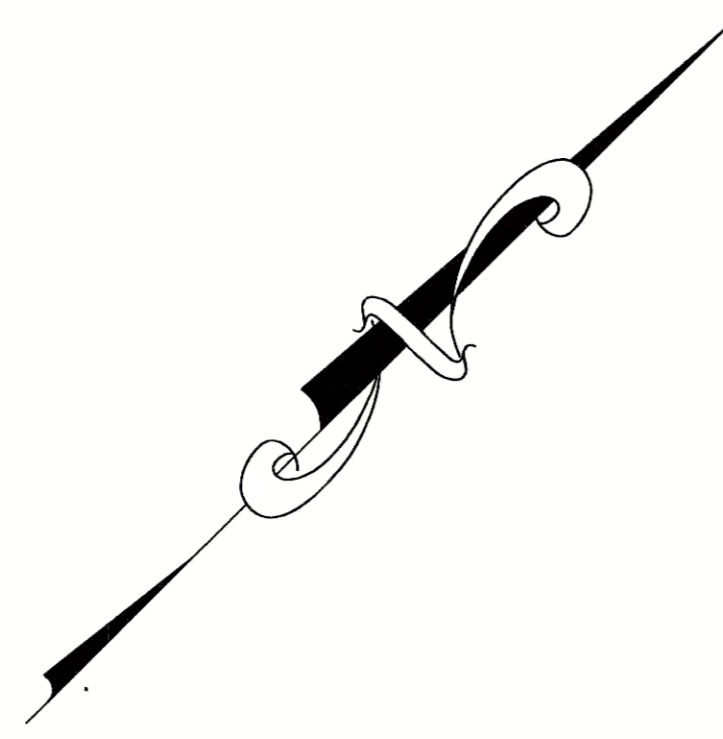


LOCUS MAP  
N.T.S.



GLENWOOD AVENUE  
PUBLIC 25' WIDE

WEST STREET  
PUBLIC 55' WIDE

MAIN STREET  
PUBLIC RIGHT OF WAY  
C.O. LAYOUT 1916

STONE STREET



**ASSESSOR'S REFERENCE:**  
MAP 30, PARCEL 30

**DEED REFERENCE:**  
NORFOLK COUNTY REGISTRY OF DEEDS  
Bk. 37424, Pg. 205

**PLAN REFERENCE:**  
PLAN No. 285 OF 2002, Bk. 495  
PLAN No. 286 OF 2002, Bk. 495

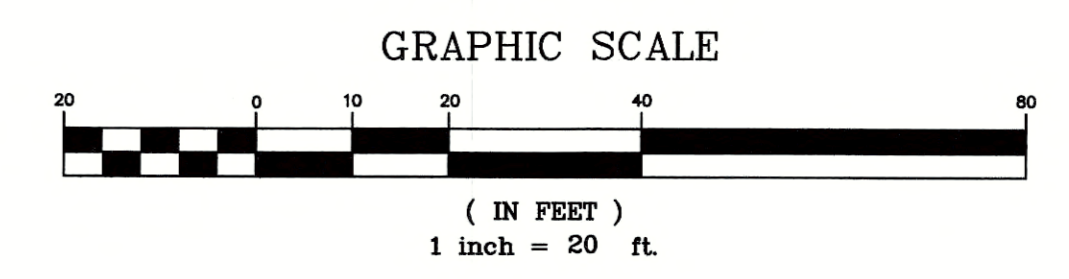
**OWNER OF RECORD:**  
JMK Property One LLC  
P.O. Box 174  
Norwood, MA 02062

**ZONING CLASSIFICATION:**  
CBD - CENTRAL BUSINESS DISTRICT  
LOT AREA: 5,000 S.F.

**ZONING TABLE:**  
CLASSIFICATION: CBD - CENTRAL BUSINESS DISTRICT

	REQUIRED	EXISTING
LOT AREA:	5,000 S.F.	4,387 S.F.
FRONTAGE:	50 ft.	55.9 ft.(Main St)
COVERAGE BLDG.:	50%	68.1%
IMPERVIOUS AREA:	100%	92.2%
SETBACKS:		
FRONT:	0	0.6 ft.(Glenwood)
SIDE:	0	1.0 ft.
REAR:	0	N.A.

- NOTES:**
- 1) UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE INDICATIONS AND COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES. THEY ARE APPROXIMATE ONLY, AND IT IS THE CONTRACTOR AND/OR OWNERS RESPONSIBLE TO VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION. "DIG SAFE" 1-888-344-7233.
  - 2) THIS PLAN WAS PREPARED FROM AN ON THE GROUND SURVEY AND PLANS OF RECORD.
  - 3) UTILITY INFORMATION IN MAIN STREET WAS OBTAINED FROM PLANS ON FILE WITH THE NORFOLK REGISTRY OF DEEDS AND THE TOWN OF WALPOLE.



REVISIONS	DESCRIPTION
No.	DATE

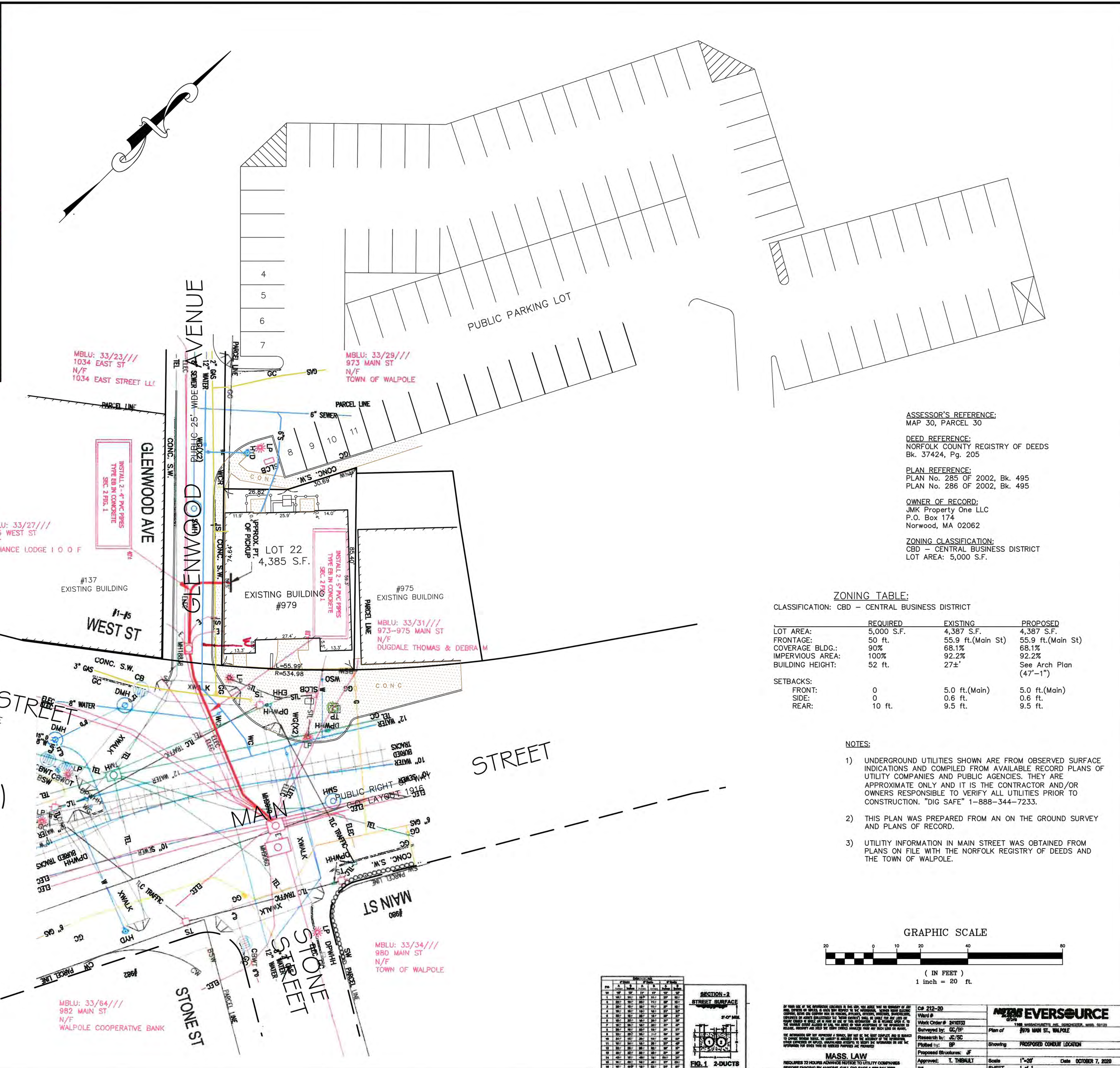
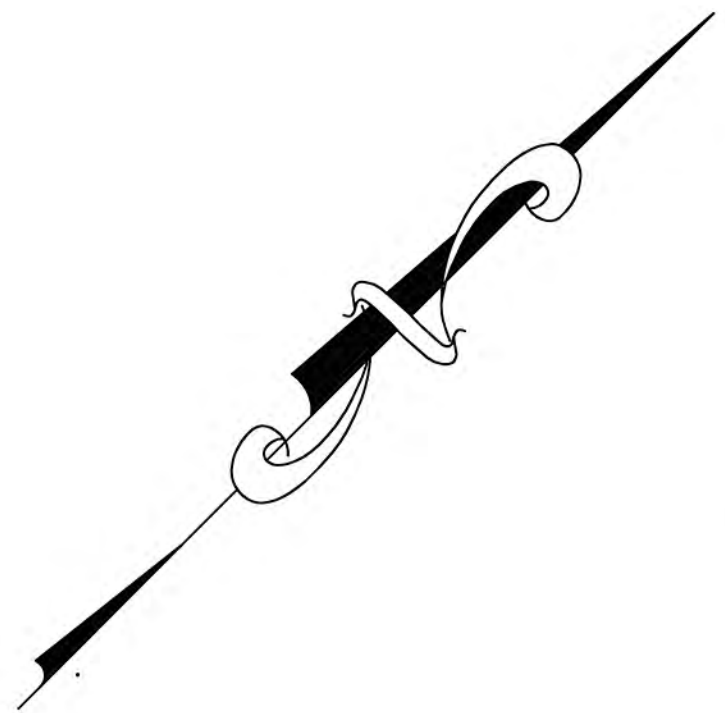
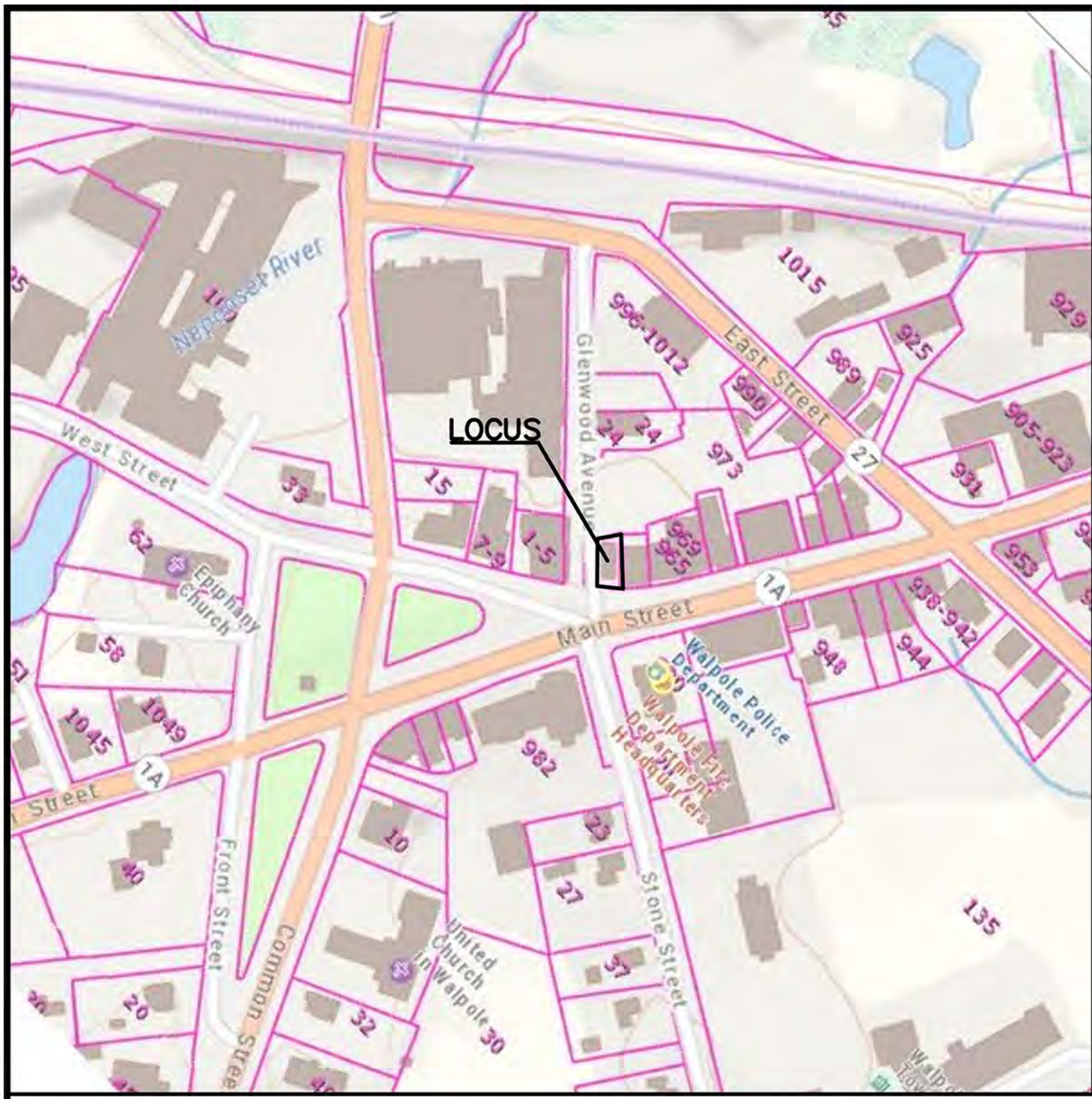


**SITE PLAN OF LAND  
"979 MAIN STREET"  
WALPOLE, MASSACHUSETTS**

PREPARED FOR:  
JMK PROPERTY ONE LLC  
P.O. BOX 174  
NORWOOD, MA 02062

**GLM** Engineering Consultants, Inc.  
19 EXCHANGE STREET  
HOLLISTON, MA 01746  
P: 508-429-1100  
F: 508-429-7160  
www.GLMengineering.com

DRW.:	RST
JOB No.	16,731
DATE:	APRIL 28, 2020
SCALE:	1"=20'
SHEET:	1 of 1
PLAN #:	27,403



**ASSESSOR'S REFERENCE:**  
MAP 30, PARCEL 30

**DEED REFERENCE:**  
NORFOLK COUNTY REGISTRY OF DEEDS  
Bk. 37424, Pg. 205

**PLAN REFERENCE:**  
PLAN No. 285 OF 2002, Bk. 495  
PLAN No. 286 OF 2002, Bk. 495

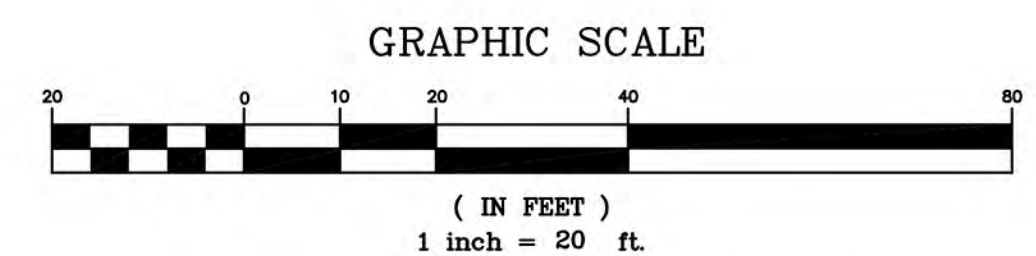
**OWNER OF RECORD:**  
JMK Property One LLC  
P.O. Box 174  
Norwood, MA 02062

**ZONING CLASSIFICATION:**  
CBD - CENTRAL BUSINESS DISTRICT  
LOT AREA: 5,000 S.F.

**ZONING TABLE:**  
CLASSIFICATION: CBD - CENTRAL BUSINESS DISTRICT

	REQUIRED	EXISTING	PROPOSED
LOT AREA:	5,000 S.F.	4,387 S.F.	4,387 S.F.
FRONTAGE:	50 ft.	55.9 ft.(Main St)	55.9 ft.(Main St)
COVERAGE BLDG.:	90%	68.1%	68.1%
IMPERVIOUS AREA:	100%	92.2%	92.2%
BUILDING HEIGHT:	52 ft.	27±'	See Arch Plan (47'-1")
SETBACKS:			
FRONT:	0	5.0 ft.(Main)	5.0 ft.(Main)
SIDE:	0	0.6 ft.	0.6 ft.
REAR:	10 ft.	9.5 ft.	9.5 ft.

- NOTES:**
- 1) UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE INDICATIONS AND COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES. THEY ARE APPROXIMATE ONLY AND IT IS THE CONTRACTOR AND/OR OWNERS RESPONSIBLE TO VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION. "DIG SAFE" 1-888-344-7233.
  - 2) THIS PLAN WAS PREPARED FROM AN ON THE GROUND SURVEY AND PLANS OF RECORD.
  - 3) UTILITY INFORMATION IN MAIN STREET WAS OBTAINED FROM PLANS ON FILE WITH THE NORFOLK REGISTRY OF DEEDS AND THE TOWN OF WALPOLE.



**SECTION - 2**  
STREET SURFACE  
3'-0" MIN.

**FIG. 1 2-DUCTS**

NO.	DATE	DESCRIPTION
1	8/17/20	REVISED ZONING TABLE
2	8/31/20	REVISED ZONING TABLE

**MASS. LAW**  
REQUIRES 24 HOURS ADVANCE NOTICE TO UTILITY COMPANIES BEFORE DIGGING BY ANYONE. CALL 800-452-4343.

**EVERSOURCE**  
Plan of 979 MAIN ST, WALPOLE  
Showing PROPOSED CONDUIT LOCATION

Scale: 1"=20'  
Date: OCTOBER 7, 2020

**REVISIONS**

No.	DATE	DESCRIPTION
1	8/17/20	REVISED ZONING TABLE
2	8/31/20	REVISED ZONING TABLE

**SITE PLAN OF LAND**  
**"979 MAIN STREET"**  
**WALPOLE, MASSACHUSETTS**

PREPARED FOR:  
JMK PROPERTY ONE LLC  
P.O. BOX 174  
NORWOOD, MA 02062

**GLM** Engineering Consultants, Inc.  
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HOLLISTON, MA 01746  
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F: 508-429-7160  
www.GLMengineering.com

DRW.: RST  
JOB No. 16,731  
DATE: APRIL 28, 2020  
SCALE: 1"=20'  
SHEET: 1 of 1  
PLAN #: 27,403



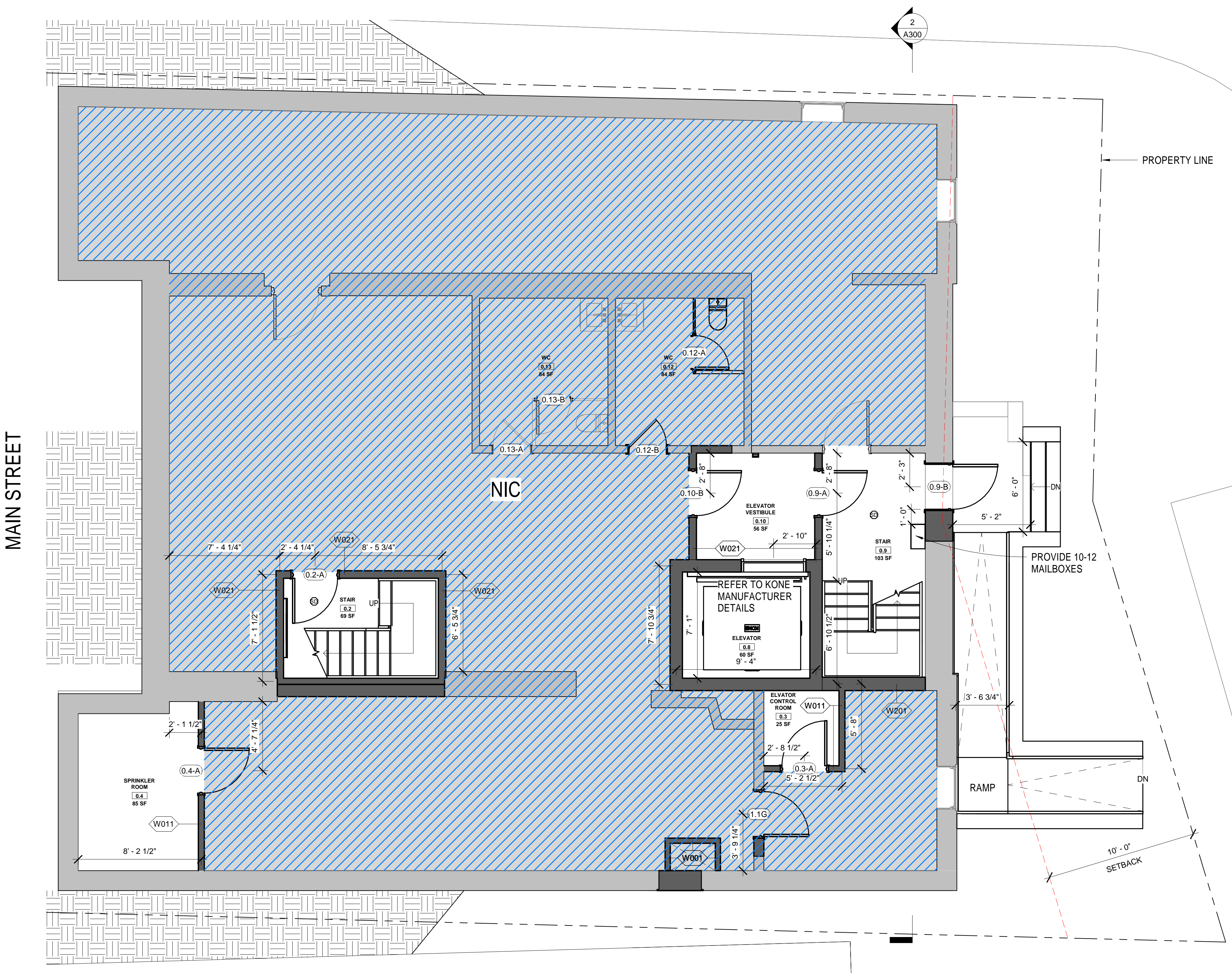












1 Basemnt - Proposed  
 1/4" = 1'-0"

**GENERAL NOTES**

1. WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS.
2. ALL DIMENSIONS ARE TO BE TAKEN FROM NUMERIC DESIGNATIONS ONLY; DIMENSIONS ARE NOT TO BE SCALED OFF THE DRAWINGS.
3. ALL GYPSUM BOARD SURFACES ARE TO BE 5/8" THICK UNLESS OTHERWISE NOTED.
4. ALL GYPSUM AND PLASTER FINISHES SHOULD BE SMOOTH, CONTINUOUS, FREE OF IMPERFECTIONS, AND HAVE NO VISIBLE JOINTS.
5. PROVIDE GAS, WATER SPOGOT, OUTLET, AND LIGHTING AT ROOF DECKS.
6. ALL CLOSETS SHALL HAVE SHELF AND POLE OR SHELVES AS REQUIRED, UNLESS OTHERWISE NOTED.
7. ALL REQUIRED LIFE SAFETY DEVICES, INCLUDING SMOKE & CARBON MONOXIDE DETECTORS, SHALL BE INSTALLED BY THE CONTRACTOR IN COMPLIANCE WITH THE 2009 INTERNATIONAL BUILDING CODE

**PLAN NOTES**

1. ALL DIMENSIONS ARE MEASURED FROM FACE OF BRICK TO F.O. STUD OR FROM F.O. STUD TO F.O. STUD, UNLESS OTHERWISE NOTED.
2. ALL DOORS ARE 80" TALL UNLESS OTHERWISE NOTED.

**MECHANICAL | SECURITY NOTES**

1. PROVIDE 5.1 AUDIO WIRING FOR LIVING ROOM AND MASTER BEDROOMS; FOR NUMBER AND LOCATION, SEE REFLECTED CEILING PLANS.
2. PROVIDE NEST LEARNING THERMOSTAT AT EACH UNIT. (ZONING PER FLOOR LEVEL IN DUPLEX UNITS)
3. HEATING AND AIR CONDITIONING IS TO BE PROVIDED BY HIGH VELOCITY FORCED AIR SPACE PAK HIGH VELOCITY AIR CONDITIONING SYSTEMS WITH HYDRONIC HEATING.
4. HOT WATER IS TO BE PROVIDED BY A HIGH EFFICIENCY NAVIEN MODULATING CONDENSING COMBINATION HEATING AND HOT WATER SYSTEM OR EQUAL.
5. HARD WIRED SECURITY SYSTEM SHALL BE PROVIDED AT EACH UNIT; CONTACTS SHALL BE PLACED AT EXTERIOR DOORS AND WINDOWS WITH ONE MOTION DETECTOR PER UNIT.

**ELECTRICAL NOTES**

1. ELECTRICAL SERVICE POWER IS TO BE EVALUATED FOR MEETING LIGHTING DESIGN AND EQUIPMENT REQUIREMENTS. PROPER POWER LEVEL SHALL BE PROVIDED.
2. ALL NEW ELECTRICAL ITEMS ARE TO BE U.L. RATED.
3. ALL ELECTRICAL PANELS ARE TO BE RECESSED INTO A WALL WITH A MINIMUM 6" STUD DIMENSION. REVIEW FINAL LOCATION WITH ARCHITECT AND OWNER.
4. ALL DISTRIBUTION PANELS ARE TO BE NEW.
5. LIVING AREAS, DINING AREAS, AND ALL BEDROOM ARE TO RECEIVE 3-WIRE JUNCTION BOXES.
6. PROVIDE ELECTRIC HEAT MATS BY NUHEAT OR EQUAL AT ALL BATHROOMS.
7. ALL CLOSET LIGHTING IS TO BE HIGH EFFICIENCY LIGHTING.
8. OUTLETS IN BATHROOMS SHALL HAVE GROUND FAULT INTERCEPTORS.
9. ALL SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY SOURCE OF POWER FROM BUILDING WIRING WITH BATTERY BACK-UP.
10. ALL DIMENSIONS FOR THE FOLLOWING ITEMS ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED:
  - A. MOUNT ALL OUTLETS, PHONE JACKS, AND TELEVISION CABLE JACKS VERTICALLY AT 18" TO CENTERLINE ABOVE THE FINISH FLOOR UNLESS OTHERWISE NOTED. WHERE BASE AND TRIM IS LARGER THAN 9-1/2" TALL PROVIDE 6" CLEARANCE FROM BOTTOM OF PLATE TO TOP OF BASEBOARD TRIM.
  - B. MOUNT ALL SWITCHES AT 42" TO CENTERLINE ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED.
  - C. VERTICALLY ALIGN SWITCHES AND OUTLETS WHERE POSSIBLE.

**DEMO/PROPOSED PLAN GRAPHIC KEY**

- EXISTING WALL TO REMAIN
- NEW WALL/FILL
- AREA NOT IN CONTRACT
- DEMOLISHED BUILDING ELEMENT
- DEMOLISHED FLOOR FINISH/CEILING
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1) HOUR FIRE RESISTANCE RATED SEPARATION
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1/2) HOUR FIRE RESISTANCE RATED SEPARATION



No.	Description	Date
1	Wall tags/Mail boxes	11.19.2021

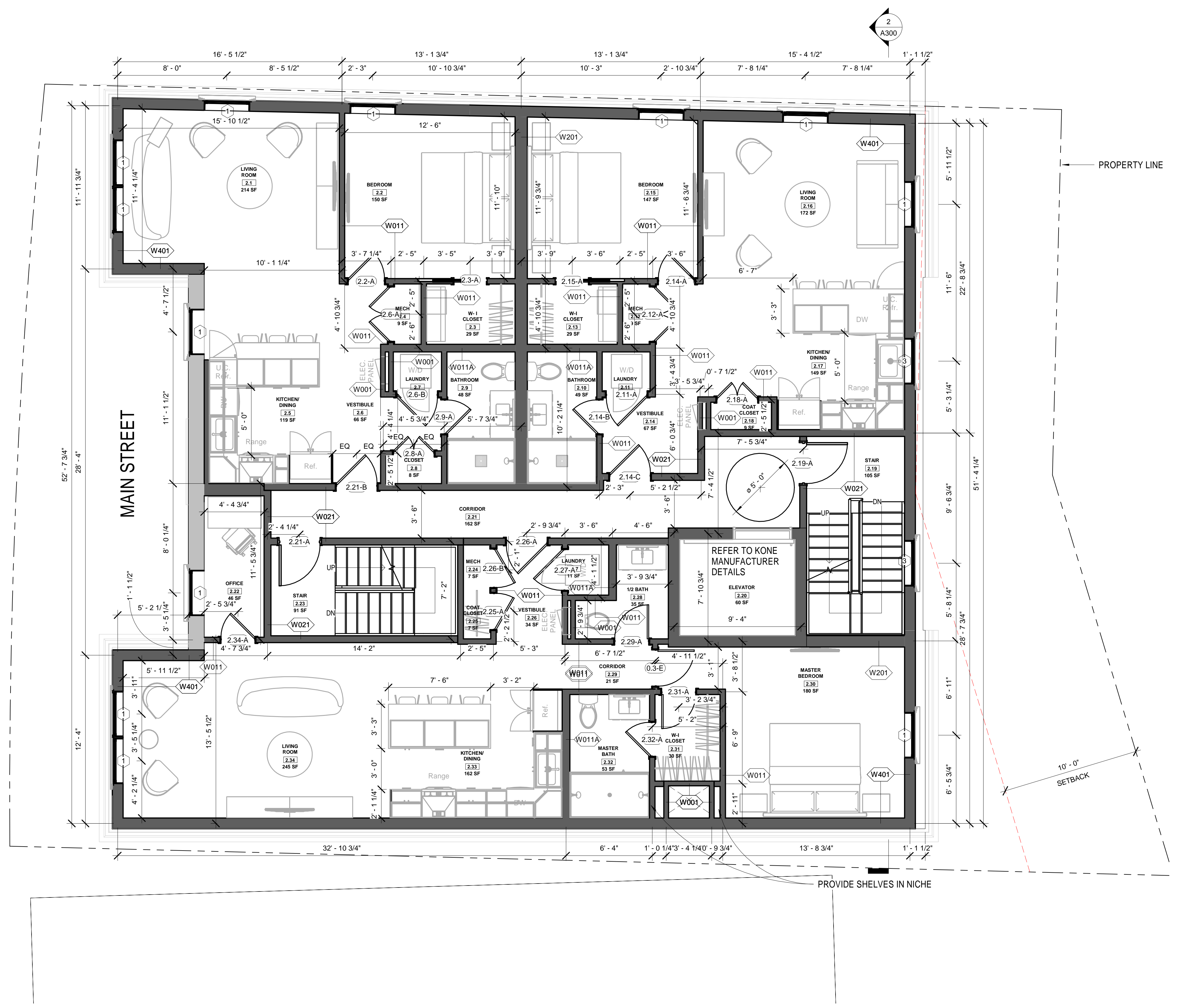
**HUS Companies**  
 979 Main St  
**LEVEL G - PROPOSED**

Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	NPL

**A101**

Scale	As indicated
-------	--------------





2 Level 2 - Proposed  
1/4" = 1'-0"

**GENERAL NOTES**

- WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS.
- ALL DIMENSIONS ARE TO BE TAKEN FROM NUMERIC DESIGNATIONS ONLY; DIMENSIONS ARE NOT TO BE SCALED OFF THE DRAWINGS.
- ALL GYPSUM BOARD SURFACES ARE TO BE 5/8" THICK UNLESS OTHERWISE NOTED.
- ALL GYPSUM AND PLASTER FINISHES SHOULD BE SMOOTH, CONTINUOUS, FREE OF IMPERFECTIONS, AND HAVE NO VISIBLE JOINTS.
- PROVIDE GAS, WATER SPOIGOT, OUTLET, AND LIGHTING AT ROOF DECKS.
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- ALL REQUIRED LIFE SAFETY DEVICES, INCLUDING SMOKE & CARBON MONOXIDE DETECTORS, SHALL BE INSTALLED BY THE CONTRACTOR IN COMPLIANCE WITH THE 2009 INTERNATIONAL BUILDING CODE

**PLAN NOTES**

- ALL DIMENSIONS ARE MEASURED FROM FACE OF BRICK TO F.O. STUD OR FROM F.O. STUD TO F.O. STUD, UNLESS OTHERWISE NOTED.
- ALL DOORS ARE 80" TALL UNLESS OTHERWISE NOTED.

**MECHANICAL | SECURITY NOTES**

- PROVIDE 5.1 AUDIO WIRING FOR LIVING ROOM AND MASTER BEDROOMS; FOR NUMBER AND LOCATION, SEE REFLECTED CEILING PLANS.
- PROVIDE NEST LEARNING THERMOSTAT AT EACH UNIT. (ZONING PER FLOOR LEVEL IN DUPLEX UNITS)
- HEATING AND AIR CONDITIONING IS TO BE PROVIDED BY HIGH VELOCITY FORCED AIR SPACE PAK HIGH VELOCITY AIR CONDITIONING SYSTEMS WITH HYDRONIC HEATING.
- HOT WATER IS TO BE PROVIDED BY A HIGH EFFICIENCY NAVIEN MODULATING CONDENSING COMBINATION HEATING AND HOT WATER SYSTEM OR EQUAL.
- HARD WIRED SECURITY SYSTEM SHALL BE PROVIDED AT EACH UNIT; CONTACTS SHALL BE PLACED AT EXTERIOR DOORS AND WINDOWS WITH ONE MOTION DETECTOR PER UNIT.

**ELECTRICAL NOTES**

- ELECTRICAL SERVICE POWER IS TO BE EVALUATED FOR MEETING LIGHTING DESIGN AND EQUIPMENT REQUIREMENTS. PROPER POWER LEVEL SHALL BE PROVIDED.
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- ALL DISTRIBUTION PANELS ARE TO BE NEW.
- LIVING AREAS, DINING AREAS, AND ALL BEDROOM ARE TO RECEIVE 3-WIRE JUNCTION BOXES.
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- ALL SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY SOURCE OF POWER FROM BUILDING WIRING WITH BATTERY BACK-UP.
- ALL DIMENSIONS FOR THE FOLLOWING ITEMS ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED:

- A. MOUNT ALL OUTLETS, PHONE JACKS, AND TELEVISION CABLE JACKS VERTICALLY AT 18" TO CENTERLINE ABOVE THE FINISH FLOOR UNLESS OTHERWISE NOTED. WHERE BASE AND TRIM IS LARGER THAN 9-1/2" TALL PROVIDE 6" CLEARANCE FROM BOTTOM OF PLATE TO TOP OF BASEBOARD TRIM.
- B. MOUNT ALL SWITCHES AT 42" TO CENTERLINE ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED.
- C. VERTICALLY ALIGN SWITCHES AND OUTLETS WHERE POSSIBLE.

**DEMO/PROPOSED PLAN GRAPHIC KEY**

- EXISTING WALL TO REMAIN
- NEW WALL/FILL
- AREA NOT IN CONTRACT
- DEMOLISHED BUILDING ELEMENT
- DEMOLISHED FLOOR FINISH/CEILING
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1) HOUR FIRE RESISTANCE RATED SEPARATION
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1/2) HOUR FIRE RESISTANCE RATED SEPARATION



Design Resource Team, LLC  
546 East Broadway  
Boston, MA 02127  
617.804.6117  
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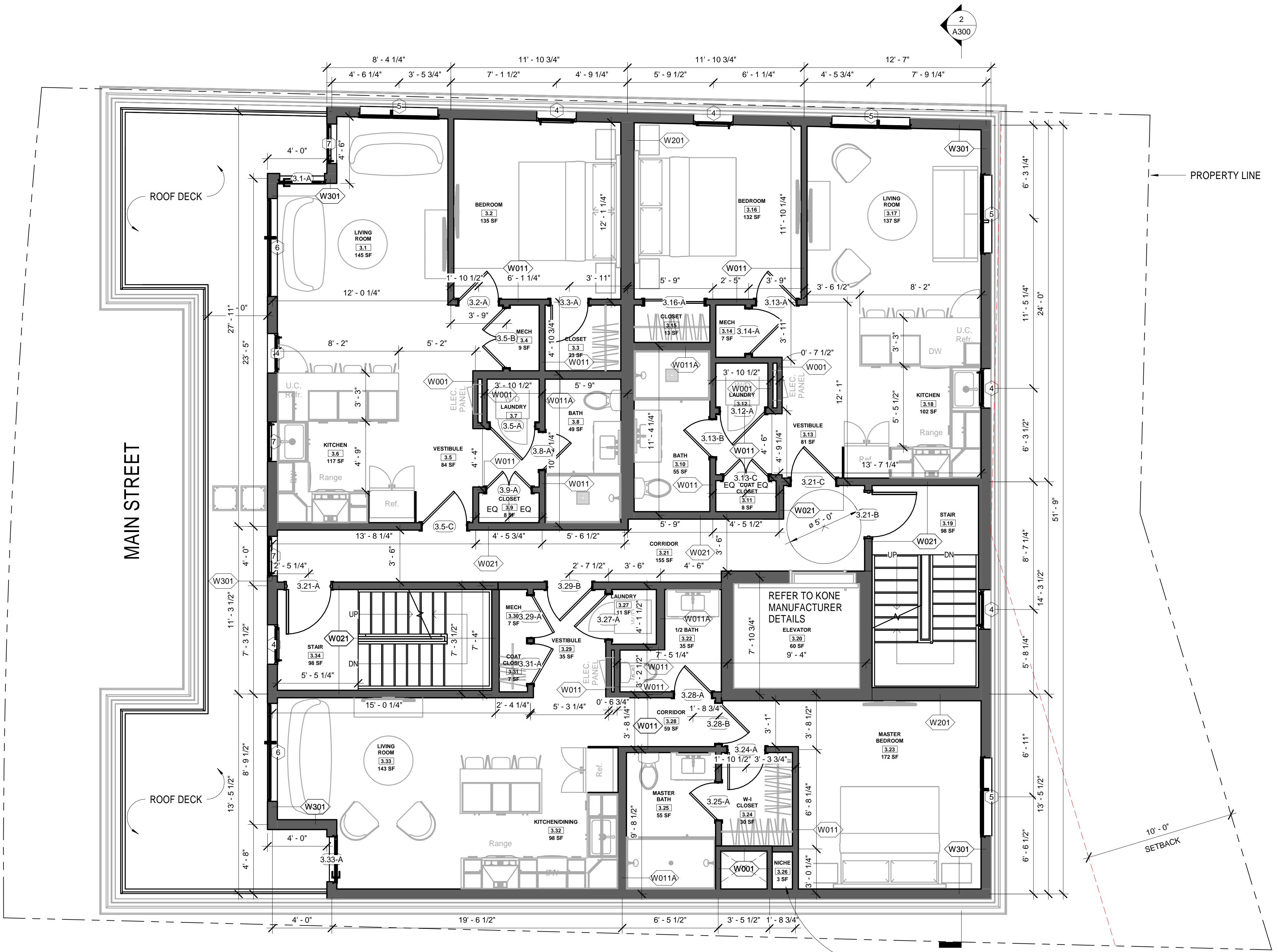
No.	Description	Date
1	Wall tags/Mail boxes	11.19.2021

HUS Companies  
979 Main St  
**LEVEL 2 - PROPOSED**

Project number 221018  
Date 11.01.2021  
Drawn by DB  
Checked by NPL

**A103**

Scale As indicated



**GENERAL NOTES**

- 1. WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS.
- 2. ALL DIMENSIONS ARE TO BE TAKEN FROM NUMERIC DESIGNATIONS ONLY; DIMENSIONS ARE NOT TO BE SCALED OFF THE DRAWINGS.
- 3. ALL GYPSUM BOARD SURFACES ARE TO BE 5/8" THICK UNLESS OTHERWISE NOTED.
- 4. ALL GYPSUM AND PLASTER FINISHES SHOULD BE SMOOTH, CONTINUOUS, FREE OF IMPERFECTIONS, AND HAVE NO VISIBLE JOINTS.
- 5. PROVIDE GAS, WATER SPIGOT, OUTLET, AND LIGHTING AT ROOF DECKS.
- 6. ALL CLOSETS SHALL HAVE SHELF AND POLE OR SHELVES AS REQUIRED, UNLESS OTHERWISE NOTED.
- 7. ALL REQUIRED LIFE SAFETY DEVICES, INCLUDING SMOKE & CARBON MONOXIDE DETECTORS, SHALL BE INSTALLED BY THE CONTRACTOR IN COMPLIANCE WITH THE 2009 INTERNATIONAL BUILDING CODE

**PLAN NOTES**

- 1. ALL DIMENSIONS ARE MEASURED FROM FACE OF BRICK TO F.O. STUD OR FROM F.O. STUD TO F.O. STUD, UNLESS OTHERWISE NOTED.
- 2. ALL DOORS ARE 80" TALL UNLESS OTHERWISE NOTED.

**MECHANICAL | SECURITY NOTES**

- 1. PROVIDE 5.1 AUDIO WIRING FOR LIVING ROOM AND MASTER BEDROOMS; FOR NUMBER AND LOCATION, SEE REFLECTED CEILING PLANS.
- 2. PROVIDE NEST LEARNING THERMOSTAT AT EACH UNIT. (ZONING PER FLOOR LEVEL IN DUPLEX UNITS)
- 3. HEATING AND AIR CONDITIONING IS TO BE PROVIDED BY HIGH VELOCITY FORCED AIR SPACE PAK HIGH VELOCITY AIR CONDITIONING SYSTEMS WITH HYDRONIC HEATING.
- 4. HOT WATER IS TO BE PROVIDED BY A HIGH EFFICIENCY NAVEN MODULATING CONDENSING COMBINATION HEATING AND HOT WATER SYSTEM OR EQUAL.
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**ELECTRICAL NOTES**

- 1. ELECTRICAL SERVICE POWER IS TO BE EVALUATED FOR MEETING LIGHTING DESIGN AND EQUIPMENT REQUIREMENTS. PROPER POWER LEVEL SHALL BE PROVIDED.
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- 3. ALL ELECTRICAL PANELS ARE TO BE RECESSED INTO A WALL WITH A MINIMUM 6" STUD DIMENSION. REVIEW FINAL LOCATION WITH ARCHITECT AND OWNER.
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- B. MOUNT ALL SWITCHES AT 42" TO CENTERLINE ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED.
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**DEMO/PROPOSED PLAN GRAPHIC KEY**

- EXISTING WALL TO REMAIN
- NEW WALL/FILL
- AREA NOT IN CONTRACT
- DEMOLISHED BUILDING ELEMENT
- DEMOLISHED FLOOR FINISH/CEILING
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- TRIPLE DASHED BLUE LINE INDICATES REQUIRED (1/2) HOUR FIRE RESISTANCE RATED SEPARATION

① Level 3 - Proposed  
1/4" = 1'-0"



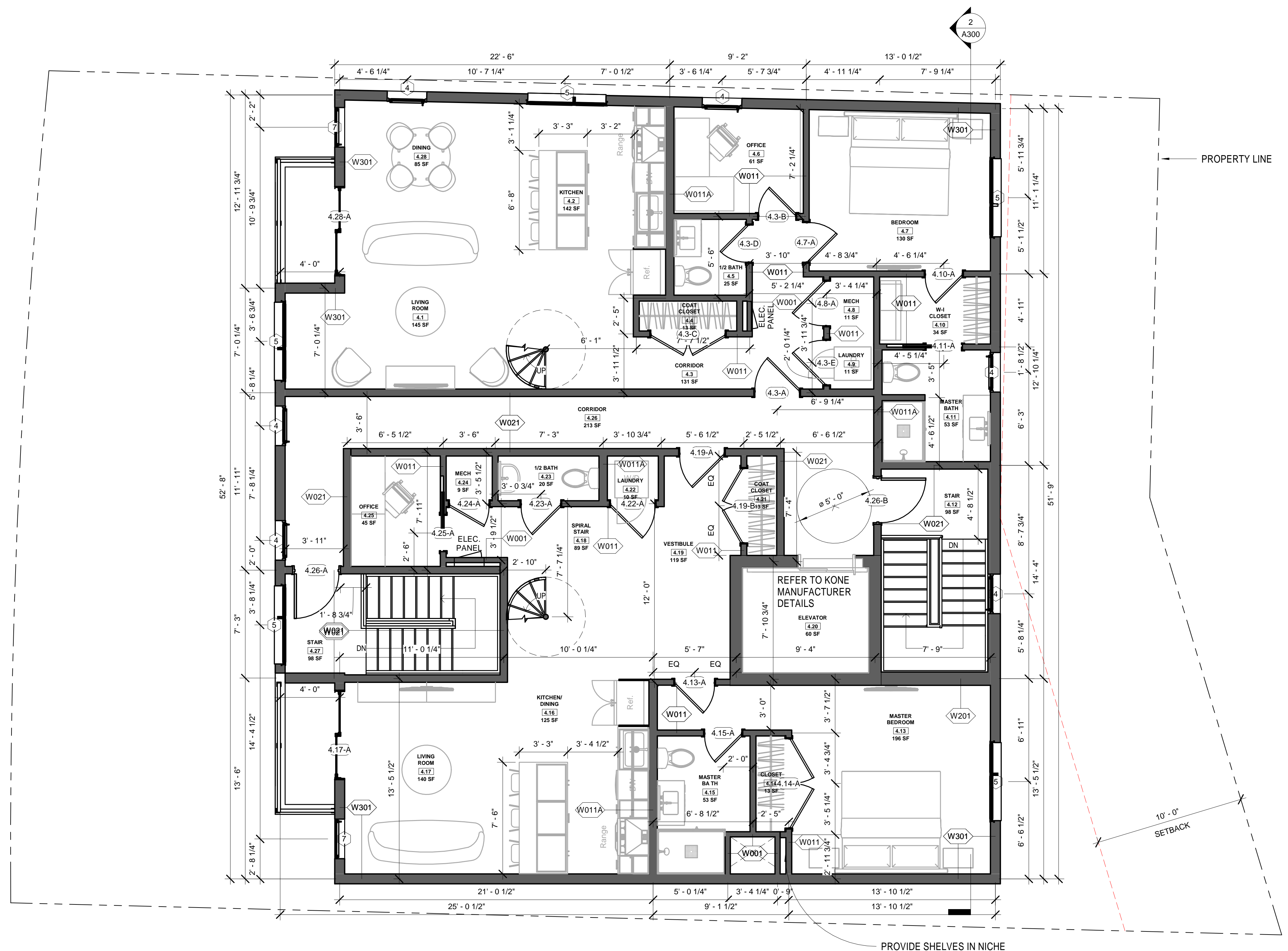
Design Resource Team, LLC  
546 East Broadway  
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info@d-r-t.co  
www.d-r-t.co



No.	Description	Date
1	Wall tags/Mail boxes	11.19.2021

**HUS Companies**  
979 Main St  
**LEVEL 3 - PROPOSED**

Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	NPL
<b>A104</b>	
Scale	As indicated



1 Level 4 - Proposed  
1/4" = 1'-0"

**GENERAL NOTES**

- WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS.
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**PLAN NOTES**

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- ALL DOORS ARE 80" TALL UNLESS OTHERWISE NOTED.

**MECHANICAL | SECURITY NOTES**

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**ELECTRICAL NOTES**

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  - B. MOUNT ALL SWITCHES AT 42" TO CENTERLINE ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED.
  - C. VERTICALLY ALIGN SWITCHES AND OUTLETS WHERE POSSIBLE.

**DEMO/PROPOSED PLAN GRAPHIC KEY**

- EXISTING WALL TO REMAIN
- NEW WALL/INFILL
- AREA NOT IN CONTRACT
- DEMOLISHED BUILDING ELEMENT
- DEMOLISHED FLOOR FINISH/CEILING
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1) HOUR FIRE RESISTANCE RATED SEPARATION
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1/2) HOUR FIRE RESISTANCE RATED SEPARATION



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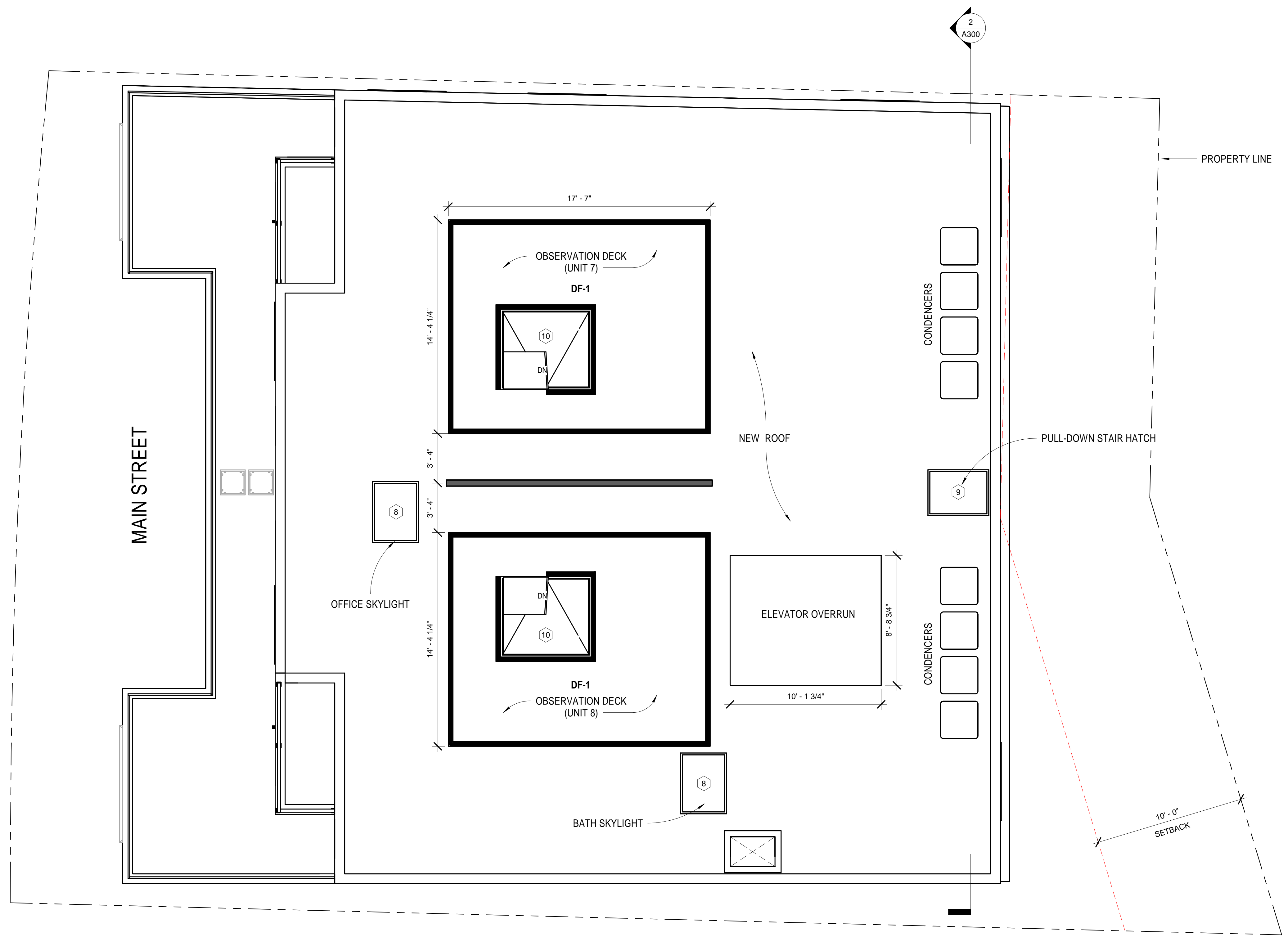
No.	Description	Date
1	Wall tags/Mail boxes	11.19.2021

**HUS Companies**  
979 Main St  
**LEVEL 4 - PROPOSED**

Project number 221018  
Date 11.01.2021  
Drawn by DB  
Checked by NPL

**A105**

Scale As indicated



**GENERAL NOTES**

1. WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS.
2. ALL DIMENSIONS ARE TO BE TAKEN FROM NUMERIC DESIGNATIONS ONLY; DIMENSIONS ARE NOT TO BE SCALED OFF THE DRAWINGS.
3. ALL GYPSUM BOARD SURFACES ARE TO BE 5/8" THICK UNLESS OTHERWISE NOTED.
4. ALL GYPSUM AND PLASTER FINISHES SHOULD BE SMOOTH, CONTINUOUS, FREE OF IMPERFECTIONS, AND HAVE NO VISIBLE JOINTS.
5. PROVIDE GAS, WATER SPOIGOT, OUTLET, AND LIGHTING AT ROOF DECKS.
6. ALL CLOSETS SHALL HAVE SHELF AND POLE OR SHELVES AS REQUIRED, UNLESS OTHERWISE NOTED.
7. ALL REQUIRED LIFE SAFETY DEVICES, INCLUDING SMOKE & CARBON MONOXIDE DETECTORS, SHALL BE INSTALLED BY THE CONTRACTOR IN COMPLIANCE WITH THE 2009 INTERNATIONAL BUILDING CODE.

**PLAN NOTES**

1. ALL DIMENSIONS ARE MEASURED FROM FACE OF BRICK TO F.O. STUD OR FROM F.O. STUD TO F.O. STUD, UNLESS OTHERWISE NOTED.
2. ALL DOORS ARE 80" TALL UNLESS OTHERWISE NOTED.

**MECHANICAL | SECURITY NOTES**

1. PROVIDE 5.1 AUDIO WIRING FOR LIVING ROOM AND MASTER BEDROOMS; FOR NUMBER AND LOCATION, SEE REFLECTED CEILING PLANS.
2. PROVIDE NEST LEARNING THERMOSTAT AT EACH UNIT. (ZONING PER FLOOR LEVEL IN DUPLEX UNITS)
3. HEATING AND AIR CONDITIONING IS TO BE PROVIDED BY HIGH VELOCITY FORCED AIR SPACE PAK HIGH VELOCITY AIR CONDITIONING SYSTEMS WITH HYDRONIC HEATING.
4. HOT WATER IS TO BE PROVIDED BY A HIGH EFFICIENCY NAVEN MODULATING CONDENSING COMBINATION HEATING AND HOT WATER SYSTEM OR EQUAL.
5. HARD WIRED SECURITY SYSTEM SHALL BE PROVIDED AT EACH UNIT; CONTACTS SHALL BE PLACED AT EXTERIOR DOORS AND WINDOWS WITH ONE MOTION DETECTOR PER UNIT.

**ELECTRICAL NOTES**

1. ELECTRICAL SERVICE POWER IS TO BE EVALUATED FOR MEETING LIGHTING DESIGN AND EQUIPMENT REQUIREMENTS. PROPER POWER LEVEL SHALL BE PROVIDED.
2. ALL NEW ELECTRICAL ITEMS ARE TO BE U.L. RATED.
3. ALL ELECTRICAL PANELS ARE TO BE RECESSED INTO A WALL WITH A MINIMUM 6" STUD DIMENSION. REVIEW FINAL LOCATION WITH ARCHITECT AND OWNER.
4. ALL DISTRIBUTION PANELS ARE TO BE NEW.
5. LIVING AREAS, DINING AREAS, AND ALL BEDROOM ARE TO RECEIVE 3-WIRE JUNCTION BOXES.
6. PROVIDE ELECTRIC HEAT MATS BY NUHEAT OR EQUAL AT ALL BATHROOMS.
7. ALL CLOSET LIGHTING IS TO BE HIGH EFFICIENCY LIGHTING.
8. OUTLETS IN BATHROOMS SHALL HAVE GROUND FAULT INTERCEPTORS.
9. ALL SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY SOURCE OF POWER FROM BUILDING WIRING WITH BATTERY BACK-UP.
10. ALL DIMENSIONS FOR THE FOLLOWING ITEMS ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED:
  - A. MOUNT ALL OUTLETS, PHONE JACKS, AND TELEVISION CABLE JACKS VERTICALLY AT 18" TO CENTERLINE ABOVE THE FINISH FLOOR UNLESS OTHERWISE NOTED. WHERE BASE AND TRIM IS LARGER THAN 9-1/2" TALL PROVIDE 6" CLEARANCE FROM BOTTOM OF PLATE TO TOP OF BASEBOARD TRIM.
  - B. MOUNT ALL SWITCHES AT 42" TO CENTERLINE ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED.
  - C. VERTICALLY ALIGN SWITCHES AND OUTLETS WHERE POSSIBLE.

**DEMO/PROPOSED PLAN GRAPHIC KEY**

- EXISTING WALL TO REMAIN
- NEW WALL/FILL
- AREA NOT IN CONTRACT
- DEMOLISHED BUILDING ELEMENT
- DEMOLISHED FLOOR FINISH/CEILING
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1) HOUR FIRE RESISTANCE RATED SEPARATION
- TRIPLE DASHED RED LINE INDICATES REQUIRED (1/2) HOUR FIRE RESISTANCE RATED SEPARATION

① Level 5- Proposed  
 1/4" = 1'-0"

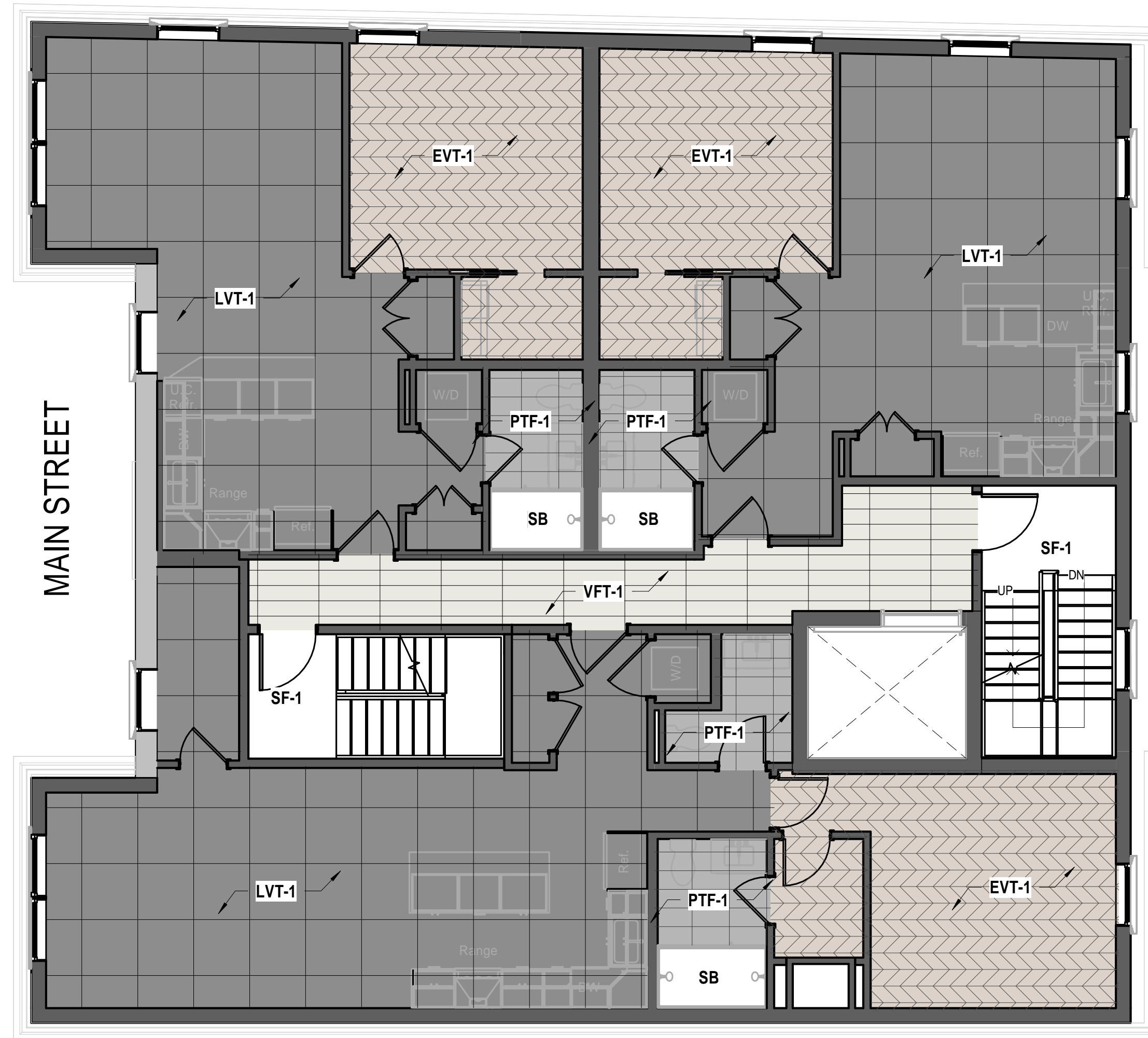
No.	Description	Date

**HUS Companies**  
 979 Main St  
**ROOF LEVEL - PROPOSED**

Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	NPL

**A106**

Scale: As indicated



1 Level 2 - Floor Finish Plan  
3/16" = 1'-0"

2 Level 3 - Floor Finish Plan  
3/16" = 1'-0"

**GENERAL NOTES**

- WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS.
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- PROVIDE GAS, WATER SPIGOT, OUTLET, AND LIGHTING AT ROOF DECKS.
- ALL CLOSETS SHALL HAVE SHELF AND POLE OR SHELVES AS REQUIRED, UNLESS OTHERWISE NOTED.
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**FLOOR FINISH LEGEND**

	VFT-1 - VINYL FLOOR TILES SILENCE, VISUAL MONOLITHIC INSTALLATION (ALL COMMON CORRIDORS)
	EVT-1 - ASPECTA, Aspecta Contours Versailles Alpin (6816701X) 12.01" x 55.43"
	PTF-1 - HAPPY FLOORS, PORCELAIN TILE FLOOR (12 X 24) NEXTONE GREY
	LVT-1 - MOHAWK GROUP BOLDER 888 (68X36) MONOLITHIC INSTALLATION
	DF-1 - AZEK Building Products, TimberTech Capped Composite Material Straight wood grain finish The Prime+ Collection COLOR: Sea Salt Gray



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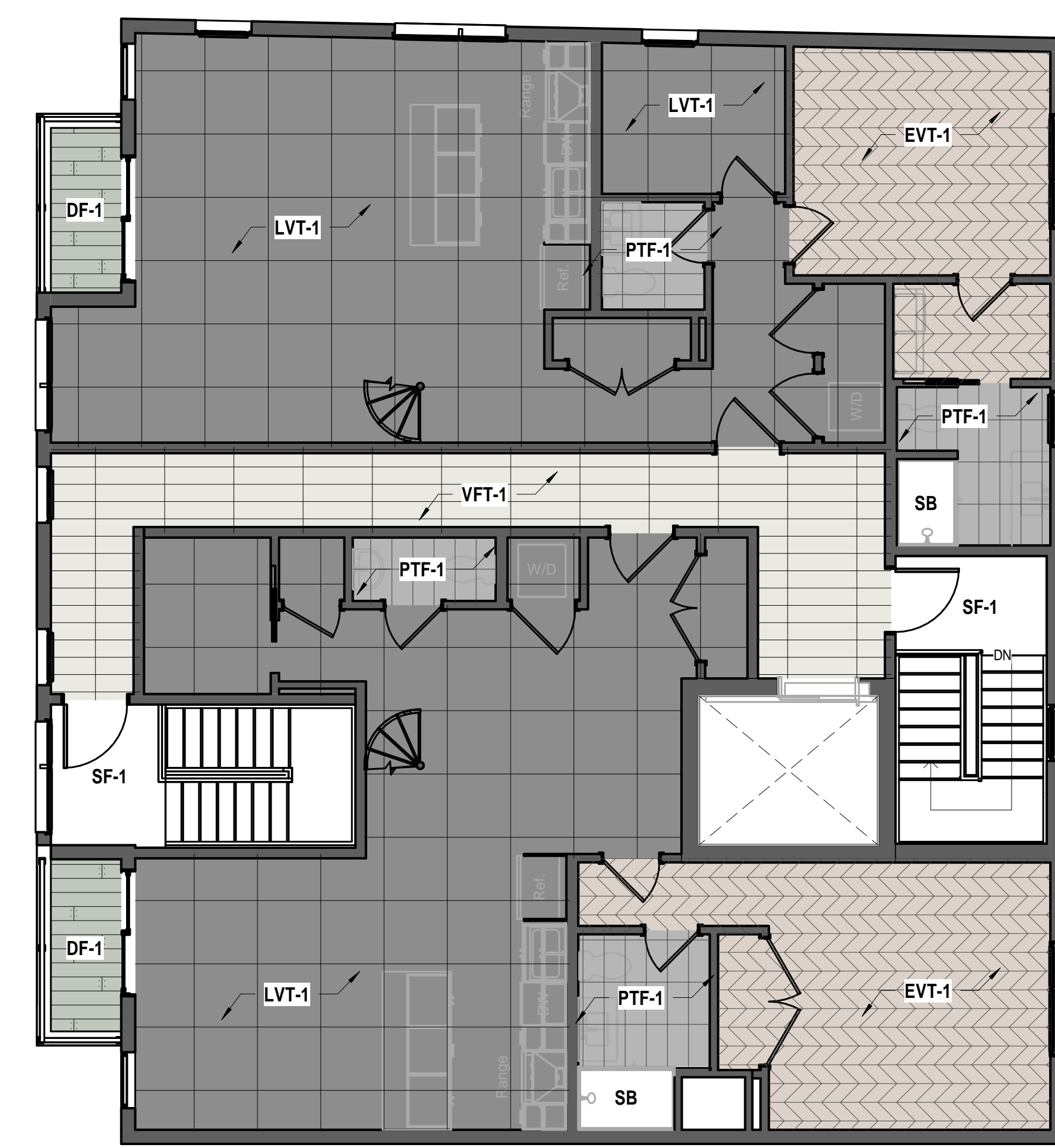
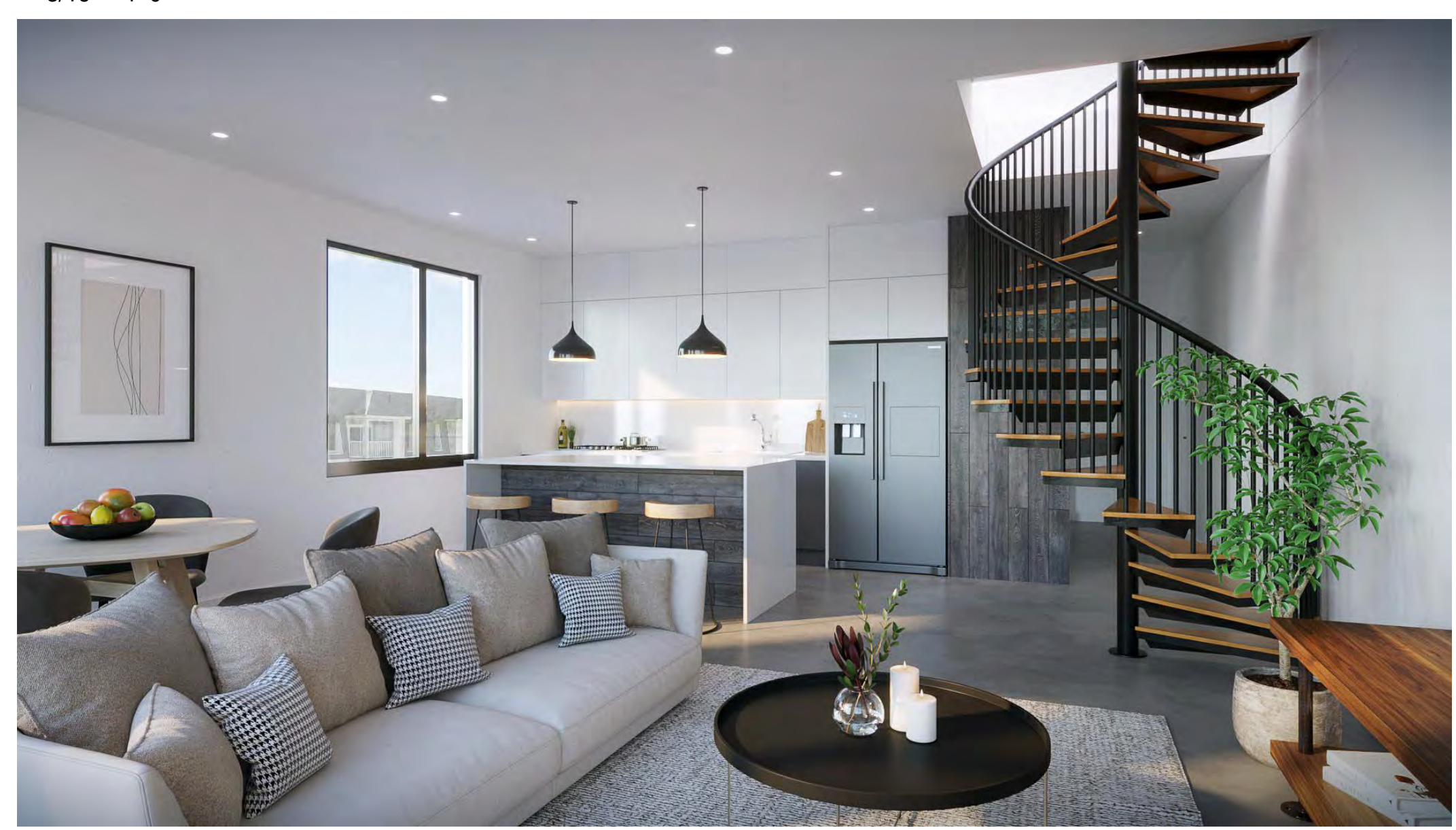
No.	Description	Date

**HUS Companies**  
979 Main St  
**FLOOR FINISH PLANS**

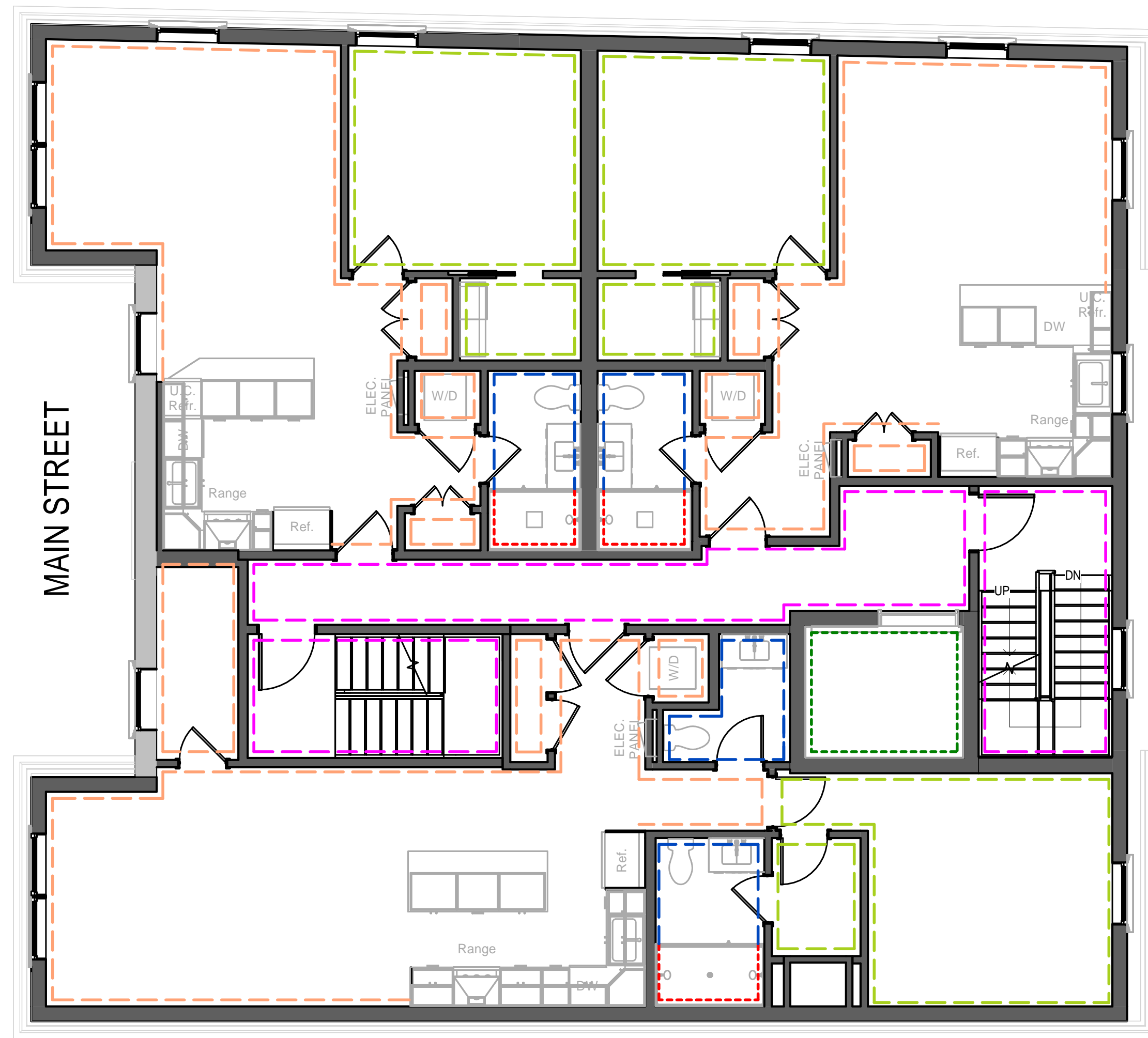
Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	NPL

**A109**

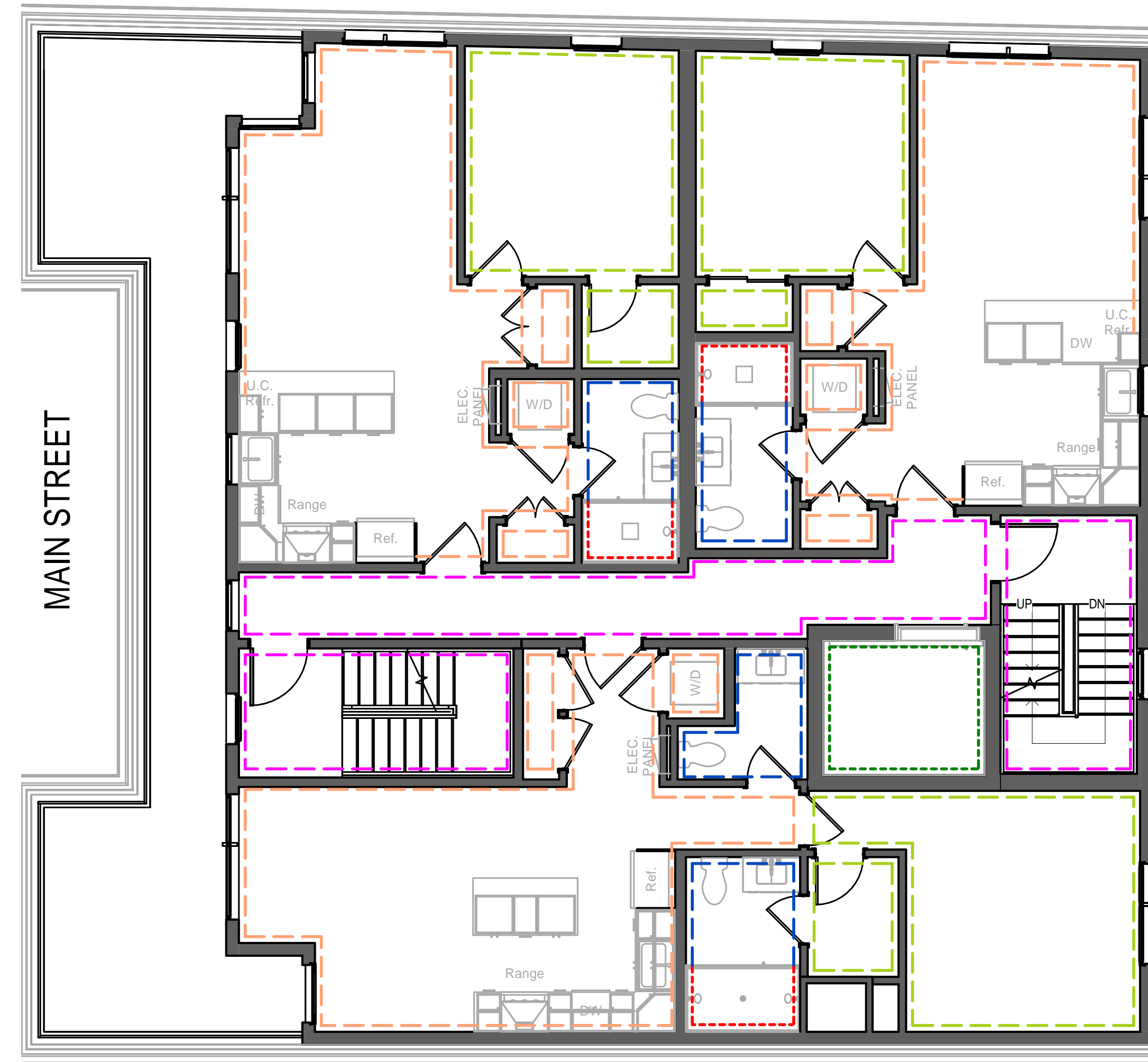
Scale As indicated



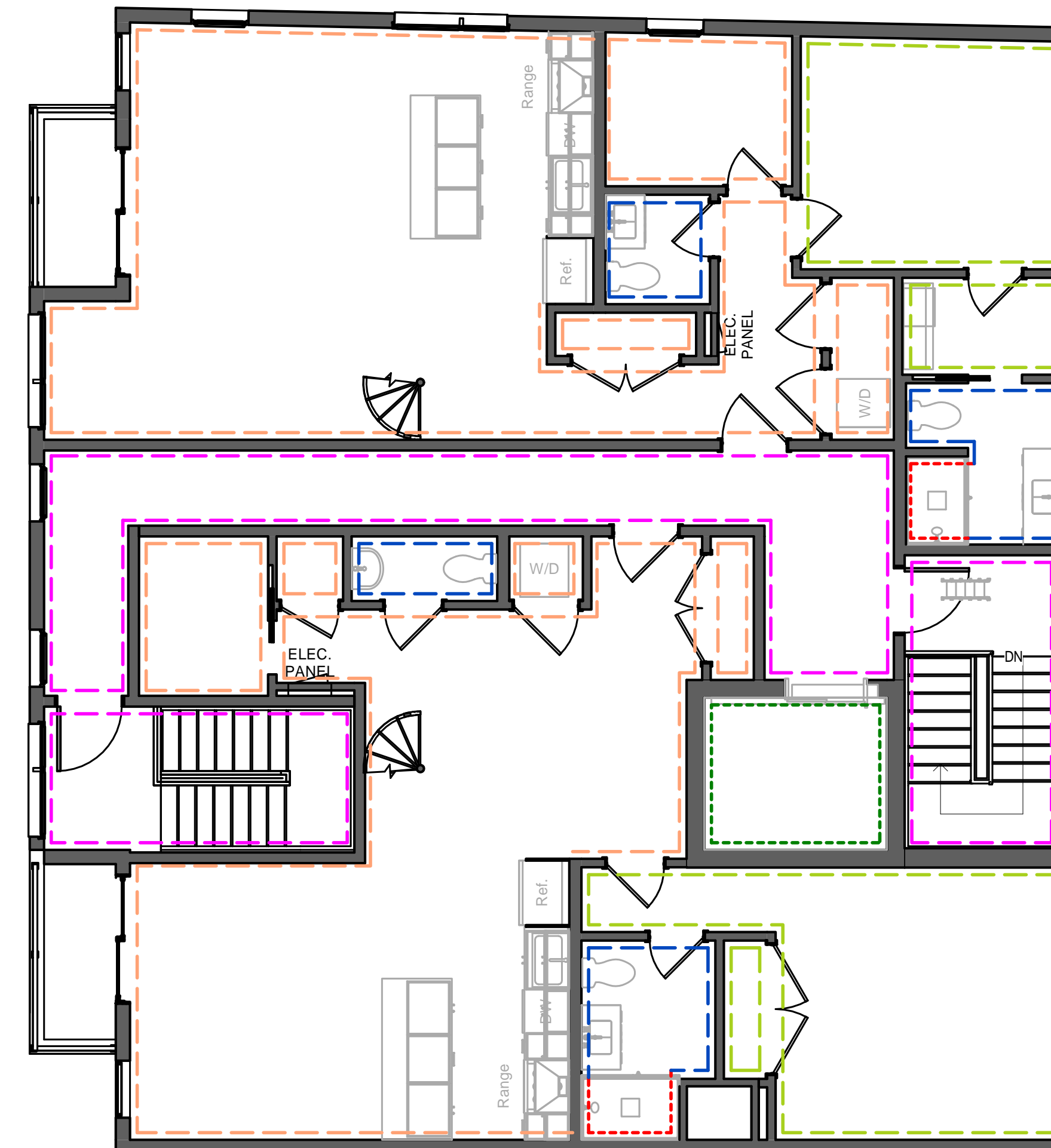
3 Level 4 - Floor Finish Plan  
3/16" = 1'-0"



1 Level 2 - Paint Plan  
3/16" = 1'-0"



2 Level 3 - Paint Plan  
3/16" = 1'-0"



3 Level 4 - Paint Plan  
3/16" = 1'-0"



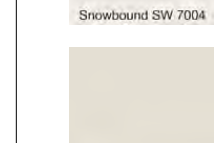

#### GENERAL NOTES

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#### PLAN NOTES

1. ALL DIMENSIONS ARE MEASURED FROM FACE OF BRICK TO F.O. STUD OR FROM F.O. STUD TO F.O. STUD, UNLESS OTHERWISE NOTED.
2. ALL DOORS ARE 80" TALL UNLESS OTHERWISE NOTED.

#### PAINT LEGEND

	PNT-1		SHERWIN WILLIAMS SPARE WHITE (6203) EGGSHELL FINISH
	PNT-2		SHERWIN WILLIAMS ICE CUBE (6225) SATIN FINISH
	PNT-3		SHERWIN WILLIAMS SNOW BOUND (7004) SATIN FINISH
	PNT-4		SHERWIN WILLIAMS OYSTER WHITE (7637) EGGSHELL FINISH

#### WALLCOVERING LEGEND

	EWC-1		PHILLIP JEFFRIES VINYL WICKER 1347 GUIDING GREY
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#### WALL TILE LEGEND

	WT-1		HAPPY FLOORS NEXTONE GREY 12 X 24
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No.	Description	Date

HUS Companies  
979 Main St  
PAINT PLANS

Project number 221018  
Date 11.01.2021  
Drawn by DB  
Checked by NPL

A112

Scale As indicated







































NOTE:

- 3/4" PLYWOOD SUB-FLR
- 11 7/8" TJI 110 @ 16" O.C.

NOTE:

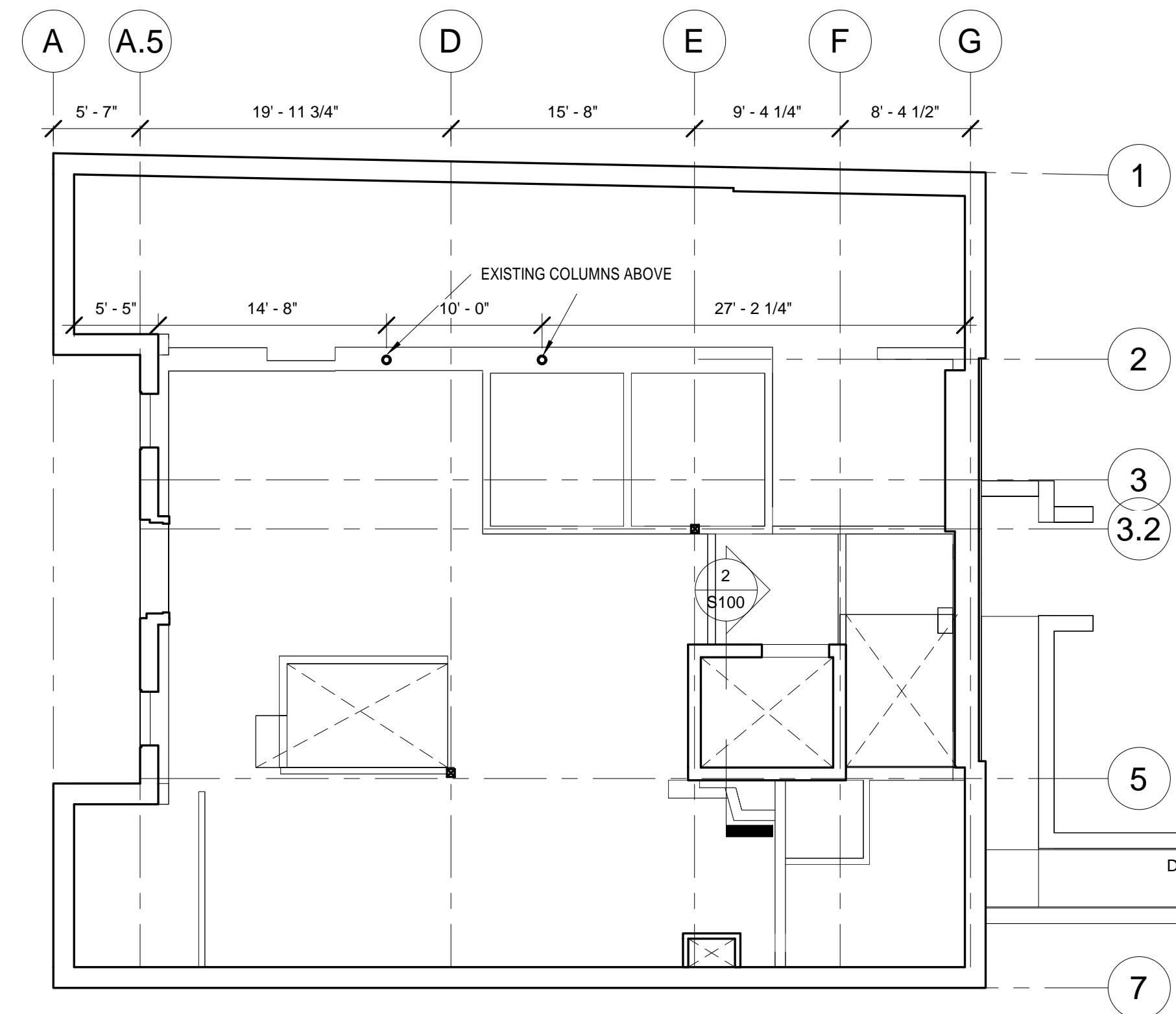
- NOTIFY ENGINEER AFTER EXISTING STR. BEAMS & COLUMNS ARE EXPOSED.
- ASSUME W10X54 @ COL 2 & 5 AS ALTERNATE.

STRUCTURAL NOTES

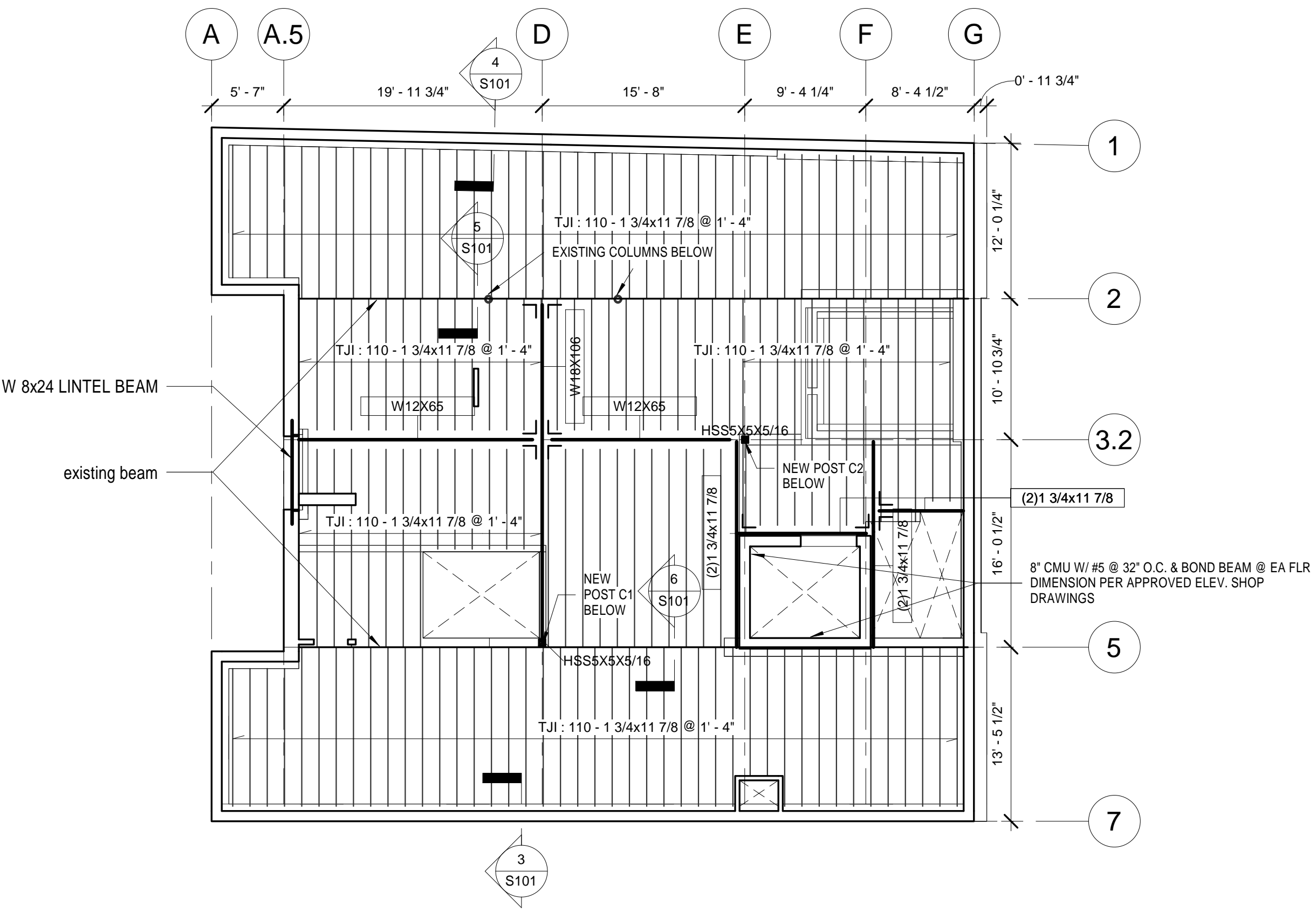
- All work shall be done in accordance with the MSBC, 9th edition.
  - Provide temporary support prior to demolition.
  - Allowable soil bearing pressure = 1.50 ksf.
  - Loading: LL = 40 psf; LL(deck) = 40 psf; P<sub>d</sub> = 40 psf; P<sub>i</sub> = 35 psf.  
V<sub>w</sub> = 130 mph. (Cat II)  
S<sub>s</sub> = 0.190; S<sub>i</sub> = 0.065
  - Material:
    - Lumber: LVL: F<sub>v</sub> = 2,600 psi; E = 2.0 x 10<sup>6</sup> psi;  
Posts: PSL  
Wood: Hem-Fir No.1 & btr.;  
Joists: TJI series or approved equal; P.T. at ext. exposure  
Studs: construction grade
    - Metal connectors: Simpson or approved equal; corrosion protected @ ext. exposure
    - Structural Steel (if needed): A36, A500, and A992
    - Concrete: f<sub>c</sub> = 3,500 psi;  
Rebar: Grade 60.
- BRACED WALL PARTITION (B.W.P.)  
ATTACH SHEATHING ON EA. SIDE OF WALL @ 4" O.C.  
AT PERIMETER & O.C. IN FIELD OF EA. SHEATHING



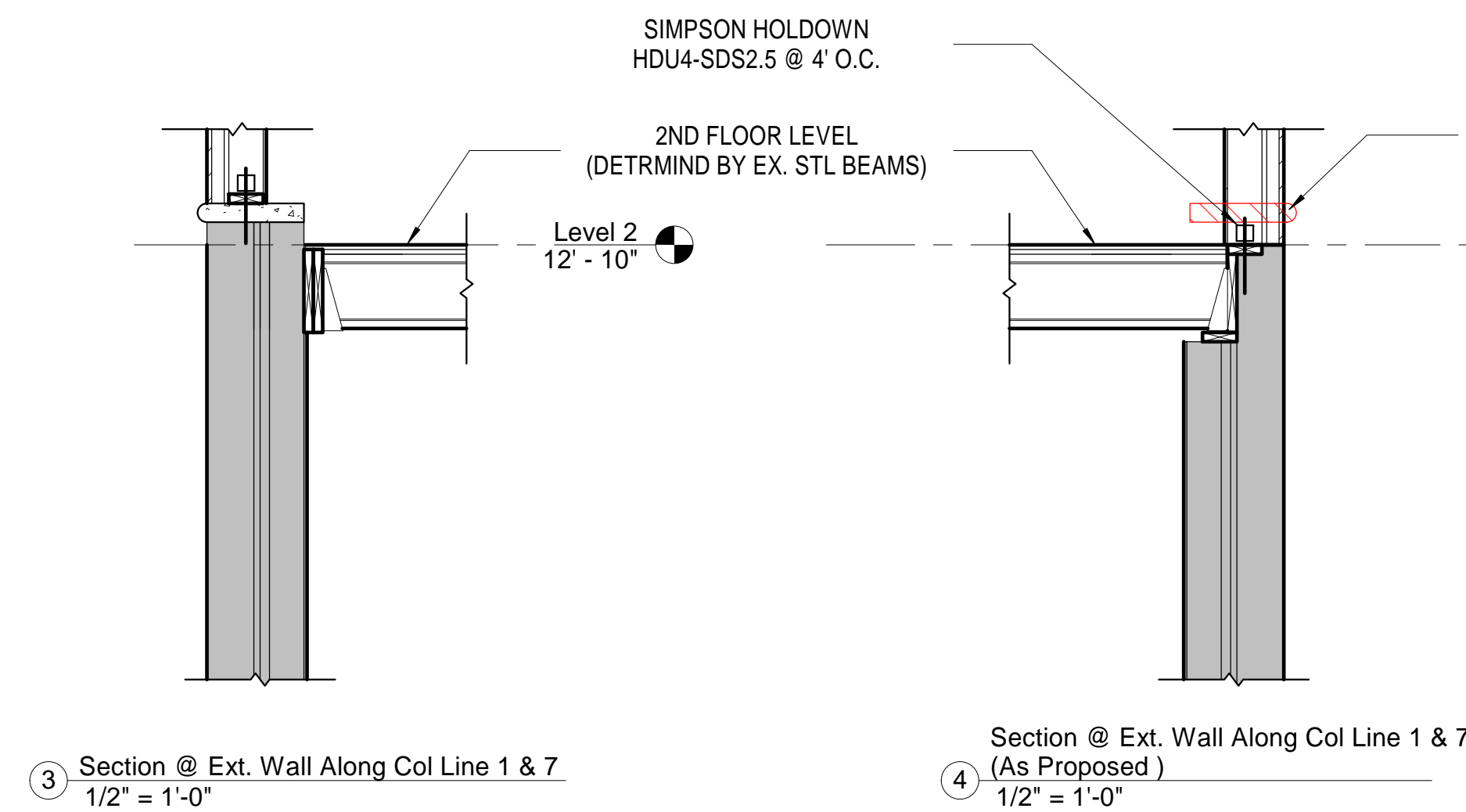
Design Resource Team, LLC.  
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Boston, MA 02127  
617.804.6117  
nlandry@d-r-t.co  
www.d-r-t.co



1 Level 1 Framing  
1/8" = 1'-0"

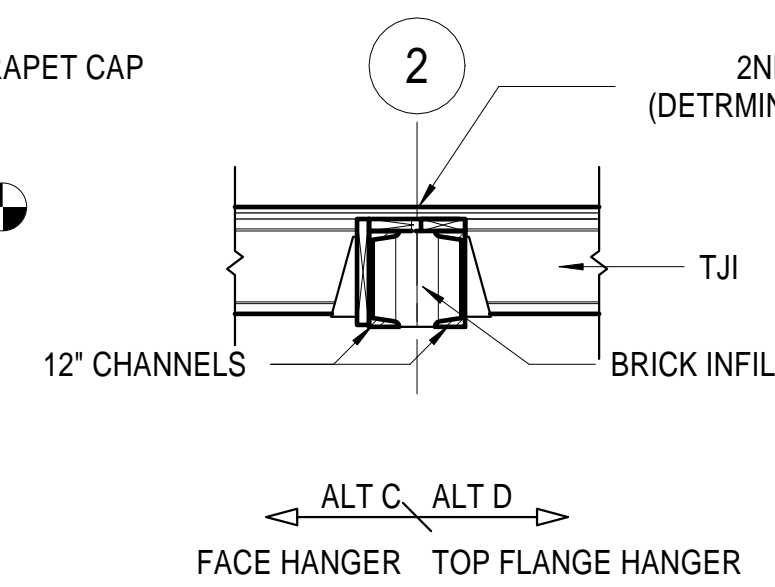


2 Level 2 Framing  
1/8" = 1'-0"

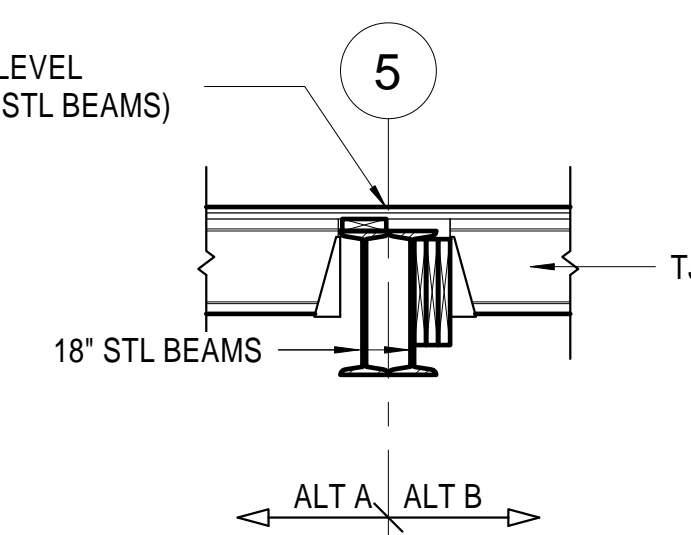


3 Section @ Ext. Wall Along Col Line 1 & 7  
1/2" = 1'-0"

4 Section @ Ext. Wall Along Col Line 1 & 7  
(As Proposed)  
1/2" = 1'-0"



5 Section @ Interior  
1/2" = 1'-0"



6 Section @ Interior  
1/2" = 1'-0"

No.	Description	Date

**HUS Companies**  
979 Main St  
**STRUCTURAL FRAMING**

Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	ELH

**S101**

Scale As indicated

NOTE:

- 3/4" PLYWOOD SUB-FLR  
- 11 7/8" TJI 110@16" O.C.

BEAM SIZE:

BEAM A = 2 - 2x12  
BEAM B1 = 3 - 1 3/4" x 11 7/8" LVL  
BEAM B2 = 4 - 1 3/4" x 11 7/8" LVL  
BEAM C1 = 4 - 1 3/4" x 11 7/8" LVL  
BEAM C2 = 4 - 1 3/4" x 11 7/8" LVL

STRUCTURAL NOTES

- All work shall be done in accordance with the MSBC, 9th edition.
- Provide temporary support prior to demolition.
- Allowable soil bearing pressure = 1.50 ksf.
- Loading: LL = 40 psf; LL(deck) = 40 psf.; P<sub>s</sub> = 40 psf.; P<sub>i</sub> = 35 psf.  
V<sub>W</sub> = 130 mph. (Cat II)  
S<sub>s</sub> = 0.190; S<sub>i</sub> = 0.065

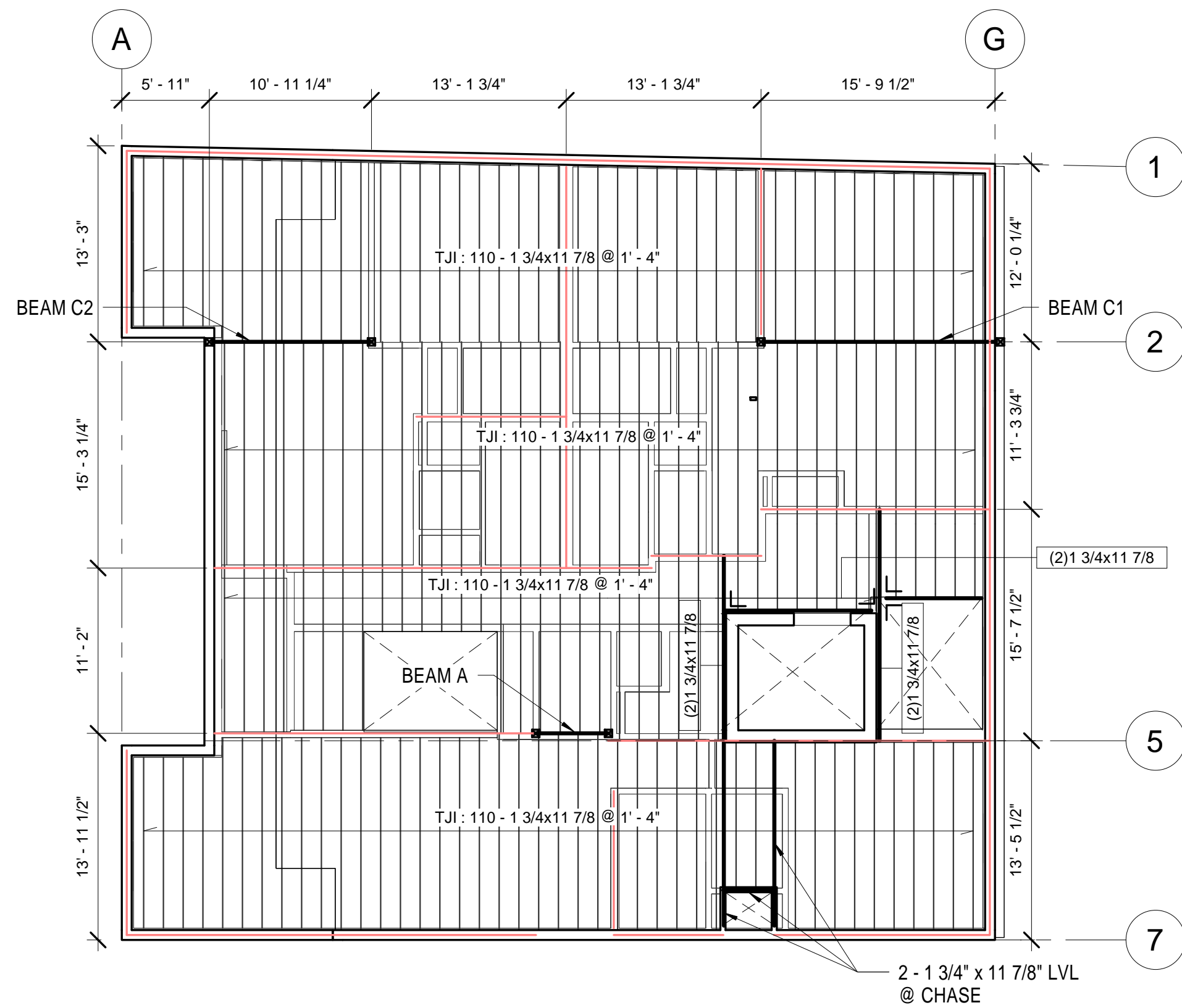
5. Material:

- A. Lumber: LVL: F<sub>b</sub> = 2,600 psi; E = 2.0 x 10<sup>6</sup> psi;  
Posts: PSL  
Wood: Hem-Fir No.1 & btr.;  
Joists: TJI series or approved equal; P.T. at ext. exposure  
Studs: construction grade
- B. Metal connectors: Simpson or approved equal; corrosion protected @ ext. exposure
- C. Structural Steel (if needed): A36, A500, and A992
- D. Concrete: f<sub>c</sub> = 3,500 psi;  
Rebar: Grade 60.

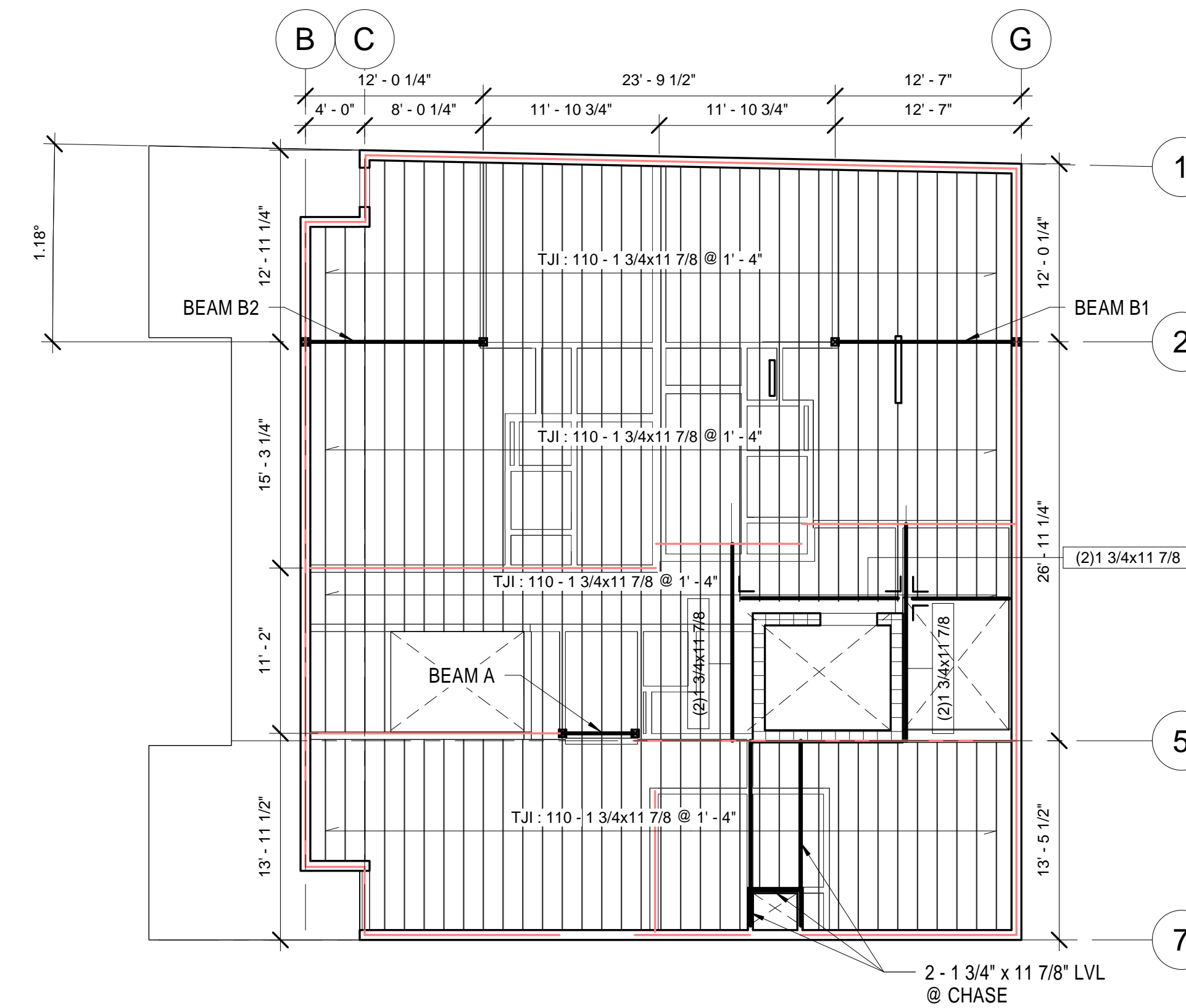
BRACED WALL PARTITION (B.W.P.)  
ATTACH SHEATHING ON EA. SIDE OF WALL @ 4" O.C.  
AT PERIMETER & O.C. IN FIELD OF EA. SHEATHING



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① Level 3 Framing  
1/8" = 1'-0"



② Level 4 Framing  
1/8" = 1'-0"

No.	Description	Date

HUS Companies	
979 Main St	
STRUCTURAL FRAMING	
Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	ELH
<b>S102</b>	
Scale	As indicated

**NOTE:**

- 5/8" ROOF SHEATHING
- HURRICANE TIS @ EA ROOF JOIST

**STRUCTURAL NOTES**

1. All work shall be done in accordance with the MSBC, 9th edition.
2. Provide temporary support prior to demolition.
3. Allowable soil bearing pressure = 1.50 ksf.
4. Loading: LL = 40 psf; LL(deck) = 40 psf; P<sub>s</sub> = 40 psf; P<sub>i</sub> = 35 psf.  
V<sub>w</sub> = 130 mph (Cat II)  
S<sub>s</sub> = 0.190; S<sub>1</sub> = 0.065

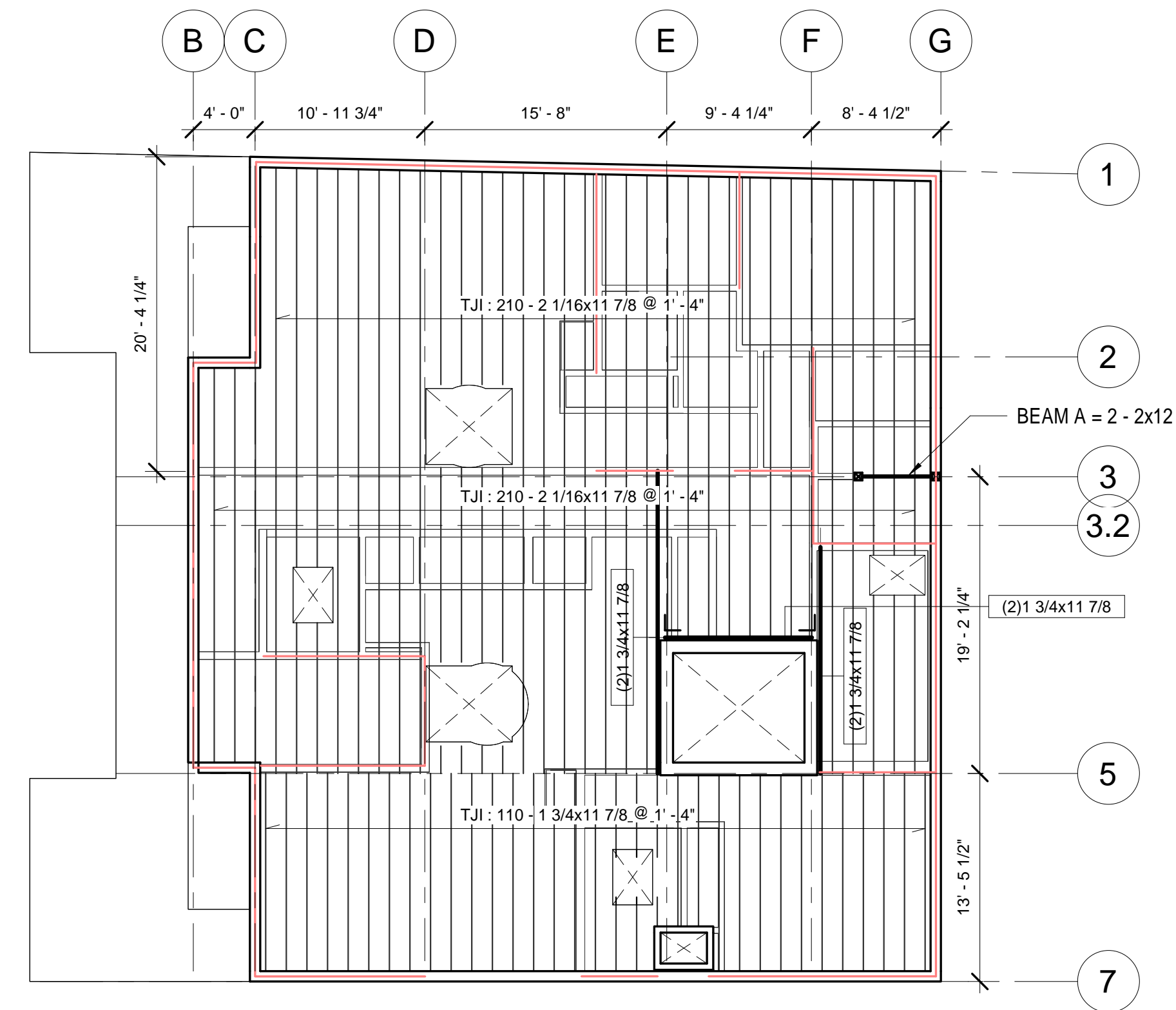
5. Material:

- A. Lumber: LVL: F<sub>v</sub> = 2,600 psi; E = 2.0 x 10<sup>6</sup> psi;  
Posts: PSL  
Wood: Hem-Fir No. 1 & btr.;  
Joists: TJI series or approved equal; P.T. at ext. exposure  
Studs: construction grade
- B. Metal connectors: Simpson or approved equal; corrosion protected @ ext. exposure
- C. Structural Steel (if needed): A36, A500, and A992
- D. Concrete: f<sub>c</sub> = 3,500 psi;  
Rebar: Grade 60.

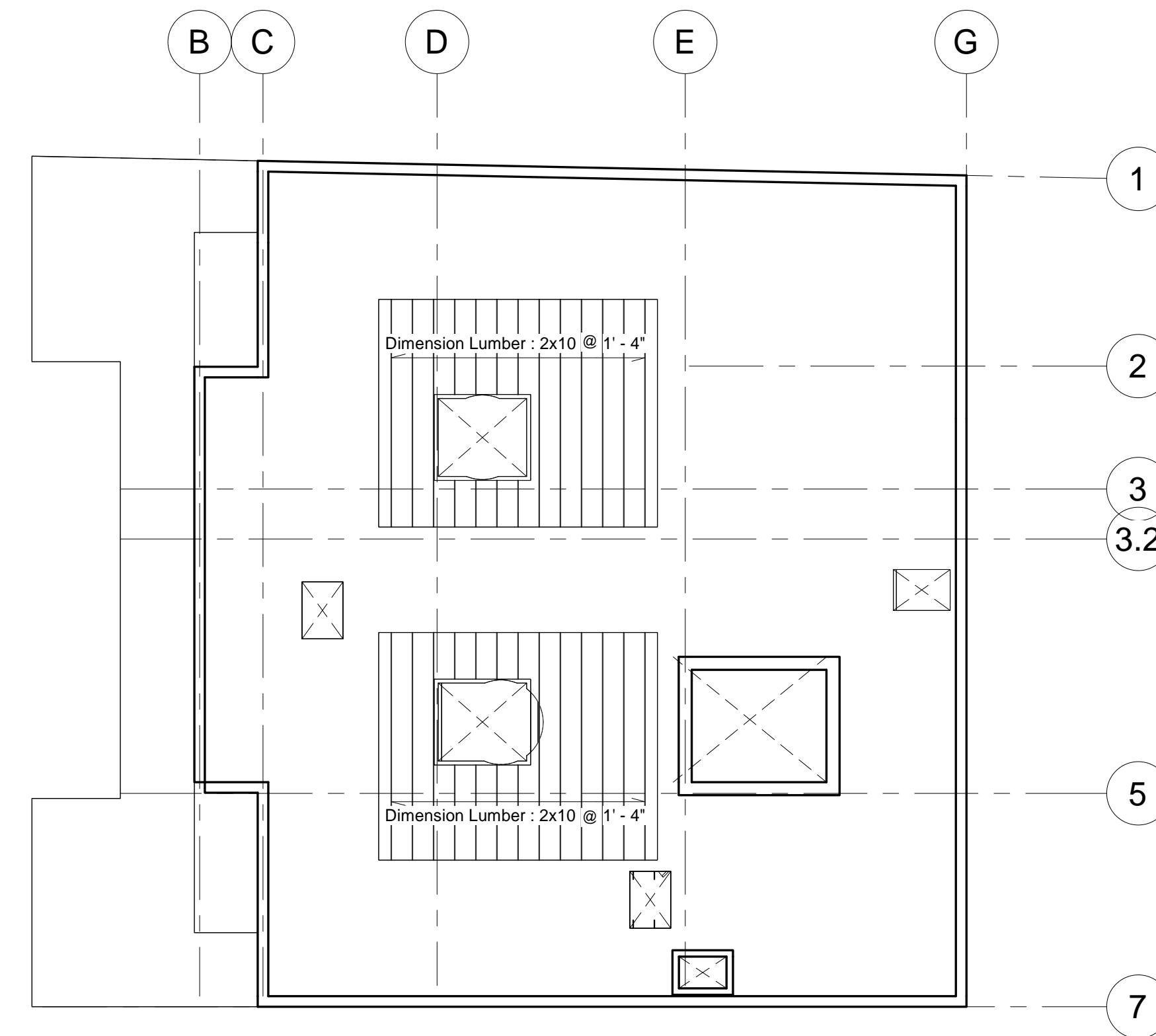
BRACED WALL PARTITION (B.W.P.)  
ATTACH SHEATHING ON EA. SIDE OF WALL @ 4' O.C.  
AT PERIMETER & O.C. IN FIELD OF EA. SHEATHING



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1 New Roof Framing  
1/8" = 1'-0"



2 Roof Deck Framing  
1/8" = 1'-0"



No.	Description	Date

HUS Companies  
979 Main St

---

STRUCTURAL FRAMING

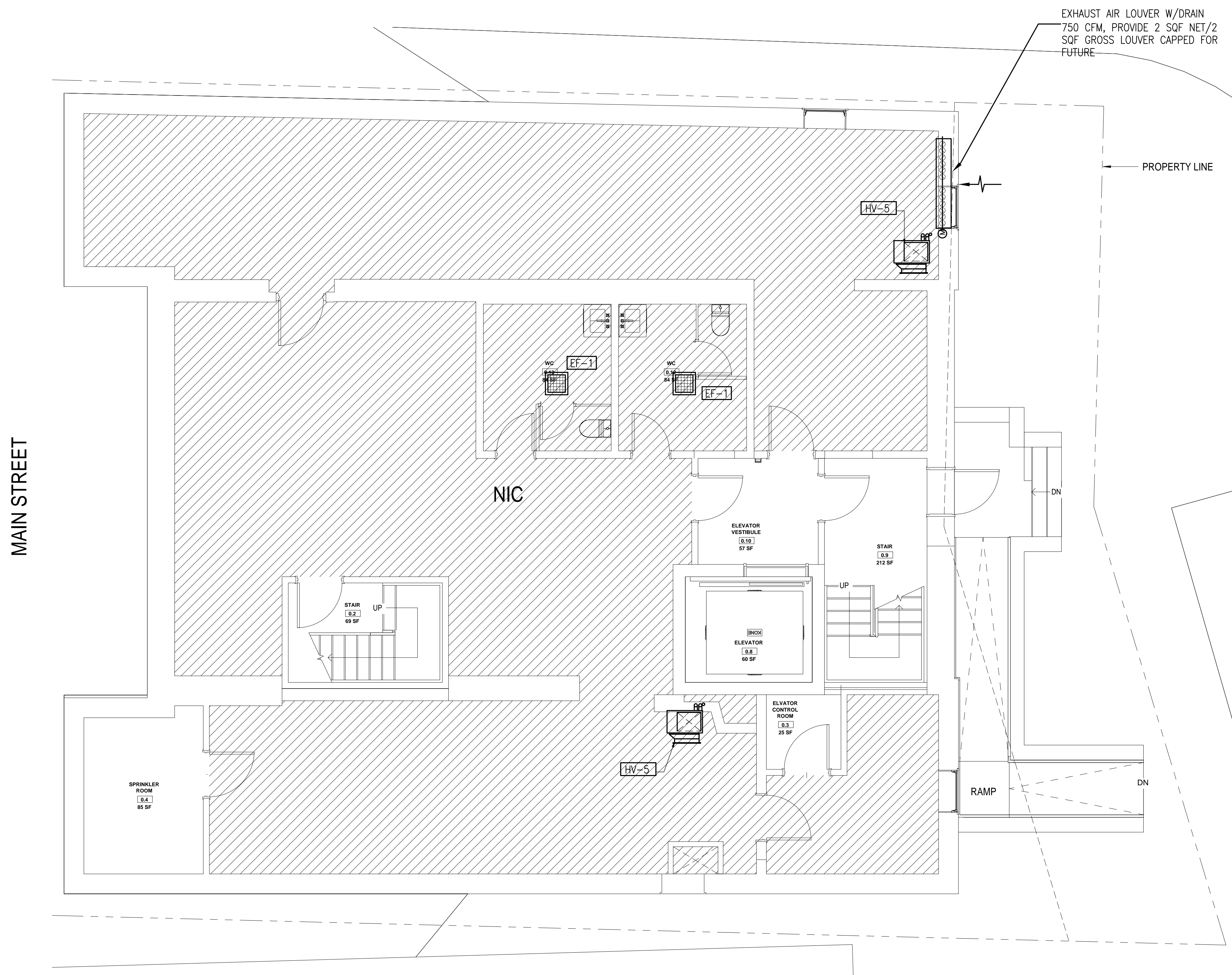
Project number	221018
Date	11.01.2021
Drawn by	DB
Checked by	ELH

**S103**

Scale: As indicated



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 www.d-r-t.co



① Basement - Proposed  
 1/4" = 1'-0"



*Mohammed Zade*

No.	Description	Date
1	For construction/ Permit	7-23-2021

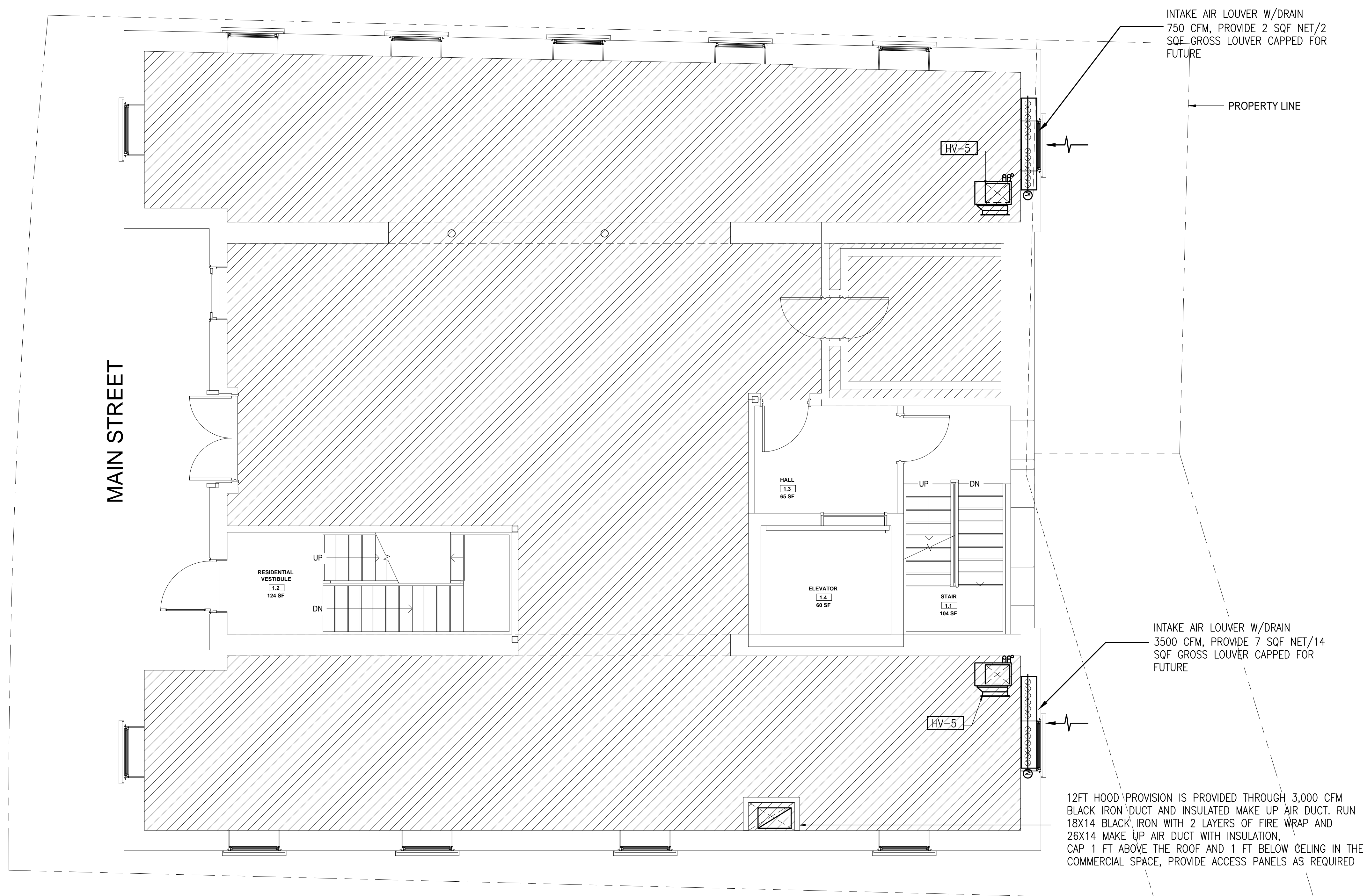
ZADE ASSOCIATES LLC  
 CONSULTING ENGINEERS  
 140 BEACH STREET, BOSTON, MA 02111  
 TEL: (617) 338-4406  
 FAX: (617) 451-2540  
 E-MAIL Zade@ZadeEngineering.com

HUS Companies  
 979 Main St  
**LEVEL G - PROPOSED HVAC**

Project number 221018  
 Date 04.07.2021  
 Drawn by RC  
 Checked by MZ

**H101**

Scale As indicated



MAIN STREET

INTAKE AIR LOUVER W/DRAIN  
750 CFM, PROVIDE 2 SQF NET/2  
SQF\_GROSS LOUVER CAPPED FOR  
FUTURE

PROPERTY LINE

INTAKE AIR LOUVER W/DRAIN  
3500 CFM, PROVIDE 7 SQF NET/14  
SQF\_GROSS LOUVER CAPPED FOR  
FUTURE

12FT HOOD PROVISION IS PROVIDED THROUGH 3,000 CFM  
BLACK IRON DUCT AND INSULATED MAKE UP AIR DUCT. RUN  
18X14 BLACK IRON WITH 2 LAYERS OF FIRE WRAP AND  
26X14 MAKE UP AIR DUCT WITH INSULATION,  
CAP 1 FT ABOVE THE ROOF AND 1 FT BELOW CEILING IN THE  
COMMERCIAL SPACE, PROVIDE ACCESS PANELS AS REQUIRED

① Level 1 - Proposed  
1/4" = 1'-0"



Mohammed Zade

No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
979 Main St  
**LEVEL 1 - PROPOSED HVAC**

Project number	221018
Date	04.07.2021
Drawn by	RC
Checked by	MZ

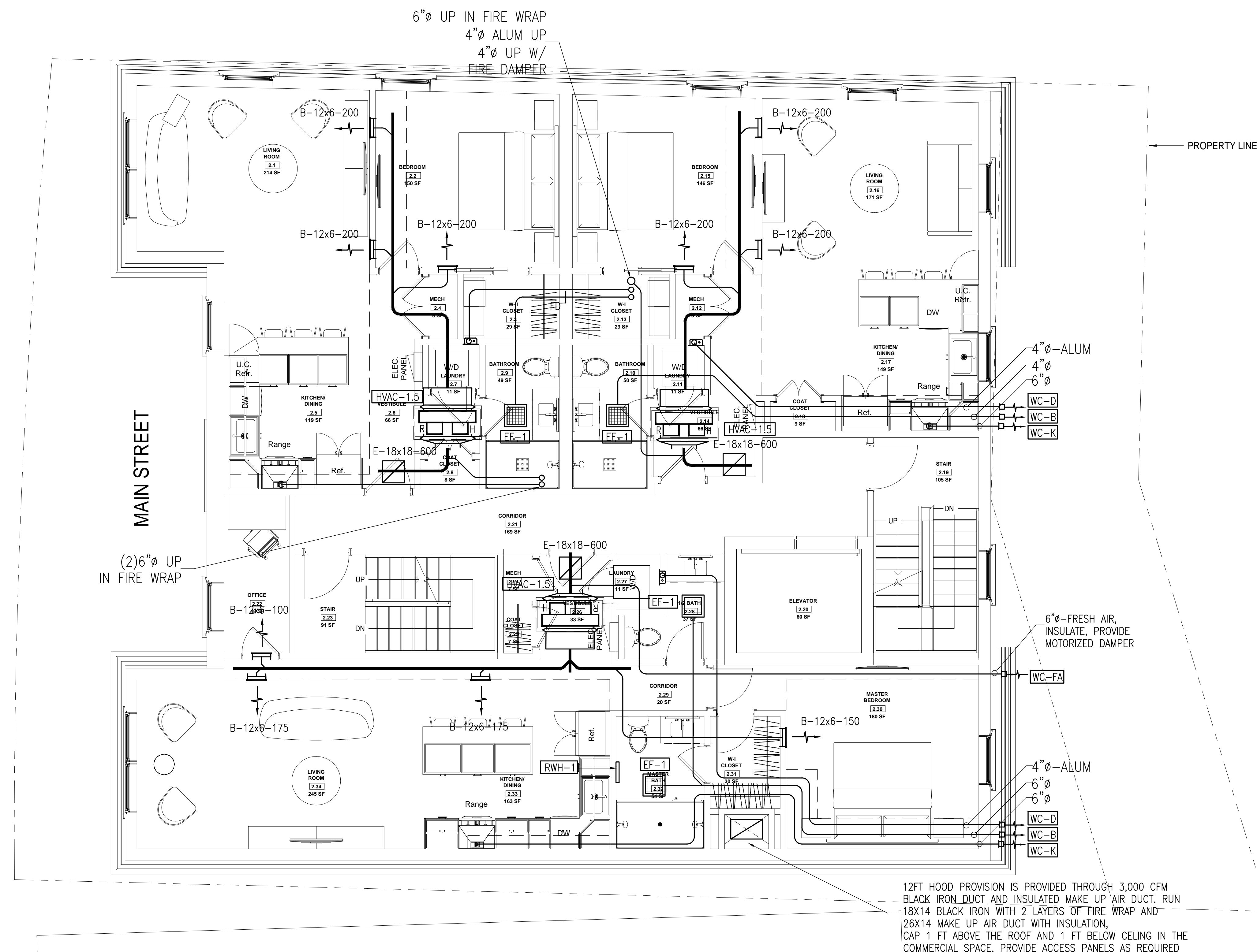
**H102**

Scale: As indicated

**ZADE ASSOCIATES LLC**  
CONSULTING ENGINEERS  
140 BEACH STREET, BOSTON, MA 02111  
TEL: (617) 338-4406  
FAX: (617) 451-2540  
E-MAIL: Zade@ZadeEngineering.com



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 www.d-r-t.co



No.	Description	Date
1	For construction/ Permit	7-23-2021

1 Level 2 - Proposed  
 1/4" = 1'-0"

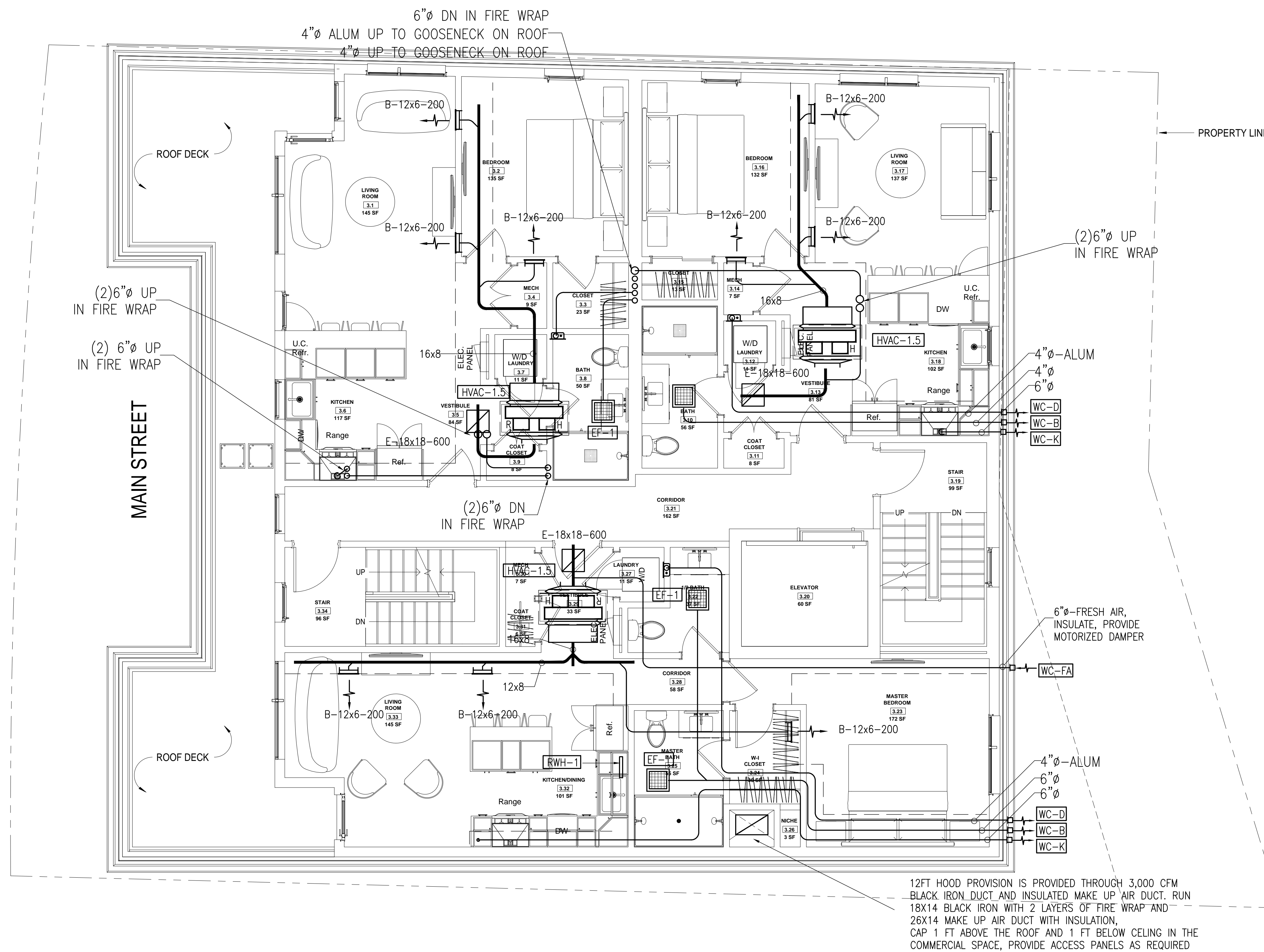
ZADE ASSOCIATES LLC  
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 FAX: (617) 451-2540  
 E-MAIL: Zade@ZadeEngineering.com

HUS Companies  
 979 Main St  
**LEVEL 2 - PROPOSED  
 HVAC**

Project number	221018
Date	04.07.2021
Drawn by	RC
Checked by	MZ

**H103**

Scale As indicated



① Level 3 - Proposed  
 1/4" = 1'-0"

**ZADE ASSOCIATES LLC**  
 CONSULTING ENGINEERS  
 140 BEACH STREET, BOSTON, MA 02111  
 TEL: (617) 338-4406  
 FAX: (617) 451-2540  
 E-MAIL: Zade@ZadeEngineering.com



No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
 979 Main St  
**LEVEL 3 - PROPOSED HVAC**

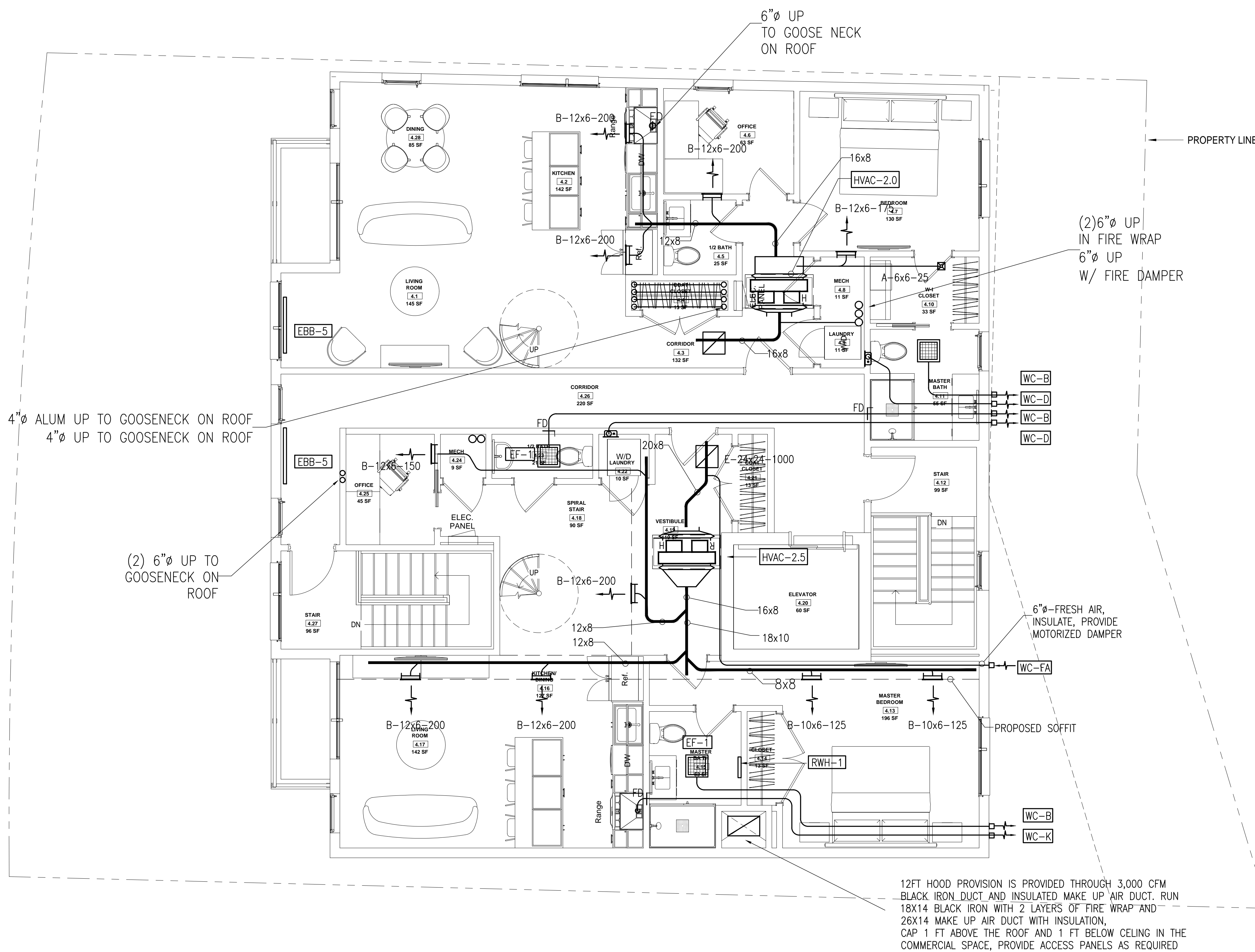
Project number	221018
Date	04.07.2021
Drawn by	RC
Checked by	MZ

**H104**

Scale As indicated



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info@d-r-t.co  
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1 Level 4 - Proposed  
1/4" = 1'-0"

**ZADE ASSOCIATES LLC**  
CONSULTING ENGINEERS  
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TEL: (617) 338-4406  
FAX: (617) 451-2540  
E-MAIL: Zade@ZadeEngineering.com



No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
979 Main St  
**LEVEL 4 - PROPOSED HVAC**

Project number	221018
Date	04.07.2021
Drawn by	RC
Checked by	MZ
<b>H105</b>	
Scale	As indicated







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**GENERAL NOTES**

- PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO EXECUTE THE WORK SHOWN AND DESCRIBED. INSTALLATION OF MATERIALS SHALL MEET ALL APPLICABLE STATE, FEDERAL AND MUNICIPAL REQUIREMENTS.
- OBTAIN PERMITS AND PAY ALL FEES FOR WORK AND REQUIRED INSPECTIONS.
- MAINTAIN LIABILITY INSURANCE TO PROTECT OWNER AND THE CONTRACTOR FROM ANY AND ALL CLAIMS UNDER THE WORKER'S COMPENSATION ACT.
- THE DRAWINGS SHALL CONSIDERED DIAGRAMMATIC ONLY. ALL MEASUREMENTS SHALL BE TAKEN FROM BUILDING SITE AND ARCHITECT'S DRAWINGS.
- PROVIDE TEMPORARY MATERIAL STORAGE AS REQUIRED AND BE RESPONSIBLE FOR ANY LOSS OR DAMAGE THERETO.
- SUBMIT DIGITAL COPIES OF SHOP DRAWINGS FOR REVIEW COVERING MAJOR MANUFACTURED ITEMS, IE. AIR HANDLING UNITS, REGISTERS & DIFFUSERS, WIRING DIAGRAMS, ETC.
- KEEP ACCURATE RECORD OF "AS-BUILT" DRAWINGS AND SUBMIT THESE BEFORE FINAL CERTIFICATE OF COMPLETION.
- ON COMPLETION OF THE WORK, REMOVE FROM THE PREMISES ALL TOOLS, DEBRIS, SURPLUS AND WASTE MATERIALS RESULTING FROM OPERATIONS UNDER THIS SECTION. CLEAN ALL EQUIPMENT AND LEAVE ALL ITEMS IN PERFECT ORDER READY FOR OPERATION.
- AFTER ACCEPTANCE, INSTRUCT OWNER IN EQUIPMENT OPERATION AND PROVIDE HIM WITH OPERATING AND MAINTENANCE MANUALS STANDARDS AND EXTENDED WARRANTY DOCUMENTS, INSPECTION CERTIFICATES AND COPIES OF SHOP DRAWINGS OF INSTALLED EQUIPMENT.
- THE CONTRACTOR SHALL, BEFORE FINAL PAYMENT IS MADE, GUARANTEE ALL MATERIALS AND WORKMANSHIP SUPPLIED BY HIM IN THE PERFORMANCE OF THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AND SHALL, WHEN CALLED UPON, MAKE GOOD WITHOUT FURTHER COST TO THE OWNER SUCH DEFECTS AS MAY APPEAR WITHIN THIS PERIOD.
- SUPPLY AND INSTALL DUCTWORK AS INDICATED ON DRAWING. DUCTWORK SHALL BE FABRICATED AND INSTALLED IN STRICT ACCORDANCE WITH LATEST ASHRAE & SMACNA STANDARDS AND SHALL BE MANUFACTURED OF GALVANIZED STEEL UNLESS SPECIFICALLY NOTED OTHERWISE.
- ADJUST ALL FAN SPEEDS TO DELIVER SHOWN AIR QUANTITIES. BALANCE ALL AIR SYSTEMS AND SUPPLY WRITTEN AIR BALANCING REPORTS IN TRIPLICATE. INCLUDE NECESSARY SPARE BELTS AND PULLEYS FOR FIELD ADJUSTMENT.
- ALL VALVES AND FITTINGS SHALL BE SUITABLE FOR THIS PARTICULAR PIPING APPLICATION AND MINIMUM 150LBS PRESSURE RATING.
- ALL DUCTWORK SHALL BE: 24 GAUGE UP TO 36 INCHES WIDE, 22 GAUGE 31 INCHES WIDE TO 60 INCHES WIDE, ROUND DUCT SHALL BE 24 GAUGE UP TO 10 INCHES DIAMETER, 22 GAUGE 11 TO 20 INCHES DIAMETER, 20 GAUGE ABOVE 20 INCHES DIAMETER; ALL GALVANIZED SHEETMETAL. SEAL ALL JOINTS AND SLIPS WITH EC 800 OR OTHER SUITABLE SEALANT. ALL LONGITUDINAL SEAMS SHALL BE PITTSBURG LOCKING TAPE. ALL SLIPS SHALL BE REINFORCED BAR TYPE. FABRICATE AND INSTALL ALL DUCTS IN COMPLIANCE WITH SMACNA STANDARDS FOR LOW PRESSURE DUCT CONSTRUCTION.
- ALL DUCT CONNECTIONS TO FAN DRIVEN UNITS SHALL BE MADE WITH A FIREPROOF FLEXIBLE DUCT CONNECTOR.
- BEFORE THE H.V.A.C. SYSTEM IS OPERATED, ALL DUCTS SHALL BE BLOWN OUT & THOUGHLY CLEANED. SYSTEM SHALL BE TEST AT FULL PRESSURE & ALL LEAKS & FAULTS CORRECTED.
- INSTALL ALL PIPING AND VALVES AS HIGH AS POSSIBLE.
- BALANCE THE AIR SYSTEM AS PER ASSOCIATED AIR BALANCING COUNCILS LATEST STANDARDS. SUBMIT BALANCING REPORT FOR ENGINEERS APPROVAL.
- THESE DRAWINGS ARE DIAGRAMMATIC. FIELD CONDITIONS SHALL DETERMINE ACTUAL LOCATION OF ALL PIPING AND DUCTWORK.
- ALL DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS.
- DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL MECHANICAL CODE AND THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION DUCT CONSTRUCTION STANDARDS UNLESS OTHERWISE INDICATED IN THESE DRAWINGS OR IN THE SPECIFICATIONS.
- ALL DUCT SUPPORTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS UNLESS OTHERWISE NOTED.

**GENERAL NOTES**

SHOULD ANY CONTRADICTION, AMBIGUITY, ERROR, INCONSISTENCY, OMISSION OR INCOMPLETE SYSTEM APPEAR IN OR BETWEEN ANY OF CONTRACT DOCUMENTS THE CONTRACTOR SHALL, BEFORE SUBMITTING THE FINAL BID AND SIGNING THE CONTRACT FOR CONSTRUCTION, NOTIFY THE ARCHITECT AND REQUEST A WRITTEN RESOLUTION AS TO WHICH METHODS OR MATERIALS WILL BE REQUIRED. IN THE EVENT OF CONFLICTING REQUIREMENTS OF STANDARDS, DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE MORE STRINGENT REQUIREMENTS. BEFORE SUBMITTING THE FINAL BID AND SIGNING THE CONTRACT FOR THE CONSTRUCTION THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION FROM THE ARCHITECT. IN NO CASE SHALL THE CONTRACTOR PROCEED WITH THE AFFECTED WORK UNTIL ADVISED BY THE ARCHITECT.

IF THE CONTRACTOR FAILS TO MAKE A REQUEST FOR INTERPRETATION OR RESOLUTION NO EXCUSE WILL BE ACCEPTED FOR FAILURE TO CARRY OUT THE WORK IN A SATISFACTORY MANNER, AS INTERPRETED BY THE ARCHITECT. THIS GENERALLY MEANS THE USE OF THE HIGHEST QUALITY MATERIAL, MOST EXPENSIVE WAY OF PERFORMING WORK AND PROVIDING COMPLETE FUNCTIONING SYSTEM FOR PROPER OPERATION.

EACH AND EVERY TRADE OR SUBCONTRACTOR WILL BE DEEMED TO HAVE FAMILIARIZED THEMSELVES WITH ALL THE CONTRACT DOCUMENTS OF THIS PROJECT, INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND SITE WORK, AND TO HAVE VISITED THE SITE, SO AS TO AVOID ERROR, OMISSIONS AND MISINTERPRETATIONS. RELATED INFORMATION MAY BE PROVIDED ON CONTRACT DOCUMENTS OTHER THAN THOSE ASSOCIATED WITH THE SUBCONTRACTOR'S TRADE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RELATED WORK OF ALL THE CONTRACT DOCUMENTS. NO ADDITIONAL COMPENSATION WILL BE AUTHORIZED FOR ALLEGED ERRORS, OMISSIONS AND MISINTERPRETATIONS WHETHER THEY ARE A RESULT OF FAILURE TO OBSERVE THIS REQUIREMENT OR NOT.

**ENERGY CODE 2015 REQUIREMENTS**

APPLICABILITY (CONTRACTOR SHALL PROVIDE ALL ITEMS LISTED BELOW)  
 RESIDENTIAL BUILDING, FOR THIS CODE, INCLUDES DETACHED ONE- AND TWO-FAMILY DWELLINGS AND MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES) AS WELL AS GROUP R-2, R-3 AND R-4 BUILDINGS THREE STORES OR LESS IN HEIGHT ABOVE GRADE PLANE.  
 R401.2 COMPLIANCE. PROJECTS SHALL COMPLY WITH SECTIONS IDENTIFIED AS "MANDATORY" AND WITH EITHER SECTIONS IDENTIFIED AS "PRESCRIPTIVE" OR THE PERFORMANCE APPROACH IN SECTION R405. (PRESCRIPTIVE METHOD IS CHOSEN)  
 R403.1.1 PROGRAMMABLE THERMOSTAT.

PROVIDE, AT LEAST ONE THERMOSTAT PER DWELLING UNIT. THERMOSTAT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE TO MAINTAIN DIFFERENT TEMPERATURE SET POINTS AT DIFFERENT TIMES OF THE DAY. THIS THERMOSTAT SHALL INCLUDE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55F (13C) OR UP TO 85F (29C). THE THERMOSTAT SHALL INITIALLY BE PROGRAMMED WITH A HEATING TEMPERATURE SET POINT NO HIGHER THAN 70F (21C) AND A COOLING TEMPERATURE SET POINT NO LOWER THAN 78F (26C).

PROVIDE PER R403.2.1 INSULATION (PRESCRIPTIVE). ANY SUPPLY DUCT IN ATTIC SHALL BE INSULATED TO A MINIMUM OF R-12. ALL OTHER DUCTS SHALL BE INSULATED TO A MINIMUM OF R-6.

PROVIDE PER R403.2.2 SEALING (MANDATORY). ALL DUCTS, AIR HANDLERS AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH EITHER THE INTERNATIONAL MECHANICAL CODE OR INTERNATIONAL RESIDENTIAL CODE, AS APPLICABLE.

DO NOT USE BUILDING CAVITIES PER R403.2.3. (MANDATORY). BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS.

PROVIDE VENTILATION R403.5 AS SHOWN (MANDATORY). THE BUILDING SHALL BE PROVIDED WITH VENTILATION THAT MEETS THE REQUIREMENTS OF THE INTERNATIONAL RESIDENTIAL CODE OR INTERNATIONAL MECHANICAL CODE, AS APPLICABLE, OR WITH OTHER APPROVED MEANS OF VENTILATION. OUTDOOR AIR INTAKES AND EXHAUSTS SHALL HAVE AUTOMATIC OR GRAVITY DAMPERS THAT CLOSE WHEN THE VENTILATION SYSTEM IS NOT OPERATING.

R403.2 HOT WATER BOILER OUTDOOR TEMPERATURE SETBACK. HOT WATER BOILERS THAT SUPPLY HEAT TO THE BUILDING THROUGH ONE- OR TWO-PIPE HEATING SYSTEMS SHALL HAVE AN OUTDOOR SETBACK CONTROLLER THAT LOWERS THE BOILER WATER TEMPERATURE BASED ON THE OUTDOOR TEMP.

R403.3.2 SEALING (MANDATORY) DUCTS, AT HANDLERS AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH EITHER THE INTERNATIONAL MECHANICAL CODE OR IRC, AS APPLICABLE

- EXCEPTIONS:
- AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT SEALS
  - FOR DUCTS HAVING A STATIC PRESSURE CLASSIFICATION OF LESS THAN 2 INCHES OF WATER COLUMN (500 PA) , ADDITIONAL CLOSURE SYSTEMS SHALL NOT BE REQUIRED TO CONTINUOUSLY WELDED JOINTS AND SEAMS, LOCKING TYPE JOINTS AND SEAMS OF OTHER THAN THE SNAP-LOCK AND BUTTON-LOCK TYPES.

403.3.2.1 SEALED AIR HANDLER AIR HANDLERS SHALL HAVE A MANUFACTURERS DESIGNATION OF AIR LEAKAGE OF NO MORE THAN 2 PERCENT OF THE DESIGN AIR FLOW RATE WHEN TESTED IN ACCORDANCE WITH ASHRAE 193.

R403.3.3 DUCT TESTING DUCTS SHALL BE PRESSURE TESTED THROUGH ROUGH IN TEST, POST CONSTRUCTION TEST

EXCEPTION- NOT REQUIRED WHERE DUCTS AND AIR HANDLERS ARE LOCATED ENTIRELY THROUGH THE BUILDING THERMAL ENVELOPE

**LOW RISE ESTAR REQUIREMENTS FOR MEP TRADES**

(CONTRACTOR SHALL COMPLY WITH ALL ITEMS BELOW)

PROGRAMMABLE THERMOSTAT REQUIRED (IF HEAT PUMP HAS AUXILIARY ELECTRIC HEATER, THAN THERMOSTAT WILL HAVE "ADAPTIVE USE TECHNOLOGY")

INSULATION IN THE UNCONDITIONED ATTIC R-8 OR BETTER  
 ALL OTHER DUCTS IN CONDITIONED SPACE R-6 OR BETTER  
 DUCT LEAKAGE TO INTERIOR SHALL BE LESS THAN 8 CM25 PER 100 SQF OF CONDITIONED SPACE  
 DUCT LEAKAGE TO OUTSIDE SHALL BE LESS THAN 4CM25 PER 100 SQF OF CONDITIONED SPACE

ALL APPLIANCES SHALL BE ESTAR RATED  
 80% OF ALL BULBS SHALL BE ESTAR RATED.

**HVAC SYSTEM REQUIREMENTS**

- VENTILATION SHALL COMPLY WITH ASRAE 62.2-2010 (EXHAUST ONLY)  
 KITCHEN SACH CONTINUOUS OR 100 CFM INTERMITTENT  
 BATHROOM 20 CFM CONSTANT OR 50 CFM INTERMITTENT  
 CONTINUOUS FANS 1SONE, INTERMITTENT MAXIMUM 3 SONES

2-IF INTAKE IS CONNECTED TO RETURN OF THE DUCT THAN MOTORIZED DAMPER TO BE USED.

3-FOR HVAC MAXIMUM 115% OF HVAC LOAD OR NEXT NOMINAL SIZE.

4-FOR HEAT PUMP MAXIMUM 140% OF HEATING LOAD OR NEXT NOMINAL SIZE

5-TOTAL SYSTEM AIR FLOW WITHIN 15% OF CALCULATED AIR.

6-SYSTEM TO BE BALANCED WITHIN 25% OF CALCULATED AIR OR 25 CFM

7-CORROSION RESISTANT DRAIN PAN IS PROVIDED. (galvanized or plastic)

8-PROVIDE MINIMUM MERV 6 FILTER (MINI SPLITS ARE EXEMPTED)

9-IF HVAC HAS FRESH AIR INTAKE THAN MOTOR WILL BE ECM WITH SMART CYCLER THAT WILL SHUT DOWN THE INTAKE. (17) INSTALLATION

- THERE WILL BE NO KINKS OR SHARP TURNS IN DUCTWORK
- FLEXIBLE DUCTS SUPPORTED AT MAXIMUM 5FT INTERVALS
- PROVIDE RETURN GRILL 1 SQ. INCH NET PER 1 CFM AIR.
- CONTINUOUSLY OPERATED EXHAUST FANS SHALL HAVE READILY ACCESSIBLE CONTROLS.
- VENTILATION INTAKES SHALL BE 4FT ABOVE ROOF OR GRADE.
- PROVIDE INSECT SCREEN 0.5 INCH MESH
- FRESH AIR MUST PASS THRU FILTER
- PROVIDE DUCT LEAKAGE TEST, LEAKAGE TO BE LIMITED TO ESTAR REQUIREMENTS

**CONSTRUCTION NOTES**

- ALL CEILING MOUNTED HVAC UNITS SHALL BE HUNG FROM STRUCTURAL STEEL WITH SPRING ISOLATORS.
- PROVIDE FLEXIBLE DUCT CONNECTIONS AT HVAC UNIT, AND ALL FANS
- PROVIDE ISOLATION VALVES, CONTROL VALVES, DRAIN AND STRAINER FOR ALL WATER BASED HVAC UNITS.
- PROVIDE SECONDARY DRAIN PAN WITH LEAK DETECTOR TO SHUT DOWN HVAC UNIT.
- MAINTAIN ACCESS DOORS AND CODE REQUIRED CLEARANCES FOR ALL FILTER REPLACEMENT, EQUIPMENT REPAIR AND ELECTRICAL CONTROLS.
- PRIOR TO ANY INSTALLATION, COORDINATE CLEARANCES WITH ALL TRADES.
- CONDENSATE DRAINS SHALL RUN TO NEAREST STORM CONNECTION PROVIDED BY P.C. REFER TO PLUMBING DRAWINGS
- CONDENSING UNITS SHALL BE MOUNTED ON CONCRETE PAD ON VIBRATION PADS, OR MOUNTED ON SLEEPERS ANCHORED TO ROOF.
- ALL SPLIT SYSTEM CONDENSER UNITS IF LOCATED AWAY FROM THE BUILDING SHALL BE PIPED UNDERGROUND UP TO BUILDING, PROVIDE MINIMUM 18" COVER.
- PROVIDE MAINTENANCE PADS MINIMUM 4" HIGH FOR ALL FLOOR-MOUNTED EQUIPMENT PUMPS AND BOILERS.
- PROVIDE 13 FILTERS FOR ALL INDOOR UNITS, MERV 8 FOR ESTAR/LEED BUILDINGS
- PROVIDE 11 FILTERS FOR ALL OUTSIDE AIR UNITS, MERV 9 FOR ESTAR/LEED BUILDINGS
- ALL PIPING CONNECTED TO VIBRATION-ISOLATED EQUIPMENT TO BE ISOLATED BY MEANS OF VIBRATION ISOLATORS, RESILIENT LATERAL SUPPORTS AND RESILIENT PENETRATION SLEEVE /SEALS. THIS APPLIES TO FIRST 50 FEET OF TOTAL PIPE LENGTH OR THE ENTIRE PIPE WITHIN MECH. ROOM (WHICHEVER IS LONGER), PIPES THAT ARE 4" DIAMETER OR LARGER TO BE ISOLATED THROUGHOUT THE BUILDING REFER TO SPEC SECTION 230548 FOR ADDITIONAL INFORMATION
- PROVIDE EXPANSION LOOPS AS REQUIRED
- ALL FRESH AIR DUCTS SHALL HAVE MOTORIZED DAMPERS INTERLOCKED WITH UNIT AND HAVE VOLUME DAMPERS

**APARTMENT EXHAUST NOTES**

- EACH APARTMENT SHALL BE PROVIDED WITH A CONNECTION POINT FOR A CLOTHES WASHER VENT.
  - PROVIDE AND INSTALL THE DRYER BOX 6", SIZED TO THE WALL THICKNESS, SHALL BE PROVIDED AT EACH SCHEDULED DRYER LOCATION
  - DRYER VENT PIPE SHALL BE MINIMUM 28 GAUGE RIGID METAL, WITH NO SCREWS FOR ATTACHMENT, AND CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS.
  - DRYER VENTING SHALL USE THE DRYER ELL FOR THE FIRST ELBOW. LOCATED AND COORDINATED TO MINIMIZE ANY ADDITIONAL BENDS. DUCTWORK SHALL HAVE THE LAST (5) FEET MINIMUM PITCHED TO THE EXTERIOR EXHAUST POINT.
  - DUCTWORK SHALL EXHAUST TO THE EXTERIOR TO A NON-SCREENED VINYL SIDEWALL HOOD PROVIDED UNDER THIS SCOPE AND COLORED TO MATCH THE ADJACENT EXTERIOR FINISH. VINSULATE WITH R-4 MINIMUM LAST 10' OF EXHAUST SEAL AGAINST EXTERIOR WALL
  - LAUNDRY VENT DUCT SHALL BE ALUMINUM TYPE TO PREVENT CORROSION AND TAPE SHALL BE IN COMPLIANCE WITH UL FOR DRYER DUCT CONNECTIONS
- KITCHEN EXHAUST**
- EACH APARTMENT SHALL BE PROVIDED WITH A CONNECTION POINT FOR EXHAUSTING A RANGE HOOD.
  - COORDINATE SIZE AND CONNECTION POINT WITH THE GENERAL CONTRACTOR, APPLIANCE SUPPLIER AND CABINET SUPPLIER.
  - EXHAUST PIPE SHALL BE MINIMUM 26 GAUGE RIGID METAL, WITH NO SCREWS FOR ATTACHMENT, AND CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS. DUCTWORK SHALL HAVE THE LAST (5) FEET MINIMUM PITCHED TO THE EXTERIOR EXHAUST POINT.
  - DUCTWORK SHALL EXHAUST TO THE EXTERIOR TO A SCREENED VINYL SIDEWALL HOOD PROVIDED UNDER THIS SCOPE AND COLORED TO MATCH THE ADJACENT EXTERIOR FINISH. VINSULATE WITH R-4 MINIMUM LAST 10' OF EXHAUST SEAL AGAINST EXTERIOR WALL
- BATHROOM EXHAUST**
- EACH APARTMENT SHALL BE PROVIDED WITH A CONNECTION POINT FOR EXHAUSTING A BATHROOM
  - COORDINATE SIZE AND LOCATION WITH THE GENERAL CONTRACTOR AND ARCHITECT
  - EXHAUST PIPE SHALL BE MINIMUM 26 GAUGE RIGID METAL CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS. DUCTWORK SHALL HAVE THE LAST (5) FEET MINIMUM PITCHED TO THE EXTERIOR EXHAUST POINT.
  - DUCTWORK SHALL EXHAUST TO THE EXTERIOR TO A SCREENED VINYL SIDEWALL HOOD PROVIDED UNDER THIS SCOPE AND COLORED TO MATCH THE ADJACENT EXTERIOR FINISH. VINSULATE WITH R-4 MINIMUM LAST 10' OF EXHAUST SEAL AGAINST EXTERIOR WALL

**LOUVER NOTES**

LOUVER DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS  
 LOUVERS SHALL BE AMCA CERTIFIED FOR WIND DRIVEN RAINS  
 BLADES SHALL BE 4" DEEP MOUNTED BETWEEN 35-45 DEGREES WITH DRAINABLE BLADE AND DRAINABLE HEAD  
 PROVIDE BIRD SCREENS IN COMPLIANCE WITH IMC 401  
 PROVIDE COLOR ANODIZED LOUVER PER ARCHITECTS DIRECTION  
 LOUVERS SHALL BE AS MANUFACTURED BY GREENHECK MODEL EHI 401 SERIES

**FIRE RATED CEILING NOTES:**

WHEN DUCT PENETRATE RATED CEILING:  
 -ALL RECESSED DIFFUSERS AND REGISTERS SHALL HAVE RADIATION DAMPERS.  
 -ALL UNITS DUCTED TO PLENUM SPACE SHALL HAVE CEILING FIRE DAMPERS TO MEET UL 555C  
 -ALL RETURN DUCTS SHALL BE BELOW THE RATED CEILING, DROPPED CEILING AREAS SHALL NOT BE RATED CEILING UNLESS SHOWN OTHERWISE  
 -ALL RETURN AIR GRILLES IN RATED CEILING SHALL HAVE CEILING FIRE DAMPERS  
 -ALL UNIT DISCHARGES SHALL BE OFFSET TO GET INTO PROPER JOIST SPACES, CARRY TRANSITION PIECE AS NEEDED  
 -ALL DUCTS LARGER THAN 4"9 DIAMETER SHALL HAVE FIRE DAMPERS AT CEILING PENETRATIONS

**FIRE/SMOKE DAMPER REQUIREMENTS**

- IMC 607.5.5 REQUIRES FIRE/SMOKE DAMPER AT ALL SHAFT PENETRATIONS
- IMC 607.6.1. REQUIRES DAMPER EXCEPT  
 -DUCT CAN PENETRATE UP TO THREE FLOORS IF, 26 GAUGE, OPEN FROM ONE UNIT TO OUTSIDE, 4" ROUND AND SEALED AROUND AND CEILING GRILLES HAVE RADIATION DAMPERS
- IMC 607.5.3 REQUIRES FIRE PARTITION PENETRATIONS TO HAVE FIRE DAMPERS EXCEPT  
 -BUILDING IS SPRINKLED OR  
 -DUCT IS MINIMUM 26 GAUGE, LESS THAN 100 SQ-INCH AND  
 -DUCT IS ABOVE CEILING AND,  
 -DUCT IS NOT TERMINATED AT FIRE RATED WALL AND  
 -MINIMUM 12" SLEEVE IS PROVIDED

**CEILING RADIATION DAMPERS**

CEILING RADIATION DAMPERS SHALL BE AS MANUFACTURED BY GREENHECK  
 MODEL CRD-1WT FOR SIDE INLET  
 MODEL CRD-2WT FOR TOP INLET  
 CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE UL LISTED DAMPER WITH THE UL LISTING OF THE CEILING  
 APPROVED CEILING RATINGS ARE  
 L-528,546,558,562,574,576,581,583,585,592  
 M-501,503,508  
 P-533,538,545,547,548,554

**INSULATION NOTES**

CONTRACTOR SHALL FOLLOW THE MOST STRINGENT INSULATION REQUIREMENT FOR EACH ITEM  
 THE FOLLOWING SYSTEMS SHALL BE INSULATED. DUCT LINER SHALL BE CLOSED CELL TYPE, GERM PROOF  
 IECC 2015 REQUIREMENTS:  

- HEATING HOT WATER MAINS AND BRANCHES:  
 PIPING < 1" REQUIRES 1 1/2" INSULATION  
 PIPING > 1 1/2" REQUIRES 2" INSULATION
- SUPPLY & RETURN DUCTWORK FROM HVAC UNITS:  
 1" INSULATION MIN. R-6

 LEED/ASHRAE 2013 REQUIREMENTS:  

- HEATING HOT WATER MAINS AND BRANCHES:  
 PIPING < 1 1/2" REQUIRES 1 1/2" INSULATION  
 PIPING > 1 1/2" REQUIRES 2" INSULATION
- SUPPLY & RETURN DUCTWORK FROM HVAC UNITS:  
 1" INSULATION MIN. R-6

 GENERAL INSULATION REQUIREMENTS:  

- ALL LINED SUPPLY, RETURN AND TRANSFER DUCTWORK SHALL BE 1" DUCT LINER  
 -DUCT INSULATION SHALL CONTINUE OVER DUCT AT LINED POINT  
 -FIRST 10' OF SUPPLY AND RETURN FOR ALL ERU'S AND HVAC UNITS
- CONDENSATE DRAIN: 1"
- ALL DUCTWORK IN CEILING SPACE SHALL HAVE R-6 INSULATION.
- REFRIGERANT PIPING 3/4" ARAMFLEX

 ALL DUCTWORK ON ROOF OR UNCONDITIONED SPACE SHALL BE INSULATED WITH R-12 INSULATION AND COVERED WITH EPDM ROOFING MATERIAL FOR WATER TIGHT INSTALLATION.

**DIFFUSER/REGISTER SCHEDULE**

LEGEND:		
	(N) - ### - ###	
	CFM	
	DIMENSIONS	
	TYPE	
TYPE	DESCRIPTION	MODEL (BASED ON TITUS)
A	LOUVER FACE CEILING DIFFUSER FOR SHEET ROCK CEILING INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR. WITH OPPOSITE BLADE DAMPER	TITUS TQCA, BORDER 1
A1	LOUVER FACE CEILING DIFFUSER FOR 2'x2' LAY-IN CEILING INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR. WITH OPPOSITE BLADE DAMPER	TITUS TQCA, BORDER 3
B	DOUBLE DEFLECTION REGISTER FOR SHEET ROCK INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR.	TITUS 272RS
E	DOUBLE DEFLECTION GRILLE FOR SHEET ROCK INSTALLATION. WITH OPPOSITE BLADE DAMPER	TITUS 25 RS
E1	DOUBLE DEFLECTION GRILLE FOR SHEET ROCK NSTALLATION. WITH OPPOSITE BLADE DAMPER ALUMINUM TYPE	TITUS 25 RS
F	PERFORATED SIGHT PROOF EGGRATE GRILLE FOR SHEET ROCK CEILING INSTALLATION.	TITUS 45F
G	LINEAR DIFFUSER, LINEAR STYLE 1 1/2" SLOT SPACING WIDTH, 4 SLOT FOR SHEET ROCK CEILING INSTALLATION. 100 CFM/FT WITH DAMPER, INSULATED PLENUM	TITUS MLR-40, BORDER TYPE 22



No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
 979 Main St  
 HVAC NOTES

Project number	221018
Date	04.07.2021
Drawn by	RC
Checked by	MZ

**H201**

Scale As indicated

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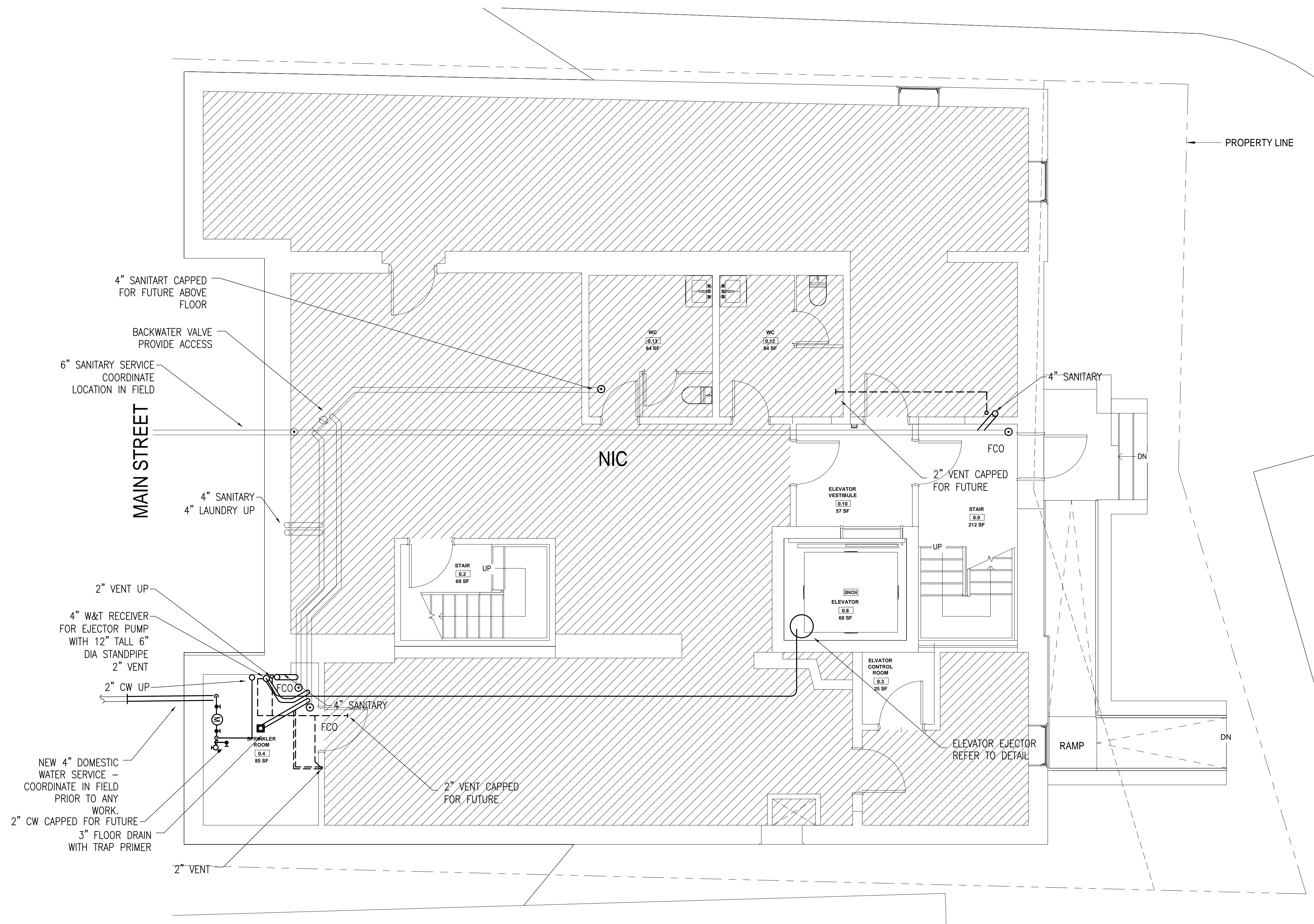








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① Basement - Proposed  
 1/4" = 1'-0"



No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
 979 Main St  
**LEVEL G - PROPOSED PLUMBING**

**ZADE ASSOCIATES LLC**  
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Project number	221018
Date	04.07.2021
Drawn by	RC
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**P101**  
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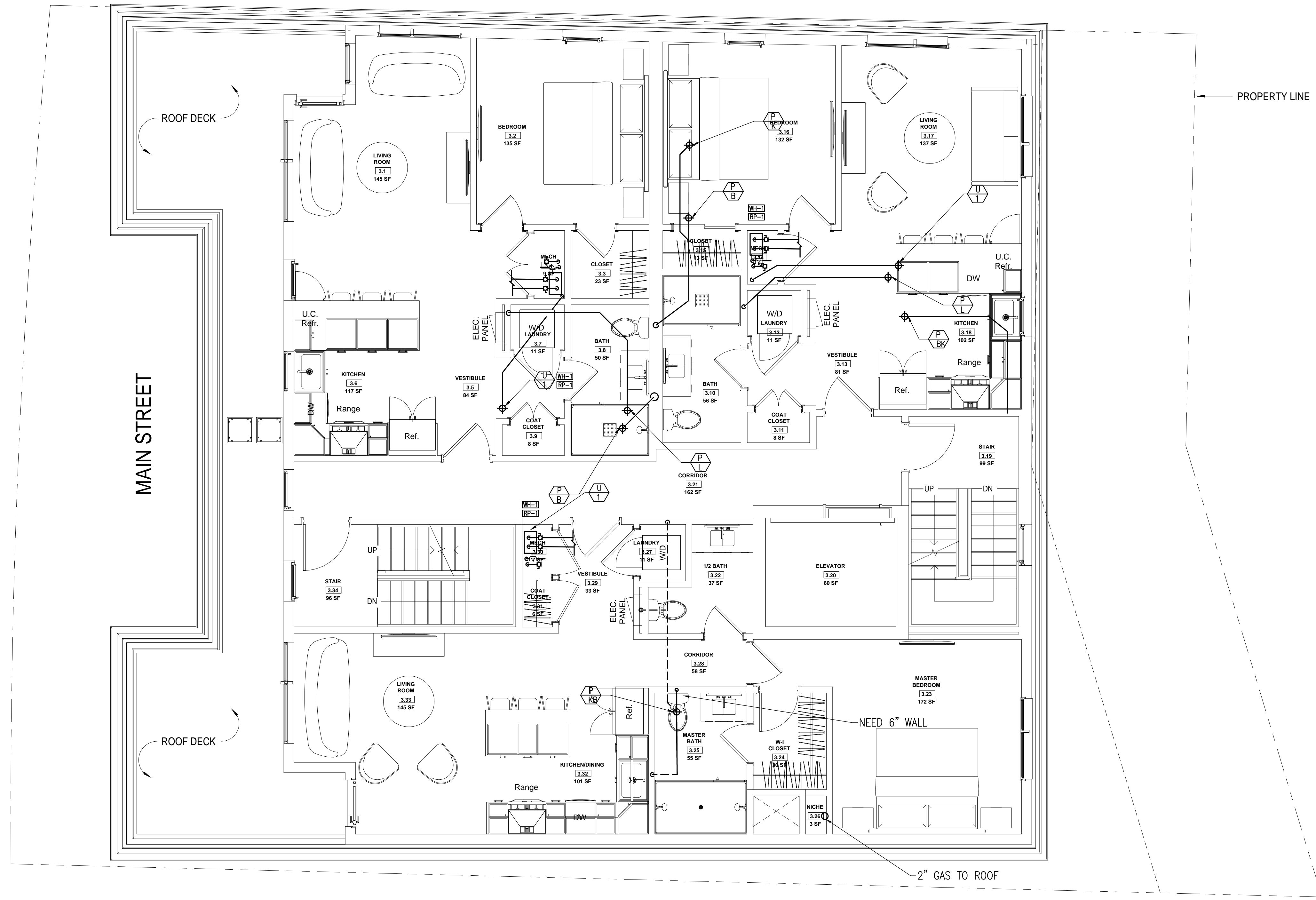








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① Level 3 - Proposed  
1/4" = 1'-0"

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No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
979 Main St  
**LEVEL 3 - PROPOSED PLUMBING**

Project number 221018  
Date 04.07.2021  
Drawn by RC  
Checked by MZ

**P104**

Scale As indicated







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## PLUMBING FIXTURE SPECIFICATION SCHEDULE

DESIGNATION	FIXTURE SYMBOL	SYMBOL	MANUFACTURER	FIXTURE			FITTING				CARRIER	LOCATION	REMARKS
				MODEL	TYPE	SIZE	MANUF./MODEL#	TYPE	SUPPLY	TRAP			
REFER TO ARCHITECTURAL SPECIFICATION FOR PLUMBING FIXTURES													
TRAP PRIMER	P-6	T.P.	PRECISION PLUMBING PRODUCTS	PR-500	-	-	-	-	1/2" CW SUPPLY	-	-	AS SHOWN	PROVIDE DU-4 FOR MULTIPLE TRAP PRIMERS

NOTE: ALL WASHER MACHINES TO BE PROVIDED WITH AQUA MANAGERS "FLOODSTOP" (FS 3/4-H) AUTOMATIC FLOOD PROTECTION KIT

### SCHEDULE OF WATER HEATER

DESIGNATION	NAME	LOCATION	DESCRIPTION
WH-1	HOT WATER HEATER	AS SHOWN	HTP COMBI-GAS FIRED WATER HEATER, MODEL EFTC-199, 95.7 AFUE, 120V/1Ø, 4.8 GPM DOMESTIC OUTPUT.
POU-1	POINT OF USE WATER HEATER	BATHROOMS	EEMAX MODEL EX95T-ML, THERMOSTATIC, 208 V, 7.125 KW, 30 AMPS, 48.75' F RISE @ 1 GPM, MAX TEMP SET @ 90'F

### GENERAL NOTES

- 1) FOR EXACT LOCATION OF PLUMBING FIXTURES SEE ARCHITECTURAL DRAWINGS.
- 2) EXAMINE ALL CONTRACT DRAWINGS, GENERAL CONDITIONS AND SPECIFICATIONS WHICH MAY AFFECT THE WORK.
- 3) ALL PLUMBING WORK MUST BE COORDINATED WITH ALL OTHER TRADES BEFORE PROCEEDING WITH INSTALLATION.
- 4) CHECK INVERT ELEVATIONS AND EXACT LOCATIONS OF ALL OUTSIDE UTILITIES BEFORE INSTALLING ANY UNDERGROUND.
- 5) NO CHANGES ARE TO BE MADE IN PLUMBING LAYOUT WITHOUT WRITTEN PERMISSION OF THE ARCHITECT.
- 6) NO PIPING SHALL RUN EXPOSED IN FINISHED AREAS.
- 7) ALL PLUMBING SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LOCAL AND STATE PLUMBING CODES.
- 8) ROUGHING DIMENSIONS OF TOILET FIXTURES MUST BE COORDINATED WITH GENERAL CONTRACTOR.
- 9) INSTALL ALL HOT AND COLD WATER PIPING AS PER SPECIFICATIONS.
- 10) INSTALL SHUTOFF GATE VALVES ON ALL BRANCH SUPPLY LINES AND AT THE BASE OF HOT AND COLD WATER RISERS.
- 11) PLUMBING CONTRACTOR SHALL REQUIRE PANELS TO ACCESS THE CONCEALED PLUMBING CLEANOUTS, DRAINS, DEVICES AND CONTROLS. ACCESS PANELS SHALL BE FIRE RATED TO MATCH THE PENETRATING PARTITION OR CEILING TYPE. GENERAL CONTRACTOR SHALL INSTALL THE ACCESS PANELS.
- 12) INSTALL ALL FLOOR CLEANOUTS TO CLEAR EQUIPMENT.
- 13) PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES AND CHARGES IN CONNECTION WITH THE WORK.
- 14) PLUMBING CONTRACTOR SHALL PROVIDE WATERTIGHT SLEEVES FOR ALL PIPES PASSING THRU BASEMENT WALLS.
- 15) INSTALL CLEANOUTS AT THE BASE OF ALL SANITARY STACKS.
- 16) INSTALL ALL HORIZONTAL RUNS OF PIPING AS HIGH AS POSSIBLE, PITCH ALL WATER PIPING TO DRAIN, DRAW OFFS AT ALL POINTS.
- 17) PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO OUTSIDE UTILITIES.
- 18) FOR PIPE SIZES NOT SHOWN ON PLANS SEE DETAILS & RISER DIAGRAMS.

### FIRE SAFE THROUGH WOOD FLOORS

TYPE	SIZE	HILTI	MATERIAL	RATING	BOTTOM	TOP	CHASE WALL
STEEL/CAST COPPER/EMT	MAX 4"	FS-ONE	INTUMESCENT SEALANT	2HRS	FIRE STOP	FIRE STOP	REQUIRED
STEEL/CAST 4" EMT/ 2" FLEX	MAX 6"	FS-ONE	INTUMESCENT SEALANT	2HRS	FIRE STOP	FIRE STOP	NOT REQUIRED
STEEL/CAST COPPER/EMT	MAX 4"	CP-620	FIRE FOAM	1HRS	FIRE STOP	FIRE STOP	REQUIRED
PEX	MAX 1"	CP 645	INTUMESCENT STRIP W/COLLAR	1HRS	BOTH SIDES	BOTH SIDES	NOT REQUIRED
PVC PIPE	MAX 2"	FS-ONE	INTUMESCENT SEALANT	1HRS	FIRE STOP	FIRE STOP	NOT REQUIRED
PVC PIPE	MAX 4"	FS-ONE	INTUMESCENT SEALANT	2HRS	FIRE STOP	FIRE STOP	REQUIRED
PVC PIPE	MAX 4"	CP 645	INTUMESCENT STRIP W/COLLAR	1HRS	COLLAR	FIRE STOP	NOT REQUIRED
REFRIGERANT	-	FS-ONE	INTUMESCENT SEALANT	-	1HRS	FIRE STOP	NOT REQUIRED
4" DUCT	MAX 4"	FS-ONE	INTUMESCENT SEALANT	-	1HRS	FIRE STOP	NOT REQUIRED
INSULATED COPPER/STEEL	MAX 2"	FS-ONE	INTUMESCENT SEALANT	-	1HRS	FIRE STOP	NOT REQUIRED
CABLES	MAX 2"	FS-ONE	INTUMESCENT SEALANT	-	1HRS	FIRE STOP	NOT REQUIRED

-----	SANITARY ABOVE FLOOR
-----	SANITARY UNDER FLOOR
-----	VENT
=====	VENT BURIED
-----	COLD WATER
-----	HOT WATER
-----	HOT WATER CIRCULATION
⊞	SHUT OFF VALVE
⊞	CHECK VALVE
⊞	FLOOR CLEANOUT
⊞	CLEANOUT
⊞	WALL CLEANOUT
VR	VENT RISER
VTR	VENT THRU ROOF
HD	HUB DRAIN
FD	FLOOR DRAIN
FCO	FLOOR CLEANOUT
--- ---	UNION
HB	HOSE BIBB
RD	ROOF DRAIN
VS	VENT STACK
WB	WASHER BOX
WC	WATER CLOSET
LAV	LAVATORY SINK
SH	SHOWER
KS	KITCHEN SINK

**PLUMBING LEGEND** N.T.S.

### INSULATION NOTES

THE FOLLOWING SYSTEMS SHALL BE INSULATED.  
 DUCT LINER SHALL BE CLOSED CELL TYPE, GERM PROOF

#### ESTAR REQUIREMENTS:

1. DOMESTIC HOT WATER & RECIRCULATION MAINS AND BRANCHES:  
 PIPING < 1" REQUIRES 1" INSULATION  
 PIPING > 1 1/2" REQUIRES 1 1/2" INSULATION

#### IECC 2015 REQUIREMENTS:

1. DOMESTIC HOT WATER MAINS AND BRANCHES:  
 PIPING < 1" REQUIRES 1" INSULATION  
 PIPING > 1 1/2" REQUIRES 2" INSULATION

#### GENERAL INSULATION REQUIREMENTS:

CW PIPING: 1/2" INSULATION  
 HORIZONTAL STORM: 1/2" INSULATION

THIS BUILDING WILL SHALL BE QUALIFIED FOR ESTAR, STRETCH CODE, AND LEED SILVER.  
 PROVIDE THE MOST STRINGENT LEVELS OF INSULATION FOR QUALIFICATION

### PIPING MATERIAL NOTES

SANITARY AND VENT: BELOW GROUND: SWCI WITH PUSH ON JOINTS.

ABOVE GROUND:  
 -SCH.40 PVC WITH SOLVENT JOINTS FOR ALL PLUMBING FIXTURES ONLY SERVING RESIDENTIAL FLOORS. IF SANITARY MAIN CONNECTS TO COMMERCIAL FIXTURES FROM THAT POINT AND BEYOND SHALL BE CAST IRON. IF ANY CONNECTION FROM RESIDENTIAL TO COMMERCIAL FIXTURES HAPPENS ON FIRST LEVEL TRANSITION TO CAST IRON IN RESIDENTIAL LEVEL.  
 -SWCI WITH HUSKY 4-BAND CLAMPS FOR ALL PLUMBING IN CONNECTIONS IN COMMERCIAL AND GARAGE LEVELS.

WATER PIPING: TYPE "L" COPPER WITH 95-5 SOLDER JOINTS IN COMMERCIAL AND GARAGE LEVEL, CPVC IN RESIDENTIAL LEVELS ONLY.

GAS PIPING: SCHEDULE 40 ER/ERW BLACK STEEL WITH THREADED JOINTS OR WELDED.

### PLUMBING NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL FIRE WALLS. ANY PENETRATION THROUGH FIRE FLOORS SHALL BE **FIRE STOPPED**. ANY PENETRATION THROUGH FIRE WALL SHALL BE **FIRE CAULKED**. REFER TO SECTION 7275 FOR PROCEDURE.

2. WITHOUT LIMITATION PAY ATTENTION TO THE FOLLOWING ITEMS:

- A. CHASES BEHIND BATHROOM (WALL BETWEEN CORRIDOR AND BATHROOM) AND WALLS BETWEEN UNITS ARE FIRE RATED. **FIRE CAULK** ALL PENETRATIONS.
- B. TOP AND BOTTOM WALL PLATES AT CEILING AND AT FLOOR IS PART OF FIRE SEPARATION. **FIRE STOP** ALL PENETRATIONS THROUGH PLATES.

### GENERAL NOTES:

1. SHOULD ANY CONTRADICTION, AMBIGUITY, ERROR, INCONSISTENCY, OMISSION OR INCOMPLETE SYSTEM APPEAR IN OR BETWEEN ANY OF CONTRACT DOCUMENTS THE CONTRACTOR SHALL, BEFORE SUBMITTING THE FINAL BID AND SIGNING THE CONTRACT FOR CONSTRUCTION, NOTIFY THE ARCHITECT AND REQUEST A WRITTEN RESOLUTION AS TO WHICH METHODS OR MATERIALS WILL BE REQUIRED. IN THE EVENT OF CONFLICTING REQUIREMENTS OF STANDARDS, DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE MORE STRINGENT REQUIREMENTS. BEFORE SUBMITTING THE FINAL BID AND THE SIGNING THE CONTRACT FOR THE CONSTRUCTION THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION FROM THE ARCHITECT. IN NO CASE SHALL THE CONTRACTOR PROCEED WITH THE AFFECTED WORK UNTIL ADVISED BY THE ARCHITECT.

IF THE CONTRACTOR FAILS TO MAKE A REQUEST FOR INTERPRETATION OR RESOLUTION NO EXCUSE WILL BE ACCEPTED FOR FAILURE TO CARRY OUT THE WORK IN A SATISFACTORY MANNER, AS INTERPRETED BY THE ARCHITECT. THIS GENERALLY MEANS THE USE OF THE HIGHEST QUALITY MATERIAL, MOST EXPENSIVE WAY OF PERFORMING WORK AND PROVIDING COMPLETE FUNCTIONING SYSTEM FOR PROPER OPERATION.

EACH AND EVERY TRADE OR SUBCONTRACTOR WILL BE DEEMED TO HAVE FAMILIARIZED THEMSELVES WITH ALL THE CONTRACT DOCUMENTS OF THIS PROJECT, INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND SITE WORK, AND TO HAVE VISITED THE SITE, SO AS TO AVOID ERROR, OMISSIONS AND MISINTERPRETATIONS. RELATED INFORMATION MAY BE PROVIDED ON CONTRACT DOCUMENTS OTHER THAN THOSE ASSOCIATED WITH THE SUBCONTRACTOR'S TRADE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RELATED WORK OF ALL THE CONTRACT DOCUMENTS. NO ADDITIONAL COMPENSATION WILL BE AUTHORIZED FOR ALLEGED ERRORS, OMISSIONS AND MISINTERPRETATIONS WHETHER THEY ARE A RESULT OF FAILURE TO OBSERVE THIS REQUIREMENT OR NOT.

2. ALL PENETRATIONS OF ASSEMBLIES EXPOSED TO THE EXTERIOR ENVIRONMENT SHALL BE SEALED WITH FOAM SEALANT OR EQUIVALENT SEALER TO PROVIDE ZERO AIR INFILTRATION. COORDINATE WITH FIRE STOPPING REQUIREMENTS.

3. NO COMPONENT OF ANY SYSTEM SHALL RUN THROUGH THE STAIR ENCLOSURE THAT DOES NOT RELATE TO OR SERVE THE STAIR ENCLOSURE.



No.	Description	Date
1	For construction/ Permit	7-23-2021

## HUS Companies 979 Main St PLUMBING NOTES & SCHEDULES

Project number: 221018  
 Date: 04.07.2021  
 Drawn by: RC  
 Checked by: MZ

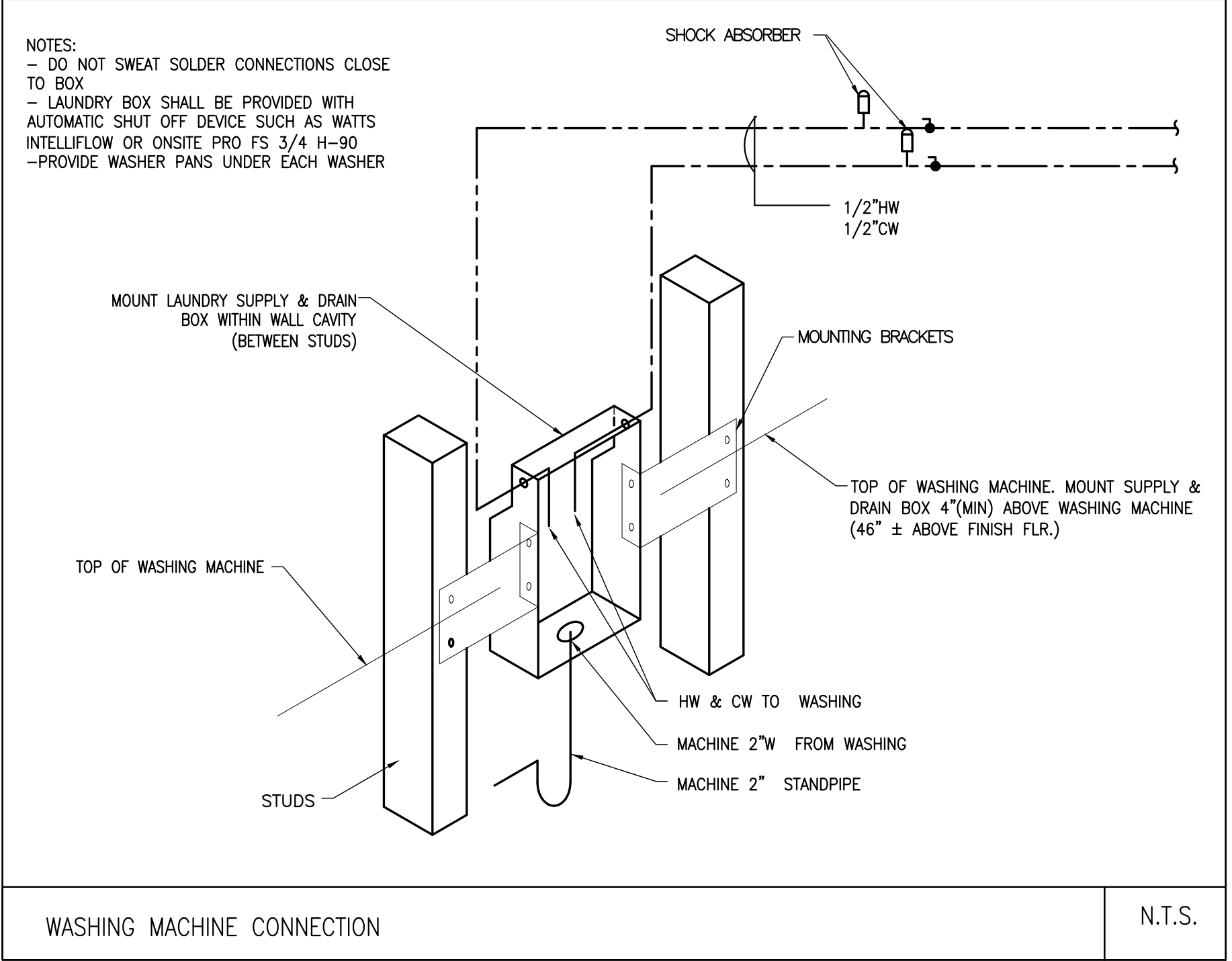
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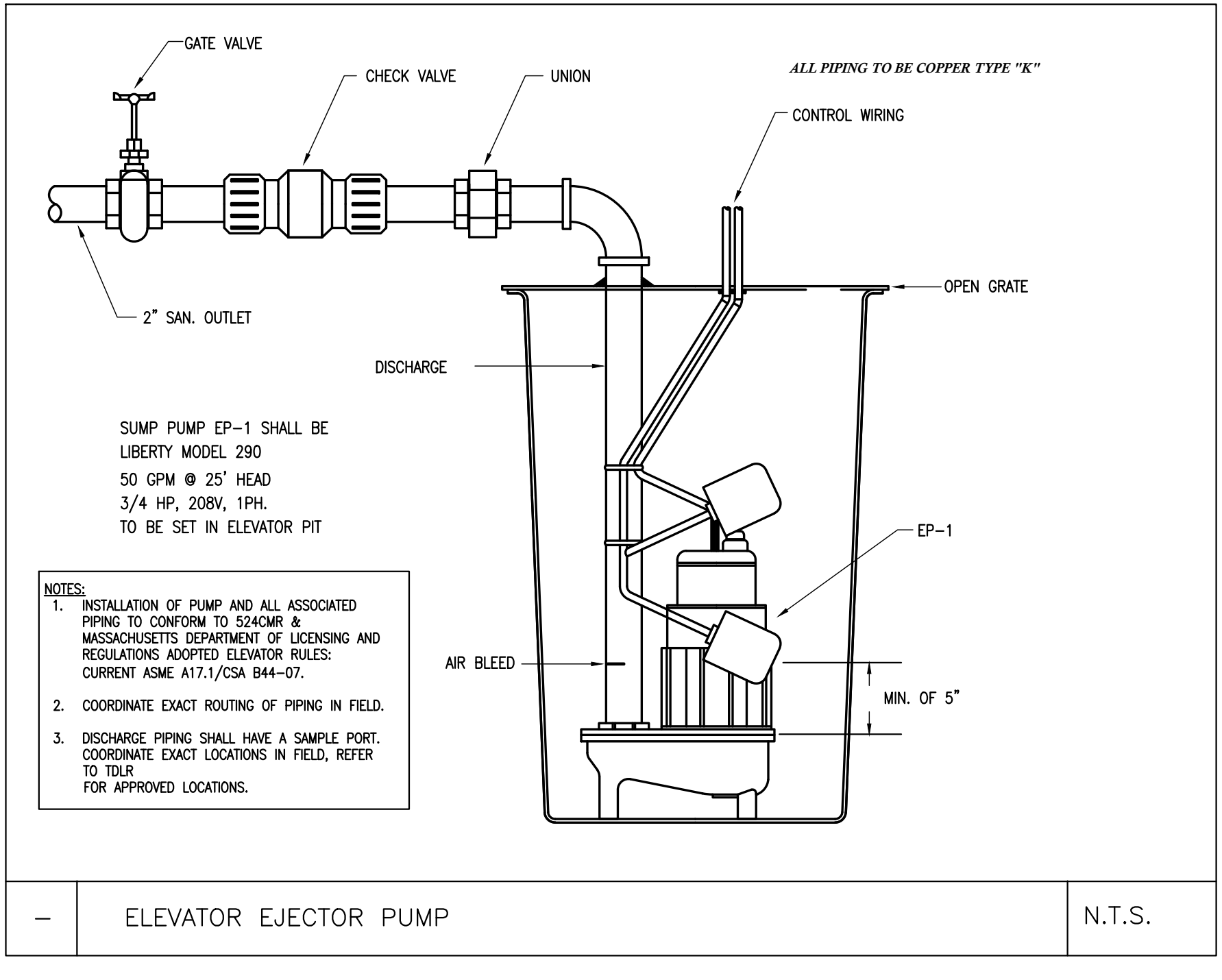
**ZADE ASSOCIATES LLC**  
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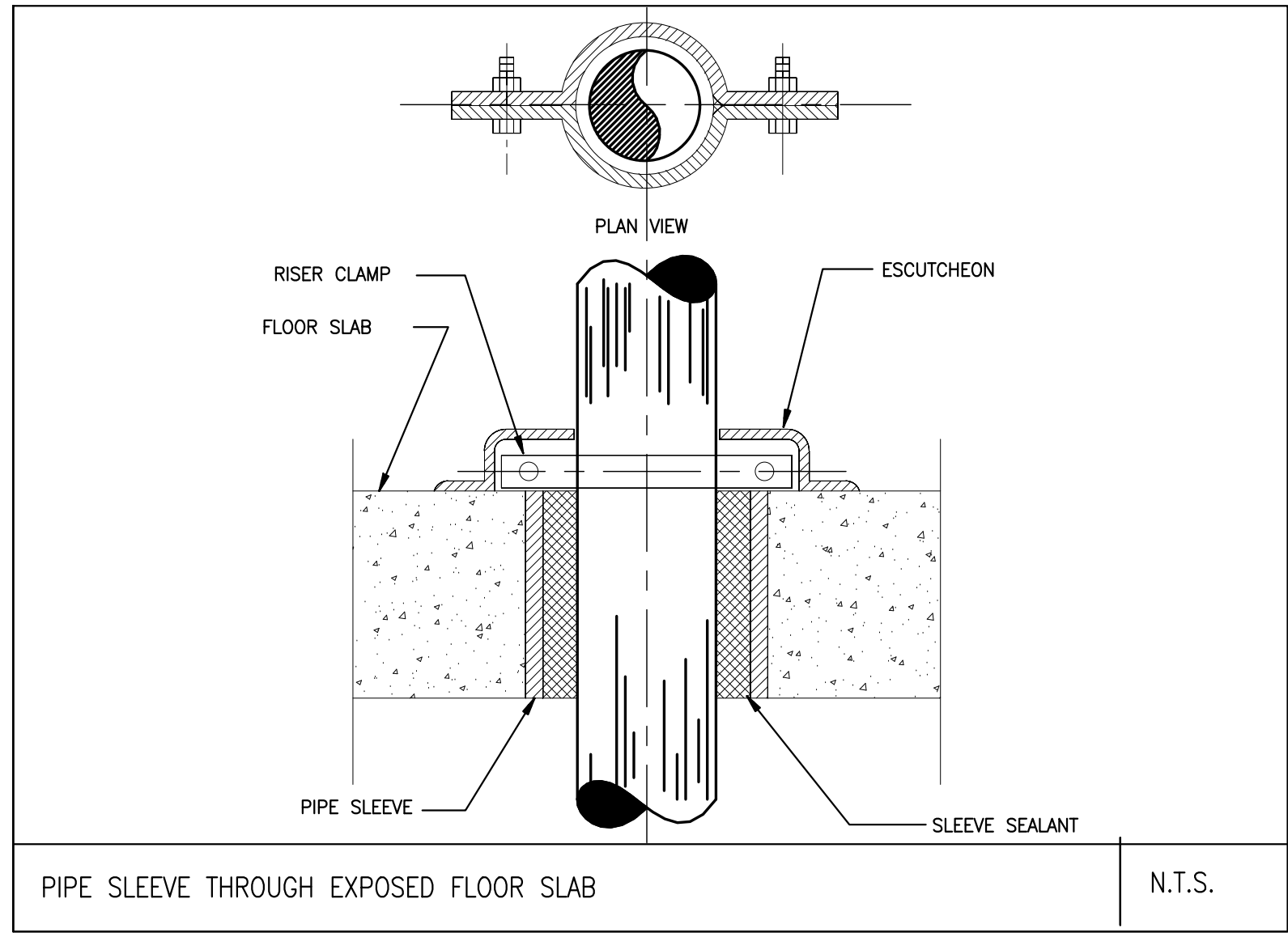




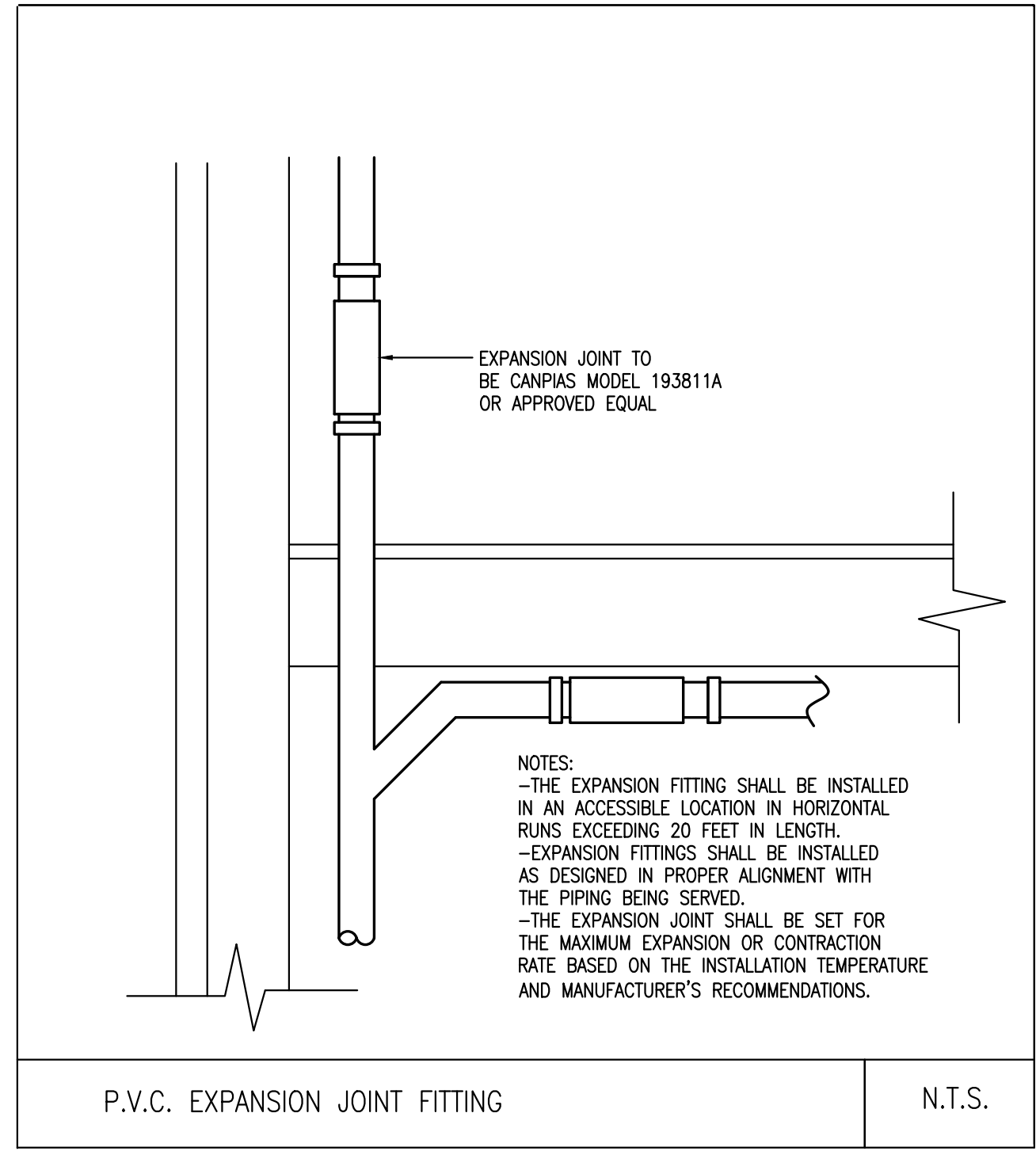
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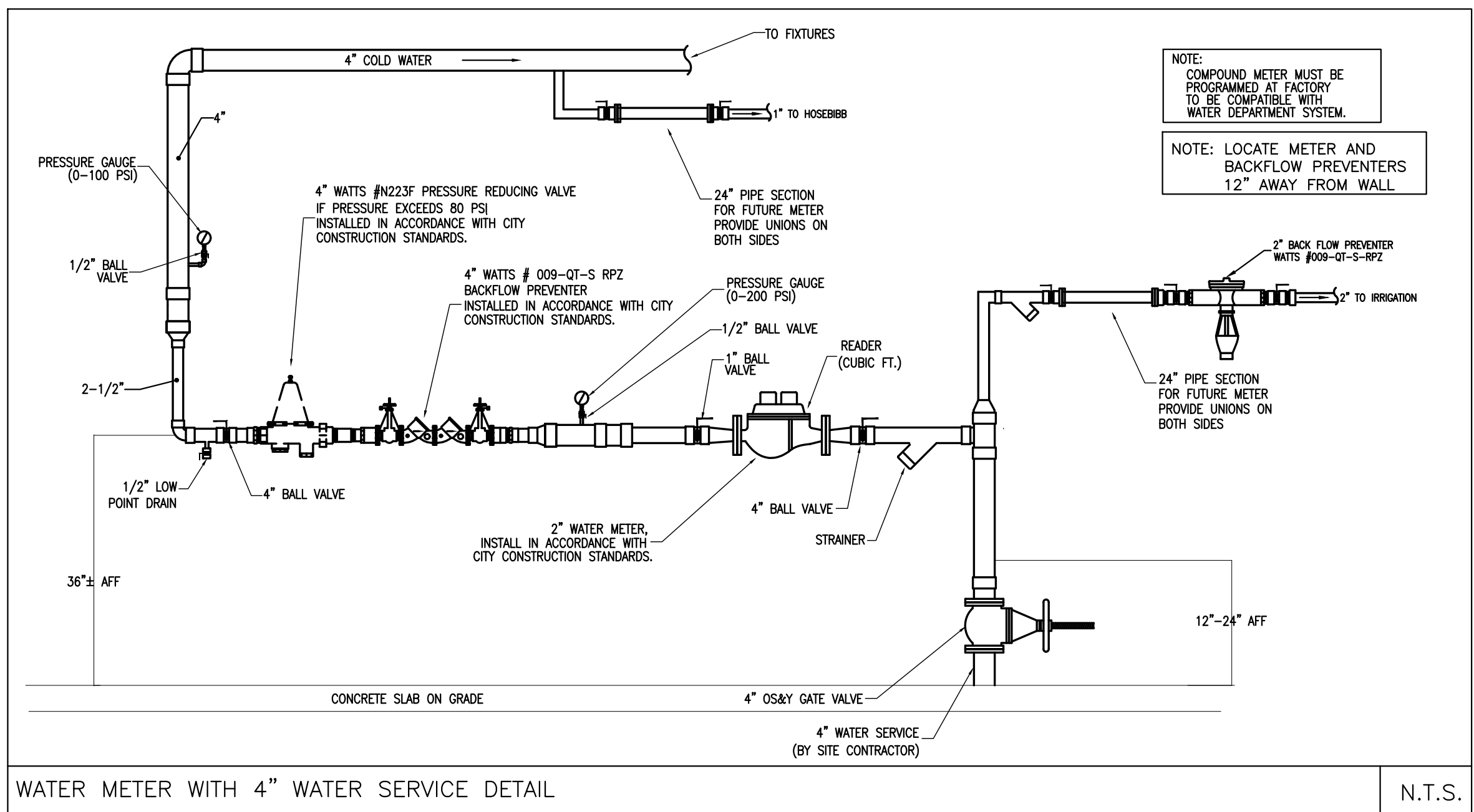
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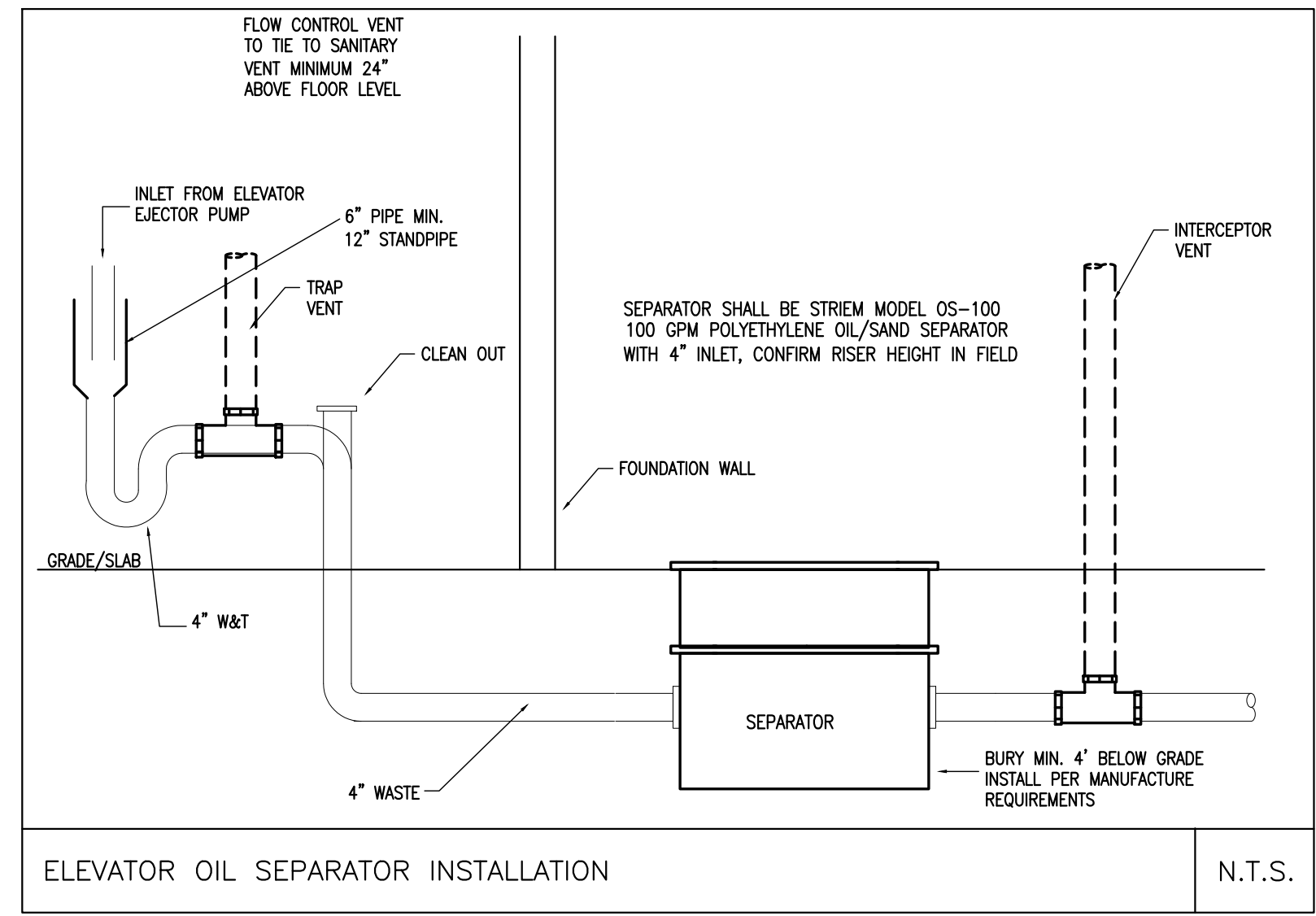
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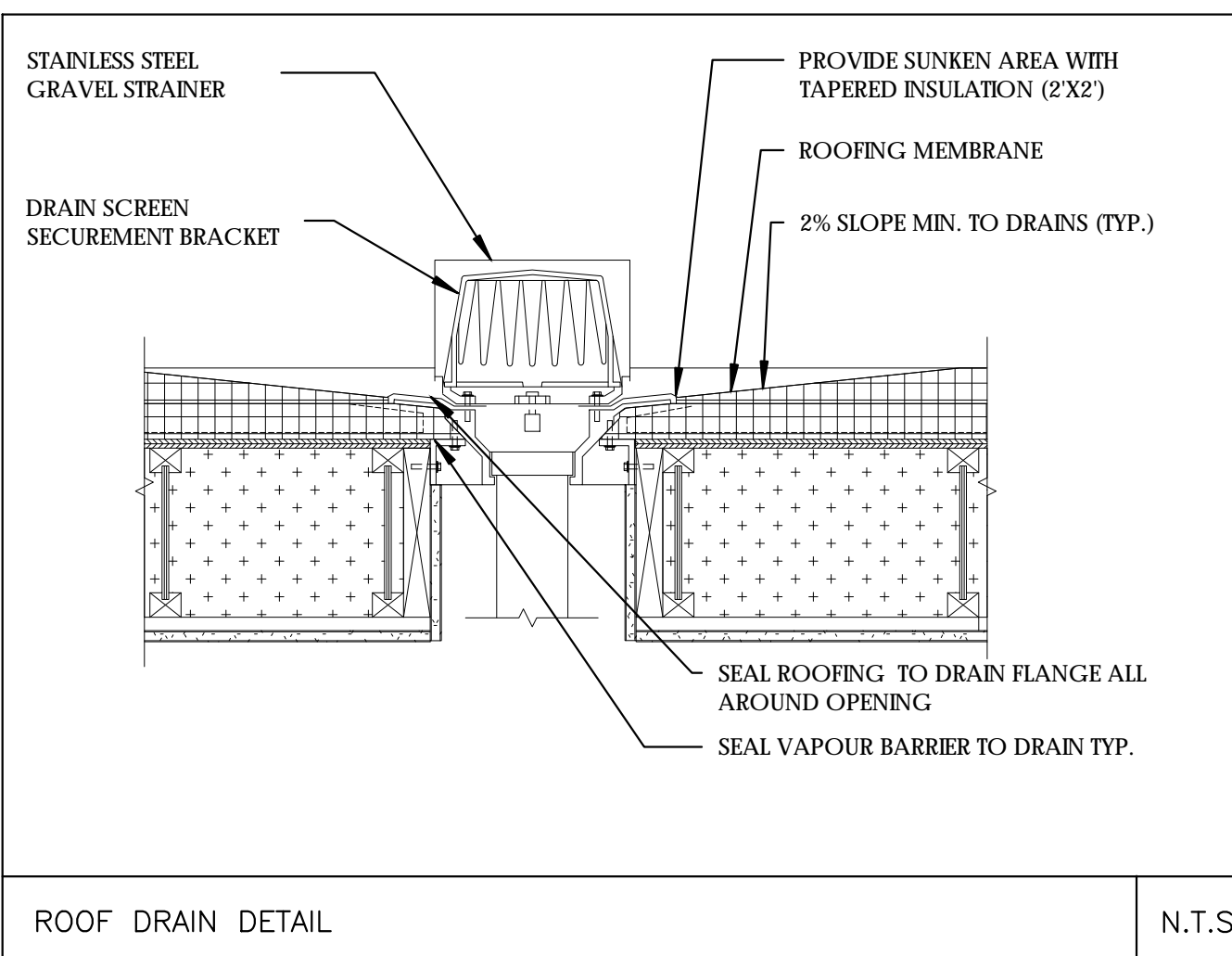
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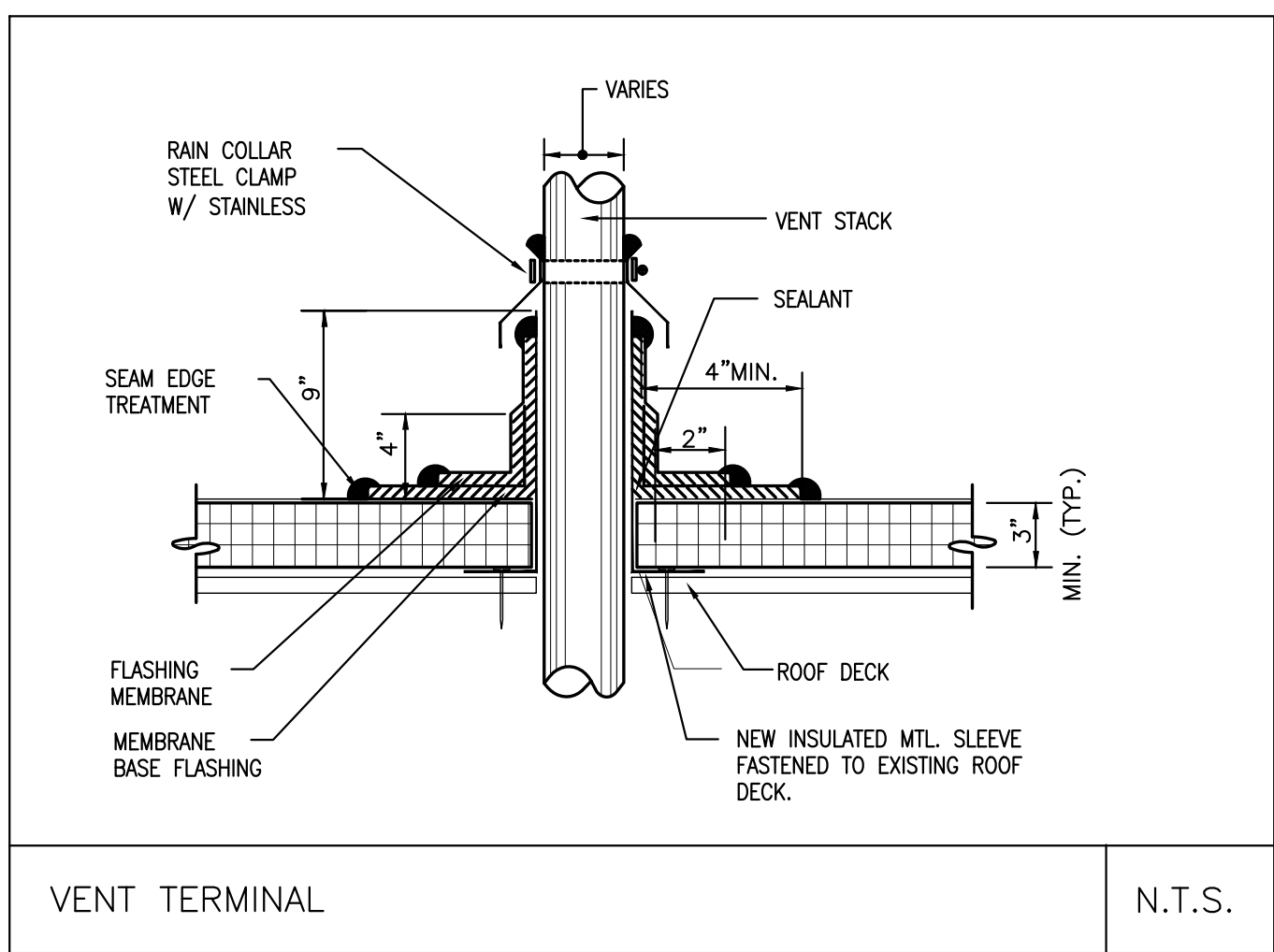
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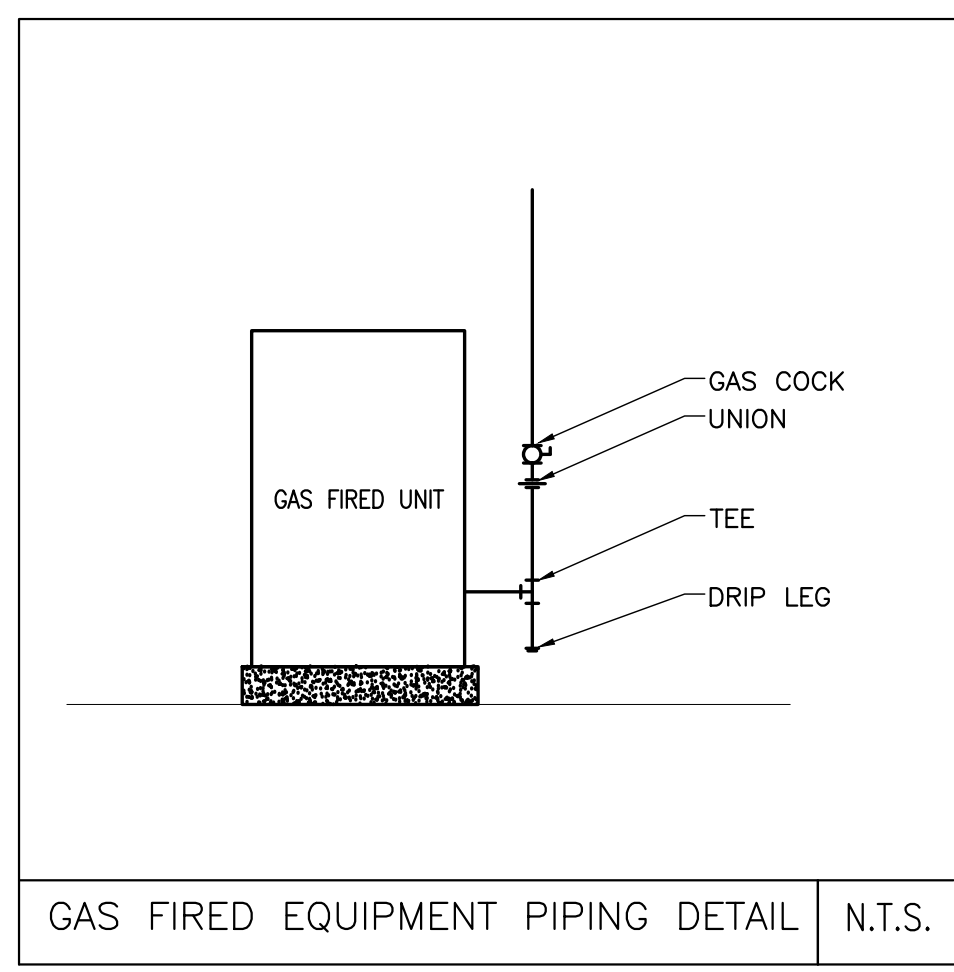
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N.T.S.



N.T.S.



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No.	Description	Date
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HUS Companies  
979 Main St  
PLUMBING DETAILS

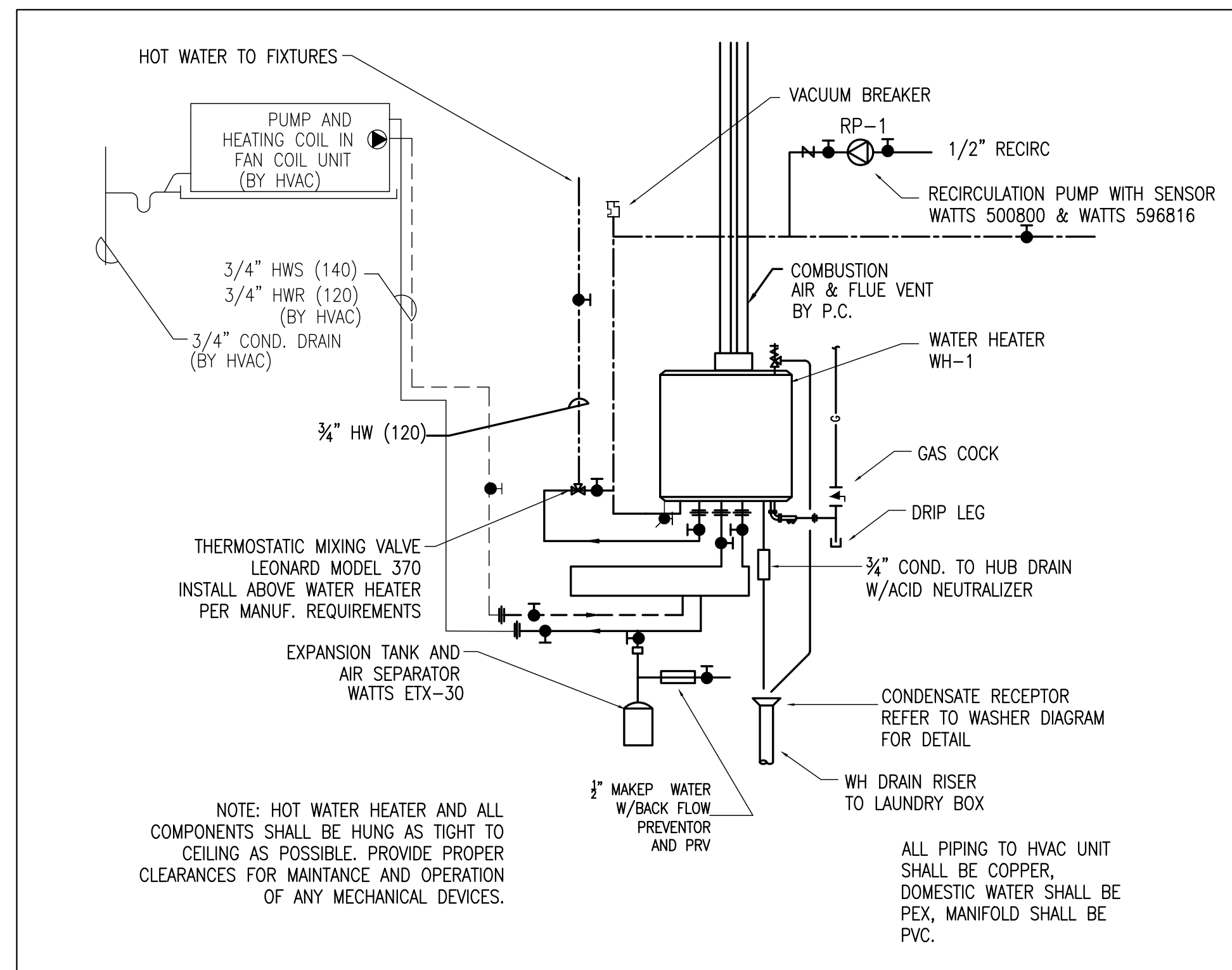
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Date	04.07.2021
Drawn by	RC
Checked by	MZ

P204

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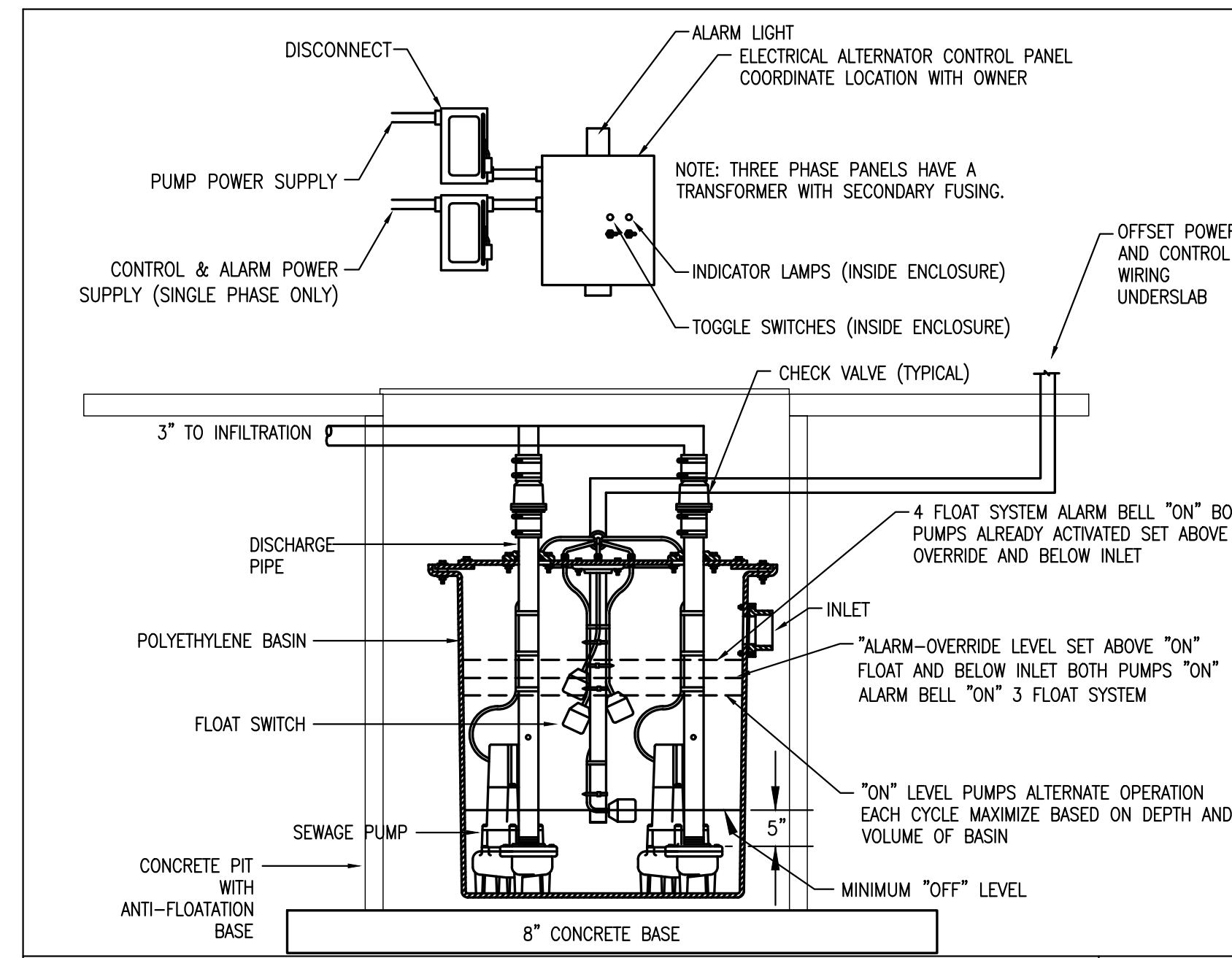
**ZADE ASSOCIATES LLC**  
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INSTANTANEOUS WATER HEATER DETAIL N.T.S.

EJECTOR PUMP SCHEDULE		
EJECTOR PUMP	EP-2	PROVIDE DUPLEX SEWAGE EJECTOR SYSTEM. PUMPS SHALL BE ZOELLER X185, 20 GPM @ 20 FT HEAD, 1 HP, 208V/1Ø, POWER CORD, 36" x 48" DEEP POLYPROPYLENE BASIN (4" INLET, 2" DISCHARGE, 2" VENT). PROVIDE WITH DUPLEX PUMP CONTROL WITH NEMA 4X ENCLOSURE (WEATHER PROOF), PUMP ALTERNATOR, TWO SENSORS AND ONE ALARM FLOAT, VISUAL AND AUDIBLE ALARM WITH SILENCE SWITCH.



DUPLEX SUMP PUMP DETAIL N.T.S.



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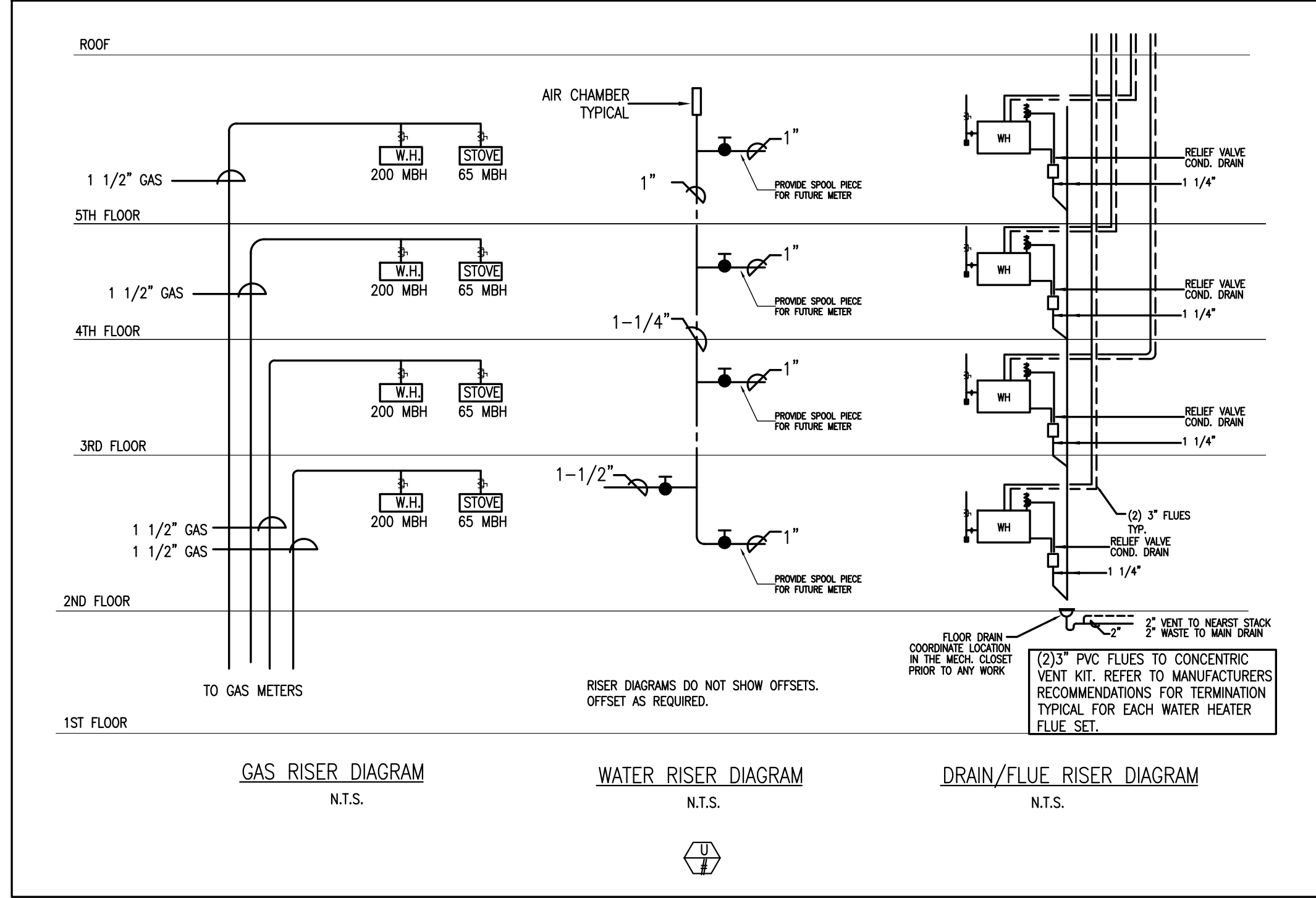
**HUS Companies**  
 979 Main St  
**PLUMBING DETAILS**

Project number	221018
Date	04.07.2021
Drawn by	RC
Checked by	MZ

P205

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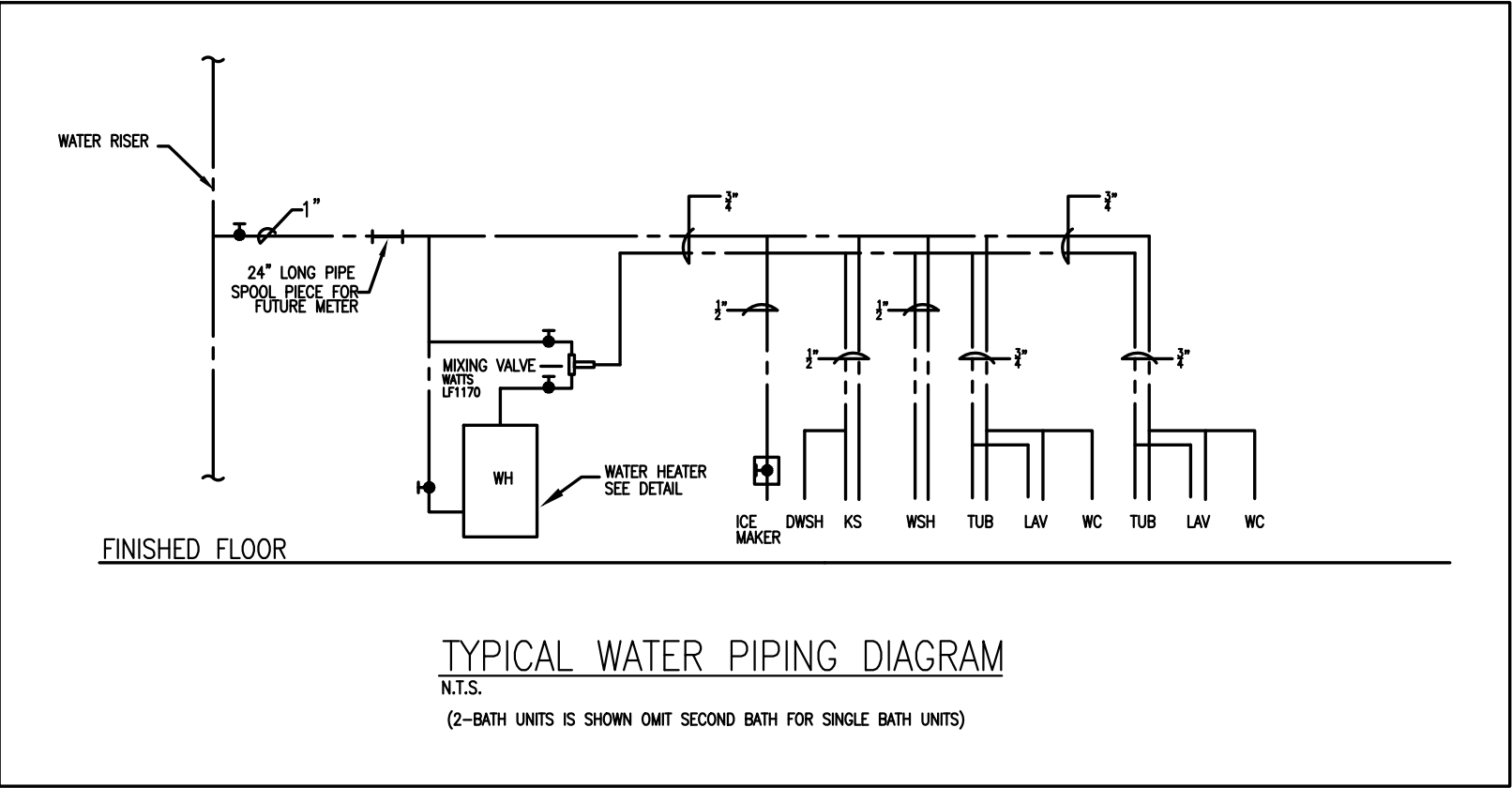
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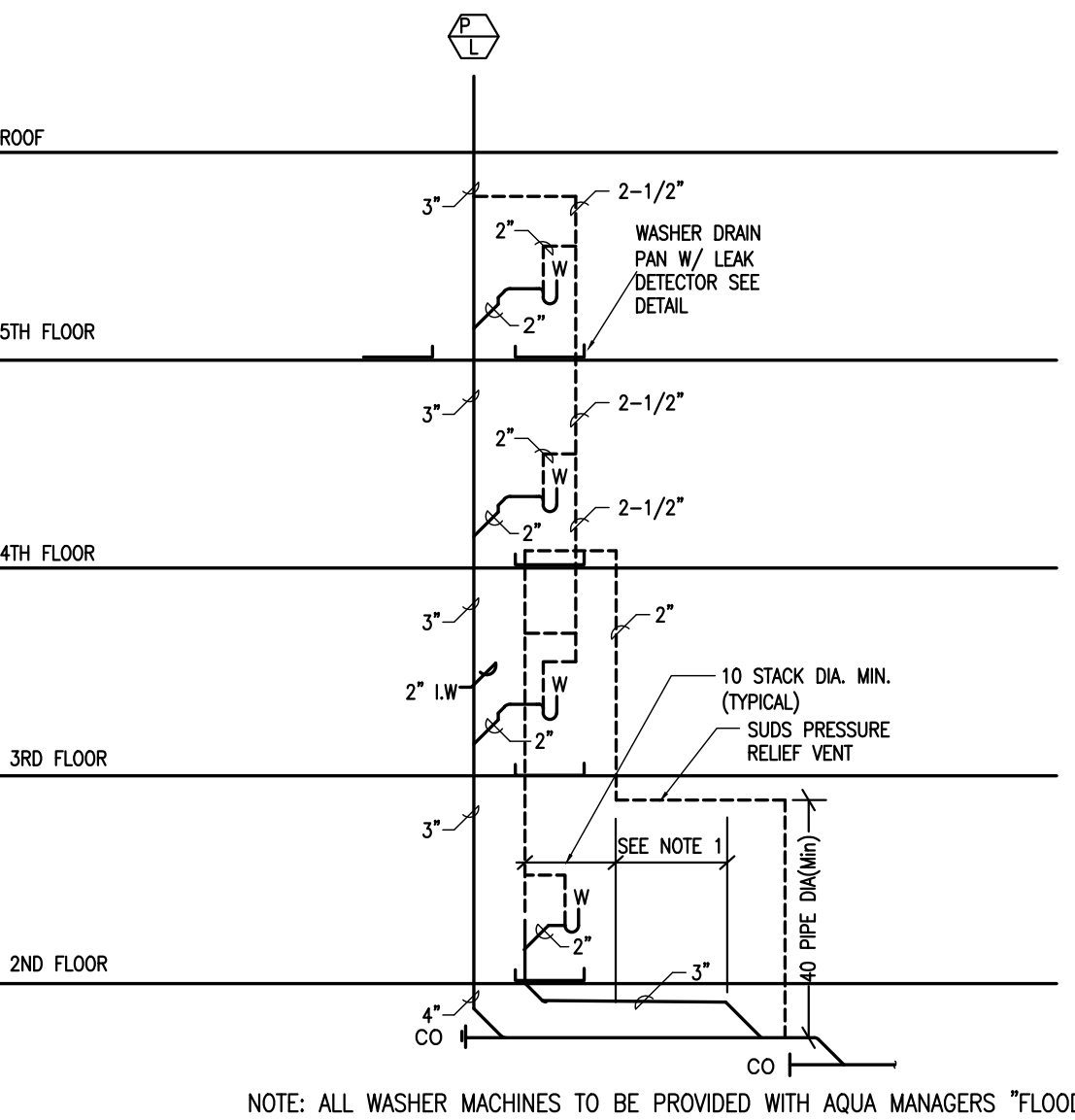
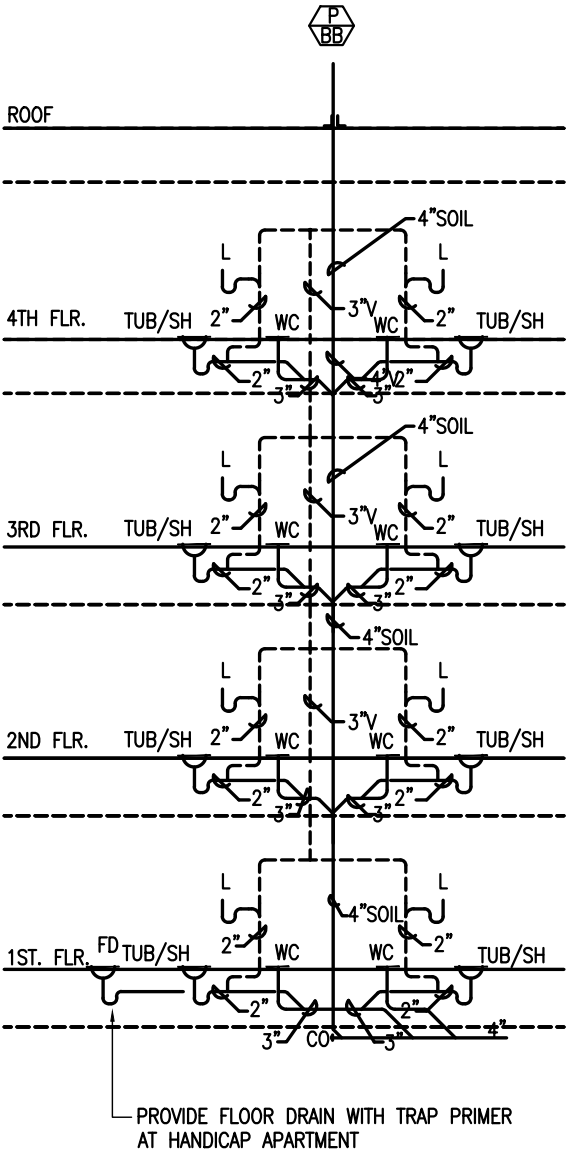
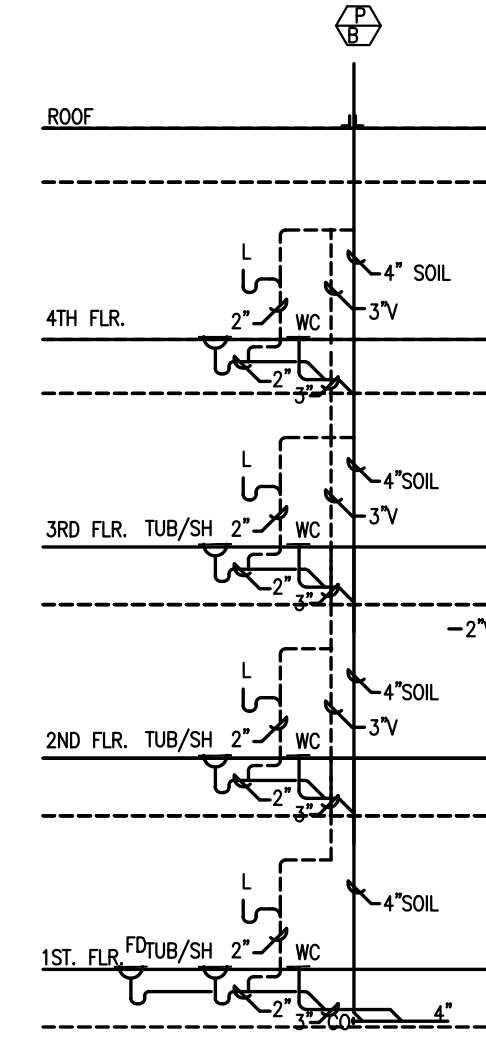
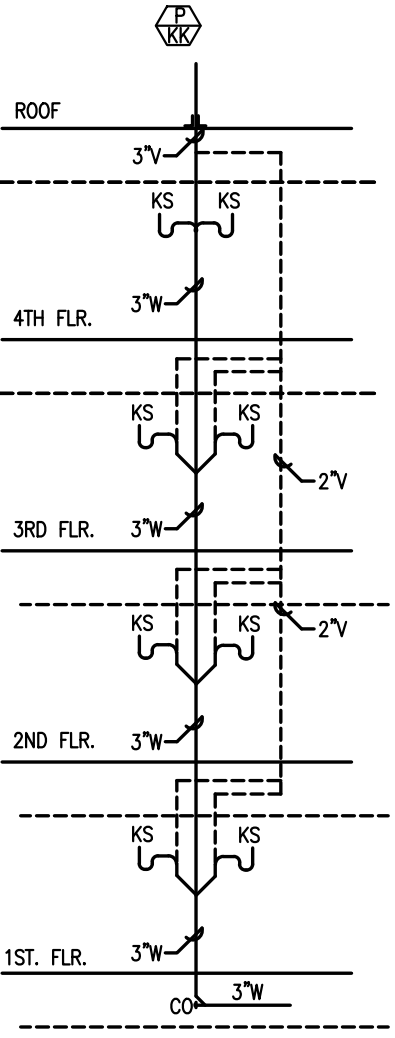
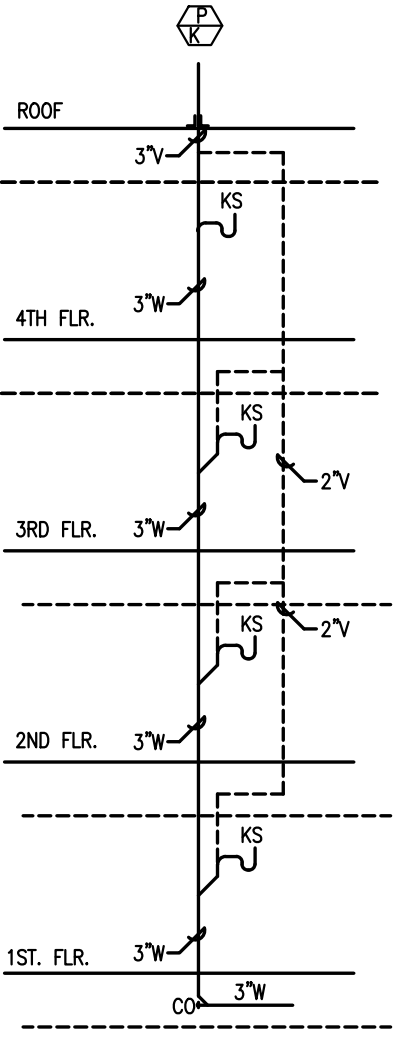
GAS RISER DIAGRAM  
N.T.S.

WATER RISER DIAGRAM  
N.T.S.

DRAIN/FLUE RISER DIAGRAM  
N.T.S.



TYPICAL WATER PIPING DIAGRAM  
N.T.S.  
(2-BATH UNITS IS SHOWN OMIT SECOND BATH FOR SINGLE BATH UNITS)



- NOTES:**
- 40 PIPE DIAMETER (MIN) IF CHANGE IN DIRECTION IS GREATER THAN 45°.
  - LONG SWEEPS & DANDY CLEANOUTS MAY BE USED IN LIEU OF WYE 1/8 BEND.
  - IF THERE ARE MORE THAN TEN BRANCH INTERVALS ON STACK THEN A RELIEF VENT SHALL BE INSTALLED IN ACCORDANCE WITH 248 CHR. 2.16(4)(e).
  - IF IDEAL CONDITIONS DO NOT EXIST, THE LOCAL PLUMBING INSPECTOR MAY APPROVE A VARIATION FROM FIGURE 19 TO ACCOMMODATE THE INTENT OF 248 CMR 2.15(9)(d).

WASHER RISER DIAGRAMS  
N.T.S.

RISER DIAGRAMS DO NOT SHOW OFFSETS.

TYPICAL SANITARY RISER DIAGRAMS  
N.T.S.

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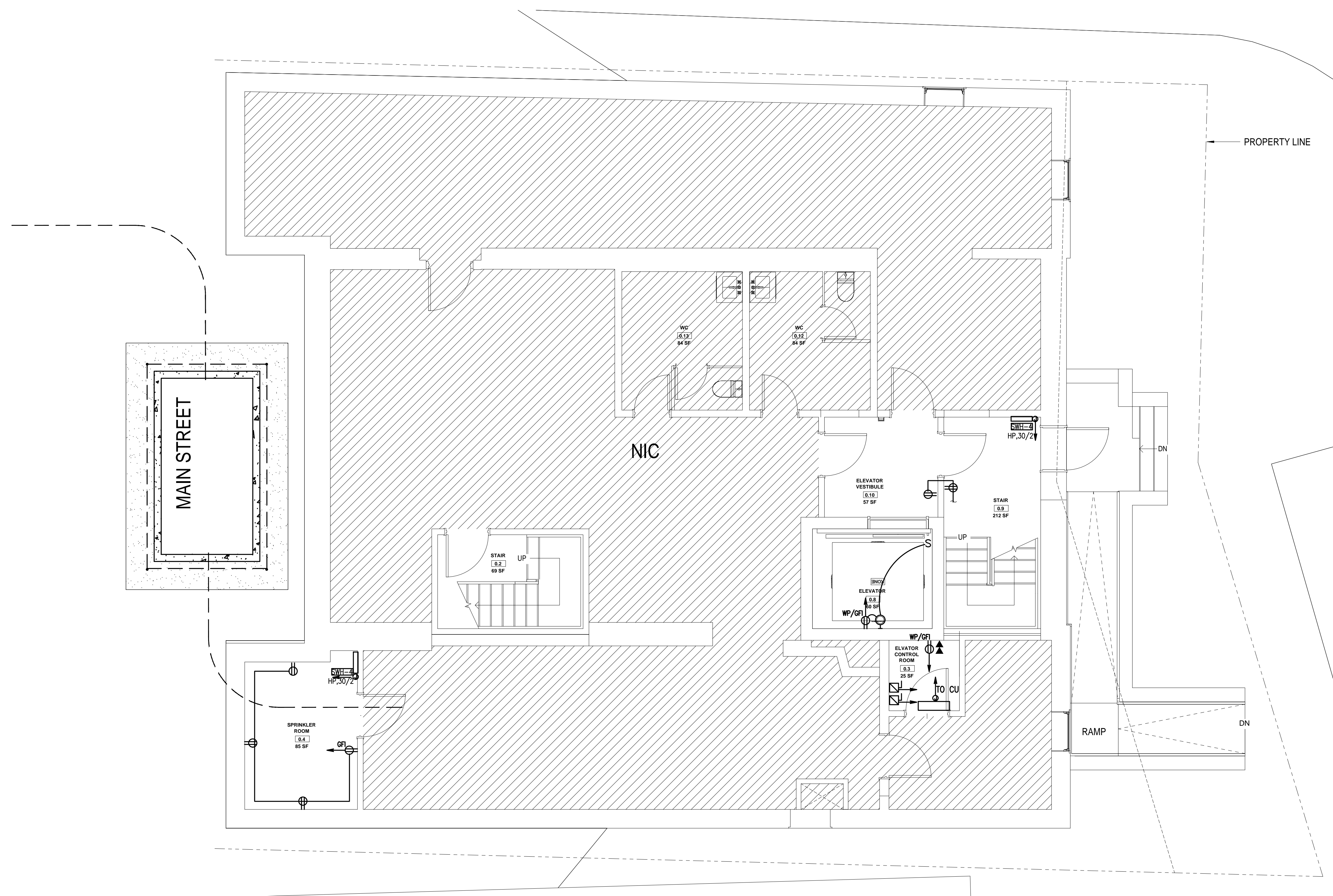
No.	Description	Date
1	For construction/Permit	7-23-2021

**HUS Companies**  
979 Main St  
**PLUMBING RISERS**

Project number	221018
Date	04.07.2021
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**P206**

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*Matthew Muehleberg*

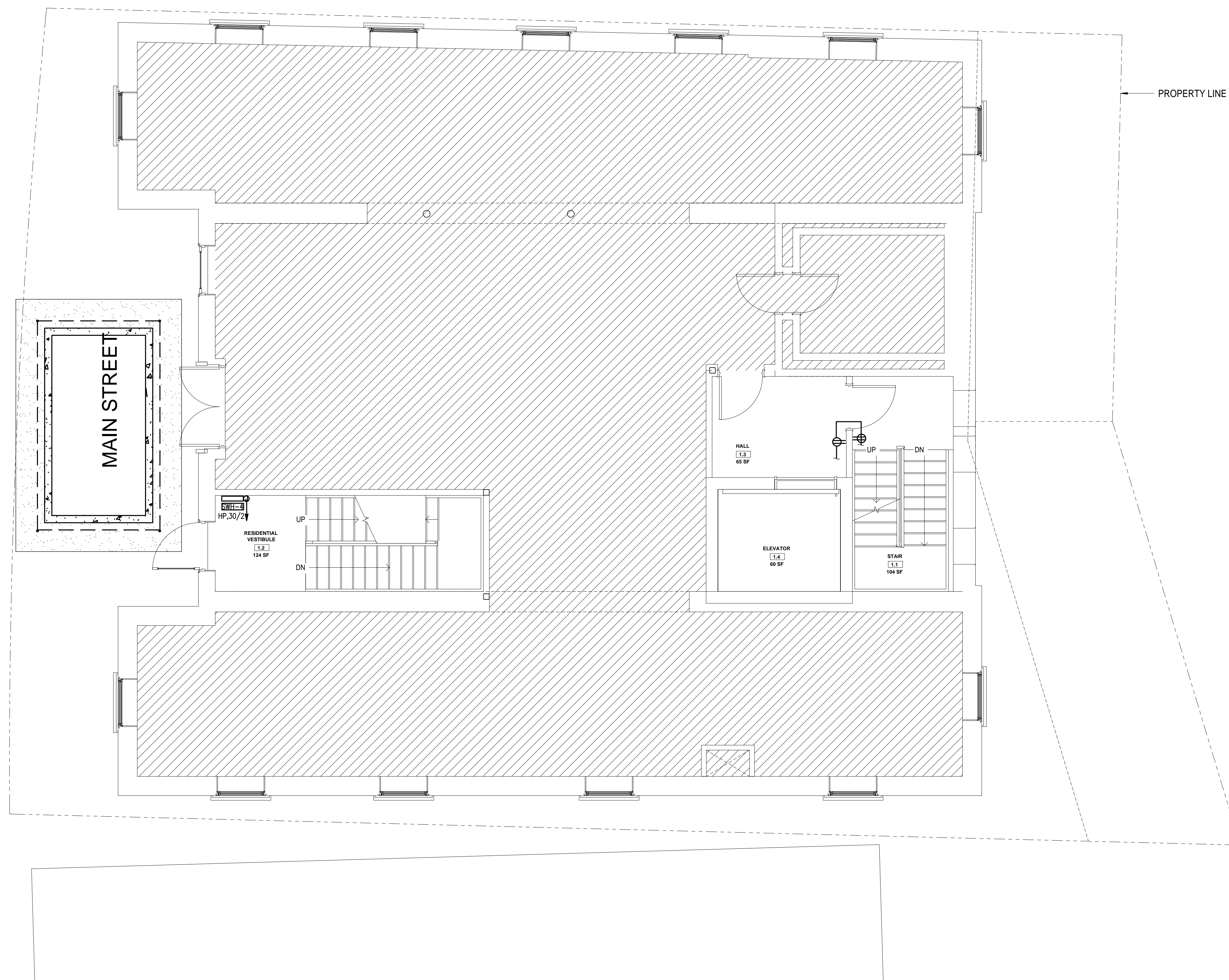
No.	Description	Date
1	For construction/ Permit	7-23-2021

<b>HUS Companies</b>	
979 Main St	
<b>POWER BASEMENT PLAN</b>	
Project number	221018
Date	04.07.2021
Drawn by	
Checked by	
<b>E100</b>	
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*Mustafa Mucitoglu*

No.	Description	Date
1	For construction/ Permit	7-23-2021

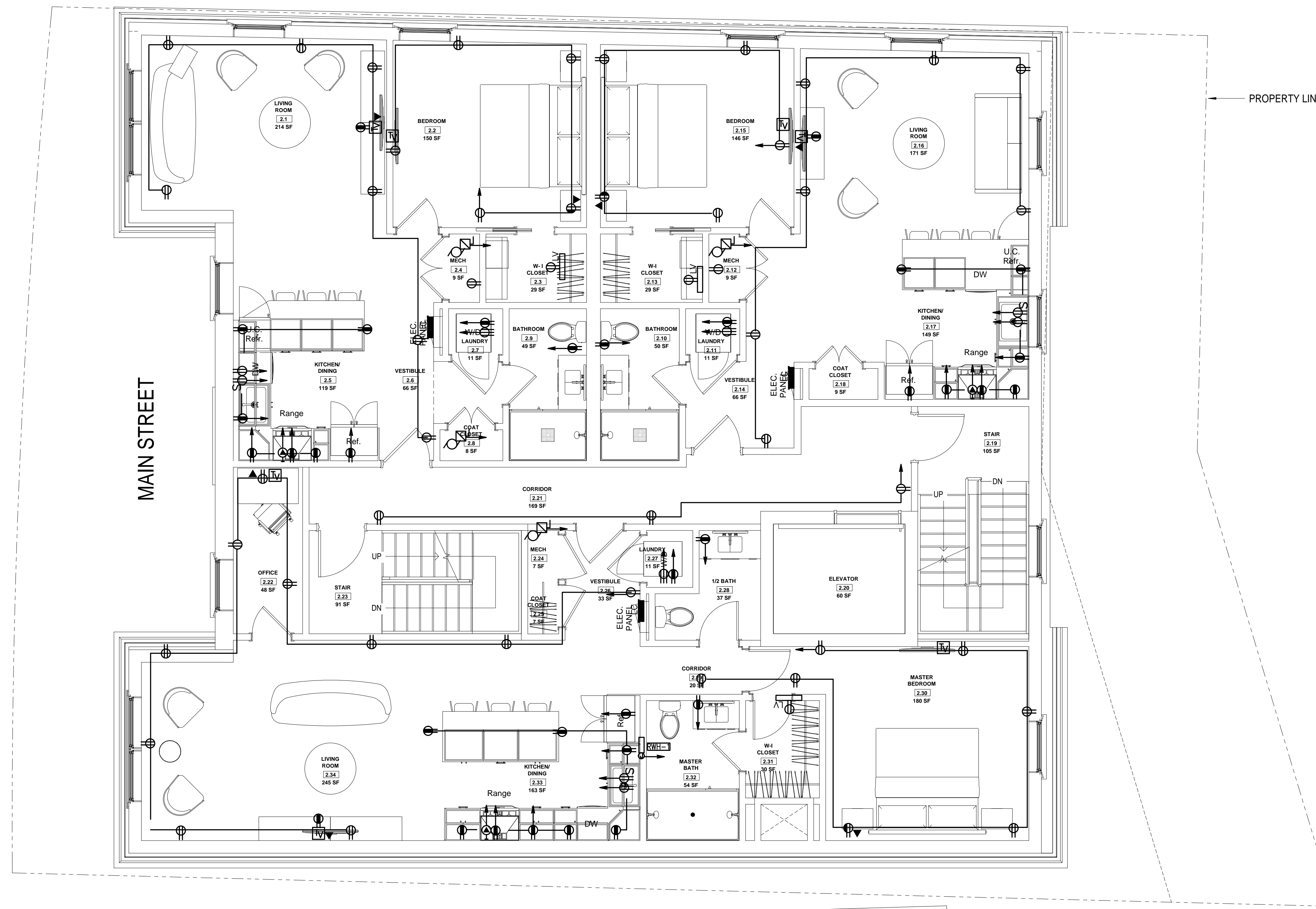
**HUS Companies**  
 979 Main St  
 POWER FIRST  
 FLOOR PLAN

Project number	221018
Date	04.07.2021
Drawn by	
Checked by	
<b>E101</b>	
Scale	As indicated

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*Mustafa Muckelbauer*

No.	Description	Date
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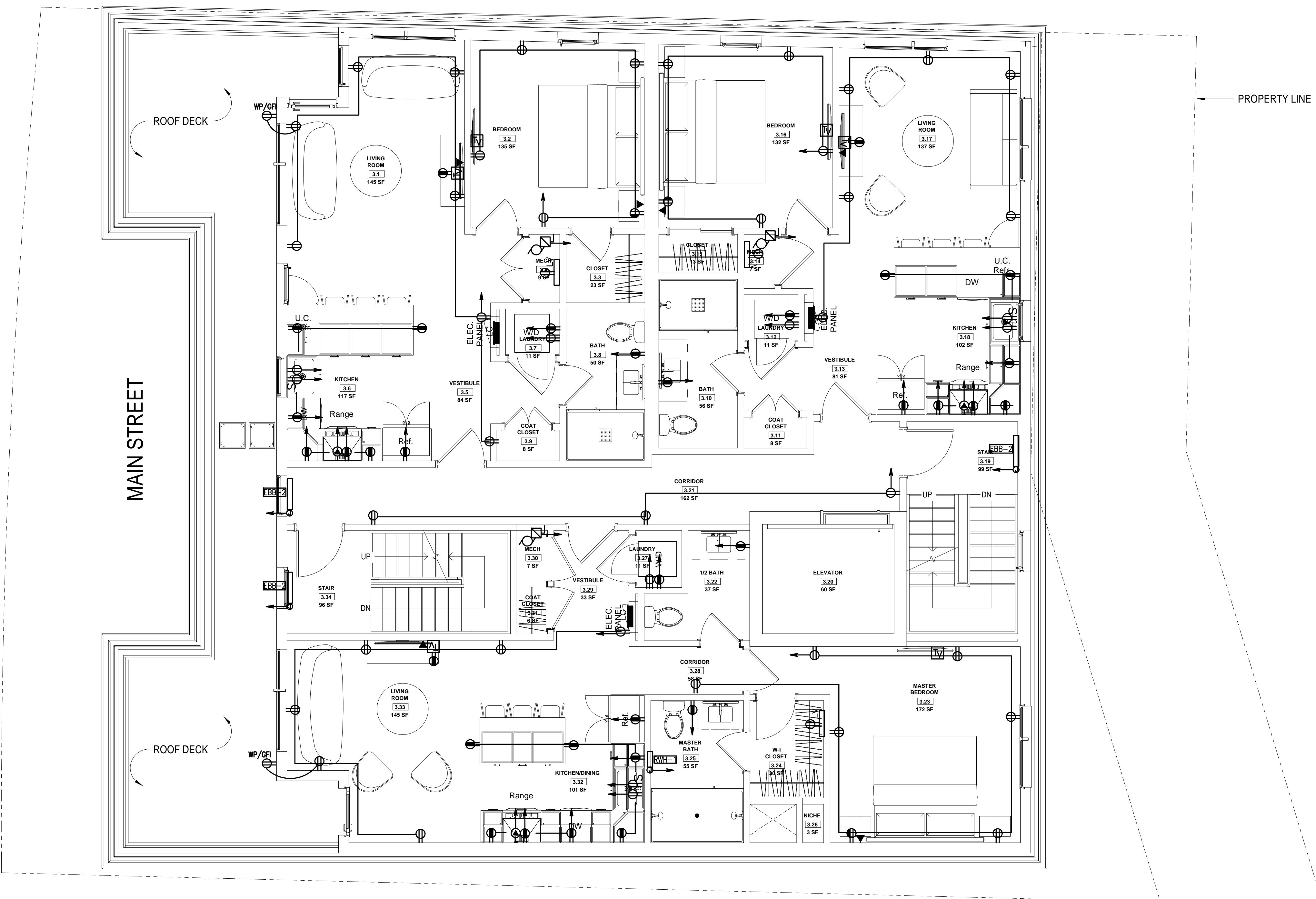
**HUS Companies**  
 979 Main St  
**POWER SECOND**  
**FLOOR PLAN**

Project number	221018
Date	04.07.2021
Drawn by	
Checked by	
<b>E102</b>	
Scale	As indicated

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*Hussey Macthigane*

No.	Description	Date
1	For construction/ Permit	7-23-2021

HUS Companies  
 979 Main St  
**POWER THIRD FLOOR PLAN**

Project number: 221018  
 Date: 04.07.2021

Drawn by: \_\_\_\_\_  
 Checked by: \_\_\_\_\_

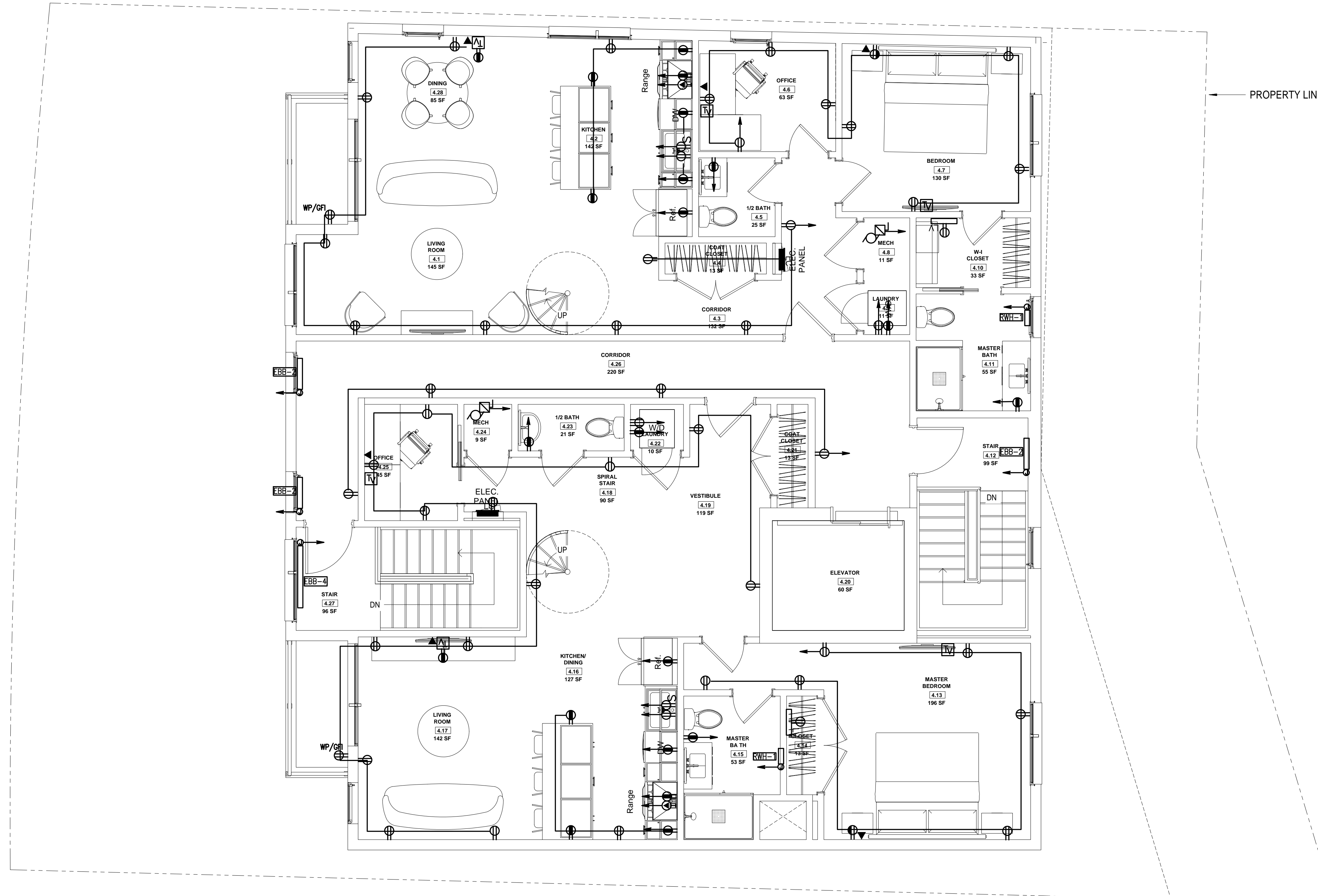
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HUS Companies  
 979 Main St  
**POWER FOURTH  
 FLOOR PLAN**

Project number 221018  
 Date 04.07.2021

Drawn by

Checked by

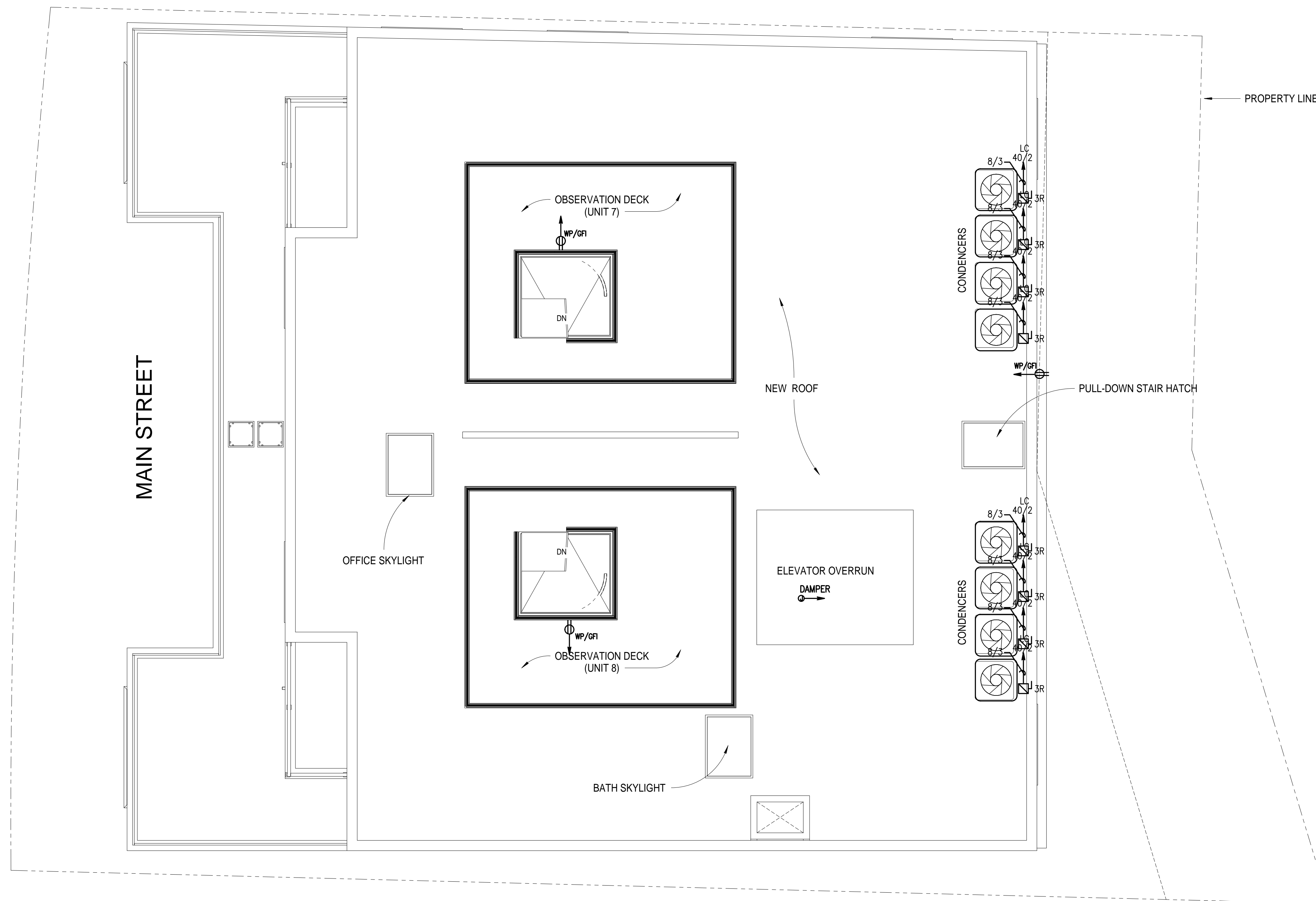
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Scale As indicated

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*Matthew Mectelgane*

No.	Description	Date
1	For construction/ Permit	7-23-2021

HUS Companies  
 979 Main St  
 POWER ROOF  
 FLOOR PLAN

ZADE ASSOCIATES LLC  
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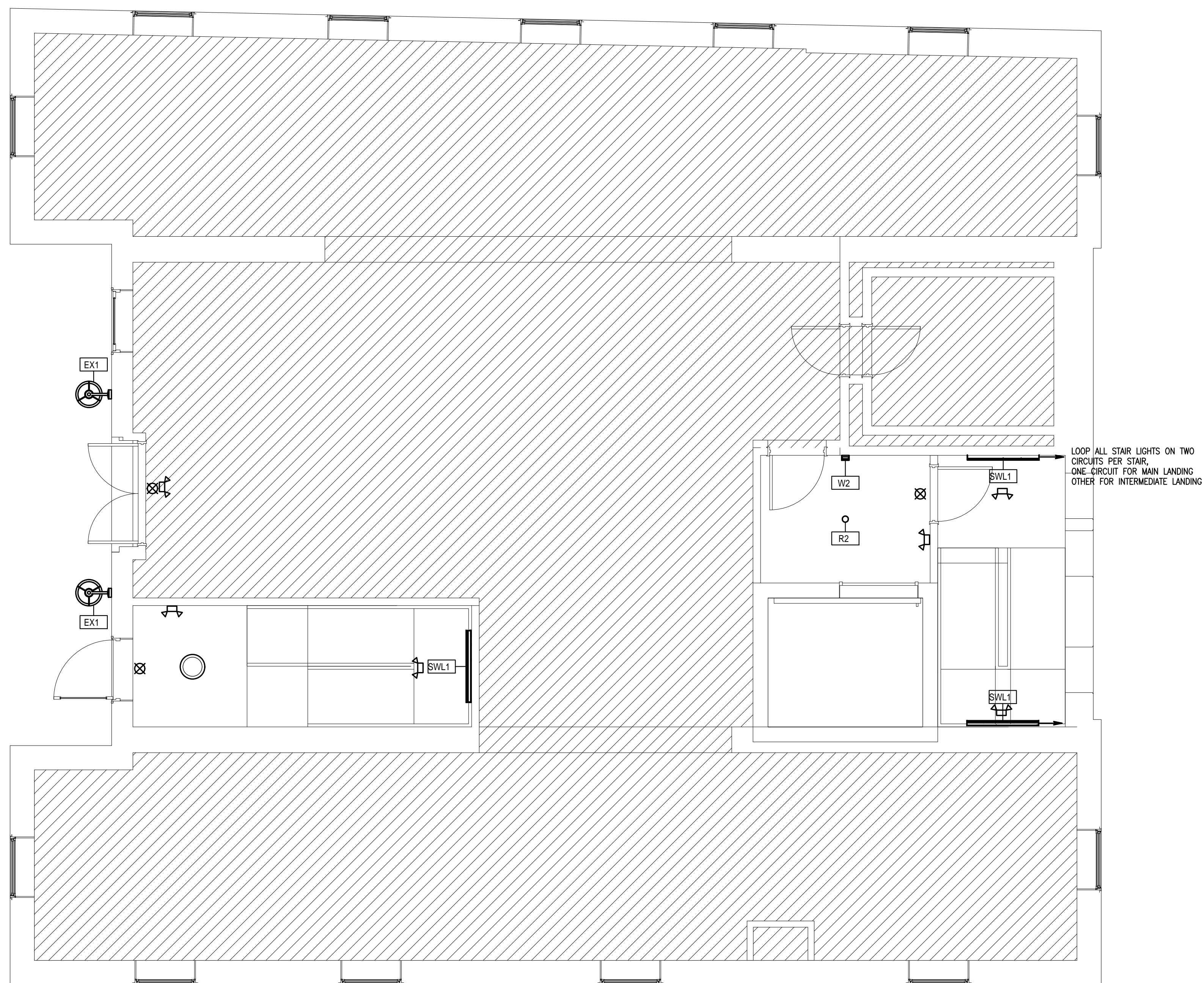
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Date	04.07.2021
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Checked by	
<b>E105</b>	
Scale	As indicated







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*Muzaffer Mueezzade*

No.	Description	Date
1	For construction/ Permit	7-23-2021

HUS Companies  
 979 Main St  
**LIGHTING FIRST FLOOR PLAN**

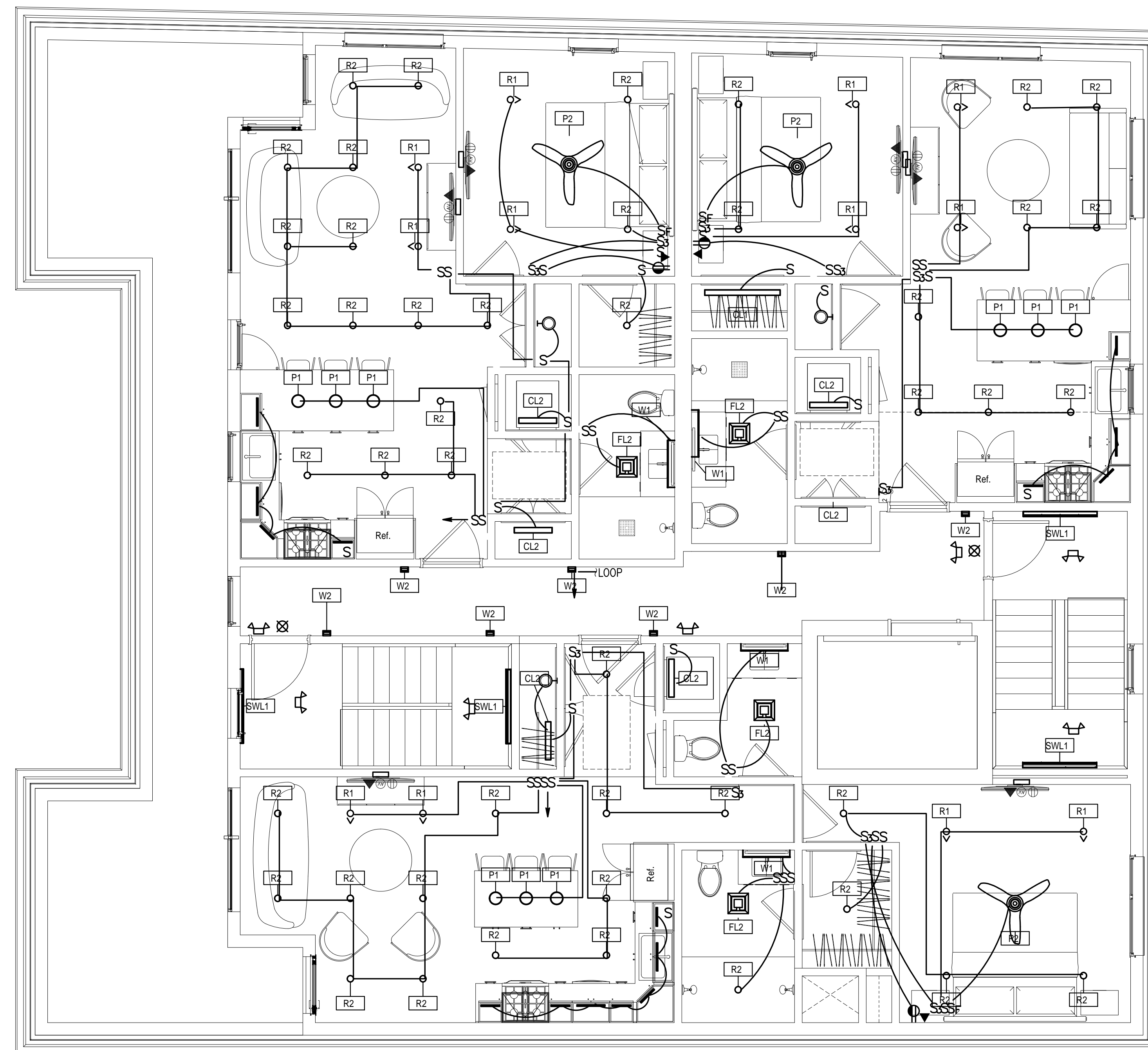
Project number	221018
Date	04.07.2021
Drawn by	
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<b>E201</b>	
Scale	As indicated

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No.	Description	Date
1	For construction/ Permit	7-23-2021

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**HUS Companies**  
979 Main St  
**LIGHTING THIRD FLOOR PLAN**

Project number	221018
Date	04.07.2021
Drawn by	
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**E203**

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No.	Description	Date
1	For construction/ Permit	7-23-2021

HUS Companies  
 979 Main St  
 ELECTRICAL  
 DETAILS

Project number 221018  
 Date 04.07.2021  
 Drawn by  
 Checked by

E301

Scale As indicated

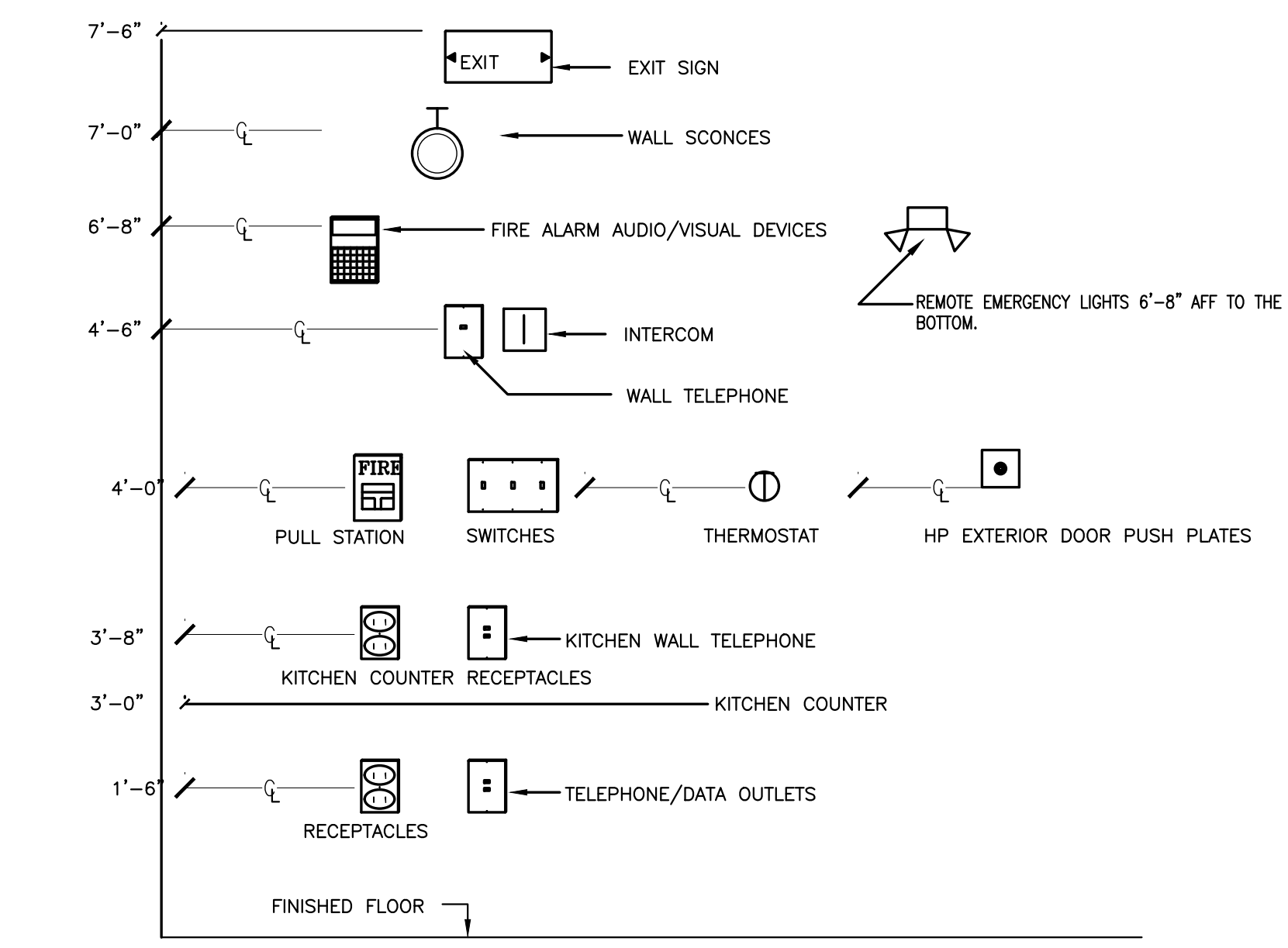
**SYMBOL LIST**

○ CEILING MOUNTED LIGHT FIXTURE.  
 ○ WALL MOUNTED LIGHT FIXTURE.  
 ◻ 2'X2' OR 2'X4' FLUORESCENT LIGHT FIXTURE.  
 ◻ 1'X4' FLUORESCENT WALL/CEILING MOUNTED LIGHT FIXTURE.  
 ⎯ TRACK LIGHT  
 S SINGLE POLE LIGHT SWITCH  
 S<sub>3</sub> THREE-WAY LIGHT SWITCHES  
 S<sub>4</sub> FOUR-WAY LIGHT SWITCHES  
 S<sub>0</sub> DIMMER SWITCH MINIMUM 1000W OR AS REQUIRED PER CIRCUIT  
 S<sub>0</sub> THREE-WAY DIMMER SWITCHES  
 S<sub>0</sub> FOUR-WAY DIMMER SWITCHES  
 S<sub>0</sub> TIMER SWITCH

Ⓟ DUPLEX RECEPTACLE, 120V,18" AFF.  
 Ⓟ<sup>GF</sup> DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER 8" ABOVE COUNTER TO C<sub>L</sub>  
 Ⓟ DUPLEX RECEPTACLE, 120V,18" AFF., ONE OUTLET SWITCHED  
 Ⓟ 120V DOUBLE DUPLEX CONVENIENCE RECEPTACLE  
 Ⓟ DUPLEX RECEPTACLE ABOVE COUNTER, 8" ABOVE COUNTER TO C<sub>L</sub>  
 Ⓟ 208V/1P/30A RECEPTACLE  
 Ⓟ<sup>USB</sup> DUPLEX RECEPTACLE WITH USB PORT  
 Ⓟ 208V/1P/50A RANGE OUTLET

▽ TELEPHONE JACK COMPLETE W/JACK AND COVER, ('W' WALL MOUNTED 4'-0" A.F.F.)  
 ▽ TEL/DATA COMBINATION OUTLET, COMPLETE W/JACK AND COVER, HEIGHT @18" TO C AFF.  
 Ⓜ MOTOR  
 3R FUSED DISCONNECT SWITCH, (3R RAIN-PROOF).

← HOMERUN TO PANEL WITH CONDUCTOR.(HOT, NEUTRAL, GROUND)  
 ⊕ JUNCTION BOX  
 ⊞ LIGHTING & POWER PANEL  
 ⊞<sup>LC</sup> APARTMENT LOAD CENTER, RECESSED  
 ⊞<sup>LV</sup> LOW VOLTAGE BOX  
 --- RACEWAY CONCEALED IN CEILING, PLENUM OR WALLS  
 --- RACEWAY CONCEALED IN SLAB (FLOOR)  
 ⊞ TIME SWITCH  
 ⊞ DRY TYPE TRANSFORMER  
 ⊞ UNIVERSAL MOUNTING EXIT SIGN (DOUBLE FACED), ARROWS AS INDICATED.  
 ⊞ EMERGENCY BATTERY UNIT WITH MOUNTING BRACKET AND VOLTMETER.  
 ⊞ OCCUPANCY SENSOR SWITCH  
 ⊞ OCCUPANCY SENSOR  
 ⊞<sup>AORC</sup> AREA OF REFUGE CENTRAL BASE UNIT  
 ⊞<sup>AOR</sup> AREA OF REFUGE FLOOR ELEVATOR LOBBY UNIT.



**TYPICAL DEVICE MOUNTING HEIGHTS DETAIL**

- NOTES**
1. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
  2. IN ACCESSIBLE UNITS ANY PUBLIC AREAS CONTROL SWITCHES MOUNTING HEIGHT NO HIGHER THAN 48" AFF. HOOD CONTROL SWITCHES (LIGHT/FAN) SHALL BE MOUNTED ON WALL AT COUNTER. KITCHEN COUNTER OUTLETS 2" LOWER THAN REGULAR UNITS
  3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL, UNO IN THESE CONTRACT DOCUMENTS, BY ARCHITECT OR BY OWNER.
  4. FIRE ALARM PULL STATION MOUNTING HEIGHT SHALL BE COMPLY WITH NFPA 72. (NOT LESS THAN 42 INCHES AND NOT MORE THAN 48 INCHES ABOVE FINISHED FLOOR.)
  5. FIRE ALARM HORN/STROBE OR STROBE ONLY THE ENTIRE STROBE LENS TO BE LOCATED NOT LESS THAN 80 INCHES ABOVE FINISHED FLOOR AND NOT MORE THAN 96 INCHES ABOVE FINISHED FLOOR AND COMPLY WITH NFPA 72.

**LEWS** INDICATES EXTERIOR MOUNTED EMERGENCY LIGHT.CONNECT ALL REMOTE EMERGENCY LIGHTS ON CIRCUITS SO THAT (WATTSXFT) IS LESS THAN 3200 UNITS AND WIRE WITH #10 CU TO REMOTE BATTERY PROVIDE 12V SEALED CALCIUM BATTERY UNIT AS REQUIRED OR AS SPECIFIED. BATTERY SHALL BE LOCATED IN A WARM ROOM AND FED FROM LIGHTING CIRCUIT SERVING THE AREA WHERE REMOTE HEADS ARE LOCATED BATTERY SHALL BE EMERGI-LITE 12LSM 220V OUTDOOR LIGHTS SHALL BE EMERGI-LITE EF11D

**LOOP** EVERY 8 EXTERIOR BUILDING MOUNTED LIGHT FIXTURE ON ONE CIRCUIT AND FEED FROM TC-S VIA 20A/1PCB. WIRE SHALL RUN INSIDE BUILDING

**LMS** INDICATES CEILING MOUNTED OCCUPANCY SENSOR. IN EACH SPACE EXCEPT CLOSETS, BATHROOMS, CORRIDORS AND UTILITY ROOMS, PROVIDE CEILING MOUNTED OCCUPANCY SENSOR SHOWN OR OTHERWISE TO COMPLY WITH MASS ENERGY CODE. UNITS SHALL BE SIZED PER CIRCUIT REQUIREMENTS. EQUIPMENT SHALL BE AS MANUFACTURED BY NOVITAS O1-087 OR O1-077 OR EQUAL, AIR FLOW COMPENSATED TYPE.

**SHADED AND HALF SHADED** FIXTURE INDICATES LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT, LOOP UP TO 1200W/120V ON ONE CIRCUIT AND FEED FROM LIGHTING PANEL

**CONNECT** ALL EXIT SIGNS AND EMERGENCY BATTERIES TO LOCAL LIGHTING CIRCUIT AHEAD OF ANY CONTROLS TYPICAL FOR ALL AREAS

CONDENSING UNIT SHALL BE WIRED TO APARTMENT PANEL UNIT IS SERVING. CONTRACTOR SHALL COORDINATE WITH HVAC SUB CONTRACTOR FOR EXACT UNIT, CORRESPONDING APARTMENT AND ELECTRICAL CHARACTERISTICS PRIOR TO ANY WORK DONE. ALL WITHIN 25FT OF EACH CONDENSING UNIT PROVIDE WP/GFI OUTLET WIRED TO HOUSE PANEL. LOOP UP TO 8 SUCH ROOF OUTLETS ON ONE CIRCUIT

LOCATION OF ALL MECHANICAL EQUIPMENTS AND ELECTRICAL CHARACTERISTICS SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR PRIOR TO ANY WORK DONE. ALL EQUIPMENT RELATING TO MECHANICAL COMPONENTS SHALL BE ORDERED ONLY AFTER THE APPROVAL OF MECHANICAL EQUIPMENT SHOP DRAWINGS

PER NEW DEFINITION OF READILY ACCESSIBLE, ALL APPLIANCE CONNECTION POINT WILL BE LOCATED IN THE NEXT BAY OF THE KITCHEN COUNTER OR SIMILAR SO THAT PLUGGING/UNPLUGGING OF THE APPLIANCES WILL NOT REQUIRE REMOVAL OR PULLING OUT OR TAKING PANELS OF THE FRONT FACE OF THE APPLIANCE. PROVIDE GFI BREAKER FOR DISHWASHER

OUTLETS AT FOLLOWING LOCATIONS SHALL BE GFI TYPE REGARDLESS HOW THEY ARE SHOWN.  
 -RESIDENTIAL BATHROOMS, 210.8(A)(1)  
 -RESIDENTIAL KITCHENS, 210.8(A)  
 -LAUNDRY, 210.8(A)(10)  
 -DISHWASHERS, 210.8(O) (THROUGH GFI BREAKER)  
 -DRINKING FOUNTAIN, 422.52  
 -VENDING MACHINES, 422.51  
 -ROOF TOPS, 210.8(B)(2)(WP ALSO)  
 -BALCONY/EXTERIOR OUTLETS (WP ALSO)  
 -ELEVATOR MACHINE ROOMS AND FITS (WP ALSO)  
 -GARAGES  
 -FINISHED/UNFINISHED BASEMENT OUTLETS

REGARDLESS SHOWN ON PLANS OR NOT PROVIDE CARBON MONOXIDE DETECTORS AT  
 -OUTSIDE EACH BEDROOM WIRED TO SMOKE DETECTOR CIRCUIT AND  
 -IN THE ROOM HOUSING THE GAS APPLIANCE.  
 DETECTORS SHALL BE UL LISTED.  
 DETECTORS SHALL BE HARD WIRED WITH BATTERY BACK-UP  
 CO DETECTORS SHALL BE AS MANUFACTURED BY BRK CO 5120BN

IN RESIDENTIAL BUILDINGS, FOR ALL GAS FIRED VENTILATION/AIR CIRCULATION EQUIPMENT, PROVIDE DUCT MOUNTED CO DETECTOR COMPLETE WITH HOUSING AND SAMPLING TUBE AS MANUFACTURED BY MACURCO CM 15A OR EQUAL AND CONNECT TO FIRE ALARM PANEL VIA MONITOR MODULE  
 ALL CO DETECTORS MUST "LATCH" AT THE PANEL; THAT IS TO SAY, 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. THIS WILL MEAN 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; THAT IS TO SAY, LITERALLY THE WORDS "CARBON MONOXIDE" MUST BE PRESENT AT ALARM COMPANY, THE LETTERS "CO" ARE NOT ACCEPTABLE.

**CARBON MONOXIDE DETECTORS**  
 IN ALL RESIDENTIAL UNITS  
 PROVIDE CARBON MONOXIDE DETECTORS AT  
 -OUTSIDE EACH BEDROOM WIRED TO SMOKE DETECTOR CIRCUIT AND  
 -ON EVERY HABITABLE LEVEL AT LEAST ONE AND  
 -FOR ALL GAS FIRED UNITS WITH UNIT SHUT DOWN INTERLOCK AND NEAR ALL GAS FIRED FIRE PLACES

WIRING IN ALL EXPOSED AREAS SHALL BE IN METALLIC RACEWAYS AS WIREMOLD OR EQUAL. RACEWAYS SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT. SURFACE RACEWAYS SHALL CLOSELY FOLLOW THE SURFACE AND WRAP AROUND THE BEAMS AS REQUIRED. PRIOR TO ANY INSTALLATION, SUBMIT LAYOUT SKETCH INDICATING PROPOSED ROUTING FOR APPROVAL. ARCHITECT HAS THE RIGHT TO MODIFY OR CHANGE LAYOUT AS NEEDED. ANY CHANGES PRIOR TO ANY INSTALLATION SHALL BE AT NO CHARGE TO CONTRACT PRICE.

**INDICATES TEL/DATA COMBINATION OUTLET WITH**  
 CAT 6 TEL/DATA JACK. E.C. SHALL WIRE EACH OUTLET HOME RUN 4 PAIR CAT 6 CLP FOR TELEPHONE AND 4 PAIR CAT 6 CLP FOR DATA TO TELEPHONE AND DATA TERMINATION BOARDS RESPECTIVELY. TERMINATE AT TWO SEPARATE PUNCH DOWN BLOCKS. ALL WIRING AND TERMINATION'S SHALL BE PER CAT 6 SPECIFICATIONS, ALL WIRES SHALL BE PROPERLY LABELED AND RINGED OUT. KEEP WIRES MINIMUM 18" FROM POWER FEEDS AND FIXTURE BALLASTS

ALL 120V RECEPTACLES INSTALLED WITHIN A RESIDENTIAL UNIT SHALL BE SHALL BE SAFETY TYPE AS MANUFACTURED BY LEVITON "S262-SG" OR APPROVED EQUAL.

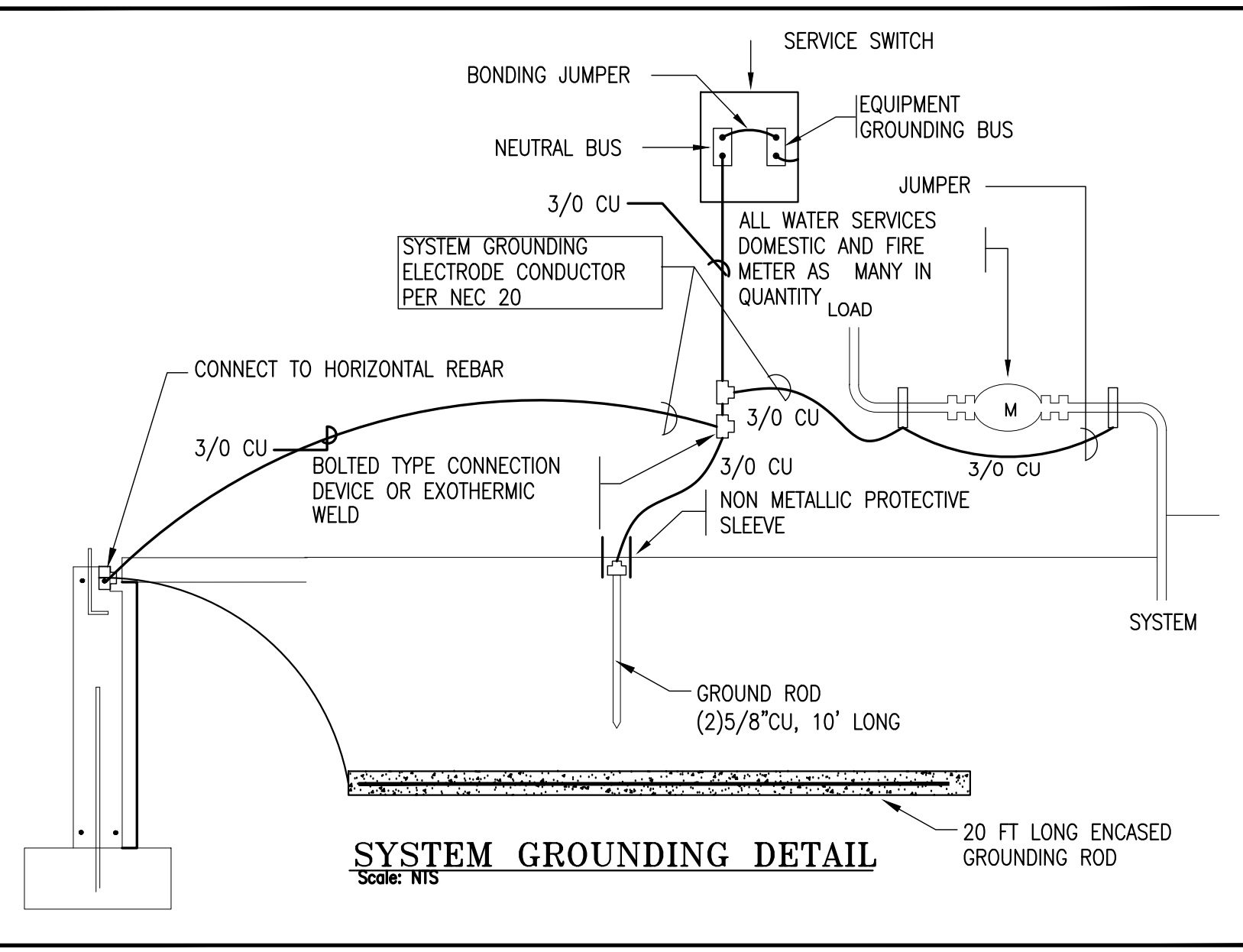
UNLESS NOTED OTHERWISE ALL WIRING SHALL BE #12AWG, CU, AND FED FROM PANEL LP VIA 20A/1P C.B. CIRCUITS LONGER THAN 100FT SHALL BE #10 CU

NO EXPOSED WIRING IS ALLOWED, ALL CONCEALED WIRING SHALL BE IN "MC". ALL WIRING IN BLOCK WALLS SHALL BE CONCEALED, RUN IN CONDUIT.

**INDICATES CATV JACK COMPLETE.**  
 EC SHALL HOME RUN EACH CATV OUTLETS WITH RG 6 COAX CABLE AND CONNECT TO CATV SPLITTER WITHIN EACH UNIT CLOSET AND CONNECT UNIT WITH DOUBLE COAX TO CATV ENTRANCE BOX LOCATED IN ELECTRIC ROOM.

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL LOCATE BOXES FOR EACH TYPICAL UNIT FOR OWNER/ARCHITECT REVIEW.

IN RESIDENTIAL BUILDINGS, UNLESS NOTED OTHERWISE --ALL LIGHT FIXTURES WITHIN BEDROOMS SHALL BE WIRED TO BEDROOM CIRCUIT  
 --ALL OPEN AREA LIGHTS SHALL BE WIRED TO A SINGLE LIGHTING CIRCUIT (DINING ROOM, KITCHEN, HALL WAY)  
 --BATHROOM LIGHTS SHALL BE WIRED TO OPEN AREA CIRCUITS.



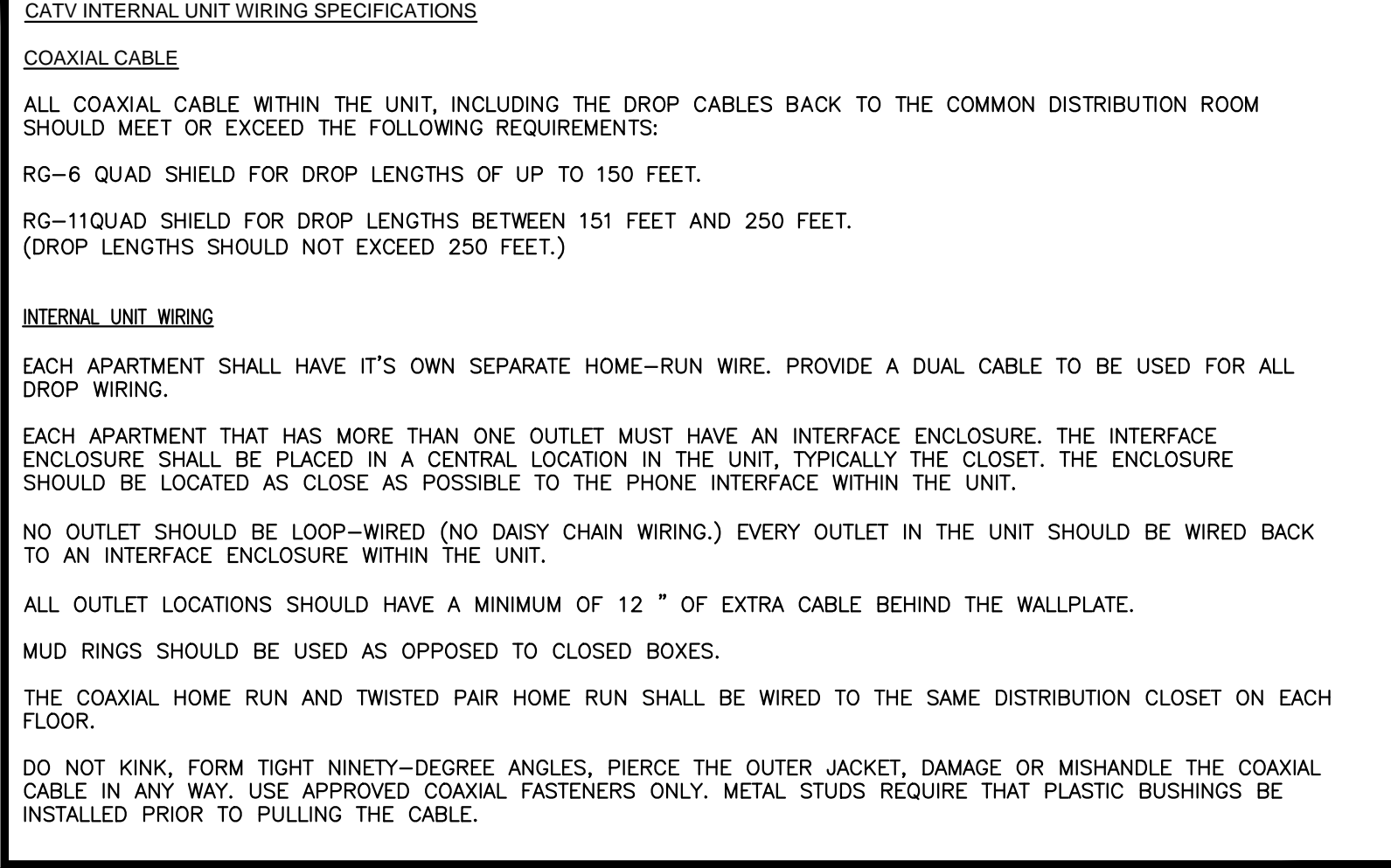
**TELEPHONE SYSTEM**  
 A. FURNISH AND INSTALL A COMPLETE SYSTEM OF CONDUITS AND BACKBOARDS FOR TELEPHONE INSTRUMENTS AS SHOWN ON THE PLANS.  
 B. TELEPHONE TERMINAL LOCATIONS AS SHOWN ON THE PLANS SHALL BE 30" X 48" X 3/4" PLYWOOD. GROUND CONNECTIONS SHALL BE MADE BY THE TELEPHONE COMPANY. ELECTRICAL CONTRACTOR SHALL PROVIDE PRIMARY ARRESTER WITH FUSE AND #6CU GROUNDING WIRE AND GROUND BOLT CONNECTED TO SERVICE GROUND  
 C. A NYLON FISH WIRE SHALL BE LEFT IN ALL CONDUITS TO FACILITATE PULLING-IN TELEPHONE WIRES. FURNISH AND INSTALL ONE NYLON PULL WIRE FOR PULLING IN TELEPHONE SERVICE IN ALL CONDUITS. SEE SITE PLAN FOR SERVICE ENTRANCE.  
 D. LOCAL TELEPHONE COMPANY SHALL BE RESPONSIBLE FOR TELEPHONE WIRING FROM THEIR OUTDOOR TERMINATION CABINET TO A NETWORK INTERFACE LOCATED IN THE TELEPHONE ROOM.  
 F. EACH TELEPHONE OUTLET SHALL BE WIRED TO DATA INTERFACE TERMINATION BOARD WITH PLENUM RATED CAT 6 #20/8 TWISTED DATA WIRE TERMINATED IN TESTED AND CERTIFIED CAT 6 TERMINATION STYLE AT BOTH ENDS AND CLEARLY RINGED AND TAGGED.

CONSTRUCTION AND TEST REQUIREMENTS (NEC REQUIREMENTS)  
 800.50 PREVENTS LAYING TELEPHONE WIRES ON CEILING TILES.  
 800.50 REQUIRES PRIMARY PROTECTOR FOR MOST UNDERGROUND AND ALL OVERHEAD SERVICES  
 800.30 (2) REQUIRES FUSED TYPE PRIMARY PROTECTOR AT SERVICE ENTRANCE  
 800.50 REQUIRES ALL METAL SHIELDS TO BE GROUNDED  
 800.50 REQUIRES INSULATED GROUNDING CONDUCTOR TO BE MINIMUM #14, NO LONGER THAN 20FT AND CONNECTED TO BUILDING GROUND SYSTEM. WITH MINIMUM #6 BONDING CABLE.  
 800.50 REQUIRES TYPE CMP FOR PLENUM, CMR FOR RISER APPLICATIONS,  
 800.51 REQUIRES MINIMUM 2" BETWEEN POWER LINES AND COMMUNICATION LINES, RECOMMENDED PRACTICE 6" FROM BALLASTS AND 6FT FROM LIGHTNING WIRES.  
 PROVIDE MINIMUM TWO LINES AT EACH LOCATION ONE FOR TELEPHONE OTHER FOR DATA  
 WATCH FOR THAT A KINKED CABLE REDUCES 2.5DB; A SINGLE 1" RADIUS BEND REDUCES 2 DB.

CAT 6 INSTALLATION RECOMMENDATIONS INCLUDE  
 CAT 6 INSTALLATION REQUIRES MINIMUM 1/2" UNTWIST  
 MINIMUM 1" BENDING RADIUS FOR FOUR PAIR OR 4X. FOR 25 PAIR 10XDA.  
 KEEP MINIMUM 6" FROM 20A/2KW CIRCUITS  
 KEEP MINIMUM 12" FROM 30A/SKW CIRCUITS  
 KEEP MINIMUM 24" FROM ANY FEEDER.  
 FOR SHIELDED CABLES THESE VALUES MAY BE TAKEN IN 1/3.

**CATV INTERNAL WIRING SPECIFICATIONS**  
**COAXIAL CABLE**  
 ALL COAXIAL CABLE WITHIN THE UNIT, INCLUDING THE DROP CABLES BACK TO THE COMMON DISTRIBUTION ROOM SHOULD MEET OR EXCEED THE FOLLOWING REQUIREMENTS:  
 RG-6 QUAD SHIELD FOR DROP LENGTHS OF UP TO 150 FEET.  
 RG-11QUAD SHIELD FOR DROP LENGTHS BETWEEN 151 FEET AND 250 FEET.  
 (DROP LENGTHS SHOULD NOT EXCEED 250 FEET.)

**INTERNAL UNIT WIRING**  
 EACH APARTMENT SHALL HAVE IT'S OWN SEPARATE HOME-RUN WIRE. PROVIDE A DUAL CABLE TO BE USED FOR ALL DROP WIRING.  
 EACH APARTMENT THAT HAS MORE THAN ONE OUTLET MUST HAVE AN INTERFACE ENCLOSURE. THE INTERFACE ENCLOSURE SHALL BE PLACED IN A CENTRAL LOCATION IN THE UNIT, TYPICALLY THE CLOSET. THE ENCLOSURE SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO THE PHONE INTERFACE WITHIN THE UNIT.  
 NO OUTLET SHOULD BE LOOP-WIRED (NO DAISY CHAIN WIRING.) EVERY OUTLET IN THE UNIT SHOULD BE WIRED BACK TO AN INTERFACE ENCLOSURE WITHIN THE UNIT.  
 ALL OUTLET LOCATIONS SHOULD HAVE A MINIMUM OF 12 " OF EXTRA CABLE BEHIND THE WALLPLATE.  
 MUD RINGS SHOULD BE USED AS OPPOSED TO CLOSED BOXES.  
 THE COAXIAL HOME RUN AND TWISTED PAIR HOME RUN SHALL BE WIRED TO THE SAME DISTRIBUTION CLOSET ON EACH FLOOR.  
 DO NOT KINK, FORM TIGHT NINETY-DEGREE ANGLES, PIERCE THE OUTER JACKET, DAMAGE OR MISHANDLE THE COAXIAL CABLE IN ANY WAY. USE APPROVED COAXIAL FASTENERS ONLY. METAL STUDS REQUIRE THAT PLASTIC BUSHINGS BE INSTALLED PRIOR TO PULLING THE CABLE.



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**CONSTRUCTION NOTES**

- LOCAL SMOKE DETECTORS SHALL BE WIRED FROM ARC-FAULT CIRCUITS, VERIFY WITH ELECTRICAL INSPECTOR.
- 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 CEILING SHALL HAVE FIRE RATED HOODS ON TOP TO MAINTAIN FIRE RATING. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATED AREAS.
- ALL WIRING WITHIN UNITS SHALL BE ROMEX. WIRING OUTSIDE UNITS SHALL BE METAL CLAD.

**LOAD CALCULATIONS,**

-LIGHTING AND POWER: 3W/SF X 1,000SF = 3,000W  
 -KITCHEN = 3,000W  
 -ELECTRIC RANGE = 8,000W - gas  
 -DISHWASHER/DISPOSAL: = 2,000W  
 -WATER HEATER: = 0W - gas  
 -WASHER: = 1,500W  
 -DRYER: = 5,000W  
 -INDOOR A/C: = 500W  
 -OUTDOOR A/C: = 4,500W  
 -MICROWAVE/HOOD: = 1,500W  
 TOTAL: = 29,500W  
 UNIT DEMAND = (29.5 - 10KW - 5) X .4 + 10 + 5 = 20.8KW  
 100A/125A  
 BUILDING DEMAND = UNIT X TOTAL KW FACTOR = XXXXXX  
 FACTOR TO BE TAKEN FROM TABLE NEC 220.84

**FOR EACH APARTMENT PROVIDE DEDICATED CIRCUITS**

- (3) 20A/1P KITCHEN COUNTER OUTLETS GFCI AND AFCI PROTECTION
- (1) 20A/1P FOR REFRIGERATOR GFCI AND AFCI PROTECTION
- (1) 20A/1P FOR DISHWASHER AFCI/GFCI PROTECTION
- (1) 20A/1P FOR DISPOSAL RECEPTACLE AFCI/GFCI PROTECTION
- (1) 20A/1P FOR MICROWAVE-HOOD AFCI/GFCI PROTECTION
- (1) 50A/2P FOR ELECTRIC RANGE, GFCI
- (1) 20A/1P FOR DINING ROOM OUTLETS AFCI PROTECTION IF THEY ARE COMBINED WITH KITCHEN COUNTER OUTLETS AND AFCI PROTECTION.
- (1) 30A/2P FOR ELECTRIC WATER HEATER, GFCI
- (1) 20A/1P FOR WASHER, AFCI/GFI
- (1) 30A/2P FOR DRYER, GFCI
- (1) 30A/2P FOR EACH A/C CONDENSER UNIT, GFCI
- (1) 15A/1P FOR EACH A/C INDOOR UNIT (VERIFY)
- (1) 20A/1P FOR EACH BATHROOM GFCI PROTECTION
- (1) 15A/1P FOR LIGHTING AFCI PROTECTION
- (1) 15A/1P FOR LIVING ROOM AFCI PROTECTION
- (1) 15A/1P FOR EACH BEDROOM AFCI PROTECTION
- RECEPTACLES INSTALLED WITHIN 6 FEET OF SINK SHALL BE GFCI PROTECTED IN ADDITION TO AFCI PROTECTION.

**ACCESSIBLE UNIT WIRING NOTES**

- SEE ARCHITECTURAL PLANS FOR NUMBER OF HC UNITS AND LOCATIONS.
- CARRY MINIMUM OF 5% OF UNITS AS ACCESSIBLE IN EACH UNIT PROVIDE
- LOCAL TYPE SMOKE DETECTOR WITH BUILT IN STROBE EACH BEDROOM, OUTSIDE BEDROOM
- SYSTEM TYPE STROBE IN EACH BEDROOM AND LIVING ROOM
- LOCAL TYPE CO DETECTORS OUTSIDE BEDROOMS AND EVERY HABITABLE FLOOR LEVEL, STROBES ARE TO BE LOCATED IN BEDROOMS AND HABITABLE SPACES
- MOUNTING HEIGHTS OF ANY CONTROL SWITCH SHALL BE NO HIGHER THAN 48" AFF.
- HOOD CONTROL SWITCHES (LIGHT/FAN) SHALL BE MOUNTED ON WALL AT COUNTER
- PROVIDE WALL OVEN AND COOK TOP WIRING ON SAME CIRCUIT, 50A/2P
- ALL OUTLETS AND CONTROL SWITCHES SHALL BE MINIMUM 18" AWAY FROM AN INTERIOR CORNER REGARDLESS HOW IT IS SHOWN
- PROVIDE STROBE LIGHT FOR INTERCOM SYSTEM IN LIVING ROOM AND IN EACH BEDROOM
- ALL ELECTRICAL OUTLETS HEIGHTS TO BE A MINIMUM OF 15" TO THE CENTERLINE OF THE LOWEST RECEPTACLE AND MAXIMUM OF 48" TO THE CENTERLINE OF THE HIGHEST RECEPTACLE
- ALL ELECTRICAL OUTLETS ARE LOCATED OVER COUNTERTOPS, SHALL BE NO HIGHER THAN 44" TO THE CENTERLINE OF THE HIGHEST RECEPTACLE.
- ALL CIRCUIT BREAKER PANELS MUST BE CENTERED ON A 30" BY 48" CLEAR FLOOR SPACE AND IF A PARALLEL APPROACH IS USED, THE HIGHEST CONTROL CAN BE NO HIGHER THAN 54" A.F.F.
- IF A FRONT APPROACH IS USED, THE HIGHEST CONTROL CAN BE NO HIGHER THAN 48" A.F.F.
- PROVIDE STROBE FOR INTERCOM FOR THE HEARING IMPAIRED.

**FIXTURE SCHEDULE - COMMON AREA**

TYPE	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP	DESCRIPTION
SEE ARCHITECTURAL RCP FOR FIXTURES TYPES					
SL-1	TBD	CARRY \$150	120	(1)32W LED	EXTERIOR FRONT LIGHT
SL-2	TBD	CARRY \$150	120	(1)32W LED	EXTERIOR REAR LIGHT
⊗	TBD	CARRY \$150	120/12	LED AS REQUIRED	SELF POWERED EXIT SIGN SINGLE FACE
⚡	TBD	CARRY \$150	120/6	(2)5.4W	SELF CONTAINED EMERGENCY LIGHTS AT INTERIOR
⚡	TBD	CARRY \$150	120/6	(2)5W	WP EMERGENCY LIGHTS AT EXTERIOR

EM\* INDICATES FIXTURE WITH BUILT IN BATTERY  
 MS\* INDICATES FIXTURE WITH BUILT IN OCCUPANCY SENSOR, HALF LIGHT/FULL LIGHT  
 EM/MS INDICATES BOTH FEATURES AS ABOVE

**FIXTURE SCHEDULE - APARTMENTS**

TYPE	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP	DESCRIPTION
SEE ARCHITECTURAL RCP FOR FIXTURES TYPES					

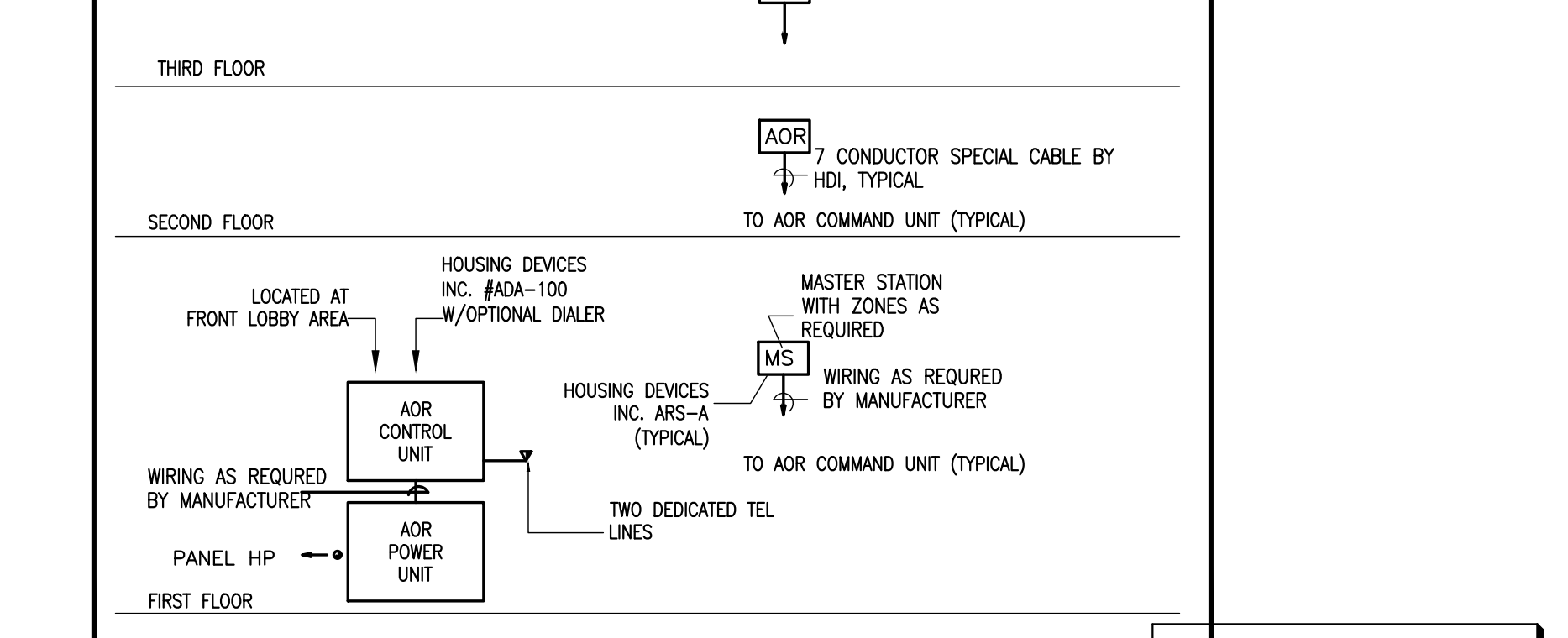
**FIXTURE NOTES**

ALL LIGHT FIXTURES MODELS, FINISH COLORS SHALL BE VERIFIED BY ARCHITECT. REGARDLESS HOW MODEL NUMBERS ARE WRITTEN ALL FLUORESCENT & PL FIXTURES SHALL HAVE HPF ENERGY SAVINGS BALLAST/ENERGY STAR LABEL.  
 LAMPS AND BALLASTS SHALL BE IN COMPLIANCE WITH LOCAL UTILITY COMPANY REBATE PROGRAMS, SPECIFICATIONS ABOVE FOR THE FIXTURE TYPE ONLY.  
 FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS THD LESS THAN X15.  
 FIXTURES MOUNTED IN INSULATED CEILING, EC SHALL PROVIDE HOODS TO KEEP INSULATION AWAY.  
 FIXTURES MOUNTED IN RATED CEILING (SEE ARCHITECTURAL DRAWINGS), EC SHALL PROVIDE HOODS TO MAINTAIN RATINGS.  
 SHADED FIXTURE INDICATES EMERGENCY LIGHT WITH BUILT IN BODINE BALLAST, 700 LUMEN OUTPUT.  
 EMERGENCY LIGHTS SHALL HAVE INTEGRAL TEST SWITCHES BUILT INTO FIXTURE (NOT SEPARATE SWITCH).  
 PROVIDE CONSTANT FEED TO BUILT-IN EMERGENCY BATTERY AS REQUIRED.  
 EXACT LOCATION AND TYPES OF ALL LIGHTING FIXTURES, MOUNTING HEIGHTS AND MOUNTING DETAILS SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ANY CONFLICTS SHALL BE BROUGHT TO ARCHITECT'S ATTENTION PRIOR TO ANY WORK DONE. OBTAIN LATEST COPY OF THE CEILING PLAN FROM ARCHITECT PRIOR TO ANY WORK DONE.  
 IN AREAS WHERE FIXTURES ARE MOUNTED INTO INSULATED CEILING, THIS CONTRACTOR SHALL PROVIDE HOODS, 3" LARGER THAN FIXTURES TO KEEP INSULATION AWAY FROM THE FIXTURES AND TO MAINTAIN INSULATION INTEGRITY OF THE CEILING. SEE ARCHITECTURAL DRAWINGS FOR AREAS WHERE THESE HOODS MAY BE REQUIRED.

**ARCHITECTURAL CURVED ELECTRIC HEATER SCHEDULE**

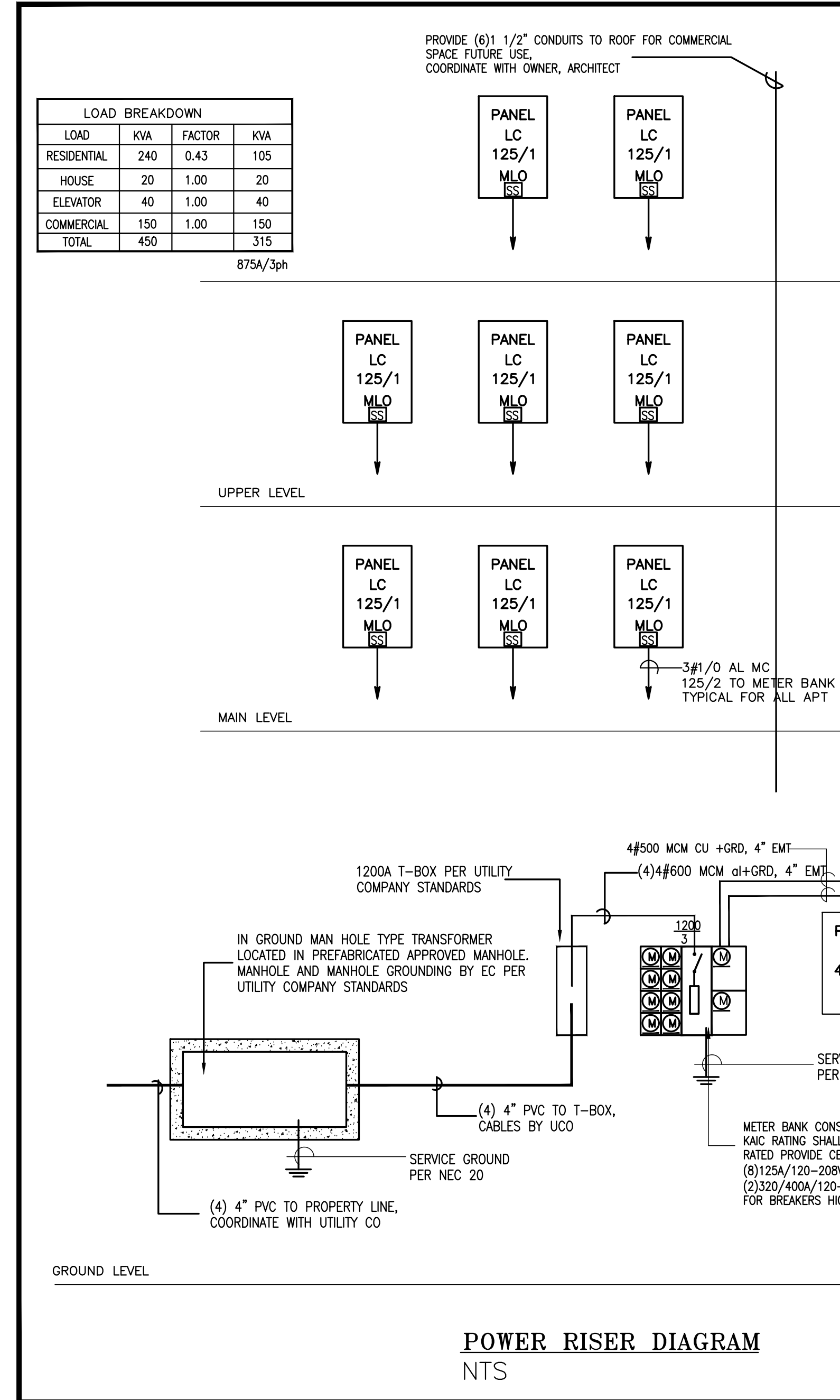
TYPE	KW	VOLT/PH	WIRE	CB	DIMENSIONS	MODEL NUMBER-COLOR BY ARCH
RWH-1	1	120/1	2#12	20/1		Q'MARK#RA 1512-12
RWH-2	2	120/1	2#12	20/1	19"X16"XW4"D	Q'MARK# MCSRARWH1802/HTWHS1
RWH-4	4	208/1	2#10	30/2	19"X16"XW4"D	Q'MARK# MCSRARWH4808/HTWHS1
SWH-4	4	208/1	2#12	30/2	19"X16"XW4"D	Q'MARK# MCSRARWH4808/HTWHS1
EBB-2	0.4	120/1	2#12	20/1		Q'MARK#QMK-2512W-W/T/STAT
EBB-3	0.75	120/1	2#12	20/1		Q'MARK#QMK-2513W-W/T/STAT
EBB-4	1	120/1	2#12	20/1		Q'MARK#QMK-2514W-W/T/STAT
EBB-6	1.5	120/1	2#12	20/1		Q'MARK#QMK-2516W-W/T/STAT
CCH-4	4	208/1	2#10	30/2		Q'MARK#CDF548-W/T/STAT
EUH-5	5	208/1	2#10	30/2	22"X20"XW8"D	Q'MARK#MUH-35-W/T/STAT
EUH-10	5	208/3	2#10	30/3	22"X20"XW8"D	Q'MARK#MUH-108-W/T/STAT

SEE FLOOR PLANS FOR LOCATIONS, TYPICALLY IN ELEVATOR BUILDINGS IN ELEVATOR LOCATIONS, IN OTHER BUILDINGS NEAR IN THE STAR LANDINGS



**TWO-WAY COMMUNICATION DIAGRAM (SUPERVISED LINES)**

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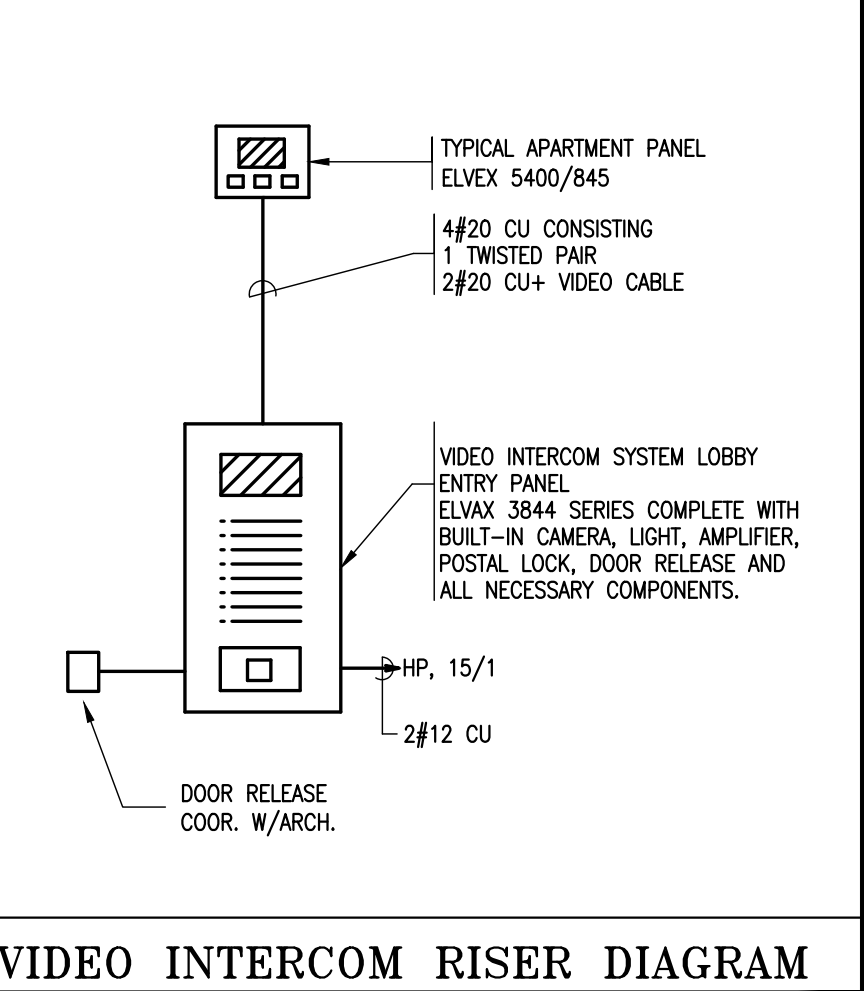
**POWER RISER DIAGRAM NTS**

**(CU) WIRE SCHEDULE**

AMPS CB	CU	CMIL	MAX LENGT*
20	#12	6,530	70 FT
30	#10	10,380	70 FT
40	#8	16,510	90 FT
50	#6	26,240	110 FT
60	#6	26,240	95 FT
70	#4	41,740	120 FT
80	#3	52,620	125 FT
100	#2	66,360	140 FT
125	#1	83,690	145 FT
150	#1/0	105,600	145 FT
200	#3/0	167,800	165 FT
225	#4/0	211,600	175 FT
300	#300	300,000	200 FT
350	#400	400,000	225 FT
400	#500	500,000	250 FT

**GENERAL POWER DISTRIBUTION NOTES**

- BEFORE ORDERING ANY EQUIPMENT AND/OR START ANY CONSTRUCTION OR EXCAVATION ELECTRICAL CONTRACTOR AND/OR GENERAL CONTRACTOR SHALL CONTACT ELECTRIC/TELEPHONE/CITY COMPANIES FOR SERVICE POINT AND ROUTING, SERVICE AVAILABILITY.
- FEEDERS ARE SIZED BASED ON X3 VD. CONTRACTOR SHALL FOLLOW THE FOLLOWING CRITERIA.
- 50A, UP TO 100FT #6, INCREASE BY ONE SIZE FOR EVERY 30FT.
- 100A, UP TO 100FT #3, INCREASE BY ONE SIZE FOR EVERY 30FT.
- 200A, UP TO 150FT #3/0, INCREASE BY ONE SIZE FOR EVERY 50 FT.
- 400A, UP TO 200FT #500, INCREASE BY ONE SIZE FOR EVERY 50FT.
- FOR SWITCHGEAR SHORT CIRCUIT RATINGS, SEE NOTES UNDER PANEL SCHEDULES.
- PRIOR TO ORDERING ANY SWITCHGEAR ELECTRICAL CONTRACTOR SHALL CONFIRM CIRCUIT BREAKER SIZES WITH HVAC AND OTHER MECHANICAL EQUIPMENT SHOP DRAWINGS. DUE TO SUBMITTAL TIMING FROM VARIOUS CONTRACTORS, ENGINEERS APPROVAL IS GIVEN FOR QUALITY ONLY.
- CONTRACTOR SHALL COORDINATE WITH OTHER TRADES SO THAT NO OTHER TRADE SHALL PASS THROUGH ELECTRIC ROOM OR ABOVE DEDICATED SPACES. INFORM ARCHITECT/ENGINEER ABOUT ANY INFRINGEMENTS PRIOR SUCH INSTALLATIONS OCCUR.
- ELECTRIC ROOM DIMENSIONS ARE BASED ON CERTAIN MANUFACTURER EQUIPMENT DIMENSIONS, CONTRACTOR SHALL CONFIRM ROOM DIMENSIONS PRIOR TO ORDERING EQUIPMENT.



**VIDEO INTERCOM RISER DIAGRAM**

**PANEL SCHEDULE**

ITEM	VOLT/PHS/W	MLO	MCB	CIRC	BRANCH BREAKERS	SPR=SPARE SFC=SPACE
PANEL HP	120-208/3/4	400	-	42	S B	(1)200/3, (8)30/2, (1)20/2, (20)20/1
PANEL TP-1	120-208/3/4	400	-	42	S B	(8)30/2, (1)20/2, (20)20/1
PANEL LC	120-208/1/3	125	-	30	F P	(1)30/2 GFCI, (2)30/2 GFCI, (4)20/1 AF/GFI, (2)20/1, (4)20/1 AF, (7)15/1 AF

SWITCHGEAR AND PANELBOARDS SHALL BE MANUFACTURED BY SQUARE D, SIEMENS OR GENERAL ELECTRIC MAIN SWITCH AND MAIN DISTRIBUTION PANEL AND ALL CONSECUTIVE PANELS UP TO LAST TWO PANELS IN THE DISTRIBUTION GRID SHALL BE FULLY RATED AND LAST TWO PANELS MAY BE SERIES RATED FOR AVAILABLE SHORT CIRCUIT RATINGS. IF SERIES RATINGS ARE APPLIED SUPPLIER SHALL BE RESPONSIBLE FOR PROVIDING PROPER SERIES RATED EQUIPMENT AS REQUIRED. AVAILABLE SHORT CIRCUIT CURRENT FOR THE MAIN SERVICE IS 42KA. SEE RISER DIAGRAM FOR CONNECTION DIAGRAM OF THE PANELS. NO LINE IMPEDANCES ARE TO BE CONSIDERED IN SERIES RATING APPLICATIONS. FOR ALL RESIDENTIAL LOAD CENTERS, 15A AND 20A CIRCUITS SERVING THE UNIT EXCEPT BATHROOMS CIRCUITS SHALL BE ARC FAULT INTERRUPTER TYPE AS REQUIRED PER NEC 210-12(B)



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No.	Description	Date
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**HUS Companies  
 979 Main St  
 RISER DIAGRAM  
 & DETAILS**

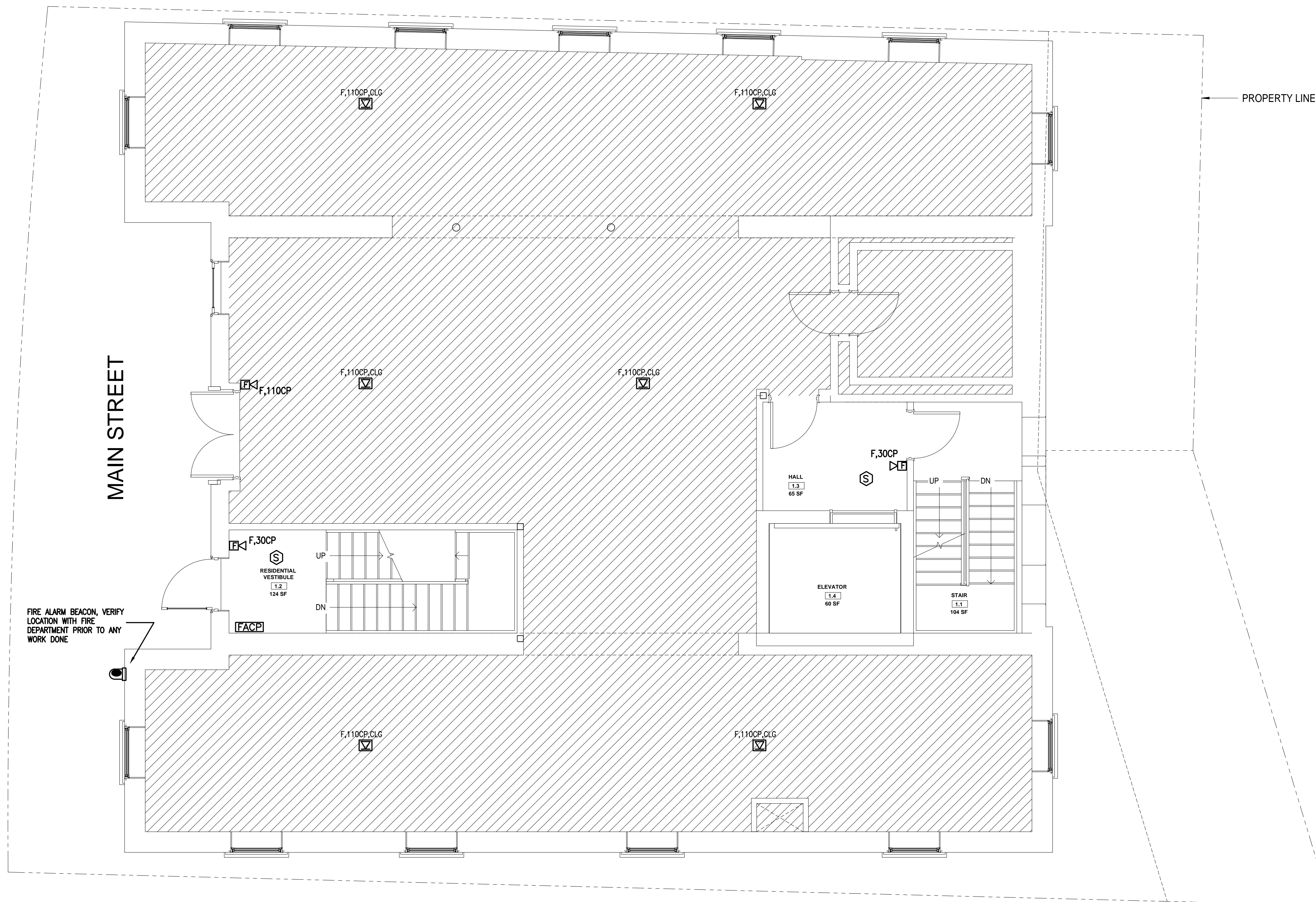
Project number 221018  
 Date 04.07.2021  
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*Mueller Multitrade*

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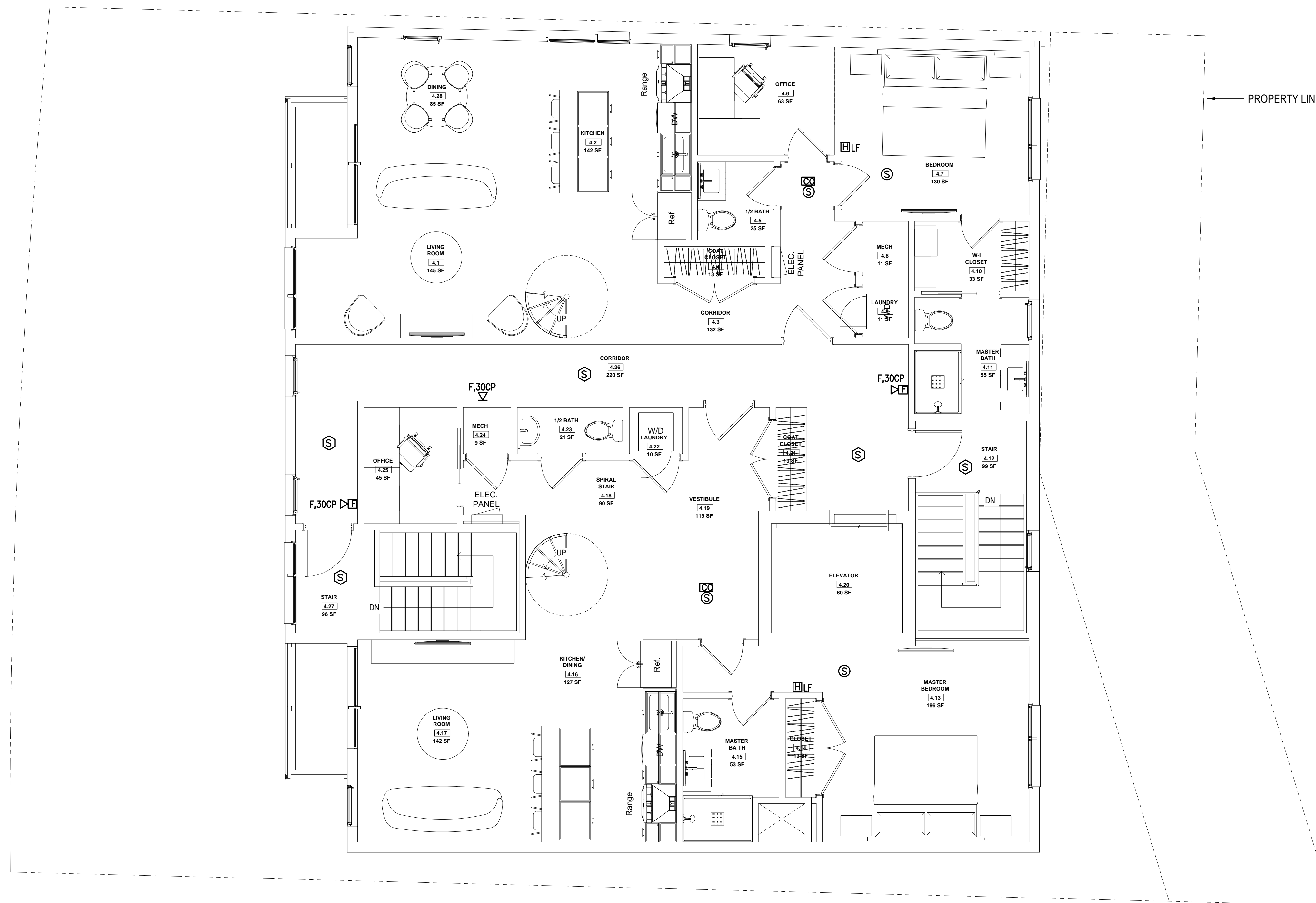
**HUS Companies**  
 979 Main St  
**FIRE ALARM**  
**FIRST FLOOR PLAN**

**ZADE ASSOCIATES LLC**  
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Project number	221018
Date	04.07.2021
Drawn by	
Checked by	
<b>FA101</b>	
Scale	As indicated







*Mustafa Muehizadeh*

No.	Description	Date
1	For construction/ Permit	7-23-2021

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**HUS Companies**  
 979 Main St  
**FIRE ALARM**  
**FOURTH FLOOR PLAN**

Project number: 221018  
 Date: 04.07.2021  
 Drawn by:  
 Checked by:

**FA104**

Scale: As indicated

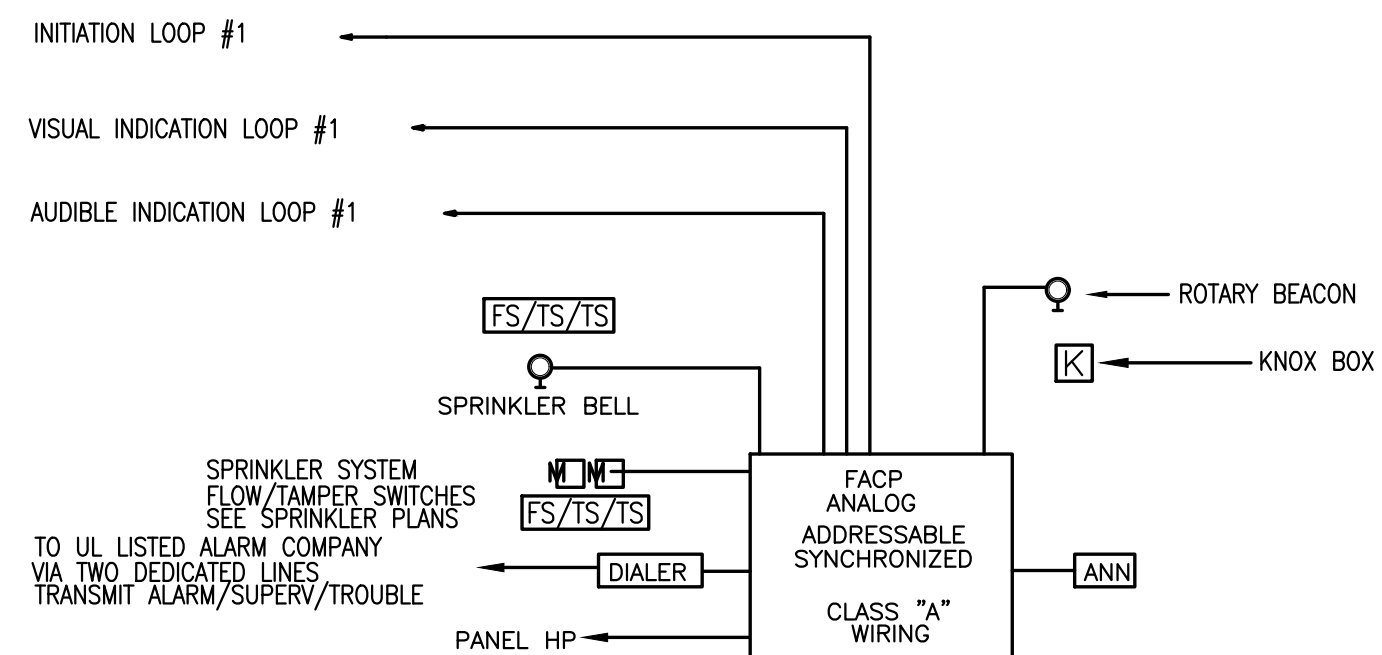




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### LEGEND

- SYSTEM TYPE SMOKE DETECTOR, ANALOG ADDRESSABLE
- HEAT DETECTOR, ADDRESSABLE TYPE
- FIRE ALARM PULL AND HORN/LIGHT DEVICE, PER NFPA 72, SYNCHRONIZED, 15CD IN CORR., 60CD IN COMMON AREAS
- FIRE ALARM PULL STATION, ADDRESSABLE, MOUNTED AT 4'-0" AFF.
- FIRE ALARM HORN/LIGHT (SYNCHRONIZED), MTD AT 6'-8" AFF 15 CD IN CORRIDORS, 60 CD IN COMMON AREAS
- FIRE ALARM LIGHT ONLY (SYNCHRONIZED) MTD AT 6'-8" AFF 15 CD IN CORRIDORS, MIN 60 CD IN COMMON AREAS
- CEILING MOUNTED A/V DEVICE
- SPRINKLER SYSTEM FLOW SWITCH, WIRING ONLY.
- SPRINKLER SYSTEM TAMPER SWITCH, WIRING ONLY.
- LOW PRESSURE SWITCH WIRING AS SUPERVISORY
- FIRE ALARM CONTROL PANEL.
- FIRE ALARM REMOTE ANNUNCIATOR WITH TROUBLE BUZZER.
- DIALER BY E.C. WIRED TO UL LISTED ALARM CO.
- LOCAL TYPE 110V SMOKE DETECTOR, PHOTOELECTRIC TYPE WITH BATTERY BACK-UP. "L" INDICATES BUILT-IN STROBE, 177(CO)TANDEM WIRED WITH OTHER LOCAL DETECTORS IN THE UNIT. WIRED TO LIGHTING CIRCUIT
- LOW FREQUENCY MINI HORN
- SYSTEM TYPE CO DETECTOR W/MONITOR MODULE
- LOCAL TYPE SMOKE/CO COMBI DETECTOR, VOICE TYPE



**NOTES**

PROVIDE ADDRESS MODULES FOR ALL FLOW & TAMPER SWITCHES  
 PROVIDE COMPLETE INTERLOCK WIRING FOR HVAC UNIT SHUT DOWN  
 PROVIDE COMPLETE INTERLOCK WIRING FOR ELEVATOR RECALL SYSTEM  
 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 MODULE FOR KITCHEN ANSUL SYSTEM  
 FOR ELEVATOR BUILDINGS PROVIDE ACCESSIBLE DEVICES FOR 5% OF THE UNITS  
 PROVIDE COMPLETE SIGNAL WIRING FOR DOOR RELEASE  
 PROVIDE COMPLETE WIRING FOR FIRE/SMOKE DAMPERS  
 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 AS REQUIRED. PROVIDE SMOKE DETECTOR AT EACH BOOSTER LOCATION AND FACP LOCATION

**SEQUENCE OF OPERATION**

UPON ACTIVATION OF ANY FIRE DETECTOR, MANUAL PULL STATION OR FLOW SWITCH  
 -FIRE ALARM PANEL WILL TRIP AND CALL FIRE DEPARTMENT  
 -ALL AUDIO DEVICES WILL INITIATE ALARM SIGNAL TO ALERT ALL OCCUPANTS FOR ALARM CONDITION IN THE BUILDING FOR FULL EVACUATION.  
 -ALL VISUAL DEVICES WILL ACTIVATE, THEY SHALL BE SYNCHRONIZED TYPE.  
 -AIR HANDLER UNITS THAT HAS DUCT SMOKE DETECTORS WILL SHUT DOWN UPON ACTIVATION OF THE DUCT SMOKE DETECTOR.

UPON ACTIVATION OF ELEVATOR LOBBY SMOKE DETECTOR  
 -ELEVATOR RECALL SYSTEM WILL OPERATE. NO OTHER DEVICE WILL ACTIVATE RECALL SYSTEM.

A 24"x18" GRAPHICAL FLOOR PLAN SHALL BE POSTED INSIDE ALL BUILDING ENTRY POINTS AND BE APPROVED BY THE FIRE DEPARTMENT

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

### FIRE ALARM SYSTEM RISER DIAGRAM

REGARDLESS SHOWN ON PLANS OR NOT PROVIDE CARBON MONOXIDE DETECTORS AT  
 -OUTSIDE EACH BEDROOM WIRED TO SMOKE DETECTOR CIRCUIT AND  
 -IN THE ROOM HOUSING THE GAS APPLIANCE.  
 DETECTORS SHALL BE UL LISTED.  
 DETECTORS SHALL BE HARD WIRED WITH BATTERY BACK-UP  
 CO DETECTORS SHALL BE AS MANUFACTURED BY BRK CO 5120BN, VOICE TYPE

AUDIBLE APPLIANCES 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.

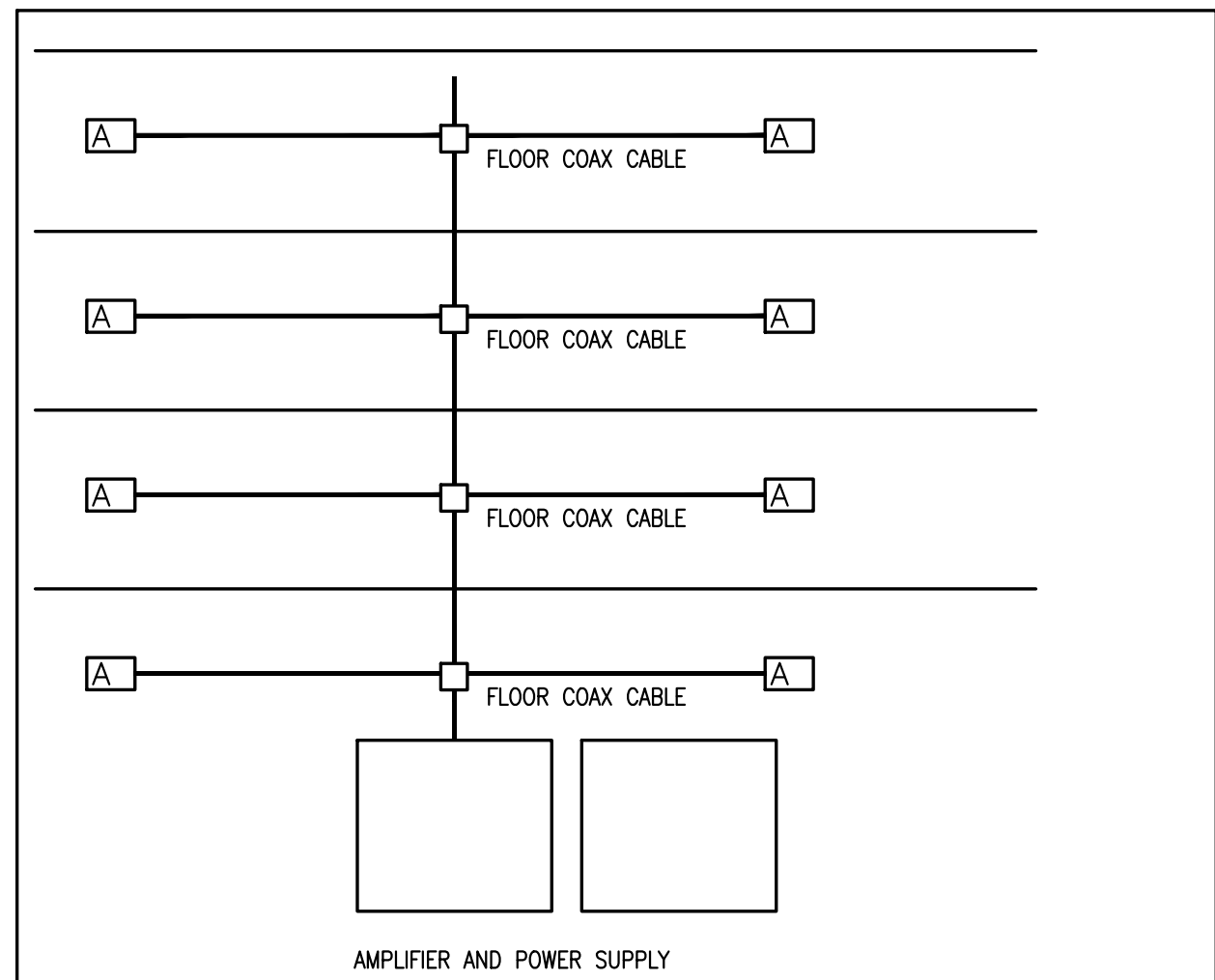
IN RESIDENTIAL BUILDINGS, FOR ALL GAS FIRED VENTILATION/AIR CIRCULATION EQUIPMENT, PROVIDE DUCT MOUNTED CO DETECTOR COMPLETE WITH HOUSING AND SAMPLING TUBE AS MANUFACTURED BY MACURCO CM 15A OR EQUAL AND CONNECT TO FIRE ALARM PANEL VIA MONITOR MODULE  
 ALL CO DETECTORS MUST "LATCH" AT THE PANEL; THAT IS TO SAY, 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. THIS WILL MEAN 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; THAT IS TO SAY, LITERALLY THE WORDS "CARBON MONOXIDE" MUST BE PRESENT AT ALARM COMPANY, THE LETTERS "CO" ARE NOT ACCEPTABLE.

-ALL SMOKE DETECTOR LOCATIONS SHALL BE COORDINATED WITH REFLECTED CEILING PLANS IN FIELD SO THAT DETECTORS SHALL BE MINIMUM 3FT AWAY FROM SUPPLY DIFFUSER.  
 -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.

- 120V LOCAL SMOKE DETECTOR WITH BATTERY BACK-UP. COMBINATION TYPE 120V LOCAL SMOKE/CO DETECTOR WITH BATTERY BACK-UP.
- SMOKE DETECTOR SHALL BE PHOTO ELECTRIC TYPE. TANDEM WIRE ALL COMBINATION TYPE SMOKE/CO AND SMOKE ONLY DETECTORS IN THE SAME UNIT AND FEED FROM BEDROOM RECEPTACLE CIRCUIT, VOICE TYPE.
- CARBON MONOXIDE DETECTOR MFG:BRK ELECTRONICS CAT#CO5120BN FEED FROM SMOKE DETECTOR.

FIRE ALARM CONSTRUCTION NOTES  
 -LOCAL SMOKE DETECTORS SHALL BE WIRED FROM ARC-FAULT CIRCUITS, VERIFY WITH ELECTRICAL INSPECTOR.  
 -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.  
 -ALL WIRING WITHIN UNITS SHALL BE ROMEX. WIRING OUTSIDE UNITS SHALL BE METAL CLAD.

PROVIDE ALL NECESSARY STRUCTURE AND RACEWAYS TO BE ABLE TO INSTALL BDA SYSTEM PER IBC 916.1.2&3 UPON COMPLETION OF THE BUILDING AND AFTER ESTABLISHING THE NEED TO INSTALL HEAD END EQUIPMENT OF A BDA SYSTEM TO MEET EMERGENCY SERVICES COMMUNICATION NEEDS AS TO BE DETERMINED BY THE FD.  
 PROVIDE ADD ALTERNATE COST FOR ALL HARDWARE COMPONENTS AND INSTALLATION OF FOR EACH BUILDING (EACH BUILDING MAY HAVE DIFFERENT NEEDS) RUN CONDUITS IN 2HR RATED ENCLOSURE. IF EQUIPMENT IS TO BE INSTALLED IT WILL BE HOUSED IN 2HR ENCLOSURE.  
 CARRY THE COST OF TESTING THE BUILDING UPON COMPLETION OF INTERIOR PARTITIONS



ON TOP OF ELEVATOR SHAFT PROVIDE 20A/120V DEDICATED CIRCUIT TO POWER FAIL SAFE TYPE MOTORIZED DAMPER (VERIFY W/HVAC TO ASSURE FAIL SAFE TYPE DAMPER INSTALLATION) INTERLOCKED VIA 20A RELAY AND CONTROL MODULE TO OPEN UPON FIRE ALARM PANEL ACTIVATION

REGARDLESS SHOWN ON PLANS OR NOT PROVIDE CARBON MONOXIDE DETECTORS AT  
 -OUTSIDE EACH BEDROOM WIRED TO SMOKE DETECTOR CIRCUIT AND  
 -IN THE ROOM HOUSING THE GAS APPLIANCE. DETECTORS SHALL BE UL LISTED. DETECTORS SHALL BE HARD WIRED WITH BATTERY BACK-UP CO DETECTORS SHALL BE AS MANUFACTURED BY BRK CO 5120BN

FOR FIRE ALARM SYSTEM A/V WIRING WITHIN THE TENANT SPACE PROVIDE SPARE CAPACITY AT THE PANEL BY WAY OF POWER BOOSTERS ON EACH FLOOR TO SUPPLY POWER TO TENANT A/V DEVICES WITHIN THE TENANT SPACE. SPARE POWER SHALL BE CALCULATED BASED ON (1) 110CD RATED A/V DEVICES PER 1000SQF OF TENANT SPACE. TYPICAL FOR EACH TENANT SPACE

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

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

	CONTROL	UNIT	ANN	NOTIFICATION	FIRE SAFETY SYSTEM CONTROLS	
1						1
2						2
3						3
4						4
5						5
6						6
7						7
8						8
9						9
10						10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19
20						20



Handwritten signature: *Walter M. ...*

No.	Description	Date
1	For construction/Permit	7-23-2021

**HUS Companies**  
 979 Main St  
**FIRE ALARM ROOF PLANS**

Project number 221018  
 Date 04.07.2021  
 Drawn by  
 Checked by  
**FA106**  
 Scale As indicated

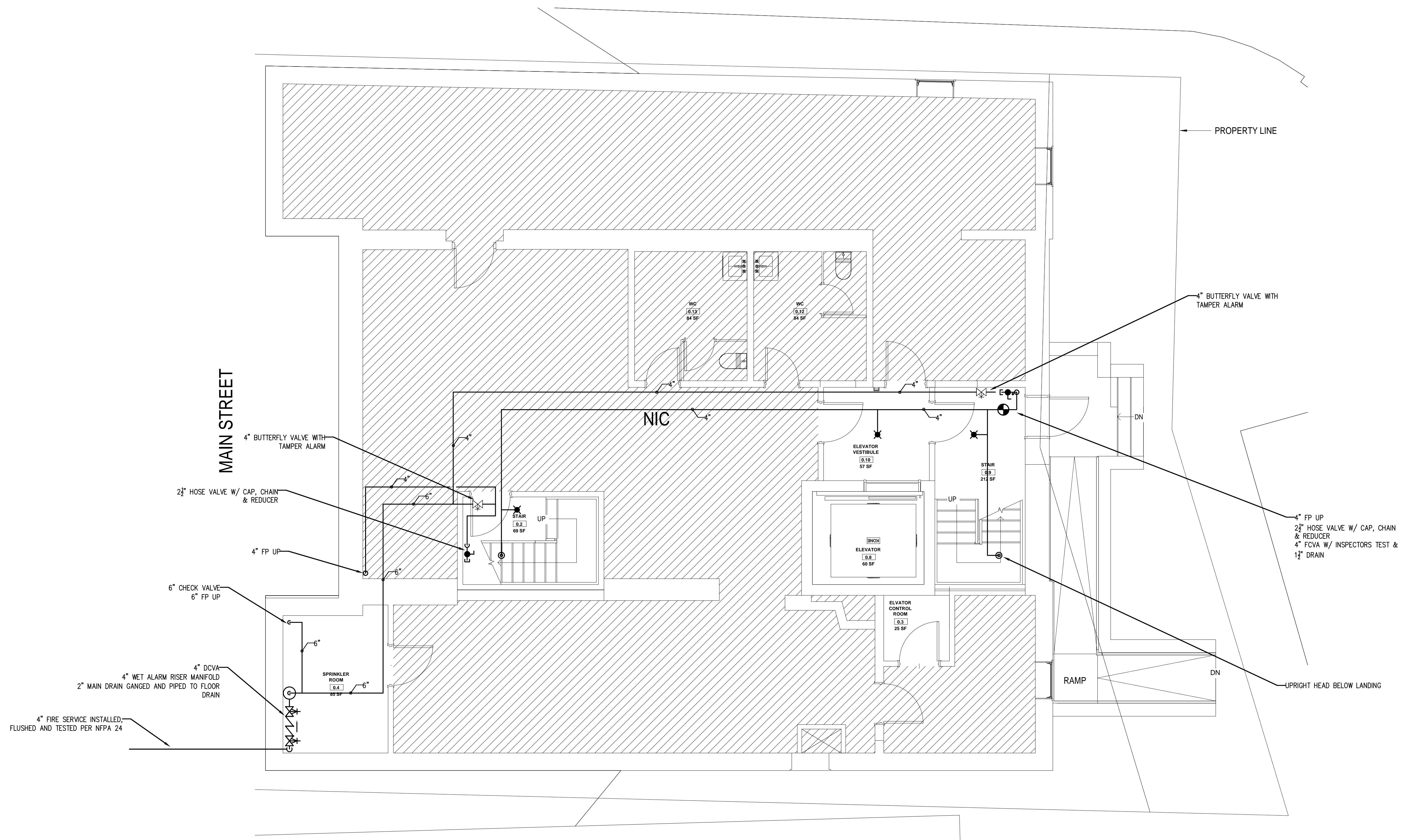
**ZADE ASSOCIATES LLC**  
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*Muzaffer M. Wadwa*



① Basement - Proposed  
 1/4" = 1'-0"

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No.	Description	Date
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**HUS Companies**  
 979 Main St  
**FIRE PROTECTION PLAN**

Project number	221018
Date	04.07.2021
Drawn by	JD
Checked by	MM

**FP101**

Scale As indicated

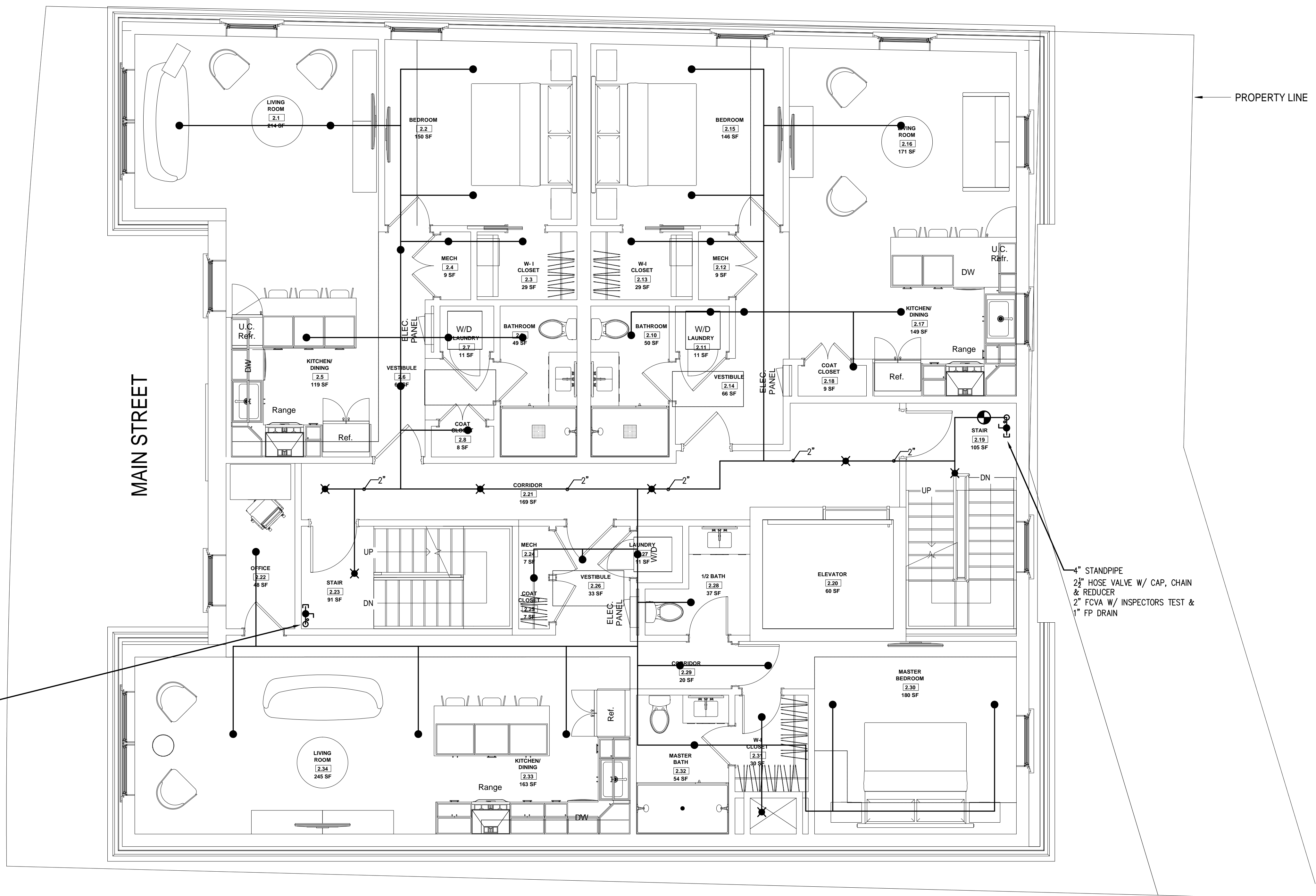






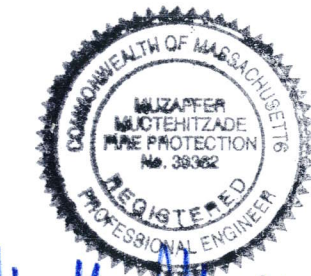
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ALL MECHANICAL SOFFITS TO BE COMPLETELY FILLED WIT NONCOMBUSTIBLE INSULATION



PROPERTY LINE

MAIN STREET



*Handwritten signature*

4" STANDPIPE  
 2 1/2" HOSE VALVE W/ CAP, CHAIN & REDUCER  
 2" FCVA W/ INSPECTOR'S TEST & 1" FP DRAIN

4" STANDPIPE  
 2 1/2" HOSE VALVE W/ CAP, CHAIN & REDUCER  
 2" FCVA W/ INSPECTOR'S TEST & 1" FP DRAIN

No.	Description	Date
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① Level 2 - Proposed  
 1/4" = 1'-0"

ZADE ASSOCIATES LLC  
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**HUS Companies**  
 979 Main St  
**FIRE PROTECTION PLAN**

Project number 221018  
 Date 04.07.2021  
 Drawn by JD  
 Checked by MM

**FP103**

Scale As indicated



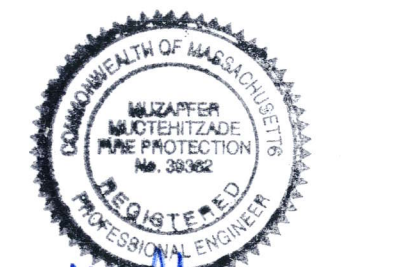








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*Matthew Mordale*

No.	Description	Date
1	For construction/ Permit	7-23-2021

**HUS Companies**  
 979 Main St  
**FIRE PROTECTION NOTES**

Project number	221018
Date	04.07.2021
Drawn by	JD
Checked by	MM

**FP201**

Scale As indicated

**FIRE PROTECTION SPECIFICATION**

**FIRE PROTECTION SPECIFICATION**

- BEFORE BIDDING THE JOB, CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY EXISTING CONDITIONS. REPORT ADVERSE CONDITIONS IN WRITING TO ARCHITECT.
- SPRINKLER PIPING SHALL BE SCH.10/40 BLACK STEEL WITH 125 LB. CAST IRON THREADED/GROOVED JOINTS WHERE EXPOSED. BLAZE-MASTER TYPE CPVC FOR FIRE PROTECTION SHALL BE INSTALLED CONCEALED AND PER MANUFACTURERS INSTRUCTIONS.
- SPRINKLER HEADS IN COMMON AREAS SHALL BE QUICK RESPONSE CONCEALED TYPE MANUFACTURED BY VIKING OR EQUAL. WITHIN UNITS THEY WILL BE RESIDENTIAL CONCEALED TYPE.
- APPLY AND OBTAIN PERMIT AND APPROVAL FROM LANDLORD'S INSURANCE COMPANY, FIRE DEPARTMENT AND STATE AND LOCAL AUTHORITIES.
- COORDINATE WITH ARCHITECT AND ARCHITECTURAL REFLECTED CEILING PLAN FOR THE LOCATION OF SPRINKLER HEADS.
- 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.
- 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.
- GUARANTEE ALL WORK AND MATERIAL FOR ONE YEAR FROM THE DATE OF ACCEPTANCE.

**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
	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"
	PRESSURE GAUGE
	HYDRAULIC JUNCTION POINT
	HYDRAULIC DISCHARGE NODE

**PREPARATION OF SHOP DRAWINGS:**

PER 7800CMR 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	-----	83 PSI
RESIDUAL	-----	78 PSI
FLOW	-----	1,349 GPM

NOTE:  
 INSTALLING CONTRACTOR SHALL OBTAIN CURRENT FLOW TEST DATA PRIOR TO CONSTRUCTION

**FIRE SPRINKLER LEGEND**

SYM	POSITION	FINISH	TEMP	K	NPT	SIN
	UPRIGHT	BRASS	155°	5.60	1/2"	EQ
	UPRIGHT	BRASS	200°	5.60	1/2"	EQ
	DRY UPRIGHT	BRASS	200°	5.60	1/2"	EQ
	PENDENT	CONCEALED	155°	5.60	1/2"	EQ
	RES PENDENT	CONCEALED	155°	4.90	1/2"	EQ
	DRY PENDENT	CONCEALED	155°	5.60	1/2"	EQ
	RES SIDEWALL	CONCEALED	155°	4.00	1/2"	VK480
	DRY SIDEWALL	CONCEALED	155°	5.60	1/2"	VS-1

**FIRE PROTECTION MATERIAL SCHEDULE**

SYSTEM	PIPE							FITTINGS				JOINTS					
	BLAZE-MASTER CPVC	DUCTILE IRON	EXTRA HEAVY CAST IRON	STEEL SCHED 10	STEEL SCHED 30	STEEL SCHED 40	STEEL SCHED 80	BLACK GALVANIZED	CEMENT LINED	MALLEABLE IRON	BLAZE-MASTER CPVC	LINED	BLACK GALVANIZED	DUCTILE IRON	MECH-JOINT-FLANGED	GROOVED	SLIP
<b>NOTES:</b> 1. COMPONENT PRESSURE RATING TO MATCH EXISTING 2. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE ENGINEER & LOCAL AUTHORITIES 2. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE ENGINEER & LOCAL AUTHORITIES																	
<b>BURIED BUILDING FIRE SERVICE</b>																	
<b>RESIDENTIAL CROSS MAINS</b>																	
<b>RESIDENTIAL BRANCH LINES</b>																	
<b>ARM-OVER &amp; DROPS</b>																	
<b>SPRINKLER DRAIN PIPE</b>																	

**DESIGN CRITERIA**

THE AUTOMATIC FIRE SUPPRESSION SYSTEM HAS BEEN DESIGNED PER NFPA-13 2013, CWR 780 WITH AMENDMENTS

1. THE DRAWINGS ARE INTENDED TO BE DIAGRAMMATIC IN NATURE AND MAY NOT DEPICT EVERY COMPONENT REQUIRED TO FURNISH A FULLY CODE COMPLIANT SYSTEM. THE FIRE PROTECTION CONTRACTOR IS REQUIRED TO PROVIDE ALL MATERIAL AND LABOR TO FURNISH A FULLY CODE COMPLIANT SYSTEM PER NFPA-13 2013

**PIPE, FITTINGS AND JOINTS**

- PIPE AND FITTINGS SHALL CONFORM TO THE LATEST ANSI, ASTM, NFPA AND AWWA STANDARDS INCLUDING LATEST AMENDMENTS AND SHALL BE LISTED FOR USE WITH FIRE SPRINKLER SYSTEMS
- SEE MATERIAL SCHEDULE ON DETAIL SHEET

**HANGERS AND SUPPORTS**

- 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.
- HANGER MATERIAL SHALL BE COMPATIBLE WITH PIPING MATERIALS WITH WHICH IT COMES INTO CONTACT.
- 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.
- HORIZONTAL RUNS MAY USE BAND HANGERS UP TO 4" SIZE. PIPING LARGER THAN 4" SHALL BE PROVIDED WITH CLEVIS TUBE.
- ALL RODS, CLAMPS, NUTS, WASHERS, SHIELDS AND HANGERS IN ALL AREAS SHALL BE ELECTRO-GALVANIZED COATED STEEL.

**VALVES AND SUNDRIES**

- 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.
- CHECK VALVES SHALL BE 175-POUND CLASS FOR FIRE PROTECTION.
- VALVES SHALL BE PROVIDED WITH SEATS SUITABLE FOR THE SERVICE INTENDED.
- 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.
- 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**

- SPRINKLER HEADS: QUICK RESPONSE, BULB TYPE, AND STYLE AS INDICATED OR REQUIRED BY THE APPLICATION. UNLESS OTHERWISE INDICATED.
- IN ALL OPEN AREAS, WHERE ELECTRICAL EQUIPMENT IS LOCATED, AN APPROVED TYPE SHIELD, TO KEEP WATER OFF THE ELECTRICAL EQUIPMENT, SHALL BE PROVIDED.
- PROVIDE ALL SPRINKLER HEADS WITH PROTECTIVE CAGE.
- 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. PRIOR TO INSTALLATION FIRE PROTECTION CONTRACTOR SHALL FURNISH COMPLETE TIER II SHOP DRAWINGS AND HYDRAULIC CALCULATIONS BASED ON A RECENT HYDRANT FLOW TEST FOR APPROVAL BY THE ENGINEER OF RECORD. FINAL AFFIDAVITS CANNOT BE ISSUED WITHOUT APPROVED SHOP DRAWINGS

**FLUSHING AND TESTING**

- 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.
- 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.
- 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.
- THE ENGINEER RETAINS THE RIGHT TO REQUEST A RECHECK OR RESETING OF ANY PUMP OR INSTRUMENT BY THIS CONTRACTOR DURING THE GUARANTEE PERIOD AT NO ADDITIONAL COST TO THE CONTRACTOR.
- 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.
- 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.
- 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.
- TESTING SHALL BE IN ACCORDANCE WITH NFPA-13 "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS".
- EACH SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE OF 200 PSI FOR TWO HOURS.
- FLUSHING OF ALL BURIED SUPPLY PIPING SHALL BE PERFORMED AT A MINIMUM RATE OF 880 GPM FOR SYSTEMS WITH A 6" SERVICE.
- ALL WATER FLOW DETECTING DEVICES AND CIRCUITS SHALL BE FLOW TESTED THROUGH THE INSPECTOR'S TEST CONNECTION AND ACTIVATE WITHIN FIVE MINUTES OF INITIATION.
- ALL FLOW TESTS ON THE FIRE PROTECTION SYSTEMS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION.
- 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**

- 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.
- THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ENGINEER OF RECORD AT SUCH A TIME WHERE THE INSTALLATION HAS PROGRESSED TO 90% AND PRIOR TO WALLS BEING CLOSED FOR INSPECTION.

**PATCHING, REPLACEMENT AND MODIFICATION OF EXISTING WORK**

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**

- GENERAL: INSTALL FIRE PROTECTION SPECIALTY VALVES, FITTINGS, AND SPECIALTIES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, NFPA 13 AND 14, AND THE AUTHORITY HAVING JURISDICTION.
- USE PROPER TOOLS TO PREVENT DAMAGE DURING INSTALLATIONS.
- ALL PENDENT MOUNTED SPRINKLERS SHALL BE INSTALLED ON RETURN BENDS.
- ALL SPRINKLERS INSTALLED IN ACOUSTICAL CEILING TILES SHALL BE CENTERED IN TILES WHERE APPLICABLE.
- COORDINATE AND VERIFY DRAFT CURTAINS ARE INSTALLED AS REQUIRED BY SPRINKLER HEAD SPECIFICATIONS
- CONTRACTOR IS RESPONSIBLE TO PROVIDE 100% SPRINKLED BUILDING INCLUDING ALL COMBUSTIBLE CONCEALED SPACES WHETHER SHOWN ON THIS PLAN OR NOT
- NO WORK SHALL COMMENCE BEFORE HAVING FULL APPROVAL FROM THIS OFFICE

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