City of Boston
Planning Department

Planning Department Design Review
7 Thornley St, Dorchester
Neighborhood Design Overlay District
12.18.2025

Design

1. Window and door trim shall have the following minimum dimensions: 4" casings with 5" or 6" trim at head. Cornerboards shall be 8" wide at minimum.
2. Create an integrated awning over the front door to shield the entry from weather. Use a solid looking material and finish underneath the entire front porch and stairs.
3. Replace headhouse with a roof hatch.

General

4. All changes to the exterior and/or site plans shall be submitted to the Planning Department for review and approval.
5. All building improvements shall be completed *prior to issuance of occupancy permit by ISD* unless prior approval is granted by the Planning Department.
6. All site improvements, including but not limited to hardscape & plantings, must be completed *prior to issuance of occupancy permit by ISD* unless prior approval is granted by the Planning Department for a delay in completing site improvements.

Landscape/Street/Site

7. Existing street trees within the public right of way are to be protected & retained. Building, building protrusions, and construction shall not negatively impact the existing tree, critical root zone, nor impede the healthy growth of the tree's canopy.
8. Where impacts are unavoidable and public street trees must be removed, the proponent must apply for tree removal approval from the City's Tree Warden and provide mitigation as specified by the Parks and Recreation Department.
9. Public sidewalks fronting the project site should be upgraded to meet the Americans with Disabilities Act minimum 4' wide clear path of travel (exclusive of the 6" curb).

Building

10. All front porches and the rear porches shall have wood square edge decking. Porch ceilings shall be bead board and all stairs shall have closed risers. All lattice shall have a painted finish. Pressure treated lumber shall be covered and shielded from the public views on the site. Composite materials can be considered for porches.
11. Pressure treated lumber will not be allowed as an externally visible material for exterior decking. All pressure treated wood exposed to public views on the site shall be covered and shielded from view. Use of PVC, composite, and/or natural wood materials is acceptable.

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

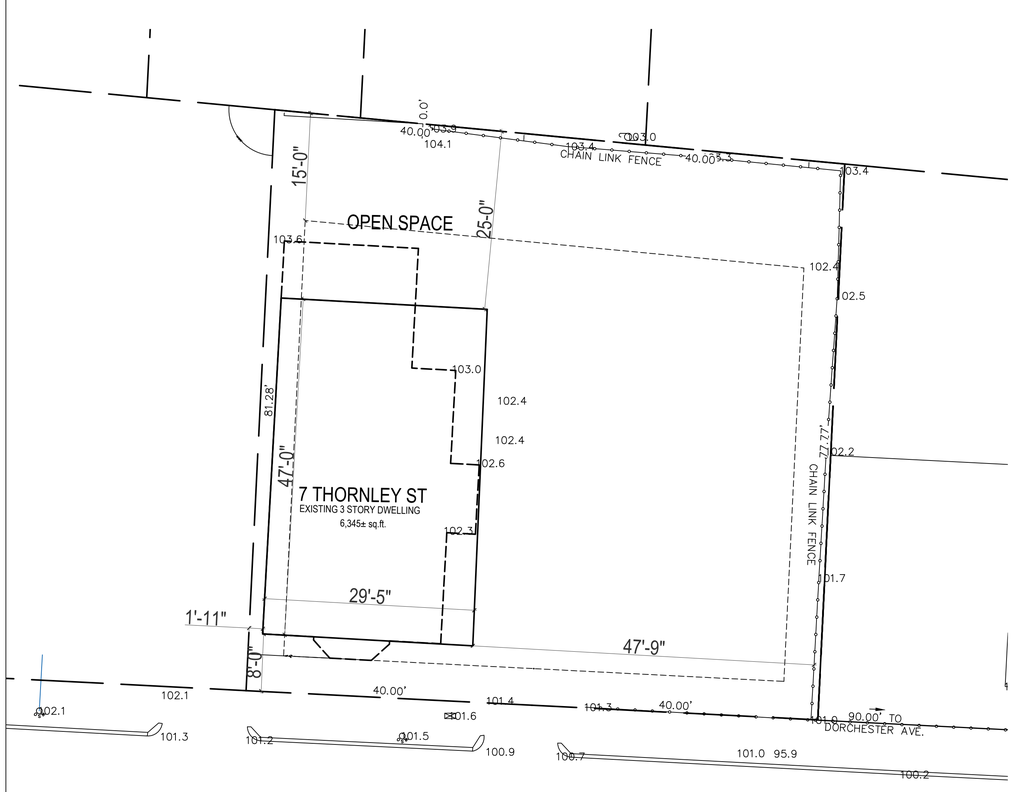
S1- FOUNDATION AND FIRST FLOOR FRAMING
S2- SECOND FLOOR AND THIRD FLOOR FRAMING
S3- ROOF FRAMING AND SECTIONS
S4- DETAILS

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



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

SEE SITE PLAN FOR OFFICIAL SETBACK

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)-47'-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

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
188 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal
781-801-2690- gavin.lighthousedesign@gmail.com
J. Edward Roche, AIA
617-512-9281 - eroche@lighthousedesign.com

DATE: 1/5/26
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

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. INFIL. 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

INSPECTED BY DATE

AS BUILT FEE COLLECTED

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

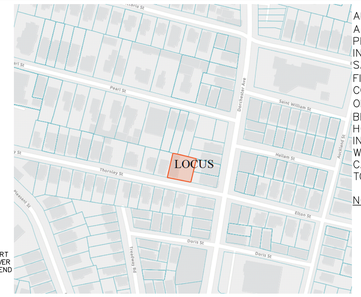
VOLUME COMPUTATION EXTERIOR CRUSHED STONE
40.5 FT. x 8.33 FT. x 3.5 FT. = 1180.8 CU. FT.
1180.8 CU. FT. - 261 CU. FT. (CHAMBER VOLUME) = 919.8 CU. FT.
919.8 CU. FT. x 0.3 (VOIDS) = 275.9 CU. FT. VOLUME VOIDS STORAGE
261 CU. FT. CHAMBER VOLUME + 275.9 CU. FT. VOIDS = 536.9 CU. FT.
536.9 CU. FT. TOTAL STORAGE > 479.2 CU. FT. RUNOFF CALCULATION

6"SDR35 PVC SEWER SERVICE W/CLEANOUT

INSPECTED BY DATE

SEWER DYE TEST

INSPECTED BY DATE



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:_____

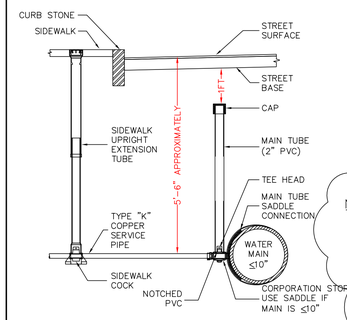
BOSTON WATER AND SEWER COMMISSION
LOCATION APPROVED UNDER THE FOLLOWING CONDITIONS

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.

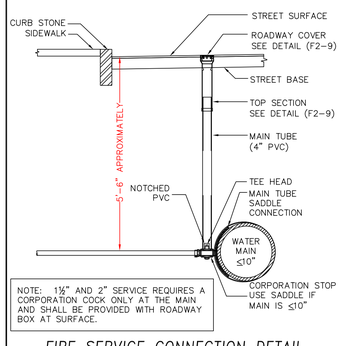
JOHN P. SULLIVAN JR., P.E., DATE
CHIEF ENGINEER

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, LISCENCED BY THE BOSTON WATER AND SEWER COMMISSION.



WATER SERVICE CONNECTION DETAIL



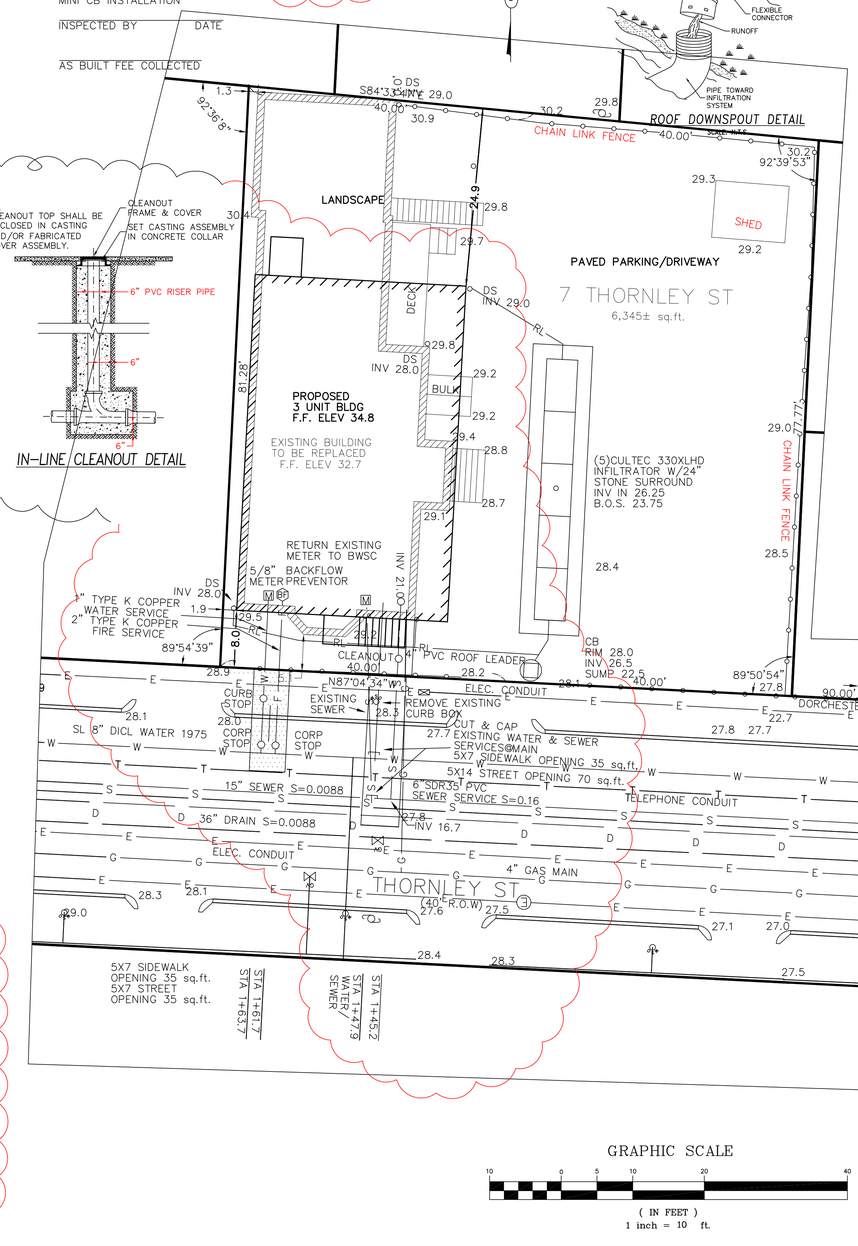
NOTE: 1½" AND 2" SERVICE REQUIRES A CORPORATION COCK ONLY AT THE MAIN AND SHALL BE PROVIDED WITH ROADWAY BOX AT SURFACE.

FIRE SERVICE CONNECTION DETAIL

NOTES:
1. FULL PVC OR IRON SADDLE MAY BE USED TO CONNECT TO EXISTING PVC, CLAY, CONCRETE, OR IRON PIPE.
2. SADDLES MUST HAVE RUBBER GASKETS AND SHALL BE TIGHTENED WITH STRAPS. SADDLES WILL NOT BE CEMENTED ONTO PIPE.
3. FULL WYE CONNECTION FITTINGS MAY BE USED.
4. PIPE SHALL BE CUT TO CONFORM TO THE OPENING OF THE SADDLE.
5. CONNECTIONS DIRECTLY INTO THE EXISTING PIPE WITHOUT A SADDLE OR A FULL WYE FITTING ARE NOT ALLOWED.

SEWER SERVICE CONNECTION DETAIL

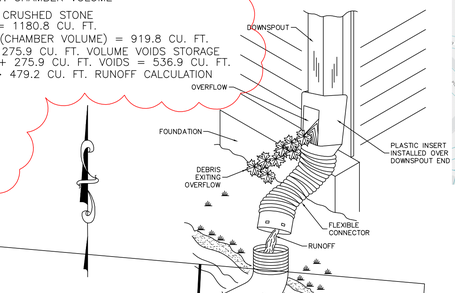
IN-LINE CLEANOUT DETAIL



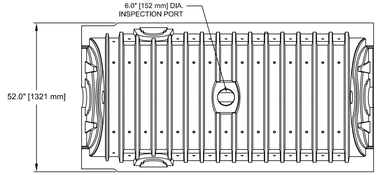
GRAPHIC SCALE

10 0 5 10 20 40

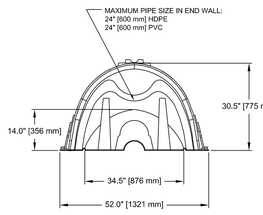
(IN FEET)
1 inch = 10 ft.



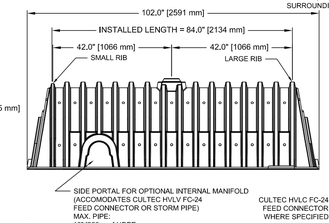
ROOF DOWNSPOUT DETAIL



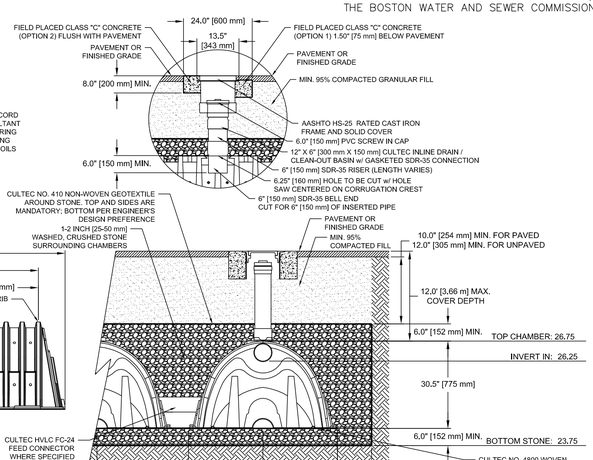
NOTE:
PROJECT ENGINEER OF RECORD OR GEOTECHNICAL CONSULTANT IS RESPONSIBLE FOR ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET.



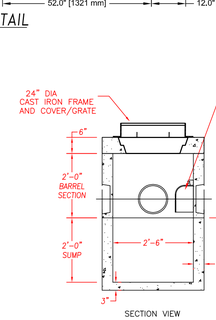
CULTEC RECHARGER 330XLHD CHAMBER STORAGE = 7.459 CF/FT [0.693 m³/m]
INSTALLED LENGTH ADJUSTMENT = 1.5' [0.46 m]
SINGLE CHAMBER MAX. STORAGE = 52.21 CF [1.478 m³]
SIDE PORTAL ACCEPTS CULTEC HVLV FC-24 FEED CONNECTOR



CULTEC 330XLHD LEACHING CHAMBER DETAIL



WATER METER SPACING DETAIL



SECTION VIEW

NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR H-20 LOADING.

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-38WTCH	585#

MANHOLE 30" DIA H-20
MINI CATCH BASIN

30" MINI CATCH BASIN 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

COMMONWEALTH OF MASSACHUSETTS JAMES A. HERRICK JR. NO. 49705 REGISTERED PROFESSIONAL ENGINEER

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.

REFERENCES:

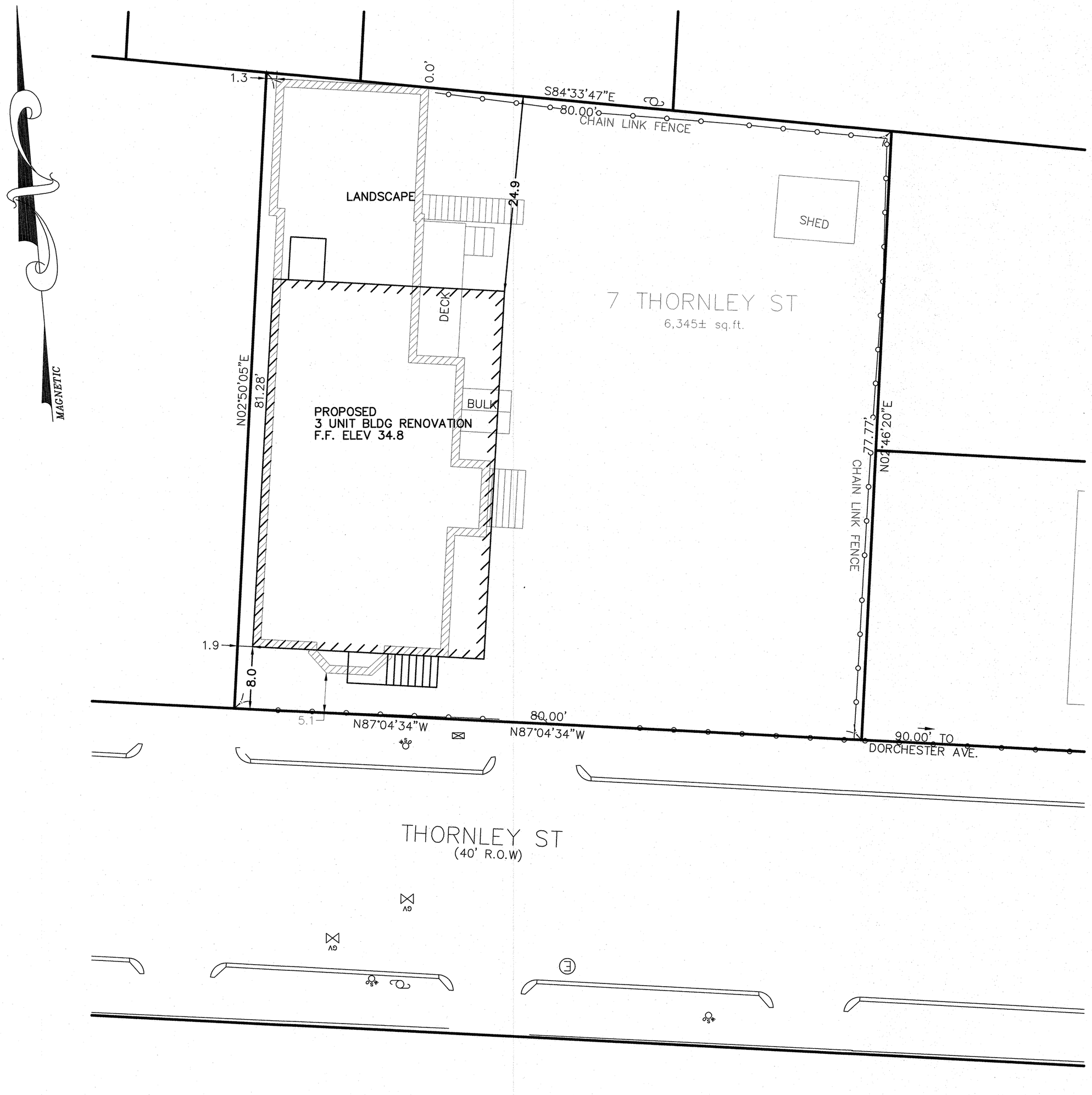
PARCELID:
1302112000
DEED:
BOOK71429 PAGE 332
PLAN
BOOK 1058 PAGE 270
PLAN 146 OF 2025
PLAN 252 OF 2020
CITY OF BOSTON
STREET LAYOUT
L-9222
L-963

DS

APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE

Neighborhood Design Overlay District project. Approved with attached provisos. Any changes must be approved by the Planning Department.

01/08/2026



COMMONWEALTH OF MASSACHUSETTS
LEONARD JOSEPH BOUFFARD
No. 58160
PROFESSIONAL LAND SURVEYOR

LEONARD JOSEPH BOUFFARD P.L.S. DATE 10/31/25

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

PROPOSED 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: 10/31/2025 JOB: 4819

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

REFERENCES:

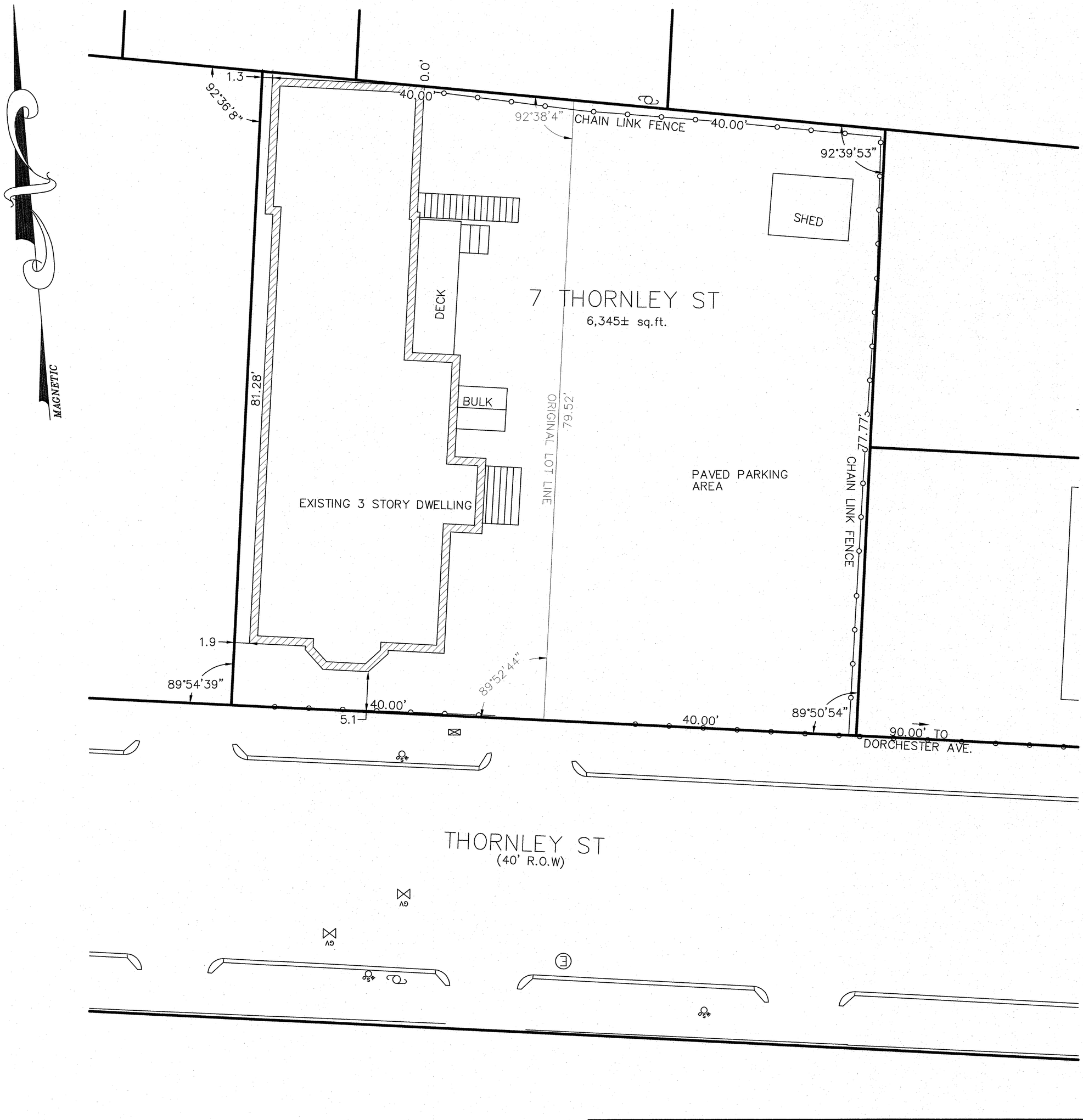
PARCELID:
1302112000
DEED:
BOOK71429 PAGE 332
PLAN
BOOK 1058 PAGE 270
PLAN 146 OF 2025
PLAN 252 OF 2020
CITY OF BOSTON
STREET LAYOUT
L-9222
L-963

DS

APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE

Neighborhood Design Overlay District project. Approved with attached provisos. Any changes must be approved by the Planning Department.

01/08/2026



COMMONWEALTH OF MASSACHUSETTS
LEONARD JOSEPH BOUFFARD No. 56160 PROFESSIONAL LAND SURVEYOR

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

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

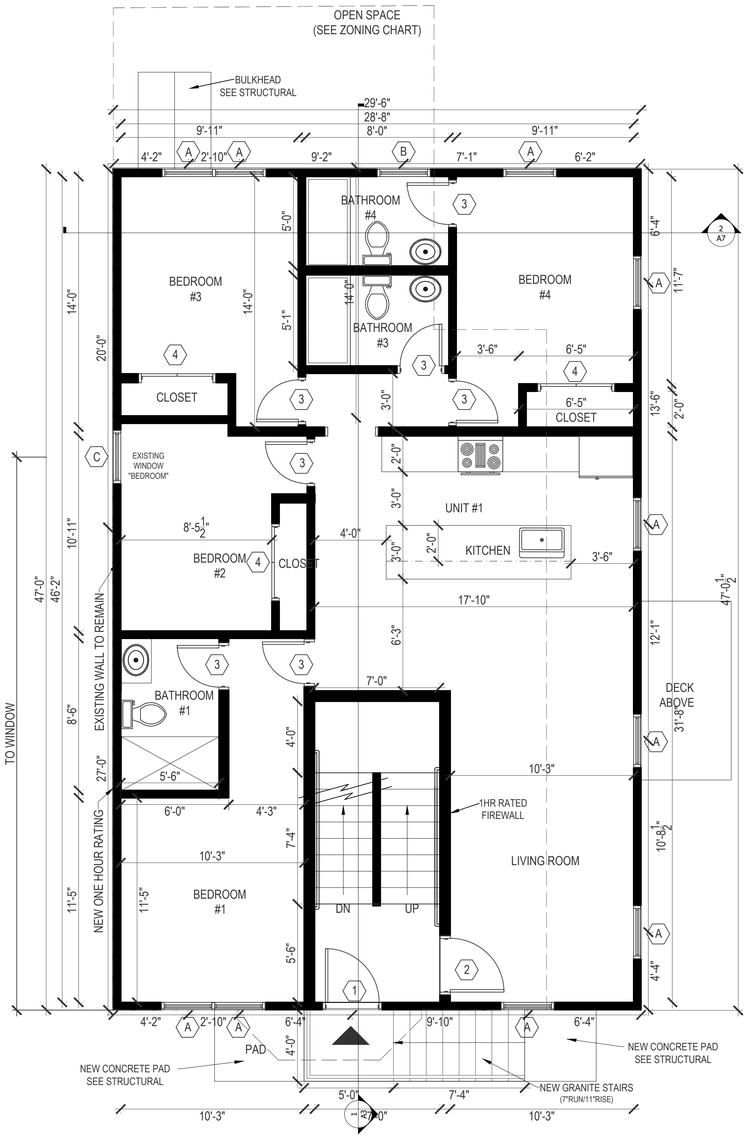
EXISTING SITE PLAN
7 THORNLEY ST
DORCHESTER, MA
FOR
THORNLEY DOT LLC

CIVIL ENVIRONMENTAL CONSULTANTS
8 OAK STREET PEABODY, MA 01960 978-531-1191

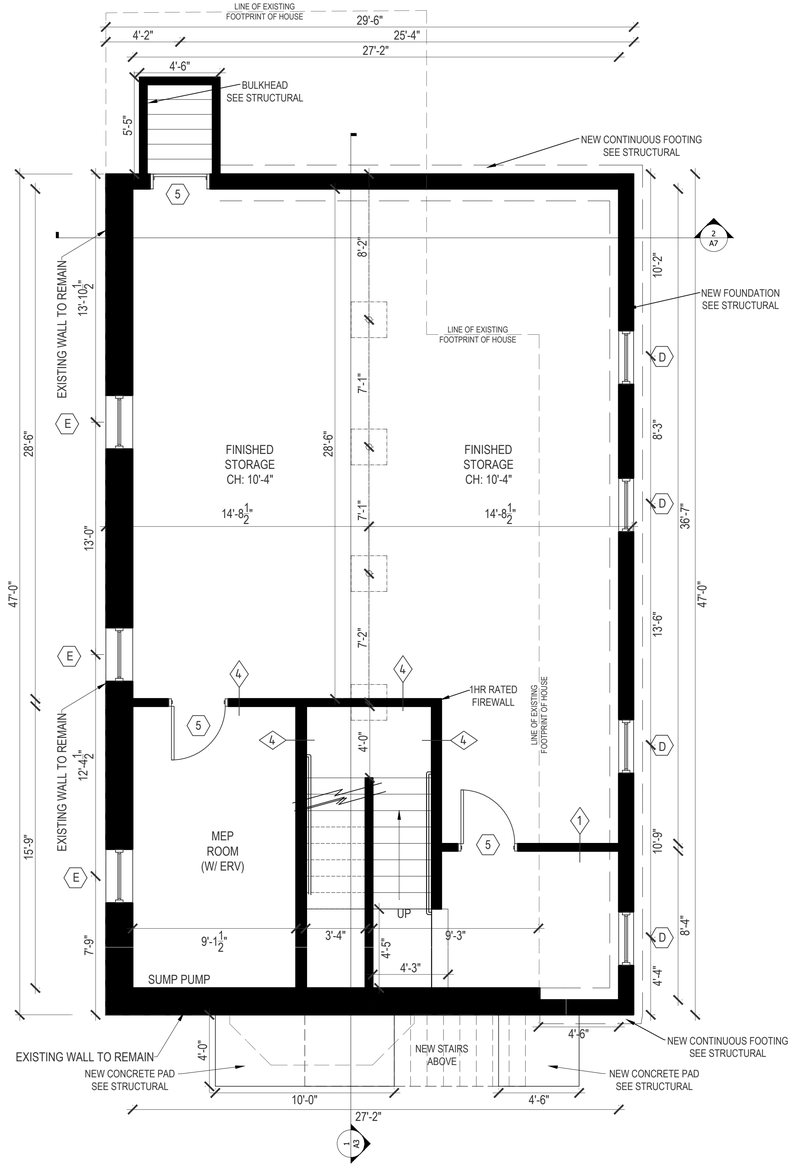
SHEET NO: 1 OF 1

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.

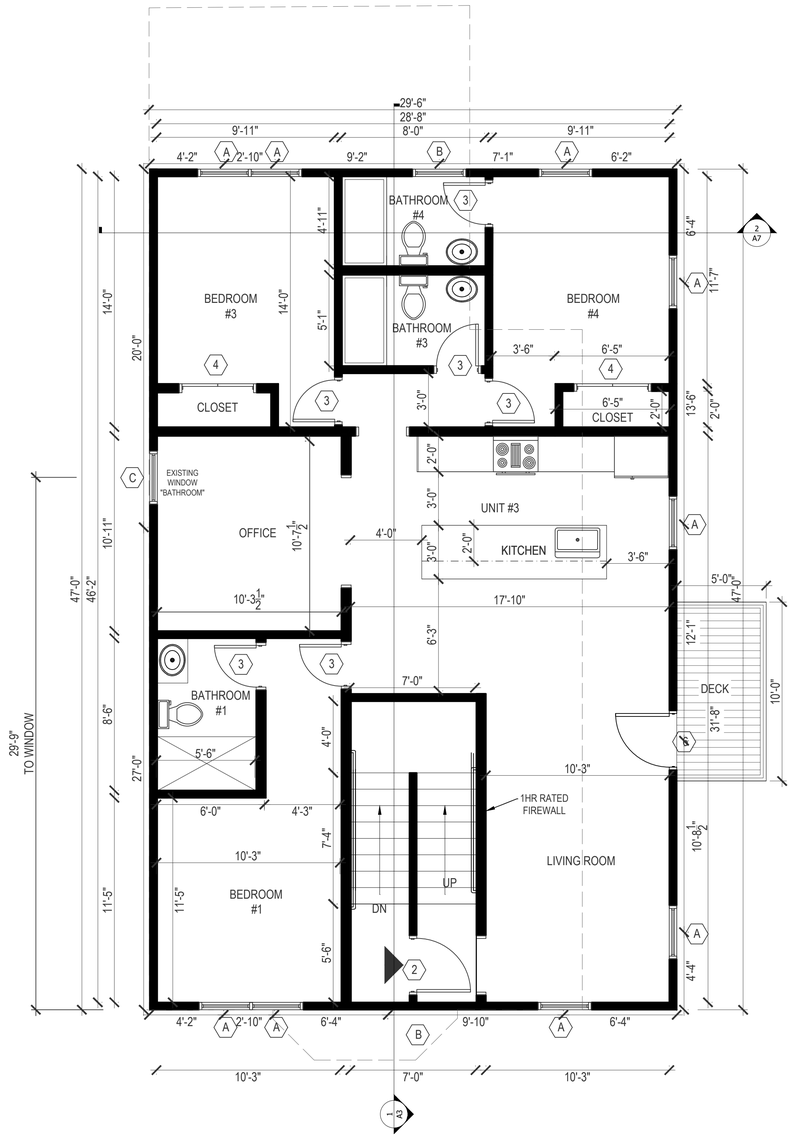
LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRADFORD, MA 01835
Gavin Driscoll, Principal - 781-801-2690- gavin@lighthousedesign.com
J. Edward Roche, AIA - 617-512-9281 - erochejia@gmail.com

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

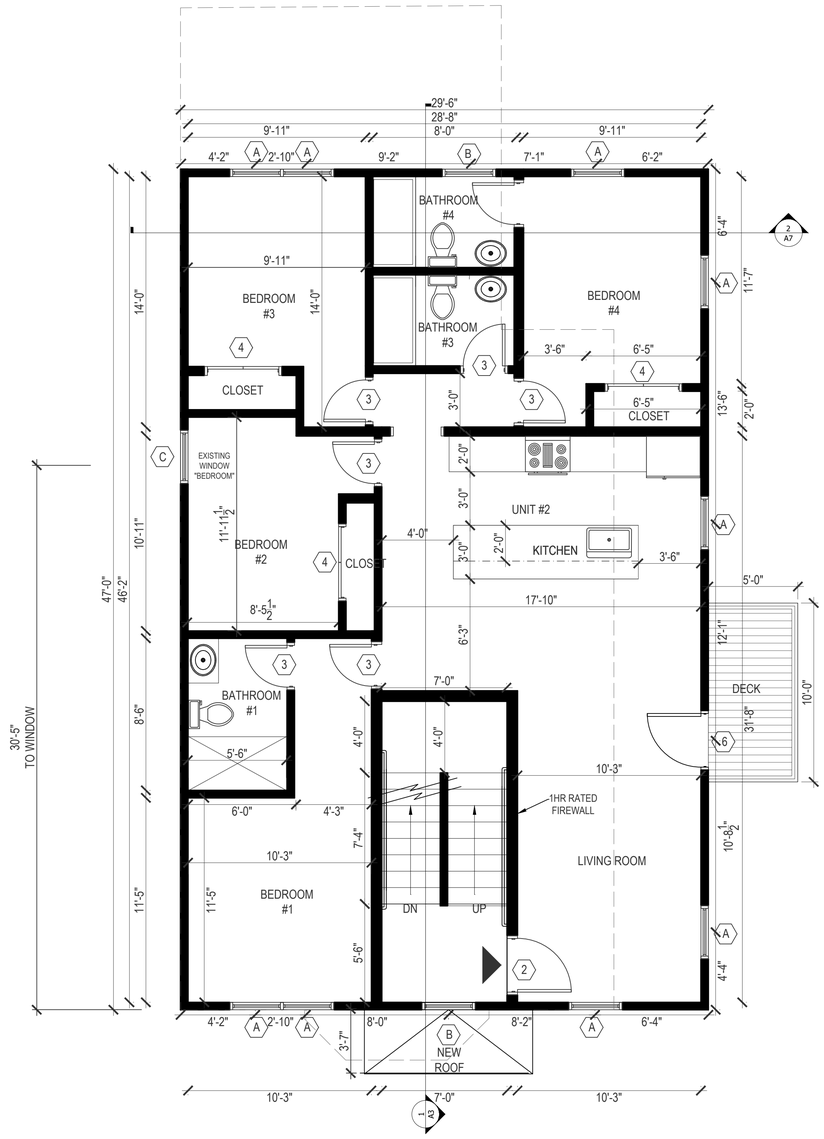
PROPOSED BASEMENT PLAN
PROPOSED FIRST FLOOR

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"

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.

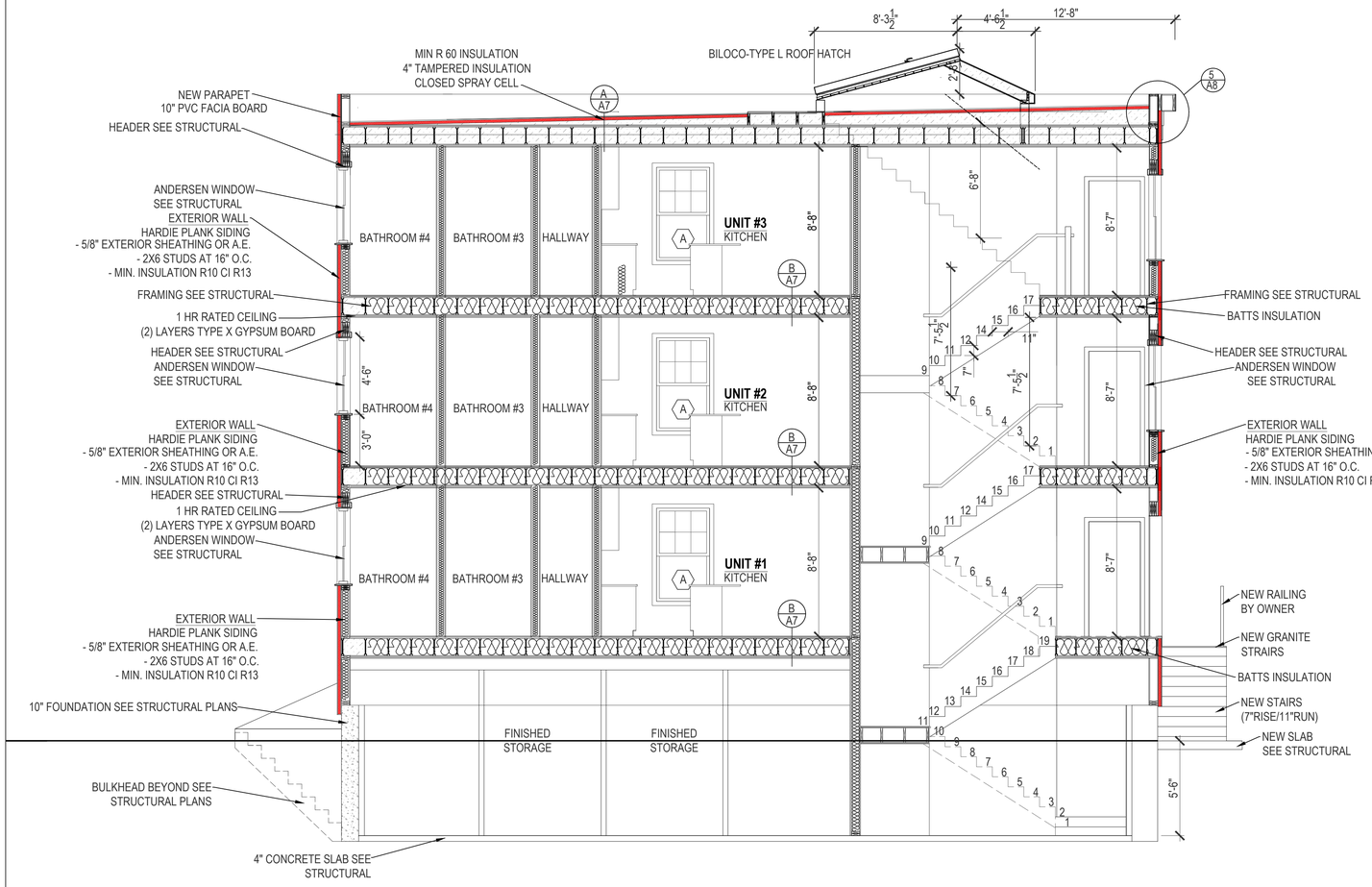
LIGHTHOUSE ARCHITECTURE & DESIGN
188 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - 781- 801-2690- gavin@lighthousedesign.com
J. Edward Roche, AIA - 617-512-9281 - erochejia@gmail.com

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

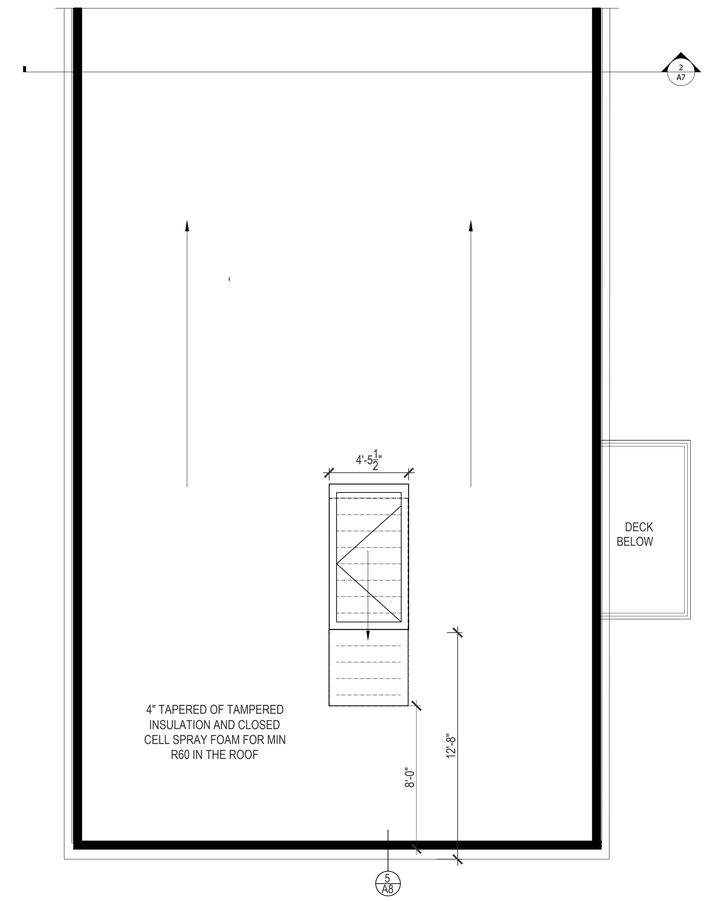
PROPOSED 2ND FLOOR PLAN
PROPOSED3RD FLOOR PLAN

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

A2



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



PROPOSED 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.

LIGHTHOUSE ARCHITECTURE & DESIGN
188 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal
781-801-2690- gavin@lighthousedesign.com
J. Edward Roche, AIA
617-512-9281 - eroche@lighthousedesign.com

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

PROPOSED ROOF PLAN
PROPOSED SECTION

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

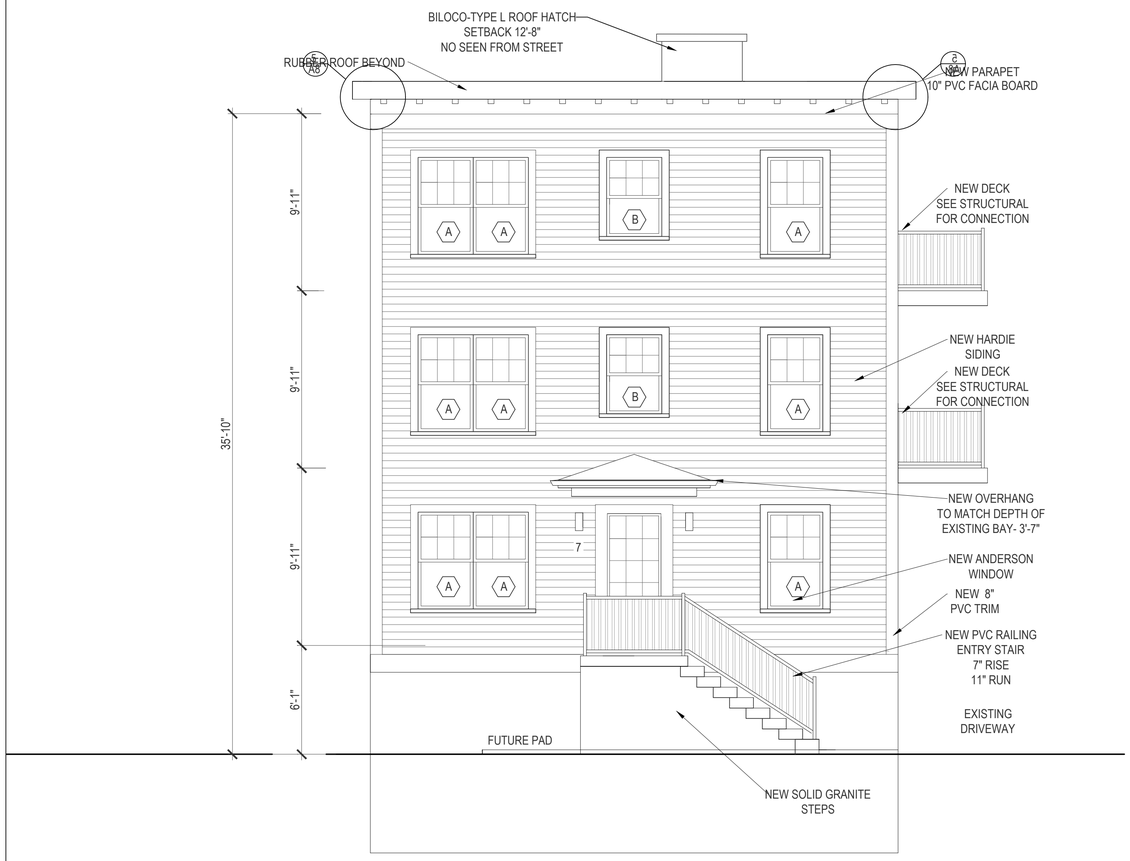
A3

DS

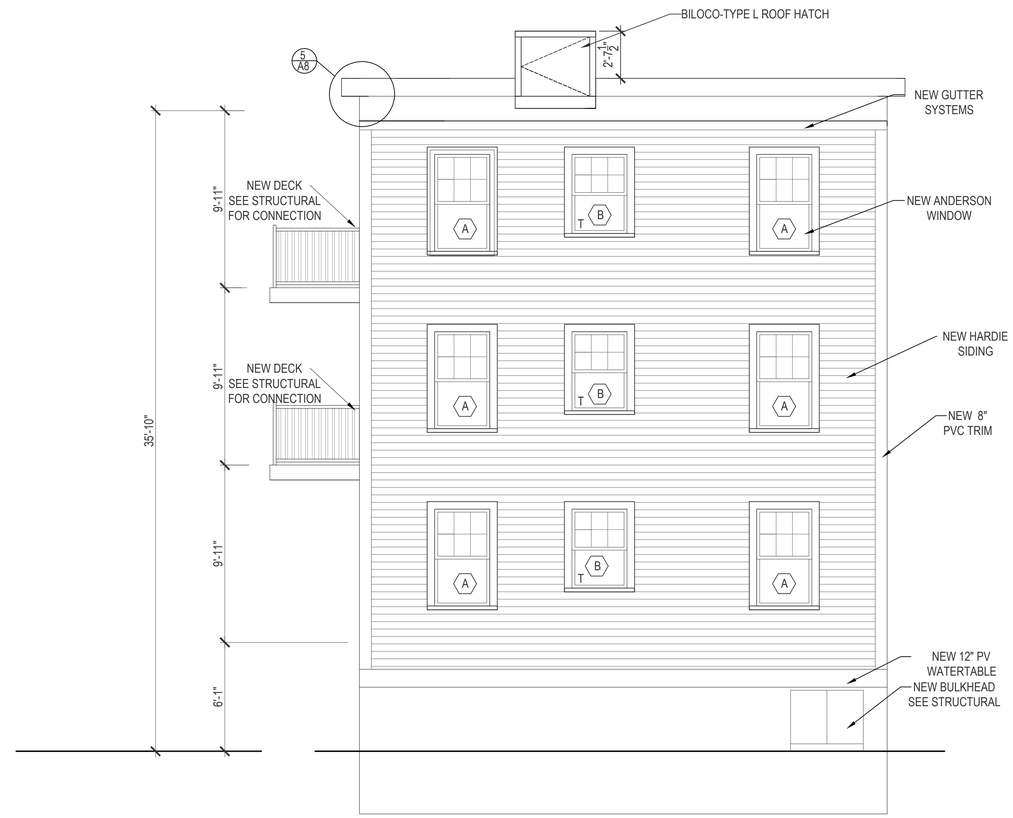
APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE

Neighborhood Design Overlay District project. Approved with attached provisos. Any changes must be approved by the Planning Department.

01/08/2026



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



PROPOSED REAR ELEVATION
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 BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - 781-801-2690- gavin@lighthousedesign.com
J. Edward Roche, AIA - 617-512-9281 - eroche@lighthousedesign.com

REGISTERED ARCHITECT
COMMONWEALTH OF MASSACHUSETTS
J. EDWARD ROCHE
#6635

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

PROPOSED FRONT AND REAR ELEVATION

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

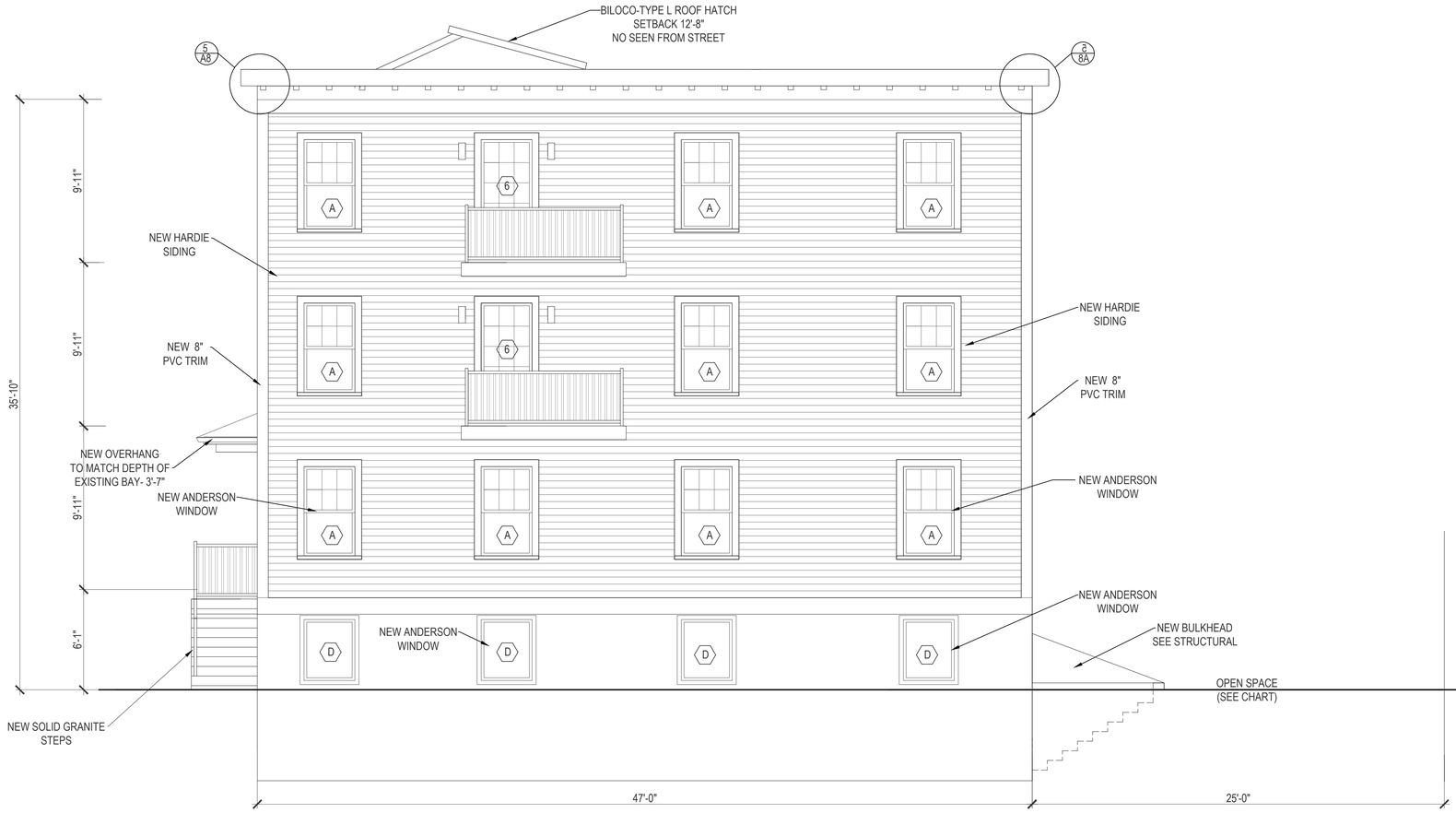
A4

DS

APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE

01/08/2026

Neighborhood Design Overlay District project. Approved with attached provisos. Any changes must be approved by the Planning Department.



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

LIGHTHOUSE ARCHITECTURE & DESIGN
188 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - gavin@lighthousedesign.com
781-801-2690
J. Edward Roche, AIA - erochella@gmail.com
617-512-9281

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

PROPOSED RIGHT ELEVATION

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

A5

GENERAL NOTE:

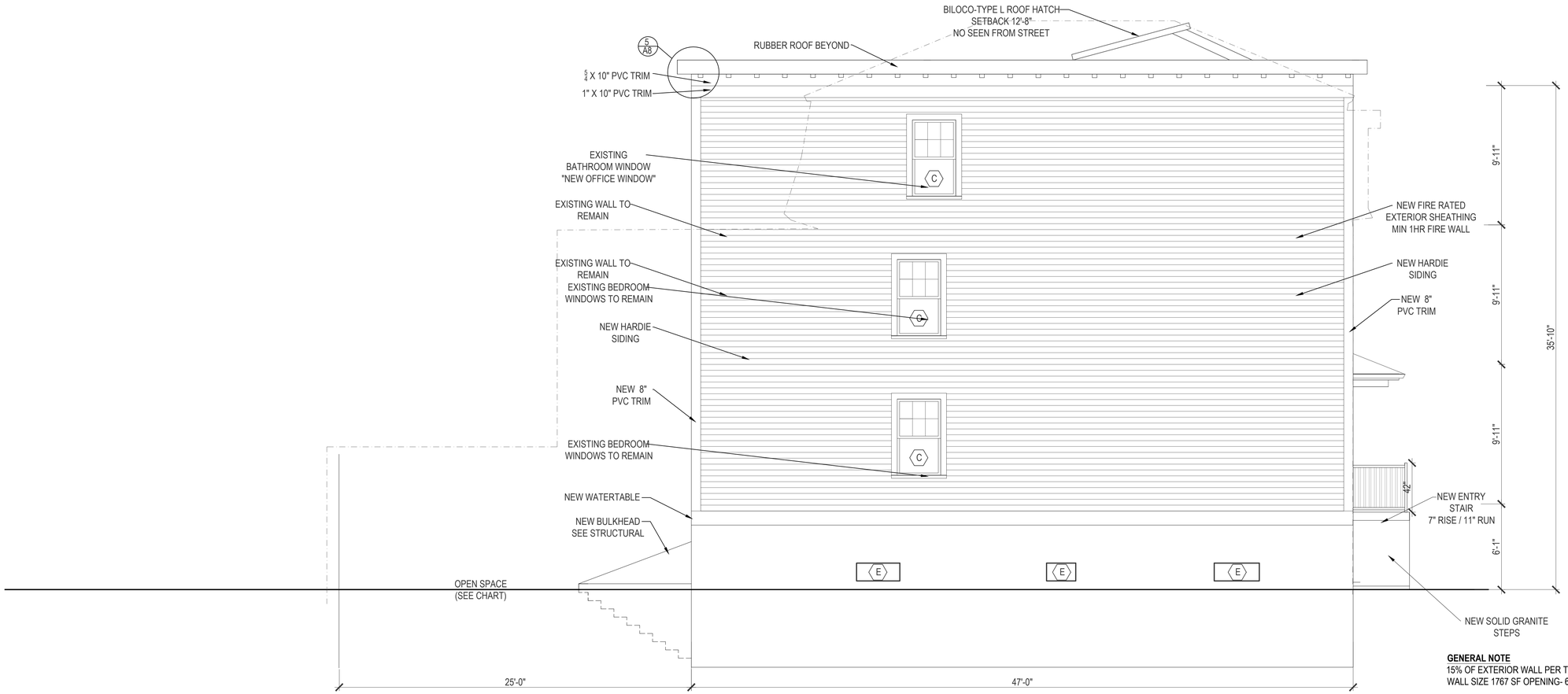
VERIFY AND CONFIRM ALL CONDITIONS AND/OR DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS.NOTIFY ARCHITECT OF ANY INCONSISTENCIES FOR REVIEW AND APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.

DS

APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE

01/08/2026

Neighborhood Design Overlay District project. Approved with attached provisos. Any changes must be approved by the Planning Department.



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

PROPOSED LEFT ELEVATION
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 BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - 781-801-2690- gavin@lighthousedesign.com
J. Edward Roche, AIA, Project Architect - 617-512-9281 - erochejia@gmail.com

#6635

DATE:	1/5/26
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

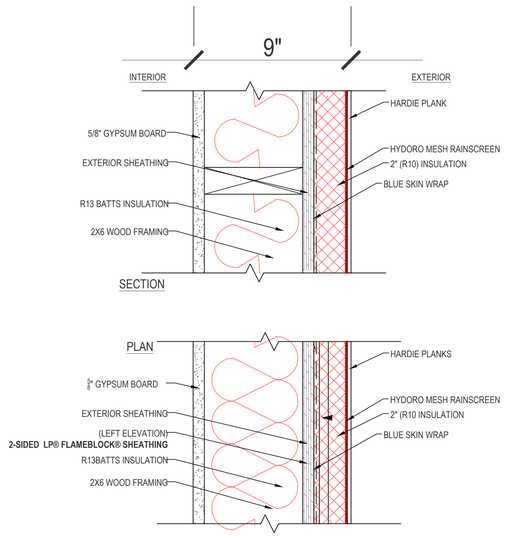
DOOR SCHEDULE

NO.	ROUGH OPENING WIDTH	ROUGH OPENING HEIGHT	QTY.	NOTES
1	3'-0"	6'-8"	1	EXTERIOR FIBERGLASS ENTRY DOOR
2	3'-0"	6'-8"	4	UNIT ENTRY DOOR - 1 HR/ROOF DOOR
3	2'-6"	6'-8"	21	INTERIOR ENTRY DOOR -
4	4-0"	6'-8"	9	INTERIOR WOOD DOOR- FRENCH
5	3'-0"	6'-8"	3	METAL DOOR- FD
6	3'-0"	6'-8"	2	GLASS DOOR-
TOTAL DOORS			40	

WINDOW SCHEDULE

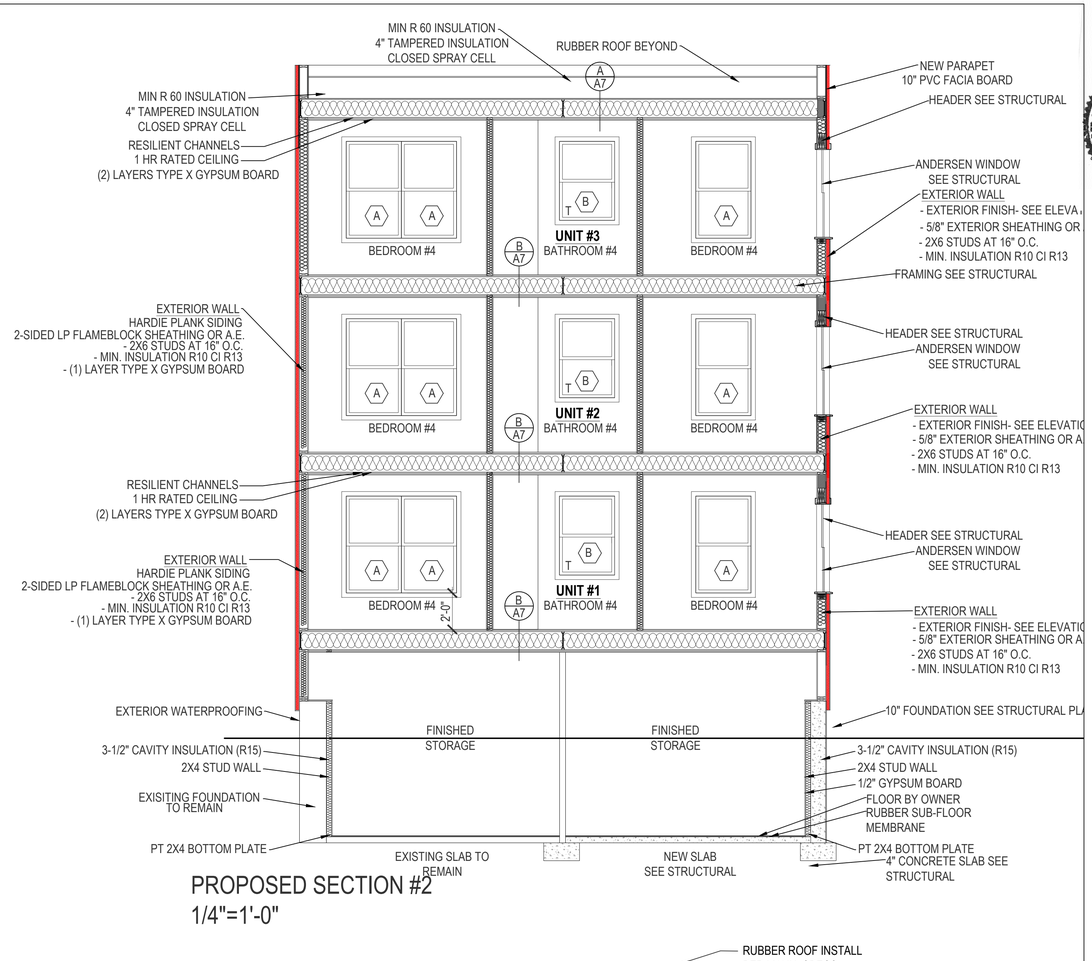
NO.	ROUGH OPENING WIDTH	ROUGH OPENING HEIGHT	QTY.	NOTES
A	3'-1"	5'-0"	28	Double Hung- EGRESS
B	3'-1"	5'-0"	5	Double Hun- TEMPERED
C	3'-2"	5'-6"	3	Double Hung- EGRESS
D	3'-1"	3'-6"	4	NEW BASEMENT WINDOWS
E	EXISTING WINDOWS REPLACE IN KIND			
Total Windows			42	

- ALL WINDOWS WERE BASED ON ANDERSON 400 SERIES
- ALL BEDROOM WINDOWS ARE TO BE EGRESS AND TO MEET THE 10TH BUILDING CODE.
- GC TO CONFIRM ROUGH OPENINGS BEFORE INSTALLATION
- FIRE SHUTTERS TO BE USED WHERE APPLICABLE

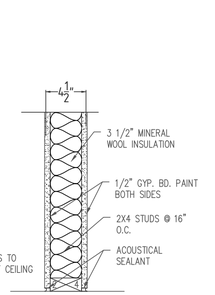


TYPICAL EXTERIOR WALL (**HARDIE PLANK**) - SCALE: 3" = 1'-0"

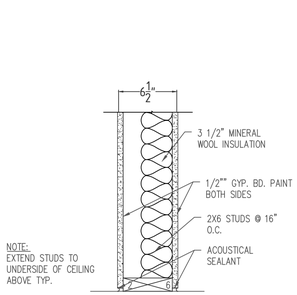
5" HARDIE PLANK LAP SIDING - HYDRO GAP MAT OR RAINSCREEN MESH OR A.E HYDRO GAP MAT OR RAINSCREEN MESH OR A.E ., 5/8" ADVANTECH SYSTEM WALL SHEATHING/ZIP SYSTEM OR A.E. , 2" x 6" NOMINAL WOOD STUDS @ 16" O.C WITH Min. R-30 OPEN CELL SPRAY FORM INSULATION AND ½" GYPSUM BOARD ON THE INTERIOR. NOTE: OUTER FACE OF STUDS AT EXTERIOR WALLS TO ALIGN WITH OUTER FACE OF FOUNDATION WALL. GN- SEE STRUCTURAL PLANS FOR DETAILS



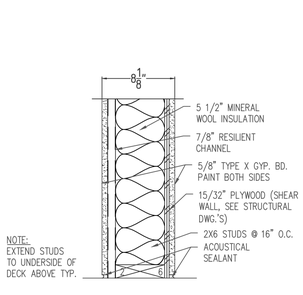
PROPOSED SECTION #2
1/4"=1'-0"



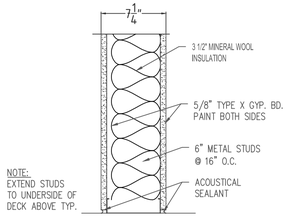
1 NONRATED (2x4 STUDS)
4" STUDS @ 16" O.C.



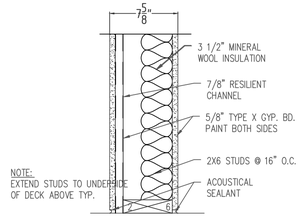
2 NONRATED (2x6 STUDS)
6" STUDS @ 16" O.C.



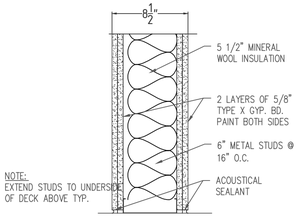
5 1HR RATED SHEAR WALL (2x6 STUDS)
UL 305 6" STUDS @ 16" O.C.



3 1 HR RATED ACOUSTIC (6" STUDS)
UL U419, STC 45, 6" STUDS @ 16" O.C.



4 1HR RATED DEMIZING WALL (2X4/2X6 STUDS)
UL 311 6" STUDS @ 16" O.C.

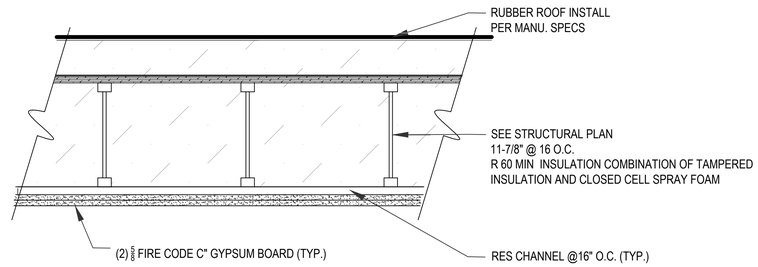


6 2 HR RATED WALL (6" STUDS)
UL U419, STC 45, 6" STUDS @ 16" O.C.

GENERAL NOTES

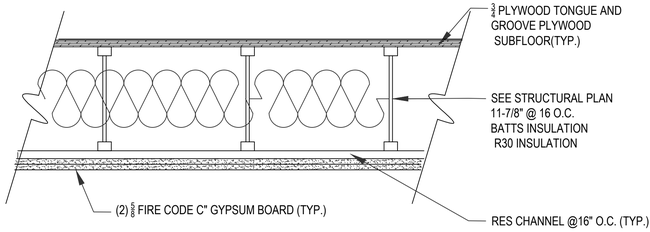
RATED CORE

1. ALL GWB ARE 5/8" THICK TYPE 'X' GWB WITH FIRE
2. PROVIDE RATED ACOUSTIC SEALANT AT PERIMETER OF RATED PARTITIONS.
3. SUBSTITUTE 5/8" CEMENTITIOUS BACKER BOARD FINISH SCHEDULE. STRUCTURAL GLAZED TILE FINISH; SEE ROOM FULL HEIGHT METAL STUD PARTITIONS.
4. PROVIDE DEFLECTION TRACK HEADS AT ALL
5. STC VALUES ARE BASED ON LAB TESTS STC REQUIREMENTS IN THE FIELD. CONTRACTOR IS RESPONSIBLE FOR MEETING
6. BOXES FOR OUTLETS, SWITCHES, ALARMS, CABLE TV & TEL/DATA THAT OCCUR IN DEMISING AND /OR CORRIDOR WALLS SHALL HAVE A CLAY
7. STUDS TO BE 16" O.C. UNLESS NOTED OTHERWISE; VERIFY STUD SIZE AND SPACING AT BEARING WALLS WITH STRUCTURAL ENGINEER. TO BE SEALED
8. ALL VERTICAL OR HORIZONTAL PENETRATIONS
9. PROVIDE CONTINUOUS FIRE RATING. AND ASSEMBLIES TO EXTEND TO DECK AND



A TYPICAL FLOOR ASSEMBLY UNITS- SCALE: 3" = 1'-0"-

RUBBER ROOF PER SPEC 4" TAMPERED INSUALTION 3/4" ROOF SHEATHING, TGI 11-7/8 @ 16" O.C. SEE STRUCTURAL PLANS WITH R60 MIN. INSULATION WITH COMBO RES. METAL CHANNEL, AND TWO LAYERS OF ⅝ FIRE CODE C GYPSUM BOARD



B TYPICAL FLOOR ASSEMBLY UNITS- SCALE: 3" = 1'-0"-

TWO LAYERS OF ⅝ FIRE CODE C GYPSUM BOARD, RES. METAL CHANNEL, 11-7/8" TGIS @ 16" O.C. SEE STRUCTURAL PLANS WITH R30 MIN BATT INSULATION , ¾ PLYWOOD TONGUE AND GROOVE PLYWOOD SUBFLOOR AND ¾"HARDWOOD FLOOR SELECTED BY OWNER (TYP.) STC OF 50 AND 1 HOUR RATING MIN.

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.

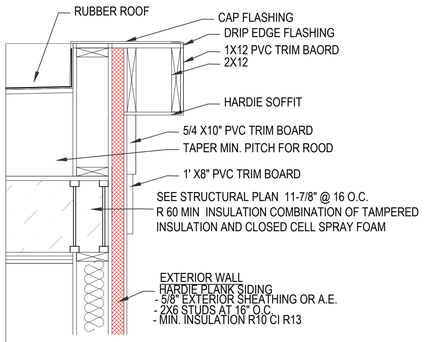
LIGHTHOUSE ARCHITECTURE & DESIGN
168 ALLEN ST BRADFORD, MA 01835
Gavin Driscoll, Principal 781-801-2690- gavin@lighthousedesign.com
J. Edward Roche, AIA 617-512-9281 - erochejia@gmail.com

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

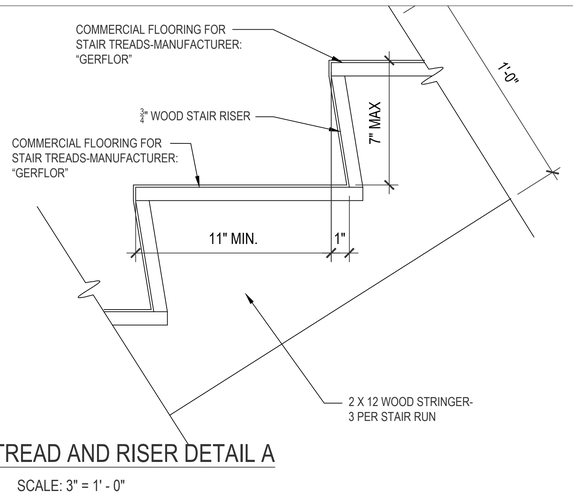
PROPOSED SECTION SCHEDULES AND DETAILS

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

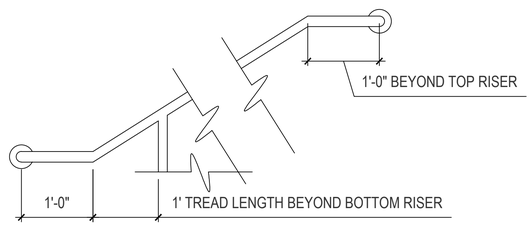
A7



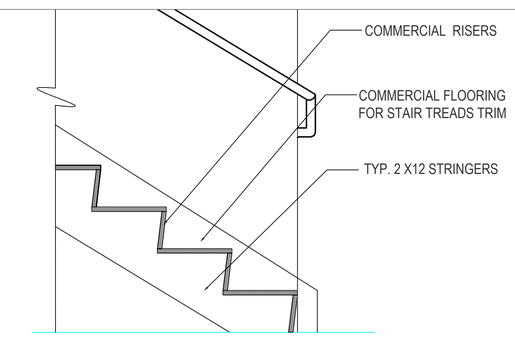
SOFFIT DETAIL #5
3/8"=1'-0"



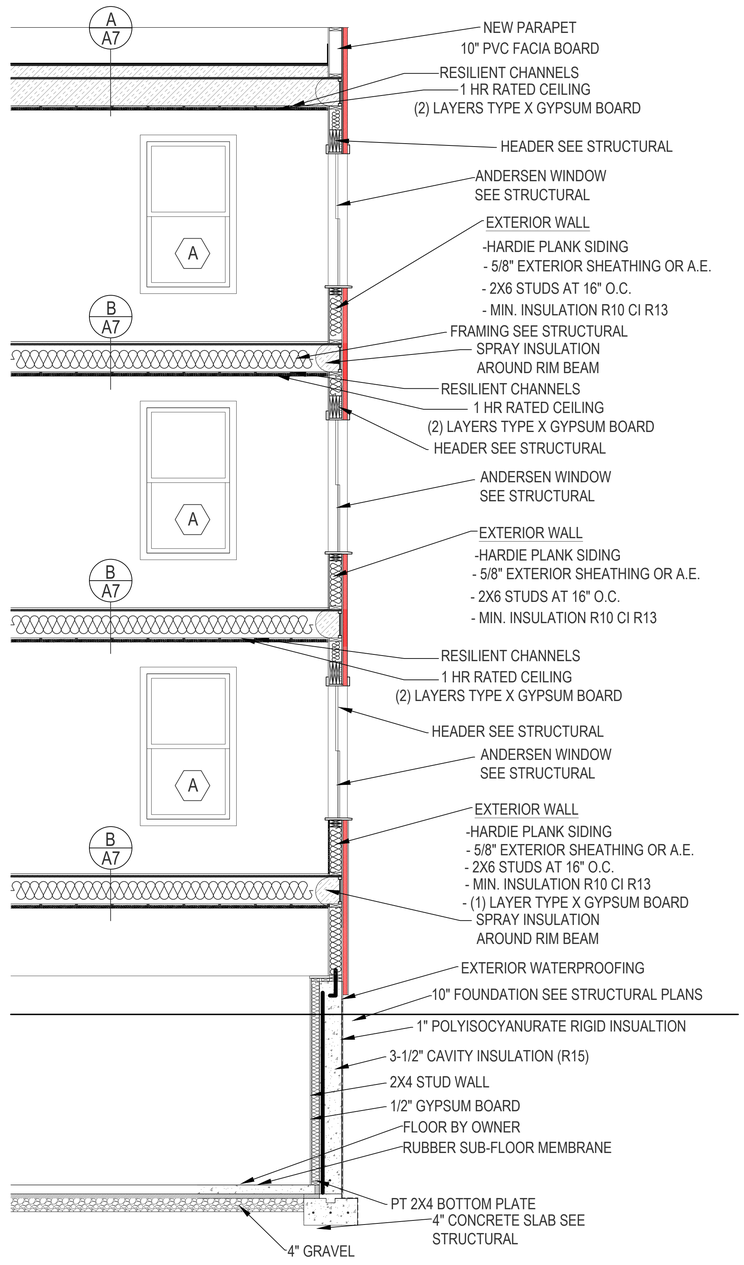
TREAD AND RISER DETAIL A
SCALE: 3" = 1' - 0"



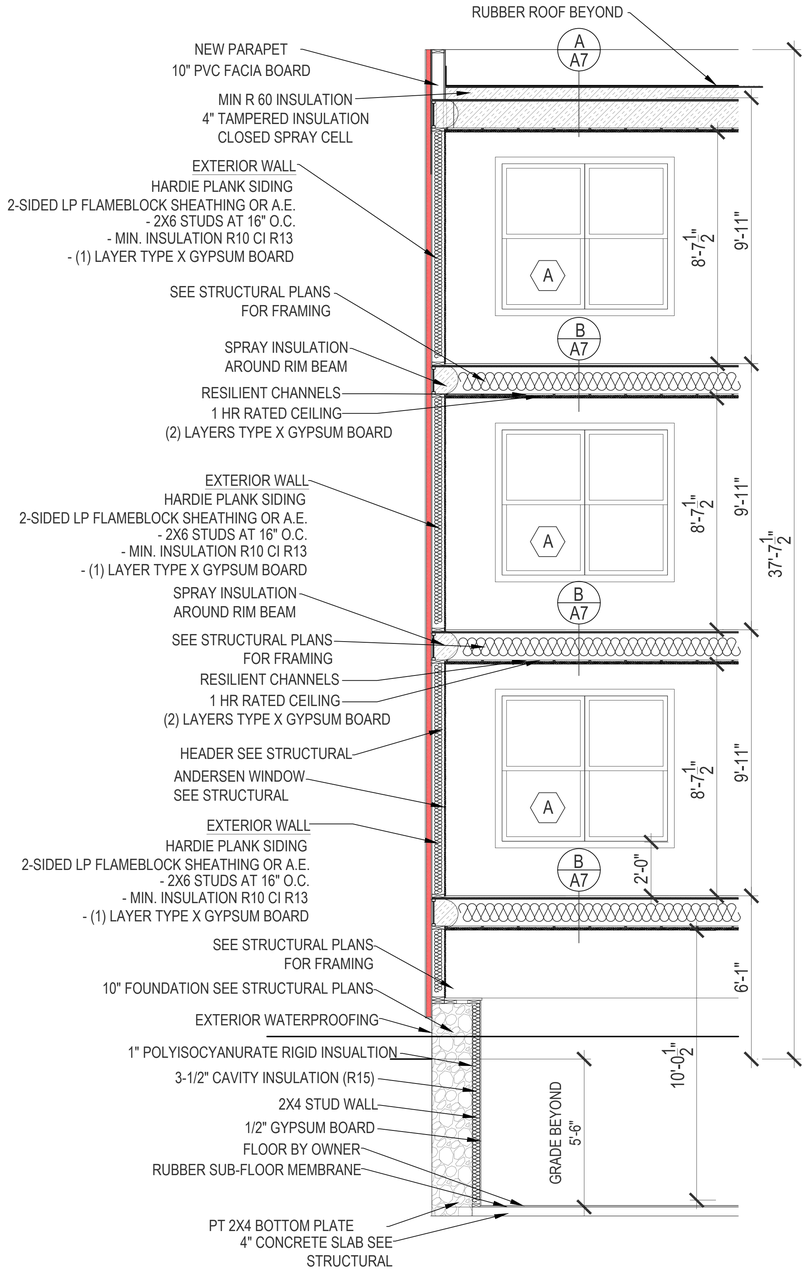
WALL HAND RAIL EXTENSION DETAIL (TYP.) B
SCALE: 1" = 1' - 0"



STAIR SECTION DETAIL C
SCALE: 1" = 1' - 0"



PROPOSED SECTION #4
3/8"=1'-0"



PROPOSED SECTION #3
3/8"=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
188 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal 781-801-2690- gavin.lighthousedesign@outlook.com
J. Edward Roche, AIA 617-512-9281 - erochejia@gmail.com

DATE:	1/5/26
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

PROPOSED WALL SECTIONS AND DETAILS

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

A8

GENERAL NOTES:

CONTRACTOR RESPONSIBILITY-
CONTRACTOR IS SOLELY RESPONSIBLE FOR:

1. VIEWING SITE AND INCLUDING ANY SPECIAL CONDITIONS NECESSARY TO PERFORM THE WORK AS DESCRIBED IN THE DRAWINGS.
2. ESTABLISHING CONTROL OF THE SITE VIA SURVEY, AND LAYOUT.
3. OBTAINING AND PAYING FOR ALL PERMITS.
4. PAYING FOR ALL TEMPORARY UTILITIES AND FACILITIES.
5. CHECKING AND CONFIRMING ALL DIMENSIONS, AND LAYOUTS.
6. SCHEDULING AND SEQUENCING.
7. CONSTRUCTION MEANS, METHODS AND TECHNIQUES
8. FOLLOW CONSTRUCTION DRAWINGS OR MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE.
9. MAINTAINING DRAWINGS AND PERMITS ON SITE.
10. JOB SITE SAFETY
11. COORDINATION BETWEEN TRADES, AND SUPPLIERS.
12. PROVIDE SCHEDULE TO OWNER AND ARCHITECT,
13. PROVIDE A SCHEDULE OF VALUES TO THE OWNER AND ARCHITECT.
14. TEMPORARY HEAT, ICE AND SNOWPLOWING IS THE RESPONSIBILITY OF THE CONTRACTOR.
15. SITE CLEANLINESS AND CONFORMANCE TO NFPA 241 REQUIREMENTS.
16. REPAIRING ANY WORK DAMAGED BY HIS FORCES WHILE PERFORMING THIS CONTRACT.
17. GIVING WARRANTY FOR HIS WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL COMPLETION.

REVIEW OF WORK BY DESIGNERS-

CONTRACTOR SHALL NOTIFY ARCHITECT BEFORE PROJECT STARTS.

CONTRACTOR SHALL NOTIFY ARCHITECT, ONE WEEK PRIOR TO:

18. POURING CONCRETE
19. INSULATING
20. INSTALLING DRYWALL
21. FINAL INSPECTION

SHOP DRAWINGS-

ALL SHOP DRAWINGS SHALL BE SUBMITTED 30 DAYS AFTER CONTRACT AWARD.

GENERAL CONTRACTOR SHALL APPROVE SHOP DRAWINGS, PRIOR TO SUBMITTING TO ARCHITECT OR ENGINEER.

NON SUBMISSION DOES NOT CONSTITUTE APPROVAL OF ANY WORK.

NO EXCEPTIONS TAKEN DOES NOT RELIEVE THE CONTRACTOR OF PERFORMING ANY OTHER WORK ON THE DRAWINGS.

CONTRACTOR SHALL EXPECT A MINIMUM OF 2 WEEKS FOR DESIGNERS' REVIEW TIME.

ANY VARIANCE FROM THE ORIGINAL DESIGN SHALL BE NOTED.

ANY SUBSTITUTION NOT INDICATED SHALL NOT CONSTITUTE APPROVAL OF A CHANGE.

SHOP DRAWINGS ARE NOT COORDINATION DRAWINGS.

DESIGNERS ARE NOT RESPONSIBLE FOR DIMENSIONS.

CONTRACTOR TO ENSURE MATERIALS AND ASSEMBLIES ARE COMPATIBLE AND ACCEPTABLE TO THE MANUFACTURER. ALL ASSEMBLY MATERIALS SHALL BE FROM A SINGLE SOURCE AS MUCH AS POSSIBLE.

REQUEST FOR INFORMATION -

ONLY RFI'S SENT THROUGH BY THE OWNER AND AWARDING CONTRACTOR WILL BE ANSWERED. SUBCONTRACTORS MUST SUBMIT RFI'S THROUGH THE GENERAL CONTRACTOR.

BIDDING PHASE - OWNER AND AWARDING CONTRACTOR ARE RESPONSIBLE FOR COMPILING AND AGGREGATING RFI'S AND SUBMITTING TO THE ARCHITECT OR DESIGNER AT ONE TIME ONLY. ARCHITECT OR DESIGNER HAS ONE WEEK TO RESPOND. QUESTIONS MUST BE COMPLETE , NOT PIECEMEAL AND SHOULD BE SUBMITTED BY CSI DIVISION.

CHANGE ORDERS-

CONTRACTOR SHALL VISIT THE SITE AND BE THOROUGHLY ACQUAINTED WITH THE PROJECT PRIOR TO SUBMITTING A PRICE. ADDITIONAL MONEY WILL NOT BE GRANTED FOR WORK NOT CLARIFIED PRIOR TO BIDDING.

DESIGNER SHALL BE NOTIFIED OF ANY CHANGE TO THE DRAWINGS, UNFORESEEN FIELD CONDITIONS OR DISCREPANCIES PRIOR TO PERFORMING WORK.

ANY PROPOSED CHANGES SHALL BE ACCOMPANIED WITH A WRITTEN DESCRIPTION OR A SKETCH FOR CLARIFICATION.

ALL CHANGE ORDERS SHALL BE APPROVED PRIOR TO PERFORMING WORK.

CHANGE ORDERS SHALL BE PRICED EITHER LUMP SUM OR UNIT PRICE OR TIME AND MATERIALS.

ANY SUBSTITUTION REQUEST SHALL BE MADE VIA CHANGE ORDER, AND NOT VIA SHOP DRAWINGS UNLESS AGREED TO.

ANY CHANGE SHALL STATE THE CREDIT OR COST ADD AND/OR ANY CHANGE TO THE SCHEDULE.

REQUISITIONS-

ANY REQUISITION REQUIRED TO BE SIGNED BY THE ARCHITECT SHALL BE SUBMITTED A MINIMUM OF ONE WEEK PRIOR TO BEING SUBMITTED TO THE BANK FOR REVIEW.

CONTRACTOR SHALL PROVIDE RECEIPTS AND INSURANCE CERTIFICATES FOR ANY MATERIALS FOR PAYMENT FOR ANY UNINSTALLED MATERIALS.

FOUNDATION NOTES:

1. THE FOUNDATION HAS BEEN DESIGNED FOR 4000 PSF ALLOWABLE SOIL BEARING CAPACITY.
2. ALL BACKFILL UNDER STRUCTURAL SLABS, MATS, AND FOOTINGS WILL BE ENGINEERED BACKFILL COMPACTED IN SPECIFIC LIFTS TO 95 PERCENT OF MAXIMUM DRY DENSITY, UNLESS OTHERWISE INDICATED OR SPECIFIED.
3. ALL EMBANKMENTS AND BACKFILL COMPACTED IN SPECIFIED LIFTS TO 90 PERCENT OF MAXIMUM DRY DENSITY, UNLESS OTHERWISE INDICATED OR SPECIFIED.
4. PROVIDE SHEETING, BRACING, AND UNDERPINNING AS REQUIRED TO PRESERVE ADJACENT STRUCTURES.
5. FOUNDATIONS SHALL NOT BE POURED IN WATER OR ON FROZEN GROUND.
6. VERIFY LOCATIONS AND REQUIREMENTS FOR INSERTS, SLEEVES, CONDUITS, EMBEDMENT AND PENETRATIONS WITH RESPECTIVE TRADES BEFORE PLACING CONCRETE.
7. DOWELS FROM FOUNDATIONS INTO PIERS, COLUMNS, BUTTRESSES OR WALLS SHALL BE THE SAME SIZE AND NUMBER AS REINFORCEMENT IN PIERS, COLUMNS, BUTTRESSES OR WALLS ABOVE, EXCEPT AS OTHERWISE SHOWN.
8. CONTRACTOR SHALL PROVIDE CONTINUOUS DRAINAGE BY MECHANICAL METHODS TO CONTROL SURFACE AND UNDERGROUND WATER, AS REQUIRED DURING CONSTRUCTION.
9. CONTRACTOR SHALL ENSURE THAT GROUND WATER LEVELS UNDER ADJACENT STRUCTURES AND PROPERTIES ARE NOT ALTERED.
10. ALL FOUNDATION UNITS (PIERS) SHALL BE CENTERED SUPPORT MEMBERS, UNLESS OTHERWISE NOTED ON PLANS.
11. COORDINATE UNDER FLOOR AND PERIMETER DRAIN REQUIREMENTS WITH ARCHITECTURAL, CIVIL AND PLUMBING DRAWINGS AND THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
12. ALL BEARING MATERIALS SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL DETERMINE THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
13. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 4'-0" BELOW FINAL FINISHED GRADE FOR FROST PROTECTION.
14. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR & SLAB AT TOP AND BOTTOM ARE IN PLACE.
15. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
16. ALL FOOTING EXCAVATIONS ARE TO BE FINISHED BY HAND.
17. SEE THE REQUIREMENTS OF THE SPECIFICATIONS FOR BACKFILLING UNDER OR ADJACENT TO ANY PORTION OF THE BUILDING.
18. PROTECT IN-PLACE FOUNDATIONS, SLABS AND ADJACENT STRUCTURES, NEW CONSTRUCTION, STREET UTILITIES FROM FROST PENETRATION OR DAMAGE FROM CONSTRUCTION ACTIVITIES UNTIL THE PROJECT IS COMPLETED.
19. SLAB ON GRADE SHALL BEAR DIRECTLY ON A MIN. 12" THICK LAYER OF COMPACTED STRUCTURAL FILL, OR MIN. 6" THICK LAYER OF CRUSHED STONE, PLACED ABOVE PROOFROLLED AND COMPACTED EXISTING FILL, OR ABOVE UNDISTURBED NATURAL TILL. SHOULD BEDROCK BE ENCOUNTED AT OR WITHIN 12" OF BOTTOM OF SLAB, BEDROCK SHALL BE OVER EXCAVATED A MIN. OF 12" BELOW BOTTOM OF SLAB.
20. WHERE BEDROCK IS ENCOUNTED AT OR WITHIN 12" OF DESIGN FOOTING GRADE, IT SHOULD BE OVER EXCAVATED A MIN. OF 12" BELOW THE BOTTOM OF PROPOSED FOOTING. BEDROCK EXCAVATIONS SHOULD EXTEND A MIN. OF 12" BEYOND FOOTING EDGE. LOOSE ROCK PIECES SHOULD BE REMOVED WITHIN THE FOOTING BEARING ZONE, AND OPEN BEDROCK JOINTS SHOULD BE CHOKED WITH CRUSHED STONE OR FILLED WITH CONCRETE PRIOR TO PLACING THE SOIL CUSHION.

CONCRETE NOTES:

1. ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF:
   - **3000 PSI** FOR FOUNDATION WALL, EXTERIOR WALLS AND OTHER VERTICAL CONCRETE SURFACES EXPOSED TO THE WEATHER.
2. MAXIMUM SLUMP SHALL NOT EXCEED 3"; AND MAXIMUM; COARSE AGGREGATE SIZE SHALL NOT EXCEED 3/4" IN DIAMETER.

REINFORCING NOTES:

1. ALL REINFORCEMENT, EXCEPT FOR TIES AND STIRRUPS, SHALL CONFORM TO ASTM 615-60.
2. ALL REINFORCEMENT FOR TIES AND STIRRUPS SHALL CONFORM TO ASTM 615-40.
3. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185-70 SPECIFICATIONS.
4. ALL REINFORCEMENT SHALL BE INSPECTED AND APPROVED BY THE ARCHITECT OR HIS ENGINEER PRIOR TO THE PLACEMENT OF ANY CONCRETE.
5. THE CONTRACTOR SHALL SUBMIT FOUR PRINTS OF SHOP DRAWINGS: SHOWING ALL REINFORCING DETAILS, CHAIR BARS, HIGH CHAIRS, SLAB BOLSTERS, ETC. TO THE ARCHITECT FOR HIS APPROVAL. THE CONTRACTOR SHALL RECEIVE WRITTEN APPROVED SHOP DRAWINGS FROM THE ARCHITECT OR HIS ENGINEER PRIOR TO THE FABRICATION OF REINFORCEMENT.
6. CLEARANCES OF MAIN REINFORCING FROM ADJACENT CONCRETE SURFACES SHALL BE AS FOLLOWS:
   A. FOOTINGS — 3 INCHES
   B. SIDES OF FOUNDATIONS WALLS. EXPOSED FACES OF FOUNDATIONS. SIDES OF COLUMNS/PIERS, SLABS ON GRADE FROM TOP SURFACE — 2 INCHES
   C. INTERIOR FACES OF FOUNDATIONS, TOP REINFORCING IN SLABS EXPOSED TO THE WEATHER — 1-1/2 INCHES
   D. TOP STEEL OF INTERIOR SLABS — 1 INCHES
7. MAXIMUM DEVIATION FROM THESE REQUIREMENTS SHALL BE 1/4" OF SECTIONS 10" OR LESS, 1/2" FOR SECTIONS GREATER THAN 10".

WOOD NOTES:

1. ALL LUMBER SHALL HAVE A MOISTURE CONTENT OF NOT MORE THAN 19%.
2. ALL FRAMING LUMBER SHALL BE #2 SPF, OR BETTER, HAVING A MINIMUM:
   FB=875 PSI, FV=135 PSI, E=1,300,000 PSI.
3. ALL JOIST SPANS SHALL HAVE ONE ROW OF 1" X 3: CROSS BRIDGING AT MID SPAN AND NOT MORE THAN 8'-O" O.C.
4. ALL STUD BEARING WALLS SHALL HAVE ONE ROW OF 2X HORIZONTAL BLOCKING AT 1/2 STUD HEIGHT, AND NOT MORE THAN 6'-O" O.C. MAXIMUM.
5. PROVIDE AND INSTALL ALL NECESSARY TIMBER CONNECTORS WITH ADEQUATE STRENGTH.
6. PROVIDE DOUBLE JOIST BELOW PARTITIONS PARALLEL TO JOIST FRAMING.
7. PROVIDE SOLID BRIDGING BELOW PARTITIONS PERPENDICULAR TO JOIST FRAMING.
8. PROVIDE SOLID BRIDGING BETWEEN JOIST FRAMING MEMBERS WHEN BEARING ON STUD PARTITIONS OR BEAMS.
9. PROVIDE A CONTINUOUS BAND JOIST AT EXTERIOR STUD WALLS.
10. PROVIDE DIAGONAL METAL STRAP BRACING AT ALL CORNERS AND WALL INTERSECTIONS, AT THE INSIDE FACE OF STUDS, FROM TOP PLATE TO FLOOR PLATE AT A 45 DEGREE ANGLE WITH A SIMPSON TYPE "RCWB" STRAP, OR EQUAL.
11. ALL BUILT-UP BEAMS SHALL BE BOLTED WITH ½" Ø THRU BOLTS, MEETING A307 STANDARDS, OR, AS NOTED ON DRAWINGS.
12. ALL STRUCTURAL FRAMING FOR STAIRS IS DONE BY OTHERS.

WOOD LINTEL SCHEDULE:

Lintels over openings in bearing walls shall be as follows;or as noted on drawings.

Span of opening:	Size: 2x6 studs	Size: 2x4 studs
less than 4'-0"	3 - 2x4	2 - 2x4
up to 6'-0"	3 - 2x6	2 - 2x6
up to 8'-0"	3 - 2x8	2 - 2x8
up to 10'-0"	3 - 2x10	2 - 2x10

DESIGN CRITERIA:

ALL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM TO THE 10th EDITION OF THE MASSACHUSETTS BUILDING CODE.

DESIGN LIVE LOAD = 40 POUNDS PER SQUARE FOOT
- FLOORS
- PRIVATE DECK

DESIGN SNOW LOAD = 40 POUNDS PER SQUARE FOOT WITH SNOW DRIFT WHERE APPLICABLE.

WIND LOAD = 127 MILES PER HOUR

SEISMIC: Ss = 0.127
S1 = 0.069

ALL LUMBER SHALL BE #2 SPF, Fb= 875 PSI, Fv=135 PSI.

COMMONWEALTH OF MASSACHUSETTS — DOV KIRSZTAJN — STRUCTURAL — No. 31457 — REGISTERED PROFESSIONAL ENGINEER

Location

PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

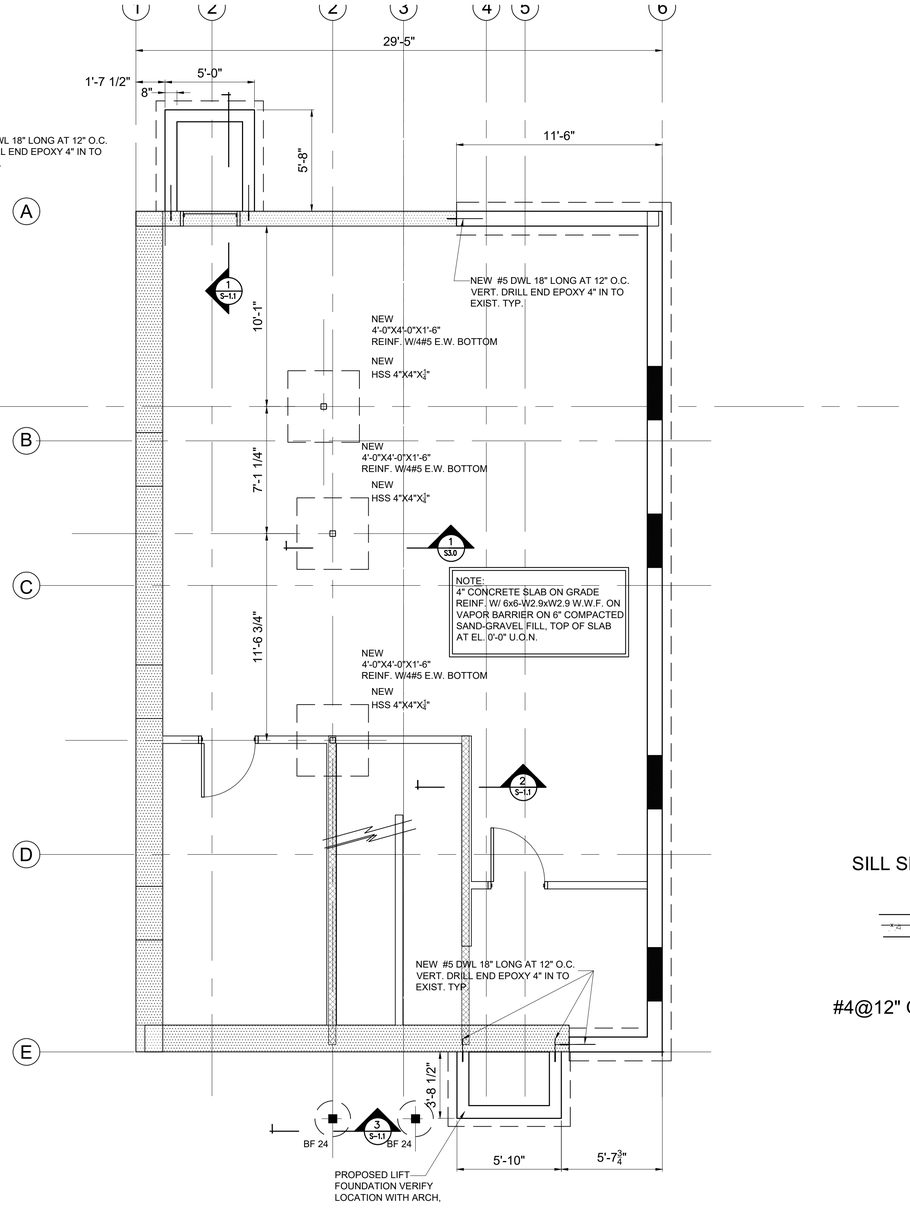
Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

Drawing Name

GENERAL NOTES

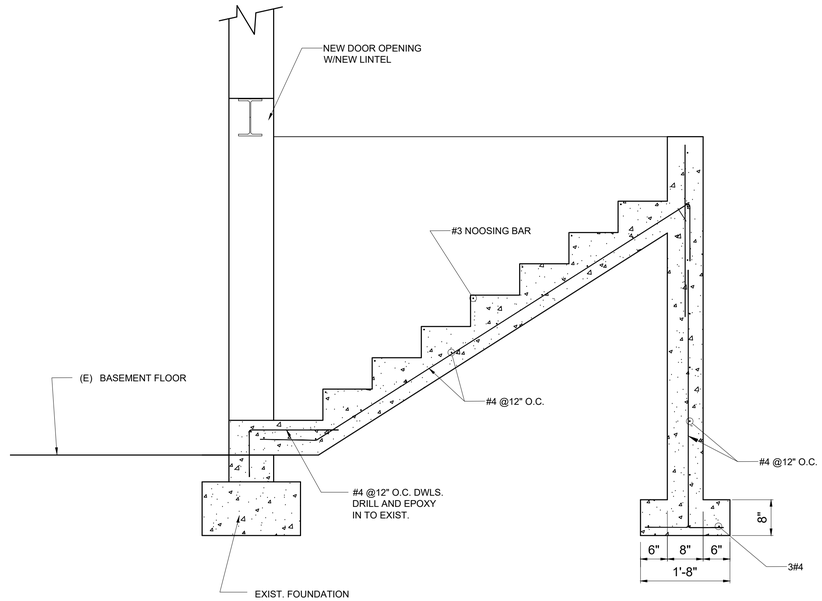
Sheet No.

S-1.0

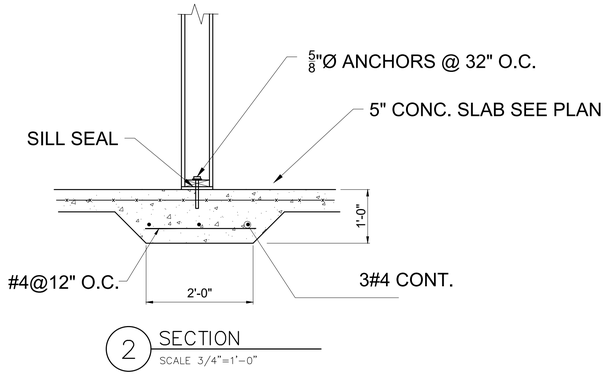


1 FOUNDATION PLAN
1/4" = 1'-0"

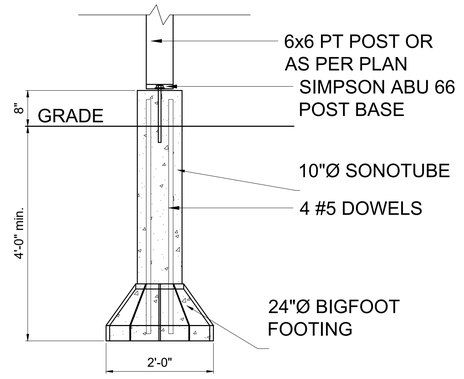
DRAWING NOTES:
1. ▨ INDICATES EXISTING FOUNDATION TO REMAIN



1 SECTION
SCALE 3/4"=1'-0"



2 SECTION
SCALE 3/4"=1'-0"



MIN. 2 TON BEARING CAPACITY

3 SECTION
SCALE 3/4"=1'-0"

Location

PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

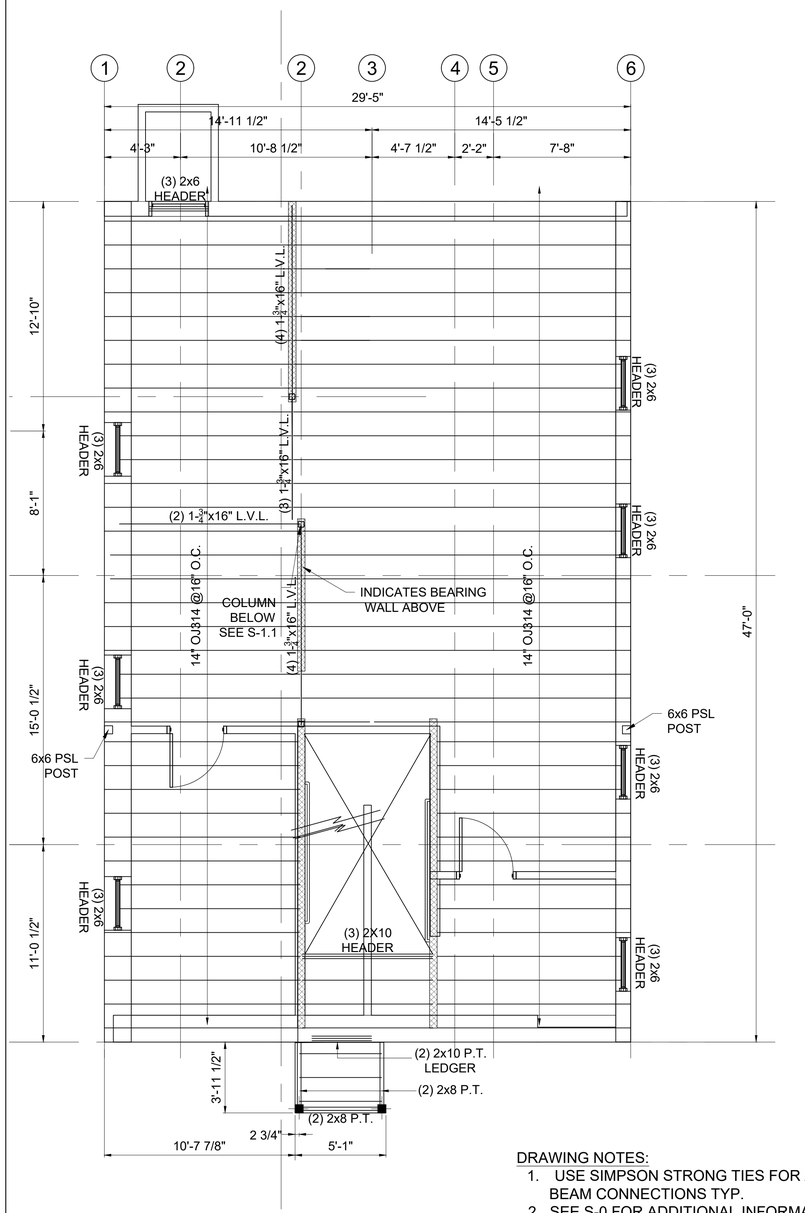
Drawing Name

FOUNDATION PLAN

Sheet No.

S-1.1

COMMONWEALTH OF MASSACHUSETTS
DOV KIRSZTAJN
STRUCTURAL
No. 31481
REGISTERED PROFESSIONAL ENGINEER



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

NOTES:
1. ALL FLOOR JOISTS TO BE 14" WOOD TRUSSES. WOOD TRUSSES DESIGNED AND PROVIDED BY TRUSS MANUFACTURER.
2. ALL WOOD POSTS SUPPORTING LVL BEAMS TO BE 6x6 VERSA-LAM POST UNLESS OTHERWISE NOTED.
3. INSTALL BLOCKING AT ALL EXTERIOR WALL SHEATHING JOINTS AND SHEAR WALL SHEATHING JOINTS.
4. ALL SHEAR WALLS SHEATHINGS SEE SCHEDULE 2/S-2.1.
5. HD = HOLDDOWN; HATCHED WALL ▨ INDICATES SHEAR WALL, ALL EXTERIOR STUD WALLS TO BE SHEAR WALLS.
6. INSTALL SOLID BLCOKINGS AT 8' ON CENTER ON ALL WOOD TRUSSES.
7. INSTALL L4X6x$\frac{3}{8}$ RELIEVING ANGLES AROUND PERIMETER WHERE APPLICABLE, SEE DETAIL 3/S-2.3

BEARING WALL STUD SCHEDULE (INSTALL MIDDLE BLOCKING BETWEEN ALL STUDS)			
FLOOR	3RD FL	4TH FL	5TH FL
INTERIOR STUD SIZES (SINGLE OR DOUBLE 2X6 WALLS)	2x6 @ 12"O.C.	2x6 @ 16"O.C.	2x6 @16"O.C.
EXTERIOR STUD SIZES (SINGLE 2X6 WALLS)	2x6 @ 16"O.C.	2x6 @ 16"O.C.	2x6 @16"O.C.

DRAWING NOTES:
1. USE SIMPSON STRONG TIES FOR ALL JOIST TO BEAM CONNECTIONS TYP.
2. SEE S-0 FOR ADDITIONAL INFORMATION
3. SEE S-2.3 FOR FRAMING DETAILS
4. SEE ARCH. DRAWINGS FOR ADDITIONAL INFO.
5. ▨ INDICATES 2X8 @16" O.C. PORCH ROOF FRAMING

COMMONWEALTH OF MASSACHUSETTS DOV KIRSZTAJN STRUCTURAL No. 31460 REGISTERED PROFESSIONAL ENGINEER

Location

PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

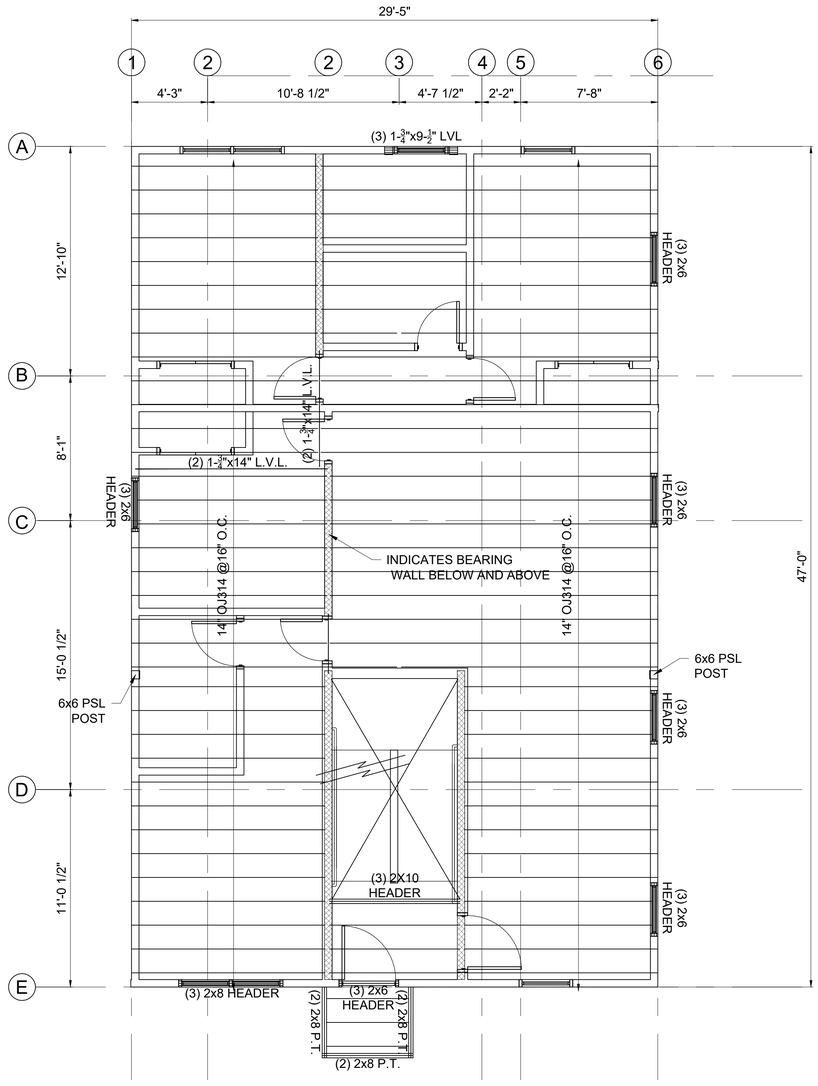
Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

Drawing Name

FIRST FLOOR FRAMING PLAN

Sheet No.

S-1.2



1 SECOND FLOOR FRAMING PLAN

1/4" = 1'-0"

Location

PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

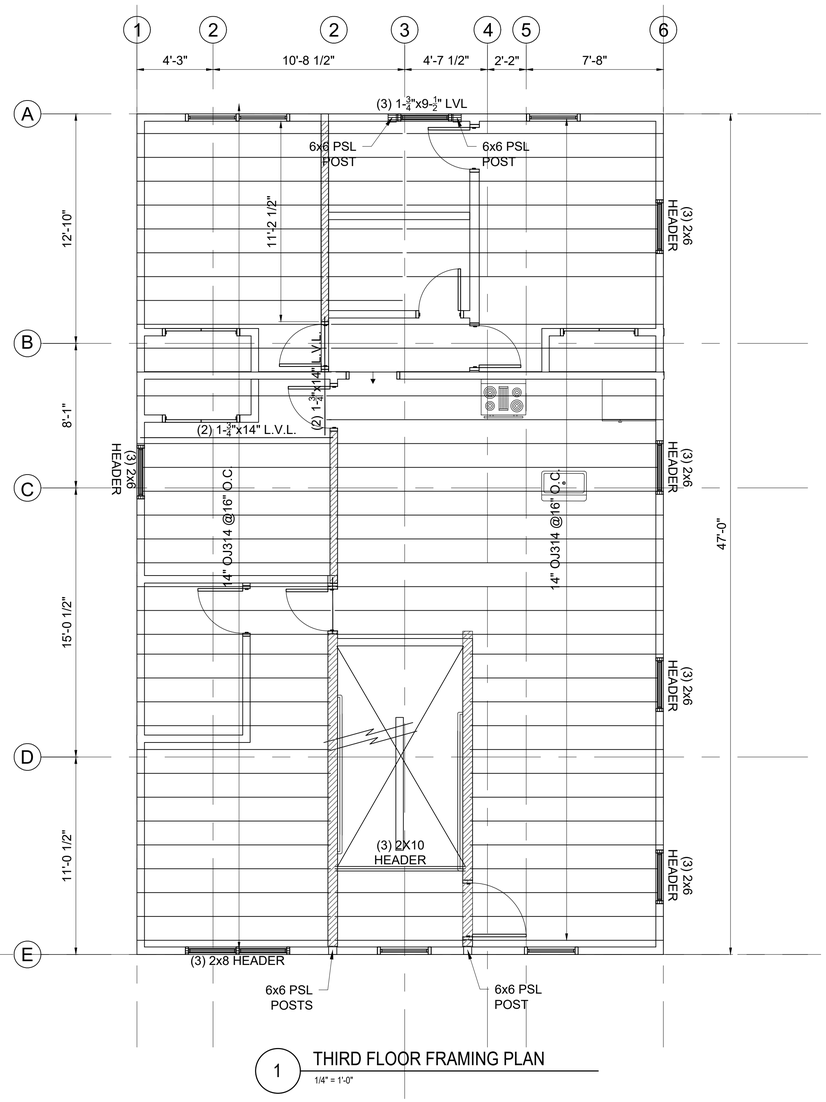
Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

Drawing Name

SECOND FLOOR FRAMING PLAN

Sheet No.

S-1.3



1 THIRD FLOOR FRAMING PLAN

1/4" = 1'-0"

Location

PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

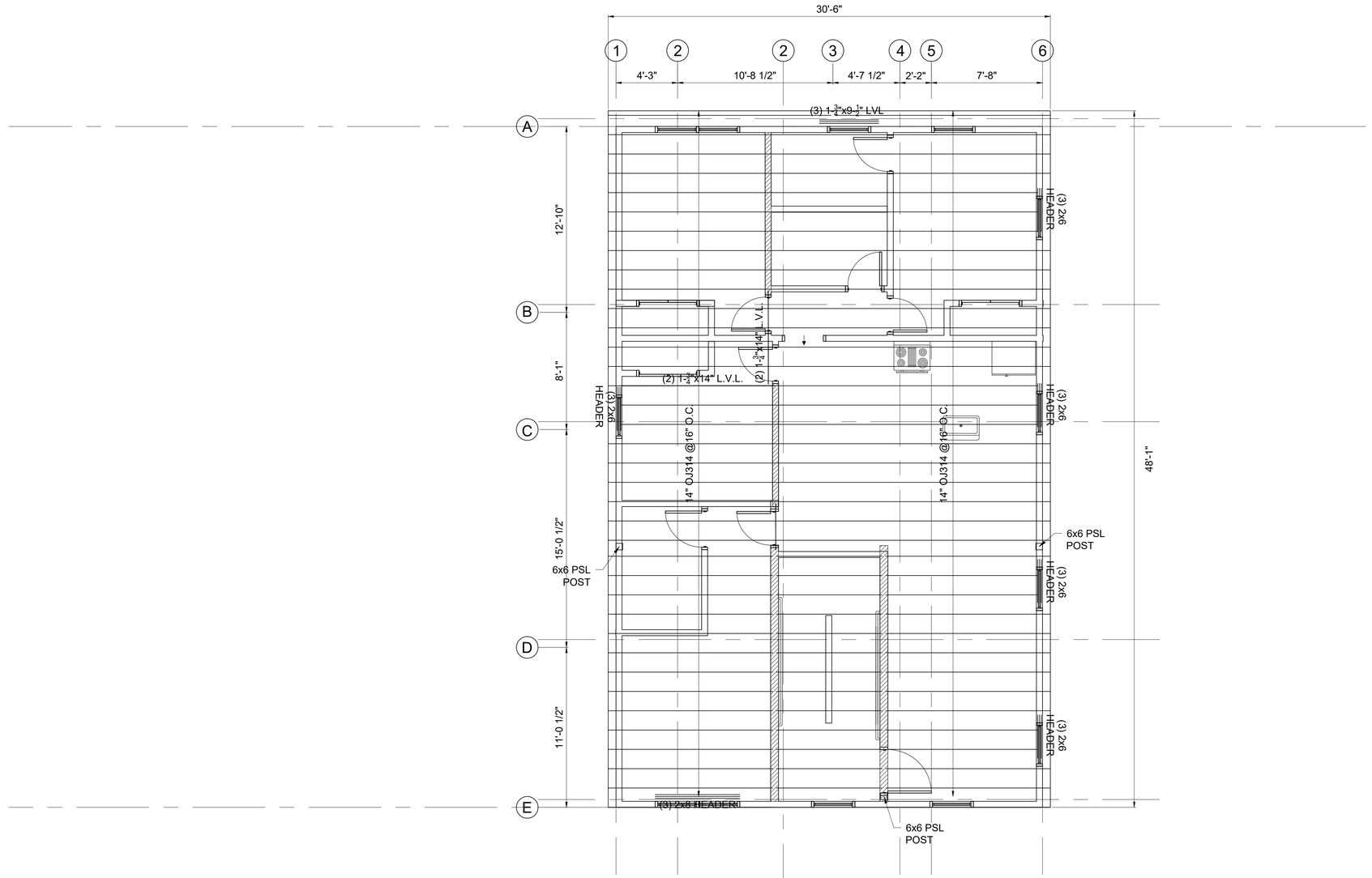
Drawing Name

THIRD FLOOR FRAMING PLAN

Sheet No.

S-1.4

COMMONWEALTH OF MASSACHUSETTS DOV KIRSZTAJN No. 31451 REGISTERED PROFESSIONAL ENGINEER



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

Location

Choo & Company, Inc.
One Billings Road Quincy, MA
617-786-7727 fax 617-786-7715

PROPOSED 3 FAMILY RENOVATION
7 THORNLEY STREET
DORECHESTER, MA 02125

No.	Description	Date

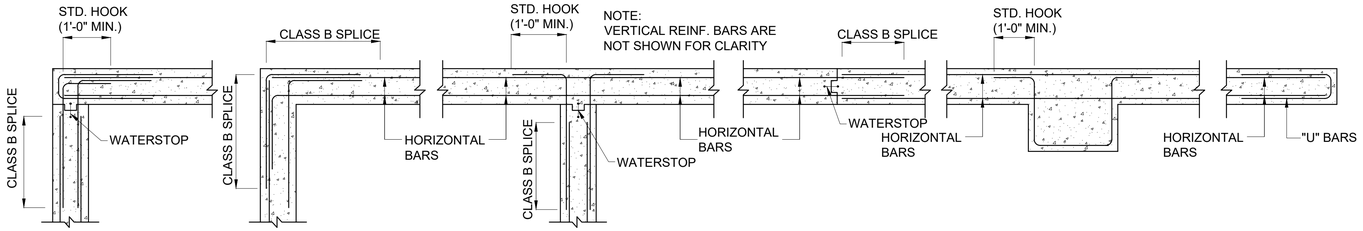
Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

Drawing Name

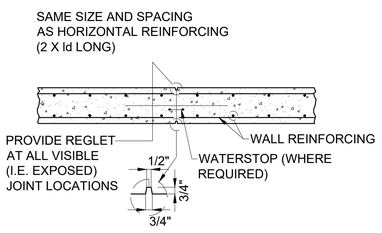
ROOF FRAMING PLAN

Sheet No.

S-1.5

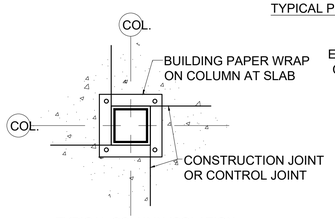


IF CONSTRUCTION JOINT EXISTS AT CORNERS | AT CORNERS | AT INTERSECTIONS | AT CONSTRUCTION JOINTS | AT PILASTERS

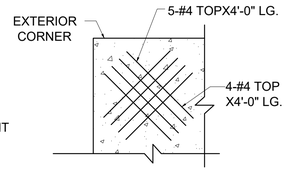


TYPICAL VERTICAL WALL CONTROL JOINT

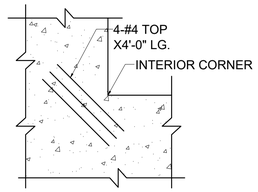
TYPICAL PLAN OF HORIZONTAL WALL REINFORCING



TYPICAL COLUMN ISOLATION JOINT DETAIL
SCALE: 1"=1'-0"



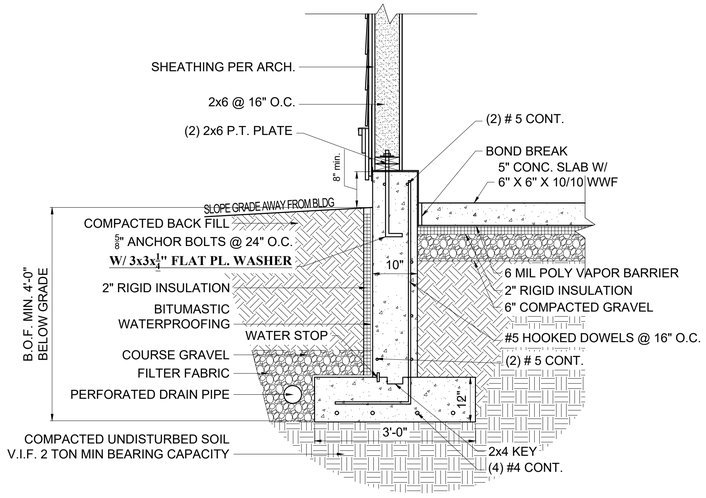
AT EXTERNAL



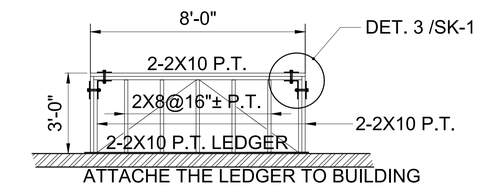
AT INTERNAL

ADDITIONAL REINFORCING AT THE SLAB CORNERS

1 TYPICAL CONCRETE DETAILS
1/2" = 1'-0"

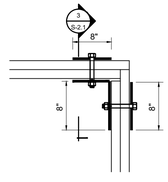


2 TYPICAL FOUNDATION WALL SECTION
3/4" = 1'-0"

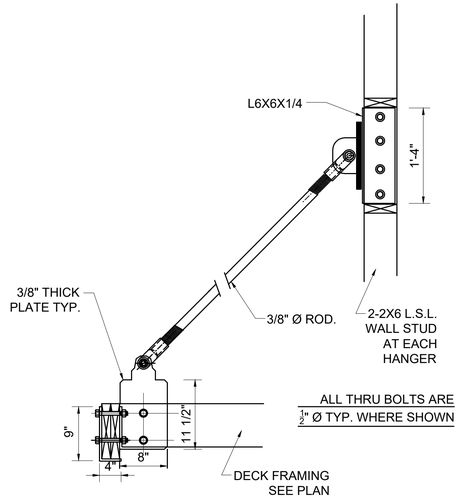


ATTACHE THE LEDGER TO BUILDING STRUCTURE WITH 5/8"Ø LAG BOLTS SPACET AT 18" O.C.
SEE ARCH. FOR LOCATION

TYP. BALCONY FRAMING PLAN
SCALE: 3/8"=1'-0"



DETEIL 3
SCALE: 1"=1'-0"



ALL THRU BOLTS ARE 1/2" Ø TYP. WHERE SHOWN

SECTION 3
SCALE: 1"=1'-0"

Location

PROPOSED 3 FAMILY RENOVATION 7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

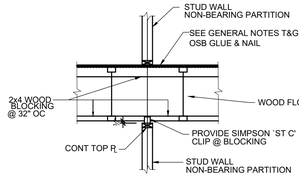
Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

Drawing Name

FOUNDATION DETAILS

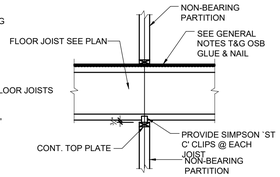
Sheet No.

S-2.1



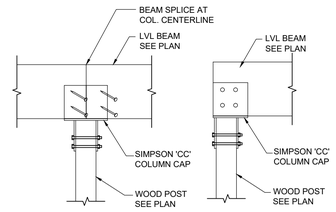
TYPICAL FRAMING AT NON-BEARING PARTITIONS

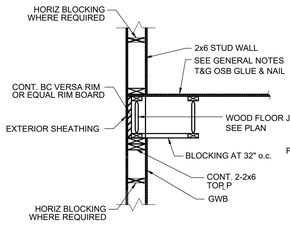
PARALLEL TO FRAMING
(REFER TO ARCH DWGS FOR WALL LOCATIONS)



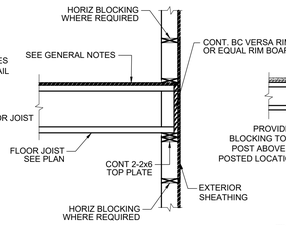
TYPICAL FRAMING
AT NON-BEARING PARTITIONS

PERPENDICULAR TO FRAMING
(REFER TO ARCH DWGS FOR WALL LOCATIONS)

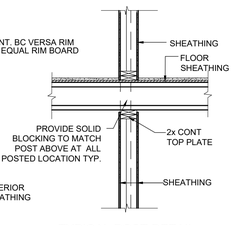




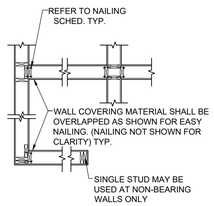
TYPICAL SECTION AT EXTERIOR WALL



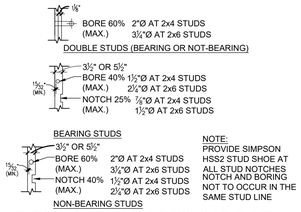
TYPICAL SECTION AT EXTERIOR WALL



TYPICAL POST DETAIL

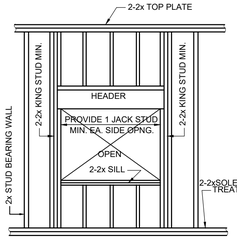


TYPICAL PLAN DETAILS

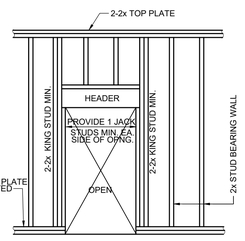


TYPICAL CUTTING AND BORING STUD DETAIL

HEADER SCHEDULE (U.N.O.)			
BEARING WALLS			
OPNG. WIDTH	HDR. DEPTH	KING STUDS	TRIMMER
3'-6" OR LESS	6"	2-2x6	1-2x6
3'-6" TO 6'-6"	8"	3-2x6	1-2x6
6'-6" TO 8'-6"	SEE PLAN	5-2x6	2-2x6
8'-6" TO 16'-0"	SEE PLAN	7-2x6	3-2x6
NON-BEARING WALLS			
OPNG. WIDTH	HDR. DEPTH	KING STUDS	TRIMMER
4'-0" OR LESS	6"	2-2x6	1-2x6
4'-0" TO 7'-6"	8"	3-2x6	1-2x6
7'-6" TO 10'-0"	10"	5-2x6	2-2x6
10'-0" TO 14'-0"	12"	6-2x6	3-2x6



TYP. WINDOW OPENING



TYPICAL DOOR FRAMING

1 TYPICAL WOOD DETAILS

1/2" = 1'-0"

RECOMMENDED FASTENING SCHEDULE

BUILDING ELEMENT	NAIL SIZE AND TYPE	NUMBER AND LOCATION
STUD TO SOLE PLATE	8D COMMON 16D COMMON	4 TOE-NAIL OR 2 DIRECT-NAIL
STUD TO CAP PLATE	16D COMMON	2 TOE-NAIL OR 2 DIRECT-NAIL
DOUBLE STUDS	10D COMMON	12" O.C. DIRECT
CORNER STUDS	16D COMMON	24" O.C. DIRECT
SOLE PLATE TO JOIST OR BLOCKING	16D COMMON	16" O.C.
DOUBLE CAP PLATE	10D COMMON	16" O.C. DIRECT
CAP PLATE LAPS	10D COMMON	2 DIRECT-NAIL
RIBBON STRIP, 6" OR LESS	10D COMMON	2 EACH DIRECT BEARING
RIBBON STRIP, 6" OR MORE	10D COMMON	3 EACH DIRECT BEARING
ROOF RAFTER TO PLATE	8D COMMON	3 TOE-NAIL
JACK RAFTER TO RIDGE	16D COMMON	2 TOE-NAIL OR DIRECT-NAIL
JACK RAFTER TO HIP	10D COMMON 16D COMMON	3 TOE-NAIL OR 2 DIRECT-NAIL
FLOOR JOISTS TO STUDS (NO CEILING JOISTS)	10D COMMON 10D COMMON	5 DIRECT OR 3 DIRECT
FLOOR JOISTS TO STUDS (WITH CEILING JOISTS)	10D COMMON	2 DIRECT
FLOOR JOISTS TO SILL OR GIRDER	3D COMMON	3 TOE-NAIL
LEDGER STRIP	16D COMMON	3 EACH DIRECT
CEILING JOISTS TO PLATE	16D COMMON	3 TOE-NAIL
CEILING JOISTS (LAPS OVER PARTITION)	10D COMMON	3 DIRECT-NAIL
CEILING JOISTS (PARALLEL TO RAFTER)	10D COMMON	3 DIRECT
COLLAR BEAM	10D COMMON	3 DIRECT
BRIDGING TO JOISTS	8D COMMON	2 EACH DIRECT END
DIAGONAL BRACE (TO STUD AND PLATE)	8D COMMON	2 EACH DIRECT BEARING
TAIL BEAMS TO HEADERS (WHEN NAILING PERMITTED)	20D COMMON	1 EACH END 4 SQ. FT. FLOOR AREA
HEADER BEAMS TO TRIMMERS	20D COMMON	1 EACH END 8 SQ. FT. FLOOR AREA
1" ROOF DECKING (OVER 6" IN WIDTH)	8D COMMON 8D COMMON	2 EACH DIRECT RAFTER 3 EACH DIRECT RAFTER
1" SUBFLOORING (6" OR LESS)	8D COMMON	2 EACH DIRECT JOIST
1" SUBFLOORING (8" OR MORE)	8D COMMON	3 EACH DIRECT JOIST
2" SUBFLOORING	16D COMMON	2 EACH DIRECT JOIST
1" WALL SHEATHING (8" OR LESS IN WIDTH)	8D COMMON	2 EACH DIRECT STUD
1" WALL SHEATHING (OVER 8" IN WIDTH)	8D COMMON	3 EACH DIRECT STUD
PLYWOOD ROOF & WALL SHEATHING (1/2" OR LESS) (5/8" OR GREATER) (5/16",3/8", OR 1/2") (OVER 6" IN WIDTH)	 6D COMMON 8D COMMON 16 GAUGE GALVANIZED WIRE STAPLES, 3/8" MINIMUM CROWN; LENGTH OF 1" PLUS PLYWOOD THICKNESS SAME AS IMMEDIATELY ABOVE	 6" O.C. DIRECT EDGES & 12" O.C. INTERMEDIATE 6" O.C. DIRECT EDGES & 12" O.C. INTERMEDIATE 4" O.C. EDGES & 8" O.C. INTERMEDIATE 2 1/2" O.C. EDGES & 5" O.C. INTERMEDIATE
PLYWOOD SUBFLOORING (1/2") (3/8", 3/4") (1", 1 1/8") (1/2") (3/8")	 6D COMMON OR 6D ANNULAR OR SPIRAL THREAD 8D COMMON OR 8D ANNULAR OR SPIRAL THREAD 10D COMMON OR 8D RING SHANK OR 8D ANNULAR OR SPIRAL THREAD 16D GALVANIZED WIRE STAPLES 3/8" MINIMUM CROWN; 1 3/8' LENGTH	 6" O.C. DIRECT EDGES & 10" O.C. INTERMEDIATE 6" O.C. DIRECT EDGES & 10" O.C. INTERMEDIATE 6" O.C. DIRECT EDGES & 6" O.C. INTERMEDIATE 4" O.C. EDGES & 7" O.C. INTERMEDIATE 2 1/2" O.C. EDGES & 4" O.C. INTERMEDIATE
BUILT-UP GIRDERS AND BEAMS	20D COMMON	32" O.C. DIRECT
CONTINUOUS HEADER TO STUD	8D COMMON	4 TOE-NAIL
CONTINUOUS HEADER, TWO PIECES	16D COMMON	16" O.C. DIRECT
1/2" FIBER BOARD SHEATHING	1 1/2" GALVANIZED ROOFING NAIL OR 16 GAUGE STAPLE, 1 1/2" LONG WITH MIN. CROWN OF 7/16"	3" O.C. EXTERIOR EDGE 6" O.C. INTERMEDIATE
25/32" FIBER BOARD SHEATHING	1 3/4" GALVANIZED ROOFING NAIL OR 8D COMMON NAIL OR 16 GAUGE STAPLE, 1 1/2" LONG WITH MIN. CROWN OF 7/16"	3" O.C. EXTERIOR EDGE 6" O.C. INTERMEDIATE
GYPSUM SHEATHING	12 GAUGE 1 3/4" LARGE HEAD CORROSION-RESISTANT	4" O.C. EDGE 8" O.C. INTERMEDIATE
PARTICLE BOARD UNDERLAYMENT (1/4"-3/4")	6D ANNULAR THREADED	6" O.C. DIRECT EDGES 10" O.C. INTERMEDIATE
PARTICLE BOARD ROOF AND WALL SHEATHING 1/2" OR LESS	6D COMMON	6" O.C. DIRECT EDGES 12" O.C. INTERMEDIATE
5/8" OR GREATER	8D COMMON	6" O.C. DIRECT EDGES 12" O.C. INTERMEDIATE
PARTICLE BOARD SUBFLOORING (5/8" OR GREATER)	8D COMMON	6" O.C. DIRECT EDGES 12" O.C. INTERMEDIATE
SHINGLES, WOOD*	NO. 14 B&S GAGE CORROSION RESISTIVE	2 EACH BEARING
WEATHER BOARDING	8D CORROSION	2 EACH BEARING

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

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

No.	Description	Date

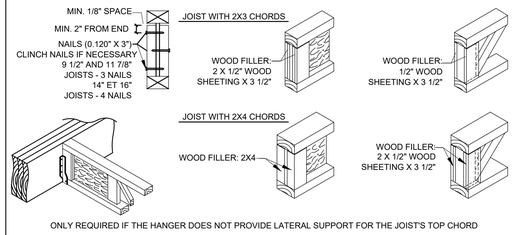
Project No: 2025132
Scale: AS NOTED
Date: 07-18-2025
Drawn By: MM

Drawing Name

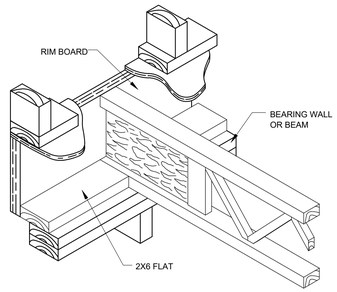
WOOD DETAILS

Sheet No.

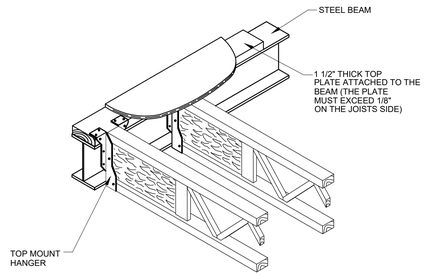
S-2.2



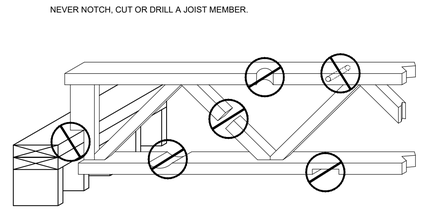
16 LATERAL BRACING FOR A SINGLE JOIST W/ HANGER
1/2" = 1'-0"



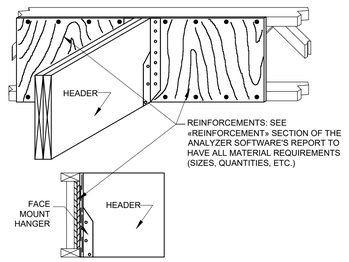
12 MULTIPLE LEVEL BRICK AT LOWER LEVEL
1/2" = 1'-0"



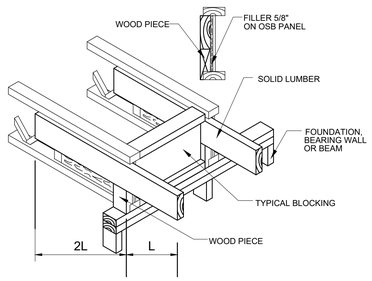
8 STEEL BEAM CONN. W/ TOP PLATE AND HANGER
1/2" = 1'-0"



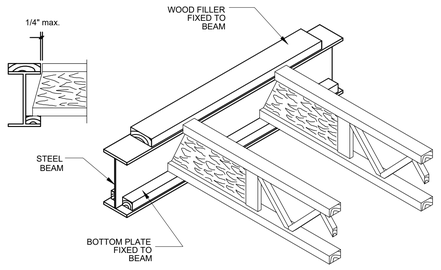
4 CONDITIONS THAT ARE FORBIDDEN
1/2" = 1'-0"



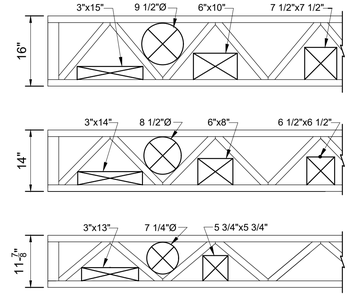
15 CONCENTRATED SIDE LOAD FACE MOUNT HANGER
1/2" = 1'-0"



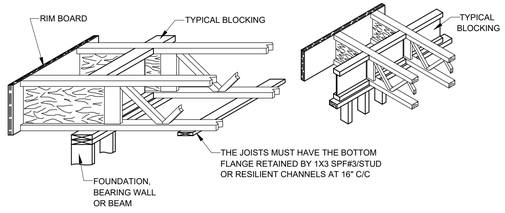
11 CANTILEVERED BALCONY
1/2" = 1'-0"



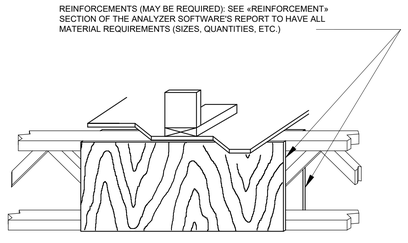
7 STEEL BEAM BOTTOM FLANGE BEARING HANGER
1/2" = 1'-0"



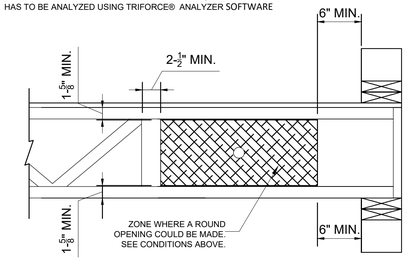
3 WOOD TRUSS MECHANICAL CLEARANCES
1/2" = 1'-0"



14 CANTILEVERED JOIST
1/2" = 1'-0"



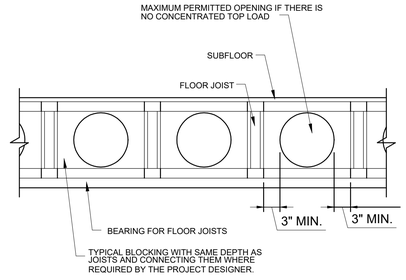
10 CONCENTRATED TOP LOAD
1/2" = 1'-0"



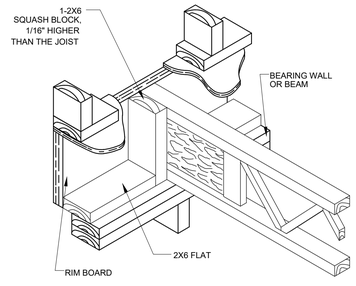
CONDITIONS :
1. ONE (1) ROUND HOLE OF 1.5" OR LESS DIAMETER CAN BE MADE IN THIS ZONE WITHOUT ANY ADJUSTMENT OF THE JOIST CAPACITY.

2. FOR ANY OTHER QUANTITY OR TYPE OF HOLE, THE JOIST CAPACITY HAS TO BE ANALYZED USING TRIFORCE® ANALYZER SOFTWARE

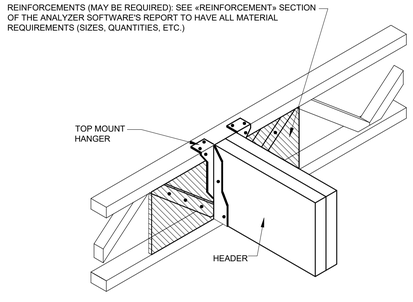
6 OPENINGS IN THE OSB END PANEL OF JOIST
1/2" = 1'-0"



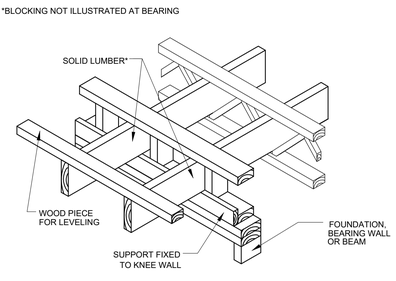
2 TYP. BLOCKING DETAIL
1/2" = 1'-0"



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

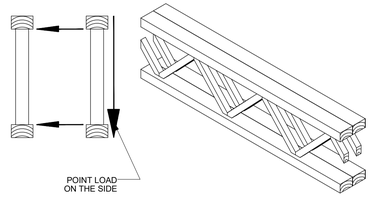


9 CONCENTRATED SIDE LOAD TOP MOUNT HANGER
1/2" = 1'-0"



5 CANTILEVER PERPENDICULAR TO OPEN JOIST
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"

Location

PROPOSED 3 FAMILY RENOVATION
7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

COMMONWEALTH OF MASSACHUSETTS
DOV KIRSZTUN
STRUCTURAL
No. 31451
REGISTERED PROFESSIONAL ENGINEER

No.	Description	Date

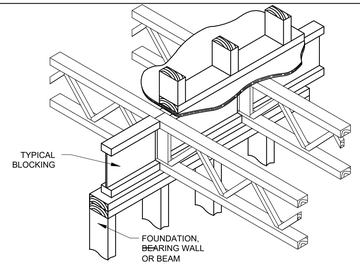
Project No: 2025132
Scale: AS NOTED
Date: 08-08-2025
Drawn By: MM

Drawing Name

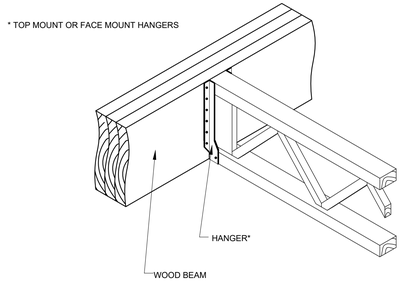
WOOD DETAILS

Sheet No.

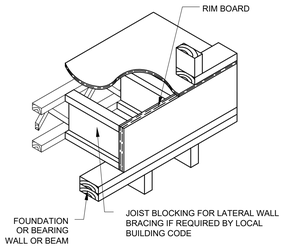
S-2.3



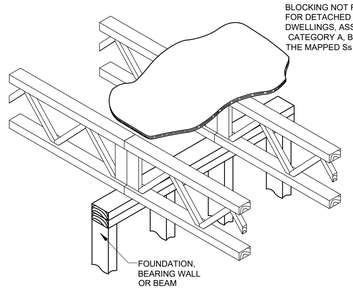
12 END TO END JOIST W/ BEARING WALL ABOVE
1/2" = 1'-0"



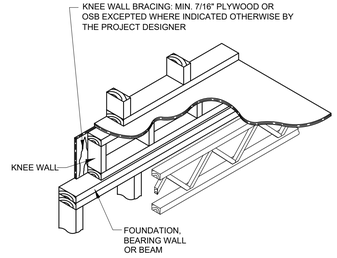
8 WOOD BEAM CONNECTIONS W/ HANGER
1/2" = 1'-0"



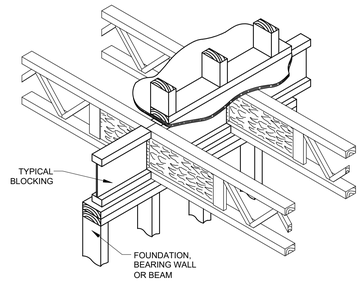
4 RIM BOARD AND BLOCKING AT EXTERIOR WALL
1/2" = 1'-0"



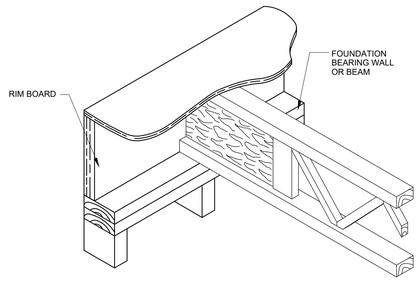
11 END TO END JOIST
1/2" = 1'-0"



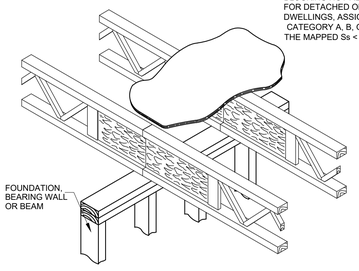
7 KNEE WALL
1/2" = 1'-0"



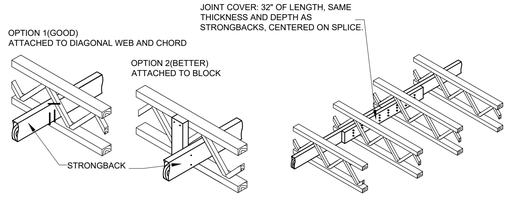
3 END TO END JOIST W/ BEARING WALL ABOVE
1/2" = 1'-0"



10 BEARING WALL
1/2" = 1'-0"



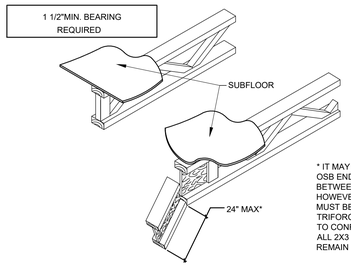
6 END TO END JOIST
1/2" = 1'-0"



USE GUN NAILS 0.122" X 3.25" OR 3" SCREWS TO SECURE STRONGBACKS(S) AT MID SPAN OF JOIST. IF TWO STRONGBACKS ARE SPECIFIED, INSTALL THE SECOND ONE ADJACENT TO THE NEXT CLOSEST DIAGONAL WEB BAY.

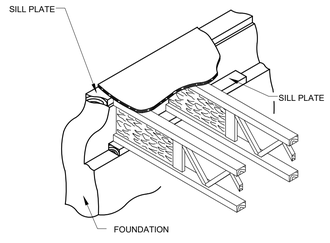
USE DRY LUMBER FOR STRONGBACK

2 STRONGBACK BRACING OPTIONS
1/2" = 1'-0"

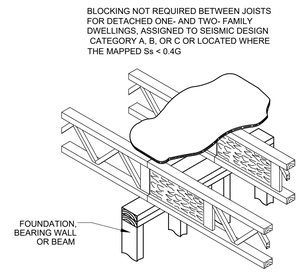


* IT MAY BE POSSIBLE TO TRIM THE OSB END PANEL OF THE JOIST BETWEEN 24" AND 31 5/8". HOWEVER, THE JOIST CAPACITY MUST BE ANALYZED USING THE TRIFORCE ANALYZER SOFTWARE TO CONFIRM.
ALL 2X3 POSTS MUST ALWAYS REMAIN INTACT.

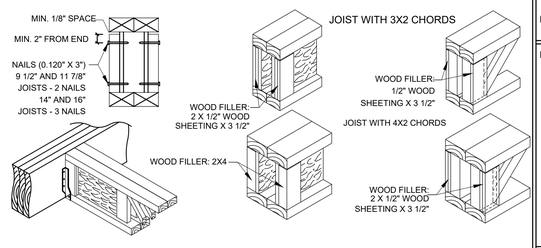
13 JOIST ADJUSTMENT TOLERANCE
1/2" = 1'-0"



9 DROPPED IN FOUNDATION
1/2" = 1'-0"



5 END TO END JOIST
1/2" = 1'-0"



ONLY REQUIRED IF THE HANGER DOES NOT PROVIDE LATERAL SUPPORT FOR THE JOIST'S TOP CHORD

1 LATERAL BRACING FOR A DOUBLE JOIST W/ HANGER
1/2" = 1'-0"

Location

PROPOSED 3 FAMILY RENOVATION
7 THORNLEY STREET DORECHESTER, MA 02125

Choo & Company, Inc.
One Billings Road Quincy, MA 02171
617-786-7727 fax 617-786-7715

DOV KIRSZTAJN STRUCTURAL No. 31483 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

No.	Description	Date

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

Drawing Name

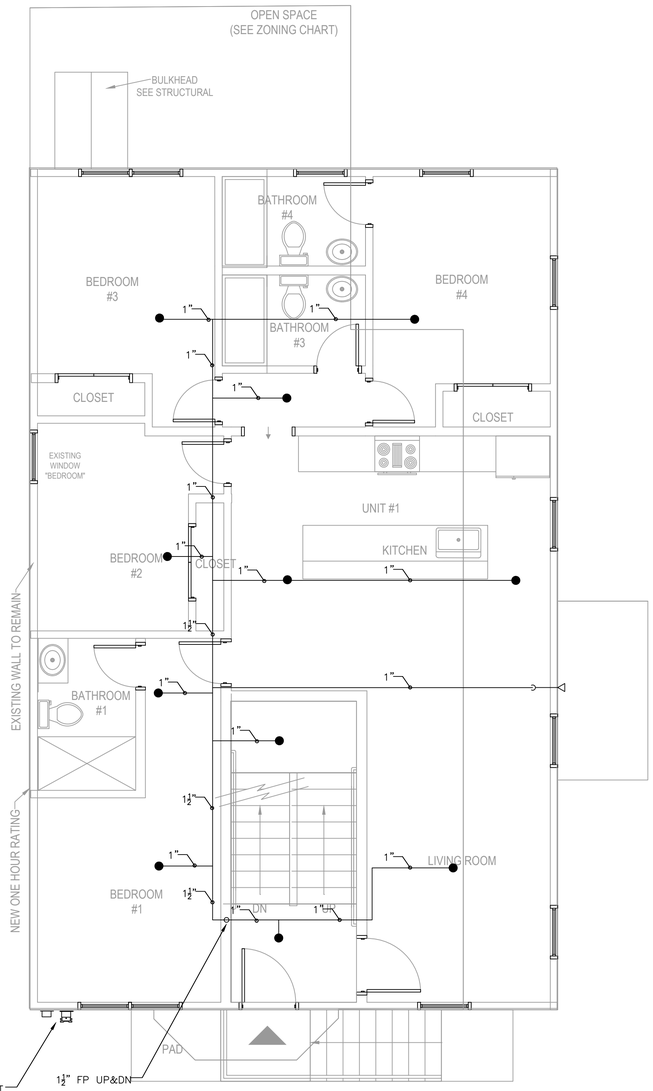
WOOD DETAILS

Sheet No.

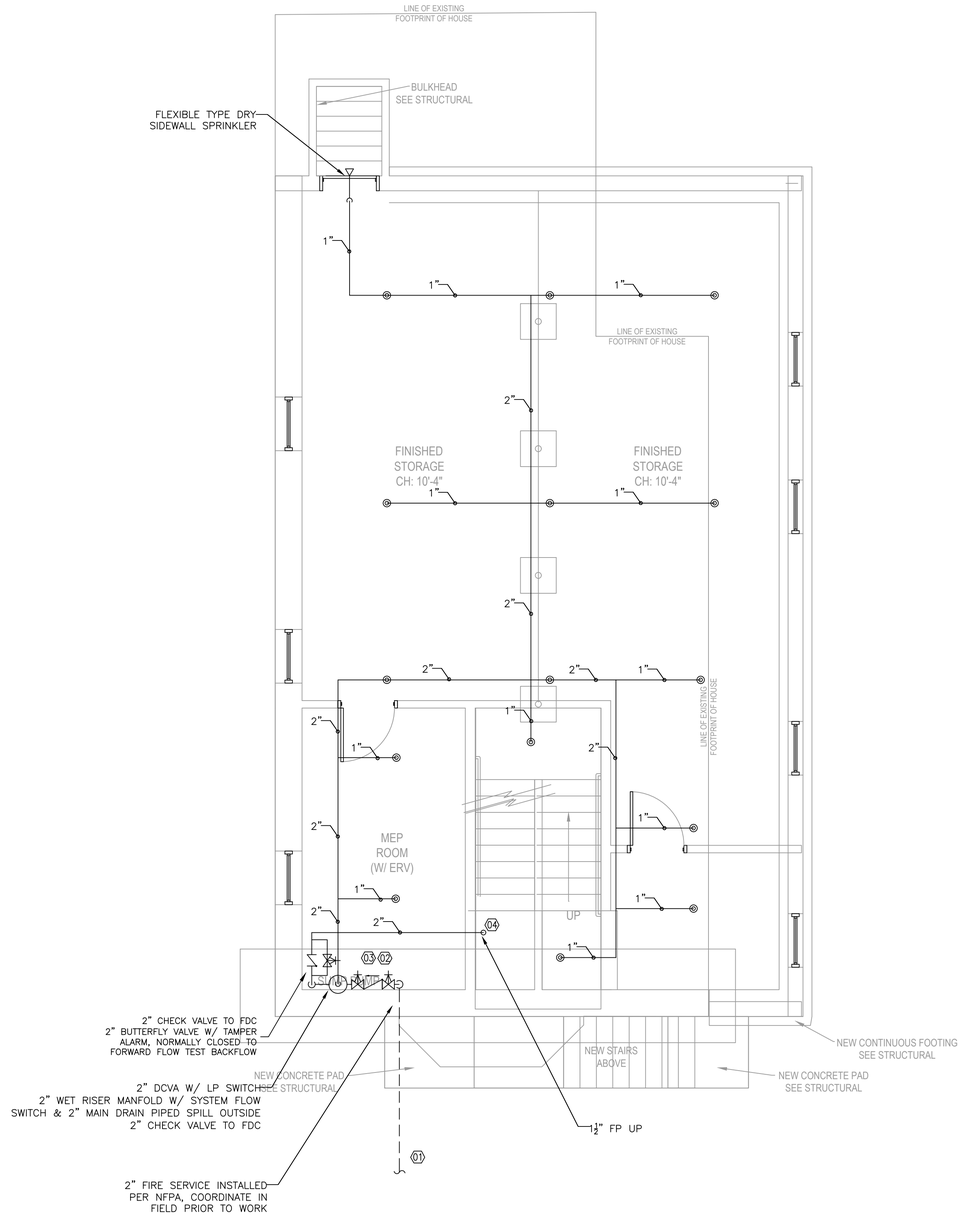
S-2.4

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

LIGHTHOUSE ARCHITECTURE & DESIGN
186 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 - erocheaia@msn.com



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



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

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

FIRE PROTECTION
PROPOSED BASEMENT PLAN
PROPOSED FIRST FLOOR

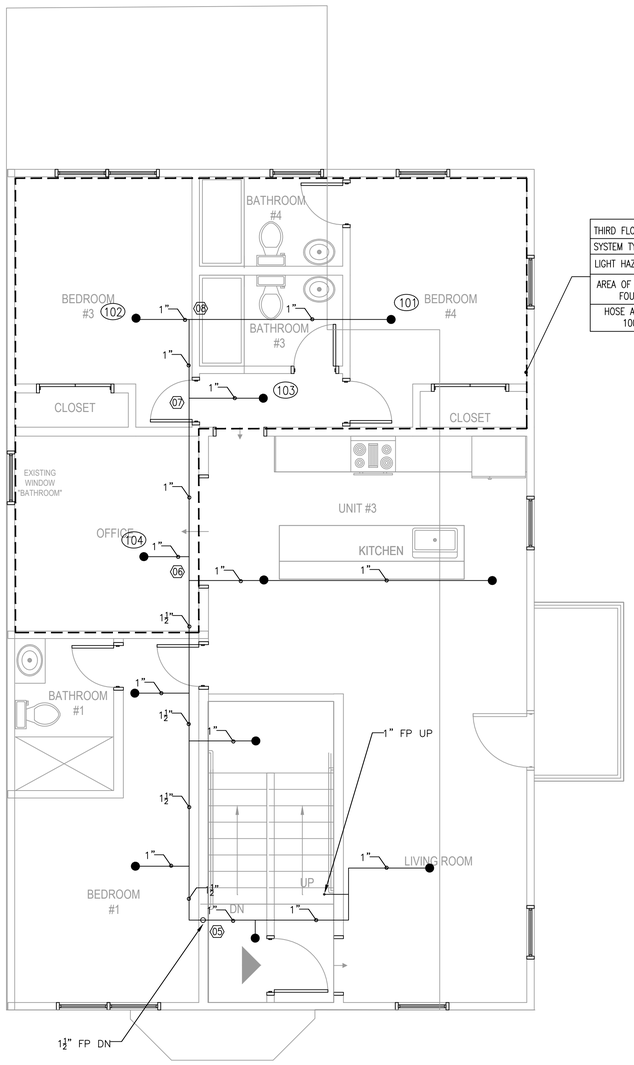
RENO OF EXISTING THREE FAMILY HOME
7 THORNLEY ST, DORCHESTER, MA 02125

FP1

GENERAL NOTE:

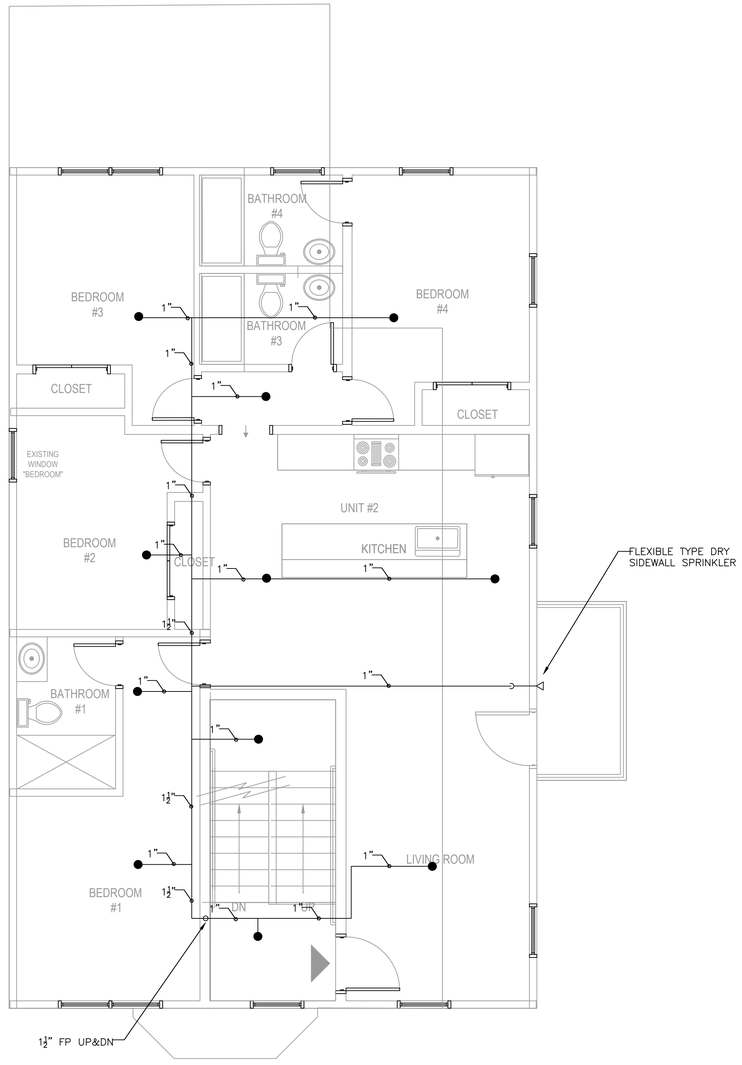
VERIFY AND CONFIRM ALL CONDITIONS AND/OR DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS.NOTIFY ARCHITECT OF ANY INCONSISTENCIES FOR REVIEW AND APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.

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



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"

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
184 ALLEN ST BRAINTREE MA, 02184-UNIT #1
Gavin Driscoll, Principle
781-801-2690- gavin.s.driscoll@gmail.com
J. Edward Rocke, AIA, Architect-
617-512-9281 - erocheaia@msn.com

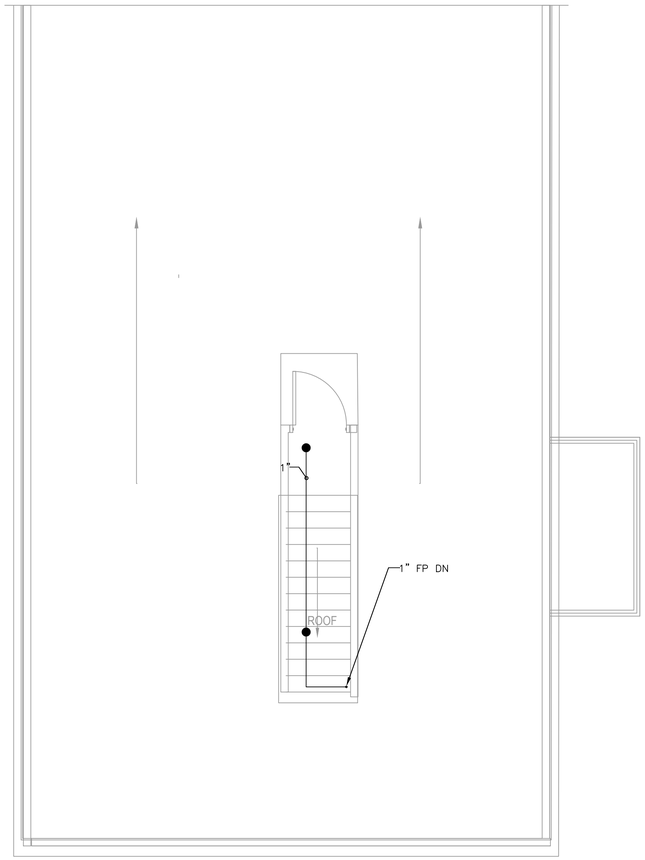
DATE: 11/03/2025
SCALE: AS NOTED
DRAWN BY: ---
CHECKED BY: ---

FIRE PROTECTION
PROPOSED SECOND FLOOR PLAN
PROPOSED THIRD FLOOR PLAN

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

FP2

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



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

LIGHTHOUSE ARCHITECTURE & DESIGN
184 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 - erocheaia@msn.com

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

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:
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.

DESIGN CRITERIA

1. THE AUTOMATIC FIRE SUPPRESSION SYSTEM HAS BEEN HYDRAULICALLY SIZED PER NFPA–13R 2019, CMR 780 (10TH) WITH AMENDMENTS

2. SPRINKLER COVERAGE SHALL BE REQUIRED IN AREAS OF THE BUILDING PER NFPA–13R

PIPE, FITTINGS AND JOINTS

1. PIPE AND FITTINGS SHALL CONFORM TO THE LATEST ANSI, ASTM, NFPA AND AWWA STANDARDS INCLUDING LATEST AMENDMENTS.

2. SPRINKLER MAINS AND BRANCHES MAY BE LIGHT WALL BLACK STEEL PIPE WITH ROLLED GROOVE TYPE MALLEABLE IRON PIPE COUPLINGS AND FITTINGS WITH GASKETS AND BOLTS AS APPROVED BY THE NATIONAL FIRE PROTECTION ASSOCIATION AND THE UNDERWRITERS' LABORATORIES. SCHEDULE 40 BLACK STEEL PIPE WITH STANDARD WEIGHT MALLEABLE IRON FITTINGS AS APPROVED BY NFPA AND UL MAY BE USED WITH, OR IN LIEU OF, THE SYSTEM DESCRIBED ABOVE. CPVC PIPING MAY BE USED WHERE ALLOWED BY LOCAL & NATIONAL LIFE SAFETY CODES

HANGERS AND SUPPORTS

1. HANGERS AND SWAY BRACING WHERE REQUIRED , SHALL BE INSTALLED TO MEET NFPA AND LOCAL STATE BUILDING CODE COMPLIANCE AS TO LOCATION, SPACING, AND MAXIMUM LOADS.

2. HANGER MATERIAL SHALL BE COMPATIBLE WITH PIPING MATERIALS WITH WHICH IT COMES INTO CONTACT.

3. HANGERS SHALL BE INSTALLED, IN ADDITION TO THE ABOVE, AT ALL CHANGES OF DIRECTION (HORIZONTAL AND VERTICAL), VALVES AND EQUIPMENT CONNECTIONS. HANGERS SHALL BE LOCATED SO THAT THEIR REMOVAL IS NOT REQUIRED TO SERVICE, ASSEMBLE OR REMOVE EQUIPMENT.

4. HORIZONTAL RUNS MAY USE BAND HANGERS UP TO 4" SIZE. PIPING LARGER THAN 4" SHALL BE PROVIDED WITH CLEVIS TYPE.

5. ALL RODS, CLAMPS, NUTS, WASHERS, SHIELDS AND HANGERS IN ALL AREAS SHALL BE ELECTRO–GALVANIZED COATED STEEL.

VALVES AND SUNDRIES

1. SHUTOFF VALVES ON THE ABOVEGROUND FIRE PROTECTION SYSTEM SHALL BE UL, FM BUTTERFLY OR OS&Y GATE VALVES, AS INDICATED, ON SIZES 2–1/2" AND LARGER, VALVES UP TO 2" SHALL BE UL, FM BALL VALVES. ALL ISOLATION / CONTROL VALVES SHALL BE MONITORED.

2. CHECK VALVES SHALL BE 175–POUND CLASS FOR FIRE PROTECTION.

3. VALVES SHALL BE PROVIDED WITH SEATS SUITABLE FOR THE SERVICE INTENDED.

4. VALVES SHALL BE AS MANUFACTURED BY NIBCO, VICTAULIC, WALLWORTH, MILWAUKEE OR APPROVED EQUAL. MANUFACTURERS MODEL NUMBERS REFERENCED BELOW ARE USED TO INDICATE A TYPE, MATERIAL AND QUALITY TO BE PROVIDED.

5. ALL VALVES SPECIFIED HEREIN SHALL BE UL/FM APPROVED, 175 PSI MINIMUM WORKING PRESSURE. ALL CONTROL VALVES SHALL BE PROVIDED WITH TAMPER SWITCH.

AUTOMATIC SPRINKLERS

1. SPRINKLER HEADS: QUICK RESPONSE, BULB TYPE, AND STYLE AS INDICATED OR REQUIRED BY THE APPLICATION. UNLESS OTHERWISE INDICATED.

2. IN ALL OPEN AREAS, WHERE ELECTRICAL EQUIPMENT IS LOCATED, AN APPROVED TYPE SHIELD, TO KEEP WATER OFF THE ELECTRICAL EQUIPMENT, SHALL BE PROVIDED.

3. PROVIDE ALL SPRINKLER HEADS WITH PROTECTIVE CAGE.

4. PROVIDE IN THE VALVE ROOM, A FINISHED STEEL CABINET SUITABLE FOR WALL MOUNTING, WITH HINGED COVER AND SPACE FOR 6 SPARE SPRINKLER HEADS PLUS SPRINKLER HEAD WRENCH.

SPRINKLER SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT ENGINEERED TIER II SHOP DRAWINGS FOR REVIEW PRIOR TO INSTALLATION. SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE DETAILED PER NFPA–13R REQUIREMENTS FOR WORKING DRAWINGS–FINAL AFFIDAVITS CANNOT BE ISSUED WITHOUT APPROVED SHOP DRAWINGS

2. HYDRAULIC CALCULATIONS SHALL ACCOUNT FOR ALL OFFSETS IN THE SYSTEM BASED ON A 100% COORDINATED SET. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL STRUCTURAL AND ARCHITECTURAL FEATURES PRESENT

FLUSHING AND TESTING

1. ALL LABOR, MATERIALS, INSTRUMENTS, DEVICES AND POWER REQUIRED FOR TESTING SHALL BE PROVIDED BY THIS CONTRACTOR. THE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF THE ENGINEER, GENERAL CONTRACTOR AND THE LOCAL FIRE DEPARTMENT AND SUCH OTHER PARTIES, AS MAY HAVE LEGAL JURISDICTION. NO PIPING IN ANY LOCATION SHALL BE CLOSED UP, FURRED IN, OR COVERED BEFORE TESTING.

2. WHERE PORTIONS OF PIPING SYSTEMS ARE TO BE COVERED OR CONCEALED BEFORE COMPLETION OF THE PROJECT, THOSE PORTIONS SHALL BE TESTED SEPARATELY IN THE MANNER SPECIFIED HEREIN FOR THE RESPECTIVE ENTIRE SYSTEM.

3. ANY PIPING OR EQUIPMENT THAT HAS BEEN LEFT UNPROTECTED AND SUBJECT TO MECHANICAL OR OTHER INJURY IN THE OPINION OF THE GENERAL CONTRACTOR SHALL BE RE TESTED IN PART OR IN WHOLE AS DIRECTED.

4. THE ENGINEER RETAINS THE RIGHT TO REQUEST A RECHECK OR RESETTING OF ANY PUMP OR INSTRUMENT BY THIS CONTRACTOR DURING THE GUARANTEE PERIOD AT NO ADDITIONAL COST TO THE CONTRACTOR.

5. REPAIR, OR IF DIRECTED, REPLACE ANY DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE CONTRACT. REPEAT TESTS AS DIRECTED, UNTIL THE WORK IS PROVEN TO MEET THE REQUIREMENTS SPECIFIED HEREIN.

6. RESTORE TO ITS FINISHED CONDITION ANY WORK, DAMAGED OR DISTURBED, PROVIDED BY OTHER CONTRACTORS AND ENGAGE THE ORIGINAL CONTRACTOR TO DO THE WORK OF RESTORATION TO THE DAMAGED OR DISTURBED WORK.

7. THIS CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND ANY INSPECTORS HAVING JURISDICTION, A MINIMUM OF 48 HOURS IN ADVANCE OF MAKING ANY REQUIRED TESTS SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS HIS SCHEDULED TESTS.

8. TESTING SHALL BE IN ACCORDANCE WITH NFPA–13R "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS".

9. EACH SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE OF 200 PSI FOR TWO HOURS.

10. FLUSHING OF ALL BURIED SUPPLY PIPING SHALL BE PERFORMED AT A MINIMUM RATE OF 680 GPM FOR SYSTEMS WITH A 4" SERVICE.

11. ALL WATER FLOW DETECTING DEVICES AND CIRCUITS SHALL BE FLOW TESTED THROUGH THE INSPECTOR'S TEST CONNECTION AND ACTIVATE WITHIN FIVE MINUTES OF INITIATION.

12. FIRE PROTECTION CONTRACTOR SHALL OBTAIN RECENT HYDRANT FLOW TEST RESULTS FOR THE USE OF PREPARING WORKING DRAWINGS PER NFPA–13R

13. SPRINKLER FLOW TEST DISCHARGE AND FLUSHING WATER DISCHARGE SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND THE LOCAL FIRE DEPARTMENT OR PUBLIC WORKS AS TO ACCEPTABLE DISCHARGE POINTS PRIOR TO SCHEDULING OF FLUSHING AND TESTS. THIS CONTRACTOR SHALL PROVIDE ALL HOSE AND EQUIPMENT NECESSARY TO PERFORM THE REQUIRED TESTING AND FLUSHING.

AS BUILT DRAWINGS AND CONTRACTOR CERTIFICATES

1. CONTRACTOR SHALL HAVE, ON HAND, AT TIME OF FINAL INSPECTION BY THE AUTHORITY HAVING JURISDICTION, FOR TEMPORARY / FINAL CERTIFICATE OF OCCUPANCY, ALL COMPLETED CERTIFICATES OF MATERIAL AND TESTING FOR ABOVEGROUND AND UNDERGROUND PIPING AS WELL AS THE AS– BUILT DRAWINGS OF THE FIRE PROTECTION INSTALLATION.

2. PROVIDE RED–LINE TIER III AS BUILT RECORD DRAWINGS TO ZADE ASSOCIATES FOR REVIEW & APPROVAL AS A CONDITION OF FINAL AFFIDAVIT

PATCHING, REPLACEMENT AND MODIFICATION OF EXISTING WORK

1. AFTER INSTALLATION OF PIPELINES, THE CONTRACTOR SHALL NEATLY PATCH, REPAIR, AND/OR REPLACE EXISTING WORK WHERE DAMAGED, REMOVED OR ALTERED FOR PIPE LINE INSTALLATION. THIS WORK SHALL BE SIMILAR AND EQUAL IN QUALITY TO THE WORK REMOVED OR DAMAGED, UNLESS OTHERWISE SHOWN OR SPECIFIED. SUCH WORK SHALL INCLUDE PATCHING AND REPLACEMENT OF EXISTING PIPING AT POINTS OF CONNECTION TO NEW PIPING, PATCHING OF INSULATION, AND WHEREVER ANY SUCH PATCHING WORK IS INDICATED ON THE DRAWINGS OR OTHERWISE REQUIRED.

INSTALLATION

1. GENERAL: INSTALL FIRE PROTECTION SPECIALTY VALVES, FITTINGS, AND SPECIALTIES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, NFPA–13R (2013) AND THE AUTHORITY HAVING JURISDICTION.

2. USE PROPER TOOLS TO PREVENT DAMAGE DURING INSTALLATIONS.

3. ALL PENDENT MOUNTED SPRINKLERS SHALL BE INSTALLED ON RETURN BENDS.

4. ALL SPRINKLERS INSTALLED IN ACOUSTICAL CEILING TILES SHALL BE CENTERED IN TILES WHERE APPLICABLE.

5. COORDINATE AND VERIFY DRAFT CURTAINS ARE INSTALLED AS REQUIRED BY SPRINKLER HEAD SPECIFICATIONS

FIRE PROTECTION SPECIFICATION

FIRE PROTECTION SPECIFICATION

1. BEFORE BIDDING THE JOB, CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY EXISTING CONDITIONS. REPORT ADVERSE CONDITIONS IN WRITING TO ARCHITECT/ENGINEER

2. SPRINKLER PIPING SHALL BE
A. SCH.10/40 BLACK STEEL WITH 125 LB. CAST IRON THREADED/GROOVED JOINTS WHERE EXPOSED, USED FOR VALVE TRIM, SYSTEM DRAINS OR OTHER ANCILLARY SYSTEM COMPONENT

B. CPVC SHALL BE PERMITTED FOR USE WHERE INSTALLED CONCEALED AND IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS, BE LISTED FOR FIRE PROTECTION AND SHALL EMPLOY FITTINGS FROM THE SAME MANUFACTURER

3. SPRINKLER HEADS IN COMMON AREAS SHALL BE QUICK RESPONSE CONCEALED TYPE MANUFACTURED BY VIKING OR EQUAL. WITHIN UNITS THEY WILL BE RESIDENTIAL CONCEALED TYPE.

4. APPLY AND OBTAIN PERMIT AND APPROVAL FROM LANDLORD'S INSURANCE COMPANY, FIRE DEPARTMENT AND STATE AND LOCAL AUTHORITIES.

5. COORDINATE WITH ARCHITECT AND ARCHITECTURAL REFLECTED CEILING PLAN FOR THE LOCATION OF SPRINKLER HEADS.

6. COORDINATE SPRINKLER WORK WITH OTHER DISCIPLINES. SINCE PERFORMANCE OF SPRINKLER SYSTEM IS AFFECTED BY OBSTRUCTIONS AND NOT OTHER WAY AROUND, THIS CONTRACTOR SHALL COORDINATE ALL LIGHTING FIXTURE LOCATIONS AND TYPES AND OTHER OBSTRUCTIONS PRIOR TO ANY WORK DONE.

7. THE SYSTEM SHALL BE HYDROSTATICALLY TESTED AT NOT LESS THAN 200 PSI PRESSURE FOR 2 HOURS. THERE WILL BE NO VISIBLE LEAKAGE WHEN THE SYSTEM IS SUBJECTED TO THE HYDROSTATIC PRESSURE TEST.

8. GUARANTEE ALL WORK AND MATERIAL FOR ONE YEAR FROM THE DATE OF ACCEPTANCE.

PREPARATION OF SHOP DRAWINGS:

PER 780CMR 901.2.1
SPRINKLER CONTRACTOR SHALL PREPARE TIER ii SHOP DRAWINGS INCLUDING PIPING & HYDRAULIC CALCULATIONS, AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. ENGINEER SHALL CERTIFY SYSTEM INSTALLATION FOR CODE COMPLIANCE AT PROJECT COMPLETION.

FLOW TEST DATA

STATIC ----- 66 PSI
RESIDUAL ----- 62 PSI
FLOW ----- 2004 GPM

SPRINKLER CONTRACTOR SHALL OBTAIN A NEW AND RECENT HYDRANT FLOW TEST FOR THIS FEED MAIN PRIOR TO INSTALLATION

FIRE PROTECTION ABBREVIATIONS

DSW	DRY SIDEWALL
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DIA	DIAMETER
DR	DRAIN
ETR	EXISTING TO REMAIN
FHV	FIRE HOSE VALVE
IT	INTERMEDIATE TEMPERATURE
FP	FIRE PROTECTION
FS	FLOW SWITCH
SP	STANDPIPE
GV	GATE VALVE
GAL	GALLONS
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
DN	PIPE DROP
PSI	POUNDS PER SQUARE INCH
PRV	PRESSURE REDUCING VALVE
RV	RELIEF VALVE
SPK	SPRINKLER
TS	TAMPER SWITCH
UP	PIPE RISE
VIF	VERIFY IN FIELD

FIRE PROTECTION LEGEND

SYMBOL	DESCRIPTION
	SUPERVISED BUTTERFLY VALVE
	DOUBLE CHECK VALVE ASSEMBLY
	SUPERVISED OS&Y GATE VALVE
FS	FLOW ALARM SWITCH
	SPRINKLER ZONE CONTROL ASSEMBLY (SEE DETAIL)
	PUMP (FIRE OR JOCKEY)
	DRY ALARM VALVE
	WET ALARM VALVE
	CHECK VALVE
	DRAIN VALVE
	FIRE VALVE ASSEMBLY 2–1/2"W X 2–1/2" X 1–1/2"
XX	HYDRAULIC JUNCTION POINT
XXX	HYDRAULIC DISCHARGE NODE
	BURIED SERVICE PIPING
	ABOVE GROUND FP SYSTEM PIPING

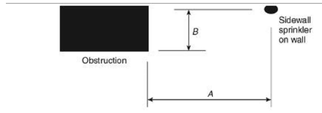


FIGURE 6.4.6.3.7.2(b) Positioning of Sprinkler to Avoid Obstruction Along Wall (Residential Sidewall Sprinklers).

Distance from Sidewall Sprinkler to Side of Obstruction (A)	Maximum Allowable Distance of Deflector Above Bottom of Obstruction (in.) (B)
Less than 8 ft	Not allowed
8 ft to less than 10 ft	1
10 ft to less than 11 ft	2
11 ft to less than 12 ft	3
12 ft to less than 13 ft	4
13 ft to less than 14 ft	6
14 ft to less than 15 ft	7
15 ft to less than 16 ft	9
16 ft to less than 17 ft	11
17 ft or greater	14

For SI units, 1 in. = 25.4 mm; 1 ft = 0.3048 m.
Note: For *A* and *B*, refer to Figure 6.4.6.3.7.2(a).

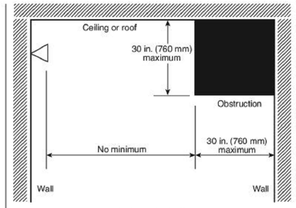


FIGURE 6.4.6.3.7.2(c) Positioning of Sprinkler to Avoid Obstruction Against Wall (Residential Sidewall Sprinklers).

Table 6.4.6.3.7.2(b) Positioning of Sprinklers to Avoid Obstructions Along Wall (Residential Sidewall Sprinklers)

Distance from Sidewall Sprinkler to Side of Obstruction (A)	Maximum Allowable Distance of Deflector Above Bottom of Obstruction (in.) (B)
Less than 1 ft 6 in.	0
1 ft 6 in. to less than 3 ft	1
3 ft to less than 4 ft	3
4 ft to less than 4 ft 6 in.	5
4 ft 6 in. to less than 6 ft	7
6 ft to less than 6 ft 6 in.	9
6 ft 6 in. to less than 7 ft	11
7 ft to less than 7 ft 6 in.	14

Table 6.4.6.3.6.2 Positioning of Sprinklers to Avoid Obstructions to Discharge (Residential Upright and Pendent Spray Sprinklers)

Distance from Sprinklers to Side of Obstruction (A)	Maximum Allowable Distance of Deflector Above Bottom of Obstruction (in.) (B)
Less than 1 ft	0
1 ft to less than 1 ft 6 in.	0
1 ft 6 in. to less than 2 ft	1
2 ft to less than 2 ft 6 in.	1
2 ft 6 in. to less than 3 ft	1
3 ft to less than 3 ft 6 in.	3
3 ft 6 in. to less than 4 ft	3
4 ft to less than 4 ft 6 in.	5
4 ft 6 in. to less than 5 ft	7
5 ft to less than 5 ft 6 in.	7
5 ft 6 in. to less than 6 ft	7
6 ft to less than 6 ft 6 in.	9
6 ft 6 in. to less than 7 ft	11
7 ft and greater	14

For SI units, 1 in. = 25.4 mm; 1 ft = 0.3048 m.
Note: For *A* and *B*, refer to Figure 6.4.6.3.6.2.

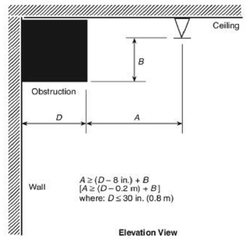


FIGURE 6.4.6.3.6.3 Positioning of Sprinkler to Avoid Obstruction Against Wall (Residential Upright and Pendent Spray Sprinklers).

NFPA–13R OBSTRUCTION CHART

SCALE:N.T.S.

FIRE SPRINKLER LEGEND

SOME SYMBOLS MAY NOT BE USED

SYM	POSITION	FINISH	TEMP	K	NPT	SIN
◎	UPRIGHT	BRASS	155°	5.60	1/2"	EQ
⊠	UPRIGHT	BRASS	200°	5.60	1/2"	EQ
✹	PENDENT	CONCEALED	155°	5.60	1/2"	EQ
●	RES PENDENT	CONCEALED	155°	5.80	1/2"	VK494/EQ
A ●	RES PENDENT	CONCEALED	200°	5.80	1/2"	VK494/EQ
⦿	DRY PENDENT	CONCEALED	155°	5.60	1/2"	EQ
A ▶	STD SIDEWALL	CONCEALED	155°	5.60	1/2"	EQ
▶	RES SIDEWALL	CONCEALED	155°	4.00	1/2"	VK480
▷	DRY SIDEWALL	CONCEALED	155°	11.2	3/4"	TY5339

NFPA–13R 2019 DESIGN CRITERIA

THE SPRINKLER SYSTEM SHALL PROVIDE AT LEAST THE FLOW REQUIRED TO PRODUCE A MINIMUM DENSITY OF 0.05 pgm/sf OR THE LISTING OF THE SPRINKLER HEAD WHICHEVER IS GREATER, TO THE DESIGN SPRINKLERS.
THE NUMBER OF SPRINKLERS IN THE DESIGN AREA SHALL BE ALL OF THE SPRINKLERS WITHIN A COMPARTMENT, UP TO A MAXIMUM OF FOUR SPRINKLERS, THAT REQUIRE THE GREATEST HYDRAULIC DEMAND.

SPRINKLER HEADS IN KITCHENS AND W/D ROOMS TO BE 175°F	
RESIDENTIAL SPRINKLERS SPACED MAXIMUM 8' FROM ANY WALL	

SPRINKLER COVERAGE REQUIREMENTS

BASED ON NFPA–13R

1) SPRINKLER SHALL NOT BE REQUIRED IN BATHROOMS OF 55 SF AND LESS.
2) SPRINKLER SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRY THAT MEET THE FOLLOWING CONDITIONS:
A) THE AREA OF THE SPACE DOES NOT EXCEED 24 SF.
B) THE SHORTEST DIMENSION DOES NOT EXCEED 3 FT.
C) THE WALLS AND CEILINGS ARE SURFACED WITH NON–COMBUSTIBLE OR LIMITED COMBUSTIBLE AS DEFINED BY NFPA–220.
3) SPRINKLER SHALL NOT BE REQUIRED IN COVERED, UNHEATED PROJECTIONS OF THE BUILDING AT ENTRANCE/EXITS AS LONG AS THE DWELLING UNIT HAS ANOTHER MEANS OF EGRESS.
4) SPRINKLER SHALL NOT BE REQUIRED IN CLOSETS IN GARAGE AND EXTERIOR CLOSETS (REGARDLESS OF SIZE) LOCATED ON EXTERIOR BALCONIES, EXTERIOR BREEZEWAY/CORRIDORS, OR ACCESSED FROM OUTDOOR WHERE THE CLOSET DOES NOT HAVE DOORS OR UNPROTECTED PENETRATIONS DIRECTLY INTO THE DWELLING UNIT.
5) SPRINKLER SHALL BE INSTALLED IN ANY CLOSET USED FOR HEATING AND/OR AIR–CONDINONING EQUIPMENT, WASHERS AND/OR DRYERS, OR WATER HEATERS EXCEPT AS AS ALLOWED BY 8.3.8. (SEE NOTE #4 ABOVE)
6) SPRINKLERS SHALL NOT BE REQUIRED IN COMBUSTIBLE FLOOR/CEILING ASSEMBLIES

FIRE PROTECTION MATERIAL SCHEDULE

SYSTEM	PIPE										FITTINGS							JOINTS			
NOTES: 1. COMPONENT PRESSURE RATING PER MANUFACTURER 2. EXPOSED CPVC PROHIBITED 3. ALL PIPE NOT NORMALLY FILLED WITH WATER SHALL BE SCH. 40 BLACK	BLAZEMASTER CPVC	COPPER W/ HARD SOLDER	EXTRA HEAVY CAST IRON	STEEL SCHED 10	STEEL SCHED 30	STEEL SCHED 40	STEEL SCHED 80	BLACK	GALVANIZED	CEMENT LINED	MALLEABLE IRON	BLAZEMASTER CPVC	MECHANICAL	BLACK	GALVANIZED	VICTAULIC	LISTED COPPER	THREADED	MECH–JOINT–FLANGED	GROOVED	SLIP
BURIED BUILDING FIRE SERVICE		●						●		●											●
RESIDENTIAL CROSS MAINS	●											●									●
RESIDENTIAL BRANCH LINES	●											●									●
ARM–OVER & DROPS	●											●									●
SPRINKLER DRAIN PIPE							●		●						●			●	●		

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.

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

LIGHTHOUSE ARCHITECTURE & DESIGN
188 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 - erocheaia@msn.com

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

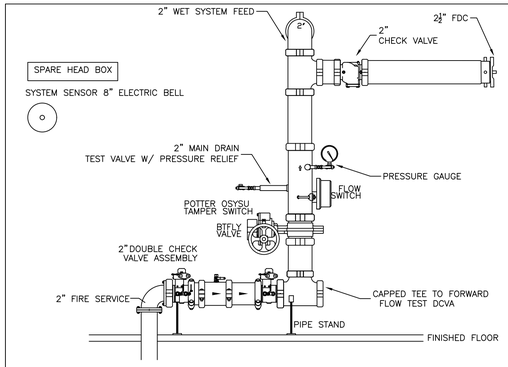
FIRE PROTECTION NOTES & DETAILS

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

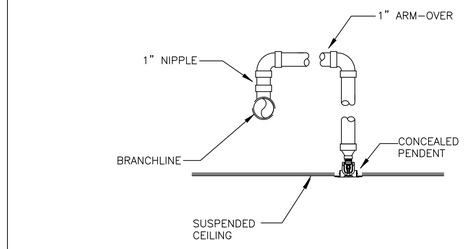
FP4

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

LIGHTHOUSE ARCHITECTURE & DESIGN
184 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 - eroceaia@msn.com

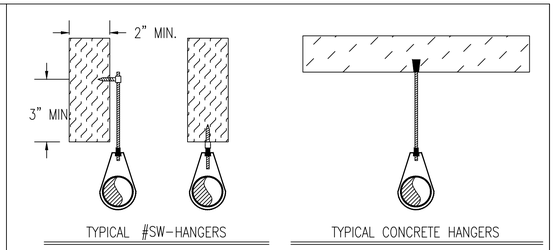


SPRINKLER SUPPLY MANIFOLD NTS

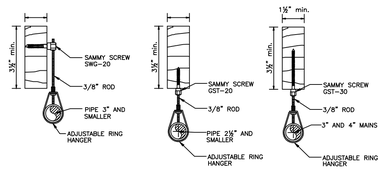


**ALL NEW SPRINKLER PIPING TO BE 1" U.N.O.

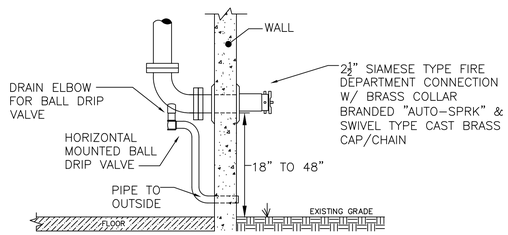
TYPICAL PENDENT SPRINKLER INSTALLATION NTS



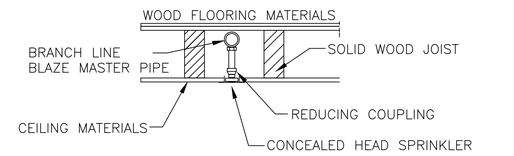
TYPICAL HANGER DETAILS NTS



PIPE HANGER SPACING NTS



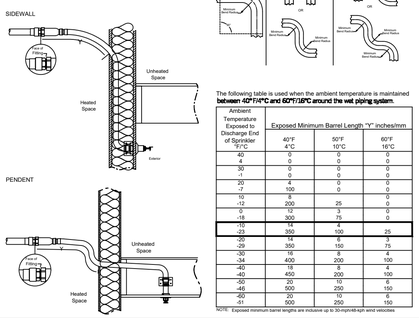
FIRE DEPARTMENT CONNECTION NTS



SPRINKLER PIPING AT CEILING PLENUM NTS

Flexible Hose Bend Characteristics:

NOTE: For out-of-plane (three-dimensional) bends, care shall be taken to avoid imparting torque on the flexible hose.

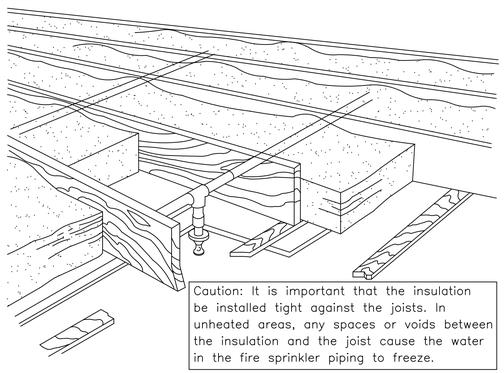


The following table is used when the ambient temperature is maintained between 40°F/4°C and 60°F/16°C around the wet piping system.

Ambient Temperature Exposed to Discharge End of Sprinkler °F/°C	Exposed Minimum Barrel Length "Y" inches/mm		
	40°F 4°C	50°F 10°C	60°F 16°C
40 4	0 0	0 0	0 0
30 -1	0 0	0 0	0 0
20 -7	4 100	0 0	0 0
10 -12	8 200	25	0 0
0 -18	12 300	3 75	0 0
-10 -23	14 350	4 100	25
-20 -29	14 350	6 150	3 75
-30 -34	16 400	8 200	4 100
-40 -40	18 450	8 200	4 100
-50 -46	20 500	10 250	6 150
-60 -51	20 500	10 250	6 150

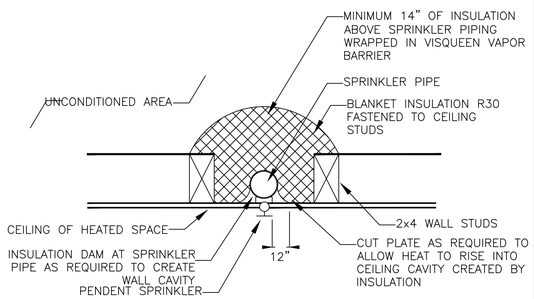
NOTE: Exposed minimum barrel lengths are inclusive up to 30-mph/48-kph wind velocities

DRY SIDEWALL SPRINKLER DETAIL NTS



Caution: It is important that the insulation be installed tight against the joists. In unheated areas, any spaces or voids between the insulation and the joist cause the water in the fire sprinkler piping to freeze.

INSULATION DETAIL NTS



SPRINKLER PIPING AT ROOF LEVEL NTS

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

FIRE PROTECTION DETAILS & NOTES

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

FP5

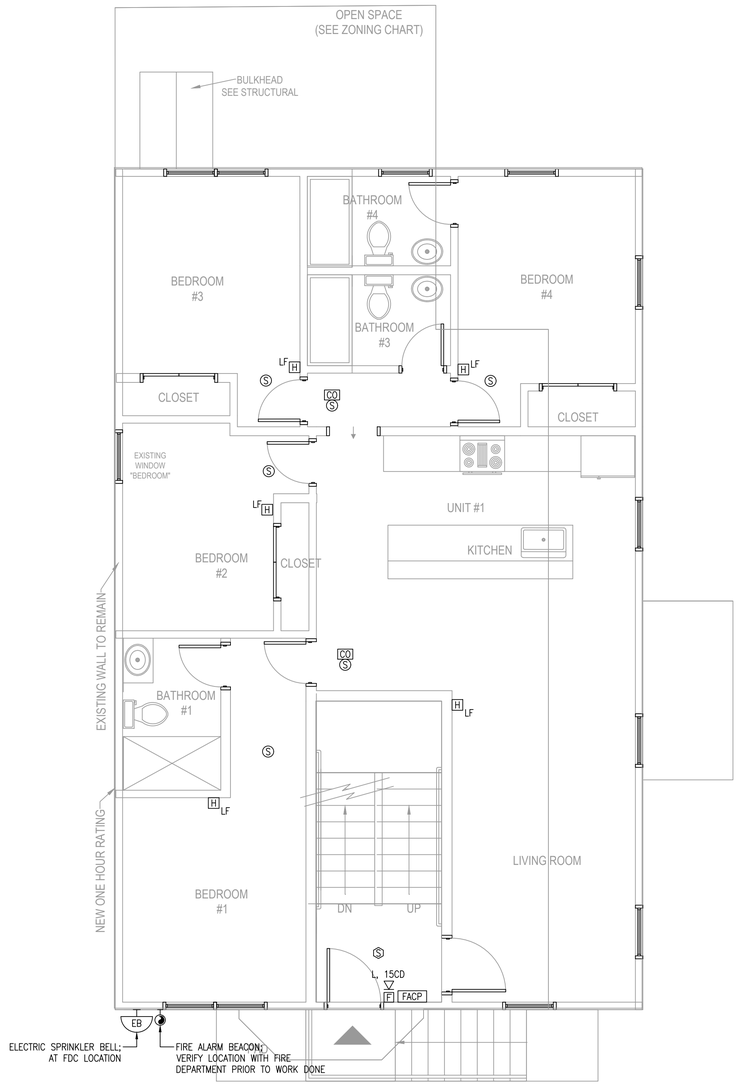
GENERAL NOTE:

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.

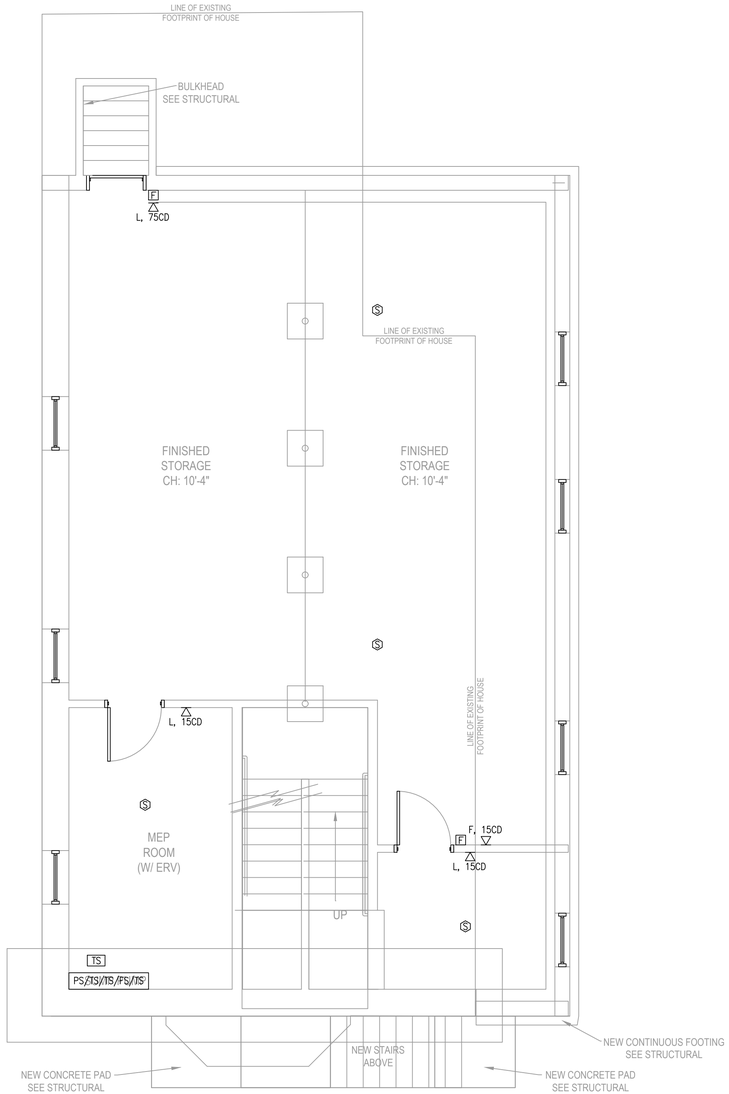
ZADE ASSOCIATES LLC
CONSULTING ENGINEERS
1 BILLINGS ROAD, QUINCY, MA 02171
TEL. (617) 338-4406
FAX. (617) 451-2540
E-MAIL: Zade@ZadeEngineering.com

COMMONWEALTH OF MASSACHUSETTS
MUZAFFER MUCTEHITZADE
ELECTRICAL
No. 32579
REGISTERED PROFESSIONAL ENGINEER

LIGHTHOUSE ARCHITECTURE & DESIGN
184 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 - eroceaia@msn.com



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



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

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

ELECTRICAL
PROPOSED BASEMENT PLAN
PROPOSED FIRST FLOOR
– FIRE ALARM

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

FA1

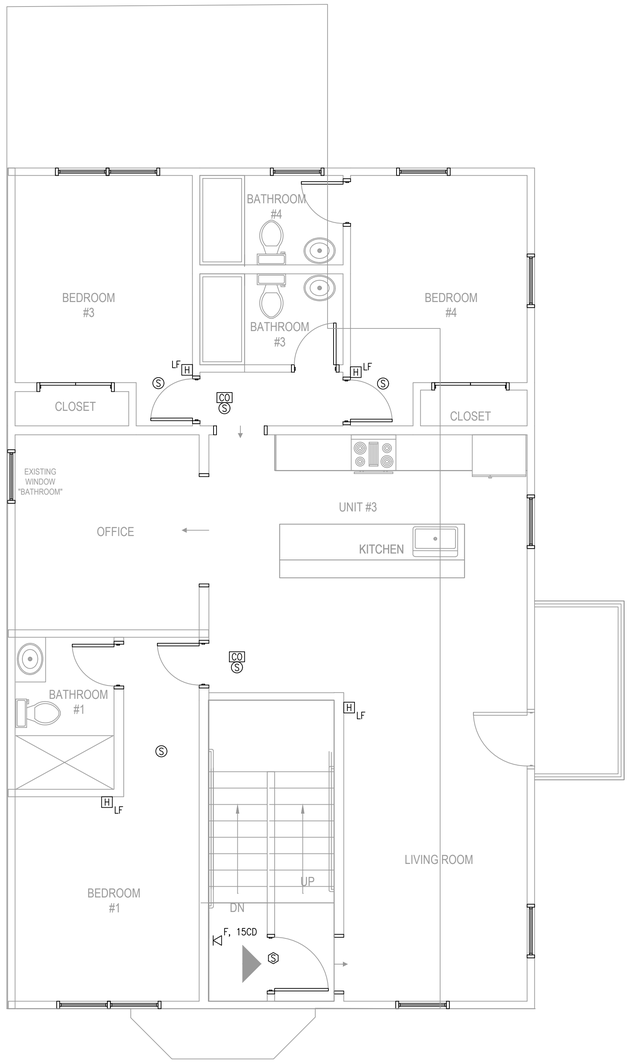
GENERAL NOTE:

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.

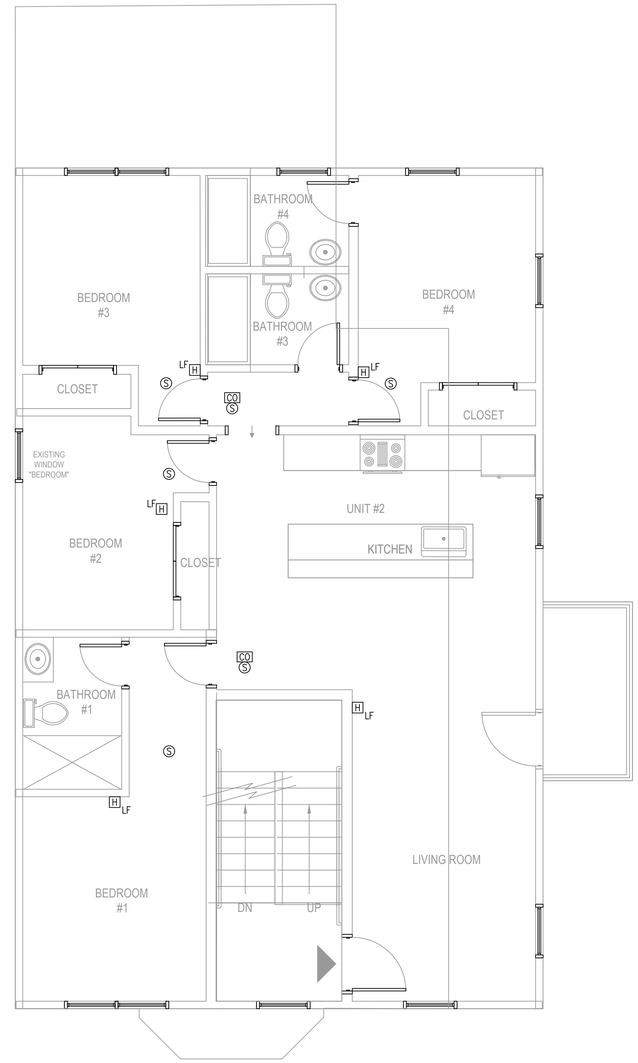
ZADE ASSOCIATES LLC
CONSULTING ENGINEERS
1 BILLINGS ROAD, QUINCY, MA 02171
TEL. (617) 338-4406
FAX. (617) 451-2540
E-MAIL: Zade@ZadeEngineering.com

COMMONWEALTH OF MASSACHUSETTS
MUZAFFER MUCTEHITZADE
ELECTRICAL
No. 32579
REGISTERED PROFESSIONAL ENGINEER

LIGHTHOUSE ARCHITECTURE & DESIGN
184 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 - eroceaia@msn.com



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



2 SECOND 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.

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

ELECTRICAL
PROPOSED SECOND FLOOR PLAN
PROPOSED THIRD FLOOR PLAN
– FIRE ALARM

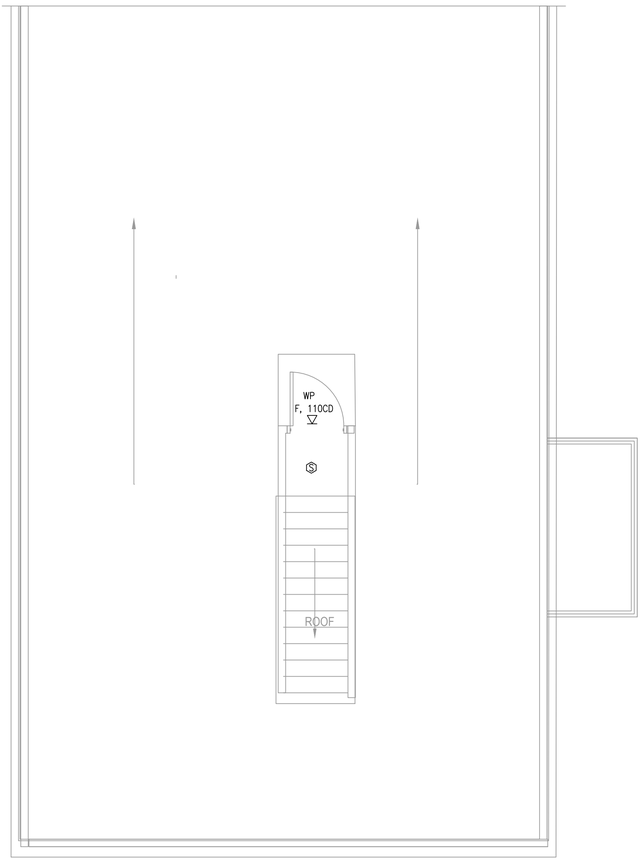
RENO OF EXISTING THREE FAMILY HOME
7 THORNLEY ST, DORCHESTER, MA 02125

FA2

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

COMMONWEALTH OF MASSACHUSETTS
MUZAFFER MUCTEHITZADE
ELECTRICAL
No. 32579
REGISTERED PROFESSIONAL ENGINEER

LIGHTHOUSE ARCHITECTURE & DESIGN
184 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 - erocheaia@msn.com



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

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

ELECTRICAL
PROPOSED ROOF PLAN
- FIRE ALARM

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

FA3

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.

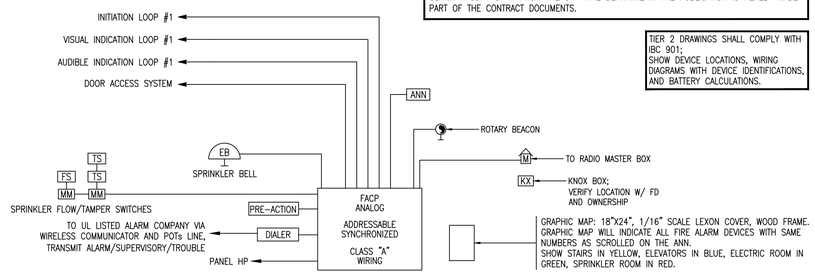
ZADE ASSOCIATES LLC
CONSULTING ENGINEERS
1 BILLINGS ROAD, QUINCY, MA 02171
TEL. (617) 338-4406
FAX. (617) 451-2540
E-MAIL: Zade@ZadeEngineering.com

LIGHTHOUSE ARCHITECTURE & DESIGN
186 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 - eroche.aia@msn.com

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

FIRE ALARM SYSTEM EQUIPMENT AND INSTALLATION SHALL BE IN ACCORDANCE WITH CITY FIRE DEPARTMENT'S RULES AND REGULATIONS WHERE THE PROJECT IS LOCATED. CONTRACTOR MAY OBTAIN A COPY OF IT FROM THE CITY FIRE DEPARTMENT. THE PUBLICATION IS HEREBY MADE PART OF THE CONTRACT DOCUMENTS.

TIER 2 DRAWINGS SHALL COMPLY WITH IBC 901;
SHOW DEVICE LOCATIONS, WIRING DIAGRAMS WITH DEVICE IDENTIFICATIONS, AND BATTERY CALCULATIONS.



NOTES

PROVIDE ADDRESS MODULES FOR ALL FLOW & TAMPER SWITCHES.
SEE FLOOR PLANS FOR DETECTOR TYPES AND LOCATIONS AND QUANTITIES.
SEE SPRINKLER DRAWINGS FOR FLOW/TAMPER SWITCH LOCATIONS AND QUANTITIES.
CARRY MINIMUM OF (1)FLOW AND (4)TAMPER SWITCH AT SPRINKLER SERVICE LOCATION AND (1) FLOW/TAMPER SWITCH PER FLOOR PER STAIR AND TWO TAMPER SWITCH FOR STAND PIPE LOCATION.
PROVIDE MONITOR MODULES AT DRY ALARM VALVE.
PROVIDE MONITOR MODULES FOR ALL DETECTORS LOCATED IN COLD AREAS.
PROVIDE COMPLETE SIGNAL WIRING FOR DOOR RELEASE.
PROVIDE COMPLETE SIGNAL WIRING FOR DRY SYSTEM COMPRESSOR AND ALARM.
PROVIDE BATTERY CALCULATIONS AND ONE LINE WIRING DIAGRAM.
PROVIDE RADIO SIGNAL COVERAGE THROUGHOUT BUILDING AS REQUIRED PER 916.1.2&3.
ALL AUDIO DEVICES LOCATED IN SLEEPING AREAS SHALL COMPLY WITH NFPA 72-18.4.5.3 IN REGARDS TO SIGNAL TYPE, PROVIDE LOW FREQUENCY DEVICES.
PROVIDE TIER 2 DRAWINGS WITH COMPLETE WIRING DIAGRAMS AND DEVICE ADDRESSES AS REQUIRED FOR FIRE DEPARTMENT APPLICATION.
PROVIDE POWER BOOSTERS (NACs) AS REQUIRED; PROVIDE SMOKE DETECTOR AT EACH BOOSTER LOCATION AND FACP LOCATION.

SIGNALING LINE CIRCUIT (SLC) AND INITIATING DEVICE CIRCUIT (IDC) WIRING SHALL BE 2#14 FPLP CABLE.
24VDC ACCESSORY WIRING SHALL BE 2#16 FPLP CABLE (VERIFY THAT ALL DC ACCESSORY CIRCUITS ARE POWER LIMITED).
NAC WIRING SHALL BE 2#14 FPLP CABLE.

TYPICAL FIRE ALARM SYSTEM RISER DIAGRAM

FIRE ALARM LEGEND

S	SYSTEM TYPE SMOKE DETECTOR, ANALOG ADDRESSABLE	TS	TAMPER SWITCH
S_D	SYSTEM TYPE DUCT SMOKE DETECTOR WITH REMOTE TEST SWITCH, ANALOG ADDRESSABLE. TUBE WILL HAVE MINIMUM 10 HOLES.	FS	FLOW SWITCH
H	SYSTEM TYPE HEAT DETECTOR, ANALOG ADDRESSABLE	PS	PRESSURE SWITCH
C	SYSTEM TYPE CO DETECTOR	A	BDA ANTENNA
F	FIRE ALARM PULL STATION	MM	ADDRESSABLE MONITOR MODULE
S_L	120V LOCAL TYPE SMOKE ALARM W/BATTERY. L-INDICATES BUILT-IN STROBE.	CM	ADDRESSABLE CONTROL MODULE
CO S_L	COMBINATION TYPE 120V LOCAL SMOKE/CO ALARM WITH BATTERY BACK UP. L-INDICATES BUILT-IN STROBE.	R	INTERPOSING RELAY
		SB	520Hz SOUNDER BASE
H^{LF}	MINI HORN/ TEMPORAL PER NFPA 72-18.4.5.3, LOW FREQUENCY IN BEDROOMS.		FIRE ALARM BEACON
∇^F	FIRE ALARM HORN/STROBE (SYCHRONIZED); SEE FLOOR PLAN FOR CANDELA RATING	EB	ELECTRIC BELL FOR FIRE DEPARTMENT CONNECTION
∇^L	FIRE ALARM STROBE ONLY (SYCHRONIZED); SEE FLOOR PLAN FOR CANDELA RATING		END OF LINE DEVICE
L, (SM/CO) ∇	FIRE ALARM STROBE; 120V FOR LOCAL CO OR SMOKE ALARM AT ACCESSIBLE AND HEARING IMPAIRED UNITS.	CO/NO	CO/NO DETECTOR
		FACP	FIRE ALARM CONTROL PANEL
∇	CEILING MOUNTED A/V DEVICE	ANN	FIRE ALARM ANNUNCIATOR PANEL
		DIALER	DIALER BY E.C. WIRED TO UL LISTED ALARM CO.
	STROBE FOR INTERCOM ACCESSABLE AND HEARING IMPAIRED UNITS	NAC	NAC BOOSTER PANEL

-DUCT SMOKE DETECTORS SHALL BE INSTALLED IN HEATED AREAS AT THE SUPPLY SIDE BEFORE THE FIRST TAKE OFF, MINIMUM 5FT AWAY FROM THE UNIT COIL. REMOTE TEST/INDICATOR LOCATIONS SHALL BE NEXT TO FACP PANEL, OR AS DIRECTED BY THE FIRE DEPARTMENT.

-A/V DEVICE LOCATIONS ARE SHOWN BASED ON DISTANCE REQUIREMENTS. CONTRACTOR SHALL COORDINATE PHYSICAL STRUCTURES SO THAT VISIBILITY WILL BE MAINTAINED. PROPOSED CHANGES SHALL BE FORWARDED TO ARCHITECT/ENGINEER FOR APPROVAL.

FOR EVERY SMOKE DAMPER SHOWN ON THE MECHANICAL DRAWINGS, PROVIDE A DUCT SMOKE DETECTOR IN THE DUCT TO OPERATE THE SMOKE DAMPER.
PROVIDE 120V POWER TO SMOKE DAMPER FOR OPERATION.
WHERE THE AIR SUPPLY FROM THE SHAFT DIRECTLY SERVES A CORRIDOR OR SPACE WHERE THERE ARE SMOKE DETECTORS PROVIDED FOR COMPLETE COVERAGE, NO DUCT SMOKE DETECTOR IS REQUIRED.
INTERLOCK DAMPERS TO CLOSE UPON DUCT DETECTOR ACTIVATIONS.

SMOKE DETECTORS INSTALLED IN DUCTS AND OTHER LOCATIONS WITH AIR VELOCITIES GREATER THAN 300FT/MIN SHALL BE LISTED FOR THE VELOCITY CONDITIONS ANTICIPATED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.

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.

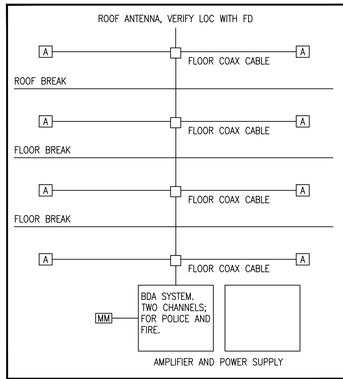
LOCATION(S) OF SMOKE AND CO ALARMS WITHIN DWELLING UNITS SHALL BE PER THE FOLLOWING:
FROM BATHROOM DOOR: 3FT
FROM HVAC DIFFUSERS: 3FT
FROM TIP OF CEILING FAN BLADES: 3FT
FROM COOKING EQUIPMENT:
PHOTOELECTRIC TYPE - 6FT
IONIZATION TYPE - 20FT

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

		CONTROL UNIT ANN						NOTIFICATION					FIRE SAFETY SYSTEMS CONTROLS					
		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	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	-																			

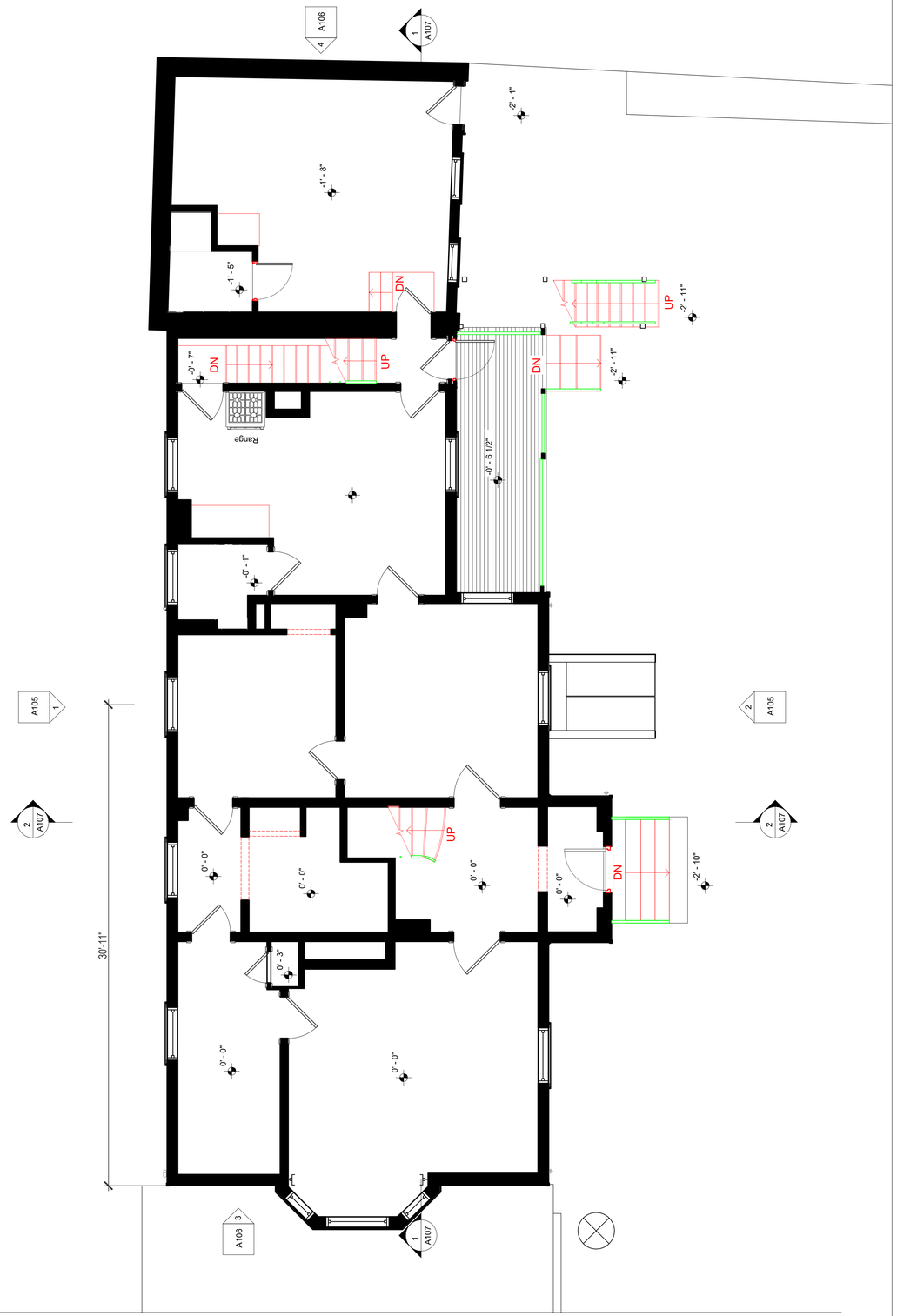
GENERAL NOTE:

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.

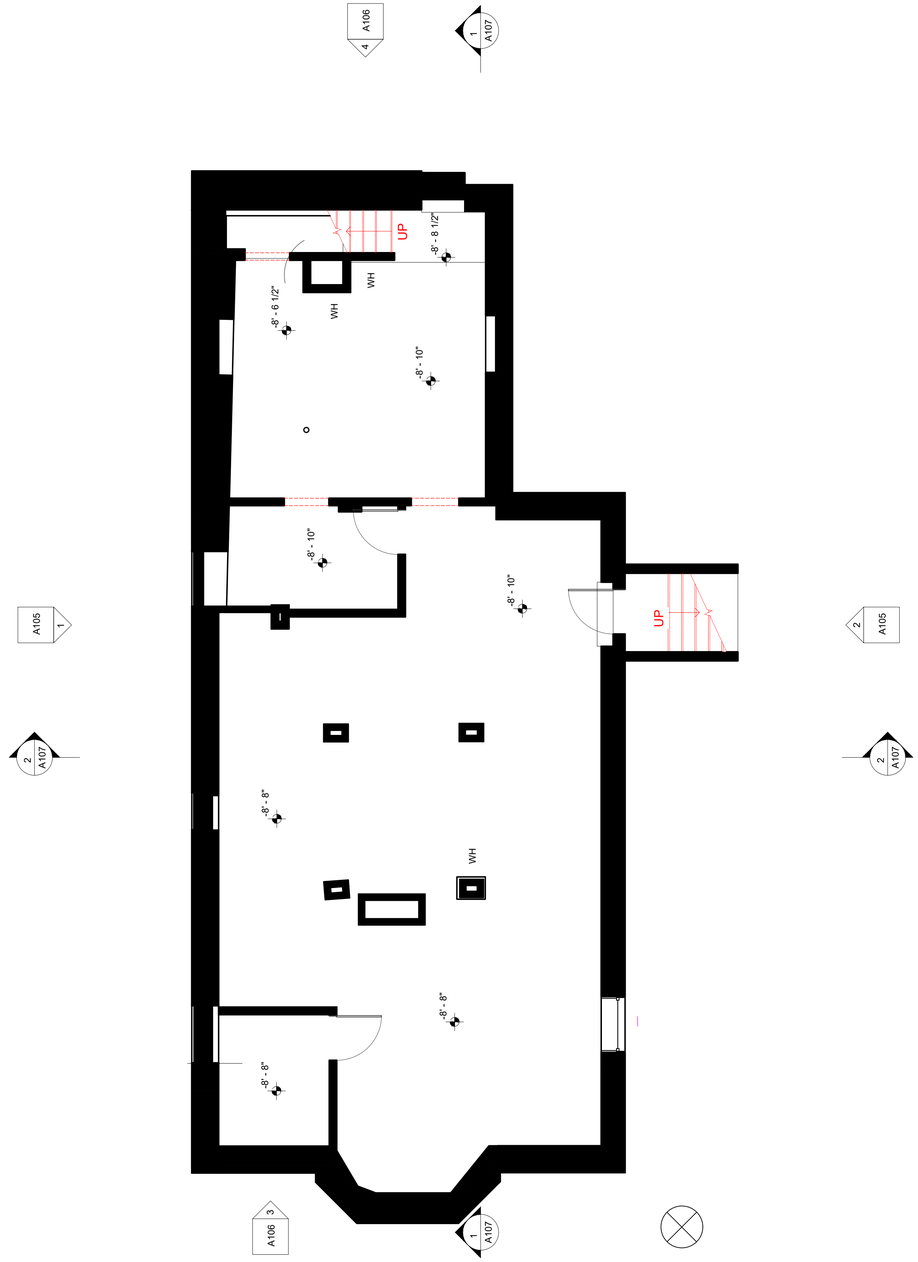
FIRE ALARM
RISER & NOTES

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

FA4



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



EXISTING BASEMENT 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.

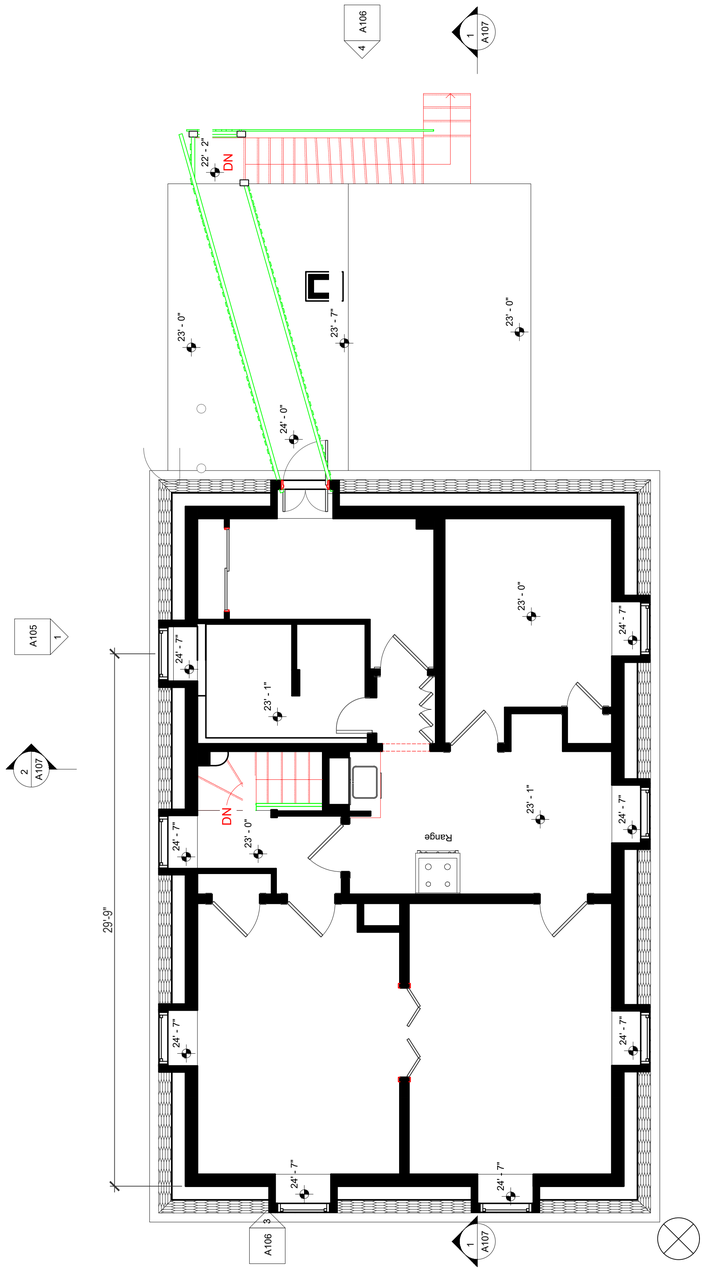
LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRAINTREE MA 02184 UNIT #1
Gavin Driscoll, Principal - 781-801-2690- gavin.s.driscoll@gmail.com
J. Edward Roche, AIA, Architect - 617-512-9281 - eroche1a@NSIA.com

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

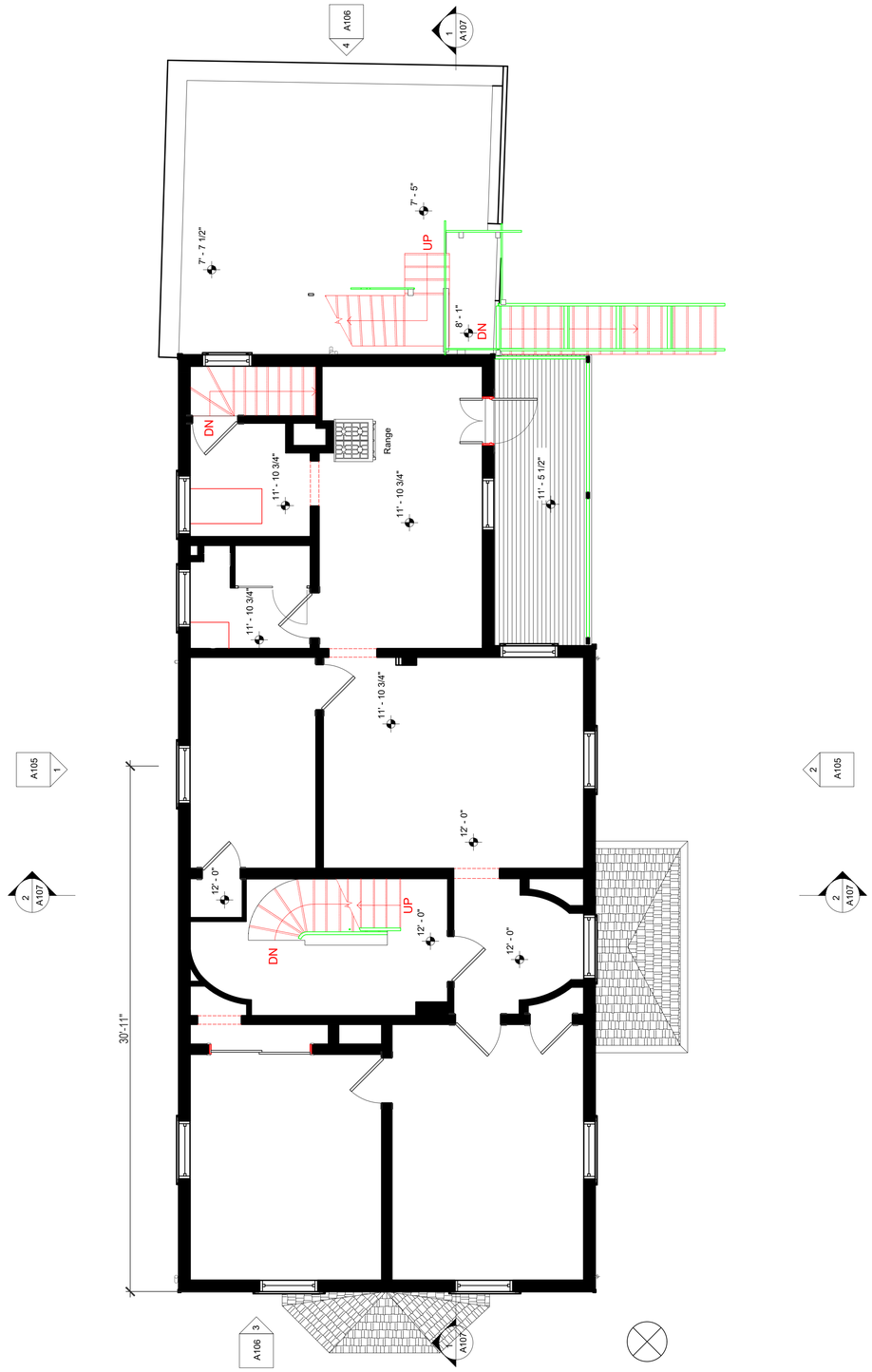
EXISTING BASEMENT PLAN
EXISTING FIRST FLOOR

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

EX1



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



PROPOSED SECOND 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.

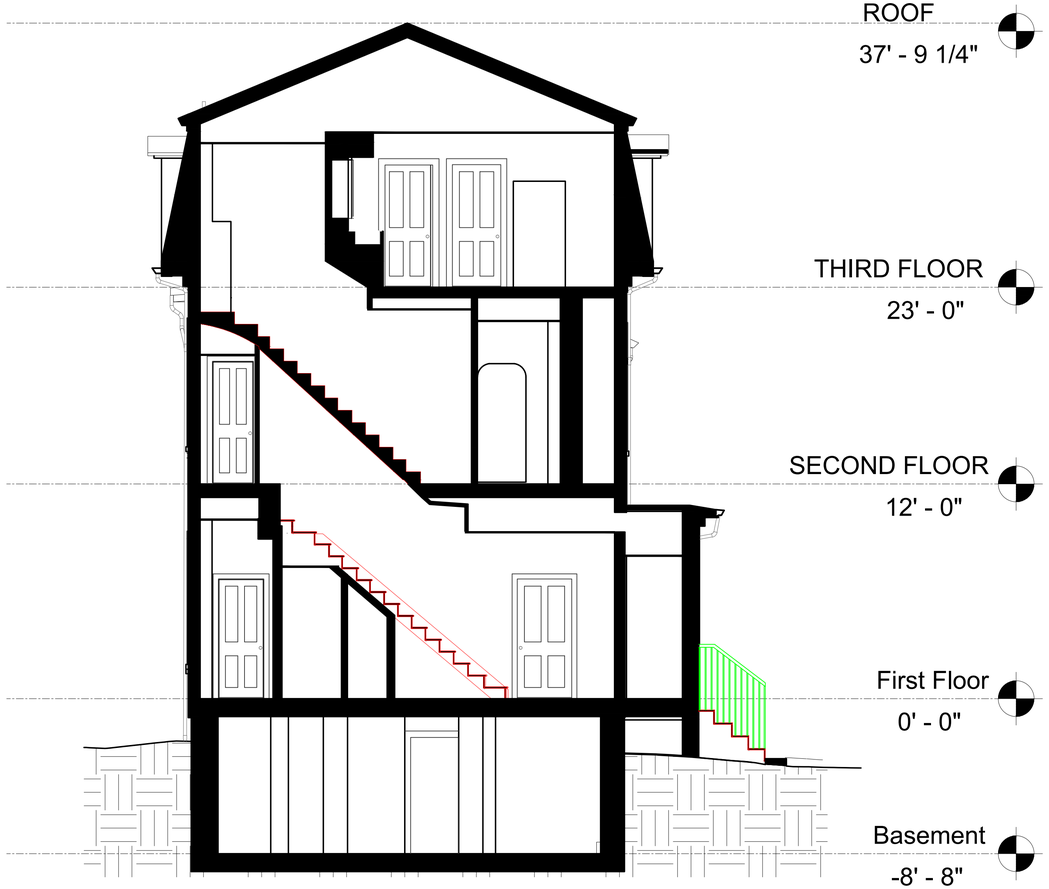
LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - gavin.lighthouse@gmail.com
781-801-2690
J. Edward Roche, AIA, Principal - erochejala@msn.com
617-512-9281

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

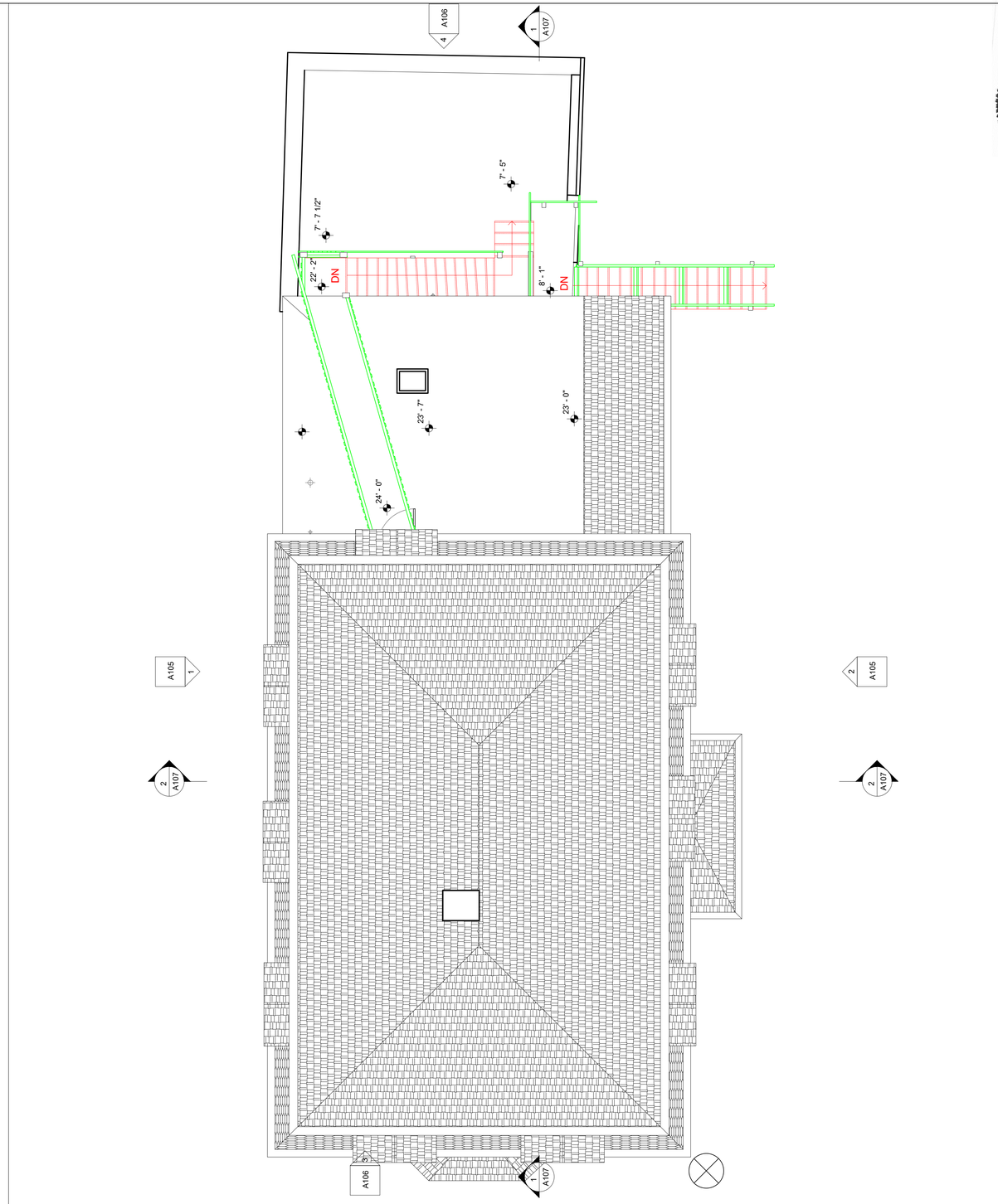
EXISTING 2ND FLOOR PLAN
EXISTING 3RD FLOOR PLAN

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

EX2



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.

LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRAINTREE MA 02184 UNIT #1
Gavin Driscoll, Principal Architect
781-801-2690- gavin.lighthousedesign@gmail.com
J. Edward Roche, AIA, Principal Architect
617-512-9281 - erochejaia@msn.com

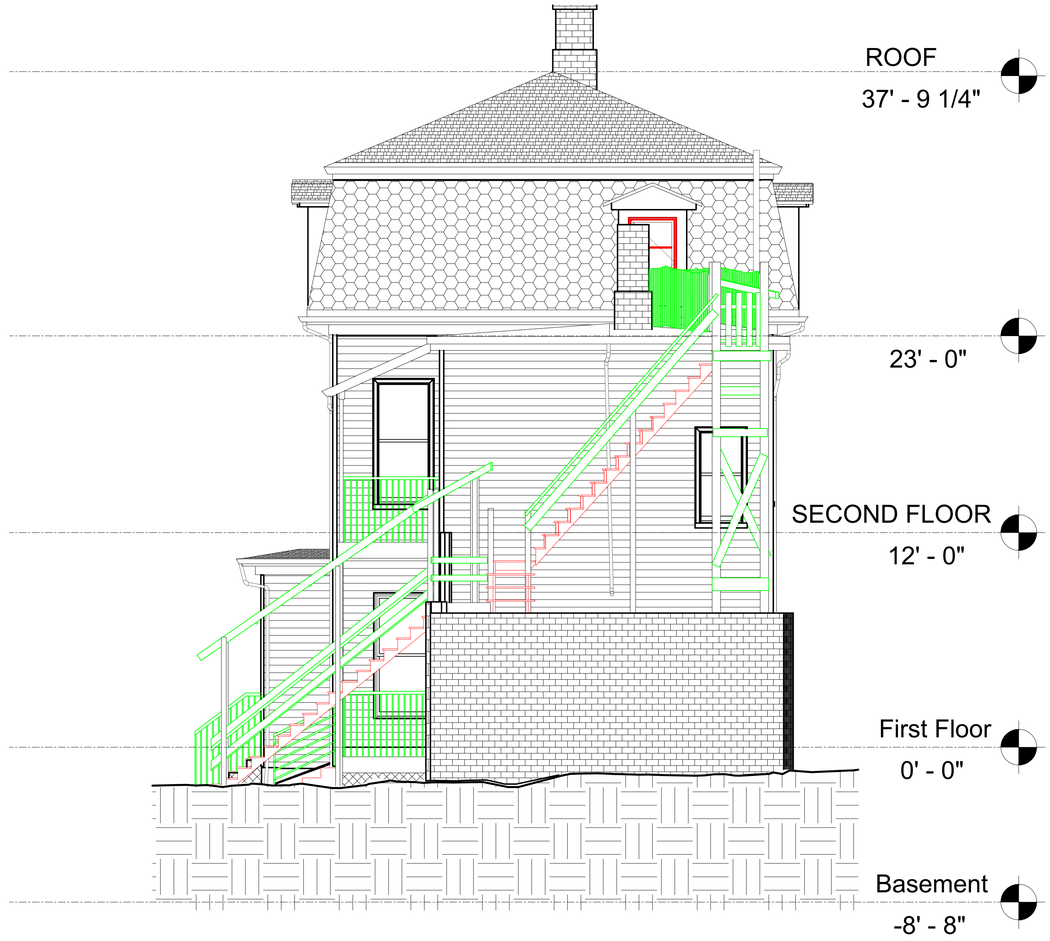
DATE:	10/30/25
SCALE:	AS NOTED
DRAWN BY:	GSD
CHECKED BY:	JER

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:
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 BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal 781-801-2690- gavin.s.driscoll@gmail.com
J. Edward Roche, AIA, Principal 617-512-9281 - eroche.aia@verizon.net

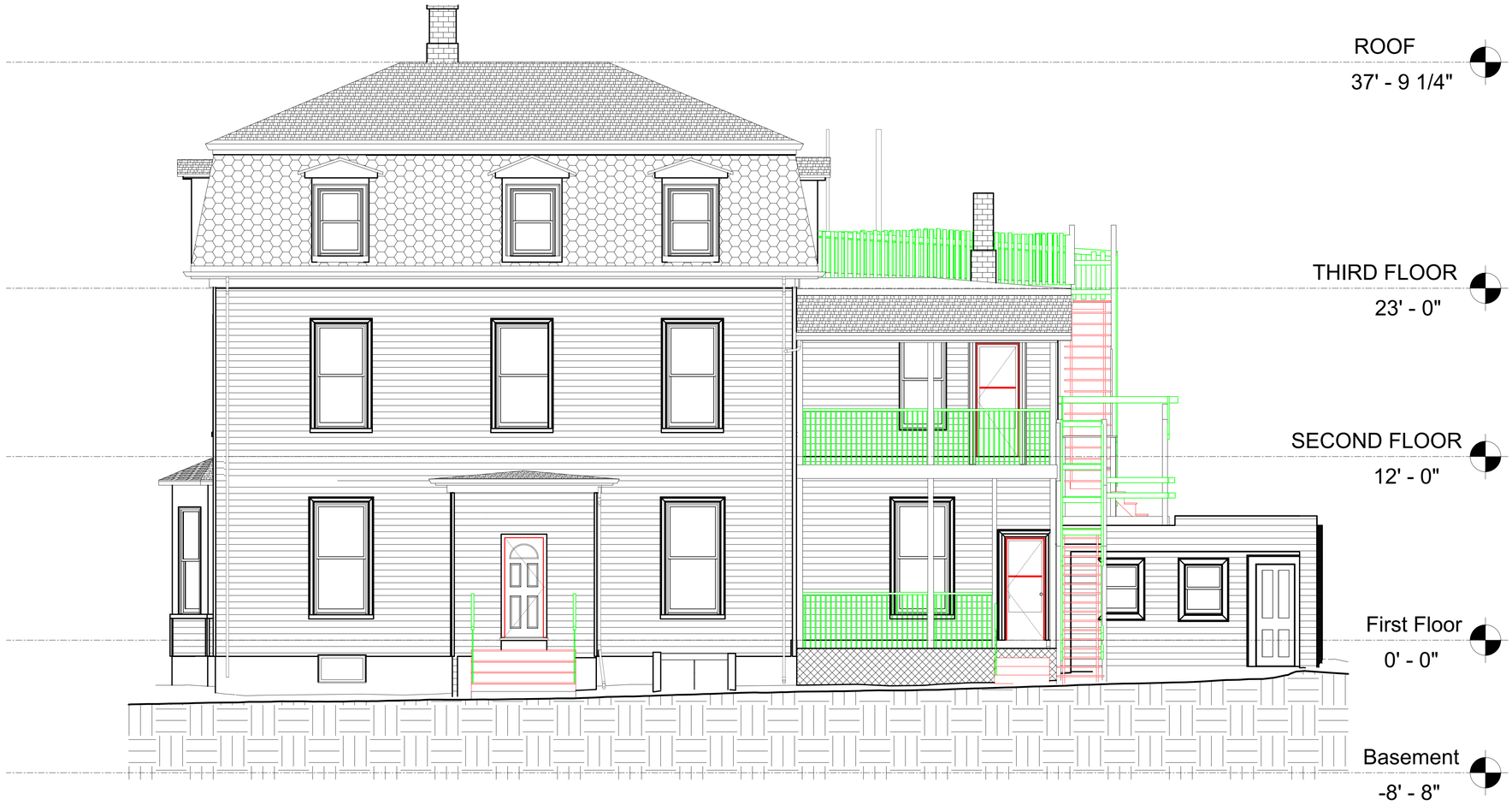
REGISTERED ARCHITECT J. EDWARD ROCHE #6635

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:
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.

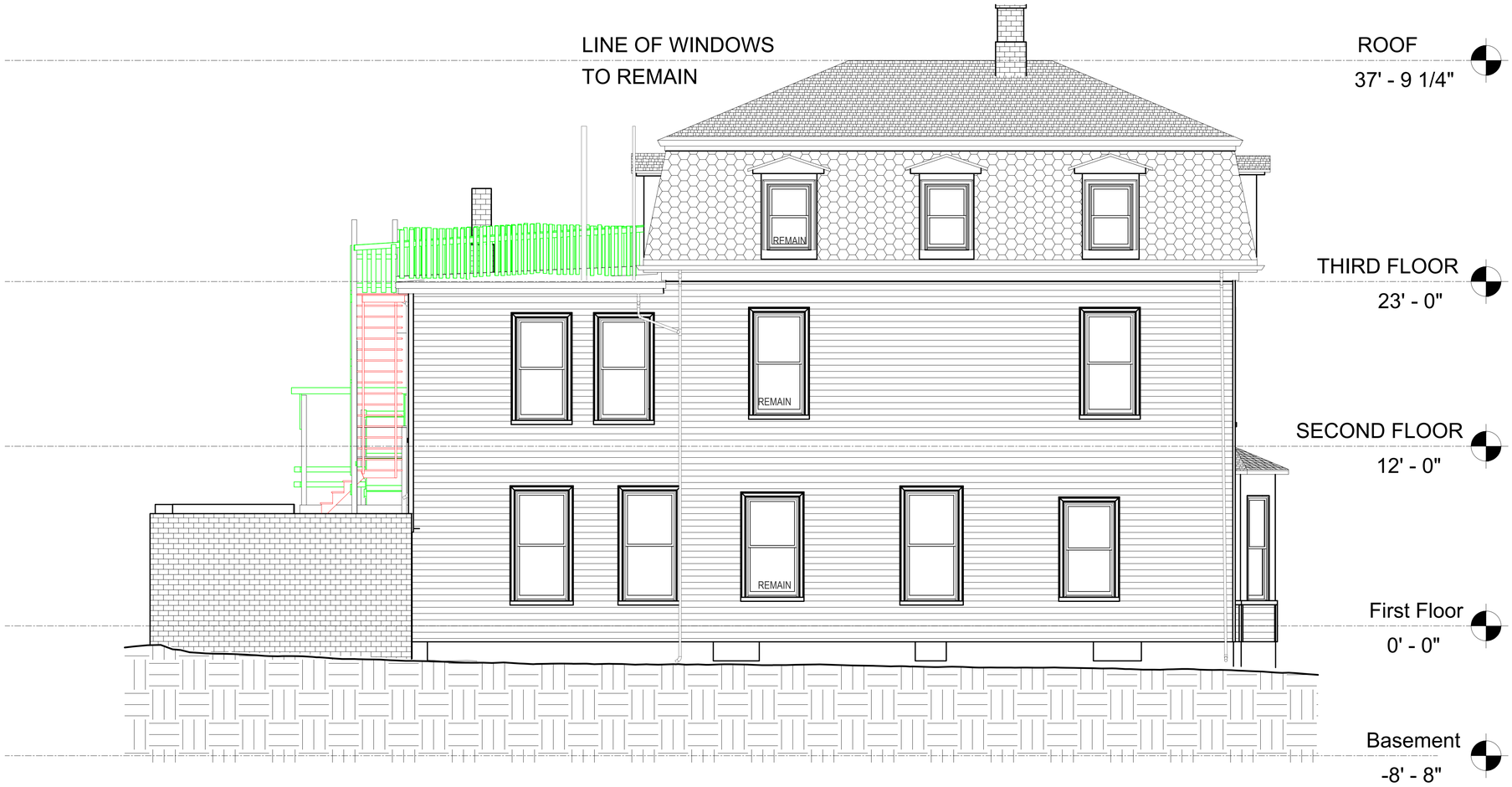
LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - gavin.lighthouse@gmail.com
781-801-2690
J. Edward Roche, AIA, LEED AP - erochejaia@msn.com
617-512-9281

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

EXISTING RIGHT ELEVATION

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

EX5



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

LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRAINTREE, MA 02184 UNIT #1
Gavin Driscoll, Principal - gavin@lighthousearchitecture.com
781-801-2690
J. Edward Roche, AIA - erochella@gmail.com
617-512-9281

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

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.

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

LIGHTHOUSE ARCHITECTURE & DESIGN
180 ALLEN ST BRADFORD ST, UNIT #1
Gavin Driscoll, Principal - gavin@lighthousedesign.com
781-801-2690
J. Edward Roche, AIA - erochejia@gmail.com
617-512-9281

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

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.

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.

Building Specification Summary

Property
7 Thornley St Unit 1
Dorchester, MA 02125

Thornley St 7 Unit 1 - vwY1DxNL
Final

Organization
Home Energy Raters
Chris Mazzola
508-833-3100

Builder
Walter Hunting
Construction

Inspection Status
Results are projected

Building Information

Conditioned Area [ft^2]	1,275.00
Conditioned Volume [ft^3]	14,232.00
Thermal Boundary Area [ft^2]	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	None
Above Grade Walls	R23,FG+XPS,R13+2",6x16,G1; U-0.049
Found. Walls	None
Framed Floors	R15,MW,10x16,G1; R-15
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 ft^2)
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%
Percent Exterior LED	100%
Refrigerator (kWh/yr)	691.0
Dishwasher Efficiency	270 kWh
Ceiling Fan	None

Clothes Dryer Fuel	Electric
Clothes Dryer CEF	3.4
Clothes Washer LER (kWh/yr)	284.0
Clothes Washer Capacity	4.2
Range/Oven Fuel	Natural Gas

Building Summary

Property
7 Thornley St Unit 1
Dorchester, MA 02125

Thornley St 7 Unit 1 - vwY1DxNL
Final

Organization
Home Energy Raters
Chris Mazzola
508-833-3100

Builder
Walter Hunting Construction

Inspection Status
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
Flr >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	: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 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

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 >adiabatic	15,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	ANTANEOUS,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

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

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

Property
7 Thornley St Unit 2
Dorchester, MA 02125

Thornley St 7 Unit 2 - dq3kDGQ2
Final

Organization
Home Energy Raters
Chris Mazzola
508-833-3100

Builder
Walter Hunting
Construction

Inspection Status
Results are projected

Building Information

Conditioned Area [ft^2]	1,275.00
Conditioned Volume [ft^3]	14,232.00
Thermal Boundary Area [ft^2]	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
Vaulted Ceiling	None
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 ft^2)
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%
Percent Exterior LED	100%
Refrigerator (kWh/yr)	691.0
Dishwasher Efficiency	270 kWh
Ceiling Fan	None

Clothes Dryer Fuel	Electric
Clothes Dryer CEF	3.4
Clothes Washer LER (kWh/yr)	284.0
Clothes Washer Capacity	4.2
Range/Oven Fuel	Natural Gas

Building Summary

Property
7 Thornley St Unit 2
Dorchester, MA 02125

Thornley St 7 Unit 2 - dq3kDGQ2
Final

Organization
Home Energy Raters
Chris Mazzola
508-833-3100

Builder
Walter Hunting Construction

Inspection Status
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: 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
Flr >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 2
Dorchester, MA 02125

Project & Plan
Thornley St 7 Unit 2 - dq3kDGQ2
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 >adiabatic	15,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	ANTANEOUS,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 2
Dorchester, MA 02125

Project & Plan
Thornley St 7 Unit 2 - dq3kDGQ2
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	Conditioned Space
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]	60
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

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

Property
7 Thornley St Unit 3
Dorchester, MA 02125

Thornley St 7 Unit 3 - Lz1B3qP2
Final

Organization
Home Energy Raters
Chris Mazzola
508-833-3100

Builder
Walter Hunting
Construction

Inspection Status
Results are projected

Building Information

Conditioned Area [ft^2]	1,275.00
Conditioned Volume [ft^3]	14,232.00
Thermal Boundary Area [ft^2]	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 ft^2)
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%
Percent Exterior LED	100%
Refrigerator (kWh/yr)	691.0
Dishwasher Efficiency	270 kWh
Ceiling Fan	None

Clothes Dryer Fuel	Electric
Clothes Dryer CEF	3.4
Clothes Washer LER (kWh/yr)	284.0
Clothes Washer Capacity	4.2
Range/Oven Fuel	Natural Gas

Building Summary

Property
7 Thornley St Unit 3
Dorchester, MA 02125

Thornley St 7 Unit 3 - Lz1B3qP2
Final

Organization
Home Energy Raters
Chris Mazzola
508-833-3100

Builder
Walter Hunting Construction

Inspection Status
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: 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
Flr >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 >roof	3"+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	ANTANEOUS,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 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

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	Conditioned Space
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]	70
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

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

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.

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)

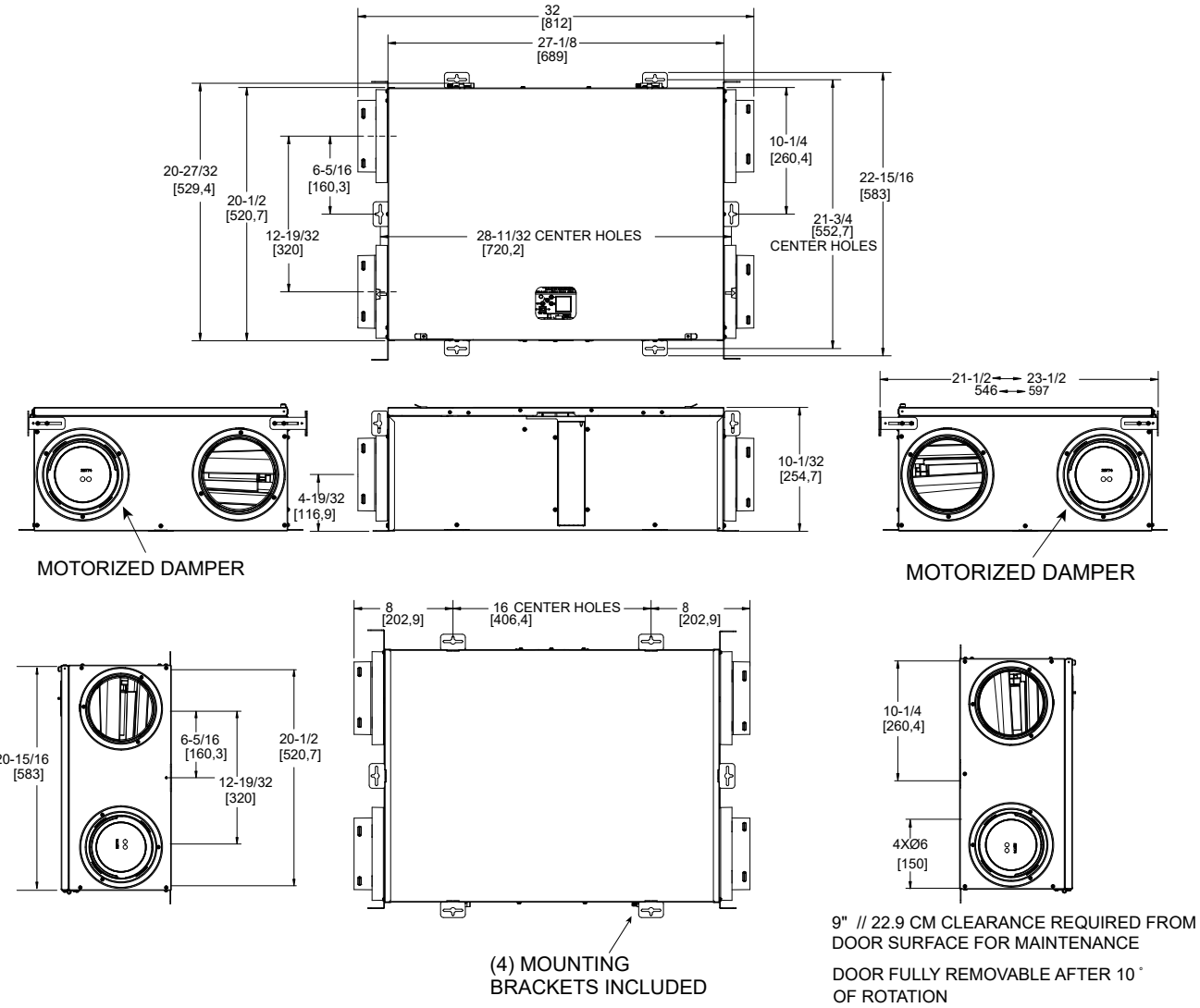
Filtration

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

Exterior Termination Options

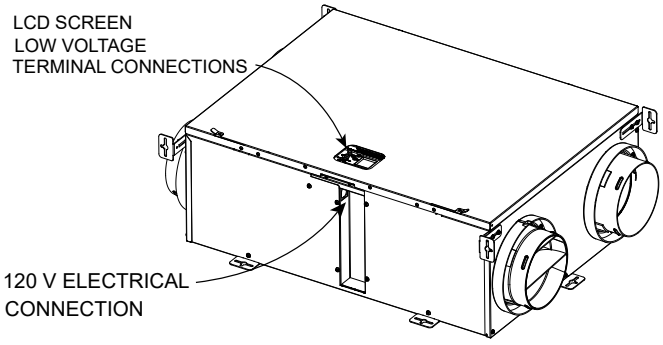
- Compatible with Tandem Terminations (part no. VTYIK1 and V14695) (airflow setting should be adjusted in accordance with application requirements)

Dimensions



9" // 22.9 CM CLEARANCE REQUIRED FROM DOOR SURFACE FOR MAINTENANCE

DOOR FULLY REMOVABLE AFTER 10 ° OF ROTATION

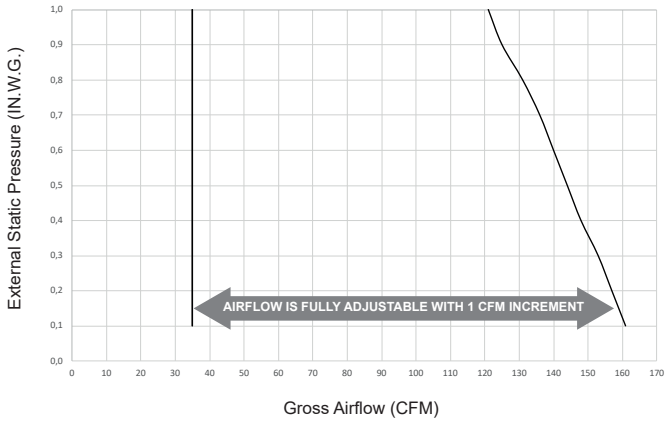


Fan Curves with VIRTUO™

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)[1]	Airflow (L/s)[1]	Power (watts)	Fan Efficacy (CFM/W)[2]	Fan Efficacy (L/s/W)[2]
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

[1] 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.
[2] 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

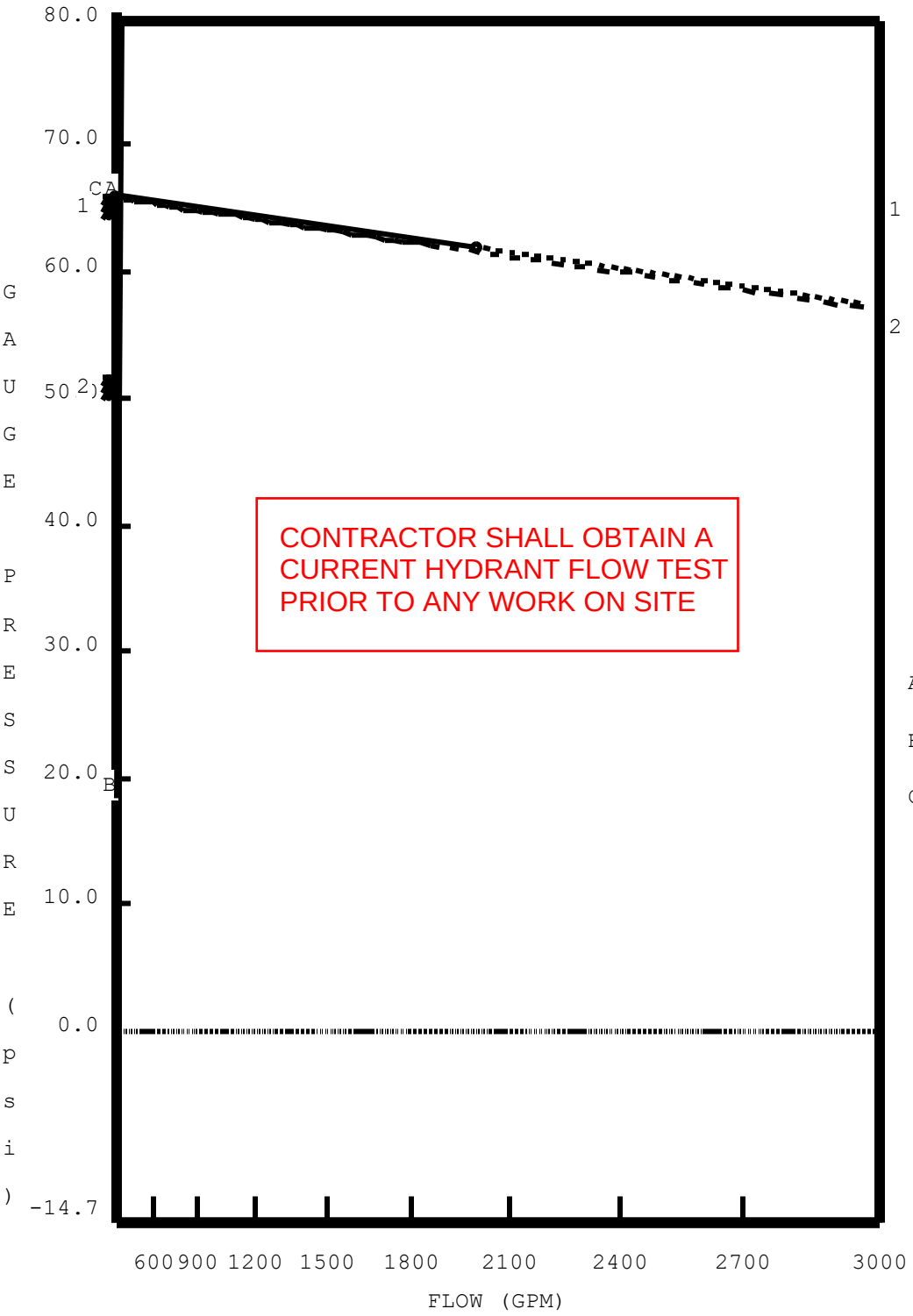
Project:	Remarks
Location:	
Part no.:	
Qty.:	
Submitted by: Date:	

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



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 / Frm Node / To Node	El (ft)	K-fac / PT	Add Fl (q) / PT	Add Fl To Node/ Disch	Nom ID / Act ID	Fit: Eq.Ln. (ft.)	L / F / T	C / Pf/ft.	(Pt) (Pe) (Pf)
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

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 1.00	5.00	2.00	5.00	6.00	1.00	10.00	2.00	5.00
1.610	4.00 2.00	8.00	2.00	9.00	6.00	1.00	10.00	10.00	8.00
2.067	5.00 2.50	10.00	3.00	11.00	6.00	1.00	10.00	10.00	10.00

ZADE

ZADE ENGINEERING LLC
Consulting Engineers
1 Billings Rd.
Quincy, MA. 02171
Suite 306
Phone: (617) 338-4406
Email: Zade@ZadeEngineering.com

Mohammed Zade Ph.D., P.E.
Muzaffer Mu ctehitzade 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 FT²
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 10th 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^2

b) Sprinkler coverage is not required in closets less than 24 FT^2

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