  Thornley St 7 Unit 1 - vwY1DxNL Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100  <b>Builder</b> Walter Hunting Construction	<b>Inspection Status</b> Results are projected
---	---	---

General Building Information	
Number Of Bedrooms: 4	Number Of Floors: 1
Conditioned Floor Area [sq. ft.]: 1,275	Has Electric Vehicle Ready Space: Yes
Unconditioned, attached garage? No	Conditioned Volume [cu. ft.]: 14,232
Total Units in Building: 3	Residence Type: Apartment, end unit
Number of Floors in Building: 3	Floor Number: 1
Model: N/A	Community:
RESNET/IECC 2006-2018 Climate Zone: 5A	IECC 2021 Climate Zone: 5A

## Envelope Components

Framed Floor						
Name	Library Type	Carpet R	Floor Grade	Surface Area	Location	Effective R-value
Fir >Cond Bsmt	R15,MW,10x16,G1	0.68	Above Grade	1,275.0 ft²	Insulated Unconditioned Basement	15.997

Rim Joist				
Name	Library Type	Surface Area	Location	Effective Insulation R-value
ambient	R21	365.0 ft²	Exposed Exterior	21.00

Wall						
Name	Library Type	Surface Color	Solar Absorptance	Surface Area	Location	Effective R-value
Wall >Amb	G+XPS,R13+2",6x16,G1	Medium	0.75	1,265.3 ft²	Exposed Exterior	20.244
Wall >entry hall	R15,MW,6x16,G1	Medium	0.75	435.5 ft²	Conditioned Space (Adiabatic)	13.285

Glazing									
Name	Library Type	Wall Assignment	Foundation Wall Assignment	Is Operable	Overhang Depth	Overhang Ft To Top	Overhang Ft To Bottom	Orientation	Surface Area
Back DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Northwest	43.2 ft²
Front DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Southeast	61.7 ft²
Left DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Southwest	17.4 ft²
Right DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Northeast	61.7 ft²

Glazing Library List		
Name	Shgc	U-factor
U:0.30,SHGC:0.30	0.3	0.300

Opaque Door									
Name	Library Type	Wall Assignment	Foundation Wall Assignment	Emittance	Solar Absorptance	Surface Color	Surface Area	Location	Effective R-value
Main	ermaTru,Opaque	Wall >entry hall		0.9	0.6	Light	20.0 ft²	Conditioned Space (Adiabatic)	7.143



# Building Summary

<b>Property</b> 7 Thornley St Unit 1 Dorchester, MA 02125	<b>Project &amp; Plan</b> Thornley St 7 Unit 1 - vwY1DxNL Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100	<b>Inspection Status</b> Results are projected <b>Builder</b> Walter Hunting Construction
---	---	--	--

Roof Insulation										
Name	Library Type	Attic Exterior Area [ft²]	Clay or Concrete Roof Tiles	Does the Roof have Eaves?	Effective R-Value after eaves	Surface Color	Solar Absorptance	Surface Area	Location	
Ceiling, Radiant	R15,MW,10x16,G1	1,275	No	No	-	Light	0.6	1,275.0 ft²	Conditioned Space (Adiabatic)	

Roof Insulation Library List		
Name	Has Radiant Barrier	Effective R-value
R15,MW,10x16,G1	No	16.798

Whole House Infiltration		
Infiltration	Measurement Type	Shelter Class
3 ACH at 50 Pa	Blower-door tested	5

## Mechanicals, Lights & Water

Mechanical Ventilation							
Ventilation Type	Ventilation Rate [ft³ / Minute]	Operational hours per day	Fan Watts	Runs once every three hours	Energy Recovery Percent	Model Number	Manufacturer
ERV	80 CFM	24	44.6 Watts	Yes	78	BLP150E75NS-PC	Broan

Lighting					
% Interior Fluorescent Lighting	% Interior LED Lighting	% Exterior Fluorescent Lighting	% Exterior LED Lighting	% Garage Fluorescent Lighting	% Garage LED Lighting
0	100	0	100	0	100

Conditioning Equipment						
Name	Library Type	Serial Number	Heating Percent Load	Cooling Percent Load	Hot Water Percent Load	Location
AC (1)	ACC,24k,14.7 SEER2		0%	100%	0%	Conditioned Space
Furnace (1)	FURNACE,AFUE95.0,NG		100%	0%	0%	Conditioned Space
Water Heater	INSTANTANEOUS,EF95.0,NG		0%	0%	100%	Conditioned Space

Equipment Type: ACC,24k,14.7 SEER2	
Equipment Type	Air Conditioner
Fuel Type	Electric
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heat Pump System Type	Unspecified
Cooling Efficiency	14.7 SEER2
Cooling Capacity [kBtu/h]	24

Equipment Type: FURNACE,AFUE95.0,NG	
Equipment Type	Furnace
Fuel Type	Natural Gas
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heating Efficiency	95 AFUE
Heating Capacity [kBtu/h]	60
Use default EAE	Yes
EAE [kWh]	767

Equipment Type: INSTANTANEOUS,EF95.0,NG	
Equipment Type	Residential Water Heater
Fuel Type	Natural Gas
Distribution Type	Hydronic Delivery (Radiant)
Hot Water Efficiency	0.95 UEF
Tankless?	Yes



# Building Summary

**Property**  
7 Thornley St Unit 1  
Dorchester, MA 02125

**Project & Plan**  
Thornley St 7 Unit 1 - vwY1DxNL  
Final

**Organization**  
Home Energy Raters  
Chris Mazzola  
508-833-3100

**Inspection Status**  
Results are projected  
**Builder**  
Walter Hunting Construction

## Distribution System

Distribution Type	Forced Air
Heating Equipment	Furnace (1)
Cooling Equipment	AC (1)
Sq. Feet Served	1,275
# Return Grilles	5
Supply Duct R Value	6
Return Duct R Value	6
Supply Duct Area [ft²]	344.25
Return Duct Area [ft²]	318.75
Leakage to Outdoors	52 CFM @ 25Pa (4.08 / 100 ft²)
Total Leakage	52 CFM25
Total Leakage Duct Test Conditions	Post-Construction
Use Default Flow Rate	Yes
Duct 1	
Duct Location	Basement (insulated basement ceiling)
Percent Supply Area	100
Percent Return Area	100

## Water Distribution

Water Fixture Type	Standard
Use Default Hot Water Pipe Length	No
Hot Water Pipe Length [ft]	50
At Least R3 Pipe Insulation?	Yes
Hot Water Recirculation System?	No
Drain Water Heat Recovery?	No

## Appliances & Notes

### Clothes Dryer

Cef	3.37
Fuel Type	Electric
Field Utilization	Moisture Sensing
Is Outside Conditioned Space	No
Defaults Type	Custom
Is Ventless	No
Is Heat Pump	No
Clothes Dryer Available	Yes

### Clothes Washer

Label Energy Rating	284 kWh/Year
Annual Gas Cost	\$18.00
Electric Rate	\$0.12/kWh
Gas Rate	\$1.09/Therm
Capacity	4.2
Imef	1.57
Defaults Type	Standard 2018+
Load Type	Front-load
Loads Per Week	6
Is Outside Conditioned Space	No
Clothes Washer Available	Yes

### Dishwasher

Dishwasher Defaults Type	Custom
Dishwasher Size	Standard
Dishwasher Efficiency	270 kWh
Annual Gas Cost	\$13.00
Electric Rate	\$0.12/kWh
Gas Rate	\$1.09/Therm
Is Outside Conditioned Space	No
Dishwasher Available	Yes

### Appliances and Controls

Programmable thermostat?	Yes
Range/Oven Fuel	Natural Gas
Convection Oven?	Yes
Induction Range?	Yes
Range/Oven Outside Conditioned Space?	No
Refrigerator Consumption	691 kWh/Year
Refrigerator Outside Conditioned Space?	No

## Notes

Errors and Warnings have been Rater Reviewed

HERS target 65  
Preliminary HERS to Builder -9.3.2025



# Building Summary

<b>Property</b> 7 Thornley St Unit 1 Dorchester, MA 02125	<b>Project &amp; Plan</b> Thornley St 7 Unit 1 - vwY1DxNL Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100	<b>Inspection Status</b> Results are projected <b>Builder</b> Walter Hunting Construction
---	---	--	--

**Components Not Found:** Foundation Wall, Foundation Wall Library List, Slab, Slab Library List, Skylight, Onsite Generation, Solar Generation, Dehumidifier, Whole House Fan, Whole House Fan Library List, HVAC Grading (Not Conducted), Ceiling Fan



# Building Specification Summary

<b>Property</b> 7 Thornley St Unit 2 Dorchester, MA 02125  Thornley St 7 Unit 2 - dq3kDGQ2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100  <b>Builder</b> Walter Hunting Construction	<b>Inspection Status</b> Results are projected
---	--	---

## Building Information

Conditioned Area [ft²]	1,275.00
Conditioned Volume [ft³]	14,232.00
Thermal Boundary Area [ft²]	4,615.83
Number Of Bedrooms	4
Housing Type	Apartment, end unit

## Rating

HERS ERI	39
HERS ERI w/o PV	39

## Building Shell

Ceiling w/ Attic	None	Windows (largest)	U-Value: 0.3, SHGC: 0.3
Vaulted Ceiling	None	Window / Wall Ratio	0.11
Above Grade Walls	R23,FG+XPS,R13+2",6x16,G1; U-0.049	Window / Floor Ratio	0.14
Found. Walls	None	Infiltration	3 ACH50
Framed Floors	None	Duct Lkg to Outside	52 CFM @ 25Pa (4.08 / 100 ft²)
Slabs	None	Total Duct Leakage	52 CFM @ 25Pa (Post-Construction)

## Mechanical Systems

Heating	Furnace • Natural Gas • 95 AFUE
Cooling	Air Conditioner • Electric • 14.7 SEER2
Water Heating	Residential Water Heater • Natural Gas • 0.95 UEF
Programmable Thermostat	Yes
Ventilation System	80 CFM • 44.6 Watts • ERV
Whole House Fan	N/A

## Lights and Appliances

Percent Interior LED	100%	Clothes Dryer Fuel	Electric
Percent Exterior LED	100%	Clothes Dryer CEF	3.4
Refrigerator (kWh/yr)	691.0	Clothes Washer LER (kWh/yr)	284.0
Dishwasher Efficiency	270 kWh	Clothes Washer Capacity	4.2
Ceiling Fan	None	Range/Oven Fuel	Natural Gas



# Building Summary

<b>Property</b> 7 Thornley St Unit 2 Dorchester, MA 02125  Thornley St 7 Unit 2 - dq3kDGQ2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100  <b>Builder</b> Walter Hunting Construction	<b>Inspection Status</b> Results are projected
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General Building Information	
Number Of Bedrooms: 4	Number Of Floors: 1
Conditioned Floor Area [sq. ft.]: 1,275	Has Electric Vehicle Ready Space: Yes
Unconditioned, attached garage? No	Conditioned Volume [cu. ft.]: 14,232
Total Units in Building: 3	Residence Type: Apartment, end unit
Number of Floors in Building: 3	Floor Number: 2
Model: N/A	Community:
RESNET/IECC 2006-2018 Climate Zone: 5A	IECC 2021 Climate Zone: 5A

## Envelope Components

Framed Floor						
Name	Library Type	Carpet R	Floor Grade	Surface Area	Location	Effective R-value
Fir >Adiabatic	R15,MW,10x16,G1	0.68	Above Grade	1,275.0 ft²	Conditioned Space (Adiabatic)	15.997

Rim Joist				
Name	Library Type	Surface Area	Location	Effective Insulation R-value
ambient	R21	365.0 ft²	Exposed Exterior	21.00

Wall						
Name	Library Type	Surface Color	Solar Absorptance	Surface Area	Location	Effective R-value
Wall >Amb	G+XPS,R13+2",6x16,G1	Medium	0.75	1,265.3 ft²	Exposed Exterior	20.244
Wall >entry hall	R15,MW,6x16,G1	Medium	0.75	435.5 ft²	Conditioned Space (Adiabatic)	13.285

Glazing									
Name	Library Type	Wall Assignment	Foundation Wall Assignment	Is Operable	Overhang Depth	Overhang Ft To Top	Overhang Ft To Bottom	Orientation	Surface Area
Back DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Northwest	43.2 ft²
Front DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Southeast	61.7 ft²
Left DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Southwest	17.4 ft²
Right DH	U:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Northeast	61.7 ft²

Glazing Library List		
Name	Shgc	U-factor
U:0.30,SHGC:0.30	0.3	0.300

Opaque Door									
Name	Library Type	Wall Assignment	Foundation Wall Assignment	Emittance	Solar Absorptance	Surface Color	Surface Area	Location	Effective R-value
Main	ermaTru,Opaque	Wall >entry hall		0.9	0.6	Light	20.0 ft²	Conditioned Space (Adiabatic)	7.143



# Building Summary

<b>Property</b> 7 Thornley St Unit 2 Dorchester, MA 02125	<b>Project &amp; Plan</b> Thornley St 7 Unit 2 - dq3kDGQ2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100	<b>Inspection Status</b> Results are projected <b>Builder</b> Walter Hunting Construction
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Roof Insulation										
Name	Library Type	Attic Exterior Area [ft²]	Clay or Concrete Roof Tiles	Does the Roof have Eaves?	Effective R-Value after eaves	Surface Color	Solar Absorptance	Surface Area	Location	
Ceiling, Radiant	R15,MW,10x16,G1	1,275	No	No	-	Light	0.6	1,275.0 ft²	Conditioned Space (Adiabatic)	

Roof Insulation Library List		
Name	Has Radiant Barrier	Effective R-value
R15,MW,10x16,G1	No	16.798

Whole House Infiltration		
Infiltration	Measurement Type	Shelter Class
3 ACH at 50 Pa	Blower-door tested	5

## Mechanicals, Lights & Water

Mechanical Ventilation							
Ventilation Type	Ventilation Rate [ft³ / Minute]	Operational hours per day	Fan Watts	Runs once every three hours	Energy Recovery Percent	Model Number	Manufacturer
ERV	80 CFM	24	44.6 Watts	Yes	78	BLP150E75NS-PC	Broan

Lighting					
% Interior Fluorescent Lighting	% Interior LED Lighting	% Exterior Fluorescent Lighting	% Exterior LED Lighting	% Garage Fluorescent Lighting	% Garage LED Lighting
0	100	0	100	0	100

Conditioning Equipment						
Name	Library Type	Serial Number	Heating Percent Load	Cooling Percent Load	Hot Water Percent Load	Location
AC (1)	ACC,24k,14.7 SEER2		0%	100%	0%	Conditioned Space
Furnace (1)	FURNACE,AFUE95.0,NG		100%	0%	0%	Conditioned Space
Water Heater	INSTANTANEOUS,EF95.0,NG		0%	0%	100%	Conditioned Space

Equipment Type: ACC,24k,14.7 SEER2	
Equipment Type	Air Conditioner
Fuel Type	Electric
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heat Pump System Type	Unspecified
Cooling Efficiency	14.7 SEER2
Cooling Capacity [kBtu/h]	24

Equipment Type: FURNACE,AFUE95.0,NG	
Equipment Type	Furnace
Fuel Type	Natural Gas
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heating Efficiency	95 AFUE
Heating Capacity [kBtu/h]	60
Use default EAE	Yes
EAE [kWh]	767

Equipment Type: INSTANTANEOUS,EF95.0,NG	
Equipment Type	Residential Water Heater
Fuel Type	Natural Gas
Distribution Type	Hydronic Delivery (Radiant)
Hot Water Efficiency	0.95 UEF
Tankless?	Yes



# Building Summary

<b>Property</b> 7 Thornley St Unit 2 Dorchester, MA 02125	<b>Project &amp; Plan</b> Thornley St 7 Unit 2 - dq3kDGQ2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100	<b>Inspection Status</b> Results are projected <b>Builder</b> Walter Hunting Construction
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Distribution System		Water Distribution	
Distribution Type	Forced Air	Water Fixture Type	Standard
Heating Equipment	Furnace (1)	Use Default Hot Water Pipe Length	No
Cooling Equipment	AC (1)	Hot Water Pipe Length [ft]	60
Sq. Feet Served	1,275	At Least R3 Pipe Insulation?	Yes
# Return Grilles	5	Hot Water Recirculation System?	No
Supply Duct R Value	6	Drain Water Heat Recovery?	No
Return Duct R Value	6		
Supply Duct Area [ft²]	344.25		
Return Duct Area [ft²]	318.75		
Leakage to Outdoors	52 CFM @ 25Pa (4.08 / 100 ft²)		
Total Leakage	52 CFM25		
Total Leakage Duct Test Conditions	Post-Construction		
Use Default Flow Rate	Yes		
Duct 1			
Duct Location	Conditioned Space		
Percent Supply Area	100		
Percent Return Area	100		

## Appliances & Notes

Clothes Dryer		Clothes Washer	
Cef	3.37	Label Energy Rating	284 kWh/Year
Fuel Type	Electric	Annual Gas Cost	\$18.00
Field Utilization	Moisture Sensing	Electric Rate	\$0.12/kWh
Is Outside Conditioned Space	No	Gas Rate	\$1.09/Therm
Defaults Type	Custom	Capacity	4.2
Is Ventless	No	Imef	1.57
Is Heat Pump	No	Defaults Type	Standard 2018+
Clothes Dryer Available	Yes	Load Type	Front-load
		Loads Per Week	6
		Is Outside Conditioned Space	No
		Clothes Washer Available	Yes

Dishwasher		Appliances and Controls	
Dishwasher Defaults Type	Custom	Programmable thermostat?	Yes
Dishwasher Size	Standard	Range/Oven Fuel	Natural Gas
Dishwasher Efficiency	270 kWh	Convection Oven?	Yes
Annual Gas Cost	\$13.00	Induction Range?	Yes
Electric Rate	\$0.12/kWh	Range/Oven Outside Conditioned Space?	No
Gas Rate	\$1.09/Therm	Refrigerator Consumption	691 kWh/Year
Is Outside Conditioned Space	No	Refrigerator Outside Conditioned Space?	No
Dishwasher Available	Yes		

Notes
Errors and Warnings have been Rater Reviewed
HERS target 65 Preliminary HERS to Builder -9.3.2025



# Building Specification Summary

<b>Property</b> 7 Thornley St Unit 3 Dorchester, MA 02125  Thornley St 7 Unit 3 - Lz1B3qP2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100  <b>Builder</b> Walter Hunting Construction	<b>Inspection Status</b> Results are projected
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## Building Information

Conditioned Area [ft²]	1,275.00
Conditioned Volume [ft³]	14,232.00
Thermal Boundary Area [ft²]	4,615.83
Number Of Bedrooms	4
Housing Type	Apartment, end unit

## Rating

HERS ERI	42
HERS ERI w/o PV	42

## Building Shell

Ceiling w/ Attic	None
Vaulted Ceiling	
R55,HDF+LDF+XPS,2"+8"+2",10x16,G1,C; U-0.021	
Above Grade Walls	R23,FG+XPS,R13+2",6x16,G1; U-0.049
Found. Walls	None
Framed Floors	None
Slabs	None

Windows (largest)	U-Value: 0.3, SHGC: 0.3
Window / Wall Ratio	0.11
Window / Floor Ratio	0.14
Infiltration	3 ACH50
Duct Lkg to Outside	52 CFM @ 25Pa (4.08 / 100 ft²)
Total Duct Leakage	52 CFM @ 25Pa (Post-Construction)

## Mechanical Systems

Heating	Furnace • Natural Gas • 95 AFUE
Cooling	Air Conditioner • Electric • 14.7 SEER2
Water Heating	Residential Water Heater • Natural Gas • 0.95 UEF
Programmable Thermostat	Yes
Ventilation System	80 CFM • 44.6 Watts • ERV
Whole House Fan	N/A

## Lights and Appliances

Percent Interior LED	100%	Clothes Dryer Fuel	Electric
Percent Exterior LED	100%	Clothes Dryer CEF	3.4
Refrigerator (kWh/yr)	691.0	Clothes Washer LER (kWh/yr)	284.0
Dishwasher Efficiency	270 kWh	Clothes Washer Capacity	4.2
Ceiling Fan	None	Range/Oven Fuel	Natural Gas



# Building Summary

<b>Property</b> 7 Thornley St Unit 3 Dorchester, MA 02125  Thornley St 7 Unit 3 - Lz1B3qP2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100  <b>Builder</b> Walter Hunting Construction	<b>Inspection Status</b> Results are projected
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General Building Information	
Number Of Bedrooms: 4	Number Of Floors: 1
Conditioned Floor Area [sq. ft.]: 1,275	Has Electric Vehicle Ready Space: Yes
Unconditioned, attached garage? No	Conditioned Volume [cu. ft.]: 14,232
Total Units in Building: 3	Residence Type: Apartment, end unit
Number of Floors in Building: 3	Floor Number: 3
Model: N/A	Community:
RESNET/IECC 2006-2018 Climate Zone: 5A	IECC 2021 Climate Zone: 5A

## Envelope Components

Framed Floor						
Name	Library Type	Carpet R	Floor Grade	Surface Area	Location	Effective R-value
Fir >Adiabatic	R15,MW,10x16,G1	0.68	Above Grade	1,275.0 ft²	Conditioned Space (Adiabatic)	15.997

Rim Joist				
Name	Library Type	Surface Area	Location	Effective Insulation R-value
ambient	R21	365.0 ft²	Exposed Exterior	21.00

Wall						
Name	Library Type	Surface Color	Solar Absorptance	Surface Area	Location	Effective R-value
Wall >Amb	G+XPS,R13+2",6x16,G1	Medium	0.75	1,265.3 ft²	Exposed Exterior	20.244
Wall >entry hall	R15,MW,6x16,G1	Medium	0.75	435.5 ft²	Conditioned Space (Adiabatic)	13.285

Glazing									
Name	Library Type	Wall Assignment	Foundation Wall Assignment	Is Operable	Overhang Depth	Overhang Ft To Top	Overhang Ft To Bottom	Orientation	Surface Area
Back DH	:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Northwest	43.2 ft²
Front DH	:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Southeast	61.7 ft²
Left DH	:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Southwest	17.4 ft²
Right DH	:0.30,SHGC:0.30	Wall >Amb		Yes	0	0	0	Northeast	61.7 ft²

Glazing Library List		
Name	Shgc	U-factor
U:0.30,SHGC:0.30	0.3	0.300

Opaque Door									
Name	Library Type	Wall Assignment	Foundation Wall Assignment	Emittance	Solar Absorptance	Surface Color	Surface Area	Location	Effective R-value
Main	ermaTru,Opaque	Wall >entry hall		0.9	0.6	Light	20.0 ft²	Conditioned Space (Adiabatic)	7.143



# Building Summary

**Property**  
7 Thornley St Unit 3  
Dorchester, MA 02125

**Project & Plan**  
Thornley St 7 Unit 3 - Lz1B3qP2  
Final

**Organization**  
Home Energy Raters  
Chris Mazzola  
508-833-3100

**Inspection Status**  
Results are projected  
**Builder**  
Walter Hunting Construction

## Roof Insulation

Name	Library Type	Attic Exterior Area [ft²]	Clay or Concrete Roof Tiles	Does the Roof have Eaves?	Effective R-Value after eaves	Surface Color	Solar Absorptance	Surface Area	Location
Ceiling >roof3"	2",10x16,G1,C	1,275	No	No	-	Light	0.6	1,275.0 ft²	Vaulted Roof

## Roof Insulation Library List

Name	Has Radiant Barrier	Effective R-value
PS,2"+8"+2",10x16,G1,C	No	48.681

## Whole House Infiltration

Infiltration	Measurement Type	Shelter Class
3 ACH at 50 Pa	Blower-door tested	5

## Mechanicals, Lights & Water

### Mechanical Ventilation

Ventilation Type	Ventilation Rate [ft³ / Minute]	Operational hours per day	Fan Watts	Runs once every three hours	Energy Recovery Percent	Model Number	Manufacturer
ERV	80 CFM	24	44.6 Watts	Yes	78	BLP150E75NS-PC	Broan

### Lighting

% Interior Fluorescent Lighting	% Interior LED Lighting	% Exterior Fluorescent Lighting	% Exterior LED Lighting	% Garage Fluorescent Lighting	% Garage LED Lighting
0	100	0	100	0	100

### Conditioning Equipment

Name	Library Type	Serial Number	Heating Percent Load	Cooling Percent Load	Hot Water Percent Load	Location
AC (1)	ACC,24k,14.7 SEER2		0%	100%	0%	Conditioned Space
Furnace (1)	FURNACE,AFUE95.0,NG		100%	0%	0%	Conditioned Space
Water Heater	INSTANTANEOUS,EF95.0,NG		0%	0%	100%	Conditioned Space

#### Equipment Type: ACC,24k,14.7 SEER2

Equipment Type	Air Conditioner
Fuel Type	Electric
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heat Pump System Type	Unspecified
Cooling Efficiency	14.7 SEER2
Cooling Capacity [kBtu/h]	24

#### Equipment Type: FURNACE,AFUE95.0,NG

Equipment Type	Furnace
Fuel Type	Natural Gas
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heating Efficiency	95 AFUE
Heating Capacity [kBtu/h]	60
Use default EAE	Yes
EAE [kWh]	767

#### Equipment Type: INSTANTANEOUS,EF95.0,NG

Equipment Type	Residential Water Heater
Fuel Type	Natural Gas
Distribution Type	Hydronic Delivery (Radiant)
Hot Water Efficiency	0.95 UEF
Tankless?	Yes



# Building Summary

<b>Property</b> 7 Thornley St Unit 3 Dorchester, MA 02125	<b>Project &amp; Plan</b> Thornley St 7 Unit 3 - Lz1B3qP2 Final	<b>Organization</b> Home Energy Raters Chris Mazzola 508-833-3100	<b>Inspection Status</b> Results are projected <b>Builder</b> Walter Hunting Construction
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Distribution System		Water Distribution	
Distribution Type	Forced Air	Water Fixture Type	Standard
Heating Equipment	Furnace (1)	Use Default Hot Water Pipe Length	No
Cooling Equipment	AC (1)	Hot Water Pipe Length [ft]	70
Sq. Feet Served	1,275	At Least R3 Pipe Insulation?	Yes
# Return Grilles	5	Hot Water Recirculation System?	No
Supply Duct R Value	6	Drain Water Heat Recovery?	No
Return Duct R Value	6		
Supply Duct Area [ft²]	344.25		
Return Duct Area [ft²]	318.75		
Leakage to Outdoors	52 CFM @ 25Pa (4.08 / 100 ft²)		
Total Leakage	52 CFM25		
Total Leakage Duct Test Conditions	Post-Construction		
Use Default Flow Rate	Yes		
Duct 1			
Duct Location	Conditioned Space		
Percent Supply Area	100		
Percent Return Area	100		

## Appliances & Notes

Clothes Dryer		Clothes Washer	
Cef	3.37	Label Energy Rating	284 kWh/Year
Fuel Type	Electric	Annual Gas Cost	\$18.00
Field Utilization	Moisture Sensing	Electric Rate	\$0.12/kWh
Is Outside Conditioned Space	No	Gas Rate	\$1.09/Therm
Defaults Type	Custom	Capacity	4.2
Is Ventless	No	Imef	1.57
Is Heat Pump	No	Defaults Type	Standard 2018+
Clothes Dryer Available	Yes	Load Type	Front-load
		Loads Per Week	6
		Is Outside Conditioned Space	No
		Clothes Washer Available	Yes

Dishwasher		Appliances and Controls	
Dishwasher Defaults Type	Custom	Programmable thermostat?	Yes
Dishwasher Size	Standard	Range/Oven Fuel	Natural Gas
Dishwasher Efficiency	270 kWh	Convection Oven?	Yes
Annual Gas Cost	\$13.00	Induction Range?	Yes
Electric Rate	\$0.12/kWh	Range/Oven Outside Conditioned Space?	No
Gas Rate	\$1.09/Therm	Refrigerator Consumption	691 kWh/Year
Is Outside Conditioned Space	No	Refrigerator Outside Conditioned Space?	No
Dishwasher Available	Yes		

Notes
Errors and Warnings have been Rater Reviewed
HERS target 65 Preliminary HERS to Builder - 9.3.2025





## Fresh Air Systems - 150 CFM

Part no. BLP150E75NS-HW (Hardwired)

For plug connected applications, refer to BLP150E75NS-PC



35 to 146 CFM @ 0.4 in. w.g.



Parts/Motor/ERV Core

Visit Broan-NuTone.com for complete warranty text.

The industry's most versatile and advanced fresh air system, created to simplify the design, specification and installation process while delivering superior air quality in a compact design.

- Quickest installation in its category saving the installer up to 20 minutes per unit, thanks to the auto-balancing and self-adjusting VIRTUO™ technology\*
- Airflow configuration can be swapped with the flip of an integrated selection switch\*\*, eliminating the need for specifying different models to accommodate mirrored floor plans and providing simplicity throughout the design and installation processes
- Horizontal and wall mount options provide location flexibility to accommodate various application needs
- Integrated LCD screen provides intuitive CFM selection in 1 CFM increments throughout the airflow range providing real-time CFM and watt usage values
- Equipped with PMSM ECM motors for reliable and energy efficient operation
- Fault indicator display (FID) responding to filter maintenance, low airflow condition, and system sensor failures while providing real-time airflow and power usage.

\*US Patent No. 11168916 - Canadian patent pending

\*\*Patent pending

### Optional Controls



There are 4 optional main controls and 2 optional auxiliary controls available. Refer to Wall Control specification sheet for more information.

\*\*\*Speed selector control available only in the US.

PRODUCT SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

### Unit Attributes

- SRE of 84% at 32°F (0°C) (36 CFM)
- Ports size: 6"
- Fan Efficacy: 2.1 CFM/Watt (64 CFM)
- Defrost operation will automatically activate to manage recovery core frost.
- Corrosion resistant galvanized steel door and cabinet
- One-piece molded insulation shell (expanded polystyrene; UL 94 HF-1 certified)
- VIRTUO™ constant airflow and auto-balancing device
- Integrated motorized dampers within both supply and exhaust air stream (no additional backdraft dampers required).
- No condensate drain required
- Unit electrical characteristics:  
Volt: 120/1 60 Hz, MCA: 2.4 A, MCOP: 15 A, Watts: 170

### Recovery Core

- ERV polypropylene crossflow core and plastic covers, impact resistant, non washable
- Dimensions: 12" x 24" x 8.5" (30.5 cm x 61 cm x 21.6 cm)

### Filtration

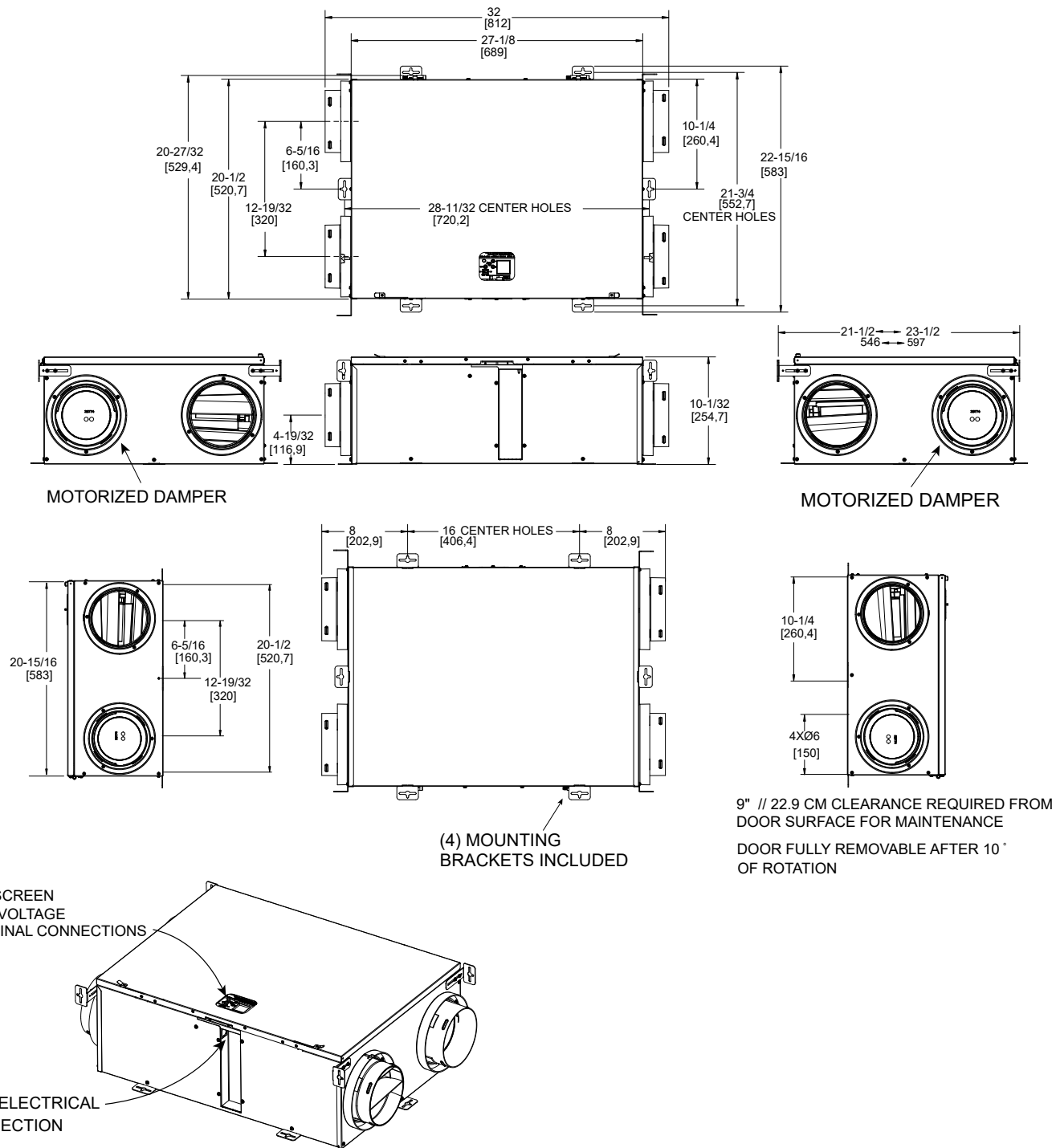
- MERV 8 grade washable standard filter (included)
- Optional 2" thick MERV13 grade filter (disposable)

### Exterior Termination Options

- Compatible with Tandem Terminations (part no. VTYIK1 and V14695) (airflow setting should be adjusted in accordance with application requirements)



# Dimensions



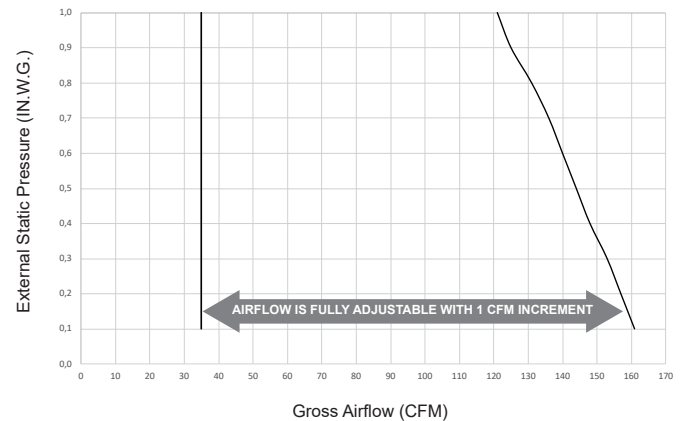


## Fan Curves with VIRTUO™

Thanks to VIRTUO™ technology, no need to balance the unit manually. Both PMSM ECM motors are controlled by an artificial intelligence performing 120 readings per minute then processing this information to maintain the requested airflow.

For typical installation, VIRTUO™ will ensure a balanced ventilation at every selected speed regardless of the weather conditions, the type of connection, the variable speed furnace/AHU, the stack effect, the filter clogging and so on. This results in peace of mind for installers and users knowing that the unit will always remain balanced and that it will maintain its maximum heat/energy recovery efficiency.

STATIC PRESSURE (PA)	STATIC PRESSURE (IN. W.G.)	NET SUPPLY AIRFLOW (L/s)	NET SUPPLY AIRFLOW (CFM)	GROSS AIRFLOW SUPPLY (L/s)	GROSS AIRFLOW SUPPLY (CFM)	GROSS AIRFLOW EXHAUST (L/s)	GROSS AIRFLOW EXHAUST (CFM)
25	0.1	75	159	76	161	76	161
50	0.2	73	155	74	157	74	157
75	0.3	71	150	72	153	72	153
100	0.4	69	146	70	148	70	148
125	0.5	67	142	68	144	68	144
150	0.6	65	138	66	140	66	140
175	0.7	63	133	64	136	64	136
200	0.8	61	129	62	131	62	131
225	0.9	58	123	59	125	59	125
250	1.0	56	119	57	121	57	121



## Energy Performance

SUPPLY TEMPERATURE		NET AIRFLOW		POWER CONSUMED WATTS	SENSIBLE RECOVERY EFFICIENCY	ADJUSTED SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS*	TOTAL RECOVERY EFFICIENCY	ADJUSTED TOTAL RECOVERY EFFICIENCY	LATENT RECOVERY / MOISTURE TRANSFER
°C	°F	L/S	CFM							
HEATING										
0	32	17	36	17	84%	87%	88%	-	-	0.72
0	32	30	64	31	78%	81%	82%	-	-	0.65
0	32	52	110	70	70%	73%	74%	-	-	0.57
COOLING										
35	95	17	36	20	-	-	82%	72%	75%	0.71
35	95	30	64	32	-	-	74%	65%	68%	0.63
35	95	52	110	75	-	-	65%	55%	58%	0.55

\*Data not certified by HVI.



## Fan Efficacy

The following data are not certified by HVI but come from measurement in accordance with CSA C439-18.

AIRFLOW (CFM) <sup>1</sup>	AIRFLOW (L/s) <sup>1</sup>	POWER (WATTS)	FAN EFFICACY (CFM/W) <sup>2</sup>	FAN EFFICACY (L/s/W) <sup>2</sup>
35	17	16.5	2.1	1.00
40	19	18.6	2.1	1.01
45	21	20.8	2.1	1.02
50	24	23.0	2.1	1.03
55	26	25.3	2.1	1.03
60	28	27.7	2.1	1.02
65	31	30.2	2.1	1.02
70	33	32.9	2.1	1.00
75	35	35.8	2.1	0.99
80	38	39.0	2.0	0.97
85	40	42.4	2.0	0.95
90	42	46.1	1.9	0.92
95	45	50.1	1.9	0.90
100	47	54.4	1.8	0.87
105	50	59.1	1.8	0.84
110	52	64.2	1.7	0.81
115	54	69.8	1.7	0.78
120	57	75.8	1.6	0.75
125	59	82.3	1.5	0.72
130	61	89.3	1.5	0.69
135	64	96.9	1.4	0.66
140	66	105.0	1.3	0.63
145	68	113.7	1.3	0.60
150	71	123.1	1.2	0.58
155	73	133.1	1.2	0.55

<sup>1</sup> Gross airflow measured at 70°F/21°C sea level, supply and exhaust stream balanced and equivalent external differential pressure of 0.2" w.g. 50 Pa applied to each stream.

<sup>2</sup> Fan efficacy calculated from balanced gross airflow divided by measured power then rounded to one decimal for I-P units (CFM/W) or 2 decimals for SI units (L/s/W).

## Requirements and Standards

- UL 1812 compliant (safety)
- Performance tested in accordance with CSA C439 Standard
- Compliant with Prop 65
- Can be used to comply with ASHRAE standard 62.2
- Can be used to comply with ASHRAE 90.1-2019 requirements
- Can be used to comply with International Energy Conservation Code (IECC) requirements
- Can be used to comply with California Title 24 2019 Part 6 Fault Indicator Display Requirements
- Can be used to earn WA energy code credits
- HVI certified

Project:	Remarks
Location:	
Part no.:	
Qty.:	
Submitted by:	
Date:	



DATE: 8/22/2025

P:\M DRIVE\7 THORNLEY STREET\HYD CALC.SDF

JOB TITLE: 7 Thornley St. Boston, MA NFPA-13R Hyd Calc

## WATER SUPPLY ANALYSIS

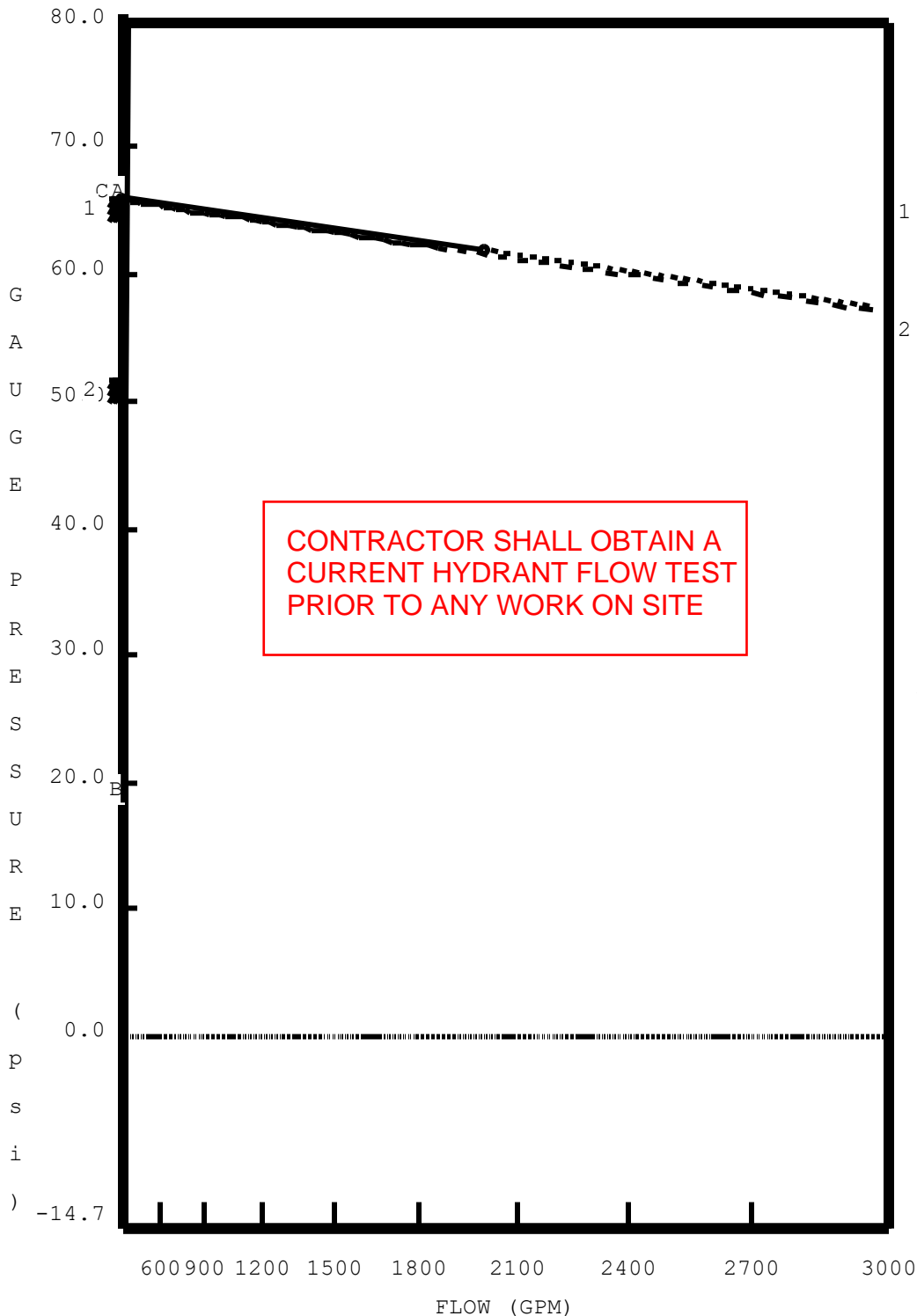
Static: 66.00 psi Resid: 62.00 psi Flow: 2004.0 gpm



*Muzaffer Mudehizade*

## LEGEND

- 1 Available pressure  
65.96 psi @ 160.0 gpm
- 2 Required pressure  
51.66 psi @ 160.0 gpm
- Avail. OnSite Demand Press.  
65.96 psi @ 60.0 gpm
- Req. OnSite Demand Press.  
51.66 psi @ 60.0 gpm
- A. Source Supply Curve  
B. System Demand Curve  
C. Available at Source



## ZADE ENGINEERING LLC

CONSULTING ENGINEERS  
1 BILLINGS ROAD STE 306, QUINCY, MA 02171  
TEL. (617) 338-4406  
FAX. (617) 451-2540  
E-MAIL zade@zadeengineering.com

Note: (1) Dashed Lines indicate extrapolated values from Test Results

(2) On Site pressures are based on hose stream deduction at the source



DATE: 8/22/2025

P:\M DRIVE\7 THORNLEY STREET\HYD CALC.SDF

JOB TITLE: 7 Thornley St. Boston, MA NFPA-13R Hyd Calc

## NFPA WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL @ DEMAND (GPM)	REQ'D PRESS. (PSI)
1	66.0	62.0	2004.0	66.0	160.0	51.7

## AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	160.0 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	100.0 GPM
OTHER HOSE STREAM ALLOWANCES	0.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	60.0 GPM

## NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
1	-6.0	SOURCE	51.7	60.0
2	-8.0	- - - -	50.7	- - -
3	-8.0	- - - -	45.7	- - -
4	-2.0	- - - -	42.1	- - -
5	37.0	- - - -	20.5	- - -
6	37.0	- - - -	15.7	- - -
7	37.0	- - - -	9.4	- - -
8	37.0	- - - -	7.6	- - -
101	36.0	K= 4.90	7.0	13.0
102	36.0	K= 4.90	7.4	13.3
103	36.0	K= 4.90	9.0	14.7
104	36.0	K= 4.90	15.0	19.0



DATE: 8/22/2025

P:\M DRIVE\7 THORNLEY STREET\HYD CALC.SDF

JOB TITLE: 7 Thornley St. Boston, MA NFPA-13R Hyd Calc

## NFPA PIPE DATA 5

Pipe Tag	K-fac	Add Fl	Add Fl To	Fit:	L	C	(Pt)		
Frm Node	El (ft)	PT	(q)	Node/	Nom ID	Eq.Ln.	F		
To Node	El (ft)	PT	Tot.(Q)	Disch	Act ID	(ft.)	T		
							Pf/ft.		
Pipe: 1	Source	0.0				50.00	140	0.9	
1	-6.0	51.7	60.0	3	2.000	T:13.3	14.63	-0.9	
2	-8.0	50.7	60.0		2.067	G: 1.3	64.63	0.027	
								1.8	
Pipe: 2		0.0		Fixed Pressure Loss Device					
2	-8.0	50.7	60.0	4		5.0 psi,	60.1 gpm		
3	-8.0	45.7	60.1						
Pipe: 3		0.0	0.0			ETBG	6.00	120	3.6
3	-8.0	45.7	60.0	5	2.000		22.00		2.6
4	-2.0	42.1	60.0		2.067		28.00	0.037	1.0
Pipe: 4		0.0	0.0				40.00	150	21.6
4	-2.0	42.1	60.0	6	1.500	E: 6.0	18.13		16.9
5	37.0	20.5	60.0		1.610	T:12.1	58.13	0.082	4.7
Pipe: 5		0.0	41.1	7			40.00	150	4.7
5	37.0	20.5	19.0		1.500	E: 6.0	18.13		-0.0
6	37.0	15.7	60.0		1.610	T:12.1	58.13	0.082	4.7
Pipe: 6		0.0	26.3	8			12.00	150	6.4
6	37.0	15.7	14.7		1.000	T: 7.6	7.56		-0.0
7	37.0	9.4	41.1		1.049		19.56	0.326	6.4
Pipe: 7		0.0	0.0				5.00	150	1.8
7	37.0	9.4	26.3		1.000	T: 7.6	7.56		-0.0
8	37.0	7.6	26.3		1.049		12.56	0.143	1.8
Pipe: 8		4.90	13.0	Disch			14.00	150	0.5
8	37.0	7.6	0.0		1.000	E: 3.0	10.58		-0.4
101	36.0	7.0	13.0		1.049	T: 7.6	24.58	0.039	1.0
Pipe: 9		4.90	13.3	Disch			4.00	150	0.2
8	37.0	7.6	0.0		1.000	E: 3.0	10.58		-0.4
102	36.0	7.4	13.3		1.049	T: 7.6	14.58	0.041	0.6
Pipe: 10		4.90	14.7	Disch			5.00	150	0.3
7	37.0	9.4	0.0		1.000	E: 3.0	10.58		-0.4
103	36.0	9.0	14.7		1.049	T: 7.6	15.58	0.049	0.8
Pipe: 11		4.90	19.0	Disch			4.00	150	0.7
6	37.0	15.7	0.0		1.000	E: 3.0	10.58		-0.4
104	36.0	15.0	19.0		1.049	T: 7.6	14.58	0.078	1.1



DATE: 8/22/2025

P:\M DRIVE\7 THORNLEY STREET\HYD CALC.SDF

JOB TITLE: 7 Thornley St. Boston, MA NFPA-13R Hyd Calc

NOTES (HASS):

- (1) Calculations were performed by the HASS 2023 D computer program in accordance with NFPA (2020) under license no. 64642423 granted by  
HRS Systems, Inc.  
208 Southside Square  
Petersburg, TN 37144  
(931) 659-9760
- (2) The system has been calculated to provide an average imbalance at each node of 0.013 gpm and a maximum imbalance at any node of 0.145 gpm.
- (3) Total pressure at each node is used in balancing the system. Maximum water velocity is 15.2 ft/sec at pipe 6.
- (4) Items listed in bold print on the cover sheet  
  
are automatically transferred from the calculation report.
- (5) Available pressure at source node 1 under full flow conditions is 65.96 psi with a flow of 174.36 gpm.

(6) PIPE FITTINGS TABLE

HASS Pipe Table Name: standard

PAGE: A MATERIAL: S40 HWC: 120

Diameter (in)	Equivalent Fitting Lengths in Feet								
	E Ell	T Tee	L LngEll	C ChkVlv	B BfyVlv	G GatVlv	A AlmChk	D DPVlv	N NTee
	-----								
	F								
	F45Ell								
1.049	2.00	5.00	2.00	5.00	6.00	1.00	10.00	2.00	5.00
	1.00								
1.610	4.00	8.00	2.00	9.00	6.00	1.00	10.00	10.00	8.00
	2.00								
2.067	5.00	10.00	3.00	11.00	6.00	1.00	10.00	10.00	10.00
	2.50								



## ZADE ENGINEERING LLC

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Mohammed Zade Ph.D., P.E.  
Muzaffer Muctehitzade M.Sc., P.E.

### FIRE PROTECTION SYSTEM NARRATIVE REPORT FOR:

AUGUST 22, 2025

7 THORNLEY ST.  
BOSTON MA 02128

### SECTION 1-Building Description

- a) Building use group is R-2 Residential
- b) Building/Space new construction approx. 5,260 FT<sup>2</sup>
- c) Building Height is low-rise
- d) Construction type is (V-B)
- e) Number of floors above is (3)
- f) Number of floors below is (1)
- g) Types of occupancies within the building is Residential
- h) Hazardous Material usage and Storage is none
- i) High storage of commodities within building over 12ft is none.
- j) Site accesses arrangement for Emergency Response Vehicles are through Fire Lanes.



### SECTION 2-Applicable Laws, regulations and Standards

Fire Protection Plans have been prepared based on following Code Requirements.

- a) IBC 2015 w/ 780 CMR 10<sup>th</sup> Ed. Including Sec. 901 (General), Sec. 903(Automatic Sprinkler Systems), Sec. 906 (Portable Fire Extinguishers), Sec. 907 (Fire Alar and Detection Systems), Sec. 912 (Fire Department Connections)
- b) NFPA 72,(2019 Ed. Fire Alarm Code), NFPA 70,(2023 Ed. NEC as amended by 527 CMR 12.00), NFPA 13R (2019 Ed. Automatic Sprinkler Installation), NFPA 10 (2018 Ed. Portable Fire Extinguishers)
- c) 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code, Massachusetts amendments to NFPA 1 (2021 Ed.)
- d) 524 CMR Board of Elevator Regulations
- e) Local by-laws or Ordinances, non-is present.
- f)Federal Laws, ADA, OSHA.

### SECTION 3-Design Responsibility for Fire Alarm Systems:

- a) Engineer whose PE Stamp bears on the Drawings is the professional engineer providing the full design and specified the design criteria to be used by the installing contractor who will finalizes the system layout. Installer will provide calculations to confirm the design criteria. Engineer will review and approve the installing contractor's final layout calculations. Design engineer whose PE Stamp is on the Drawings is the engineer of the record and will certify system installation for code compliance upon completion of the installation.



## **SECTION 4-Fire Protection Systems to be installed**

### Proposed Fire Protection Systems

- a) Fire Mains and Hydrants as required by 780 CMR, Art 913. **(2" fire service)**
- b) Automatic Sprinkler Systems as required by 780 CMR Art 903.2.8 for all R Buildings. **(Sprinklers are provided per NFPA 13R)**
- c) Dry pre-charged sprinklers heads to be provided at all combustible over hangs which exceed 4'-0 **(780 CMR)**
- d) Design Criteria is based on NFPA 13R **(Light Hazard)**
- e) Standpipe Systems as required by IBC for buildings where the floor level of the highest story is located more than 30' above the lowest level of fire department vehicle access. **(not required)**
- f) Fire Department Connection per 780 CMR Art 912 **(provided at front of building)**
- g) Fire Alarm System As required by 780 CMR Art 907.2.8 Smoke Detectors in all common areas **(Provided)**
- h) Automatic Fire Extinguishing System as required by for Kitchen Hood. **(No grease hood present)**
- i) Manual Suppression System as required by NFPA 10.
- j) Kitchen Cooking Equipment and Exhaust System as required by 780 CMR 904. **(No grease hood present)**
- k) Emergency Power as required by 780 CMR Art 1024.4 for Egress Routes.
- l) Local Type Photoelectric Smoke Detector inside each bedroom **(Provided)**
- m) Local type Smoke/Carbon Monoxide detector outside each bedroom **(Provided)**
- n) BDA system as required by 780 CMR 915 to provide approved Emergency Responder Radio Coverage **(TBD)**

**Following systems are new, addition or expansion as listed.**

### **Sprinkler System**

Sprinkler System coverage will be 100% per NFPA 13R with the exceptions and specifics as described below. Sprinklers are provided in all areas of the building, in every room, space, and closet. Sprinkler Heads within residential areas will be Residential type with RTI less than 50, Sprinklers outside dwelling units shall be quick response.

- a) Sprinkler coverage is not required in bathrooms less than 55 FT<sup>2</sup>
- b) Sprinkler coverage is not required in closets less than 24 FT<sup>2</sup>
- c) Sprinkler coverage is not required in concealed combustible spaces that are not intended for living purposes or storage

Wet automatic sprinkler system is designed per area/density method in accordance with NFPA-13R. The system employs residential sprinklers fed from 2" backflow preventer assembly located in the basement. Wet sprinkler piping has been hydraulically calculated per NFPA-13R residential requirements to provide the minimum .05 gpm density over the 2 most demanding contiguous sprinklers.

The system is a single zone throughout the building

### **Fire Alarm System**

System consists of Horn/Strobe type Analog Addressable Fire Alarm Panel.

System components consist of

Manual Pull Stations at every Stair Entrance and Building exit,

Large Common area outside the Apartments will have either Smoke or Heat Detector.



Audio/Visual Devices shall be Horn/Strobe or Strobe type only as shown on plans and located per NFPA 72 coverage.

Local smoke detectors within the unit will all activate upon sensing of smoke at any smoke detector within the unit. They will be all tandem wired.

Local CO detectors will be provided throughout each apartment outside each bedroom.

Local CO detectors within the unit will all activate upon sensing of CO condition at any CO detector within the unit. They will be all tandem wired

All designated bedrooms will be equipped with local sounding devices capable of forming low frequency waves to awaken building occupants

This system does not communicate with FACP.

### **Emergency Responder Radio Coverage**

BDA system initially shall consist of infrastructure for future installation of the system upon determination of the need of BDA system when the building is closed in. A third party testing agency will be employed to test the system, passing test result will be submitted to fire department, otherwise BDA system will be installed utilizing the previously installed infrastructure before the final fire department walk through

### **SECTION 5-Features used in the design methodology**

Purpose of the Design is to protect Lives and Property from Fire once the building is occupied.

For this purpose

- a) Building Occupants will be notified by way of Audio/Visual Devices,
- b) Emergency Response Personnel will be notified by way of Alarm Company Notification,
- c) Initial and Periodic Test Criteria will be provided for proper maintenance of the System.

### **SECTION 6-Special Considerations and Descriptions**

No Special Consideration

### **SECTION 7-Sequence of Operation**

1. Upon Activation of any automatic sprinkler head attached to this system;
  - a) Fusible link will allow water to flow
  - b) Main water flow switch will initiate fire alarm system
  - c) UL Listed Alarm Company will be notified via wireless communicator.
  - d) All Horn/mini horn and Strobe Devices will be activated.
  - e) Exterior Strobe Light & electric sprinkle bell will be activated.
2. Upon Activation of a Sprinkler Tamper Switch
  - a) Fire Alarm Panel will indicate supervisory signal and local sound.
  - b) Exterior Sprinkler Bell will be activated
  - c) UL Listed Alarm Company will be notified via wireless communicator.
3. Upon Activation of any Fire Alarm Device (Sprinkler Flow, Manual Pull Station, Smoke Detector, Heat Detector)
  - a) Fire Alarm Panel will be tripped.
  - b) UL Listed Alarm Company/fire Department will be notified via wireless communicator.
  - c) All Horn Strobe Devices will be activated.
  - d) Exterior Strobe Light will be activated.
  - e) All smoke dampers will be closed.



#### Detailed Sequence of Operations:

1. Activation of smoke detectors shall:
  - a. Sound alarm throughout building.
  - b. Identify the device activated and sound alarm at control panel.
  - c. Initiate audio/visual devices throughout building.
  - d. Notify local fire department via UL Listed Alarm Company.
2. Activation of sprinkler flow switches shall:
  - a. Sound alarm throughout building
  - b. Identify the device activated and sound alarm at control panel.
  - c. Initiate audio/visual devices throughout building.
  - d. Activate exterior sprinkler bell.
  - e. Notify local fire department via UL Listed Alarm Company.
3. Activation of any supervisory circuit shall: (tamper switch, sprinkler low pressure, open-short-ground circuit, low battery, power failure,)
  - a. Identify the location of supervisory condition at control panel.
  - b. Initiate supervisory audible/visual signal at control panel.
  - c. Notify UL Listed Alarm Company
4. Activation of trouble circuit shall:
  - a. Identify the location of trouble condition at control panel.
  - b. Initiate trouble audible/visual signal at control panel.
  - c. Notify UL Listed Alarm Company
5. All events shall be recorded at the fire alarm control panel and shall indicate time and date of occurrence and list device initiated.

#### **SECTION 8-Testing Criteria**

- a) System Installer will test the System %100 for Engineers review and conformance to Performance Criteria.
- b) UL Certified UL Listed Alarm Company will test the completed System for Performance of the System.
- c) Testing Agency will have a log of Fire Protection System Components and Devices and Test Results corresponding to each device. This Log will be submitted to Engineer for review and Approval.
- d) Upon Completion of the System to the satisfaction of the Engineer of the Record, Fire Department will be invited for Final Inspection.
- e) Testing of fire alarm system shall be per NFPA 72, chapter 14, per table 14.4.3.2
- f) Testing of sprinkler system shall be in accordance with NFPA-25, Standard for Inspection, Maintenance & Testing of Water Based Sprinkler Systems
- g) Emergency responder radio coverage shall be tested in accordance with NFPA-72 and local AHJ requirements

#### **SECTION 9-Equipment and Tools**

During the Preliminary and Final Testing of the System following Equipment and Tools will be provided at the site by the Contractor.

- a) Manufacturer's Instructions,
- b) Sound Meters
- c) Fire Hoses, nozzles
- d) Flow Measuring devices
- e) Pressure Gauges
- f) Voltage Meters
- g) Magnets
- h) Communication Radios (Min two)



- i) Ladder as required to reach high mounted Devices

## **SECTION 10-Testing and Installation Procedures**

1) Prior to applying for certificate of occupancy the contractors shall complete the following;

- 1. Fire Alarm
  - i. Record of Completion
  - ii. Inspection and Test Report
  - iii. Engineer's Final Construction Control Affidavit
- 2. Sprinkler
  - i. Aboveground Materials and Test Certificate
  - ii. Engineer's Final Construction Control Affidavit

### **Fire Alarm**

- 2) Fire Alarm System Installation shall be in accordance with NFPA 72 and NFPA 70.
- 3) Wiring shall be Class "A"
- 4) Fire Alarm System shall be tested according to NFPA 72. Table 7.2.2,

In general:

- a) Battery Test shall be done visually and by Discharge Test per Manufacturer's instructions.
- b) Stand-by Power Supply test shall be done by disconnecting the Primary Power Supply and testing the FACP as described above.
- c) Battery Test shall be done visually and by Discharge Test per Manufacturers instructions.
- d) Public Reporting System Test shall be done by testing the current, voltage across the conductors and to ground. Any variation above 10% from normal to be investigated and corrected.
- e) Transient Suppressors shall be tested per manufacturer's specifications.
- f) Control Panel Trouble Signals shall be tested shall be tested for operation and ring back feature, and off-premise signal transmission. Test of the operation under multiple fault conditions.
- g) Remote annunciator shall be tested for performance under a fault conditions.
- h) Conductors shall be tested for insulation integrity
- i) Heat detectors shall be tested mechanically and electrically.
- j) Smoke Detectors shall be tested with listed aerosol acceptable to the manufacturer.
- k) Tamper Switches shall be tested by verifying signals within the first two revolution of the wheel.
- l) Horn/Strobe devices shall be tested for sound levels with sound level meters.

### **Sprinkler System**

All sprinkler piping is to be pressure tested to a minimum of 200 psi for 2 hours without showing leakage per NFPA-25. The contractor is responsible for providing the Engineer of Record with a copy of a completed NFPA "Above Ground Test Certificate" prior to system certification

## **SECTION 11-Approval Requirements**

- a) Upon completion of successful performance of the System, Code official will issue a written Approval of the System.
- b) If the system fails to operate satisfactorily to the Fire Official, failed component or part of the System or function will be corrected immediately upon agreement of an acceptable correction period with the Fire Official
- c) At the Completion and proof of satisfactory operation of the Fire Protection System, Engineer of the record will submit to Fire Department/Building Official a "System Certification" stating that the Systems installed is in Compliance with all Laws, Regulations and Standards and per-approved Narrative Reports.



- d) Along with the above Certification, listing of Names, Addresses and Telephone Numbers of Personnel for Emergency Notification will be provided.
- e) The engineer of record must be invited to the site a minimum of two times during the construction process. It is the responsibility of the general contractor to notify the engineer of record when site visit is appropriate. If the engineer of record is not able to inspect the installation of the system no affidavit will be issued