

2018 IECC CODE COMPLIANCE

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

ROOMS CONTAINING FUEL-BURNING APPLIANCES WHERE OPEN COMBUSTION AIR DUCTS PROVIDE COMBUSTION AIR TO OPEN COMBUSTION FUEL BURNING APPLIANCES, THE APPLIANCES AND COMBUSTION AIR SHALL BE LOCATED OUTSIDE THE BUILDING THERMAL ENVELOPE OR ENCLOSED IN A ROOM ISOLATED FROM INSIDE THE THERMAL ENVELOPE. EXCEPTIONS: 1. DIRECT VENT APPLIANCES WITH BOTH INTAKE AND EXHAUST PIPES INSTALLED CONT TO THE OUTSIDE. 2. FIREPLACES AND STOVES COMPLYING WITH SECTION R402.4.2 AND SECTION R1006 OF THE IRC. RECESSED LIGHTING, RECESSED LUMINAIRES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE SEALED TO THE LIMIT AIR LEAKAGE.

TERMOSTAT - ALL DWELLING UNITS WILL HAVE AT LEAST ONE (1) PROGRAMMABLE THERMOSTAT FOR EACH SEPARATE HEATING AND COOLING SYSTEM AS PER 2018 IECC SECTION 403.1 WHERE A HEAT PUMP SYSTEM HAVING SUPPLEMENTARY ELECTRIC RESISTANCE HEAT IS USED.

TERMOSTAT SHALL PREVENT THE SUPPLEMENTARY HEAT FROM COMING ON WHEN HEAT PUMP CAN MEET HEATING LOAD.

MECHANICAL DUCT INSUL SUPPLY & RETURN DUCTS IN ATTIC = R-8 MIN, R-6 WHEN LESS THAN 3 INCHES SUPPLY AND RETURN DUCTS OUTSIDE OF CONDITIONED SPACES R-8 MIN. ALL OTHER DUCTS EXCEPT THOSE LOCATED COMPLETELY INSIDE THE BUILDING THERMAL ENVELOPE = R-6 DUCTS LOCATED UNDER CONCRETE SLABS = R-8 MIN.

DUCT SEALING ALL DUCT, AIR HANDLERS, FILTER BOXES WILL BE SEALED. JOINTS AND SEAMS WILL COMPLY WITH SECTION M1601.4.1 OR THE IRC. A DUCT TIGHTNESS TEST (DUCT BLASTER - DUCT TOTAL LEAKAGE TEST) WILL BE PERFORMED ON ALL HOMES AND SHALL BE VERIFIED BY EITHER A POST CONSTRUCTION TEST OR A ROUGH IN TEST. DUCT TIGHTNESS TEST IS NOT REQUIRED IF THE AIR HANDLER AND ALL DUCTS ARE LOCATED WITHIN CONDITIONED SPACE.

MECHANICAL VENTILATION OUTDOOR, (MAKE UP AND EXHAUST), AIR DUCTS TO BE PROVIDED WITH AUTOMATIC OR GRAVITY DAMPER THAT CLOSE WHEN THE VENTILATION SYSTEM IS NOT OPERATING.

WHOLE HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICIENCY TO COMPLY WITH TABLE R403.6.1 EQUIPMENT SIZING SHALL COMPLY WITH R403.7 LIGHTING EQUIPMENT A MINIMUM OF 75% OF ALL LAMPS (LIGHTS) MUST BE HIGH-EFFICIENCY LAMPS. THIS CONTRACTOR ALSO RESPONSIBLE FOR GENERATING A CERTIFICATE OF COMPLIANCE AND AFFIXING TO ELECTRICAL PANEL OR WITHIN 6 FEET OF THE ELEC PANEL AND BE READILY VISIBLE.

DRAWING LIST	
0000-G+G1	TITLE SHEET & SITE PLAN
0001-G+G2	CODE ANALYSIS & LIFE SAFETY PLAN
0002-G+G3	CODE ANALYSIS & LIFE SAFETY PLAN
0003-AD-AD1	BASEMENT AND FIRST FLOOR DEMO PLAN
0004-AD-AD2	SECOND AND THIRD FLOOR DEMO PLAN
0005-AD-AD3	FRONT AND REAR ELEVATION DEMO PLAN
0006-AD-AD4	SIDE ELEVATION DEMO PLAN
0007-S+S1	SECOND AND THIRD FLOOR FRAMING PLAN
0008-S+S2	ROOF FRAMING PLAN
0009-A+A1	BASEMENT AND FIRST FLOOR PLAN
0010-A+A2	SECOND AND THIRD FLOOR PLAN
0011-A+A3	ROOF PLAN AND DETAILS
0012-A+A4	FRONT AND REAR ELEVATION
0013-A+A5	SIDE ELEVATION
0014-A+A6	SECTION
0015-A+A7	CROSS SECTION
0016-A+A8	BASEMENT AND FIRST FLOOR CEILING PLAN
0017-A+A9	SECOND AND THIRD FLOOR CEILING PLAN
0018-A+A10	DOOR AND WINDOW SCHEDULE
0019-A+A11	FLOOD GATE SPECS
0020-M+M001	MECH COVER
0021-M+M002	MECH SPECIFICATIONS
0022-M+M101	MECH BASEMENT FIRST
0023-M+M102	MECH SECOND THIRD
0024-M+M103	MECH ROOF
0025-M+M201	MECH SCHEDULES
0026-M+M202	MECH SCHEDULES
0027-M+M301	MECH DETAILS
0028-M+M302	MECH DETAILS
0033-P+P001	PLUM COVER
0036-P+P002	PLUM SPECIFICATIONS
0037-P+P101	DOMESTIC WATER BASEMENT FIRST
0038-P+P102	DOMESTIC WATER SECOND THIRD
0039-P+P111	SANITARY VENT BASEMENT FIRST
0040-P+P112	SANITARY VENT SECOND THIRD
0041-P+P113	PLUM ROOF
0042-P+P201	PLUM SCHEDULES
0043-P+P301	PLUM RISER & DETAILS
0044-P+P302	PLUM GAS RISER & DETAILS
0045-P+P303	PLUM DETAILS
0046-P+P304	PLUM DETAILS
0050-E+E001	ELEC COVER
0051-E+E002	ELEC SPECIFICATIONS
0052-E+E101	ELEC BASEMENT FIRST
0053-E+E102	ELEC SECOND THIRD
0054-E+E201	ELEC SCHEDULES
0055-E+E301	ELEC DETAILS

ZONING & FIRE CODE ANALYSIS

ZONING DISTRICT = C-1

LOT SIZE = 22'-9" x 98'-7"  
2,172 SF  
80% LOT COVERAGE

EXISTING = 2 FULL FLOORS WITH PARTIAL THIRD FLOOR  
PROPOSED = 3 FULL FLOORS

USE - MIXED  
CHANGE IN USE  
SPRINLERED

MAX BUILDING HEIGHT = 41'-1"  
PROPOSED HEIGHT = 41'-1"

REAR YARD SETBACK REQUIRED = N/A  
REAR YARD SETBACK EXISTING = 20'-2"

SETBACK NOTES:  
SETBACK PROVIDED AT THE NEW THIRD FLOOR INFILL ADDITION OF 20'-2" ALIGNS WITH EXISTING SECOND FLOOR SETBACK

FIRST FLOOR IS 80% LOT COVERAGE WITH 20'-2" SETBACK

**27 S GAY ST**  
**BALTIMORE, MD 21202**

**INTERIOR RENOVATION/ REAR ADDITION**

APPLICABLE CODES	
BUILDING CODES	2018 INTERNATIONAL EXISTING BUILDING CODE 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL RESIDENTIAL CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 NATIONAL STANDARD PLUMBING CODE 2017 NATIONAL ELECTRICAL CODE 2018 INTERNATIONAL ENERGY CODE 2012 INTERNATIONAL GREEN CONSTRUCTION CODE
FIRE CODES	2018 NATIONAL FIRE PROTECTION ASSOC. (NFPA) 101 2018 EDITION NFPA 2018 INTERNATIONAL FIRE CODE
STATE OF MARYLAND	MARYLAND ACCESSIBILITY CODE GUIDELINES FOR BUILDINGS AND FACILITIES, COMAR 09.12.53 2010 AMERICANS DISABILITY ACT 1988 FEDERAL FAIR HOUSING AMENDMENTS ACT 2019 MARYLAND BUILDING PERFORMANCE STANDARDS BALTIMORE CITY BUILDING, FIRE, AND RELATED CODES (BCBFCR 2020 EDITION)

FIRE CODE NOTES:  
1-HOUR EA SIDE = PARTI WALL RATING ALONG PROPERTY LINE

INTERIOR RATINGS - MIXED USE  
1 HOUR FIRE RATED CEILING

OCCUPANT LOAD = "B" BUSINESS USE/ SINGLE TENANT  
BASEMENT - NOT IN SCOPE  
FIRST - 1,420 SF/ 100 SF = 14 PERSONS

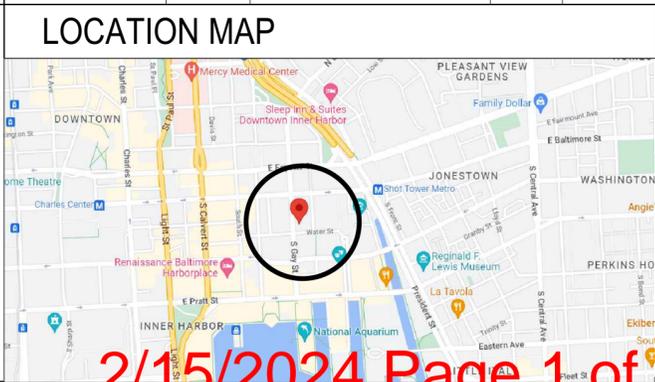
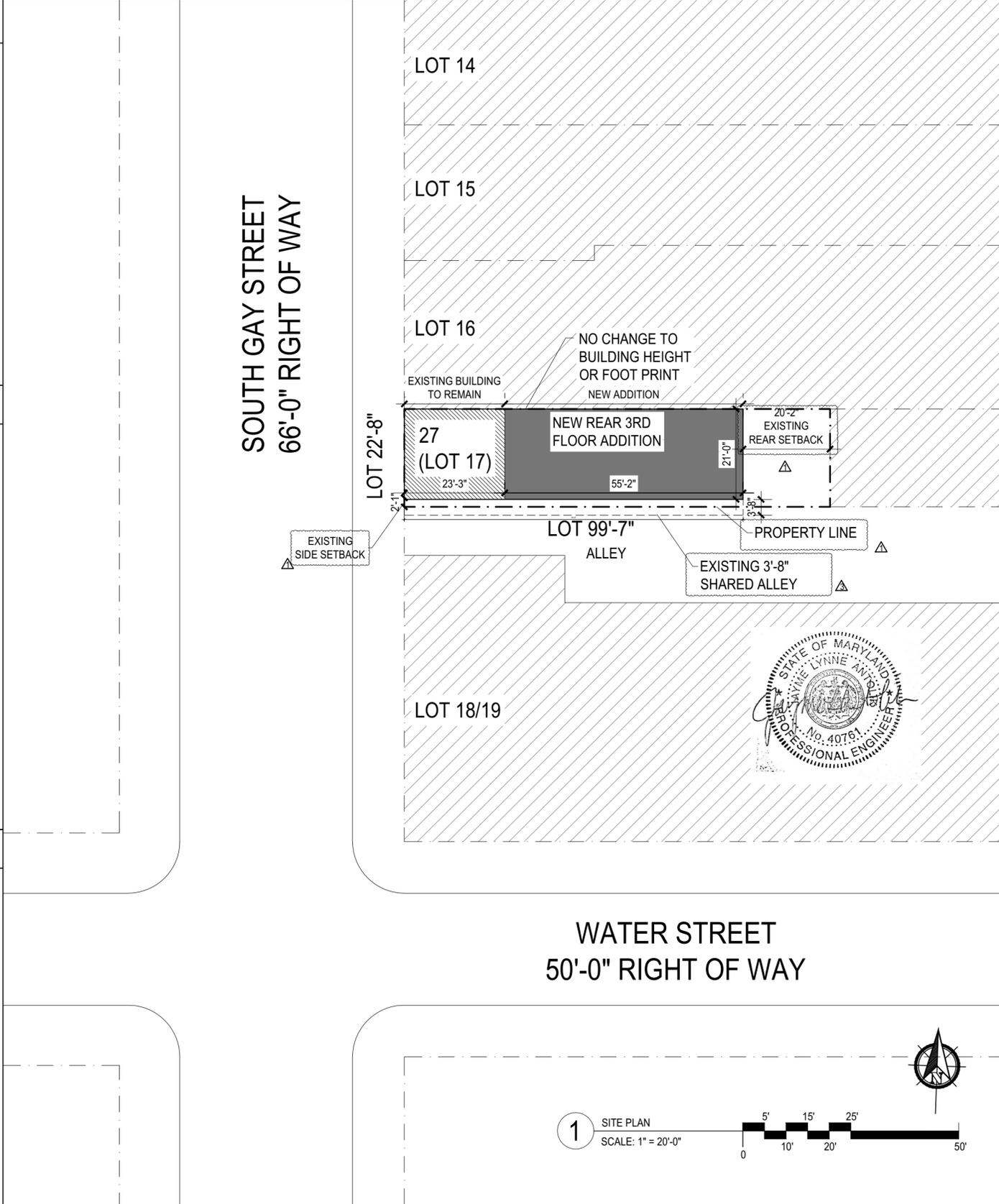
OCCUPANT LOAD = R-2 BOARDING HOUSE (NON-TRANSIENT)  
SECOND - 5 BEDROOMS \* 2 PERSONS = 10 PERSONS  
THIRD - 6 BEDROOMS \* 2 PERSONS = 12 PERSONS

TOTAL OCCUPANTS = 36

EXITING = BASEMENT - TWO EXITS PROVIDED (POINT OF DECISION)  
FIRST FLOOR - TWO EXITS TO DAYLIGHT PROVIDED  
SECOND FLOOR - TWO EXITS PROVIDED (POINT OF DECISION)  
THIRD FLOOR - ONE EXIT TO LOWER LEVEL

**0000-G=G1**  
**TITLE SHEET & SITE PLAN**

27 S GAY ST  
JOB #22-661  
APRIL 2023



LEGEND	
[Hatched Box]	NOT IN SCOPE
[Solid Grey Box]	EXISTING PROPERTY
[Dark Grey Box]	NEW ADDITION
[Dashed Line]	SUBJECT PROPERTY LINE
[Dotted Line]	CONTEXTUAL PROPERTY LINE
[Thin Solid Line]	SUBJECT BUILDING LINE
[Thick Solid Line]	CONTEXTUAL SITE LINE

BUILDING INFORMATION	
27 S GAY ST	MAP - 0004 / GRID - 0000 / PARCEL - 0000
WARD - 04 / SECTION - 11 / BLOCK - 1351 / LOT - 017	DEED REF - 05967/ 00085
LEGAL DESCRIPTION - 22'-9" x 98'-7"	ASSESSMENT YEAR - 2022

CONSTRUCTION TYPE :  
Type 3B - Masonry Ext Wall, Unprotected - Existing  
Type 3A - WD Exterior wall, Protected - Proposed

IBC USE GROUP :  
MIXED

27 S GAY ST - SITE PLAN  
WARD 04, SECTION 11, BLOCK 1351, LOT 017

INTERIOR RENOVATION/ REAR ADDITION  
SCALE : 1" = 20'-0"

OWNERSHIP :  
504 SOUTH BROADWAY LLC

OWNERSHIP ADDRESS :  
504 SOUTH BROADWAY  
BALTIMORE, MD 21231



PROFESSIONAL CERTIFICATION:  
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 15709, EXPIRATION DATE 3/27/2025.

CONTRACT DOCUMENTS HAVE BEEN PREPARED BY A LICENSED ARCHITECT FOR ARCHITECTURE DESIGN.  
MD Lic # 15709.

REVISIONS

- 7/10/2023 - Site plan update
- 8/29/2023 - Alley easement update
- 11/16/2023 - Shared Alley



CLIENT  
JARED RUSSELL

CARBALLO ARCHITECTURE, LLC  
1816 ALICEANNA ST. BALTIMORE, MD 21231  
ADAM CARBALLO, ARCHITECT  
MD LIC# 15709  
443-963-1077

2018 IECC CODE COMPLIANCE

R301.1 CITY OF BALTIMORE  
 R401.2 SIGNATURE READY SET  
 R402.1.1 2023-925  
 R402.1.2 INSULATION PLAN NUMBER  
 R402.1.2 WEATHER STRIPPING AND INSULATED R-49 BUILDING THERMAL ENVELOPE (AIR LEAKAGE) EXTERIOR WALLS AND PENETRATIONS WILL BE SEALED PER THIS SECTION OF THE 2018 IECC WITH CAULK, GASKETS, WEATHER STRIPPING OR AN AIR BARRIER OF SUITABLE MATERIAL. SEALING METHODS BETWEEN DISSIMILAR MATERIALS SHALL ALLOW SEALING FOR DIFFERENTIAL EXPANSION AND CONTRACTION. BUILDING ENVELOPE TIGHTNESS TEST.  
 R402.1.2 BUILDING ENVELOPE SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT EXCEEDING 3 AIR CHANGES PER HOUR. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM E 779 or ASTM E 1827 WITH (LOWER DOOR) AT A PRESSURE OF 0.2 INCHES w.g. (50 PASCALS). TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE BUILDING INSPECTOR.  
 R402.4.2 FIREPLACES: NEW WOOD BURNING FIREPLACES WILL HAVE TIGHT-FITTING FLUE DAMPERS OR DOORS, AND OUTDOOR COMBUSTION AIR FIREPLACE DOORS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 127 (FACTORY BUILT FIREPLACE) AND UL907 (MASONRY FIREPLACE).

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DRAWING LIST

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- 0001-G-02 CODE ANALYSIS & LIFE SAFETY PLAN
- 0002-G-03 CODE ANALYSIS & LIFE SAFETY PLAN
- 0003-AD-01 BASEMENT AND FIRST FLOOR DEMO PLAN
- 0004-AD-02 SECOND AND THIRD FLOOR DEMO PLAN
- 0005-AD-03 FRONT AND REAR ELEVATION DEMO PLAN
- 0006-AD-04 SIDE ELEVATION DEMO PLAN
- 0007-S-01 SECOND AND THIRD FLOOR FRAMING PLAN
- 0008-S-02 ROOF FRAMING PLAN
- 0009-A-01 BASEMENT AND FIRST FLOOR PLAN
- 0010-A-02 SECOND AND THIRD FLOOR PLAN
- 0011-A-03 ROOF PLAN AND DETAILS
- 0012-A-04 FRONT AND REAR ELEVATION
- 0013-A-05 SIDE ELEVATION
- 0014-A-06 SECTION
- 0015-A-07 CROSS SECTION
- 0016-A-08 BASEMENT AND FIRST FLOOR CEILING PLAN
- 0017-A-09 SECOND AND THIRD FLOOR CEILING PLAN
- 0018-A-10 DOOR AND WINDOW SCHEDULE
- 0020-M-M001 MECH COVER
- 0021-M-M002 MECH SPECIFICATIONS
- 0022-M-M101 MECH BASEMENT FIRST
- 0023-M-M102 MECH SECOND THIRD
- 0024-M-M103 MECH ROOF
- 0025-M-M201 MECH SCHEDULES
- 0026-M-M202 MECH SCHEDULES
- 0027-M-M301 MECH DETAILS
- 0028-M-M302 MECH DETAILS
- 0035-P-P001 PLUM COVER
- 0036-P-P002 PLUM SPECIFICATIONS
- 0037-P-P101 DOMESTIC WATER BASEMENT FIRST
- 0038-P-P102 DOMESTIC WATER SECOND THIRD
- 0039-P-P111 SANITARY VENT BASEMENT FIRST
- 0040-P-P112 SANITARY VENT SECOND THIRD
- 0041-P-P113 PLUM ROOF
- 0042-P-P201 PLUM SCHEDULES
- 0043-P-P301 PLUM RISER & DETAILS
- 0044-P-P302 PLUM GAS RISER & DETAILS
- 0045-P-P303 PLUM DETAILS
- 0046-P-P304 PLUM DETAILS
- 0050-E-E001 ELEC COVER
- 0051-E-E002 ELEC SPECIFICATIONS
- 0052-E-E101 ELEC BASEMENT FIRST
- 0053-E-E102 ELEC SECOND THIRD
- 0054-E-E201 ELEC SCHEDULES
- 0055-E-E301 ELEC DETAILS

APPLICABLE CODES

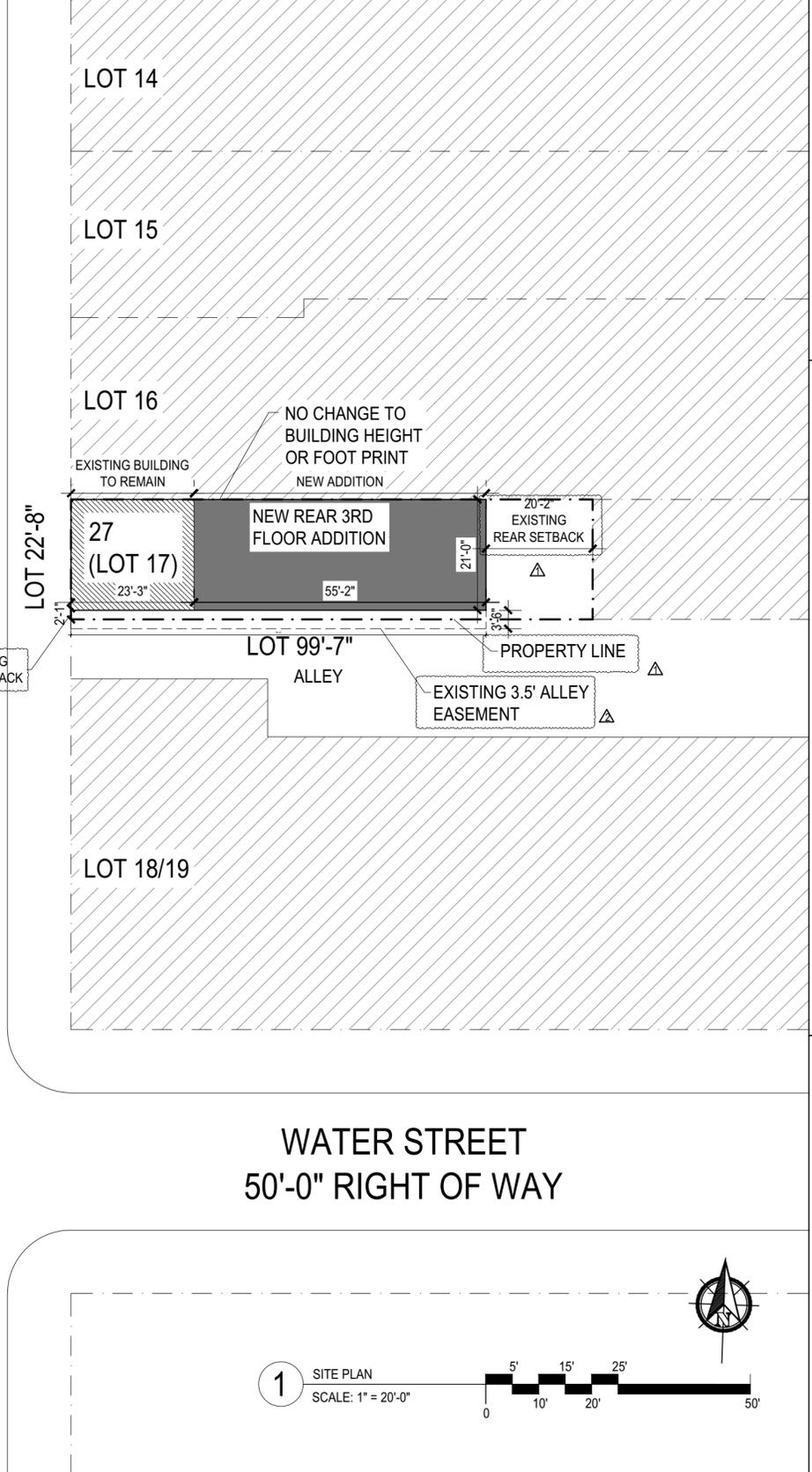
- BUILDING CODES
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  - 2018 INTERNATIONAL RESIDENTIAL CODE
  - 2018 INTERNATIONAL MECHANICAL CODE
  - 2018 NATIONAL STANDARD PLUMBING CODE
  - 2017 NATIONAL ELECTRICAL CODE
  - 2018 INTERNATIONAL ENERGY CODE
  - 2012 INTERNATIONAL GREEN CONSTRUCTION CODE
- FIRE CODES
  - 2018 NATIONAL FIRE PROTECTION ASSOC. (NFPA) 101
  - 2018 EDITION NFPA
  - 2018 INTERNATIONAL FIRE CODE
- STATE OF MARYLAND
  - MARYLAND ACCESSIBILITY CODE GUIDELINES FOR BUILDINGS AND FACILITIES, COMAR 09.12.53
  - 2010 STANDARDS FOR ACCESSIBLE DESIGN
  - 2010 AMERICANS DISABILITY ACT
  - 1988 FEDERAL FAIR HOUSING AMENDMENTS ACT
  - 2019 MARYLAND BUILDING PERFORMANCE STANDARDS
  - BALTIMORE CITY BUILDING, FIRE, AND RELATED CODES (BCBFC 2019 EDITION)

ZONING & FIRE CODE ANALYSIS

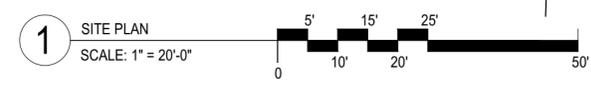
ZONING DISTRICT = C-1  
 LOT SIZE = 22'-9" x 98'-7"  
 2,172 SF  
 80% LOT COVERAGE  
 EXISTING = 2 FULL FLOORS WITH PARTIAL THIRD FLOOR  
 PROPOSED = 3 FULL FLOORS  
 USE - MIXED  
 CHANGE IN USE  
 SPRINKLERED  
 MAX BUILDING HEIGHT = 41'-1"  
 PROPOSED HEIGHT = 41'-1"  
 REAR YARD SETBACK REQUIRED = N/A  
 REAR YARD SETBACK EXISTING = 20'-2"  
 SETBACK NOTES:  
 SETBACK PROVIDED AT THE NEW THIRD FLOOR INFILL ADDITION OF 20'-2" ALIGNS WITH EXISTING SECOND FLOOR SETBACK  
 FIRST FLOOR IS 80% LOT COVERAGE WITH 20'-2" SETBACK

FIRE CODE NOTES  
 1-HOUR EA SIDE PARTI-WALL RATING ALONG PROPERTY LINE  
 INTERIOR RATINGS - MIXED USE  
 1 HOUR FIRE RATED CEILING  
 OCCUPANT LOAD = "B" BUSINESS USE/ SINGLE TENANT  
 BASEMENT - NOT IN SCOPE  
 FIRST - 1,420 SF/ 100 SF = 14 PERSONS  
 OCCUPANT LOAD = R-2 BOARDING HOUSE (NON-TRANSIENT)  
 SECOND - 5 BEDROOMS \* 2 PERSONS = 10 PERSONS  
 THIRD - 6 BEDROOMS \* 2 PERSONS = 12 PERSONS  
 TOTAL OCCUPANTS = 36  
 EXITING = BASEMENT - TWO EXITS PROVIDED (POINT OF DECISION)  
 FIRST FLOOR - TWO EXITS TO DAYLIGHT PROVIDED  
 SECOND FLOOR - TWO EXITS PROVIDED (POINT OF DECISION)  
 THIRD FLOOR - ONE EXIT TO LOWER LEVEL

SOUTH GAY STREET  
 66'-0" RIGHT OF WAY



WATER STREET  
 50'-0" RIGHT OF WAY



CONSTRUCTION TYPE :  
 Type 3B - Masonry Ext Wall, Unprotected - Existing  
 Type 3A - WD Exterior wall, Protected - Proposed  
 IBC USE GROUP :  
 MIXED  
 27 S GAY ST - SITE PLAN  
 WARD 04, SECTION 11, BLOCK 1351, LOT 017  
 INTERIOR RENOVATION/ REAR ADDITION  
 SCALE : 1" = 20'-0"

PROFESSIONAL CERTIFICATION:  
 I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 15709, EXPIRATION DATE 3/27/2025.  
 CONTRACT DOCUMENTS HAVE BEEN PREPARED BY A LICENSED ARCHITECT FOR ARCHITECTURE DESIGN.  
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REVISIONS  
 7/10/2023 - Site plan update  
 8/29/2023 - Alley easement update

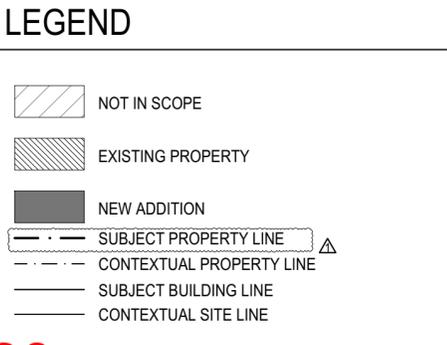
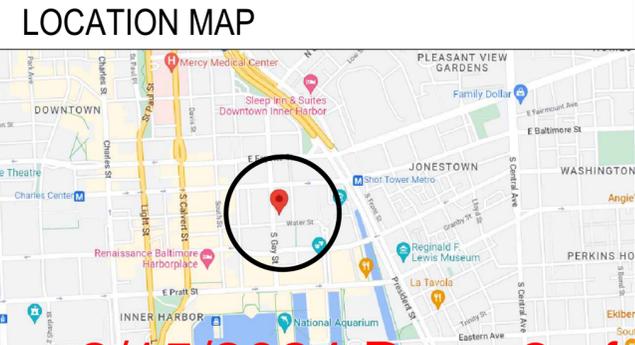
STATE OF MARYLAND ARCHITECT JARED RUSSELL

CLIENT JARED RUSSELL

CARBALLO ARCHITECTURE, LLC  
 1816 ALICEANNA ST. BALTIMORE, MD 21231  
 ADAM CARBALLO, ARCHITECT  
 MD LIC# 15709  
 443-963-1077

OWNERSHIP :  
 504 SOUTH BROADWAY LLC  
 OWNERSHIP ADDRESS :  
 504 SOUTH BROADWAY  
 BALTIMORE, MD 21231

27 S GAY ST  
 BALTIMORE, MD 21202  
 INTERIOR RENOVATION/ REAR  
 ADDITION



BUILDING INFORMATION

27 S GAY ST  
 MAP - 0004 / GRID - 0000 / PARCEL - 0000  
 WARD - 04 / SECTION - 11 / BLOCK - 1351 / LOT - 017  
 DEED REF - 05967/ 00085  
 LEGAL DESCRIPTION - 22'-9" x 98'-7"  
 ASSESSMENT YEAR - 2022

0000-G=G1  
 TITLE SHEET & SITE PLAN  
 27 S GAY  
 JOB #22-661  
 APRIL 2023

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

The Department of Housing and Community Development's Permits and Code Enforcement Division has completed a review of this document for code compliance.

As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.

**THIS DOCUMENT MAY NOT BE MODIFIED IN ANY WAY OTHER THAN TO AFFIX A SEAL, SIGNATURE AND DATE.**

The signed "Signature Ready Set" will give the electronic document from which it was created the same force and impact as if the electronic document were signed and sealed.

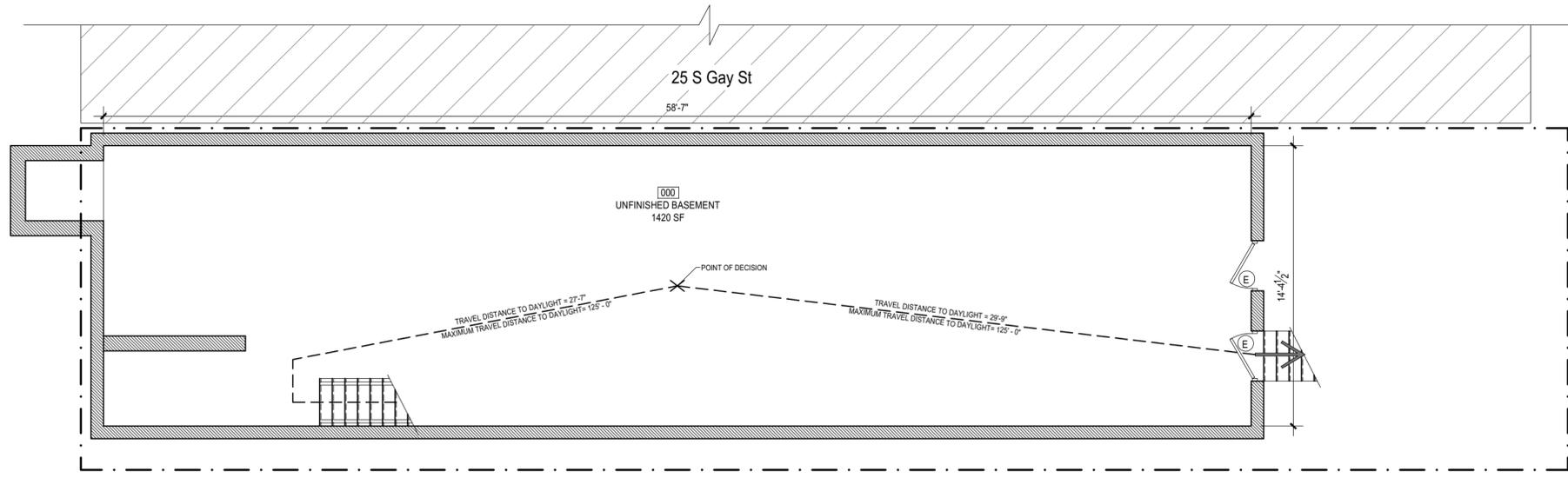
By signing this set, you are certifying that the "Signature Ready Set" has not been modified in any way that would make it different from the electronic document from which it was created.

CODE ANALYSIS	PROPOSED
USE GROUP	MIXED ("B" BUSINESS)
OCCUPANCY CAPACITY (NFPA 101)	
BASEMENT	<16
FIRST FLOOR	<16
OCCUPANCY CAPACITY (ICC CODE)	
BASEMENT	<20
FIRST FLOOR	<20
CONSTRUCTION TYPE	3A
SPRINKLER PROTECTION	YES
FIRE ALARM	YES
STANDPIPES	NO
BUILDING HEIGHT	41'-1"
NUMBER OF STORIES	THREE w/ BASEMENT
NUMBER OF EXITS REQUIRED/SHOWN	
BASEMENT	2/1
FIRST FLOOR	2/2
LOAD FACTORS	"B" BUSINESS/SINGLE TENANT
BASEMENT (UNFINISHED/UTILITY)	0 PERSONS (NON-OCCUPIED)
FIRST FLOOR	1,420 SF/ 100 SF = 14 PERSONS
	TOTAL OCCUPANTS 14

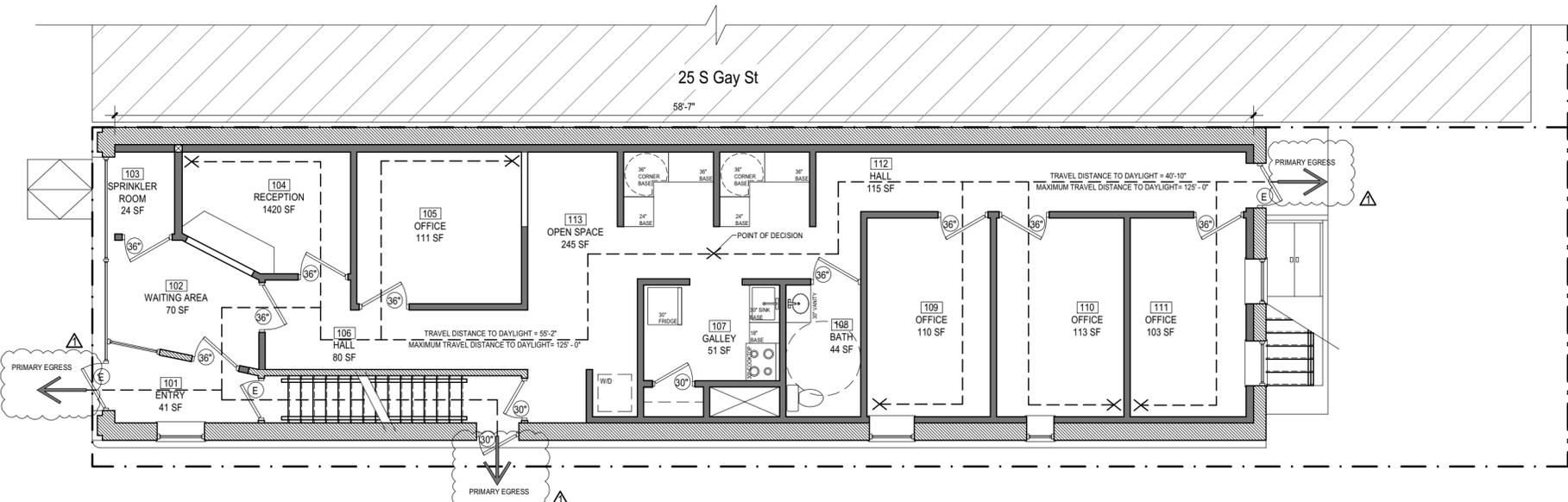
PROFESSIONAL CERTIFICATION: I, ANTONIO S. CARBALLO, ARCHITECT, NO. 15220, STATE OF MARYLAND, LICENSE NUMBER 15220, EXPIRES 03/31/2025. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR ARCHITECTURE DESIGN. MD § 1-103(b)

REVISIONS  
 7/10/2023  
 -Primary egress notes

DRAWN BY



**B** BASEMENT LIFE SAFETY PLAN  
 NOT TO SCALE



**1** FIRST FLOOR PLAN  
 NOT TO SCALE



CLIENT  
 504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALCEANNA ST. BALTIMORE, MD 21231  
 ANTONIO S. CARBALLO, ARCHITECT  
 15220  
 443-963-1077

**0001-G=G2**  
 LIFE SAFETY AND CODE ANALYSIS  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023

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WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

REMOVE ALL FIXTURES, FITTINGS AND FINISHES. PREP FOR NEW INTERIOR AS SCHEDULED

STAIRS ETR. REPAIR IN PLACE AS NEEDED

PARTIAL DEMO OF JOISTS. PREP FOR NEW INTERIOR AS SCHEDULED

REMOVE ALL FIXTURES, FITTINGS AND FINISHES. PREP FOR NEW INTERIOR AS SCHEDULED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

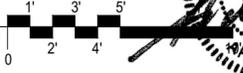
EXTERIOR STAIRS ETR. REPAIR IN PLACE AS NEEDED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

**2** SECOND FLOOR DEMO PLAN  
 SCALE: 3/16" = 1'-0"



WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

WINDOWS EXISTING TO REMAIN. REPAIR IN PLACE IN KIND AS NEEDED

REMOVE ALL FIXTURES, FITTINGS AND FINISHES. PREP OR NEW INTERIOR AS SCHEDULED

DEMO EXISTING REAR WALL. PREP FOR NEW INTERIOR LAYOUT AS SCH'D

DEMO EXISTING ROOF. PREP FOR NEW ADDITION AS SCH'D

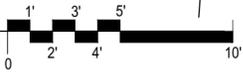
STAIRS ETR. REPAIR IN PLACE AS NEEDED

DEMO EXISTING PARAPET. PREP FOR NEW INTERIOR LAYOUT AS SCH'D

DEMO EXISTING CHIMNEY. PREP FOR NEW ADDITION AS SCH'D

WALL BELOW

**3** THIRD FLOOR DEMO PLAN  
 SCALE: 3/16" = 1'-0"



**LEGEND**

- NOT IN SCOPE
- DEMO PARTITION
- EXISTING PARTITION TO REMAIN

**GENERAL NOTES**

- DO NOT SCALE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR PULLING ALL PERMITS AND PAYING ANY ASSOCIATIVE FEES.
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- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **36"** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

**0004-AD-AD2**  
 SECOND & THIRD FLOOR DEMO  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023

CLIENT  
 504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALICEANNA ST. BALTIMORE, MD 21231  
 ADAM CARBALLO, ARCHITECT  
 443-963-1077



DRAWN BY

REVISIONS

PROFESSIONAL CERTIFICATION: THIS SET OF DRAWINGS WAS PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE STATE OF MARYLAND. LICENSE NUMBER: 17202. EXPIRES: 12/31/2025. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR ARCHITECTURE DESIGN. MD 16.4-101B

**City of Baltimore**  
**SIGNATURE READY SET**

Plan Number: **2023-925**

The Department of Housing and Community Development's Permits and Code Enforcement Division has completed a review of this document for code compliance.

As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.

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PROFESSIONAL CERTIFICATION  
I, ANTHONY S. CARBALLO, ARCHITECT, NO. 11103, AM I A LICENSED ARCHITECT IN THE STATE OF MARYLAND. LICENSE NUMBER: 11103. EXPIRES: 12/31/2025. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR ARCHITECTURE DESIGN. MD L & P 10-10

REVISIONS

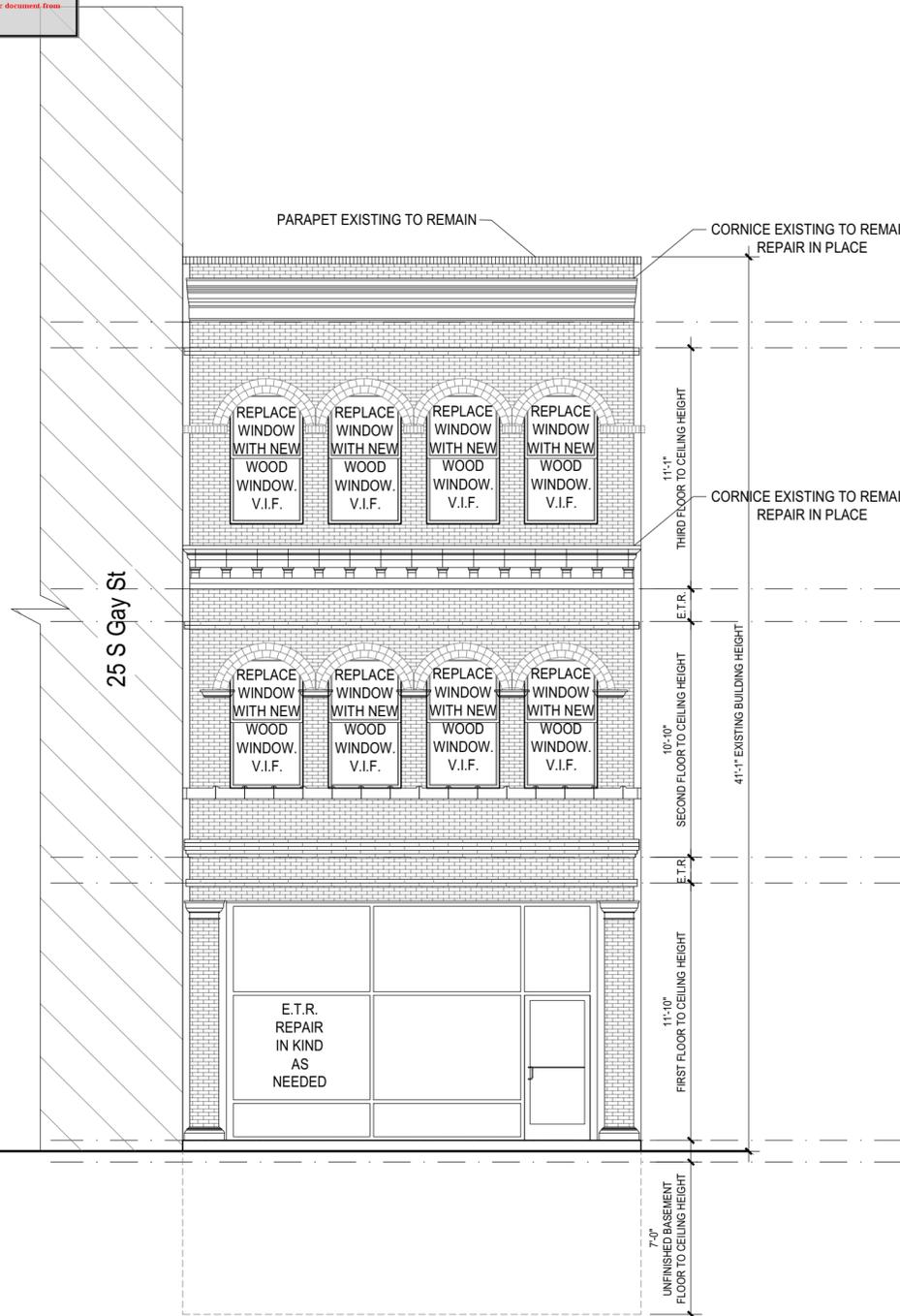
DRAWN BY



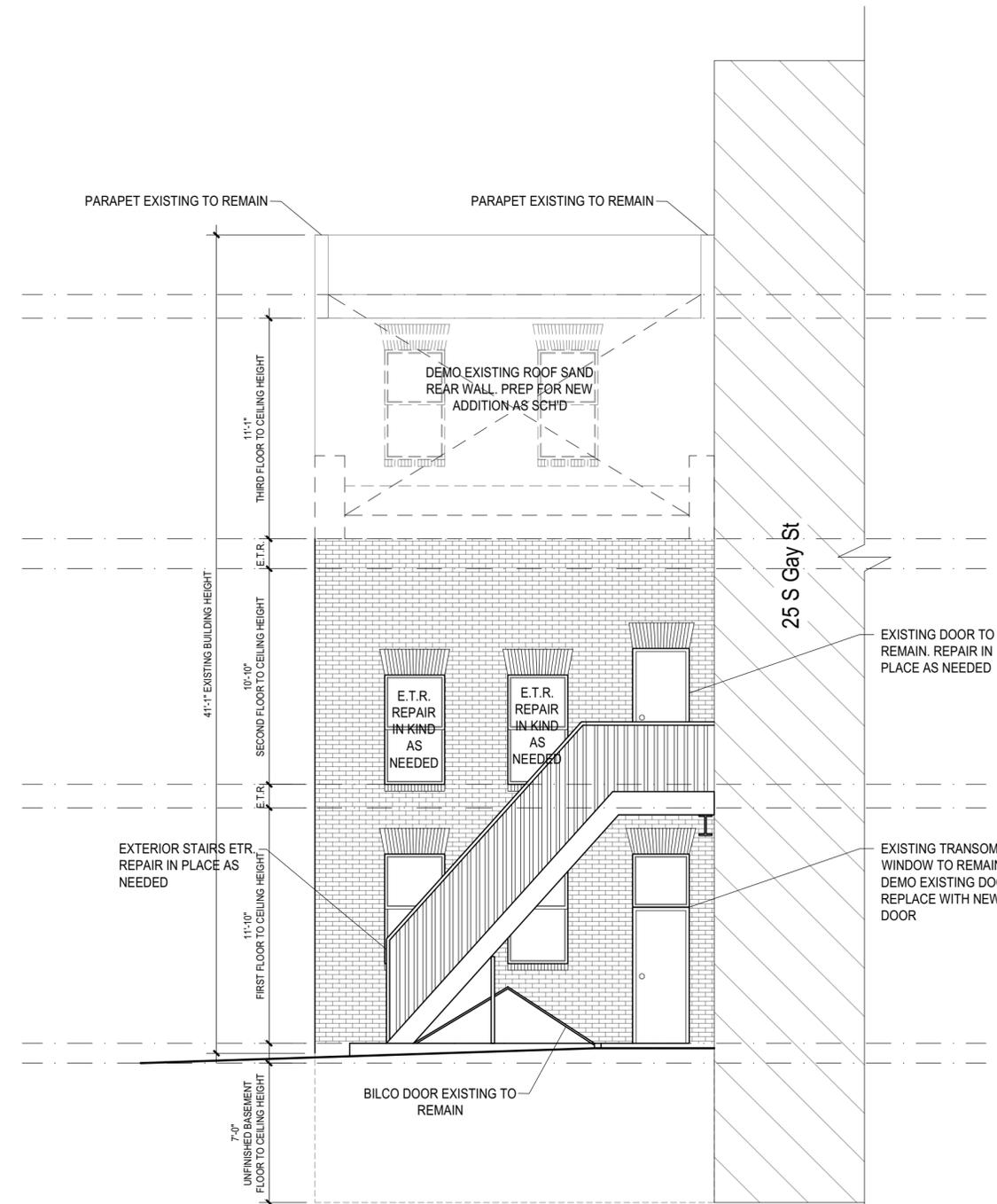
CLIENT  
504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
1816 ALICEANNA ST. BALTIMORE, MD 21231  
ANTHONY S. CARBALLO, ARCHITECT  
NO. 11103  
443-963-1077

0005-AD-AD3  
FRONT AND REAR DEMO ELEVATION  
27 S. GAY ST  
JOB # 22-661  
APRIL 2023



**1** FRONT DEMO ELEVATION  
SCALE: 3/16" = 1'-0"  
0 1 2 3 4 5 10'



**2** REAR DEMO ELEVATION  
SCALE: 3/16" = 1'-0"  
0 1 2 3 4 5 10'

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

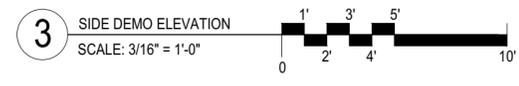
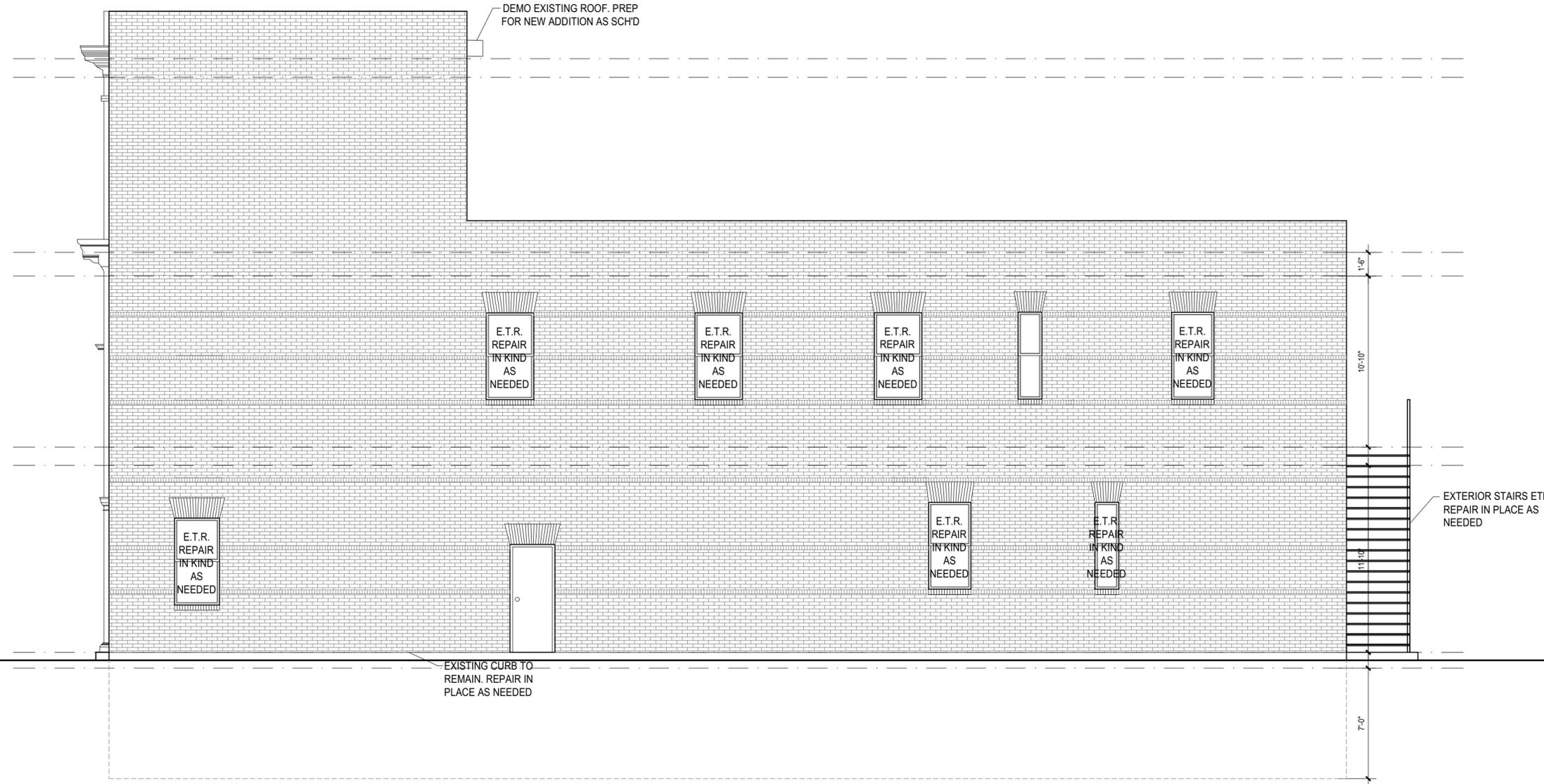
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PROFESSIONAL CERTIFICATION: I, \_\_\_\_\_, ARCHITECT, NO. \_\_\_\_\_, STATE OF MARYLAND, LICENSE NUMBER \_\_\_\_\_, EXPIRES \_\_\_\_\_, DATE 3/27/2025. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED BY ME FOR ARCHITECTURE DESIGN. MD REG # 1978

REVISIONS  
 \_\_\_\_\_

DRAWN BY \_\_\_\_\_



EXTERIOR STAIRS ETR. REPAIR IN PLACE AS NEEDED

CLIENT  
 504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALICEANNA ST. BALTIMORE, MD 21231  
 ADAM CARBALLO, ARCHITECT  
 443-963-1077

**0006-AD-AD4**  
 SIDE DEMO ELEVATION  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023

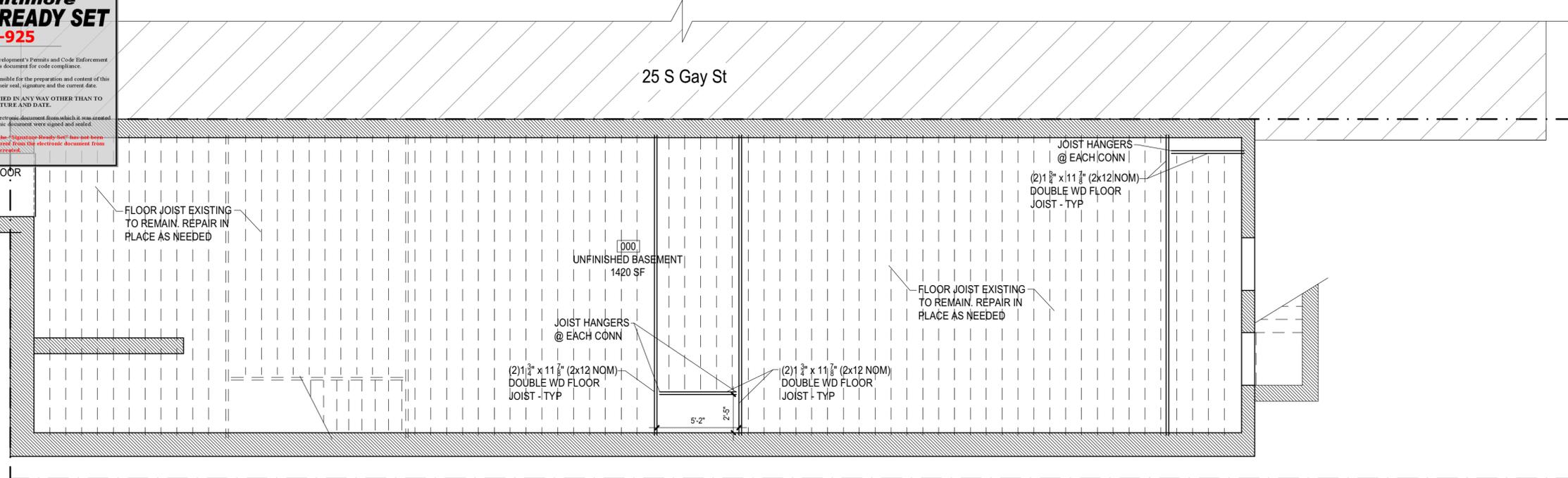
**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_  
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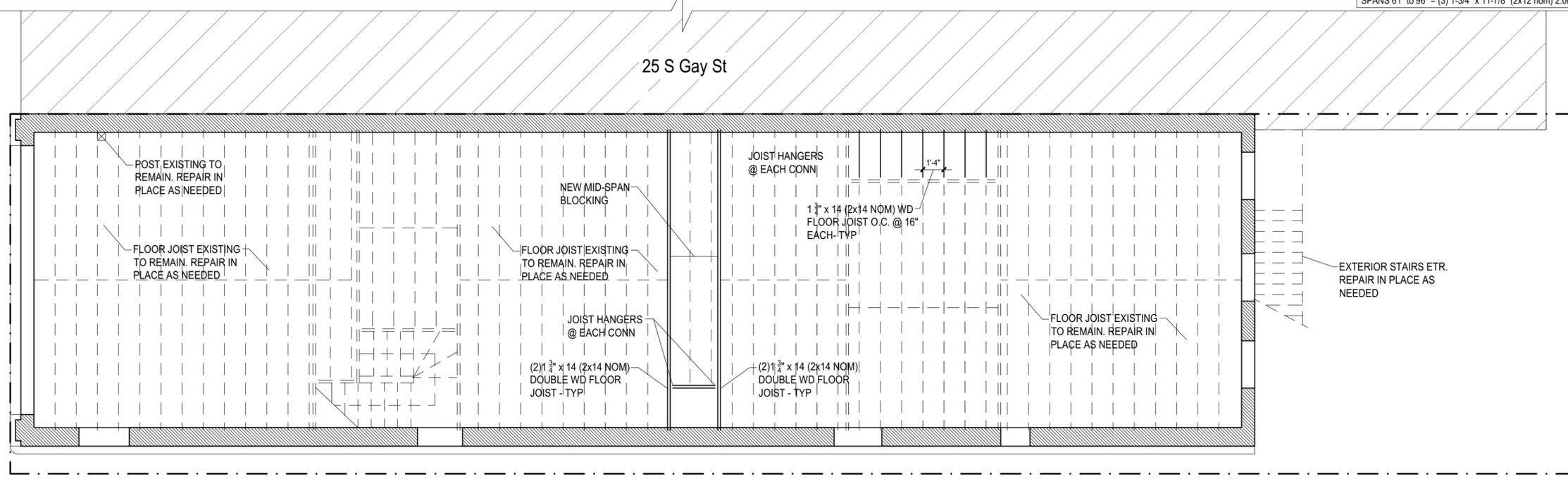
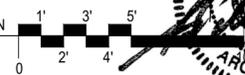
TYPICAL DOOR & WINDOW HEADER SCHEDULE

SPANS 0" to 36" =	(3) 1-1/2" x 9-1/4" (2x10 nom) DIMENSIONAL LUMBER
SPANS 37" to 60" =	(3) 1-1/2" x 11-1/4" (2x12 nom) DIMENSIONAL LUMBER
SPANS 61" to 96" =	(3) 1-3/4" x 11-7/8" (2x12 nom) 2.0E MICROLAM LVL

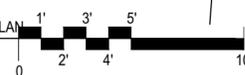
PROFESSIONAL CERTIFICATION  
I, ADAM CARBALLO, ARCHITECT, NO. 15223  
AM A LICENSED PROFESSIONAL ARCHITECT IN THE STATE OF MARYLAND. LICENSE NUMBER: 15223. EXPIRES 12/31/2025.  
CONTRACT DOCUMENTS HAVE BEEN REVIEWED FOR ARCHITECTURE DESIGN.  
DATE: 4/15/2024



**1** FIRST FLOOR FRAMING PLAN  
SCALE: 3/16" = 1'-0"



**2** SECOND FLOOR FRAMING PLAN  
SCALE: 3/16" = 1'-0"



**LEGEND**

	NOT IN SCOPE
	EXISTING PARTITION TO REMAIN
	NEW PARTITION
	NEW 2-hr FIRE RATED PARTITION UL DESIGN No. U301

**GENERAL NOTES**

- DO NOT SCALE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR PULLING ALL PERMITS AND PAYING ANY ASSOCIATIVE FEES.
- CONTRACTOR SHALL COMPLY WITH ALL HEALTH AND LIFE SAFETY REQUIREMENTS AS DIRECTED BY CITY OF BALTIMORE AND THE STATE OF MARYLAND.
- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **36"** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

CLIENT  
504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
1816 ALICEANNA ST. BALTIMORE, MD 21231  
ADAM CARBALLO, ARCHITECT  
NO. 15223  
443-963-1077

**0007-S=S1**  
FIRST & SECOND FLOOR FRAMING  
27 S. GAY ST  
JOB # 22-661  
APRIL 2023

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

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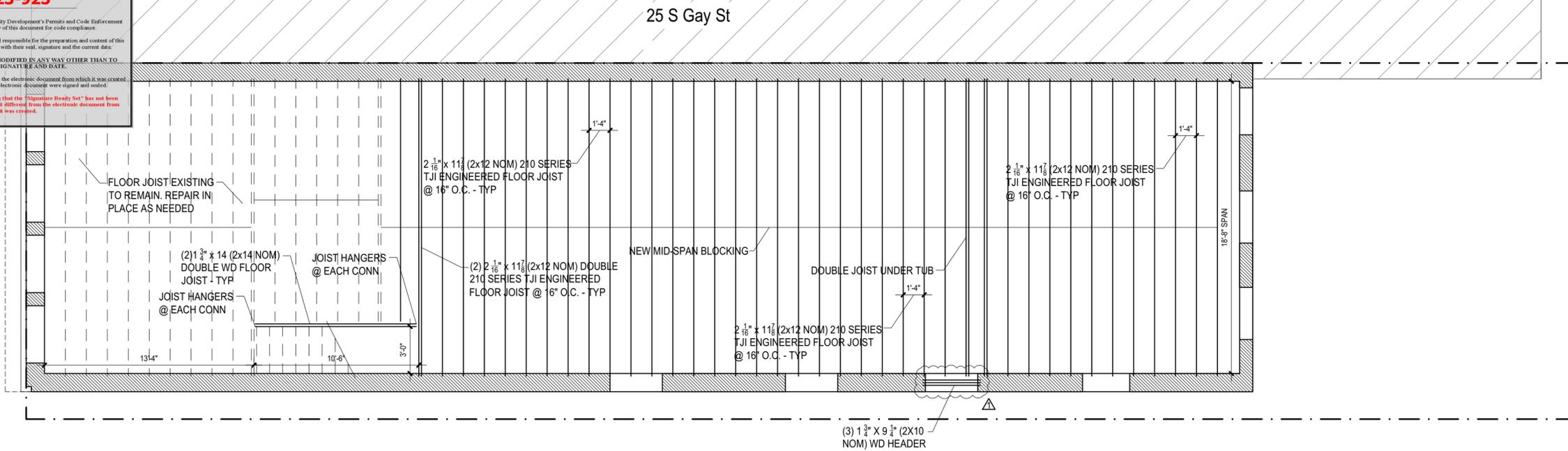
TYPICAL DOOR & WINDOW HEADER SCHEDULE

SPANS 0" to 36" = (3) 1-1/2" x 9-1/4" (2x10 nom) DIMENSIONAL LUMBER
SPANS 37" to 60" = (3) 1-1/2" x 11-1/4" (2x12 nom) DIMENSIONAL LUMBER
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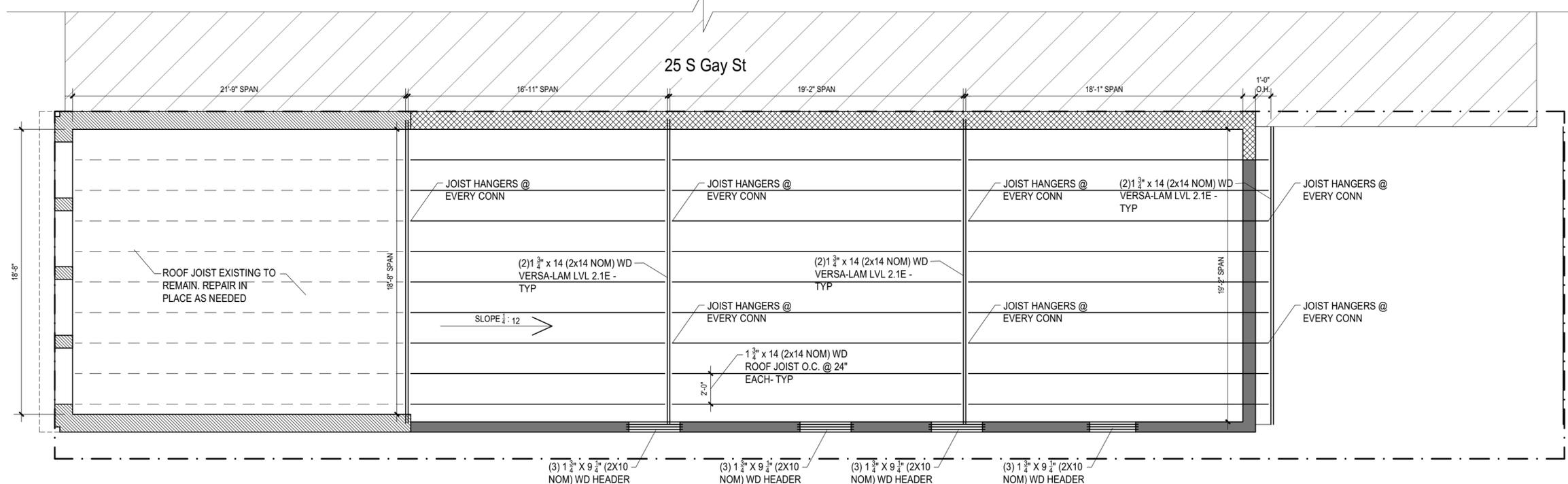
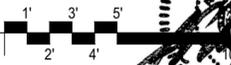
PROFESSIONAL CERTIFICATION  
 I, ANTONIO S. CARBALLO, ARCHITECT, NO. 12203, AMOUNT OF FEE \$1,000.00, LICENSE NUMBER 12203, EXPIRES 12/31/2024, CONTRACT DOCUMENTS HAVE BEEN REVIEWED FOR ARCHITECTURE DESIGN, MD L & P 10-10

REVISIONS  
 7/10/2023  
 -UPDATED WINDOW WIDTH

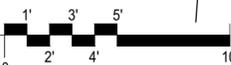
DRAWN BY



**3** THIRD FLOOR FRAMING PLAN  
 SCALE: 3/16" = 1'-0"



**R** ROOF FRAMING PLAN  
 SCALE: 3/16" = 1'-0"



CLIENT  
 SOUTH BROADWAY LLC  
 500 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALCENNA ST. BALTIMORE, MD 21231  
 ANTONIO S. CARBALLO, ARCHITECT  
 12203  
 443-963-1077

**LEGEND**

	NOT IN SCOPE
	EXISTING PARTITION TO REMAIN
	NEW PARTITION

- GENERAL NOTES**
- DO NOT SCALE DRAWINGS.
  - CONTRACTOR IS RESPONSIBLE FOR PULLING ALL PERMITS AND PAYING ANY ASSOCIATIVE FEES.
  - CONTRACTOR SHALL COMPLY WITH ALL HEALTH AND LIFE SAFETY REQUIREMENTS AS DIRECTED BY CITY OF BALTIMORE AND THE STATE OF MARYLAND.
  - INTERIOR FINISHES ARE CLIENT'S CHOICE
  - INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
  - DOOR TYPE SYMBOL **36"** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

0008-S=S2  
 ROOF AND THIRD FLOOR FRAMING  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023

**City of Baltimore  
SIGNATURE READY SET**

Plan Number: **2023-925**

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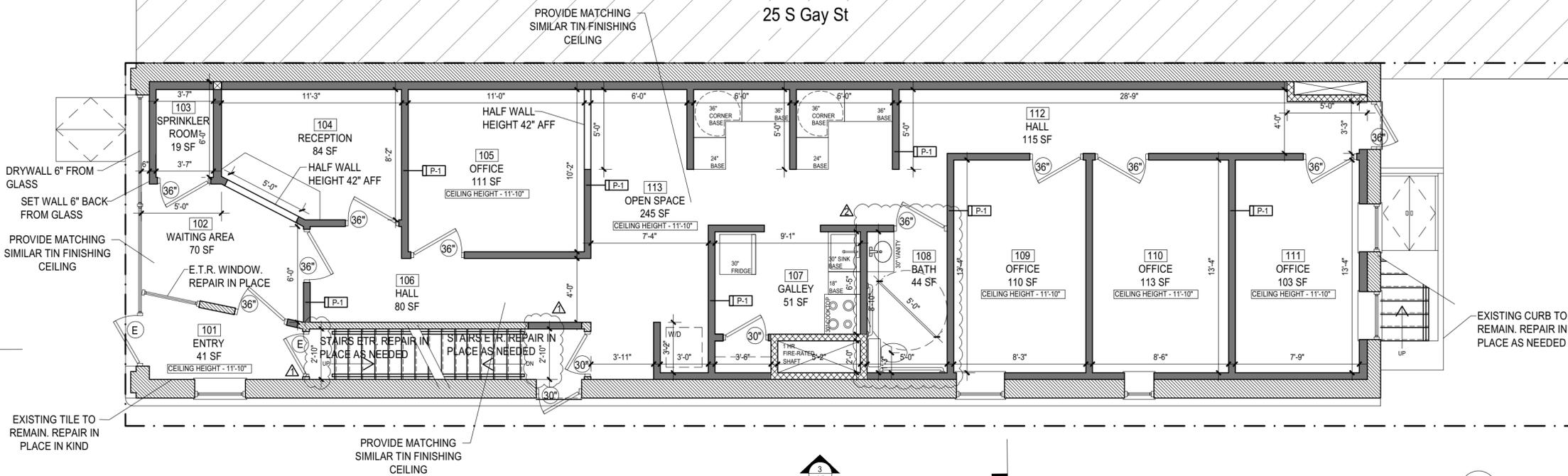
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25 S Gay St

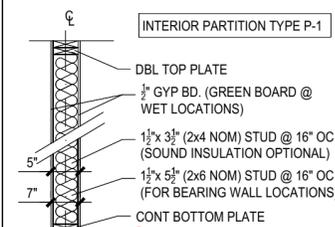
[000]  
UNFINISHED BASEMENT  
1420 SF  
CEILING HEIGHT - 7'-0"

**B** BASEMENT PLAN  
SCALE: 3/16" = 1'-0"

25 S Gay St



**1** FIRST FLOOR PLAN  
SCALE: 3/16" = 1'-0"



**LEGEND**

- NOT IN SCOPE
- EXISTING PARTITION TO REMAIN
- NEW PARTITION
- NEW 2-hr FIRE RATED PARTITION UL DESIGN No. U301

**GENERAL NOTES**

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- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8\"/> HEIGHT.



PROFESSIONAL CERTIFICATION: I, ADAM CARBALLO, ARCHITECT, LICENSE NO. 17177, STATE OF MARYLAND, LICENSE NUMBER 17177, EXPIRES 07/31/2025. CONTRACT DOCUMENTS HAVE BEEN REVIEWED FOR ARCHITECTURE DESIGN. MD REG 1018

**REVISIONS**  
 1 7/10/2023 - Existing stair dimension  
 2 7/10/2023 - ADA BATHROOM

DRAWN BY



CLIENT  
504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
1816 ALCEANNA ST. BALTIMORE, MD 21231  
ADAM CARBALLO, ARCHITECT  
443-963-1077

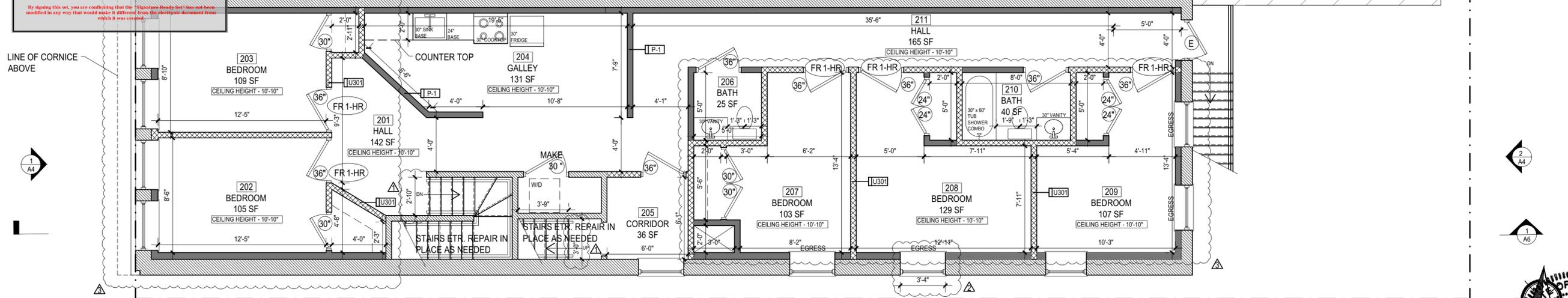
**0009-A=A1**  
BASEMENT & FIRST FLOOR PLAN  
27 S. GAY ST  
JOB # 22-661  
APRIL 2023

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

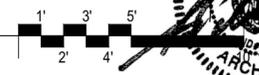
Plan Number: 2023-925  
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LINE OF CORNICE ABOVE

25 S Gay St



**2** SECOND FLOOR PLAN  
SCALE: 3/16" = 1'-0"



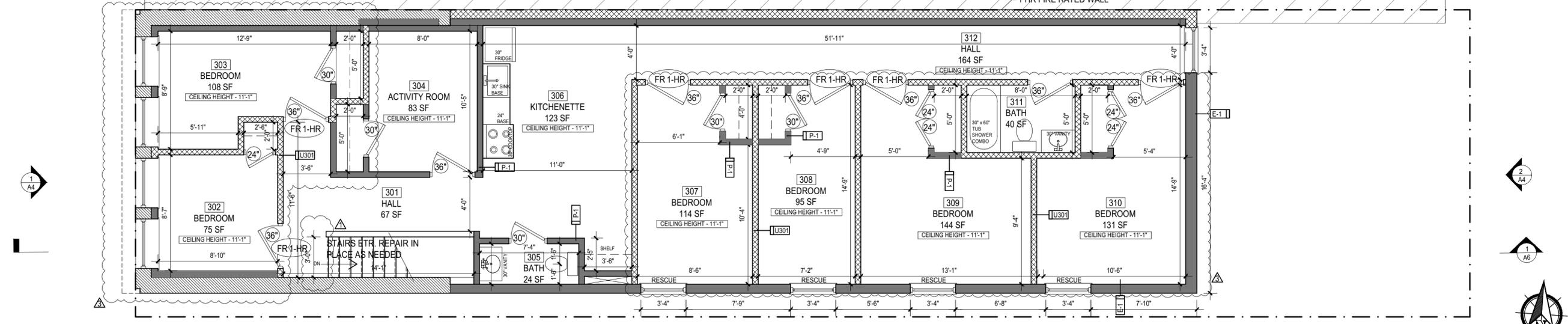
REVISIONS

7/10/2023	-Existing stair dimension
7/10/2023	-Rescue window update
7/10/2023	-ROOM FIRE SEPERATION

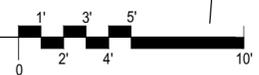
DRAWN BY

25 S Gay St

1 HR FIRE RATED WALL

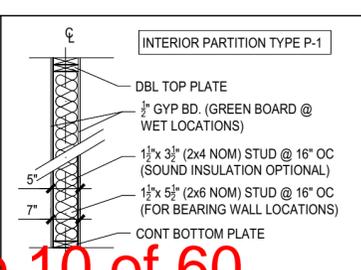
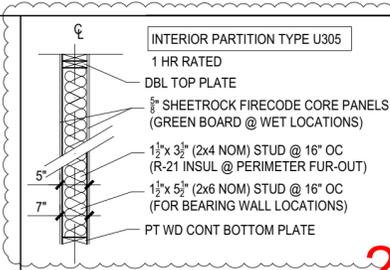


**3** THIRD FLOOR PLAN  
SCALE: 3/16" = 1'-0"



CLIENT  
504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
1816 ALCEANNA ST. BALTIMORE, MD 21231  
ADAM CARBALLO, ARCHITECT  
12/25/2019  
443-963-1077



**LEGEND**

	NOT IN SCOPE
	EXISTING PARTITION TO REMAIN
	NEW PARTITION
	NEW 1-hr FIRE RATED PARTITION

**GENERAL NOTES**

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- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **36"** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

0010-A=A2  
SECOND & THIRD FLOOR PLAN  
27 S. GAY ST  
JOB # 22-661  
APRIL 2023

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

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EXISTING TO REMAIN  
 CORNICE. REPAIR IN  
 PLACE AS NEEDED

1  
 A4

1  
 A4

3  
 A5

25 S Gay St

RUBBER ROOF  
 MEMBRANE

SLOPE 1:12

RUBBER ROOF  
 MEMBRANE

OPTION 1: MIN C-CLASS ROOF COVERING w/  
 NON-COMBUSTIBLE ROOF SHEATHING  
 OR FRP MD @ 4'-0" OF PROPERTY LINE  
 AS PER IRC 2018 SECTION R302.2.4

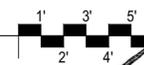
OPTION 2: CONT 5/8" TYPE-X GYP BD DIRECTLY BENEATH  
 ROOF DECKING / SHEATHING SUPPORTED BY 2" MIN (NOM)  
 LEDGERS ATTACHED TO ROOF FRAMING SIDES w/ IN  
 4'-0" OF PROPERTY LINE AS PER IRC 2018 SECTION R302.2.4

5" K-CHANNEL MTL GUTTER  
 AND DOWN SPOUT

EXISTING PARAPET TO REMAIN

55'-2" NEW PARAPET ADDITION

**R** ROOF PLAN  
 SCALE: 3/16" = 1'-0"



REVISIONS

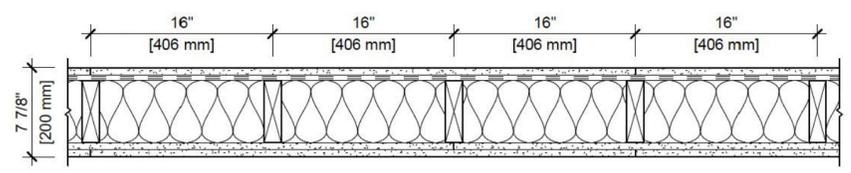
1 7/10/2023  
 - Roof drainage

2 7/10/2023  
 - 1 Hour Fire-rated floor

DRAWN BY

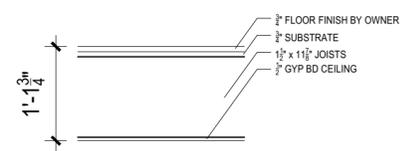
**DESIGN NO. UL U305**

FIRE RATING: 1 HOUR  
 STC RATING: 53  
 SOUND TEST: USG-161213  
 SYSTEM THICKNESS: 7-7/8" [200 MM]  
 LOCATION: INTERIOR  
 FRAMING TYPE: WOOD STUD (LOAD-BEARING)

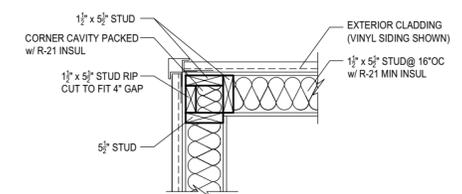


**ASSEMBLY REQUIREMENTS:**

GYPSUM PANELS: ONE LAYER 5/8" [15.9 MM] SHEETROCK® GYPSUM PANEL (UL TYPE SCX)  
 RESILIENT CHANNEL: 1/2" [12.7 MM] RESILIENT CHANNEL, 25 GA. (0.018"), 24" [610 MM] O.C.  
 WOOD STUDS: 2" X 6" [38 X 140 MM] WOOD STUDS, 16" [406 MM] O.C.  
 INSULATION: 6-1/4" [159 MM] FIBERGLASS INSULATION  
 GYPSUM PANELS: TWO LAYERS 5/8" [15.9 MM] SHEETROCK® GYPSUM PANEL (UL TYPE SCX)



**1** TYP FLOOR BUILD UP  
 SCALE: 1" = 1'-0"



**2** TYP CORNER FRAMING DETAIL  
 SCALE: 1" = 1'-0"

**LEGEND**

- NOT IN SCOPE
- EXISTING PARTITION TO REMAIN
- NEW PARTITION

**GENERAL NOTES**

- DO NOT SCALE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR PULLING ALL PERMITS AND PAYING ANY ASSOCIATIVE FEES.
- CONTRACTOR SHALL COMPLY WITH ALL HEALTH AND LIFE SAFETY REQUIREMENTS AS DIRECTED BY CITY OF BALTIMORE AND THE STATE OF MARYLAND.
- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **36"** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

CLIENT  
 504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALICEANNA ST. BALTIMORE, MD 21231  
 ADAM CARBALLO, ARCHITECT  
 443-963-1077

**0011-A=A3**  
 ROOF PLAN & DETAILS  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023

**City of Baltimore**  
**SIGNATURE READY SET**

Plan Number: **2023-925**

The Department of Housing and Community Development's Permits and Code Enforcement Division has completed a review of this document for code compliance.  
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PROFESSIONAL CERTIFICATION: I, ADAM CARBALLO, ARCHITECT, LICENSE NUMBER 17009, STATE OF MARYLAND, LICENSE EXPIRES 3/27/2025, HAVE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE ARCHITECTURE ACT OF THE STATE OF MARYLAND. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR ARCHITECTURE DESIGN. MD L & P 1016

REVISIONS

NO.	DATE	DESCRIPTION

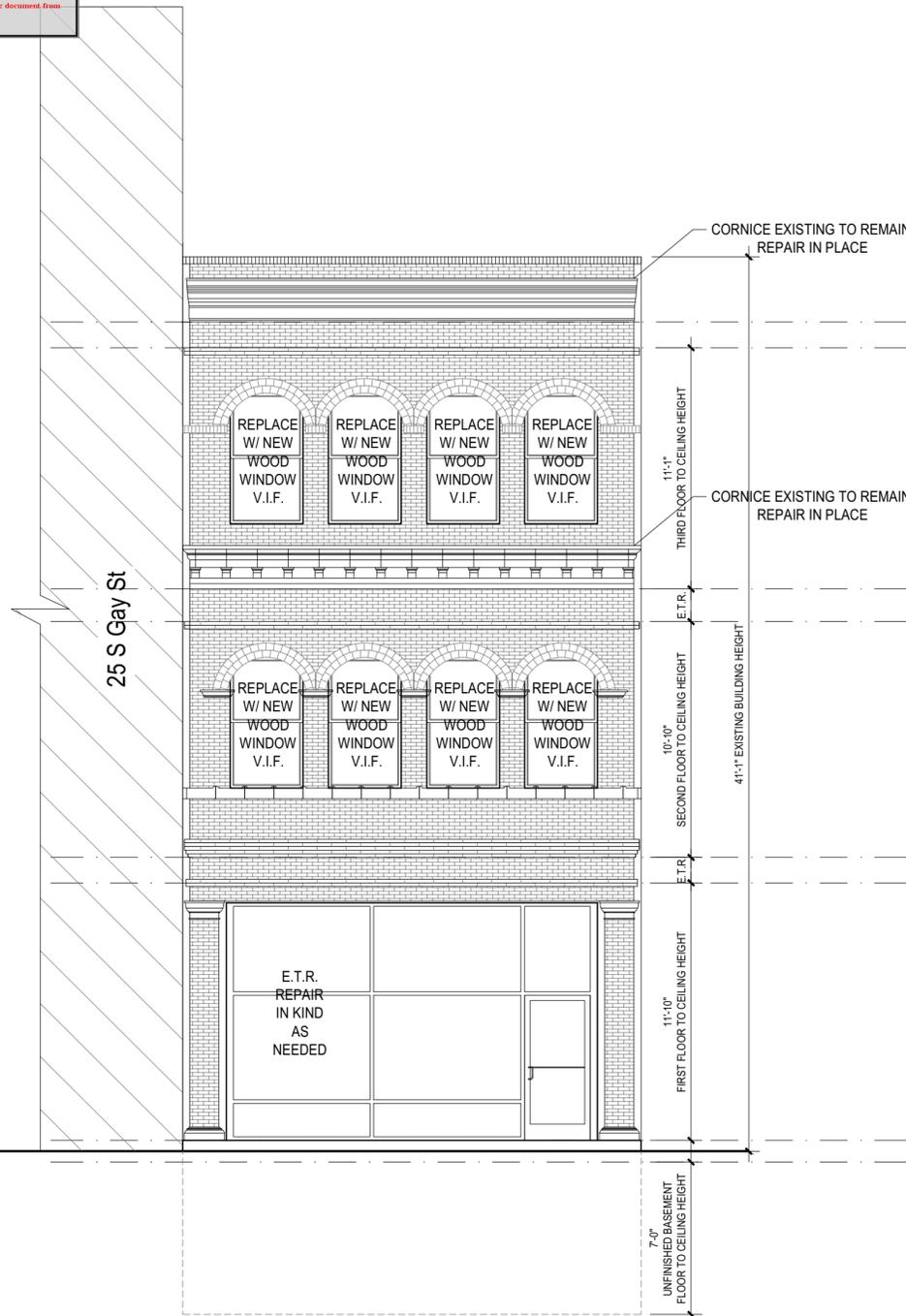
DRAWN BY



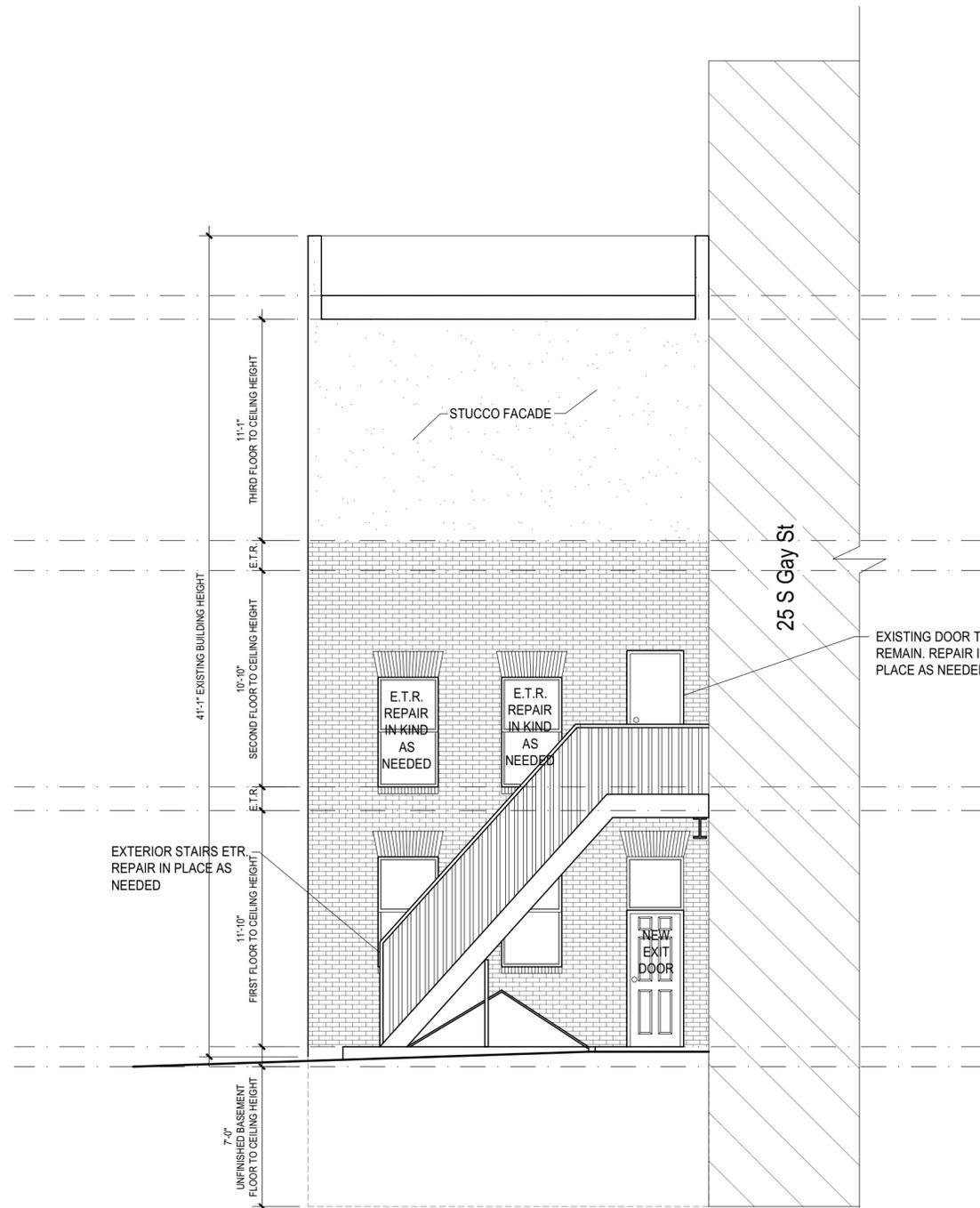
CLIENT  
504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
1816 ALICEANNA ST. BALTIMORE, MD 21231  
ADAM CARBALLO, ARCHITECT  
17009  
443-963-1077

0012-A=A4  
FRONT & REAR ELEVATION  
27 S. GAY ST  
JOB # 22-661  
APRIL 2023



**1** FRONT ELEVATION  
SCALE: 3/16" = 1'-0"  
0 1 2 3 4 5 10'



**2** REAR ELEVATION  
SCALE: 3/16" = 1'-0"  
0 1 2 3 4 5 10'





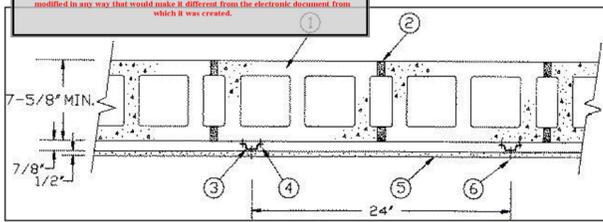
August 07, 2020

**City of Baltimore**  
**SIGNATURE READY SET**  
 2023-925

3 HR.  
 3 HR.

This design was evaluated using a load design method other than the Limit States Design Method (ASCE 7-16) for jurisdictions employing the Limit States Design Method. The design was evaluated using a load design method other than the Limit States Design Method (ASCE 7-16) for jurisdictions employing the Limit States Design Method. The design was evaluated using a load design method other than the Limit States Design Method (ASCE 7-16) for jurisdictions employing the Limit States Design Method.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark (such as Canada), respectively.



- Concrete Blocks\* — Various designs. Classification D-2 (2 hr). See Concrete Blocks category for list of eligible manufacturers.
- Mortar — Blocks laid in full bed of mortar, nom 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
- Furring Channels — Min 0.019 in. thick (25 gauge) galv steel, 1-3/8 in. wide on top and 2-9/16 in. or 2-3/4 in. or 2-23/32 in. wide at bottom by 7/8 in. deep. Spaced 24 in. OC perpendicular to floor with a channel parallel to and approximately 3 in. above floor and 3 in. below ceiling. Clearance between vertical and horizontal channels 1/2 in.
- Channel Fasteners — 1-1/4 in. long masonry screws with 3/16 in. body and 5/16 in. diameter head. Fasteners spaced 24 in. O.C. with the fasteners staggered on each long leg of the furring channel.
- Steel Framing Members\* — Alternate method used to attach furring channels (Item 3) to concrete blocks (Item 1). Clips spaced 48 in. OC, and secured to blocks with 1/4 in. dia. By 3 in. long concrete expansion anchor (Item 4B) through the center grommet. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap,

in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Furring channels are friction fitted into clips.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

5. Gypsum Board\* — 1/2 in. thick, 4 ft wide, secured to furring channels with wallboard fasteners (Item 6). Gypsum plaster not more than 1/16 in. thick may be applied to wallboard in addition to joint treatment.

AMERICAN GYPSUM CO — Types AG-C.

CABOT MANUFACTURING ULC — Type C.

CERTAINTED GYPSUM INC — Type C.

CGC INC — Types C, IP-X2, IPC-AR.

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A.

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C.

NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-C, FSMR-C.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C.

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C.

with one screw on each flange of the channel. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

4B. Concrete Expansion Anchor — (Not Shown) — 1/4 in. dia. by 3 in. long carbon steel, pre-assembled, nail drive expansion anchor with mushroom head driven into the web of the concrete block. Min. embedment in concrete block of 1-3/8 in. and evaluated in accordance with ASTM E 488 to have ultimate load capacities of 980 lbs (tension) and 1400 lbs (shear) when used in 2000 psi concrete.

4C. Steel Framing Members\* — (Not Shown) — Alternate method used to attach furring channels (Item 3) to concrete blocks (Item 1). Clips spaced 48 in. OC, and secured to blocks with 1/4 in. dia. by 3 in. long concrete expansion anchor (Item 4B) through the center hole. Ends of adjoining channels are overlapped 6 in. tied together with double strand of No. 18 AWG galvanized steel wire. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

4D. Steel Framing Members\* — (Not Shown) — Alternate method used to attach furring channels (Item 3) to concrete blocks (Item 1). Clips spaced 48 in. OC, and secured to blocks with 1/4 in. dia. by 3 in. long concrete expansion anchor (Item 4B) through the center hole. Ends of adjoining channels are overlapped 6 in. tied together with double strand of No. 18 AWG galvanized steel wire. Furring channels are friction fitted into clips.

REGUPOL AMERICA — Type SonusClip

4E. Steel Framing Members\* — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:

a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to concrete blocks as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5.

b. Steel Framing Members\* — Used to attach resilient channels (Item 4Ea) to concrete blocks. Clips spaced 48 in. OC, and secured to concrete blocks with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

4F. Steel Framing Members\* — Alternate method used to attach furring channels (Item 3A) to concrete blocks (Item 1). Clips spaced 48 in. OC, and secured to blocks with 1/4 in. dia. By 3 in. long concrete expansion anchor (Item 4B) through the center grommet. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR.

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR.

5A. Gypsum Board\* — (As an alternate to Item 5) — 5/8 in. thick. Installed as described in Item 5.

NATIONAL GYPSUM CO — Type FSMR-C.

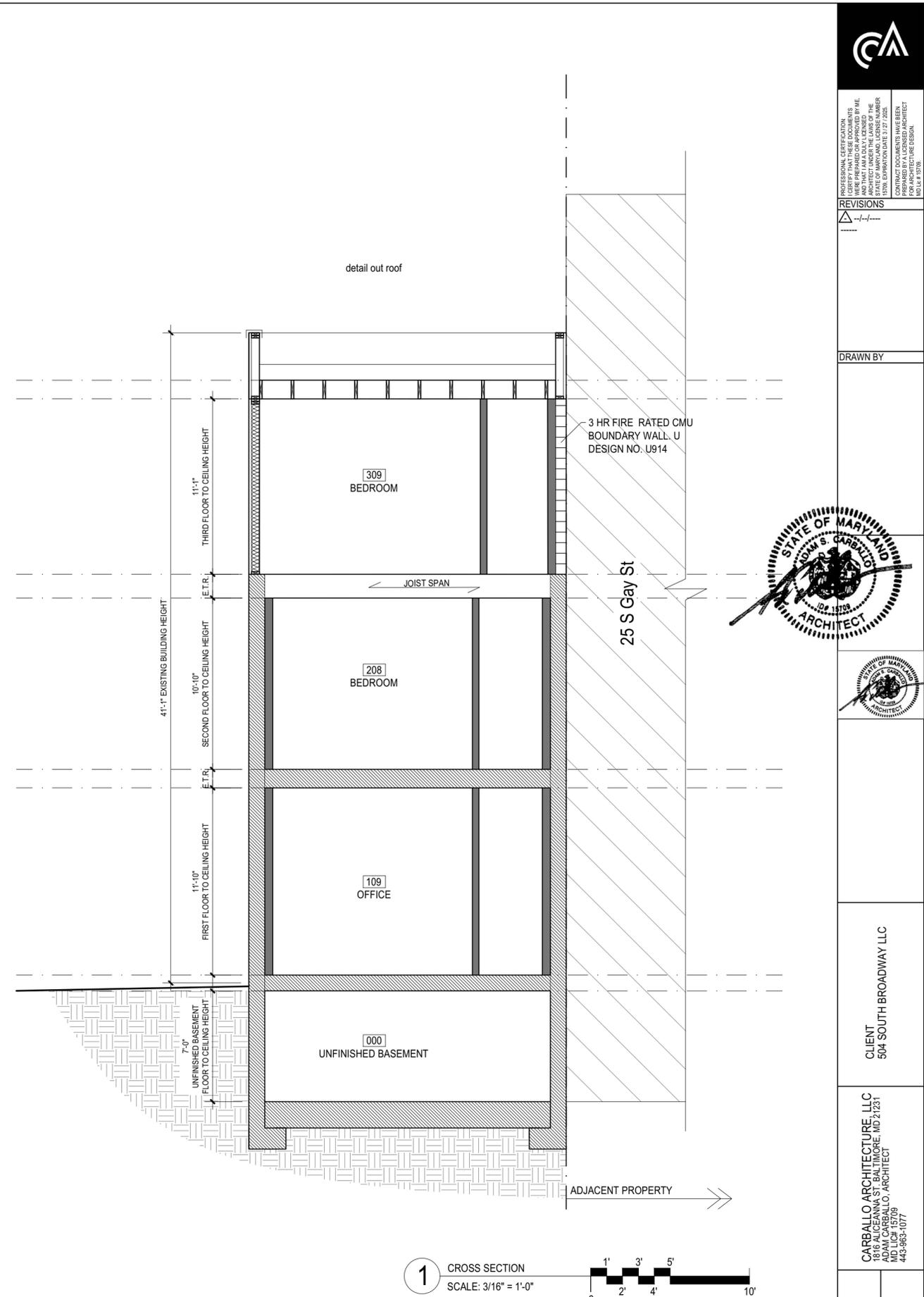
UNITED STATES GYPSUM CO — Type ULIX

6. Wallboard Fasteners — 1 in. long, self-drilling, self-tapping steel screws with bugle heads. Fasteners attached to each furring channel and spaced 8 in. OC at butt joints and 12 in. OC in the field of the board parallel with furring channels. Clearance between fasteners and edges of wallboard 3/4 in.

7. Joint System — (Not shown) — Paper tape embedded in cementitious compound over joints. Paper tape and exposed screw heads covered with two layers of compound. Edges of compound feathered out.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2020-08-07



<p>PROFESSIONAL CERTIFICATION                  I, ADAM CARBALLO, ARCHITECT, NO. 12123, STATE OF MARYLAND, LICENSE NUMBER 12123, EXPIRES 12/31/2025. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR ARCHITECTURE DESIGN. (MD &amp; P 1918)</p>
<p>REVISIONS</p>
<p>DRAWN BY</p>
<p>CLIENT                  504 SOUTH BROADWAY LLC</p>
<p>CARBALLO ARCHITECTURE, LLC                  1816 ALICEANNA ST. BALTIMORE, MD 21231                  ADAM CARBALLO, ARCHITECT                  443-963-1077</p>
<p>0015-A=A7                  CROSS SECTION                  27 S. GAY ST                  JOB # 22-661                  APRIL 2023</p>

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

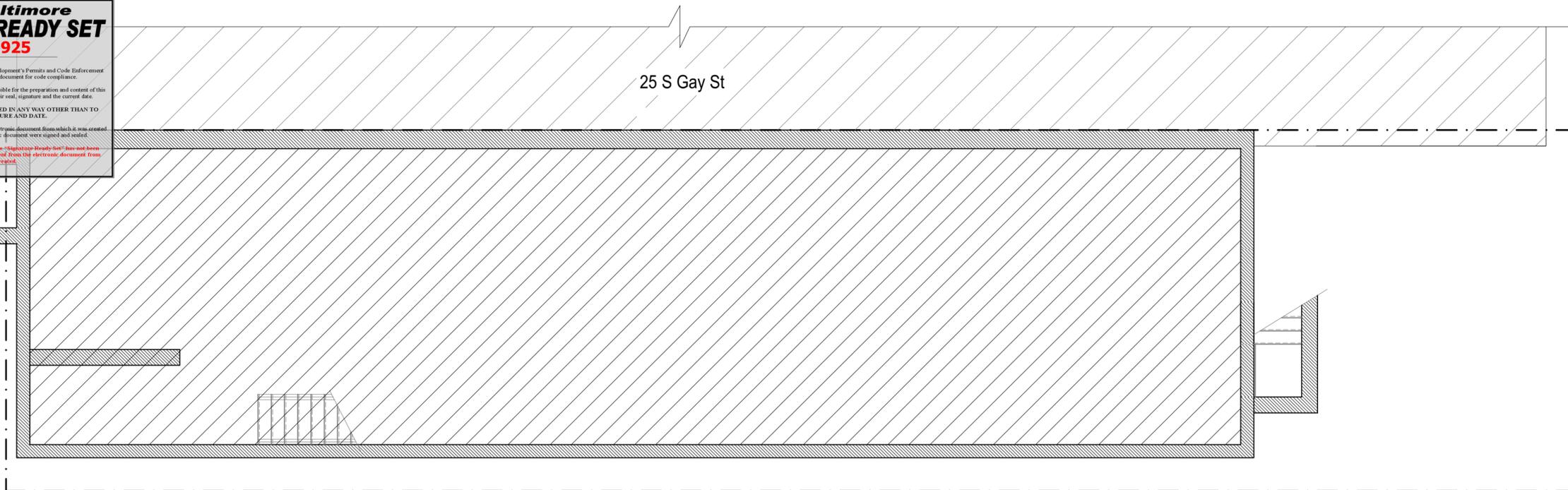
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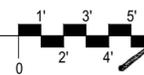
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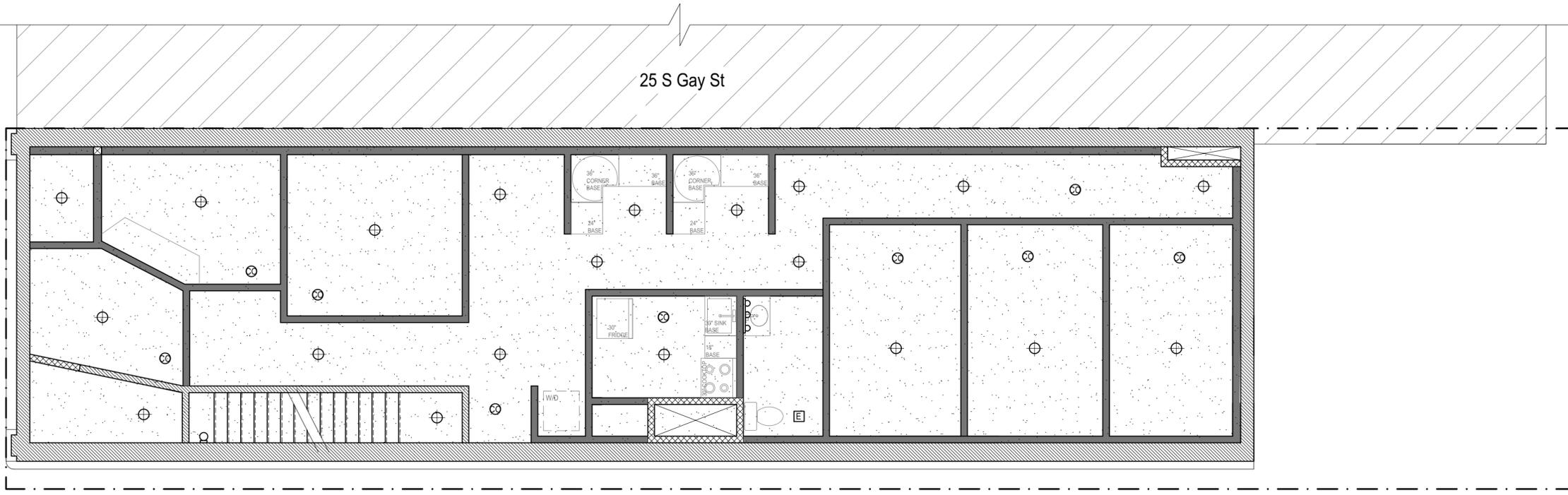
**B** BASEMENT CEILING PLAN  
 SCALE: 3/16" = 1'-0"



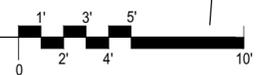
PROFESSIONAL CERTIFICATION: I, THE ARCHITECT, HAVE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED ARCHITECT IN THE STATE OF MARYLAND. LICENSE NUMBER: 12203. EXPIRES: 12/31/2024. CONTRACT DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR ARCHITECTURE DESIGN. MD 16-1-1018

NO.	REVISIONS

DRAWN BY \_\_\_\_\_



**1** FIRST FLOOR CEILING PLAN  
 SCALE: 3/16" = 1'-0"



CLIENT  
 504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALCENNA ST. BALTIMORE, MD 21231  
 ADAM CARBALLO, ARCHITECT  
 443-963-1077

**RCP FIXTURE LEGEND**

- ⊕ SURFACE MOUNTED LIGHT FIXTURE
- ⊗ CARBON MONOXIDE / SMOKE DETECTOR
- ⊠ EXHAUST FAN
- ☰ VANITY LIGHT BAR
- WALL SCONCE

**LEGEND**

- GYPSUM BOARD CEILING
- NOT IN SCOPE

**GENERAL NOTES**

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- INTERIOR FINISHES ARE CLIENT'S CHOICE
- INTERIOR LIGHTING SELECTION ARE CLIENT'S CHOICE
- DOOR TYPE SYMBOL **36"** DENOTES DOOR WIDTH, DOOR STYLE CLIENT'S CHOICE. ALL DOORS ARE 6'-8" IN HEIGHT.

**0016-A=A8**  
 BASEMENT & FIRST FLOOR CEILING  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: 2023-925

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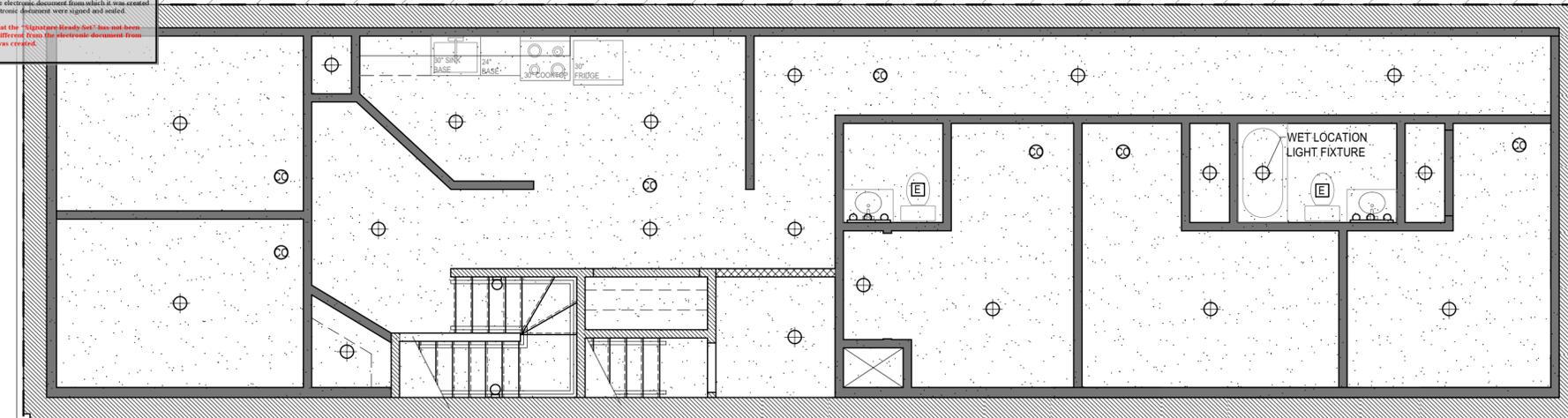
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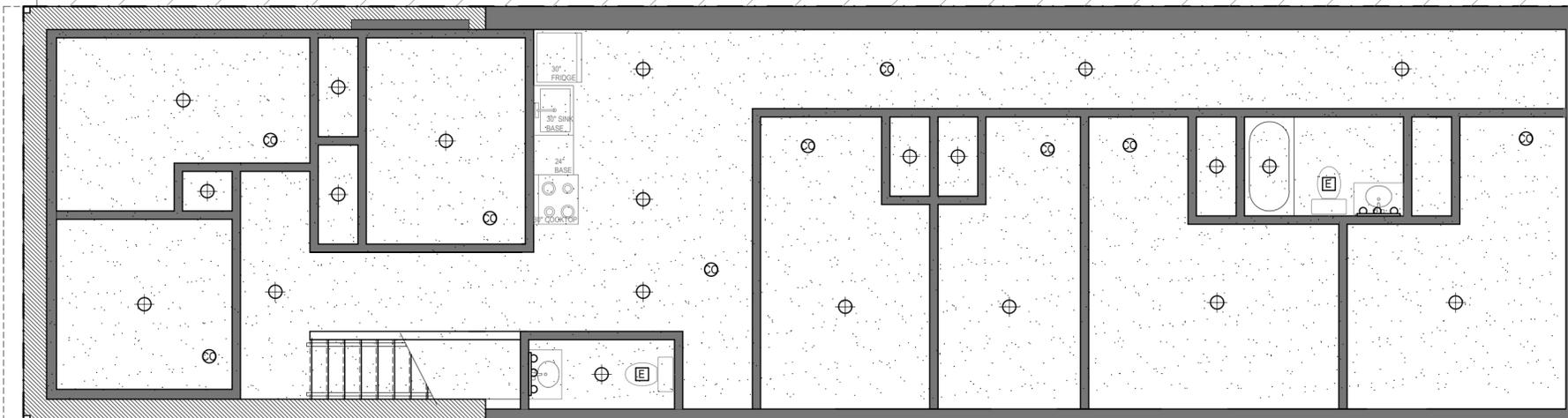
25 S Gay St



**2** SECOND FLOOR CEILING PLAN  
 SCALE: 3/16" = 1'-0"



25 S Gay St



**3** THIRD FLOOR CEILING PLAN  
 SCALE: 3/16" = 1'-0"



CLIENT  
 504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
 1816 ALICEANNA ST. BALTIMORE, MD 21231  
 ADAM CARBALLO, ARCHITECT  
 443-963-1077

**RCP FIXTURE LEGEND**

- ⊕ SURFACE MOUNTED LIGHT FIXTURE
- ⊗ CARBON MONOXIDE / SMOKE DETECTOR
- ⊞ EXHAUST FAN
- ⊞ VANITY LIGHT BAR
- ⊞ WALL SCONCE

**LEGEND**

- ⊞ GYPSUM BOARD CEILING

**GENERAL NOTES**

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**0017-A=A9**  
 SECOND & THIRD FLOOR CEILING  
 27 S. GAY ST  
 JOB # 22-661  
 APRIL 2023



**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

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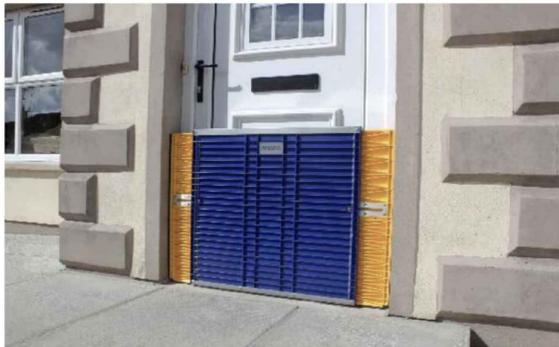
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**FREE SHIPPING ON DAM EASY BARRIERS**

MANY THOUSANDS OF HOMES PROTECTED, CALL US TODAY!



PRODUCTS BARRIER CALCULATOR OUR HAPPY CUSTOMERS HOW-TO VIDEOS AND MORE GET A QUOTE HELP & SUPPORT BLOG



**Flood Barrier Door Dam - Ultimate Flood Gate**

\$899.00

**DAM EASY® FLOOD GATE - DOOR DAM**

Floods are becoming more common around the world. What was once a 100-year phenomenon is now a seasonal trend that homeowners must deal with.

That's EXACTLY why you need this Dam Easy Flood Barrier Door Dam!

An excellent alternative to heavy and messy sandbags, this barrier provides the first line of defense to prevent water from entering doors and windows in your home. When flooding happens, the ability to act quickly is critical. This flood protection barrier provides you with reliable flood protection at your fingertips as it can be installed in under 5 minutes!

Don't wait until it's too late. Get this flood gate door dam and protect your house now!

**Description of Operation:**

The product consists of a centre piece, and two wings. The wings slide in and out of the centre piece, allowing the panel's width to be adjusted to fit a range of door openings. The wings are linked together by a screw mechanism. The movement of the wings is controlled by a ratchet handle.

Direction of movement of the wings is controlled by a reverse button on the ratchet handle. Sealing of the door opening is maintained by a patented, inflatable rubber tube arrangement, that surrounds the extended frame. When the panel is held in position by the extended wings, the tube is inflated by a manually operated, built-in, air pump. The air system has a built-in air pressure gauge..

- Main Body: ABS2100 – GR10 Glass Fibre Reinforcement
- Inner Mouldings: POM M90–44 Polyacetal
- Reinforcement: Stainless Steel 304
- Gear System: Brass
- Compression Seal: EPDM 40–50 Shore A
- Inflatable Seal: (Patented)

**Product Energy Sources:**

- Manually generated (geared) leverage, for extending panel width.
- Manually generated air pressure, to inflate rubber seal. .

**SECURE YOUR ENTRANCE IN 3 EASY STEPS**



IT'S DAM EASY!



PROFESSIONAL CERTIFICATION COMMISSION  
STATE OF MARYLAND  
10/27/2023  
REVISIONS

10/27/2023  
Floor Gate specs

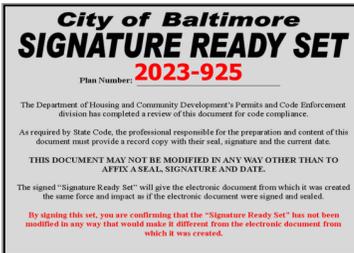
DRAWN BY



CLIENT  
504 SOUTH BROADWAY LLC

CARBALLO ARCHITECTURE, LLC  
1816 ALICEANNA ST. BALTIMORE, MD 21231  
ANTHONY CARBALLO, ARCHITECT  
443-863-1077

0019-A=A11  
FLOOD GATE SPECS  
27 S. GAY ST  
JOB # 22-661  
OCTOBER 2023



GENERAL WORK REQUIREMENTS

- ALL APPLICABLE CODES LISTED ON THIS DRAWING, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER.
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING AND SITE CONDITIONS, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH THE EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION.
- INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM THE MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF THE DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR OF THE BUILDING. REMOVE EXCESS MATERIALS FROM THE SITE AND DISPOSE OF MATERIALS ON A DAILY BASIS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FROM DAMAGE, ALL BUILDING COMPONENTS AND FINISHES. THE CONTRACTOR SHALL, AT HIS EXPENSE, RESTORE TO ORIGINAL CONDITION AREAS OR FINISHES DAMAGED BY HIS WORK.
- ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS, AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING TO AVOID OBSTRUCTIONS.
- PRIOR TO CORE DRILLING, THE AREA TO BE DRILLED SHALL BE X-RAYED AND WRITTEN APPROVAL SHALL BE OBTAINED FROM THE PROJECT'S STRUCTURAL ENGINEER AND OWNER BEFORE PROCEEDING.
- MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND FIRE ALARM CONTRACTORS SHALL BE RESPONSIBLE TO COORDINATE THE INSTALLATION OF THEIR WORK AMONGST EACH OTHER AND WITH THE GENERAL CONTRACTOR SO AS TO MEET ARCHITECTURAL AND ENGINEERING DESIGN INTENT, MEET CODE REQUIREMENTS, AND AVOID INTERFERENCE AND CONFLICT WITH STRUCTURAL ELEMENTS.
- MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS, IF EXISTS. MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND FIRE ALARM CONTRACTORS SHALL BE RESPONSIBLE TO OBTAIN BUILDING STANDARDS FROM GENERAL CONTRACTOR, BUILDING OWNER, AND/OR LANDLORD.
- ALL EQUIPMENT, FIXTURES, AND MATERIALS SHALL BE NEW. OWNER FURNISHED EQUIPMENT, IF EXISTS, IS SCHEDULED ON THE PLUMBING DRAWINGS. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING AND WEATHERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OF PIPES, DUCTS, CONDUIT AND EQUIPMENT. COORDINATE MATERIALS AND METHODS TO MAINTAIN THE INTEGRITY OF THE ROOFING BOND.
- PLUG OR CAP ALL PIPING WHERE NECESSARY AND APPROPRIATE DURING CONSTRUCTION OR FOR FUTURE TENANT CONNECTION. DO NOT LEAVE PIPING OPEN ENDED.
- SUPPORT NEW PIPING FROM BUILDING STRUCTURE AND OR FRAMING IN AN APPROVED MANNER. PROVIDE SUPPORTS AT EIGHT (8) LINEAR FEET INTERVALS, AT ALL CHANGES IN DIRECTION, AND MORE FREQUENTLY IF RECOMMENDED BY PIPE MANUFACTURER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, PROVIDE ADDITIONAL FRAMING.
- SEAL ALL OPENINGS AROUND PIPES, DUCTS, AND CONDUIT THROUGH PARTITIONS AND WALLS WITH APPROVED FIRESTOPPING MATERIAL MEETING ASTM E814 AND NFPA-101.
- ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES AND EQUIPMENT. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED.
- THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS, RIGGING, APPURTENANCES, AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLATION AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE PROVIDED IN A NEAT, WORKMANLIKE MANNER. INCLUDE ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING, AND INSPECTIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL COMPONENTS OF THE INSTALLATION FOR A MINIMUM OF TWO 6 HOUR SESSIONS CONDUCTED ON TWO DIFFERENT DAYS.
- FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF ACTUAL USE OF EQUIPMENT. WHERE DEFECTS OCCUR, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF THE OTHER TRADES AFFECTED BY DEFECTS.

MECHANICAL SYMBOLS

**DUCTWORK**

NEW DUCTWORK

AIR DUCT TURNING UP

AIR DUCT TURNING DOWN

DUCT RISE OR DROP WITH AIRFLOW DIRECTION

DUCT TRANSITION: SQUARE TO SQUARE

DUCT TRANSITION: SQUARE TO ROUND

**AIR DEVICES**

SUPPLY AIR REGISTER (SR) CEILING

SUPPLY AIR REGISTER (SR) WALL

SUPPLY AIR REGISTER (SR) FLOOR

RETURN AIR REGISTER (RG) WALL

SUPPLY DIFFUSER (SD) [OR SUPPLY AIR DUCT IN SECTION]

RETURN GRILLE (RG) [OR RETURN AIR DUCT IN SECTION]

EXHAUST REGISTER (ER) [OR EXHAUST AIR DUCT IN SECTION]

**DAMPERS & CONTROLS**

MOTORIZED DAMPER

MANUAL VOLUME DAMPER

FIRE DAMPER

FIRE/SMOKE DAMPER

SMOKE DAMPER

THERMOSTAT

**PIPE TYPE**

CONDENSATE DRAIN

REFRIGERANT LIQUID

REFRIGERANT SUCTION

**TAGS & NOTES**

SPECIFIC/KEYED/SHEET NOTE

DUCT NOTE

EQUIPMENT TAG

AIR DEVICE TAG

APPLICABLE CODES

ALL WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE, COUNTY AND OTHER LOCAL CODES THAT GOVERN EACH PARTICULAR TRADE.

BUILDING, FIRE, AND RELATED CODES OF BALTIMORE CITY LOCAL CODE AMENDMENTS LOCAL FIRE MARSHAL'S OFFICE

STATE OF MARYLAND COMAR CODE  
STATE OF MARYLAND FIRE PREVENTION CODE  
MARYLAND STATE HEALTH DEPARTMENT  
MARYLAND ACCESSIBILITY CODE  
REGULATIONS OF THE LOCAL UTILITY COMPANIES WITH RESPECT TO METERING AND SERVICE ENTRANCE EQUIPMENT.

2018 INTERNATIONAL BUILDING CODE (IBC)  
2018 INTERNATIONAL RESIDENTIAL CODE (IRC)  
2017 NATIONAL ELECTRICAL CODE (NEC), NFPA 70  
2018 INTERNATIONAL FUEL GAS CODE (IFGC)  
2018 INTERNATIONAL MECHANICAL CODE (IMC)  
2018 INTERNATIONAL PLUMBING CODE (IPC)  
2018 INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC)  
2018 INTERNATIONAL FIRE CODE (IFC)  
2018 INTERNATIONAL ENERGY CONSERVATION CODE  
2013 ANSI/ASHRAE/IES 90.1  
2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) - WITH STATE MODIFICATIONS  
2012 INTERNATIONAL GREEN CONSTRUCTION CODE (IGCC)  
2012 INTERNATIONAL SWIMMING POOL AND SPA CODE  
NATIONAL FIRE PROTECTION ASSOCIATION STDS, NFPA 2017  
FIRE LIFE SAFETY CODE, NFPA 101-2017

IN ADDITION TO THESE CODES, ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE FOLLOWING SPECIFIC CODES, REGULATIONS, AND/OR STANDARDS:

AIR MOVING AND CONDITIONING ASSOCIATION, AMCA  
AMERICAN NATIONAL STANDARDS INSTITUTE, ANSI  
AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, ASHRAE  
AMERICAN SOCIETY OF MECHANICAL ENGINEERS, ASME  
AMERICAN SOCIETY FOR TESTING AND MATERIALS, ASTM  
AMERICANS WITH DISABILITIES ACT, ADA  
ASSOCIATION AIR BALANCE COUNCIL, AABC  
SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, SMACNA  
PLUMBING DRAINAGE INSTITUTE, PDI  
NATIONAL ENVIRONMENTAL BALANCING BUREAU, NEBB  
NATIONAL SANITATION FOUNDATION, NSF  
UNDERWRITERS LABORATORIES

MECHANICAL ABBREVIATIONS

ABV	ABOVE	ESP	EXTERNAL STATIC PRESSURE	MVD	MANUAL VOLUME DAMPER	RD	RADIATION DAMPER
A/D	ACCESS DOOR	ETR	EXISTING TO REMAIN	N	NEW	REQ	REQUIRED/REQUIREMENTS
AFF	ABOVE FINISHED FLOOR	EWB	ENTERING WET BULB	NIC	NOT IN CONTRACT	SG	SUPPLY GRILLE
AFR	ABOVE FINISHED ROOF	EX	EXISTING	NTS	NOT TO SCALE	SP	STATIC PRESSURE
AHU	AIR HANDLING UNIT	EXH	EXHAUST	OA	OUTSIDE AIR	SPD	STATIC PRESSURE DROP
AL	ACOUSTICALLY LINED	F	DEGREES FAHRENHEIT	OBD	OPPOSED BLADE DAMPER	SPEC	SPECIFICATION
APD	AIR PRESSURE DROP	F/D	FIRE DAMPER	OC	ON CENTER	SR	SUPPLY REGISTER
ARI	AIR REFRIGERATION INSTITUTE	FLA	FULL LOAD AMPS	OD	OUTSIDE DIMENSION	SR/FD	SUPPLY REGISTER W/ FIRE RADIATION DAMPER
ARCH	ARCHITECT	FLR	FLOOR	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED	S/S	STAINLESS STEEL
BDD	BACKDRAFT DAMPER	FPS	FEET PER SECOND	OFOI	OWNER FURNISHED, OWNER INSTALLED	SQ	SQUARE
BLDG	BUILDING	FPM	FEET PER MINUTE	PD	PRESSURE DROP (IN WG)	TEMP	TEMPERATURE
BLW	BELOW	FR	FLOOR REGISTER	PH	PHASE	TSP	TOTAL STATIC PRESSURE
BOD	BASIS OF DESIGN	F/S	FIRE/SMOKE DAMPER	PPM	PARTS PER MILLION	TYP	TYPICAL
BTM	BOTTOM	FT	FEET	PSI	POUNDS PER SQUARE INCH	UON	UNLESS NOTED OTHERWISE
BTUH	BRITISH THERMAL UNITS PER HOUR	HP	HORSEPOWER	R	RELOCATED	V	VOLTS
C	CELSIUS	HZ	HERTZ	RA	RETURN AIR	VD	VOLUME DAMPER
CD	CONDENSATE DRAIN	ID	INSIDE DIMENSION	RD	RADIATION DAMPER	VRF	VARIABLE REFRIGERANT FLOW
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	IN	INCHES	REQ	REQUIRED/REQUIREMENTS	W/	WITH
CFM	CUBIC FEET PER MINUTE	KW	KILOWATTS	RL	RETURN GRILLE	WB	WET BULB
CLG	CEILING	LAT	LEAVING AIR TEMPERATURE	RG	RETURN GRILLE	WC	WATER COLUMN
CONN	CONNECT OR CONNECTION	LBS	POUNDS	RL	REFRIGERANT LIQUID	WG	WATER GAUGE
CONT	CONTINUED/ CONTINUATION	LDB	LEAVING DRY BULB	RLA	RUNNING LOAD AMPERES	WMS	WIRE MESH SCREEN
CTLR	CONTROLLER	LF	LINEAR FEET	RND	ROUND	W/O	WITHOUT
DB	DRY BULB	LWB	LEAVING WET BULB	RPM	REVOLUTIONS PER MINUTE	WPD	WATER PRESSURE DROP
DIA	DIAMETER	MECH	MECHANICAL	RR	REFRIGERANT SUCTION	WSA	WIRE SIZE AMPS
DN	DOWN	MAX	MAXIMUM	RX	REMOVE EXISTING		
DWG	DRAWING	MCA	MINIMUM CIRCUI AMPACITY	SA	SUPPLY AIR		
EA	EXHAUST AIR	MFR	MANUFACTURER	SD	SUPPLY DIFFUSER		
EAT	ENTERING AIR TEMPERATURE	MIN	MINIMUM	S/D	SMOKE DAMPER		
EDB	ENTERING DRY BULB	MOC	MAXIMUM OVERCURRENT PROTECTION	SF	SUPPLY FAN OR SQUARE FEET		
EF	EXHAUST FAN	MOD	MOTOR OPERATED DAMPER	R	RELOCATED		
EG	EXHAUST GRILLE	MTD	MOUNTED	RA	RETURN AIR		
ER	EXHAUST REGISTER WITH OBD						

MECHANICAL DESIGN CRITERIA

INTERIOR: SUMMER 75°F/50% RH WINTER 70°F

EXTERIOR: SUMMER 95°F DB/78°F WB WINTER 0°F

INTERIOR LOAD: LIGHTING DENSITIES IN ACCORDANCE WITH ASHRAE STD 90.1.

PEOPLE DENSITY: IN ACCORDANCE WITH IMC.

VENTILATION LOAD: IN ACCORDANCE WITH IMC VENTILATION REQUIREMENTS.

SCOPE OF WORK

RENOVATION OF 3-STORY PLUS BASEMENT COMMERCIAL BUILDING AS BOARDING HOUSE WITH FIRST FLOOR OFFICE SPACE AND UPPER FLOOR BOARDING SPACE.

MECHANICAL SHEETS

- 0020-M=M001 - MECHANICAL COVER SHEET
- 0021-M=M002 - MECHANICAL SPECIFICATIONS
- 0022-M=M101 - MECHANICAL BASEMENT & FIRST FLOOR PLANS
- 0023-M=M102 - MECHANICAL SECOND & THIRD FLOOR PLANS
- 0024-M=M103 - MECHANICAL ROOF PLAN
- 0025-M=M201 - MECHANICAL EQUIPMENT SCHEDULES
- 0026-M=M202 - MECHANICAL EQUIPMENT SCHEDULES
- 0027-M=M301 - MECHANICAL DETAILS
- 0028-M=M302 - MECHANICAL DETAILS



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JLA ENGINEERING, LLC  
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PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 40761, EXPIRATION DATE: 07/06/2023.

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NO.	DATE	ISSUE FOR PERMIT	REMARKS
0	03/29/2023	ISSUE FOR PERMIT	

REVISIONS:

DRAWING TITLE:  
**MECHANICAL COVER SHEET**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
DRAWN BY: TH CHECKED BY: JLA  
SHEET NUMBER:

0020-M=  
**M001**

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

The Department of Housing and Community Development's Permits and Code Enforcement Division has completed a review of this document for code compliance.

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**MECHANICAL GENERAL SPECIFICATIONS**

- GENERAL WORK REQUIREMENTS PERTAIN TO THE ENTIRE PROJECT.
  - NOT ALL SPECS BELOW PERTAIN TO THE PROJECT.
  - ALL MATERIALS AND EQUIPMENT SHALL BE PROPERLY AND EFFECTIVELY PROTECTED BY THE CONTRACTOR DURING THE EXECUTION OF THE WORK.
  - THE GENERAL CONTRACTOR SHALL PROVIDE ALL ROUGH OPENINGS THROUGH STRUCTURAL WALLS, FLOOR AND/OR ROOF REQUIRED FOR THE DUCTWORK SYSTEM. THE MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION AND SIZES OF PENETRATIONS THROUGH WALLS, ROOF AND FLOORS WITH ALL OTHER TRADES.
  - [RESIDENTIAL] COORDINATE 1" UNDERCUT (ABOVE CARPET OR FLOORING) AT ALL DWELLING UNIT INTERIOR DOORS WITH ARCHITECT AND/OR GENERAL CONTRACTOR FOR RETURN AIR AND/OR MAKE UP AIR.
  - COORDINATE ALL MOTORS & ELECTRICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR.
- DUCTWORK**
- INDICATED DUCTWORK SIZES ARE INCHES, INSIDE CLEAR. ADJUST SHEET METAL SIZES AT INTERNALLY INSULATED DUCTS.
  - DUCTWORK FABRICATION, FITTINGS, AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE APPLICABLE "SMACNA" DUCT CONSTRUCTION STANDARDS, NFPA 90A & 90B, THE LATEST EDITION OF ASHRAE GUIDE AND DATA BOOK, AS DETAILED BY THE DRAWINGS AND PER LOCAL CODES.
  - THE MECHANICAL CONTRACTOR SHALL INSTALL ALL DUCTWORK TO ACCOMMODATE ARCHITECTURAL CEILING HEIGHTS. THE MECHANICAL CONTRACTOR SHALL INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE AND TO CLEAR ALL LIGHT FIXTURES. DUCTWORK SHALL BE COORDINATED WITH THE SPRINKLER CONTRACTOR PRIOR TO INSTALLATION.
  - PROVIDE RISE AND DROPS IN DUCTWORK AS REQUIRED TO MAINTAIN CEILING HEIGHTS. IN SO DOING, MINIMIZE ADDED DUCT STATIC PRESSURE LOSS.
  - PENETRATION OF NEW DUCTWORK BY PIPES, PIPE HANGERS, CONDUIT, ELECTRICAL FIXTURES IS PROHIBITED.
  - TAPE ALL DUCTBOARD JOINTS WITH NASHUA 3244 ALUMINUM FOIL TAPE. ALL DUCTWORK JOINTS SHALL BE SEALED WITH UL LISTED DUCT SEALANT.
  - ALL DUCTWORK OPENINGS SHALL BE SEALED WITH PLASTIC DURING THE PERFORMANCE OF THE WORK UNTIL BUILDING IS COMPLETED.
- OUTSIDE (FRESH) AIR AND EXHAUST AIR**
- MAINTAIN A MINIMUM OF TEN FEET BETWEEN OUTSIDE AIR INTAKE AND CONTAMINATED VENT/EXHAUST DISCHARGE LOCATIONS.
  - PROVIDE 1/2" GALVANIZED WIRE MESH BIRD SCREEN AT ALL OUTSIDE AIR INTAKE AND DISCHARGE DEVICES AND EQUIPMENT [EXCLUDING DRYER DISCHARGE].
  - REFER TO ARCHITECTURAL ELEVATIONS FOR WALL CAP LOCATIONS. CONTRACTOR SHALL LOCATE WALL CAPS PER THE ARCHITECTURAL ELEVATION DRAWINGS. [FINAL INSTALLATION SHALL NOT EXCEED MANUFACTURERS CRITERIA FOR DRYER EXHAUST LENGTH.]
- PIPING**
- INDICATED PIPE SIZES ARE INCHES, NOMINAL. REFRIGERANT PIPING SIZES SHALL BE AS REQUIRED BY THE EQUIPMENT MFR.
  - PENETRATION OF NEW DUCTWORK BY PIPES, PIPE HANGERS, CONDUIT, ELECTRICAL FIXTURES IS PROHIBITED.
- CONDENSATE DRAIN PIPING**
- PROVIDE INSULATION WITH VAPOR BARRIER ON CONCEALED AND HORIZONTAL INDOOR CONDENSATE DRAIN PIPING. REFER TO INSULATION SPECS.
  - PROVIDE TAP AND CLEANOUT AT EQUIPMENT CONDENSATE DRAIN CONNECTIONS.
- MECHANICAL EQUIPMENT**
- PROVIDE GRAVITY BACK DRAFT DAMPERS WITH ALL FANS EXCEPT [GREASE EXHAUST AND] AS NOTED.
  - COORDINATE LOCATION OF MECHANICAL EQUIPMENT WITHIN UTILITY ROOMS WITH APPROPRIATE TRADE CONTRACTORS AND PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE.
  - SUPPORTS FOR DUCTWORK, PIPING, AND EQUIPMENT SHALL COMPLY WITH REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, NFPA 13, AND LOCAL CODES UNLESS NOTED OTHERWISE. AT MINIMUM SUPPORT PIPING AND DUCTWORK AT 8 FT INTERVALS AND AT ALL CHANGES IN DIRECTION.
  - PROVIDE FLEXIBLE PIPING AND DUCTWORK CONNECTIONS TO ROTATING EQUIPMENT AND AT ALL BUILDING EXPANSION SLOTS.
- MISCELLANEOUS HEAT**
- ALL ELECTRIC RESISTANCE HEATERS SHALL BE PROVIDED WITH TAMPER-RESISTANT

- THERMOSTATS. [MAY NOT APPLY TO THIS PROJECT.]
- FIRE PROTECTION**
- ALL RATED PENETRATIONS SHALL BE PROTECTED BY U.L. LISTED FIRE DAMPER OR RADIATION DAMPER ASSEMBLIES AS REQUIRED.
- AIR DEVICES & DAMPERS**
- PROVIDE ALL SUPPLY, EXHAUST, AND REGISTERS WITH OPPOSED BLADE DAMPERS.
  - PROVIDE LOW LEAKAGE DAMPERS FOR OUTDOOR AIR, PRESSURE RELIEF, AND EXHAUST AIR SYSTEMS. BOD: RUSKIN CD 50 LOW-LEAKAGE DAMPER, AMCA RATED CLASS 1 IN ACCORDANCE WITH AMCA 511, LEAKAGE NO MORE THAN 4 CFM PER SQUARE FOOT AT 1-IN WG WHEN TESTED IN ACCORDANCE WITH AMCA 500D.
  - MOTOR OPERATED DAMPERS SHALL BE PROVIDED WITH AN ELECTRIC DAMPER OPERATOR WITH MINIMUM OPENING TIME OF 30 SECONDS. FAIL SAFE IN THE EVENT OF LOSS OF POWER: FRESH AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND RETURN AIR DAMPERS SHALL OPEN.
  - PROVIDE APPROPRIATE ACCESS DOOR PANELS FOR ALL MOTOR OPERATED DAMPERS AND FIRE DAMPERS AS REQUIRED. COORDINATE INSTALLATION WITH FINISH TRADE.
- SYSTEM BALANCING**
- BALANCE AIR FLOW TO CFM INDICATED ON PLAN(S) AND/OR EQUIPMENT SCHEDULES.
- SYSTEM CONTROLS**
- ALL THERMOSTATS SHALL BE LOCATED 8" FROM ANY DOOR JAMB. THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F. TO TOP OF THERMOSTAT. EXACT LOCATIONS OF THERMOSTATS SHALL BE COORDINATED WITH OTHER TRADES AND OWNER/INTERIOR DESIGNER BEFORE INSTALLATION.
  - [RESIDENTIAL] ALL THERMOSTATS SERVING DWELLING UNITS SHALL BE PROGRAMMABLE TYPE.
  - [OTHER] ALL THERMOSTATS SERVING COMMON AREAS SHALL BE PROGRAMMABLE TYPE WITH LOCKING COVER.
- DUCT TESTING & LEAKAGE**
- ALL DUCT SYSTEMS THAT ARE NOT CONTINUOUSLY WELDED AND LIQUID TIGHT SHALL BE TESTED TO DETERMINE AIR LEAKAGE BY ONE OF THE FOLLOWING METHODS: ROUGH-IN TEST OR POST-CONSTRUCTION TEST.
  - LEAKAGE SHALL BE MEASURED WITH A PRESSURE DIFFERENTIAL OF 0.1 INCH W.G. ACROSS THE SYSTEM INCLUDING AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE SEALED DURING THE TEST.
  - THE DUCT SYSTEMS SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE NOT EXCEEDING FOUR (4) CUBIC FEET PER MINUTE PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHERE THE AIR HANDLER IS INSTALLED AT THE TIME OF THE TEST.
  - A PASSING TEST SHALL BE PROVIDED IN A WRITTEN REPORT BY THE TESTING PARTY TO THE CODE OFFICIAL.
- SHOP DRAWINGS**
- PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.

**MECHANICAL INSULATION SPECIFICATIONS**

- GENERAL INSULATION**
- PERFORM WORK IN STRICT ACCORDANCE WITH THE BUILDING, FIRE AND SAFETY CODES LISTED ON THE MECHANICAL COVER SHEET.
  - INSULATION, INCLUDING FITTINGS AND BUTT STRIPS, JACKETS, FACINGS, AND ACCESSORIES SUCH AS ADHESIVES, MASTIC, CEMENTS, TAPES AND CLOTH, SHALL HAVE A FIRE AND SMOKE HAZARD RATING AND LABEL AS TESTED BY ASTM E84, NFPA 255, AND UL 73, NOX EXCEEDING FLAME SPREAD 25, FUEL CONTRIBUTED 50, SMOKE DEVELOPED 50.
  - ALL INSULATION AND ACCESSORIES SHALL BE FREE OF ASBESTOS AND ALL OTHER HAZARDOUS MATERIALS.
  - FOR KITCHEN HOOD DUCTWORK SYSTEMS, REFER TO KITCHEN HOOD SPECIFICATION.
- DUCTWORK INSULATION**
- ALL MATERIALS TO BE INSULATED SHALL BE THOROUGHLY CLEANED AFTER SUCCESSFULLY PASSING DOCUMENTED LEAK TESTS AND SHALL BE COVERED AS SPECIFIED BELOW. INSULATION SHALL BE OWENS-CORNING FIBERGLASS, KNAUF, MANVILLE, CERTAINTEED, FOSTER PRODUCTS CORP, OR ARMSTRONG WORLD INDUSTRIES. TWO-HOUR RATED INSULATION SHALL BE PREMIER REFRACTORIES AND CHEMICALS, THERMAL CERAMICS, OR UNIFRAX CORP.
  - INDOOR CONCEALED DUCTS (ABOVE CEILINGS, IN CRAWL SPACES, IN CHASES AND SHAFTS): FLEXIBLE FIBERGLASS INSULATION WITH VAPOR BARRIER ADHESIVE - ASTM C 553, TYPE I, CLASS B-3, K-FACTOR OF 0.27 AT 75 DEGREES F MEAN TEMP, OF THICKNESS BELOW, DENSITY OF MINIMUM 0.75 LB PER CUBIC FOOT, WITH VAPOR BARRIER JACKET OF REINFORCED KRAFT AND ALUMINUM FOIL. BUTT INSULATION AND OVERLAP FACING AT LEAST 2 INCHES.
  - INDOOR EXPOSED DUCTS (IN CONDITIONED ROOMS, EQUIPMENT ROOMS, STORAGE ROOMS): RIGID FIBERGLASS INSULATION WITH MECHANICAL FASTENERS - ASTM C 612, CLASS 2, K-FACTOR OF 0.22 AT 75 DEGREES F MEAN TEMP, OF THICKNESS BELOW, DENSITY OF MINIMUM 6 LBS PER CUBIC FOOT, WITH FACTORY APPLIED JACKET OF REINFORCED WHITE KRAFT AND ALUMINUM FOIL LAMINATE WITH THE WHITE KRAFT FACING OUT, BOD: CERTAIN TEED PRODUCTS CORP IB 600 ASJ.
  - TWO HOUR FIRE RATED INSULATION: PROVIDE IN LOCATIONS NOTED ON DRAWINGS. FLEXIBLE FIRE RESISTIVE, NONCOMBUSTIBLE INSULATION, UL LISTED AND RATED RO PROVIDE TWO HOUR FIRE RATING WHEN INSTALLED ON HOT DUCTS AND DUCTS SUBJECT TO FIRE HAZARD. BOD: PREMIER PYROSCAT, THERMAL CERAMICS FIREMASTER, OR UNIFRAX Fyre WRAP. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
  - DUCTWORK EXPOSED TO WEATHER: EXTERIOR LINED OR UNLINED SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED WITH 2 INCH RIGID INSULATION TAPERED ON TOP FROM CENTER TO EACH SIDE SLOPED NO LESS THAN 1:12. MECHANICALLY FASTEN WITH WASHERS FIRMLY EMBEDDED IN INSULATION. INSTALL FASTENERS IN ROWS NO MORE THAN 18 INCHES ON CENTER. INSTALL ROWS NO MORE THAN 18 INCHES APART BUT NO FEWER THAN TWO ROWS EACH ON TOP BOTTOM AND EACH SIDE. INSTALL CORNER BEADS ON EXTERNAL CORNERS. WHERE INSULATED DUCT PENETRATES WALLS FULLY FLASH TOP, BOTTOM, AND SIDES. FINISH WITH 0.20 INCH THICK, WHITE, UV PROTECTED PVC SHEETING PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS AND SECURED WITH THE MANUFACTURER'S RECOMMENDED PVC ADHESIVE.
  - ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS OF SUPPLY AND RETURN DUCTS SHALL BE SECURELY FASTENED AND SEALED TO MEET SMACNA SEAL CLASS A.
  - COOLING AND/OR HEATING SYSTEMS DUCTWORK: SUPPLY AND RETURN AIR DUCTWORK CONCEALED IN CEILING PLENUMS SHALL BE INSULATED WITH TWO (2) INCH THICK FIBERGLASS OWENS CORNING TYPE 100 FLEXIBLE DUCT WRAP WITH VAPOR BARRIER. INSULATION SHALL HAVE AN INSTALLED MINIMUM "R" VALUE OF 6. [FOR DISTRICT OF COLUMBIA ELECTIVE A106.2.3, USE THREE (3) INCH THICK FIBERGLASS OWENS CORNING TYPE 75 FLEXIBLE DUCT WRAP WITH MINIMUM "R" VALUE OF 8.]
  - OUTDOOR AIR DUCTWORK: SHALL BE INSULATED WITH THREE (3) INCH THICK FIBERGLASS OWENS CORNING TYPE 75 FLEXIBLE DUCT WRAP. INSULATION SHALL HAVE AN INSTALLED MINIMUM "R" VALUE OF 8.
  - [EXHAUST AND PRESSURE RELIEF AIR DUCTWORK: SHALL BE INSULATED WITH TWO (2) INCH THICK FIBERGLASS OWENS CORNING TYPE 100 FLEXIBLE DUCT WRAP. INSULATION SHALL HAVE AN INSTALLED MINIMUM "R" VALUE OF 6. INSULATION SHALL START AT ROOF CURB OR OPENING AND EXTEND TO CONTROL DAMPER BUT NOT LESS THAN 10 FEET.]
  - ALL INSULATION SHALL HAVE A FACTORY APPLIED FOIL-SCRM-KRAFT VAPOR BARRIER FACING AND SHALL CARRY UL FIRE HAZARD CLASSIFICATION OF 25 - 50 - 25. INSULATION SHALL BE ADHERED TO DUCT SURFACES PER MANUFACTURER'S RECOMMENDATIONS. ON LONGITUDINAL JOINTS, THE OVERLAP SHALL BE STAPLED ON SIX (6) INCH CENTERS AND TAPED WITH A MINIMUM THREE (3) INCH WIDE FOIL REINFORCED KRAFT TAPE. STAPLES SHALL BE SEALED TO MAINTAIN VAPOR BARRIER.
  - INSULATION SHALL COVER ALL STANDING SEAMS AND METAL SURFACES. PROVIDE CORNER BEADING ON ALL EXPOSED DUCTS.
  - INSULATION SHALL BE CUT SLIGHTLY LONGER THAN PERIMETER OF DUCT TO INSURE FULL THICKNESS AT CORNERS. ALL INSULATION SHALL BE APPLIED WITH EDGES TIGHTLY STITCHED WITH STAPLES. TAPE THE STITCHED SEAM WITH THREE (3) INCH WIDE PRESSURE SENSITIVE TAPE. THE VAPOR BARRIER FACING SHALL BE THOROUGHLY SEALED WITH SAME MATERIAL BY APPLYING A VAPOR BARRIER ADHESIVE TO BOTH SURFACES AS RECOMMENDED BY THE MANUFACTURER.
  - ALL JOINTS AND PENETRATIONS OF THE VAPOR BARRIER SHALL BE SEALED WITH THREE (3) INCH PRESSURE SENSITIVE TAPE. ALL CUTS OR TEARS SHALL BE SEALED WITH STRIPS OF ALUMINUM FOIL TAPE.
  - [ALL LINED AND UNLINED DUCTWORK IN ATTIC SPACES WITH BUILDING INSULATION AT THE CEILING LEVEL SHALL BE INSULATED AS DESCRIBED ABOVE.]
  - [ALL RETURN DUCTS IN CEILING SPACE BELOW ROOF SHALL BE INSULATED AS DESCRIBED ABOVE.]
  - [OMIT INSULATION FOR COOLING SYSTEMS: SUPPLY AND RETURN DUCTWORK EXPOSED WITHIN THE AREA THEY SERVE, RETURN DUCTWORK IN CEILING SPACES OF AIR
- CONDITIONED AREAS AND IN RETURN AIR CEILING PLENUMS.]**
- [OMIT INSULATION FOR HEATING SYSTEMS: SUPPLY, RETURN, AND TRANSFER DUCTWORK EXPOSED WITHIN THE AREA THEY SERVE.]
- ACCOUSTICAL LINING FOR RECTANGULAR DUCTWORK**
- FIBERGLASS, ASTM C 1071, TYPE 1, FLEXIBLE: MEETING REQUIREMENTS OF NFPA 90A AND 90B, BONDED WITH THERMOSETTING RESH.
  - DENSITY: NOMINAL 2 LBS PER CU FT.
  - FACING: BLACK COMPOSITE SPRAYED-ON SURFACE, RECOMMENDED AND CERTIFIED BY MANUFACTURER TO PREVENT PARTICLES FROM PENETRATING THE FIBERGLASS, AND TO BE CLEANED BY VACUUM OR DUSTING.
  - PROVIDE DUCT LINING IN ACCORDANCE WITH THE NAIMA STANDARD FOR DESIGN, FABRICATION, AND INSTALLATION OF FIBROUS GLASS DUCT LINER. LINING SHALL MEET THE PHYSICAL PROPERTY REQUIREMENTS OF NFPA 90A, NFPA 90B, AND ASTM C1071, INCLUDING, BUT NOT LIMITED TO CONFORMANCE TO EROSION RESISTANCE TEST OF UL 181, SUITABLE FOR VELOCITIES TO 6000 FEET PER MINUTE, AND ALL OTHER STATED PROVISIONS.
  - SECURE LINING TO DUCT WITH ASTM C916 ASHESIVE WITH 90% AREA COVERAGE PLUS MECHANICALLY SECURE LINER WITH WELDED OR MECHANICAL DUCT LINER FASTENERS IN AN 18 INCH SQUARE GRID PATTERN ON ALL SIDES OF THE DUCTS.
  - PROVIDE METAL HAT SECTION AT TURNING VANES INSULATED WITH THICKNESS EQUAL TO LINER. FASTEN HAT SECTION TO DUCT AND FASTEN TURNING VANES TO HAT SECTION USING SHEET METAL SCREWS.
  - LINING SHALL PROVIDE RESISTANCE TO MICROBIAL GROWTH: TESTED AND SHOWN TO SUPPORT NO GROWTH OF:
    - FUNGI IN ACCORDANCE WITH ASTM G21.
    - BACTERIA IN ACCORDANCE WITH ASTM G22.
  - THICKNESS:
    - TYPICAL: ONE INCH THICK, ASTM C 423 (TYPE A MOUNTING) NOISE REDUCTION COEFFICIENT (NRC) AT LEAST 0.60.
    - WHERE INDICATED: TWO INCHES THICK, ASTM C 423 (TYPE A MOUNTING) NRC AT LEAST 0.95.
  - ADHESIVE FOR ACCOUSTICAL LINING: EQUAL TO FOSTER 85-23, NON-FLAMMABLE ELASTOMER ADHESIVE DESIGNED FOR ATTACHING LOW DENSITY DUCT LINER AND FIBROUS GLASS INSULATION TO SHEET METAL.
- PIPE INSULATION**
- ALL MATERIALS TO BE INSULATED SHALL BE THOROUGHLY CLEANED AFTER SUCCESSFULLY PASSING DOCUMENTED TESTS AND SHALL BE COVERED AS SPECIFIED BELOW. INSULATION SHALL BE OWENS-CORNING FIBERGLASS, KNAUF, MANVILLE, CERTAINTEED, FOSTER PRODUCTS CORP, OR ARMSTRONG WORLD INDUSTRIES. TWO-HOUR RATED INSULATION SHALL BE THERMAL CERAMICS, UNIFRAX CORP, OR EQUAL.
  - INSULATION SHALL BE ONE (1) PIECE OR HALF SECTIONAL MOLDED FIBROUS GLASS WITH A MAX THERMAL CONDUCTIVITY ("K") OF 0.24 AT 75F MEAN TEMPERATURE, FOR SERVICES FROM -60F. TO +250F
  - PIPE INSULATION JACKET SHALL BE FACTORY APPLIED VINYL COATED, EMBOSSED AND REINFORCED VAPOR BARRIER LAMINATE, WITH A PERM RATING OF NOT MORE THAN 0.02 PERMS FOR HOT AND COLD CONCEALED AND EXPOSED PIPING OPERATING AT TEMPERATURES FROM -60F. TO +250F. CIRCUMFERENTIAL BUTT STRIPS SHALL BE OF THE SAME MATERIAL AS JACKET. JACKET AND BUTT STRIPS SHALL BE OFF-WHITE COLOR AND SHALL BE EQUIVALENT TO OWENS-CORNING FIBERGLASS 25 -ASJ.
  - ALL FITTINGS, VALVES, AND FLANGE INSULATION SHALL BE EQUAL IN THICKNESS TO THE ADJOINING INSULATION.
  - ALL CONCEALED PIPE INSULATION SHALL BE HELD IN PLACE WITH STAPLES ON ONE (1) INCH CENTERS WITH ALL JOINTS SEALED WITH SILICONE OR EQUAL ADHESIVE.
  - REFRIGERANT SUCTION PIPING SHALL BE INSULATED WITH 1/2" EXPANDED CLOSED CELL ELASTOMERIC INSULATION. THE INSULATION SHALL BE SELF-SEALING. INSULATION SHALL BE AP/ARMAFLEX SS OR APPROVED EQUAL. ALL EXTERIOR INSULATION SHALL BE COVERED WITH ARMSTRONG UV PAINTED ON COATING. INSULATION SHALL HAVE A THERMAL CONDUCTIVITY ("K") OF 0.27 AT 75F MEAN TEMPERATURE. INSULATION SHALL HAVE A PERM RATING OF NOT MORE THAN 0.08, AND A MINIMUM "R" VALUE OF 3.
  - INTERIOR AIR CONDITIONING CONDENSATE AND PLUMBING PIPING: FIBERGLASS PIPE INSULATION - MINIMUM 1" THICKNESS. GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. PREFORMED PIPE INSULATION SHALL BE ASTM C 547 TYPE I WITH ALL SERVICE JACKET. INSULATION SHALL BE ONE (1) PIECE OR HALF SECTIONAL MOLDED FIBROUS GLASS WITH A THERMAL CONDUCTIVITY ("K") OF 0.24 AT 75F MEAN TEMPERATURE. INSULATION SHALL HAVE A PERM RATING OF NOT MORE THAN 0.08, AND A MINIMUM "R" VALUE OF 3. ALL SERVICE JACKET SHALL BE FACTORY APPLIED, FIRE-RETARDANT, VAPOR BARRIER FOIL/SCRM/KRAFT JACKET. ALL SERVICE JACKET WITH SELF SEALING LAP IS ACCEPTABLE. TAPE SHALL MATCH JACKET AND BE PRESSURE SENSITIVE. FLEXIBLE SHEET INSULATION SHALL BE ASTM C 553 TYPE IV WITHOUT FACING.
  - FOR PIPING HAVING A VAPOR BARRIER INSULATION AND FOR ALL INSULATED PIPING REQUIRING SUPPORTS, HANGERS AND SUPPORTS SHALL BE PROVIDED OUTSIDE THE INSULATION. WHEREVER HANGERS AND SUPPORTS ARE PROVIDED OUTSIDE THE INSULATION, PIPE INSULATION PROTECTING SHIELDS SHALL BE PROVIDED. WHERE INSULATION IS A LOAD BEARING MATERIAL OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE PIPING, PIPE SHIELDS OF 22 GAUGE GALVANIZED SHEET METAL OR 20 GAUGE ALUMINUM, ONE-THIRD THE CIRCUMFERENCE OF THE INSULATION AND OF A LENGTH NOT LESS THAN ONE-THIRD (1/3) THE CIRCUMFERENCE OF THE INSULATION SHALL BE PROVIDED. INSULATION OF SEVEN AND ONE-QUARTER (7-1/4) POUND OR GREATER DENSITY WILL BE CONSIDERED AS LOAD BEARING FOR PIPE SIZES UP TO AND INCLUDING TWO (2) INCHES.



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PROFESSIONAL CERTIFICATION  
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NO.	DATE	ISSUE FOR PERMIT	REMARKS
0	03/29/2023	ISSUE FOR PERMIT	

REVISIONS:

DRAWING TITLE:  
**MECHANICAL SPECIFICATIONS**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
 DRAWN BY: TH CHECKED BY: JLA  
 SHEET NUMBER:

0021-M=  
**M002**

**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

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**GENERAL NOTES**

- REFER TO GENERAL WORK REQUIREMENTS AND NOTES, SPECS, ABBREVIATIONS, SYMBOLS, AND DETAILS FOR ADDITIONAL SYSTEM REQUIREMENTS, INCLUDING FIELD COORDINATION NOTES.
  - ALL WORK, METHODS, AND INSTALLATIONS INVOLVED IN THE BUILDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY/COUNTY BUILDING CODE AND INSPECTION REGULATIONS, AND ALL OTHER OFFICIALS HAVING JURISDICTION AS LISTED ON THE PLUMBING COVER SHEET(S).
  - PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.
- FIELD VERIFICATION/TRADE COORDINATION
- CONTRACTOR SHALL COORDINATE ROUTING OF DUCTWORK AND PIPING IN CEILING SPACES WITH PLUMBING AND ELECTRICAL EQUIPMENT, PIPING, AND CONDUIT, AND WITH ARCHITECTURAL REFLECTED CEILING PLAN. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/

ENGINEER PRIOR TO INSTALLING AN ALTERNATE PLAN.

- CONTRACTOR SHALL COORDINATE ALL APPLIANCE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
- CONTRACTOR SHALL COORDINATE ALL FINISH-OUT WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
- CONTRACTOR SHALL FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL DUCTWORK AND PIPING.
- MECHANICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS, STARTERS, AND/OR DRIVES FOR MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR TO COORDINATE ALL MOTORS & ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO SUPPLY POWER TO DISCONNECTING MEANS.
- APPLIANCES SHALL BE ENERGY STAR RATED AND EQUIPMENT SHALL MEET THE EFFICIENCY REQUIREMENTS OF ASHRAE STD. 90.1 OR LOCAL CODE REQUIREMENTS.

- MEP CONTRACTOR(S) SHALL COORDINATE ARCHITECTURAL ELEMENTS REQUIRED FOR MEP SYSTEMS WITH GC AND OWNER/ARCHITECT, INCLUDING BUT NOT LIMITED TO CHASES, BULKHEADS, FIRE RATINGS, DOOR UNDERCUTS, DOOR LOUVERS, ETC.
- GPR SCAN FLOOR SLAB TO LOCATE EXISTING PIPING SYSTEMS.
- WHERE REQUIRED, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW FIXTURES, CLEANOUTS, AND UNDERSLAB WATER, WASTE, AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING. [FOR SLAB ON GRADE, PROVIDE NEW SLAB ON COMPACTED EARTH AND CONCRETE OF SAME THICKNESS AS EXISTING. DOWEL NEW CONCRETE TO EXISTING WITH 3/4" REBAR AT 24" O/C.] ALL SUCH WORK SHALL BE DONE IN ACCORDANCE WITH THE OWNER AND/OR LANDLORD'S REQUIREMENTS.
- PROVIDE MANUAL VOLUME DAMPERS WITH LOCKABLE SETTING OR OPPOSED BLADE DAMPERS WITH LOCKABLE SETTINGS ON ALL REGISTERS AND DIFFUSERS FOR SYSTEM

BALANCING. REFER TO DEVICE SCHEDULE.

- SIZES NOTED ON SOUND LINED DUCTWORK ARE INSIDE CLEAR/FREE AREA DIMENSIONS.
- PROVIDE RETURN PLENUM WITH RETURN GRILLE AND LOUVERED DOOR(S) FOR UTILITY CLOSETS WHERE A DUCTED RETURN IS NOT POSSIBLE.
- CONTAMINATED EXHAUST DISCHARGE TO OUTSIDE SHALL NOT BE LOCATED WITHIN 10' OF OUTSIDE AIR INTAKES.
- PROVIDE AUTO GRAVITY BACKDRAFT DAMPER FOR ALL EXHAUST OPENINGS.
- PROVIDE FIRE/RADIATION DAMPER FOR ALL DUCTWORK, SUPPLY AND EXHAUST REGISTERS, AND RETURN GRILLES THAT PENETRATE A FIRE RATED ASSEMBLY. DAMPER RATING SHALL MATCH ASSEMBLY RATING.
- PIPE SYSTEMS
- ALL PIPING SHALL BE LOCATED ABOVE CEILING OR TIGHT TO STRUCTURE ABOVE UNLESS OTHERWISE NOTED.
- DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS

OR EQUIPMENT, OR INSIDE ELECTRIC ROOMS.

- INSULATE ALL REFRIGERANT PIPING AND PIPE CONTAINING FLUIDS ABOVE 105°F/BELOW 55°F WITH R-3 INSULATION. REFER TO INSULATION SPEC.
  - CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING BETWEEN AHUS AND CONDENSING/HEAT PUMP UNITS. REFER TO MANUFACTURER'S PRINTED INSTALLATION REQUIREMENTS FOR SIZING, CHARGING, AND MAX HORIZONTAL AND VERTICAL PIPE LENGTHS.
  - REFER TO PLUMBING PLANS FOR CONDENSATE PIPING AND GAS PIPING (WHERE REQUIRED) LAYOUT, SIZES, AND DETAILS.
- TESTING & BALANCING
- AFTER MECHANICAL WORK IS COMPLETE AND AFTER THE WORK HAS BEEN REVIEWED AND DOCUMENTED IN THE COMPLETED MANUFACTURER'S STARTUP CHECKLIST, A CERTIFIED TESTING & BALANCING CONTRACTOR SHALL BALANCE SYSTEM TO AIRFLOWS AND/OR GPM AS SHOWN ON PLANS AND EQUIPMENT SCHEDULES.

**KEYED NOTES**

- CEILING MOUNTED SWITCH OPERATED VENTILATION FAN. PROVIDE 5" TOILET EXHAUST DUCT. INSTALL RADIATION DAMPER WHERE UNIT OR DUCT PENETRATES FIRE RATED ASSEMBLY. FAN SHALL BE ASHRAE 62.2 COMPLIANT.
- ABOVE RANGE MICROWAVE HOOD. PROVIDE 6" KITCHEN RANGE EXHAUST TO OUTDOORS. BOD: WHIRLPOOL WMH 3101, 300 CFM. INSTALL PER MFR INSTRUCTIONS. REFER TO EXHAUST FAN SCHEDULE ON MECHANICAL DWGS AND APPLIANCE SCHEDULE ON PLUMBING DWGS.
- VERTICAL STACKED CLOTHES WASHER/DRYER. PROVIDE 4" DRYER VENT. INSTALL WITHIN FIRE RATED ASSEMBLY FROM DRYER CONNECTION TO DISCHARGE WALL CAP. PROVIDE LOUVERED CLOSET DOORS FOR LAUNDRY CLOSET. REFER TO DETAIL SHEET FOR CONSTRUCTION.
- WHEN DRYER VENT PENETRATES A FIRE RATED ASSEMBLY PROVIDE 1-HOUR FIRE RATED DUCT WRAP. BOD: 3M FIRE BARRIER DUCT WRAP 615+.
- THERMOSTAT TO CONTROL AHU. MOUNT AT CURRENT ADA HEIGHT REQUIREMENT (SHALL NOT EXCEED 48" ABOVE FINISHED FLOOR.)
- INDOOR HVAC UNIT. PROVIDE CONTROL BOX AND FILTER ACCESS CLEARANCE AS RECOMMENDED BY MFR.
- LOW PRESSURE SUPPLY AIR AND RETURN AIR PLENUMS SIZED EQUAL TO FULL SIZE HVAC UNIT CONNECTIONS. PROVIDE SA FLEXIBLE DUCT CONNECTION AT HVAC UNIT.
- CONNECT 3/4" CONDENSATE DISCHARGE TO DOWNSPOUT AT BUILDING EXTERIOR. PROVIDE WITH BACKWATER VALVE. PROVIDE 2" AIR GAP IN CONDENSATE PIPE (UPSTREAM OF ITS CONNECTION WITH THE DOWNSPOUT). ENSURE DOWNSPOUT TERMINATES AT A PERMEABLE SURFACE.
- TWO 2" PVC PIPES FOR COMBUSTION AIR INTAKE AND FLUE. PIPES TO COMBINE TO A PIPE-IN-PIPE TERMINAL.
- OUTSIDE AIR VENTILATION DUCT CONNECTED TO AHU RETURN AIR PLENUM. PROVIDE OPEN/CLOSE MOTORIZED DAMPER & CEILING ACCESS PANEL. INTERLOCK MOTORIZED DAMPER WITH INDOOR HVAC UNIT AND CORRESPONDING EXHAUST FAN. PROVIDE MANUAL VOLUME DAMPER BALANCED TO SCHEDULED AIRFLOW WHEN OPEN.
- PROVIDE DUCT CHASE. MC TO COORDINATE SIZE AND LOCATION WITH GC.
- OA LOUVER SIZED FOR 900 CFM AT MAX 500 FPM AND 0.10 IN WG. BOD: GREENHECK EDJ-430. OA PLENUM: 24" WX54" LX8"D.
- AHU-2 SA DUCTWORK TIGHT TO STRUCTURE/FLOOR ABOVE.
- AHU-1 SA DUCTWORK BELOW AHU-2 DUCTWORK.
- AHU-1 RA DUCTWORK TIGHT TO STRUCTURE/FLOOR ABOVE.
- SA UP TO ER OR SR. TRANSITION FROM BRANCH SIZE TO AIR DEVICE SIZE.
- RA UP TO RG.



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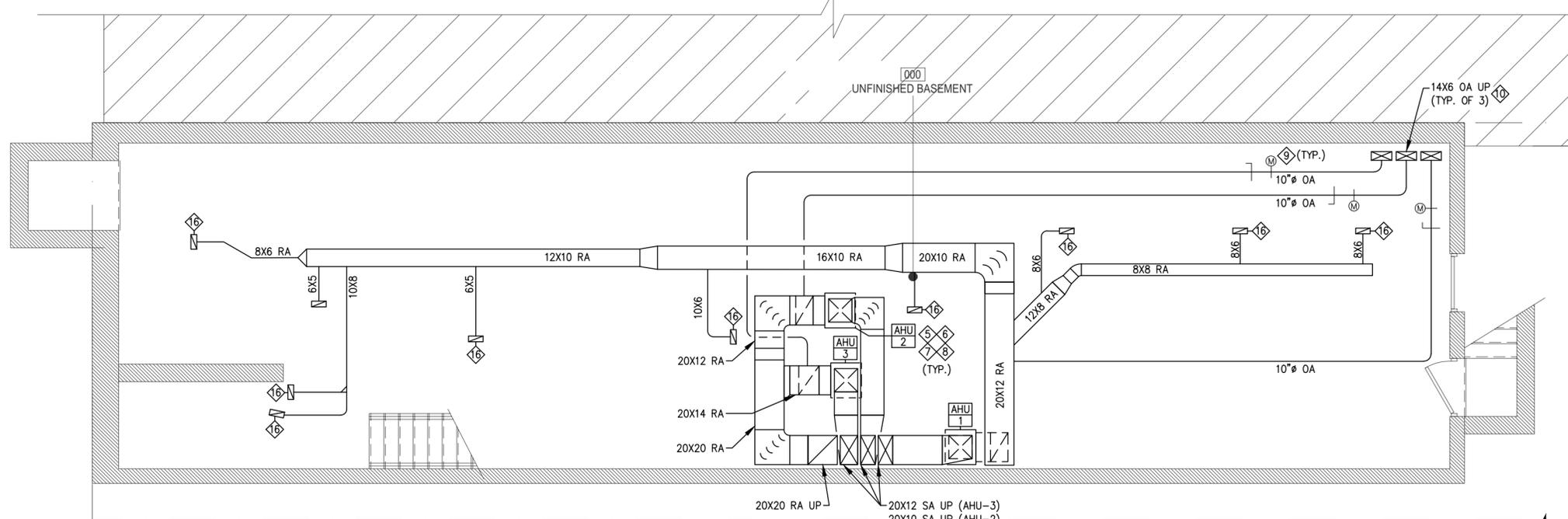
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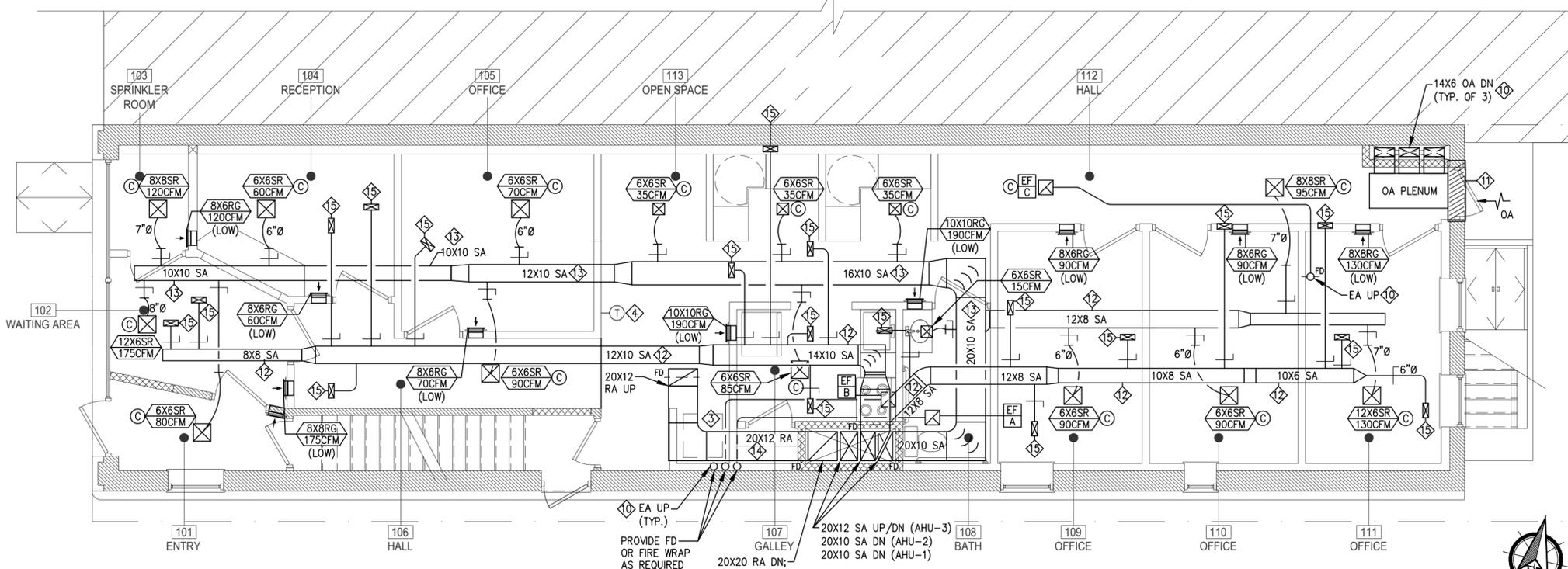
DRAWING TITLE:  
**MECHANICAL BASEMENT & FIRST FLOOR PLANS**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
DRAWN BY: TH CHECKED BY: JLA  
SHEET NUMBER:

0022-M=  
**M101**



**(B) MECHANICAL BASEMENT PLAN**  
SCALE: 3/16" = 1'-0"



**(1) MECHANICAL FIRST FLOOR PLAN**  
SCALE: 2/16" = 1'-0"

**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

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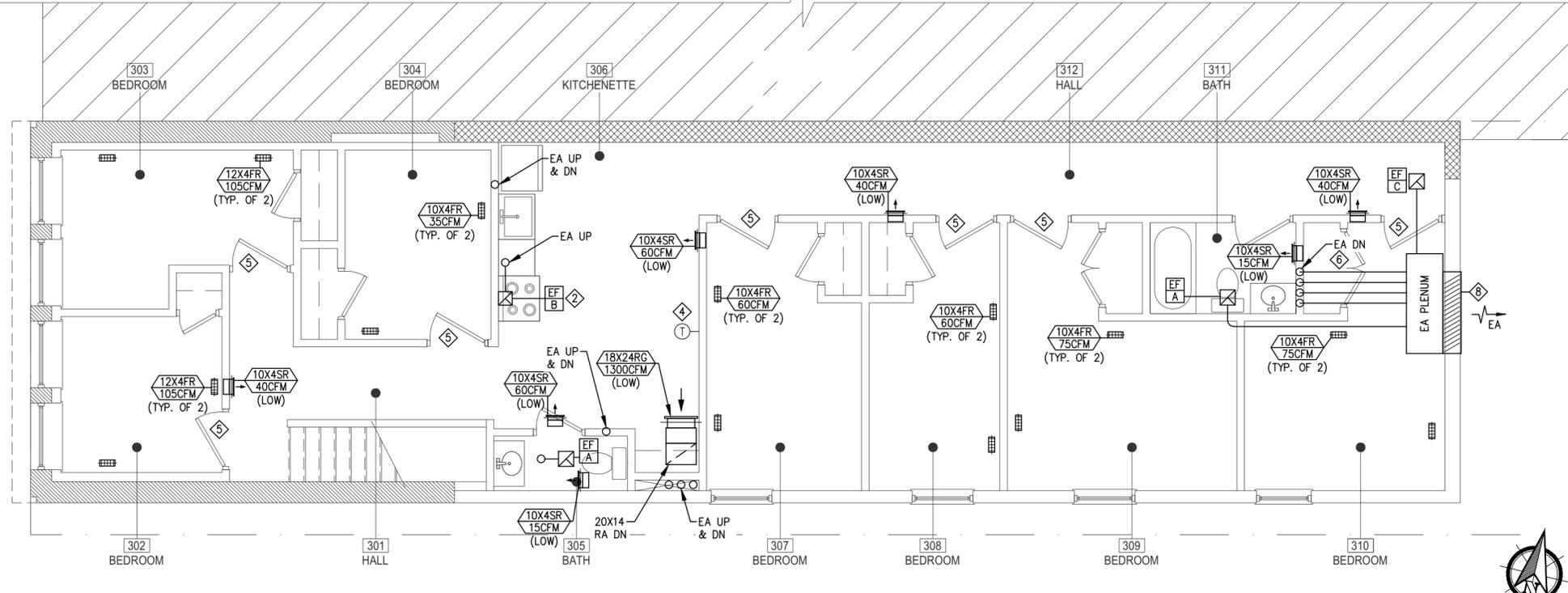
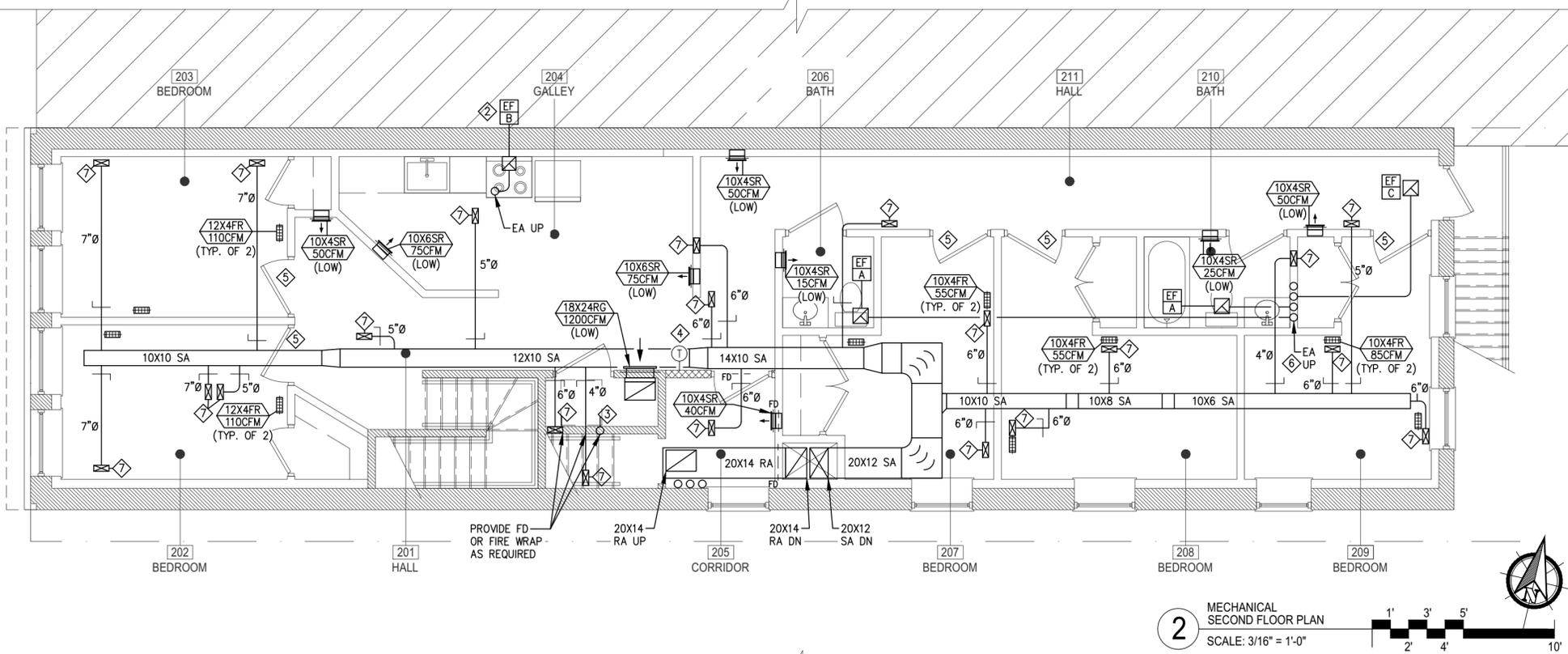
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- DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS

- INSULATE ALL REFRIGERANT PIPING AND PIPE CONTAINING FLUIDS ABOVE 105°F/BELOW 55°F WITH R-3 INSULATION. REFER TO INSULATION SPEC.
- CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING BETWEEN AHUS AND CONDENSING/HEAT PUMP UNITS. REFER TO MANUFACTURER'S PRINTED INSTALLATION REQUIREMENTS FOR SIZING, CHARGING, AND MAX HORIZONTAL AND VERTICAL PIPE LENGTHS.
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**KEYED NOTES**

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- ABOVE RANGE MICROWAVE HOOD. PROVIDE 6" KITCHEN RANGE EXHAUST TO OUTDOORS. BOD: WHIRLPOOL WMH 3101, 300 CFM. INSTALL PER MFR INSTRUCTIONS. REFER TO EXHAUST FAN SCHEDULE ON MECHANICAL DWGS AND APPLIANCE SCHEDULE ON PLUMBING DWGS.
- VERTICAL STACKED CLOTHES WASHER/DRYER. PROVIDE 4" DRYER VENT. INSTALL WITHIN FIRE RATED ASSEMBLY FROM DRYER CONNECTION TO DISCHARGE WALL CAP. PROVIDE LOUVERED CLOSET DOORS FOR LAUNDRY CLOSET. REFER TO DETAIL SHEET FOR CONSTRUCTION.
- WHEN DRYER VENT PENETRATES A FIRE RATED ASSEMBLY PROVIDE 1-HOUR FIRE RATED DUCT WRAP. BOD: 3M FIRE BARRIER DUCT WRAP 615+.
- THERMOSTAT TO CONTROL AHU. MOUNT AT CURRENT ADA HEIGHT REQUIREMENT (SHALL NOT EXCEED 48" ABOVE FINISHED FLOOR.) PROVIDE LOCKABLE COVER.
- UNDERCUT BEDROOM DOORS FOR RETURN AIR PATH BACK TO HVAC UNIT. MC TO COORDINATE WITH GC.
- PROVIDE DUCT CHASE. MC TO COORDINATE SIZE AND LOCATION WITH GC.
- SA UP TO ER OR SR. TRANSITION FROM BRANCH SIZE TO AIR DEVICE SIZE.
- EA LOUVER SIZED FOR 1000 CFM AT MAX 500 FPM AND 0.10 IN WG. BOD: GREENHECK EDJ-430. EA PLENUM: 66"WX24"LX10"D.



**DUCT INSTALLATION NOTES**

- (A) DUCT IS BETWEEN JOIST
- (B) DUCT IS BELOW JOIST IN BULKHEAD; RUN AS CLOSE TO WALL AS POSSIBLE
- (C) INSTALL FIRE RADIATION DAMPER

**DRYER EXHAUST NOTES**

- WHEN DRYER VENT EQUIVALENT LENGTH EXCEEDS 35 FEET, PROVIDE UL705 LISTED VENTILATOR (BOD: FANTECH DEDPV-705. ELECTRIC: 120V/1PH/60HZ, 72W, 0.75A).
- INSTALL SECONDARY LINT TRAP (BOD: FANTECH DBLT4W) BETWEEN DRYER AND VENTILATOR.
- PROVIDE LABEL LOCATED WITHIN 6 FEET OF DRYER EXHAUST CONNECTION THAT IDENTIFIES INSTALLED EQUIVALENT LENGTH.
- INSTALL ACCESS PANEL(S) FOR SECONDARY LINT TRAP AND VENTILATOR MAINTENANCE.
- FOLLOW MFR RECOMMENDATIONS FOR MAINTENANCE AND CLEANING OF LINT TRAP AND VENTILATOR.



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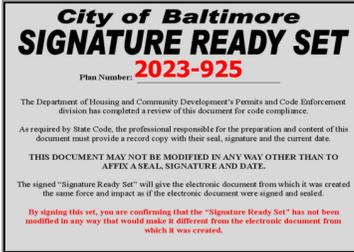
REVISIONS:

DRAWING TITLE	PROJECT NO.	PROJECT DATE
MECHANICAL SECOND & THIRD FLOOR PLANS	22-068	FEB 2023

DRAWN BY: TH  
CHECKED BY: JLA

0023-M=  
**M102**





AIR DEVICE SCHEDULE - COMMERCIAL					
TYPE	TAG	MAX AIRFLOW CFM	DEVICE SIZE INCH	DUCT RUNOUT INCH	MFR / MODEL
SUPPLY DIFFUSER (24x24 PANEL)	SD	90	6X6	6" ø / 6X6	KRUEGER SH
		125		8" ø / 8X8	
		175		8" ø / 8X8	
		270	9X9	10" ø / 10X10	
		325		10" ø / 10X10	
SUPPLY REGISTER	SR	450	12X12	12" ø / 12X12	KRUEGER 80
		90	6X6	6" ø / 6X6	
		125	8X8	8" ø / 8X8	
		175	12X6	8" ø / 8X8	
		270	10X10 / 12X8	10" ø / 10X10	
PERFORATED FACE RETURN GRILLE	RG	325	12X12	10" ø / 10X10	KRUEGER 1190
		450	14X14	12" ø / 12X12	
		200	10X10 (12X12 PANEL)	12X6	
		675	18X18 (24X24 PANEL)	22X8	
		1000	22X22 (24X24 PANEL)	24X10	
RETURN/ EXHAUST REGISTER	RR / ER	2100	22X46 (24X48 PANEL)	24X16	KRUEGER S80
		90	6X6	6X6	
		120	8X6	8X6	
		175	8X8	10X6	
		275	10X10	12X6	
		400	12X12	16X6	
		550	14X14	20X6	
		650	16X16	18X8	
		850	18X18	22X8	
		1400	22X22	26X10	

- NOTES:
- PROVIDE BOD OR EQUAL.
  - SEE PLANS FOR AIR DEVICE SIZES AND AIRFLOWS.
  - NOISE CRITERIA SHALL NOT EXCEED NC-20.
  - NECK VELOCITY SHALL NOT EXCEED 500 FPM.
  - STATIC PRESSURE DROP SHALL NOT EXCEED 0.032 IN. WG.
  - PROVIDE ALL SUPPLY AND RETURN BRANCH RUNOUTS WITH MANUAL VOLUME DAMPER.
  - KRUEGER SH & 1190 MODELS SHALL BE USED IN LAY-IN CEILING.

**GAS FURNACE SPLIT SYSTEM SUGGESTED SEQUENCE OF OPERATION**

**EXHAUST FAN SUGGESTED SEQUENCE OF OPERATION**

- CONTROL:
- HVAC UNITS SHALL BE SUPPLIED WITH A "NEST" THERMOSTAT WITH THE FOLLOWING:
    - HEATING AND COOLING MODE: HEAT-COOL-HEAT/COOL-COOL
    - ECO: ON/OFF
    - SCHEDULE: AUTO-BASIC
    - HOME/AWAY ASSIST: ON/OFF
    - COOLING AND HEATING DEADBAND: 5°F [HEATING TEMPERATURE SETPOINT SHALL NOT BE ALLOWED TO EXCEED COOLING TEMPERATURE SETPOINT]
  - THE INSTALLING CONTRACTOR SHALL SETUP EACH THERMOSTAT WITH THE FOLLOWING CONTROLS:
    - HEATING AND COOLING MODE: HEAT/COOL
    - ECO: ON/ENABLE/"YES"
      - ECO COOLING TEMPERATURE: 80°F
      - ECO HEATING TEMPERATURE: 65°F
    - AUTO SCHEDULE: ON/ENABLE/"YES"
      - COOLING TEMPERATURE: 75°F
      - HEATING TEMPERATURE: 70°F
    - HOME/AWAY ASSIST: ON/ENABLE/"YES"
    - FILTER REMINDER DURATION: 3 MONTHS OR AS RECOMMENDED BY FILTER MFR.

- BATHROOM EXHAUST**
- BATHROOM EXHAUST FAN SHALL BE TURNED ON/OFF WITH A SWITCH.
- RANGE EXHAUST**
- RANGE FAN SHALL BE TURNED ON/OFF WITH A SWITCH OR BUTTON ON MICROWAVE.
  - AND RANGE FAN SHALL BE TURNED ON AUTOMATICALLY ON A RISE OF TEMPERATURE AT THE RANGE.
- DRYER EXHAUST**
- DRYER EXHAUST SHALL OPERATE WHEN THE DRYER IS OPERATING AND VIA MANUFACTURER'S SEQUENCE.

- OPERATION:
- WHILE THE SYSTEM IS SET TO AUTO SCHEDULE, THE FAN SHALL OPERATE WITH CONSTANT VOLUME SUPPLY AIR AND GAS FURNACE AND CONDENSING UNIT SHALL FUNCTION WITH HEATING OR COOLING BASED ON A RISE OR FALL OF SPACE TEMPERATURE FROM SETPOINT ON PROGRAMMABLE THERMOSTAT.
  - WHILE FAN IS SET TO OFF, THE FAN SHALL TURN OFF AND HEATING AND COOLING MODE SHALL BE DISABLED.
  - WHILE FAN IS SET TO ON, THE FAN SHALL RUN CONTINUOUSLY.

- NOTIFICATIONS:
- THE UNITS SHALL HAVE THE FOLLOWING NOTIFICATIONS: HIGH AND LOW SPACE TEMPERATURE, DIRTY FILTER, FAN FAILURE.
  - IF THE SPACE TEMPERATURE RISES ABOVE HIGH TEMP ALARM SETPOINT OR FALLS BELOW LOW TEMP ALARM SETPOINT, A HIGH OR LOWTEMP NOTIFICATION SHALL BE TRANSMITTED TO THE CONTROL PANEL.
  - IF THE FILTER REMINDER DURATION HAS PASSED, A DIRTY FILTER NOTIFICATION SHALL BE TRANSMITTED TO THE CONTROL PANEL.
  - IF A FAN FAILS TO START OR FAILS IN SERVICE, A FAN FAILURE ALARM SHALL BE TRANSMITTED TO THE CONTROL PANEL.

AIR DEVICE SCHEDULE - RESIDENTIAL					
TYPE	TAG	MAX AIRFLOW CFM	DEVICE SIZE INCH	NECK SIZE / DUCT RUNOUT INCH	MFR / MODEL
SUPPLY REGISTER FLOOR	FR	95	10X4	6" ø / 8X4	HART & COOLEY 421 / 350
		110	12X4	6" ø / 8X4	
		130	10X6	7" ø / 8X6	
		150	12X6	8" ø / 8X6	
SUPPLY REGISTER CEILING / SIDEWALL	SR	65	10X4	5" ø / 6X4	HART & COOLEY 682
		95	10X6	6" ø / 8X4	
		120	12X6	7" ø / 10X4	
		200	14X8	8" ø / 10X6	
RETURN/ EXHAUST REGISTER	RR / ER	100	8X6	6" ø / 8X4	HART & COOLEY 672
		150	12X6	8" ø / 8X6	
		200	10X10 / 16X6	9" ø / 12X6	
		325	12X12 / 24X6	10" ø / 14X6	
		425	14X14 / 16X12	10" ø / 12X8	
		550	16X16 / 20X12	12" ø / 14X8	
		650	18X18 / 24X12	12" ø / 20X8/14X12	
		800	20X12	14" ø / 14X12	
		950	30X14	16" ø / 16X14	
		1200	30X18	18" ø / 20X12	

- NOTES:
- PROVIDE BOD OR EQUAL.
  - SEE PLANS FOR AIR DEVICE SIZES AND AIRFLOWS.
  - NOISE CRITERIA SHALL NOT EXCEED NC-20.
  - NECK VELOCITY SHALL NOT EXCEED 500 FPM.
  - STATIC PRESSURE DROP SHALL NOT EXCEED 0.035 IN. WG.
  - PROVIDE ALL SUPPLY REGISTERS WITH OPPOSED BLADE DAMPER.
  - FOR SUPPLY REGISTERS, NECK SIZE / DUCT RUNOUT SIZE IS DUCT BRANCH SIZE. ORDER USING DEVICE SIZE.

FAN SCHEDULE														
TAG	LOCATION	SERVICE	MFR	MODEL NUMBER	FAN DATA				ELECTRICAL DATA				SHIP WEIGHT LB	DIMENSIONS W x D x L
					FAN TYPE	AIRFLOW CFM	ESP IN. WG	FAN RPM	DRIVE TYPE	MOTOR HP	FLA AMPS	MCA / MOCP		
EF-A	BATHROOMS	BATHROOM EXHAUST/ VENTILATION	PANASONIC	FV-08-11VFL5E	CEILING FAN/LIGHT	50	0.4	1,240	DIRECT	26.5 W	0.22	-	12.6	11 X 11 X 6
EF-B	MICROWAVE HOOD	RANGE EXHAUST	WHIRLPOOL	WMH3101	MICROWAVE FAN	300	-	-	DIRECT	-	16	-	-	-
EF-C	FIRST FLOOR CEILING	AHU-1 FIRST FLOOR VENTILATION	GREENHECK	CSP-A390-VG	INLINE	240	0.7	1,298	DIRECT	56 W	0.9	-	24	14 X 12 X 11
EF-C	SECOND FLOOR CEILING	AHU-2 SECOND FLOOR VENTILATION	GREENHECK	CSP-A390-VG	INLINE	240	0.5	1,298	DIRECT	56 W	0.9	-	24	14 X 12 X 11
EF-C	THIRD FLOOR CEILING	AHU-3 THIRD FLOOR VENTILATION	GREENHECK	CSP-A390-VG	INLINE	260	0.3	1,298	DIRECT	56 W	0.9	-	24	14 X 12 X 11

- NOTES:
- ELECTRIC: 120V / 1PH / 60HZ.
  - ALL FANS SHALL BE PROVIDED WITH A BACK DRAFTED DAMPER, IF AVAILABLE FOR FAN.
  - PROVIDE SPEED CONTROLLER FOR ALL DIRECT DRIVE FANS.
  - PROVIDE RADIATION DAMPERS FOR ALL CABINET FANS LOCATED IN RATED ASSEMBLIES.
  - BATHROOM EXHAUST/VENTILATION FAN/LIGHT
    - PROVIDE ADJUSTABLE HUMIDITY SENSOR FOR CONTROL.
    - FAN SHALL BE ENERGY STAR RATED.
    - FAN SHALL BE ASHRAE 62.2 COMPLIANT.
    - INSTALL WITH A GFCI PROTECTED OUTLET, MC TO COORDINATE WITH EC.
    - MAX 15 WATT PER LED BULB FOR FAN/LIGHT.
  - RANGE HOOD EXHAUST
    - MICROWAVE HOOD/RANGE EXHAUST, 2-SPEED CENTRIFUGAL FAN. ELECTRICAL DATA IS FOR ENTIRE MICROWAVE HOOD UNIT. DUCT CONNECTION IS 3-1/4 X 10".
  - SPACE VENTILATION
    - INTERLOCK FAN WITH AHU AND MOTORIZED OA DAMPER FOR EACH SYSTEM.

**SPLIT SYSTEM HEATING AND AIR CONDITIONING UNIT SCHEDULE**

UNIT NO.	AREA SERVED	NOMINAL TONS	FAN DATA						COOLING DATA				HEATING SOURCE				GAS FURNACE HEATING DATA				INDOOR UNIT				OUTDOOR UNIT									
			SUPPLY CFM	MIN. OA CFM	ESP IN. W.C.	HP	FLA	MCA	MOCP	TOTAL MBH	SENS MBH	HEATING TYPE	MFR / MODEL #	INPUT HI/LO MBH	OUTPUT HI/LO MBH	# OF BURNERS	AFUE	SHIP WT LB	DIMENSIONS W X D X H	MFR / MODEL #	SHIP WT LB	DIMENSIONS W X D X H	MFR / MODEL #	TYPE	REFRIGERANT TYPE	SEER	ELECTRIC (230V)				SHIP WT LB	DIMENSIONS W X D X H		
																											COMP.	LRA	HP	FLA			MCA	MOCP
AHU-1 / HP-1	1ST FLR OFFICE	3.5 TON	1200	240	0.6	3/4	4.5	11.9	20	29.3	38.6	GAS	GOODMAN / GM9C960403	40 / 28	38.4 / 26.9	2	96	106	14 X 28-3/4 X 34-1/2	GOODMAN / CAPFA 4230	66	21" * 24-1/2 X 21 X 26	GOODMAN / GSXH50421	CONDENSING UNIT	R-410A	15.2	17.7	110.2	1/4	1.3	23.4	40	282	36 X 36 X 37
AHU-2 / HP-2	2ND FLR DWELLING	3.5 TON	1200	240	0.6	3/4	4.5	11.9	20	29.3	38.6	GAS	GOODMAN / GM9C960403	40 / 28	38.4 / 26.9	2	96	106	14 X 28-3/4 X 34-1/2	GOODMAN / CAPFA 4230	66	21" * 24-1/2 X 21 X 26	GOODMAN / GSXH50421	CONDENSING UNIT	R-410A	15.2	17.7	110.2	1/4	1.3	23.4	40	282	36 X 36 X 37
AHU-3 / HP-3	3RD FLR DWELLING	4 TON	1300	260	0.6	3/4	5.7	13.8	30	32.9	43.8	GAS	GOODMAN / GM9C960403	40 / 28	38.4 / 26.9	2	96	106	14 X 28-3/4 X 34-1/2	GOODMAN / CAPFA 4961	76	21" * 24-1/2 X 21 X 30	GOODMAN / GSXH50481	CONDENSING UNIT	R-410A	15.2	19.9	110	1/4	1.3	26.2	45	282	36 X 36 X 37

- NOTES:
- PROVIDE SPECIFIED UNITS OR EQUAL; INDOOR/OUTDOOR UNIT COMBINATIONS SHALL BE AHRI RATED.
  - PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL.
  - ELECTRIC SERVICE IS 208V / 3PH / 60HZ.
  - ELECTRICAL POWER CONNECTIONS TO BE CONFIRMED BY THE MECHANICAL CONTRACTOR AND COORDINATED WITH THE ELECTRICAL CONTRACTOR.
  - PROVIDE HACR TYPE CIRCUIT BREAKERS OF SIZE NOTED BY MFR INSTALLATION REQUIREMENTS.
  - PROVIDE ALL UNITS WITH PROGRAMMABLE THERMOSTAT. REFER TO SEQUENCE OF OPERATION FOR SYSTEM CONTROLS.
  - PROVIDE VIBRATION ISOLATION PER MFR RECOMMENDATIONS.
- INDOOR UNIT**
- DUCTED UNITS: INDOOR UNIT SHALL BE RATED FOR 2% LEAKAGE.
  - INDOOR UNIT IS VERTICAL.
  - PROVIDE INDOOR UNIT WITH CONDENSATE PUMP AND DRAIN PAN. PROVIDE WATER DETECTION DEVICE AND ALARM IN CONDENSATE DRAIN PAN INTERLOCKED TO SHUT DOWN AHU.
  - DUCTED UNITS: PROVIDE INDOOR UNIT WITH SOUND LINED RETURN AIR PLENUM AND MERV 11 FILTER.

- OUTDOOR UNIT**
- REFRIGERANT TYPE IS R410A.
  - OUTDOOR UNIT IS AIR COOLED CONDENSING UNIT.
  - COOLING CAPACITIES ARE BASED ON 80 F DB, 67 F WB INDOOR ENTERING AIR TEMP AND 95 F AMBIENT OUTDOOR ENTERING AIR TEMP, 45 F SUCTION TEMP.
  - PROVIDE OUTDOOR UNIT WITH TXV VALVE, FREEZE PROTECTION, AND LOW-AMBIENT CONTROLLER.
  - PROVIDE AND INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNITS. REFER TO MANUFACTURER'S PUBLICATION FOR SIZING, CHARGING, AND MAX HORIZONTAL AND VERTICAL PIPE LENGTHS.
- VENTILATION AIR**
- REFER TO VENTILATION CALCULATIONS.
  - VENTILATION AIR SHALL BE VIA OA DUCT WITH MOTORIZED DAMPER AND CEILING ACCESS PANEL. INTERLOCK WITH AHU AND EF.



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PROJECT NO.:	22-068
PROJECT DATE:	FEB 2023
DRAWN BY:	TH
CHECKED BY:	JLA
SHEET NUMBER:	0025-M=

**M201**



**City of Baltimore**  
**SIGNATURE READY SET**  
 2023-925

Plan Number: \_\_\_\_\_

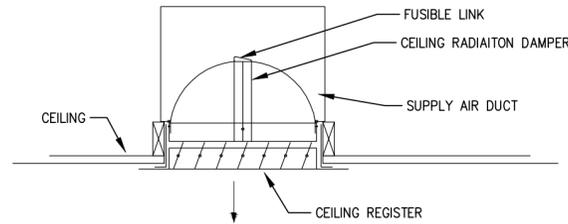
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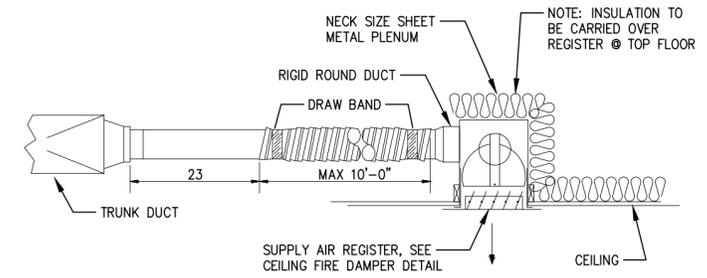
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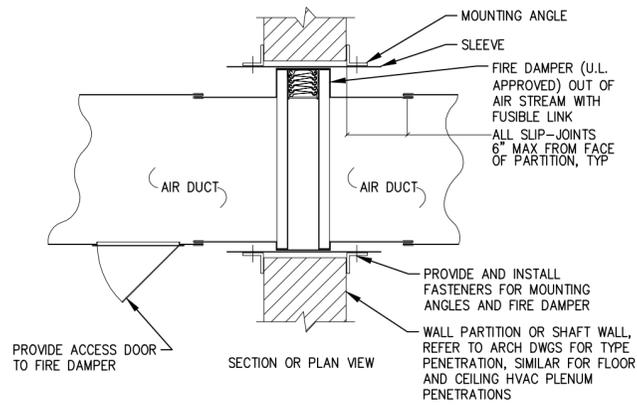
- NOTES:
1. INSTALLATION SHALL CONFORM WITH NFPA, IBC AND LOCAL CODES..
  2. RADIATION DAMPER SHALL BE SUPPORTED FROM BUILDING STRUCTURE.
  3. PROVIDE RADIATION DAMPER AT ALL CEILING REGISTERS PER THIS DETAIL.
  4. RADIATION DAMPERS SHALL BE INSTALLED IN COMPLIANCE WITH U.L. 555 AND IMC.
  5. RADIATION DAMPERS SHALL BE AS MANUFACTURED BY POTTORFF AND C&S AIR PRODUCTS OR AS LISTED ON ARCHITECTURAL FLOOR/CEILING ASSEMBLY DETAILS.

CEILING SUPPLY REGISTER W/ RADIATION (FIRE) DAMPER  
 NTS



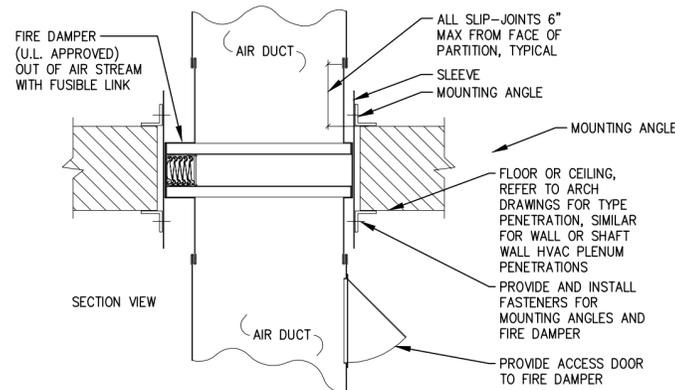
- NOTES:
1. SEE PLANS FOR SIZES AND LOCATION, ALL FLEXIBLE DUCTWORK SHALL BE U.L. 181.S
  2. ALL TOP FLOOR MAIN DUCT WORK, RIGID ROUND RUN-OUTS AND SUPPLY REGISTER BOOTS SHALL BE INSULATED.
  3. PROVIDE FLAT OVAL TAPS AS REQUIRED.

CEILING SUPPLY REGISTER  
 NTS



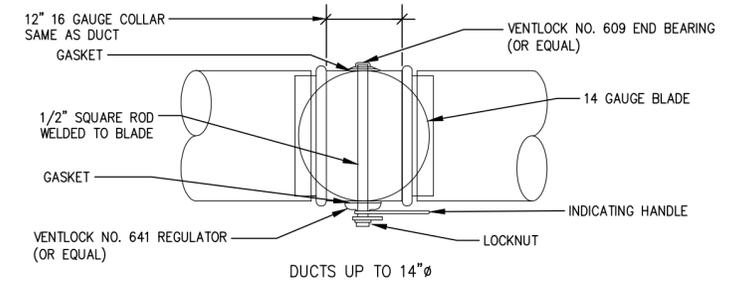
- NOTES:
1. PROVIDE AND INSTALL FIRE DAMPERS AS REQUIRED, WHERE FIRE RATED ASSEMBLIES ARE PENETRATED.
  2. FIRE DAMPERS SHALL CONFORM IN MATERIAL AND INSTALLATION TO U.L. DESIGN 555 CLASSIFICATION FOR FIRE DAMPERS.
  3. PROVIDE ACCESS PANEL WITH APPROPRIATE FINISH THRU ARCHITECTURAL ELEMENTS AS REQUIRED.

HORIZONTAL FIRE DAMPER  
 NTS



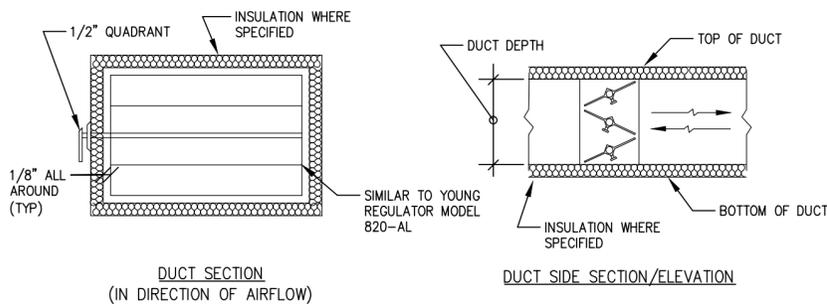
- NOTES:
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  2. FIRE DAMPERS SHALL CONFORM IN MATERIAL AND INSTALLATION TO U.L. DESIGN 555 CLASSIFICATION FOR FIRE DAMPERS.
  3. PROVIDE ACCESS PANEL WITH APPROPRIATE FINISH THRU ARCHITECTURAL ELEMENTS AS REQUIRED.

VERTICAL FIRE DAMPER  
 NTS



- NOTES:
1. WHEREVER POSSIBLE, DAMPER BLAD SHALL BE INSTALLED IN VERTICAL POSITION.
  2. FOR DUCTS OVER 22"Ø, USE OPPOSED BLADE VOLUME DAMPER.
  3. ALL QUADRANT OPERATORS SHALL BE EXTENDED TO OUTSIDE OF INSULATION.

ROUND VOLUME DAMPER  
 NTS



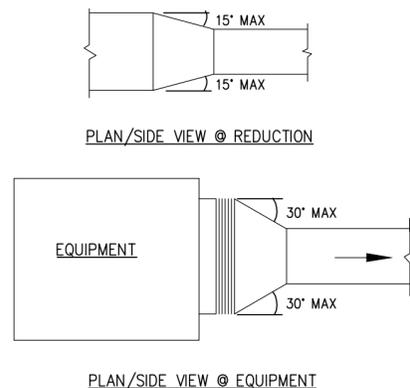
DUCT SECTION  
 (IN DIRECTION OF AIRFLOW)

DUCT SIDE SECTION/ELEVATION

FOR DUCTS UP TO 36"x24"

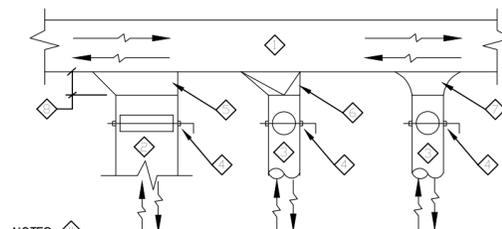
- NOTES:
1. FOR RECTANGULAR DUCTS OVER 12" HIGH USE HIGH PRESSURE OBD.
  2. ALL BRANCH DUCTS (SUPPLY, RETURN, & EXHAUST) SHALL HAVE VOLUME DAMPERS, INCLUDING RUNOUTS TO DIFFUSERS.
  3. ALL QUADRANT OPERATORS SHALL BE LOCKABLE AND EXTENDED TO OUTSIDE OF INSULATION.

RECTANGULAR VOLUME DAMPER  
 NTS



- NOTES:
1. MINIMUM ANGLES SHOWN SHALL APPLY UNLESS OTHERWISE INDICATED ON PLANS.

DUCT TRANSITION  
 NTS



- NOTES:
1. MAIN SUPPLY, RETURN, OR EXHAUST DUCT (LOW OR MEDIUM PRESSURE)
  2. RECTANGULAR BRANCH TAKE-OFF DUCT (LOW OR MEDIUM PRESSURE)
  3. ROUND BRANCH TAKE-OFF DUCT (LOW OR MEDIUM PRESSURE)
  4. VOLUME DAMPER AS INDICATED ON PLANS
  5. 45 DEGREE ENTRY FITTING
  6. RECTANGULAR TO ROUND BOOT DUCT TAKE-OFF FITTING
  7. BELLMOUTH DUCT TAKE-OFF FITTING
  8. DISTANCE = (1/4) X (DUCT WIDTH); 4" MINIMUM DISTANCE

GENERAL NOTE: SPIN-IN DUCT TAKE-OFF FITTINGS MAY BE USED IN LIEU OF CONICAL OR BELLMOUTH FITTINGS ONLY WHERE MAIN DUCT DIMENSIONS ARE NOT SUFFICIENT TO ALLOW THE USE OF A CONICAL OR BELLMOUTH. SEAL ALL TAKE-OFF & OTHER DUCT FITTINGS AIR TIGHT AS PER SPEC. FABRICATE BRANCH DUCT TAKE-OFF FITTINGS PER LATEST EDITION OF SMACNA DUCT CONSTRUCTION MANUAL, AS INDICATED ON PLANS, OR AS DESCRIBED IN SPECIFICATION.

DUCT BRANCH TAP  
 NTS



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REVISIONS:  
 MECHANICAL DETAILS

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
 DRAWN BY: TH CHECKED BY: JLA  
 SHEET NUMBER:

0027-M=  
 M301



# 27 S Gay IgCC Form

Final Audit Report

City of Baltimore

2023-07-25

## SIGNATURE READY SET

Created:

Plan Number:

2023-925

By:

Nicholas Dennis (nick@carballoarch.com)  
The Department of Housing and Community Development's Permits and Code Enforcement division has completed a review of this document for code compliance.

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**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

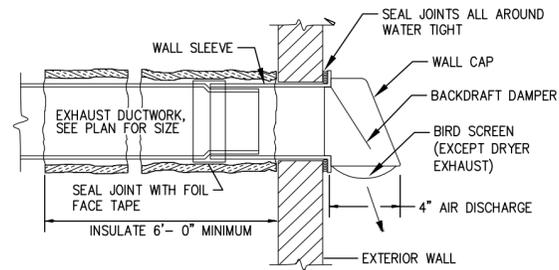
The Department of Housing and Community Development's Permits and Code Enforcement Division has completed a review of this document for code compliance.

As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.

**THIS DOCUMENT MAY NOT BE MODIFIED IN ANY WAY OTHER THAN TO AFFIX A SEAL, SIGNATURE AND DATE.**

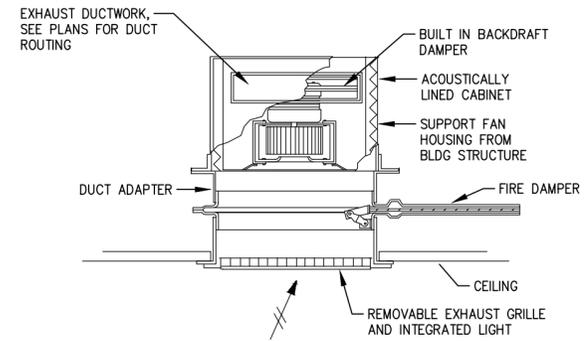
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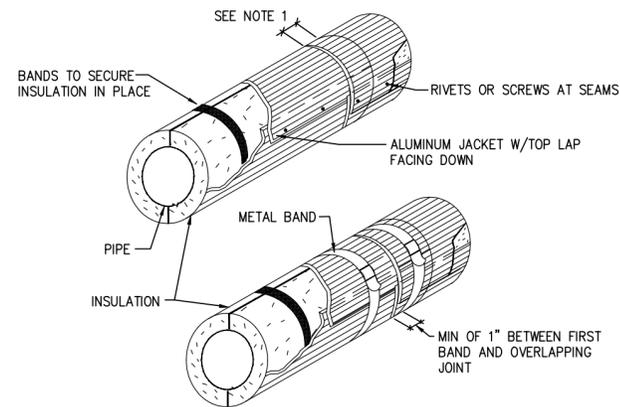
- NOTES:
1. CAPS SHALL MATCH EXTERIOR WALL.
  2. REMOVE BIRD SCREEN AT ALL DRYER VENTS.
  3. ALL DUCT IN UN-CONDITIOND SPACE SHALL BE INSULATED.
  4. FACTORY APPLIED COLOR TO MATCH BUILDINGS EXTERIOR.
  5. REMOVE BACKDRAFT DAMPER AT ALL OUTSIDE AIR INTAKE CAPS.

EXHAUST WALL CAP  
NTS



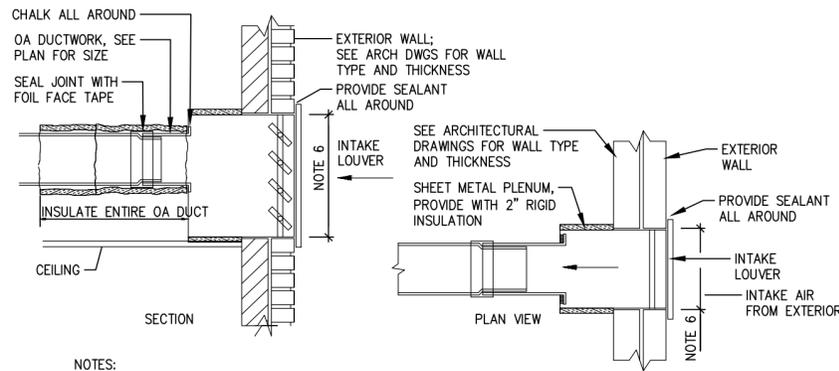
- NOTES:
1. INSTALLATION SHALL CONFORM TO ALL LOCAL REQUIREMENTS FOR FIRE RATED FLOOR/ CEILING ASSEMBLY.
  2. PROVIDE WITH FIRE DAMPER ASSEMBLY.

CEILING EXHAUST FAN W/ FIRE DAMPER  
NTS



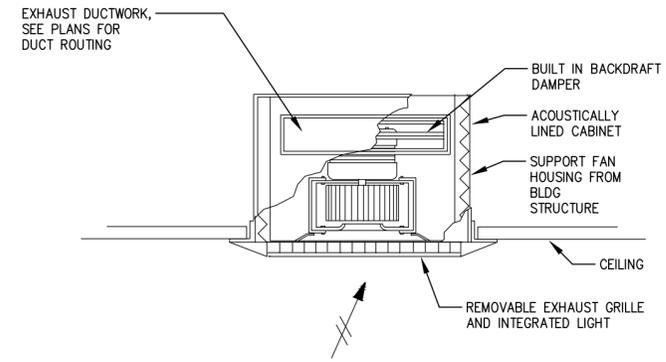
- NOTES:
1. OVERLAP JACKET A MINIMUM OF 1-1/2"

EXTERIOR PIPE INSULATION  
NTS



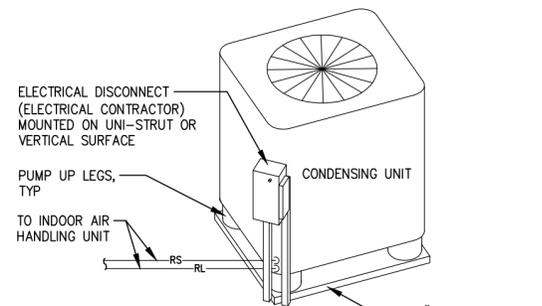
- NOTES:
1. COORDINATE INTAKE LOUVER COLOR AND SIZE WITH ARCHITECT.
  2. FIELD: PROVIDE SAMPLE OF INTAKE PLENUM TO ARCHITCT FOR APPROVAL PRIOR TO FABRICATION OF ENTIRE LOT.
  3. ALL OA DUCT SHALL BE INSULATED.
  4. FACTORY APPLIED COLOR TO MATCH BUILDINGS EXTERIOR.
  5. PLENUM BOX AND LOUVER TO BE AIR AND WATER SEALED ON ALL SIDES THROUGH EXTERIOR WALL.
  6. REFER TO PLANS FOR LOUVER DIMENSIONS.

OUTDOOR AIR INTAKE LOUVERED WALL BOX  
NTS



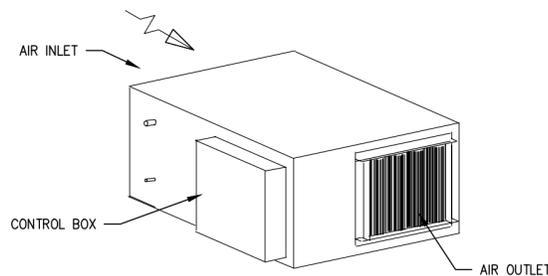
- NOTES:
1. INSTALLATION SHALL CONFORM TO ALL LOCAL REQUIREMENTS FOR FIRE RATED FLOOR/ CEILING ASSEMBLY.
  2. PROVIDE WITH FIRE DAMPER ASSEMBLY, AS NECESSARY.

CEILING EXHAUST FAN  
NTS



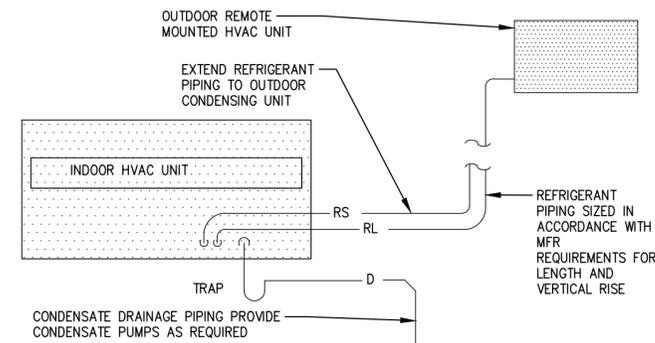
- NOTES:
1. UNIT SHALL BE ELEVATED BY FOUR PUMP UP LEGS MOUNTED ON BRAMEC AIR PAD MODEL NO. 4008.

OUTDOOR HVAC UNIT CONDENSING UNIT  
NTS



- NOTES:
1. REFER TO DETAIL ON THIS SHEET FOR PIPING DETAILS.
  2. PROVIDE FLEXIBLE DUCT CONNECTION.

SPLIT SYSTEM INDOOR UNIT DUCTED  
NTS



- NOTES:
1. CONTRACTOR SHALL FURNISH AND INSTALL REFRIGERANT LINES BETWEEN OUTDOOR AND INDOOR UNITS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS WITH INSULATED SUCTION LINE AND VIBRATION ISOLATORS.
  2. REFRIGERANT SHALL BE R-410A.
  3. PROVIDE MANUFACTURER'S THERMOSTAT AND SUB-BASE.
  4. PROVIDE CONDENSATE DISCHARGE PUMP EXTENDED DISCHARGE TO NEAREST OSD.
  5. LOCATE CONDENSING UNIT FOR PROPER VENTILATION CLEARANCES PER MFR RECOMMENDATIONS.
  6. PROVIDE MFR RECOMMENDED REMOTE CONTROLLER KIT.

INDOOR AHU TO OUTDOOR HVAC UNIT PIPING  
NTS



JARED RUSSELL

27 S GAY ST  
BALTIMORE, MD 21202



MEP ENGINEER  
JLA ENGINEERING, LLC  
BALTIMORE, MD  
443-890-0938

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 40761, EXPIRATION DATE: 07/06/2023.

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NO. DATE REMARKS

REVISIONS:

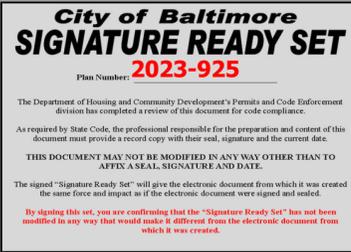
MECHANICAL DETAILS

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023

DRAWN BY: TH CHECKED BY: JLA

SHEET NUMBER:

0028-M=  
M302



GENERAL WORK REQUIREMENTS

- ALL APPLICABLE CODES LISTED ON THIS DRAWING, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER.
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING AND SITE CONDITIONS, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH THE EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION.
- INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM THE MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF THE DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR OF THE BUILDING. REMOVE EXCESS MATERIALS FROM THE SITE AND DISPOSE OF MATERIALS ON A DAILY BASIS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FROM DAMAGE, ALL BUILDING COMPONENTS AND FINISHES. THE CONTRACTOR SHALL, AT HIS EXPENSE, RESTORE TO ORIGINAL CONDITION AREAS OR FINISHES DAMAGED BY HIS WORK.
- ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS, AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING TO AVOID OBSTRUCTIONS.
- PRIOR TO CORE DRILLING, THE AREA TO BE DRILLED SHALL BE X-RAYED AND WRITTEN APPROVAL SHALL BE OBTAINED FROM THE PROJECT'S STRUCTURAL ENGINEER AND OWNER BEFORE PROCEEDING.
- MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND FIRE ALARM CONTRACTORS SHALL BE RESPONSIBLE TO COORDINATE THE INSTALLATION OF THEIR WORK AMONGST EACH OTHER AND WITH THE GENERAL CONTRACTOR SO AS TO MEET ARCHITECTURAL AND ENGINEERING DESIGN INTENT, MEET CODE REQUIREMENTS, AND AVOID INTERFERENCE AND CONFLICT WITH STRUCTURAL ELEMENTS.
- MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS, IF EXISTS. MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND FIRE ALARM CONTRACTORS SHALL BE RESPONSIBLE TO OBTAIN BUILDING STANDARDS FROM GENERAL CONTRACTOR, BUILDING OWNER, AND/OR LANDLORD.
- ALL EQUIPMENT, FIXTURES, AND MATERIALS SHALL BE NEW. OWNER FURNISHED EQUIPMENT, IF EXISTS, IS SCHEDULED ON THE PLUMBING DRAWINGS. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING AND WEATHERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OF PIPES, DUCTS, CONDUIT AND EQUIPMENT. COORDINATE MATERIALS AND METHODS TO MAINTAIN THE INTEGRITY OF THE ROOFING BOND.
- PLUG OR CAP ALL PIPING WHERE NECESSARY AND APPROPRIATE DURING CONSTRUCTION OR FOR FUTURE TENANT CONNECTION. DO NOT LEAVE PIPING OPEN ENDED.
- SUPPORT NEW PIPING FROM BUILDING STRUCTURE AND OR FRAMING IN AN APPROVED MANNER. PROVIDE SUPPORTS AT EIGHT (8) LINEAR FEET INTERVALS, AT ALL CHANGES IN DIRECTION, AND MORE FREQUENTLY IF RECOMMENDED BY PIPE MANUFACTURER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, PROVIDE ADDITIONAL FRAMING.
- SEAL ALL OPENINGS AROUND PIPES, DUCTS, AND CONDUIT THROUGH PARTITIONS AND WALLS WITH APPROVED FIRESTOPPING MATERIAL MEETING ASTM E814 AND NFPA-101.
- ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES AND EQUIPMENT. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED.
- THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS, RIGGING, APPURTENANCES, AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLATION AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE PROVIDED IN A NEAT, WORKMANLIKE MANNER. INCLUDE ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING, AND INSPECTIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL COMPONENTS OF THE INSTALLATION FOR A MINIMUM OF TWO 6 HOUR SESSIONS CONDUCTED ON TWO DIFFERENT DAYS.
- FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF ACTUAL USE OF EQUIPMENT. WHERE DEFECTS OCCUR, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF THE OTHER TRADES AFFECTED BY DEFECTS.

PLUMBING ABBREVIATIONS

A	COMPRESSED AIR PIPE	ETR	EXISTING TO REMAIN	MFR	MANUFACTURER	S	SPRINKLER SUPPLY PIPE
ABV	ABOVE	EWH	ELECTRIC WATER HEATER	MIN	MINIMUM	SAN	SANITARY
AC	AIR COMPRESSOR	EX	EXISTING	MOC	MAXIMUM OVERCURRENT PROTECTION	SF	SQUARE FEET
A/D	ACCESS DOOR	F	DEGREES FAHRENHEIT OR FIRE LINE PIPE	MTD	MOUNTED	SP	STATIC PRESSURE
AFF	ABOVE FINISHED FLOOR	FD	FLOOR DRAIN	N	NEW	SPD	STATIC PRESSURE DROP
AFR	ABOVE FINISHED ROOF	FDC	FIRE DEPARTMENT CONN.	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	SPEC	SPECIFICATION
AHU	AIR HANDLING UNIT	FLR	FLOOR	NFWH	NON-FREEZE WALL HYDRANT	SQ	SQUARE
APD	AIR PRESSURE DROP	FLA	FULL LOAD AMPS	NFRH	NON-FREEZE ROOF HYDRANT	S/S	STAINLESS STEEL
ARCH	ARCHITECT	FS	FLOOR SINK	NIC	NOT IN CONTRACT	SW	STORM WATER PIPE
BLDG	BUILDING	FT	FEET	NTS	NOT TO SCALE	TEMP	TEMPERATURE
BLW	BELOW	FU	FIXTURE UNITS	OC	ON CENTER	TSP	TOTAL STATIC PRESSURE
BOD	BASIS OF DESIGN	G	GAS PIPE	OD	OUTSIDE DIMENSION	TW	DOMESTIC TEMPERED WATER PIPE
BTM	BOTTOM	GPM	GALLONS PER MINUTE	OFD	OVERFLOW DRAIN	TEMP	TEMPERATURE
BWV	BACKWATER VALVE	GPR	GAS PRESSURE REGULATOR	OSD	OPEN SITE DRAIN	TEMP	TEMPERATURE
C	CELSIUS	HP	HORSEPOWER	P	PRIMARY	TEMP	TEMPERATURE
CD	CONDENSATE DRAIN	HP	HORSEPOWER	(P)	PRIMARY	TEMP	TEMPERATURE
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	HW	DOMESTIC HOT WATER	P	PUMP	TEMP	TEMPERATURE
CFM	CUBIC FEET PER MINUTE	HWR	DOMESTIC HOT WATER RETURN	PD	PRESSURE DROP OR PUMPED DISCHARGE	TEMP	TEMPERATURE
CI	CAST IRON	HZ	HERTZ	PH	PHASE	TEMP	TEMPERATURE
CLG	CEILING	ID	INSIDE DIMENSION	PPM	PARTS PER MILLION	TEMP	TEMPERATURE
CO	CLEAN OUT	IN	INCHES	PR	PRESSURE RELIEF	TEMP	TEMPERATURE
CONN	CONNECT OR CONNECTION	INV	INVERT	PRV	PRESSURE RELIEF VALVE	TEMP	TEMPERATURE
CONT	CONTINUED/CONTINUATION	IMC	INTERNATIONAL MECHANICAL CODE	PSI	POUNDS PER SQUARE INCH	TEMP	TEMPERATURE
CV	CHECK VALVE	IPC	INTERNATIONAL PLUMBING CODE	R	RELOCATED	TEMP	TEMPERATURE
CTLR	CONTROLLER	IW	INDIRECT WASTE	RD	ROOF DRAIN (PRIMARY)	TEMP	TEMPERATURE
CW	DOMESTIC COLD WATER	KW	KILOWATTS	REQ	REQUIRED OR REQUIREMENTS	TEMP	TEMPERATURE
DB	DRY BULB	LBS	POUNDS	RLA	RUNNING LOAD AMPERES	TEMP	TEMPERATURE
DIA	DIAMETER	LF	LINEAR FEET	RD	ROUND	TEMP	TEMPERATURE
DN	DOWN	LF	LINEAR FEET	RPM	REVOLUTIONS PER MINUTE	TEMP	TEMPERATURE
DW	DOMESTIC WATER	MAX	MAXIMUM	RX	REMOVE EXISTING	TEMP	TEMPERATURE
DWG	DRAWING	MCA	MINIMUM CIRCUIT AMPACITY	(S)	SECONDARY	TEMP	TEMPERATURE

PLUMBING SYMBOLS

PIPE TYPE	
CD	CONDENSATE PIPE (CD)
	DOMESTIC COLD WATER PIPE (DCW)
	DOMESTIC HOT WATER RETURN PIPE (DHR)
	DOMESTIC HOT WATER PIPE (DHW)
F	FIRE PIPE (F)
FND	FOUNDATION DRAIN PIPE (FND)
G	GAS PIPE (G)
PC	PUMPED CONDENSATE PIPE (PC)
S	SPRINKLER PIPE (S)
SAN	SANITARY PIPE (SAN)
SW	STORM WATER PIPE (SW)
	VENT PIPE

PIPE SYMBOLS	
	PIPE ELBOW/PIPE TEE TURNING UP
	PIPE ELBOW/PIPE TEE TURNING DOWN
	PIPE CAP OR PLUG
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	FLANGED PIPE CONNECTION
	FLOW DIRECTION ARROW

VALVE SYMBOLS	
	SHUT-OFF VALVE
	CHECK VALVE (ARROW INDICATES DIRECTION OF FLOW)
	BACKWATER VALVE (ARROW INDICATES DIRECTION OF FLOW)
	VALVE IN VERTICAL PIPE
	STRAINER
	STRAINER WITH BLOWOFF VALVE
	WATER HAMMER ARRESTER
	WALL HYDRANT OR ROOF HYDRANT
	HOSE BIBB

EQUIPMENT & FIXTURE SYMBOLS	
	FIRE DEPARTMENT CONNECTION
	BACKFLOW PREVENTER ASSEMBLY
	FLOOR DRAIN
	AREA DRAIN
	FLOOR SINK
	PRESSURE GAUGE
	WATER METER
	VENT TO ROOF
	FLOW SWITCH
	VALVE WITH MONITORING SWITCH
	BATH TUB
	WATER CLOSET
	LAVATORY/SINK
	WATER HEATER
	CLEANOUT
	WALL CLEAN OUT

TAGS & NOTES	
	SPECIFIC/KEYED/SHEET NOTE
	PIPE INVERT
	RISER TAG
	EQUIPMENT TAG
	CONNECT TO EXISTING

APPLICABLE CODES

ALL WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE, COUNTY AND OTHER LOCAL CODES THAT GOVERN EACH PARTICULAR TRADE.

BUILDING, FIRE, AND RELATED CODES OF BALTIMORE CITY LOCAL CODE AMENDMENTS LOCAL FIRE MARSHAL'S OFFICE

STATE OF MARYLAND COMAR CODE  
STATE OF MARYLAND FIRE PREVENTION CODE  
MARYLAND STATE HEALTH DEPARTMENT  
MARYLAND ACCESSIBILITY CODE  
REGULATIONS OF THE LOCAL UTILITY COMPANIES WITH RESPECT TO METERING AND SERVICE ENTRANCE EQUIPMENT.

2018 INTERNATIONAL BUILDING CODE (IBC)  
2018 INTERNATIONAL RESIDENTIAL CODE (IRC)  
2017 NATIONAL ELECTRICAL CODE (NEC), NFPA 70  
2018 INTERNATIONAL FUEL GAS CODE (IFGC)  
2018 INTERNATIONAL MECHANICAL CODE (IMC)  
2018 INTERNATIONAL PLUMBING CODE (IPC)  
2018 INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC)  
2018 INTERNATIONAL FIRE CODE (IFC)  
2018 INTERNATIONAL ENERGY CONSERVATION CODE  
2013 ANSI/ASHRAE/IES 90.1  
2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) - WITH STATE MODIFICATIONS  
2012 INTERNATIONAL GREEN CONSTRUCTION CODE (IGCC)  
2012 INTERNATIONAL SWIMMING POOL AND SPA CODE  
NATIONAL FIRE PROTECTION ASSOCIATION STDS, NFPA 2017  
FIRE LIFE SAFETY CODE, NFPA 101-2017

IN ADDITION TO THESE CODES, ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE FOLLOWING SPECIFIC CODES, REGULATIONS, AND/OR STANDARDS:

AIR MOVING AND CONDITIONING ASSOCIATION, AMCA  
AMERICAN NATIONAL STANDARDS INSTITUTE, ANSI  
AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, ASHRAE  
AMERICAN SOCIETY OF MECHANICAL ENGINEERS, ASME  
AMERICAN SOCIETY FOR TESTING AND MATERIALS, ASTM  
AMERICANS WITH DISABILITIES ACT, ADA  
ASSOCIATION AIR BALANCE COUNCIL, AABC  
SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, SMACNA  
PLUMBING DRAINAGE INSTITUTE, PDI  
NATIONAL ENVIRONMENTAL BALANCING BUREAU, NEBB  
NATIONAL SANITATION FOUNDATION, NSF  
UNDERWRITERS LABORATORIES

SCOPE OF WORK

RENOVATION OF 3-STORY PLUS BASEMENT COMMERCIAL BUILDING AS BOARDING HOUSE WITH FIRST FLOOR OFFICE SPACE AND UPPER FLOOR BOARDING SPACE.

PLUMBING SHEETS

- 0035-P=P001 - PLUMBING COVER SHEET
- 0036-P=P002 - PLUMBING SPECIFICATIONS
- 0037-P=P101 - DOMESTIC WATER BASEMENT & FIRST FLOOR PLANS
- 0038-P=P102 - DOMESTIC WATER SECOND & THIRD FLOOR PLANS
- 0039-P=P111 - SANITARY & VENT BASEMENT & FIRST FLOOR PLANS
- 0040-P=P112 - SANITARY & VENT SECOND & THIRD FLOOR PLANS
- 0041-P=P113 - PLUMBING ROOF PLAN
- 0042-P=P201 - PLUMBING EQUIPMENT SCHEDULES
- 0043-P=P301 - PLUMBING RISER DIAGRAM & DETAILS
- 0044-P=P302 - PLUMBING GAS RISER DIAGRAM & DETAILS
- 0045-P=P303 - PLUMBING DETAILS
- 0046-P=P304 - PLUMBING DETAILS



JARED RUSSELL

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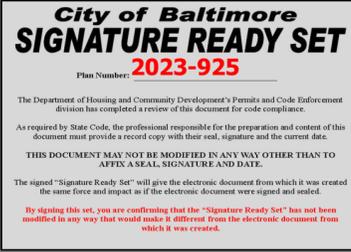
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PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 40761, EXPIRATION DATE: 07/06/2023.

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NO.	DATE	ISSUE FOR PERMIT	REMARKS
0	03/29/2023	ISSUE FOR PERMIT	

DRAWING TITLE: <b>PLUMBING COVER SHEET</b>	
PROJECT NO.: 22-068	PROJECT DATE: FEB 2023
DRAWN BY: TH	CHECKED BY: JLA
SHEET NUMBER: <b>0035-P=P001</b>	



PLUMBING GENERAL SPECIFICATIONS

PLUMBING INSULATION SPECIFICATIONS

GENERAL INSULATION
1. PERFORM WORK IN STRICT ACCORDANCE WITH THE BUILDING, FIRE AND SAFETY CODES OF THE STATE, COUNTY OR CITY IN WHICH THE WORK IS PERFORMED.
2. INSULATION, INCLUDING FITTINGS AND BUTT STRIPS, JACKETS, FACINGS, AND ACCESSORIES SUCH AS ADHESIVES, MASTIC, CEMENTS, TAPES AND CLOTH, SHALL HAVE A FIRE AND SMOKE HAZARD RATING AND LABEL AS TESTED BY ASTM E84, NFPA 255, AND UL 73, NOX EXCEEDING FLAME SPREAD 25, FUEL CONTRIBUTED 50, SMOKE DEVELOPED 50.
3. ALL INSULATION AND ACCESSORIES SHALL BE FREE OF ASBESTOS.
4. PROVIDE INSULATION TO PIPING ONLY AFTER SUCCESSFUL COMPLETION OF INSPECTIONS AND TESTING.
PIPING INSULATION
1. ALL MATERIALS TO BE INSULATED SHALL BE THOROUGHLY CLEANED AFTER TESTS AND SHALL BE COVERED AS SPECIFIED BELOW. INSULATION SHALL BE OWENS-CORNING FIBERGLASS, KNAUF, MANVILLE, CERTAINTED, FOSTER PRODUCTS CORP, OR ARMSTRONG WORLD INDUSTRIES. TWO-HOUR RATED INSULATION SHALL BE THERMAL CERAMICS, UNIFRAX CORP, OR EQUAL.
2. INSULATION SHALL BE ONE (1) PIECE OR HALF SECTIONAL MOLDED FIBROUS GLASS WITH A MAX THERMAL CONDUCTIVITY ("K") OF 0.24 AT 75F MEAN TEMPERATURE, FOR SERVICES FROM -60F. TO +250F
3. PIPE INSULATION JACKET SHALL BE FACTORY APPLIED VINYL COATED, EMBOSSED AND REINFORCED VAPOR BARRIER LAMINATE, WITH A PERM RATING OF NOT MORE THAN 0.02 PERMS FOR HOT AND COLD CONCEALED AND EXPOSED PIPING OPERATING AT TEMPERATURES FROM -60F. TO +250F. CIRCUMFERENTIAL BUTT STRIPS SHALL BE OF THE SAME MATERIAL AS JACKET. JACKET AND BUTT STRIPS SHALL BE OFF-WHITE COLOR AND SHALL BE EQUIVALENT TO OWENS-CORNING FIBERGLASS 25 -ASJ.
4. ALL FITTINGS, VALVES, AND FLANGE INSULATION SHALL BE EQUAL IN THICKNESS TO THE ADJOINING INSULATION.
5. ALL CONCEALED PIPE INSULATION SHALL BE HELD IN PLACE WITH STAPLES ON ONE (1) INCH CENTERS WITH ALL JOINTS SEALED WITH ADHESIVE.
6. REFRIGERANT SUCTION PIPING SHALL BE INSULATED WITH 1/2" EXPANDED CLOSED CELL ELASTOMERIC INSULATION. THE INSULATION SHALL BE SELF-SEALING. INSULATION SHALL BE AP/ARMAFLEX SS OR APPROVED EQUAL. ALL EXTERIOR INSULATION SHALL BE COVERED WITH ARMSTRONG UV PAINTED ON COATING. INSULATION SHALL HAVE A THERMAL CONDUCTIVITY ("K") OF 0.27 AT 75F MEAN TEMPERATURE. INSULATION SHALL HAVE A PERM RATING OF NOT MORE THAN 0.08, AND A MINIMUM "R" VALUE OF 3.
7. AIR CONDITIONING CONDENSATE AND PLUMBING PIPING: FIBERGLASS PIPE INSULATION - MINIMUM 1" THICKNESS, GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. PREFORMED PIPE INSULATION SHALL BE ASTM C 547 TYPE I WITH ALL SERVICE JACKET. INSULATION SHALL BE ONE (1) PIECE OR HALF SECTIONAL MOLDED FIBROUS GLASS WITH A THERMAL CONDUCTIVITY ("K") OF 0.24 AT 75F MEAN TEMPERATURE. INSULATION SHALL HAVE A PERM RATING OF NOT MORE THAN 0.08, AND A MINIMUM "R" VALUE OF 3. ALL SERVICE JACKET SHALL BE FACTORY APPLIED, FIRE-RETARDANT, VAPOR BARRIER FOIL/SCRM/KRAFT JACKET. ALL SERVICE JACKET WITH SELF SEALING LAP IS ACCEPTABLE. TAPE SHALL MATCH JACKET AND BE PRESSURE SENSITIVE. FLEXIBLE SHEET INSULATION SHALL BE ASTM C 553 TYPE IV WITHOUT FACING.
8. FOR PIPING HAVING A VAPOR BARRIER INSULATION AND FOR ALL INSULATED PIPING REQUIRING SUPPORTS, HANGERS AND SUPPORTS SHALL BE INSTALLED OUTSIDE THE INSULATION. WHEREVER HANGERS AND SUPPORTS ARE INSTALLED OUTSIDE THE INSULATION, PIPE INSULATION PROTECTING SHIELDS SHALL BE PROVIDED. WHERE INSULATION IS A LOAD BEARING MATERIAL OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE PIPING, PIPE SHIELDS OF 22 GAUGE GALVANIZED SHEETMETAL OR 20 GAUGE ALUMINUM, ONE-THIRD THE CIRCUMFERENCE OF THE INSULATION AND OF A LENGTH NOT LESS THAN ONE-THIRD (1/3) THE CIRCUMFERENCE OF THE INSULATION SHALL BE PROVIDED. INSULATION OF SEVEN AND ONE-QUARTER (7-1/4) POUND OR GREATER DENSITY WILL BE CONSIDERED AS LOAD BEARING FOR PIPE SIZES UP TO AND INCLUDING TWO (2) INCHES.

Table with 2 columns: SERVICE, INSULATION THICKNESS. Rows include DOMESTIC COLD WATER PIPING (1"), DOMESTIC HOT WATER PIPING UP TO 1-1/2" (1"), REFRIGERANT SUCTION PIPING (1/2"), AIR CONDITIONING CONDENSATE DRAINAGE PIPING (INCLUDING PVC PIPING) (1/2").

FIELD VERIFICATION/TRADE COORDINATION
1. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING SANITARY WASTE AND DOMESTIC WATER PIPING PRIOR TO BEGINNING CONSTRUCTION TO ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
2. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
3. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
4. CONTRACTOR SHALL FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
5. CONTRACTOR SHALL COORDINATE ALL FINISH-OUT WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
6. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.

GENERAL PIPING
1. DRAINAGE PIPING 2" SIZE AND SMALLER SHALL RUN AT A UNIFORM GRADE OF AT LEAST 1/4" PER FOOT, AND PIPING 3" SIZE AND LARGER SHALL BE RUN AT A GRADE OF NO LESS THAN 1/8" PER FOOT. ALL VENT PIPING SHALL BE SLOPED TO DRAIN BACK TO FIXTURES.
2. PROVIDE ONE (1) TRAP PRIMER VALVE FOR EACH FLOOR DRAIN, FLOOR SINK, OR OSD (OPEN SITE DRAIN) WITHOUT A CONSTANT SOURCE OF WATER SUPPLY TO MAINTAIN TRAP SEAL. PRIMER VALVE SHALL BE LOCATED IN AN ACCESSIBLE AREA AND CONNECTED TO THE NEAREST 3/4" COLD WATER LINE SERVING A FIXTURE. PROVIDE TYPE "L" SOFT COPPER WATER TUBING FROM VALVE TO FIXTURE.
3. PROVIDE VACUUM BREAKERS AND BACKFLOW PREVENTERS AS REQUIRED BY LOCAL CODE. PROVIDE WATER HAMMER ARRESTORS AT WASHING MACHINES, DISH WASHERS, [AND] ICE MAKERS. [, AND AT PUBLIC BATH AND SHOWER ROOMS.]
4. [IN ALL ACCESSIBLE DWELLING UNITS A TEMPERING VALVE SHALL BE PROVIDED FOR ALL LAVATORIES. VALVE SHALL BE ASSE STANDARD 1070 TESTED.]
5. ALL (VTR'S) VENT THRU ROOF PENETRATIONS INDICATED ON PLANS ARE PRELIMINARY. FINAL LOCATIONS SHALL BE COORDINATED WITH ALL TRADES. ALL VTR'S SHALL BE A MINIMUM OF 10'-0" FROM ALL FRESH AIR INTAKE OPENINGS.
6. PLUMBING CONTRACTORS SHALL FIELD INVESTIGATE AND VERIFY ALL UTILITY LOCATIONS AND INVERTS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF CONFLICTS. CONTRACTOR SHALL INSPECT SITE PRIOR TO BID AND VERIFY EXISTING CONDITIONS AND CONNECTIONS FOR NEW PIPING. CONTRACTOR IS RESPONSIBLE FOR CONNECTION OF ALL PLUMBING WORK WITHIN [5'- 0"] OF THE EXTERIOR BUILDING WALL.

DOMESTIC COLD WATER, HOT WATER
1. ALL PIPE SHALL COMPLY WITH NSF/ANSI 61.
2. WATER SERVICE PIPE: THE PIPE THAT EXTENDS FROM THE POTABLE WATER SOURCE TO MIN. 5 FEET INSIDE THE INTERIOR OF THE BUILDING
2.1. UNDERGROUND: PROVIDE TYPE "K" SOFT DRAWN COPPER TUBING WITH BRAZED CONNECTIONS.
2.2. ABOVE GROUND: PROVIDE TYPE "L" HARD DRAWN SEAMLESS COPPER TUBING WITH 125 PSI SOLDER JOINTS, COPPER OR BRASS FITTINGS. ASTM B 88.
3. JOINTS: SOLDERED USING 95-5 TIN-ANTIMONY, 0.20% MAXIMUM LEAD CONTENT, ASTM B32, ALLOY GRADE Sb5. PROVIDE ASTM B 828 LEAD FREE SOLDERED JOINTS IN COPPER TUBING. PROVIDE ASTM B 32 GRADE HBHN SOLDER WITH ASTM B 813 HIGH TEMPERATURE WATER SOLUBLE FLUX. RINSE PIPING AFTER SOLDERING TO REDUCE FLUX ACTIVITY; REMOVE EXCESS FLUX RESIDUE.
4. ALTERNATE JOINTS: JOINTS IN COPPER TUBING MAY BE AN EPDM ELASTOMER JOINT SYSTEM THAT IS APPROVED BY ASME B 31, ASTM B 88, AND IAPMO NATIONAL STANDARD PLUMBING CODE (SNPC). JOINTS SHALL BE PREPARED AND PROVIDED BY FACTORY CERTIFIED PERSONNEL.
5. FLUX: NONAGGRESSIVE, NONCORROSIVE TYPE, MEETING FEDERAL SPEC. OF506C, TYPE 1 AND CONTAINING NO MORE THAN 0.20% LEAD.
6. FITTINGS: WROUGHT COPPER SOLDER JOINT, ANSI B16.22.
7. VALVES - COLD AND HOT WATER, BALL VALVES, 2 INCHES AND SMALLER, 600 PSI WOG, SERVICEABLE IN LINE, SOLDER ENDS, NIBCO S-595-Y-66.
8. WATER HAMMER ARRESTERS: SHALL BE STAINLESS STEEL BELLOW TYPE, CERTIFIED IN ACCORDANCE WITH PDI WH 201, WATER HAMMER ARRESTERS, EQUAL TO ZURN SHOKTROL Z-1700. INSTALL IN EACH BRANCH DOMESTIC WATER PIPE (HOT AND COLD) WHICH FEEDS EITHER A BATTERY OF FIXTURES OR A SINGLE FIXTURE. SIZE AND LOCATE IN THE PIPING AS SHOWN ON DRAWINGS AND AS RECOMMENDED BY THE PLUMBING AND DRAINAGE INSTITUTE.
9. WATER DISTRIBUTION PIPE: THE PIPE THAT EXTENDS FROM THE WATER SERVICE PIPE TO THE POINT(S) OF UTILIZATION.
9.1. PROVIDE TYPE "L" HARD DRAWN SEAMLESS COPPER TUBING WITH 125 PSI SOLDER JOINTS, COPPER OR BRASS FITTINGS. ASTM B 88. SEE ABOVE.

SANITARY WASTE AND VENT
1. PIPE: SERVICE WEIGHT CAST IRON AND/OR SCHEDULE 40 PVC (WHERE LOCAL CODE JURISDICTION AND BUILDING RULES ALLOW.
2. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE PRODUCED BY A SINGLE MFR AND SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI).
3. JOINTS: TYLER "TY-SEAL" NEOPRENE SEAL COMPRESSION TYPE GASKETS OR CAULKED JOINTS, JUTE YARNED AND CAULKED WITH LEAD OR APPROVED EQUAL.
4. FITTINGS: PVC OR CAST IRON DRAINAGE PATTERN, DWV, SOCKET TYPE TO MATCH PIPING SYSTEM.
5. FURNISH AND INSTALL P TRAP OF SAME MATERIAL AS PIPING FOR EACH SINK.
6. ABOVE GROUND: 2" AND BELOW: SCH. 40 GALV. STL. PIPE WITH SCREWED ENDS OR SCH. 40 PVC WITH SOLVENT JOINTS OR DWV COPPER WITH SOLDER JOINTS. 3" AND LARGER: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS; OR SCH. 40 PVC WITH SOLVENT JOINTS.
6.1. PVC PIPING SHALL NOT BE USED IN AIR PLENUM CEILINGS AND SHALL NOT CROSS FIRE RATED WALLS, CEILINGS, OR FLOORS.
6.2. PUMPED SANITARY PIPING IN BUILDING SHALL BE SCREWED GALVANIZED SCHEDULE 40 STEEL PIPE.
7. BELOW GRADE: SERVICE WT. CAST IRON WITH BELL OR SPIGOT JOINTS OR SCH. 40 PVC WITH SOLVENT JOINTS.

GAS
1. PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED OR MALLEABLE IRON FITTINGS EACH PERMANENTLY STAMPED OR CAST WITH "W.O.G.".
2. WHERE GAS PIPING CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE SUPPLY PIPE, A 100% SHUT-OFF GAS COCK, REGULATOR, UNIONS, AND A MINIMUM 48" LONG UL LISTED FLEXIBLE METAL GAS CONNECTOR TO EACH ITEM OF KITCHEN EQUIPMENT.
3. ALL OUTSIDE GAS PIPING SHALL BE GALVANIZED STEEL PIPE.
4. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS OR RUNNING THREADS.

WATER HEATER
1. FURNISH AND INSTALL WATER HEATER(S) OF SIZE AND CAPACITY AS INDICATED ON THE DRAWINGS. REFER TO EQUIPMENT SCHEDULES.
2. WATER HEATERS SHALL BE BRADFORD WHITE, RUUD OR APPROVED EQUAL MEETING PERFORMANCE AND WARRANTY REQUIREMENTS.
3. WATER HEATERS SHALL MEET EFFICIENCY OF LOCAL CODE REQUIREMENTS.
4. 50 GALLON ELECTRIC HEATER MODELS SHALL HAVE INSULATION JACKET AS REQUIRED TO MEET ENERGY REQUIREMENTS.
5. TANK SHALL HAVE NON-CFC FOAM INSULATION COVERING THE SIDES AND TOP OF THE TANK.
6. EACH UNIT SHALL HAVE FULLY AUTOMATIC FAST ACTING SURFACE MOUNTED THERMOSTATS.
7. ELECTRIC WATER HEATERS SHALL HAVE SCREW-IN STYLE IMMERSED HEATING ELEMENTS.
8. HEATERS SHALL INCLUDE COLD WATER INLET SEDIMENT REDUCING DEVICE AND HAVE GLASS LINING FUSED TO THE STEEL SURFACE BY FIRING AT A TEMPERATURE OVER 1600F.
9. UNIT SHALL HAVE A FACTORY INSTALLED MAGNESIUM ANODE ROD AND TEMPERATURE AND PRESSURE RELIEF VALVE AND DRAIN VALVE.
10. PROVIDE A DIELECTRIC HEAT TRAP ON INLET AND OUTLET VERTICAL PIPES SERVING ALL HOT WATER HEATERS.
11. HEATER SHALL HAVE A 5 YEAR NON-PRORATED TANK WARRANTY.

HOT WATER RECIRCULATION PUMP
1. PUMP SHALL BE EQUAL TO TACO INC. SERIES 1600 OR SERIES 100 OF SIZE SCHEDULED ON THE DRAWINGS.
2. PUMP SHALL HAVE BRONZE BODY, BRONZE FITTED, WITH BRONZE IMPELLER, STAINLESS-STEEL SHAFT, CUPRO NICKEL SLEEVE, 250 DEGREES F SEALS, AND CARTRIDGE-TYPE SLEEVE BEARINGS. PUMP FLANGES SHALL CONFORM TO ANSI B16.1. INLINE PUMPS SHALL BE PROVIDED WHERE INDICATED AND SHALL BE INSTALLED WITH MOTOR IN HORIZONTAL POSITION. PROVIDE NECESSARY BRACKET TO BUILDING CONSTRUCTION TO SUPPORT THE PUMP AND REDUCE VIBRATION IN PIPE WORK.

HOSE SPRAY UNIT FOR KITCHENS
1. T AND S HOSE SPRAY STANCHION, COMBINATION HOT AND COLD WATER, WITH VACUUM BREAKER AT POINT OF HOSE CONNECTION AND MODIFIED WITH SINGLE 4-FOOT-(1.2-M) LONG REINFORCED HOSE HAVING A SPRAY HEAD (NO VALVE BEYOND VACUUM BREAKER). STANCHION AND TRIM: CHROME-PLATED. BOLT STANCHION TO FLOOR USING 0.5 BY 3-INCH (12.5 BY 75-MM) BOLTS AND EXPANSION SLEEVES SET IN FLOOR.

PIPING AND EQUIPMENT SUPPORT
1. PIPING AND EQUIPMENT SUPPORT SHALL COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, NATIONAL STANDARD PLUMBING CODE AND NFPA 13 UNLESS NOTED OTHERWISE.

PIPING SYSTEMS TESTING
1. NOTIFY OWNER AT LEAST ONE DAY PRIOR TO THE ACTUAL TEST.
2. TEST BEFORE PIPES ARE CONCEALED OR INSULATED. TEST THE PIPING IN SECTIONS AS THE WORK PROGRESSES, SO AS NOT TO DELAY PROGRESS OF THE BUILDING CONSTRUCTION. FURNISH PUMPS AND GAUGES REQUIRED FOR TESTING.
3. CONDUCT PIPING TESTS BEFORE CONNECTING EQUIPMENT THAT WOULD BE SUBJECT TO DAMAGE FROM THE TEST PRESSURE. REPLACE PIPING OR FITTINGS FOUND DEFECTIVE WITH NEW MATERIAL.
4. BRACING AND SUPPORTING: ADEQUATELY BRACE AND SUPPORT PIPING DURING THE TEST, SO THAT NO MOVEMENT, DISPLACEMENT, OR DAMAGE RESULTS FROM THE APPLICATION OF THE TEST PRESSURE.
5. TEST PLUMBING SYSTEMS IN ACCORDANCE TO AHJ PROCEDURES AND/OR THE FOLLOWING:
6. INTERIOR SANITARY AND STORM DRAINAGE PIPING:
6.1. BEFORE CONNECTION OF THE PLUMBING FIXTURES AND BEFORE CONNECTION TO THE SEWER, CAP OR PLUG THE ENTIRE SANITARY, CONDENSATE, AND STORM DRAINAGE PIPING SYSTEMS OF THE BUILDING.
6.2. TEST FOLLOWING THE METHODS OF TESTING REQUIRED BY THE PLUMBING CODE, AND NO LESS THAN THE DURATION AND PRESSURES REQUIRED IN THE SCHEDULE OF PIPING SYSTEMS TESTS.
6.3. WHERE PIPES ARE IN TRENCHES, LEAVE THE TRENCHES OPEN UNTIL THE COMPLETION OF THE TEST.
7. TEST EXTERIOR GRAVITY SANITARY AND STORM SEWER PIPING BY THE EXFILTRATION METHOD. BACKFILL OVER SEWERS TO A MINIMUM DEPTH OF TWO FEET OF COVER PRIOR TO TESTS. PLUG THE LOWER MANHOLE, FILLING THE SECTION BETWEEN MANHOLES WITH WATER AND MEASURING THE DROP IN WATER LEVEL IN THE UPPER MANHOLE. FURNISH WATER FOR TESTING, AND MAINTAIN IT AT LEVELS DIRECTED BY THE [ ARCHITECT ] [ ENGINEER ] FOR A PERIOD OF AT LEAST 24 HOURS. REPAIR OR REPLACE ALL VISIBLE LEAKS AND ALL DEFECTS TO MEET THE MAXIMUM ALLOWABLE LEAKAGE SHOWN IN THE SEWER PIPING TEST SCHEDULE AT THE END OF THIS SECTION.
8. REFRIGERANT PIPING: TEST AS SPECIFIED ON MECHANICAL PLANS.
9. TEST GAS SYSTEMS IN ACCORDANCE WITH NFPA 54. TEST GAS SYSTEMS WITH COMPRESSED AIR OR NITROGEN, CONDUCTED AND DOCUMENTED IN ACCORDANCE WITH NFPA SAFETY PROCEDURES. WHEN TEST(S) ARE SUCCESSFULLY COMPLETE, FILL GAS PIPING IN ACCORDANCE WITH NFPA SAFETY PROCEDURES.

10. TEST DURATION AND PASS/FAIL CRITERIA SHALL BE IN ACCORDANCE WITH AHJ REQUIREMENTS AND/OR THE FOLLOWING:
11. TEST THE PIPING SYSTEMS FOR NOT LESS THAN FOUR HOURS TO FULFILL THE CONDITIONS IN THE PIPING SYSTEMS TEST SCHEDULE ON THIS SHEET OR ON SCHEDULE SHEET.
12. DOCUMENTATION OF TESTS: PREPARE A TEST REPORT FOR EACH PORTION OF PIPING TESTED, IDENTIFIED BY SERVICE, MATERIAL, LOCATION, AND PIPE SIZE. INCLUDE THESE ITEMS
12.1. DATE OF TEST.
12.2. STARTING AND COMPLETION TIMES.
12.3. INITIAL TEST PRESSURE.
12.4. FINAL TEST PRESSURE.
12.5. PROBLEMS OR LEAKS DETECTED.
12.6. CORRECTIVE ACTIONS TAKEN.
12.7. RECORD OF SUCCESSFUL COMPLETION OF TESTING.
12.8. NAME, TITLE, AND SIGNATURE OF PERSON CONDUCTING TEST.

DISINFECTING POTABLE WATER SYSTEMS
1. USE THE FOLLOWING METHOD:
1.1. FLUSH SYSTEM UNTIL NO DIRTY WATER APPEARS AT ALL POINTS OF OUTLET.
1.2. FILL ENTIRE SYSTEM AT ALL OUTLET POINTS WITH CHLORINE SOLUTION (MIN. 50 PPM) AND LET STAND FOR 24 HOURS.
1.3. FLUSH WITH CLEAN WATER UNTIL CHLORINE SOLUTION IS NOT PRESENT AT ALL OUTLET POINTS.
1.4. REPEAT PROCESS UNTIL THERE IS NO BACTERIA PRESENT.
1.5. DOCUMENT TESTING PROCESS AND TEST RESULTS ON FORMS APPROVED BY LOCAL AHJ.

IDENTIFICATION
1. GENERAL: DO NOT APPLY IDENTIFICATION UNTIL INSULATION AND FINISH PAINTING WORK IS COMPLETE.
2. EQUIPMENT:
2.1. STENCIL EQUIPMENT WITH MINIMUM TWO-INCH (50-MM) -HIGH LETTERS OR PROVIDE IDENTIFICATION TAGS. CLEARLY IDENTIFY FUNCTION, EQUIPMENT SERVED, AND AREA SERVED.
2.2. FIRMLY FASTEN EACH IDENTIFICATION TAG TO ITS APPROPRIATE PIECE OF EQUIPMENT WITH DRIVE SCREWS, SHEET METAL SCREWS, OR RIVETS. DO NOT INTERFERE WITH OPERATION OF, OR DAMAGE THE ITEM BEING MARKED.
3. PIPING:
3.1. MARK BY STENCILING.
3.2. MARK TO IDENTIFY SERVICE WITH ARROWS SHOWING DIRECTION OF FLOW. APPLY MARKINGS NEAR BUILDING WALLS WHERE PIPES ENTER OR LEAVE AN ACCESSIBLE SPACE AND IN INTERMEDIATE LOCATIONS SO THAT MARKINGS ARE NO MORE THAN 30 FEET (9 M) APART. THEY SHALL BE READILY VISIBLE TO A PERSON STANDING ON THE FLOOR.
3.3. FULLY IDENTIFY ALL PIPING INSTALLED AS WORK OF THE PROJECT.
3.4. MARK PIPE WITH LETTERS OF HEIGHT AND WITH COLORS AS REQUIRED BY OSHA AND CONFORMING TO ANSI A13.1.
3.5. IDENTIFY EVERY THERMOMETER, GAUGE, AND CONTROL DEVICE.
3.6. PROVIDE VALVE TAGS FOR ALL VALVES EXCEPT STOP VALVES ON INDIVIDUAL FIXTURES OR EQUIPMENT WHERE THEIR FUNCTION IS OBVIOUS, OR WHERE THE FIXTURE OR EQUIPMENT IS IMMEDIATELY ADJACENT. NUMBERS SHALL CORRESPOND TO THOSE SHOWN ON THE VALVE CHART. ATTACH TAGS TO VALVE SHAFT.
4. STENCIL DUCTWORK AFTER INSULATION IS APPLIED, IF REQUIRED, WITH MINIMUM TWO-INCH (50-MM)-HIGH LETTERS, CLEARLY IDENTIFYING SERVICE (SUPPLY, RETURN, EXHAUST) AND SHOWING DIRECTION OF FLOW WITH ARROWS. MARK DUCTS NEAR THE BUILDING WALLS WHERE THEY ENTER OR LEAVE A SPACE, AND AT INTERVALS OF NOT MORE THAN 30 FEET (9 M). IDENTIFICATION SHALL BE VISIBLE TO A PERSON STANDING ON THE FLOOR.
5. CEILING IDENTIFICATION TAGS: PROVIDE ON THE ACCESS DOOR OR, IN SUSPENDED CEILINGS, ON THE CEILING SUPPORT ADJACENT TO THE UNIT.
5.1. VALVES: IDENTIFY WITH THE SAME NUMBER SHOWN ON THE VALVE TAG.
5.2. TERMINAL UNITS ABOVE CEILINGS: IDENTIFY WITH UNIT DESCRIPTION AND NUMBER.

SHOP DRAWINGS
1. PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.

Table with 4 columns: SYSTEM, TEST PRESSURE (PSIG (kPa)), ALLOWABLE DROP, MEDIUM. Rows include Domestic water service and exterior water piping, Domestic water, cold & hot, and recirculated, Sprinkler water and fire line, Air conditioning condensate drain, Sanitary waste, Pumped sanitary, Storm, Fuel gas.

Table with 2 columns: Dia. of Sewer in (mm), Leakage Gal/100 ft./24 hrs (L/M/24 hrs). Rows include 6 (150), 8 (200), 10 (250), 12 (300).

Table with 4 columns: PDI UNIT RATING, FIXTURE UNIT RATING, A, B, C. Row includes 1-11, 12-32, 33-60.

NOTES: ALL WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.



JARED RUSSELL

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PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40761, EXPIRATION DATE: 07/06/2023.

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03/29/2023 ISSUE FOR PERMIT NO. DATE REMARKS:

REVISIONS: PLUMBING SPECIFICATIONS

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023 DRAWN BY: TH CHECKED BY: JLA SHEET NUMBER:

0036-P= P002

**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

Plan Number:  
The Department of Housing and Community Development's Permits and Code Enforcement division has completed a review of this document for code compliance.  
As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.  
THIS DOCUMENT MAY NOT BE MODIFIED IN ANY WAY OTHER THAN TO AFFIX A SEAL, SIGNATURE AND DATE.  
The signed "Signature Ready Set" will give the electronic document from which it was created the same force and impact as if the electronic document were signed and sealed.  
By signing this set, you are confirming that the "Signature Ready Set" has not been modified in any way that would make it different from the electronic document from which it was created.

**GENERAL NOTES**

- REFER TO GENERAL WORK REQUIREMENTS AND NOTES, SPECS, ABBREVIATIONS, SYMBOLS, AND DETAILS FOR ADDITIONAL SYSTEM REQUIREMENTS, INCLUDING FIELD COORDINATION NOTES.
- ALL WORK, METHODS, AND INSTALLATIONS INVOLVED IN THE BUILDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY/COUNTY BUILDING CODE AND INSPECTION REGULATIONS, AND ALL OTHER OFFICIALS HAVING JURISDICTION AS LISTED ON THE PLUMBING COVER SHEET(S).
- PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.
- CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, AND CONDUIT, AND WITH ARCHITECTURAL REFLECTED CEILING PLAN. SHOULD A CONFLICT OCCUR THE

- CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER PRIOR TO INSTALLING AN ALTERNATE PLAN.
- CONTRACTOR SHALL COORDINATE ALL APPLIANCE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
- CONTRACTOR SHALL COORDINATE ALL FINISH-OUT WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
- CONTRACTOR SHALL FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL DISCONNECTS, STARTERS, AND/OR DRIVES FOR PLUMBING EQUIPMENT. PLUMBING CONTRACTOR TO COORDINATE ALL MOTORS & ELECTRICAL REQUIREMENTS FOR PLUMBING EQUIPMENT WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO SUPPLY POWER TO DISCONNECTING MEANS.
- APPLIANCES SHALL BE ENERGY STAR RATED AND EQUIPMENT SHALL MEET THE EFFICIENCY REQUIREMENTS OF

- ASHRAE STD. 90.1 OR LOCAL CODE REQUIREMENTS.
- MEP CONTRACTOR(S) SHALL COORDINATE ARCHITECTURAL ELEMENTS REQUIRED FOR MEP SYSTEMS WITH GC AND OWNER/ARCHITECT, INCLUDING BUT NOT LIMITED TO CHASES, BULKHEADS, FIRE RATINGS, DOOR UNDERCUTS, DOOR LOUVERS, ETC.
  - GPR SCAN FLOOR SLAB TO LOCATE EXISTING PIPING SYSTEMS.
  - WHERE REQUIRED, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW FIXTURES, CLEANOUTS, AND UNDERSLAB WATER, WASTE, AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING. [FOR SLAB ON GRADE, PROVIDE NEW SLAB ON COMPACTED EARTH AND CONCRETE OF SAME THICKNESS AS EXISTING. DOWEL NEW CONCRETE TO EXISTING WITH 3/4" REBAR AT 24" O/C.] ALL SUCH WORK SHALL BE DONE IN ACCORDANCE WITH THE OWNER AND/OR LANDLORD'S REQUIREMENTS.
- GENERAL

- A LICENSED PLUMBER SHALL REPAIR, REPLACE, AND/OR PROPERLY PROVIDE ALL PLUMBING SERVICE LINES, FIXTURES, EQUIPMENT, AND SYSTEMS.
- DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.
- DOMESTIC WATER
- PRIOR TO BEGINNING CONSTRUCTION, COORDINATE PLUMBING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL CODE AUTHORITY AND PROVIDE AS DIRECTED.
- ALL DW PIPING SHALL BE ABOVE CEILING OR TIGHT TO STRUCTURE ABOVE UNLESS OTHERWISE NOTED.
- WHERE INDICATED ON DRAWINGS, PROVIDE A DOMESTIC WATER SUBMETER SPECIFICALLY LISTED BY THE AHJ AS AN APPROVED BILLING SUBMETER.
- ALL LAVATORY, SHOWER/TUB, AND KITCHEN SINK PIPING SHALL BE PIPED HOT ON LEFT, COLD ON RIGHT (TYP).
- ALL MIXING VALVES SHALL LIMIT HOT WATER TEMPERATURE TO TEMPERATURE LISTED ON PLUMBING FIXTURE SCHEDULE.

- VALVES SHALL BE DESIGNED FOR THE WATER PRESSURE AND TEMPERATURE CONDITIONS OF THIS PROJECT.
- DOMESTIC HOT WATER LINE SIZE: MAXIMUM SHALL BE [AS INDICATED] [3/4"] AND MINIMUM SHALL BE 1/2" EXCEPT LINE SIZE MAY BE SMALLER AT FIXTURE CONNECTION. DOMESTIC COLD WATER LINE SIZE: MAXIMUM SHALL BE AS INDICATED AND MINIMUM SHALL BE 1/2" EXCEPT LINE SIZE MAY BE SMALLER AT FIXTURE CONNECTION.
  - INSULATE ALL HOT WATER PIPING, COLD WATER PIPING, AND PIPE CONTAINING FLUIDS ABOVE 105°F/BELOW 55°F WITH R-3 INSULATION. REFER TO INSULATION SPEC AND SCHEDULE. SPRINKLER
  - WHERE REQUIRED, DESIGN OF SPRINKLER SYSTEM SHALL BE BY OTHERS AND SUBMITTED UNDER A SEPARATE PERMIT.

**KEYED NOTES**

- LAV, TUB/SHR, KS, WMB: 1/2" CW & 1/2" HW. PROVIDE WATER HAMMER ARRESTOR FOR WMB.
  - WC, IMB: 1/2" CW. PROVIDE WATER HAMMER ARRESTOR FOR IMB.
  - DW: 3/8" HW. PROVIDE WATER HAMMER ARRESTOR.
  - SPRINKLER SYSTEM; REFER TO SPRINKLER NOTES.
  - INCOMING WATER SERVICE; REFER TO WSFU CALCULATIONS. COORDINATE SIZE WITH UTILITY AND SPRINKLER CONTRACTOR.
  - WATER TIGHT PIPE SLEEVE THROUGH EXTERIOR WALL.
  - DOMESTIC WATER HORIZONTAL DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTERS; REFER TO RISER DIAGRAM, DETAILS, & SCHEDULE. MAINTAIN MIN 2'-0" CLEARANCE FOR FOR BACKFLOW PREVENTER MAINTENANCE.
  - PROVIDE DEMAND CONTROLLED HOT WATER RECIRCULATION SYSTEM. REFER TO HOT WATER HEATER PIPING DETAIL/DIAGRAM.
  - 1-1/2" SOLENOID VALVE. VALVE SHALL FULLY CLOSE (AND THEREFORE CI OFF ALL DOMESTIC WATER) UPON SIGNAL FROM SPRINKLER FLOW SWITCH.
  - FLOW SWITCH.
  - NFPA 13 SPRINKLER MANIFOLD.
  - COORDINATE EXACT GAS CONNECTION SIZE AND LOCATION FOR EACH HVAC, PLUMBING, AND/OR KITCHEN EQUIPMENT WITH FINAL AND APPROVED EQUIPMENT SUBMITTALS.
- PROVIDE SHUT OFF VALVE AND REGULATOR FOR EACH KITCHEN APPLIANCE, MECHANICAL EQUIPMENT, AND PLUMBING EQUIPMENT. REFER TO SPECS, DETAILS, AND RISER DIAGRAMS.
- ROUTE GWH AND AHU FURNACE VENT/FLUE AND INTAKE PIPING TO OUTSIDE. REFER TO COMBUSTION GAS VENT/FLUE PIPING NOTES THIS SHEET.



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**COMB. GAS VENT/FLUE PIPING NOTES**

- COMBUSTION GAS VENT/FLUE PIPING SHALL BE PROVIDED AS A COMPLETE SYSTEM INCLUDING PIPE, FITTINGS, CEMENT, AND INTAKE/EXHAUST VENTING AND TERMINATIONS ALL FROM ONE MANUFACTURER INCLUDING ACCESSORIES SIZED FOR THE SCHEDULED UNITS. THE SYSTEM SHALL BE:
  - ENGINEERED PVC FLUE GAS VENTING SYSTEM.
  - UL 1738 CERTIFIED VENT SYSTEM FOR CATEGORIES II AND IV GAS BURNING APPLIANCES.
  - RATED FOR FLUE GAS TEMPERATURES UP TO 149F.
  - MEET NFPA 54-18 AND IFGC-18 FUEL GAS CODES.
  - FLUID PVC PIPING SHALL NOT BE USED FOR COMBUSTION GAS VENTING.
  - BOD: IPEX ENGINEERED VENT SYSTEM PVC/UL 1738 CERTIFIED.
  - PROVIDE WATER AND WEATHER TIGHT ROOF PENETRATIONS AT INTAKE AND EXHAUST PIPING IN ACCORDANCE WITH THE DETAILS AND PROVISIONS OF THESE DRAWINGS.

**SPRINKLER NOTES**

- THE SPRINKLER SYSTEM, MATERIALS USED, AND METHODS OF INSTALLATION FOR THIS MULTI-USE BUILDING SHALL BE AS PER THE PROVISIONS IN NFPA 13, INCLUDING:
  - PIPE USED IN THE SPRINKLER SYSTEM SHALL COMPLY WITH MATERIALS AS SPECIFIED IN TABLE 7.3.1.1.
  - FITTING MATERIALS SHALL CONFORM TO TABLE 7.4.1.
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- WEATHER EXPOSED SPRINKLER PIPING AND PIPING LOCATED IN UNHEATED INTERIOR SPACES SHALL BE DESIGNED BY THE SPRINKLER CONTRACTOR TO OPERATE ACCORDING TO WINTER OUTDOOR AIR CONDITIONS.

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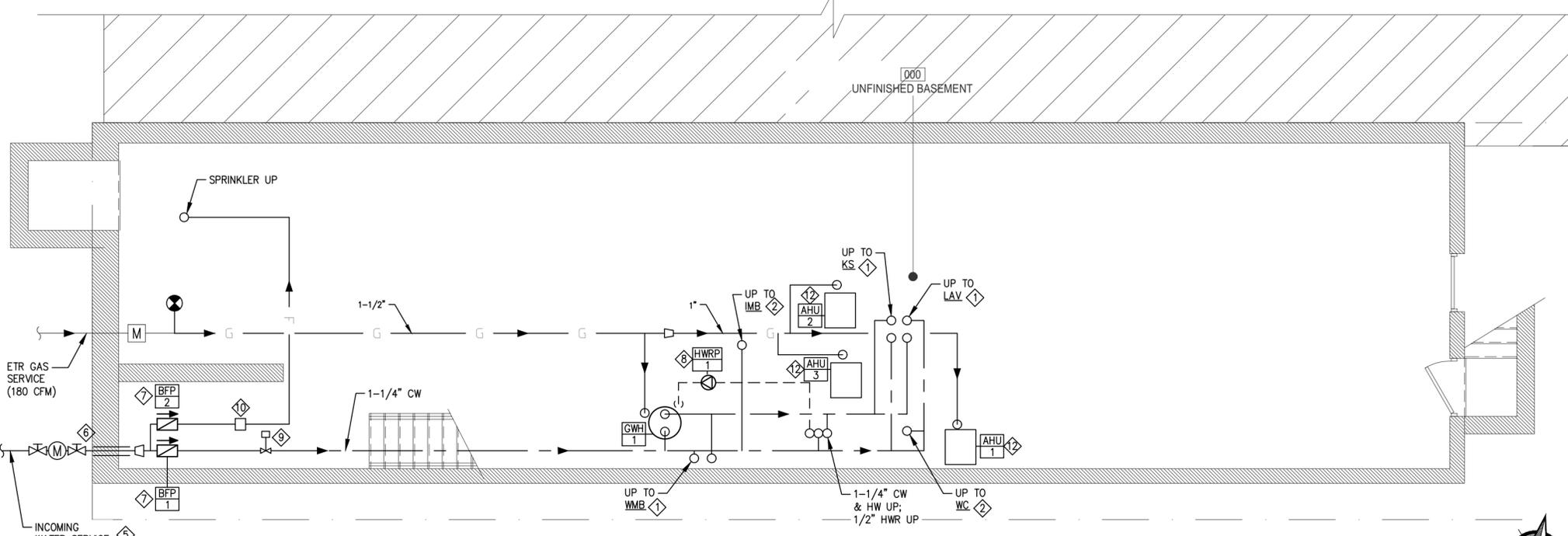
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DRAWING TITLE:	PROJECT DATE:
DOMESTIC WATER & GAS BASEMENT & FIRST FLOOR PLANS	FEB 2023

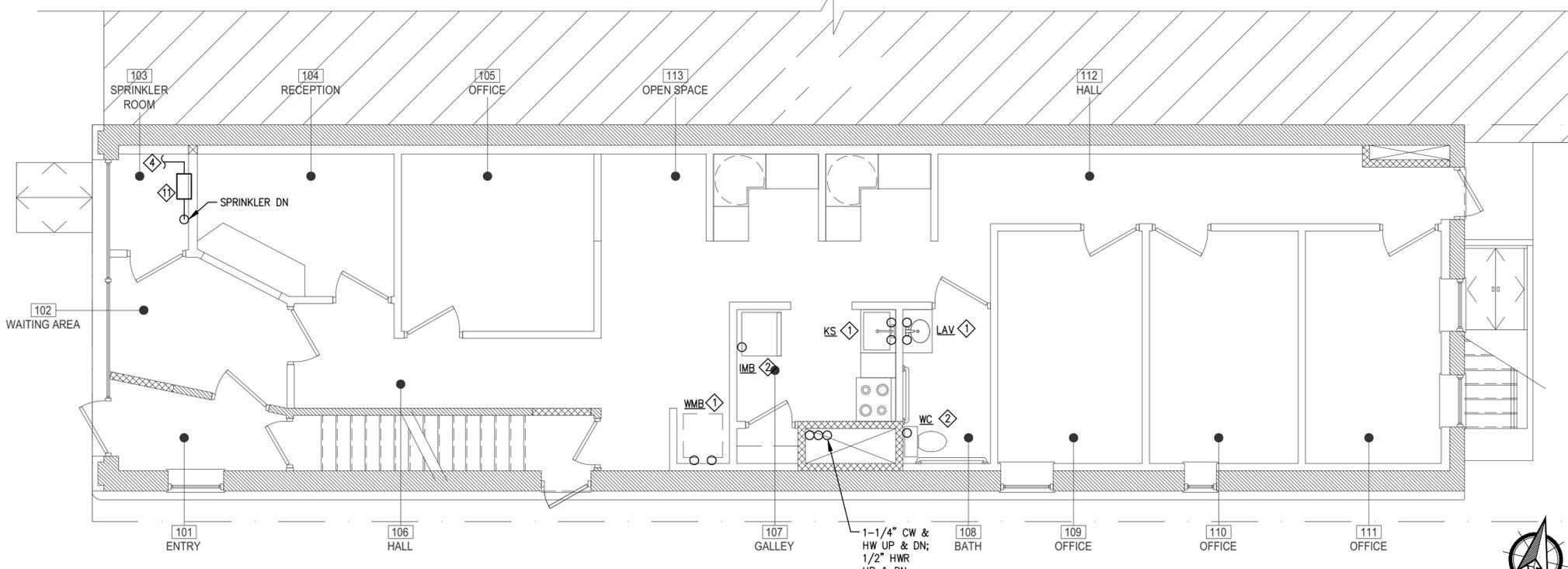
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**B** DOMESTIC WATER BASEMENT PLAN  
SCALE: 3/16" = 1'-0"



**1** DOMESTIC WATER FIRST FLOOR PLAN  
SCALE: 2/16" = 1'-0"

**City of Baltimore**  
**SIGNATURE READY SET**

Plan Number: **2023-925**

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  - PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.
- FIELD VERIFICATION/TRADE COORDINATION
- CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, AND CONDUIT, AND WITH ARCHITECTURAL REFLECTED CEILING PLAN. SHOULD A CONFLICT OCCUR THE

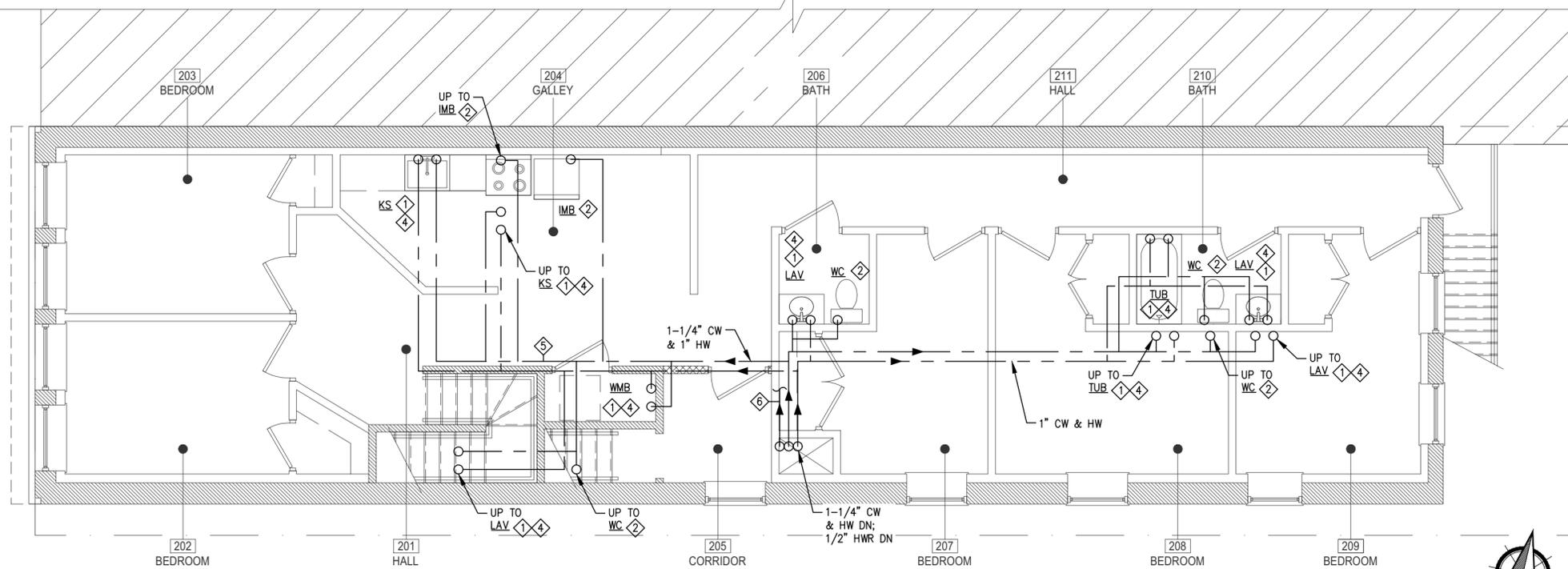
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- CONTRACTOR SHALL COORDINATE ALL FINISH-OUT WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
- CONTRACTOR SHALL FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL DISCONNECTS, STARTERS, AND/OR DRIVES FOR PLUMBING EQUIPMENT. PLUMBING CONTRACTOR TO COORDINATE ALL MOTORS & ELECTRICAL REQUIREMENTS FOR PLUMBING EQUIPMENT WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO SUPPLY POWER TO DISCONNECTING MEANS.
- APPLIANCES SHALL BE ENERGY STAR RATED AND EQUIPMENT SHALL MEET THE EFFICIENCY REQUIREMENTS OF

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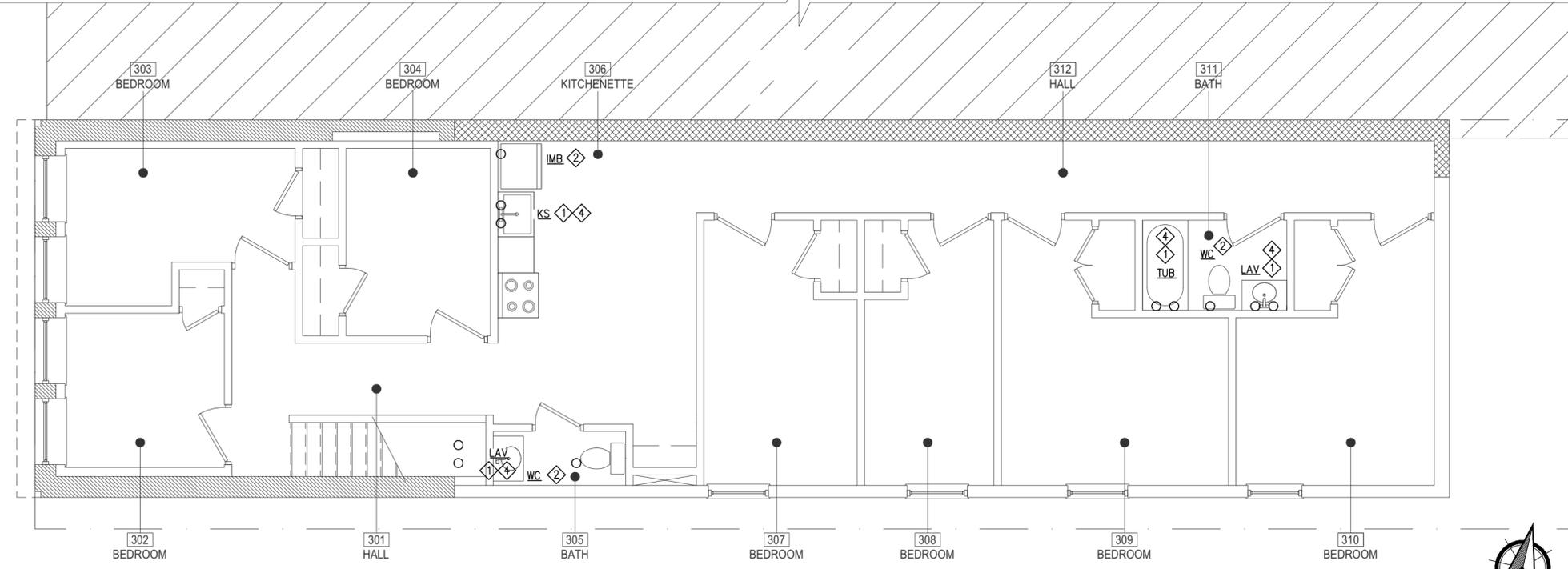
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  - GPR SCAN FLOOR SLAB TO LOCATE EXISTING PIPING SYSTEMS.
  - WHERE REQUIRED, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW FIXTURES, CLEANOUTS, AND UNDERSLAB WATER, WASTE, AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING. [FOR SLAB ON GRADE, PROVIDE NEW SLAB ON COMPACTED EARTH AND CONCRETE OF SAME THICKNESS AS EXISTING. DOWEL NEW CONCRETE TO EXISTING WITH 3/4" REBAR AT 24" O/C.] ALL SUCH WORK SHALL BE DONE IN ACCORDANCE WITH THE OWNER AND/OR LANDLORD'S REQUIREMENTS.
- GENERAL

- A LICENSED PLUMBER SHALL REPAIR, REPLACE, AND/OR PROPERLY PROVIDE ALL PLUMBING SERVICE LINES, FIXTURES, EQUIPMENT, AND SYSTEMS.
- DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.
- DOMESTIC WATER
- PRIOR TO BEGINNING CONSTRUCTION, COORDINATE PLUMBING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL CODE AUTHORITY AND PROVIDE AS DIRECTED.
- ALL DW PIPING SHALL BE ABOVE CEILING OR TIGHT TO STRUCTURE ABOVE UNLESS OTHERWISE NOTED.
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  - WHERE REQUIRED, DESIGN OF SPRINKLER SYSTEM SHALL BE BY OTHERS AND SUBMITTED UNDER A SEPARATE PERMIT.



**2** DOMESTIC WATER SECOND FLOOR PLAN  
SCALE: 3/16" = 1'-0"



**3** DOMESTIC WATER THIRD FLOOR PLAN  
SCALE: 3/16" = 1'-0"

**KEYED NOTES**

- LAV, TUB/SHR, KS, WMB: 1/2" CW & 1/2" HW. PROVIDE WATER HAMMER ARRESTOR FOR WMB.
- WC, IMB: 1/2" CW. PROVIDE WATER HAMMER ARRESTOR FOR IMB.
- DW: 3/8" HW. PROVIDE WATER HAMMER ARRESTOR.
- PROVIDE DEMAND CONTROLLED HOT WATER RECIRCULATION SYSTEM. REFER TO HOT WATER HEATER PIPING DETAIL/DIAGRAM.
- 3/4" CW & HW
- PROVIDE DEMAND CONTROLLED HOT WATER RECIRCULATION SYSTEM. REFER TO HOT WATER HEATER PIPING DETAIL/DIAGRAM.

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**P102**

**City of Baltimore**  
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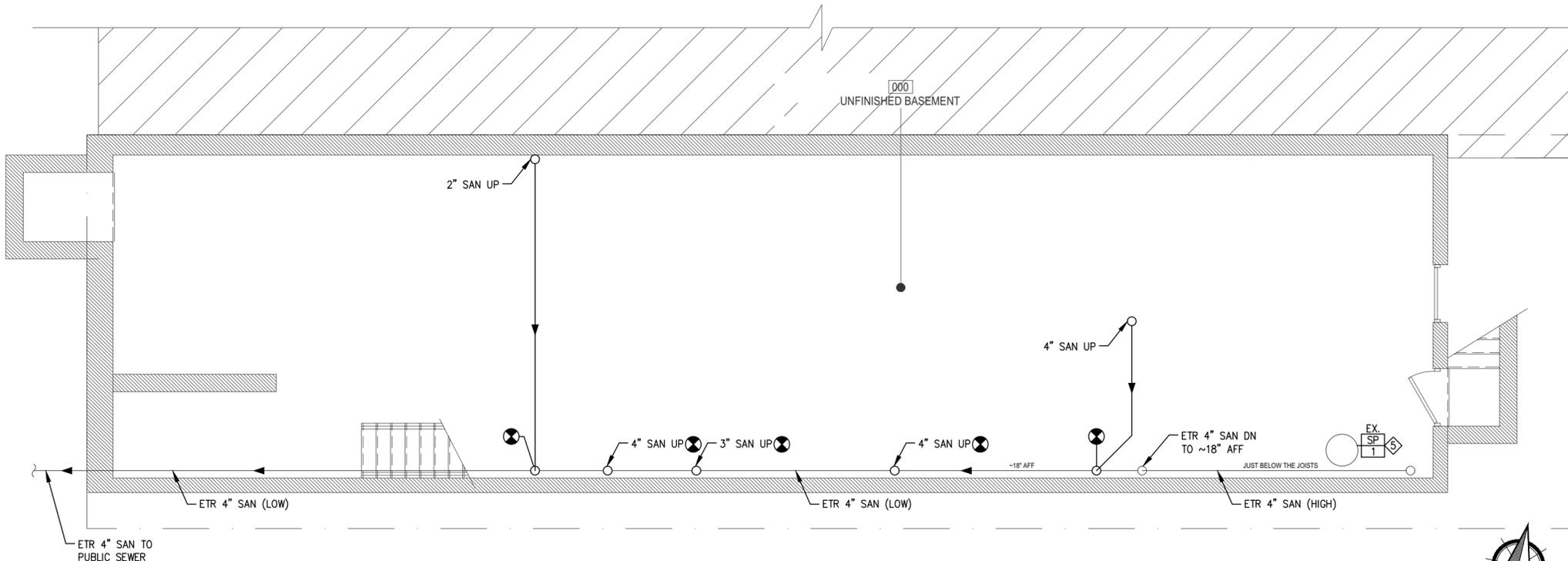
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- DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.
- SANITARY/WASTE & VENT SYSTEMS
- PRIOR TO BEGINNING CONSTRUCTION, COORDINATE PLUMBING BACKWATER VALVE REQUIREMENTS WITH THE LOCAL CODE AUTHORITY AND PROVIDE AS DIRECTED.
- ALL SANITARY/WASTE PIPING SHALL BE BELOW FLOOR UNLESS OTHERWISE NOTED.
- CLEAN OUTS SHALL BE PROVIDED IN SANITARY/WASTE AND STORM WATER PIPING WHERE REQUIRED BY CODE AND IN ALL CHANGES IN DIRECTION OF PIPE RUN. WHERE REQUIRED, PROVIDE ACCESS PANEL. COORDINATE CLEAN OUT TYPE AND ACCESS PANEL LOCATION (FIRE RATED IF REQUIRED) WITH ARCHITECT, OWNER, AND/OR LANDLORD.
- BEFORE MAKING ANY CONNECTIONS AND AGAIN UPON

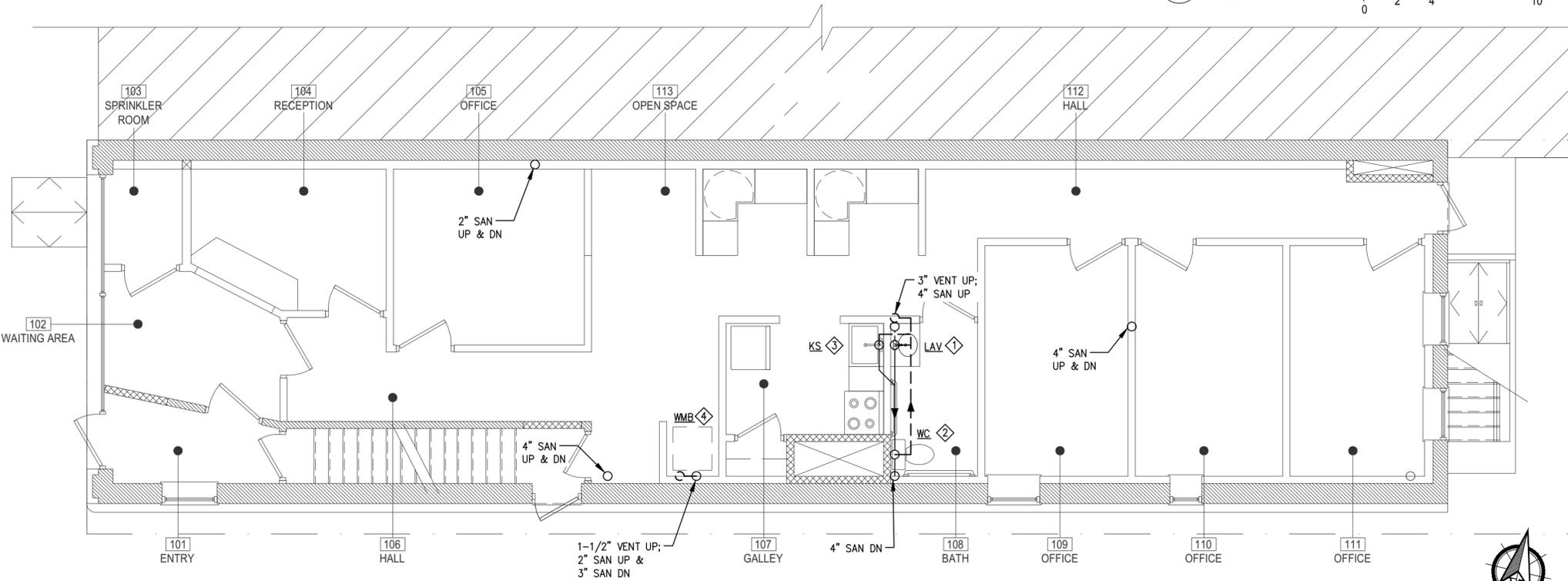
- COMPLETION OF WORK, THOROUGHLY ROD OUT AND FLUSH SANITARY/WASTE PIPING TO ENSURE THEY ARE FREE FROM BLOCKAGES.
- MAINTAIN MINIMUM 20'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND/OR WALL AND ALL FRESH AIR INTAKES.
  - [NEW VENT LINES SHALL TIE INTO EXISTING VENT PIPE RISERS WHERE POSSIBLE. SUB-CONTRACTOR SHALL COORDINATE ALL VENT LINE RUNS W/ GC AND/OR ARCHITECT PRIOR TO INSTALLATION.]
  - STORM WATER
  - FOR STORM WATER SYSTEMS, REFER TO ARCHITECTURE AND CIVIL DRAWINGS.

**KEYED NOTES**

- LAV: 1-1/2" SAN & 1-1/4" VENT
- WC: 4" SAN & 2" VENT
- TUB/SHR, KS: 1-1/2" SAN & 1-1/2" VENT
- WMB: 2" SAN & 1-1/2" VENT
- EXISTING SUMP PUMP. PC TO CONFIRM OPERATION; REPLACE IN KIND AS REQUIRED.



**B** SANITARY & VENT BASEMENT PLAN  
SCALE: 3/16" = 1'-0"



**1** SANITARY & VENT FIRST FLOOR PLAN  
SCALE: 3/16" = 1'-0"



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**SANITARY & VENT BASEMENT & FIRST FLOOR PLANS**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023

DRAWN BY: TH CHECKED BY: JLA

SHEET NUMBER:

0039-P=  
**P111**

**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

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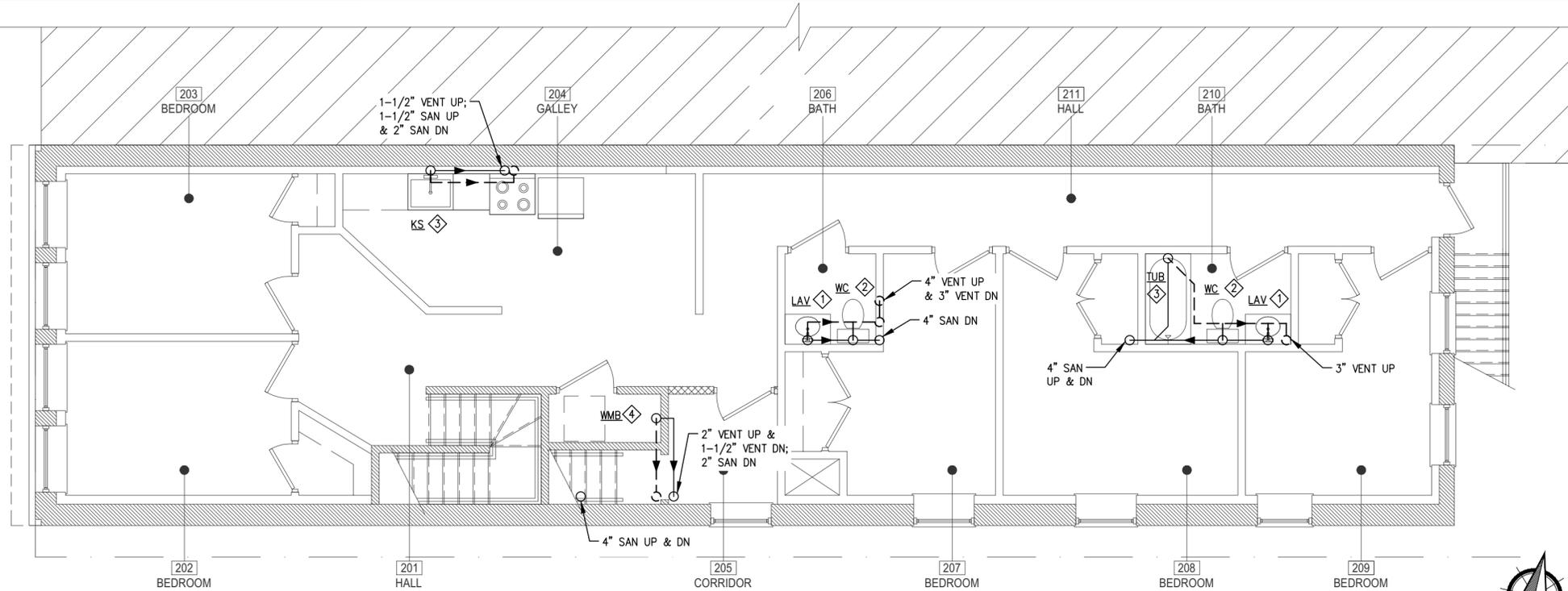
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- GENERAL

- A LICENSED PLUMBER SHALL REPAIR, REPLACE, AND/OR PROPERLY PROVIDE ALL PLUMBING SERVICE LINES, FIXTURES, EQUIPMENT, AND SYSTEMS.
  - DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.
- SANITARY/WASTE & VENT SYSTEMS
- PRIOR TO BEGINNING CONSTRUCTION, COORDINATE PLUMBING BACKWATER VALVE REQUIREMENTS WITH THE LOCAL CODE AUTHORITY AND PROVIDE AS DIRECTED.
  - ALL SANITARY/WASTE PIPING SHALL BE BELOW FLOOR UNLESS OTHERWISE NOTED.
  - CLEAN OUTS SHALL BE PROVIDED IN SANITARY/WASTE AND STORM WATER PIPING WHERE REQUIRED BY CODE AND IN ALL CHANGES IN DIRECTION OF PIPE RUN. WHERE REQUIRED, PROVIDE ACCESS PANEL. COORDINATE CLEAN OUT TYPE AND ACCESS PANEL LOCATION (FIRE RATED IF REQUIRED) WITH ARCHITECT, OWNER, AND/OR LANDLORD.
  - BEFORE MAKING ANY CONNECTIONS AND AGAIN UPON

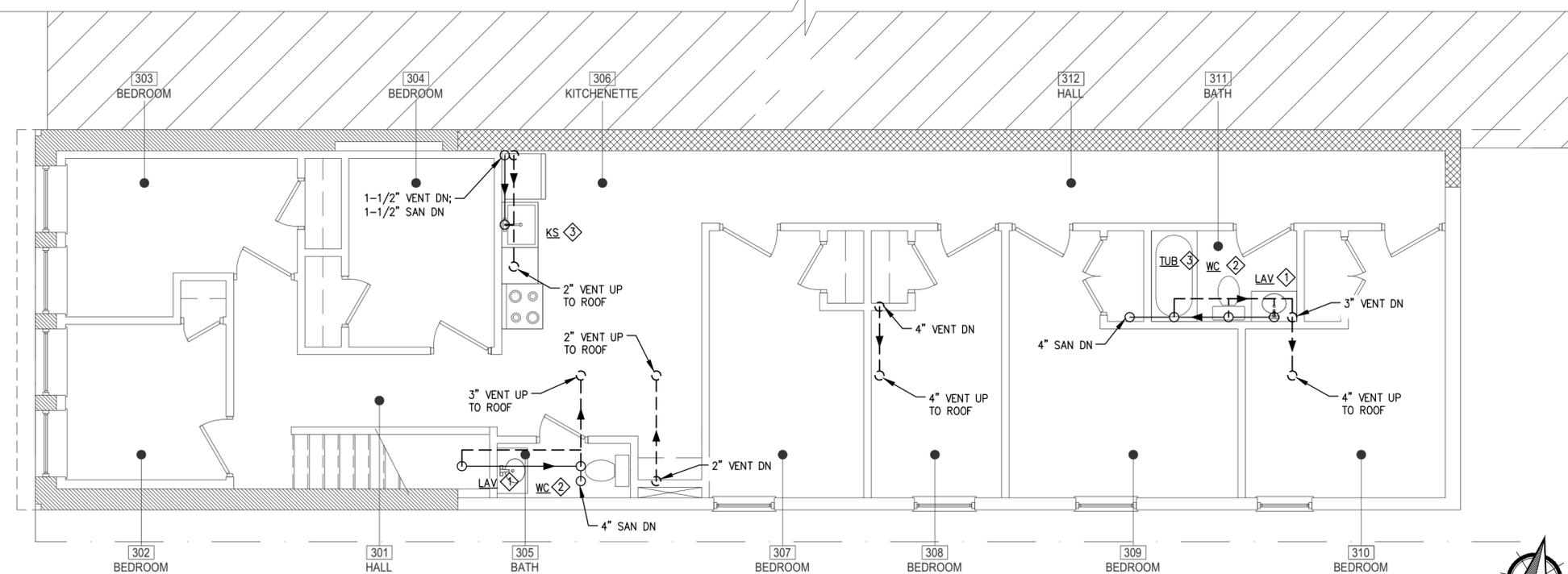
- COMPLETION OF WORK, THOROUGHLY ROD OUT AND FLUSH SANITARY/WASTE PIPING TO ENSURE THEY ARE FREE FROM BLOCKAGES.
- MAINTAIN MINIMUM 20'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND/OR WALL AND ALL FRESH AIR INTAKES.
  - [NEW VENT LINES SHALL TIE INTO EXISTING VENT PIPE RISERS WHERE POSSIBLE. SUB-CONTRACTOR SHALL COORDINATE ALL VENT LINE RUNS W/ GC AND/OR ARCHITECT PRIOR TO INSTALLATION.]
  - STORM WATER
  - FOR STORM WATER SYSTEMS, REFER TO ARCHITECTURE AND CIVIL DRAWINGS.

**KEYED NOTES**

- LAV: 1-1/2" SAN & 1-1/4" VENT
- WC: 4" SAN & 2" VENT
- TUB/SHR, KS: 1-1/2" SAN & 1-1/2" VENT
- WMB: 2" SAN & 1-1/2" VENT



**2** SANITARY & VENT SECOND FLOOR PLAN  
SCALE: 3/16" = 1'-0"



**3** SANITARY & VENT THIRD FLOOR PLAN  
SCALE: 3/16" = 1'-0"



SANITARY & VENT  
SECOND & THIRD  
FLOOR PLANS

0040-P=  
**P112**

**City of Baltimore**  
**SIGNATURE READY SET**

Plan Number: **2023-925**

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**GENERAL NOTES**

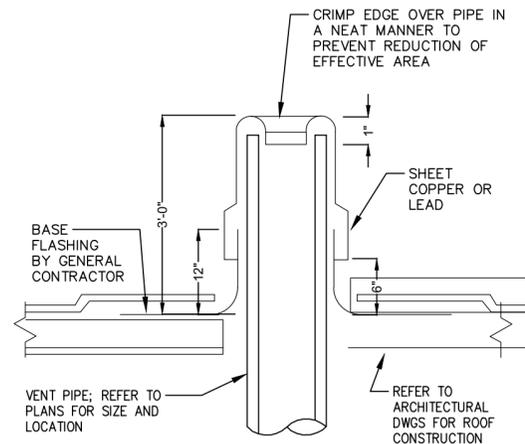
- REFER TO GENERAL WORK REQUIREMENTS AND NOTES, SPECS, ABBREVIATIONS, SYMBOLS, AND DETAILS FOR ADDITIONAL SYSTEM REQUIREMENTS, INCLUDING FIELD COORDINATION NOTES.
  - ALL WORK, METHODS, AND INSTALLATIONS INVOLVED IN THE BUILDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY/COUNTY BUILDING CODE AND INSPECTION REGULATIONS, AND ALL OTHER OFFICIALS HAVING JURISDICTION AS LISTED ON THE PLUMBING COVER SHEET(S).
  - PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.
- FIELD VERIFICATION/TRADE COORDINATION
- CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, AND CONDUIT, AND WITH ARCHITECTURAL REFLECTED CEILING PLAN. SHOULD A CONFLICT OCCUR THE

- CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER PRIOR TO INSTALLING AN ALTERNATE PLAN.
- CONTRACTOR SHALL COORDINATE ALL APPLIANCE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
  - CONTRACTOR SHALL COORDINATE ALL FINISH-OUT WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
  - CONTRACTOR SHALL FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
  - PLUMBING CONTRACTOR SHALL PROVIDE ALL DISCONNECTS, STARTERS, AND/OR DRIVES FOR PLUMBING EQUIPMENT. PLUMBING CONTRACTOR TO COORDINATE ALL MOTORS & ELECTRICAL REQUIREMENTS FOR PLUMBING EQUIPMENT WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO SUPPLY POWER TO DISCONNECTING MEANS.
  - APPLIANCES SHALL BE ENERGY STAR RATED AND EQUIPMENT SHALL MEET THE EFFICIENCY REQUIREMENTS OF

- ASHRAE STD. 90.1 OR LOCAL CODE REQUIREMENTS.
- MEP CONTRACTOR(S) SHALL COORDINATE ARCHITECTURAL ELEMENTS REQUIRED FOR MEP SYSTEMS WITH GC AND OWNER/ARCHITECT, INCLUDING BUT NOT LIMITED TO CHASES, BULKHEADS, FIRE RATINGS, DOOR UNDERCUTS, DOOR LOUVERS, ETC.
  - GPR SCAN FLOOR SLAB TO LOCATE EXISTING PIPING SYSTEMS.
  - WHERE REQUIRED, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW FIXTURES, CLEANOUTS, AND UNDERSLAB WATER, WASTE, AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING. [FOR SLAB ON GRADE, PROVIDE NEW SLAB ON COMPACTED EARTH AND CONCRETE OF SAME THICKNESS AS EXISTING. DOWEL NEW CONCRETE TO EXISTING WITH 3/4" REBAR AT 24" O/C.] ALL SUCH WORK SHALL BE DONE IN ACCORDANCE WITH THE OWNER AND/OR LANDLORD'S REQUIREMENTS.

- GENERAL
- A LICENSED PLUMBER SHALL REPAIR, REPLACE, AND/OR PROPERLY PROVIDE ALL PLUMBING SERVICE LINES, FIXTURES, EQUIPMENT, AND SYSTEMS.
  - DO NOT LOCATE ANY PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.
  - PRIOR TO BEGINNING CONSTRUCTION, COORDINATE PLUMBING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL CODE AUTHORITY AND PROVIDE AS DIRECTED.
  - ALL DW PIPING SHALL BE ABOVE CEILING OR TIGHT TO STRUCTURE ABOVE UNLESS OTHERWISE NOTED.
  - WHERE INDICATED ON DRAWINGS, PROVIDE A DOMESTIC WATER SUBMETER SPECIFICALLY LISTED BY THE AHJ AS AN APPROVED BILLING SUBMETER.
  - ALL LAVATORY, SHOWER/TUB, AND KITCHEN SINK PIPING SHALL BE PIPED HOT ON LEFT, COLD ON RIGHT (TYP).

- ALL MIXING VALVES SHALL LIMIT HOT WATER TEMPERATURE TO TEMPERATURE LISTED ON PLUMBING FIXTURE SCHEDULE. VALVES SHALL BE DESIGNED FOR THE WATER PRESSURE AND TEMPERATURE CONDITIONS OF THIS PROJECT.
- DOMESTIC HOT WATER LINE SIZE: MAXIMUM SHALL BE [AS INDICATED] [3/4"] AND MINIMUM SHALL BE 1/2" EXCEPT LINE SIZE MAY BE SMALLER AT FIXTURE CONNECTION. DOMESTIC COLD WATER LINE SIZE: MAXIMUM SHALL BE AS INDICATED AND MINIMUM SHALL BE 1/2" EXCEPT LINE SIZE MAY BE SMALLER AT FIXTURE CONNECTION.
- INSULATE ALL HOT WATER PIPING, COLD WATER PIPING, AND PIPE CONTAINING FLUIDS ABOVE 105°F/BELOW 55°F WITH R-3 INSULATION. REFER TO INSULATION SPEC AND SCHEDULE. SPRINKLER
- WHERE REQUIRED, DESIGN OF SPRINKLER SYSTEM SHALL BE BY OTHERS AND SUBMITTED UNDER A SEPARATE PERMIT.



VENT THROUGH ROOF  
NTS

**MEP SYSTEMS COMMISSIONING**

**MECHANICAL, ELECTRICAL, PLUMBING**

ALL COMMISSIONING ACTIVITIES SHALL COMPLY WITH SECTION 611 OF THE 2012 INTERNATIONAL GREEN CONSTRUCTION CODE.

SYSTEM COMMISSIONING. HVAC CONTROL SYSTEMS SHALL BE TESTED TO ENSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND IN PROPER WORKING CONDITION.

COMMISSIONING AGENT. A CERTIFIED COMMISSIONING AGENT (CXA) SHALL BE HIRED TO COMPLETE COMMISSIONING TASKS ACCORDING TO DC GCC 2013 SECTIONS 611 AND 903. A COMMISSIONING PLAN SHALL BE DEVELOPED BY THE CXA AND SHALL INCLUDE A NARRATIVE, A LIST OF EQUIPMENT AND SYSTEMS TO BE TESTED, TESTED FUNCTIONS, TEST CONDITIONS, AND MEASURABLE PERFORMANCE CRITERIA. THE NARRATIVE SHALL INCLUDE ACTIVITIES, RESPONSIBLE PARTY, AND HOW ACTIVITIES ARE ACCOMPLISHED.

FUNCTIONAL PERFORMANCE TESTING. EQUIPMENT SHALL BE TESTED ACCORDING TO THE MANUFACTURER'S SEQUENCE OF OPERATIONS, INCORPORATING ANY SPECIFIC SEQUENCE OF OPERATIONS REQUIREMENTS OF THE PROJECT'S DESIGN.

EQUIPMENT CONTROLS SENSORS/DEVICES. EQUIPMENT CONTROLS SHALL BE TESTED AND CALIBRATED. CONTROLS SHALL BE USED TO FUNCTIONALLY TEST EQUIPMENT.

LIGHTING SYSTEMS VERIFICATION AND TESTING. PRE-OCCUPANCY VERIFICATION SHALL BE PROVIDED CONFIRMING LIGHTING CONTROLS HAVE BEEN INSTALLED PER CONSTRUCTION DOCUMENTS. LIGHTING CONTROLS SHALL BE TESTED TO ENSURE THEIR OPERATION MEETS CODE REQUIREMENTS.

SYSTEM COMMISSIONING REPORTS, MANUALS, AND AS-BUILT DRAWINGS/PRELIMINARY COMMISSIONING REPORT. THE COMMISSIONING AGENT SHALL COMPLETE AND DELIVER A PRELIMINARY COMMISSIONING REPORT TO THE BUILDING OWNER PRIOR TO FINAL MECHANICAL INSPECTIONS.

ACCEPTANCE. BUILDINGS, OR PORTIONS THEREOF, SHALL PASS THE FINAL MECHANICAL INSPECTION ONLY WHEN THE BUILDING OWNER HAS PROVIDED THE CODE OFFICIAL A LETTER OF TRANSMITTAL ACKNOWLEDGING THAT THE BUILDING OWNER HAS RECEIVED THE PRELIMINARY COMMISSIONING REPORT.

COPY. THE BUILDING OWNER SHALL PROVIDE THE CODE OFFICIAL WITH A COPY OF THE PRELIMINARY COMMISSIONING REPORT.

CERTIFICATION. THE REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY SHALL CERTIFY THAT THE MECHANICAL AND SERVICE WATER HEATING SYSTEMS COMPLY WITH SECTIONS C403 AND C404 OF THE ENERGY CONSERVATION CODE. CERTIFICATION SHALL BE PROVIDED TO THE CODE OFFICIAL BY OR BEFORE THE FINAL INSPECTION.

AS-BUILT DRAWINGS. AS-BUILT DRAWINGS THAT CONTAIN EQUIPMENT LOCATION AND PERFORMANCE DATA SHALL BE PROVIDED TO THE OWNER WITHIN 90 DAYS OF THE DATE OF ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES SHALL ALSO BE INCLUDED.

FINAL COMMISSIONING REPORT. THE COMMISSIONING AGENT SHALL PROVIDE TO THE OWNER AND CODE OFFICIAL THE FINAL COMMISSIONING REPORT THAT INCLUDES THE FOLLOWING: FUNCTIONAL PERFORMANCE TEST PROCEDURE, RESULTS, DEFICIENCIES, AND CORRECTIVE MEASURES.

FINAL SEQUENCE OF OPERATIONS. THE FINALIZED SEQUENCE OF OPERATIONS SHALL BE PROVIDED AS PART OF THE AS-BUILT CONTROL PACKAGE OR AS PART OF THE SYSTEMS MANUALS.

**INDOOR ENVIRONMENTAL QUALITY DURING CONSTRUCTION**

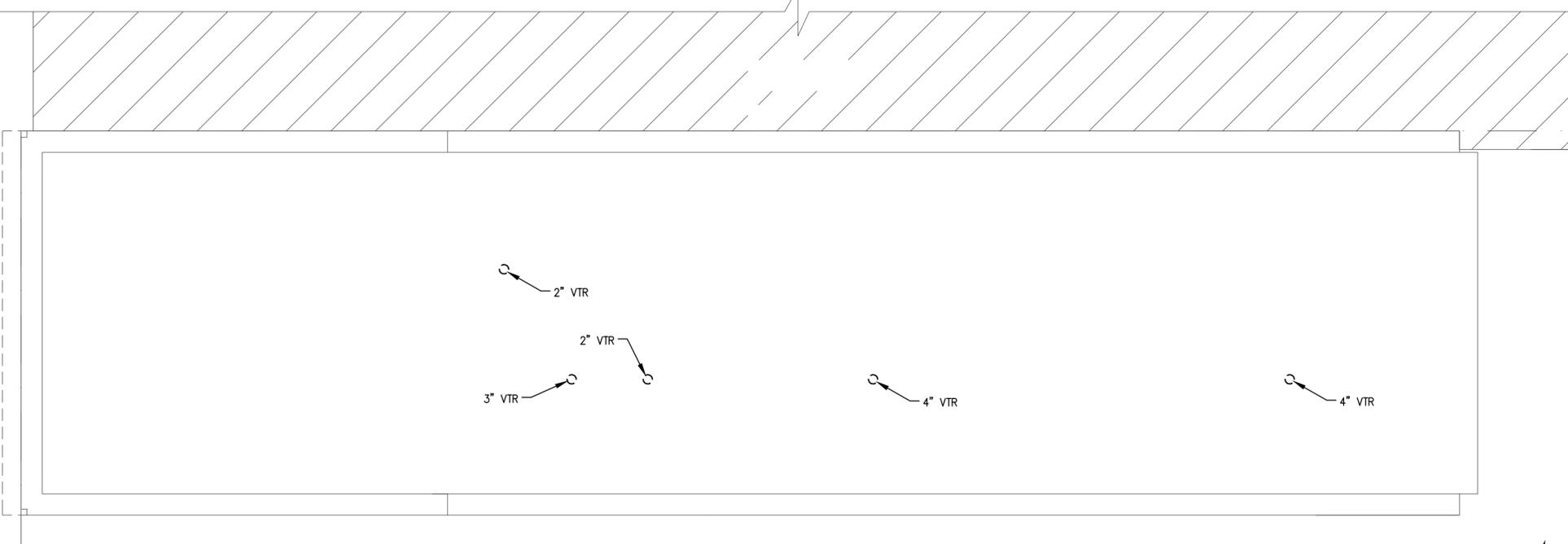
MECHANICAL SYSTEM OPENINGS DURING CONSTRUCTION. MECHANICAL EQUIPMENT OPENINGS (INCLUDING PIPE OPENINGS) AND HVAC SUPPLY AND RETURN DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR SHALL BE CLOSED BY AN APPROVED METHOD TO REDUCE THE AMOUNT OF DUST AND DEBRIS THAT COLLECTS IN THE SYSTEM FROM THE TIME OF ROUGH-IN INSTALLATION AND UNTIL STARTUP OF THE HEATING AND COOLING EQUIPMENT. DUST AND DEBRIS SHALL BE CLEANED FROM DUCT OPENINGS PRIOR TO SYSTEM FLUSH OUT AND BUILDING OCCUPANCY.

BUILDING VENTILATION DURING CONSTRUCTION. VENTILATION DURING CONSTRUCTION SHALL BE ACHIEVED THROUGH OPENINGS IN THE BUILDING ENVELOPE USING ONE OR MORE OF THE FOLLOWING METHODS:  
 1. NATURAL VENTILATION IN ACCORDANCE WITH THE PROVISIONS OF THE INTERNATIONAL BUILDING CODE OR THE INTERNATIONAL MECHANICAL CODE.  
 2. FANS THAT PRODUCE A MINIMUM OF THREE AIR CHANGES PER HOUR.  
 3. EXHAUST IN THE WORK AREA AT A RATE OF NOT LESS THAN 0.05 CFM/FT<sup>2</sup> (0.24 L/S/IN<sup>2</sup>) AND NOT LESS THAN 10 PERCENT GREATER THAN THE SUPPLY AIR RATE SO AS TO MAINTAIN NEGATIVE PRESSURIZATION OF THE SPACE.

PROTECTION FOR HVAC SYSTEM OPENINGS. CONTRACTOR SHALL PROTECT ALL HVAC SUPPLY AND RETURN DUCT AND EQUIPMENT OPENINGS DURING DUST PRODUCING CONSTRUCTION OPERATIONS.

MECHANICAL EQUIPMENT FILTERS DURING CONSTRUCTION. CONTRACTOR SHALL REPLACE FILTERS FOR ALL HVAC SYSTEMS THAT ARE USED DURING CONSTRUCTION PRIOR TO SYSTEM FLUSH OUT AND BUILDING OCCUPANCY.

GENERAL CONTRACTOR SHALL WORK WITH MECHANICAL CONTRACTOR TO DEVELOP INDOOR AIR QUALITY PLAN THAT ADHERES TO THE ABOVE REQUIREMENTS.



PLUMBING ROOF PLAN

SCALE: 2/16" = 1'-0"



JARED RUSSELL

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0	03/29/2023	ISSUE FOR PERMIT	

REVISIONS:  
DRAWING TITLE: **PLUMBING ROOF PLAN**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
DRAWN BY: TH CHECKED BY: JLA  
SHEET NUMBER:

0041-P=  
**P113**

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

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TAG	SYSTEM	INITIAL PRESSURE PSIG	MAXIMUM PRESSURE PSIG	ACCEPTANCE VOLUME GAL	TOTAL VOLUME GAL	DIMENSIONS INCHES	BOD MFR / MODEL
ET-A	DOMESTIC WATER HEATER	65	110	1.3	2	8" X 11"	WESSELS / T-5

TAG	FIXTURE	FLOW RATE (GPM)	CONNECTIONS				TRAP TYPE	NOTES
			CW	HW	SAN	VENT		
WC	WATER CLOSET	1.28 / FLUSH	1/2"	1/2"	4"	2"	INTEGRAL	1,7,9
LAV	LAVATORY	1.50	1/2"	1/2"	1-1/2"	1-1/4"	P TRAP	2,3,4,7
TUB	BATHTUB/SHOWER	2.00	1/2"	1/2"	1-1/2"	1-1/2"	P TRAP	3,5,7,9
KS	KITCHEN SINK	1.50	1/2"	1/2"	1-1/2"	1-1/2"	P TRAP	3,4,6,7
DW	DISHWASHER	--	--	3/8"	--	--	--	10
WMB	WASHING MACHINE BOX	--	1/2"	1/2"	2"	1-1/2"	P TRAP	8,10
IMB	ICE MACHINE BOX	--	1/2"	--	--	--	--	10
NF-HB	NON-FREEZE HOSE BIBB	--	1/2"	--	--	--	--	11

- NOTES:
- COORDINATE TRIM SELECTIONS WITH OWNER/ARCHITECT.
  - 1. TANK TYPE WITH HINGED CLOSED FRONT SEAT WITH COVER; PROVIDE TWO BOLT CAPS.
  - 2. PROVIDE POINT OF USE MIXING VALVE SET TO 105 DEG F.
  - 3. PROVIDE SUPPLIES, STOPS, P-TRAP, AND DRAIN. PROVIDE CARRIER AND FITTINGS AS RECOMMENDED BY MANUFACTURER.
  - 4. PROVIDE TURBO "LAV GUARD" PIPE INSUL. ON HOT/COLD WATER SUPPLIES & DRAIN PIPES ON KITCHEN SINKS AND ACCESSIBLE LAVS.
  - 5. MAXIMUM OF 120 DEG F WATER SHALL BE SUPPLIED TO ACCESSIBLE SHOWERS. WHEN FLOW IS THROUGH SHOWERHEAD, LEAKAGE FROM TUB SPOUT SHALL BE MAX 0.1 GPM.
  - 6. PROVIDE S.S. CRUMB CUP STRAINER WITH REMOVABLE BASKET.
  - 7. COMPLY WITH ANSI A117.1 FOR ACCESSIBLE FIXTURE'S MOUNTING HEIGHTS.
  - 8. BOD MFR/MODEL: IPS W2701CP OR EQUAL.
  - 9. PROVIDE WATERSENSE LABELED FIXTURE.
  - 10. PROVIDE ENERGY STAR RATED APPLIANCE.
  - 11. PROVIDE WITH INTEGRAL ASSE 1011 OR 1019 VACUUM BREAKER; ZURN Z1341XL OR APPROVED EQUAL. OR PROVIDE BACKFLOW PREVENTER; REFER TO BFP SCHEDULE.

TAG	LOCATION	SERVICE	TYPE	NOMINAL CAPACITY GAL	GAS INPUT MBH	DIAMETER INCHES	HEIGHT INCHES	FIRST HOUR DELIVERY RATING GAL	RECOVERY RATE @ 90°F RISE GPH	UNIFORM ENERGY FACTOR	PIPE CONNECTIONS			SHIP WEIGHT LBS
											GAS INCHES	INLET INCHES	OUTLET INCHES	
GWHD	BASEMENT	DOMESTIC HOT WATER	GAS	48	60	22	60	103	65	0.68	1/2	3/4	3/4	204

- NOTES
- BOD: BRADFORD WHITE / RG2PDV50H6N
  - WATER HEATERS SHALL BE BRADFORD WHITE, RUUD OR APPROVED EQUAL MEETING PERFORMANCE AND WARRANTY REQUIREMENTS. REFER TO SPECS.
  - FURNISH WITH HEAT TRAP ON INLET AND OUTLET PIPING, EXPANSION TANK, DISCONNECT.
  - 50+ GALLON WATER HEATERS SHALL HAVE INSULATION JACKET AS REQUIRED TO MEET ENERGY REQUIREMENTS.
  - GAS WATER HEATER MEETS OR EXCEEDS ASHRAE 90.1b.
  - GAS WATER HEATER: FURNISH 120V/1PH/60HZ ELECTRIC CONNECTION, 3.1 AMPS.
  - GAS WATER HEATER: PROVIDE DIRECT VENT KIT AND VENT/INTAKE SIZES PER MFR RECOMMENDATIONS.

TAG	TYPE	BOD MANUFACTURER / MODEL OR EQUAL	CW	HW	MCA/MOCP AMPS	KW	TOTAL GAS RATING MBH	ELECTRIC V/PH/Hz	DIMENSIONS WxDxH INCHES	SHIPPING WEIGHT LBS	NOTES
DW	DISH WASHER	FRIGIDAIRE / FDB2410HC	SEE PL FIXT SCH		10 / 15	1.44	--	120/1/60	24 x 23 x 34-7/8	69	
REF	REFRIGERATOR	WHIRLPOOL / WRF555SD (F/H)	SEE PL FIXT SCH		-- / 15	--	--	120/1/60	35-5/8 x 32-7/8 x 70-1/4	366	
RNG	RANGE	GE / JAS640RMSS		NA	-- / 40	10.5	--	240/1/60	24 x 28-1/8 x 36	179	
MW	MICROWAVE HOOD	WHIRLPOOL / WMH3101		NA	16 / 20	--	--	120/1/60	30 x 16 x 18	150	1
DISP	FOOD WASTE DISPOSAL	INSINKERATOR / BADGER 5		NA	--	--	--	120/1/60	6-5/16 x 11-1/2	14	2
WD	WASHER/DRYER	FRIGIDAIRE / FFLE4033Q (T/W)	SEE PL FIXT SCH		22 / 30	5.1	--	240/1/60	27 x 31-1/2 x 77	275	

- NOTES
- PROVIDE SCHEDULED APPLIANCES OR EQUAL; ALL APPLIANCES SHALL BE ENERGY STAR RATED.
  - CONFIRM FINAL SELECTIONS AND FINISHES WITH OWNER.
  - CONFIRM WATER, DRAIN, VENT, AND ELECTRIC CONNECTION SIZES WITH APPLIANCE MFR INSTALLATION INSTRUCTIONS.
  - PROVIDE ALL NECESSARY ACCESSORIES TO COMPLETE INSTALLATION.
  - COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
  - FOLLOW MFR RECOMMENDATIONS FOR APPLIANCE FRONT, SIDE, REAR, AND TOP CLEARANCES.
  - 1. BOD MICROWAVE HOOD: 1.7 CU. FT.; 300 CFM EXHAUST AIRFLOW, 6" EXHAUST DUCT CONNECTION. PROVIDE ALL MATERIALS TO INSTALL PER MFR INSTRUCTIONS.
  - 2. FOOD WASTE DISPOSAL BOD: 1/2 HP MOTOR; 6.3 FLA. PROVIDE WITH SWITCH CONTROL. COORDINATE SWITCH LOCATION WITH ARCHITECT AND/OR OWNER.



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03/29/2023 ISSUE FOR PERMIT  
NO. DATE: REMARKS:

REVISIONS:  
DRAWING TITLE:  
**PLUMBING EQUIPMENT SCHEDULES**  
PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
DRAWN BY: TH CHECKED BY: JLA  
SHEET NUMBER:

0042-P=  
**P201**





**City of Baltimore**  
**SIGNATURE READY SET**  
 2023-925

Plan Number:

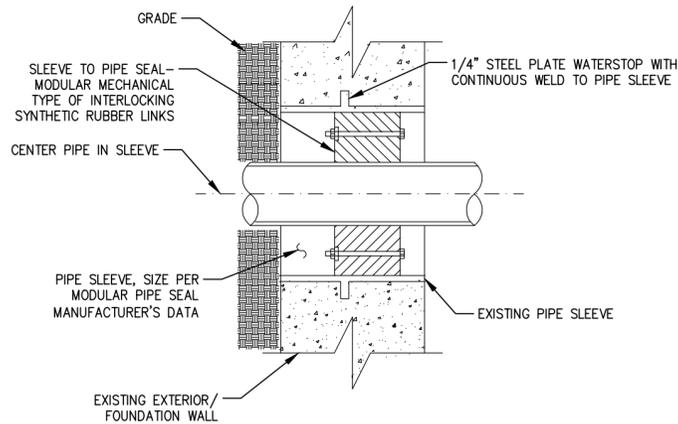
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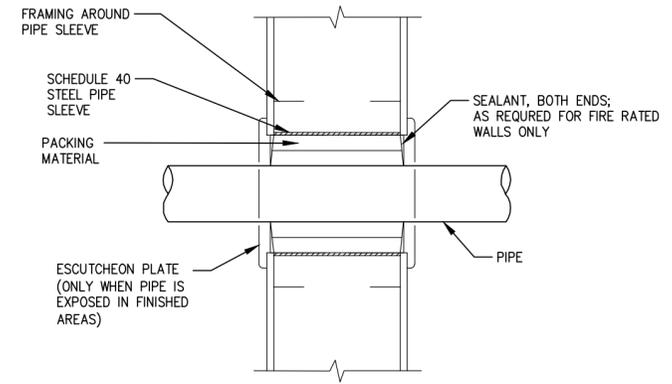
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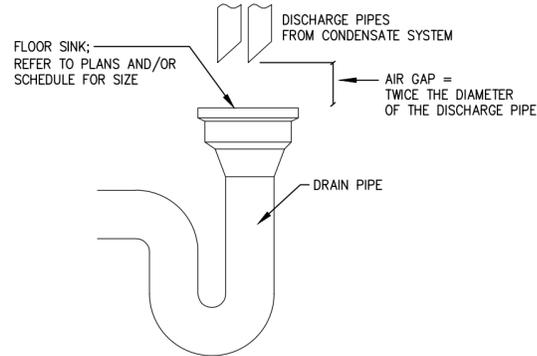


PIPE EXTERIOR WALL PENETRATION (WATER TIGHT)  
 NTS



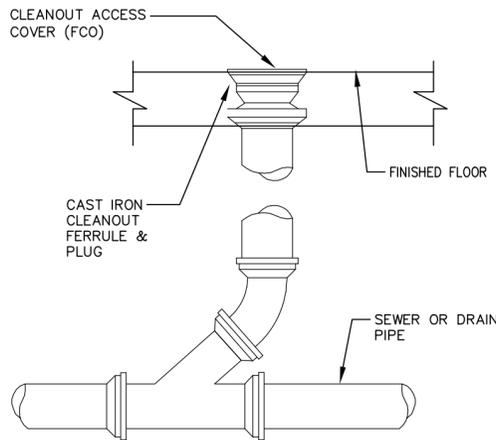
- NOTES:
1. THIS DETAIL APPLIES TO INTERIOR METAL/WOOD STUD GWB PARTITION OR WALL.
  2. THIS DETAIL APPLIES TO INSULATED AND NON-INSULATED PIPE.
  3. PROVIDE APPROVED FIRE STOPPING FOR FIRE RATED WALLS AS REQUIRED TO MAINTAIN FIRE RATING OF THE WALL ASSEMBLY.

PIPE INTERIOR WALL PENETRATION - METAL/WOOD STUD  
 NTS



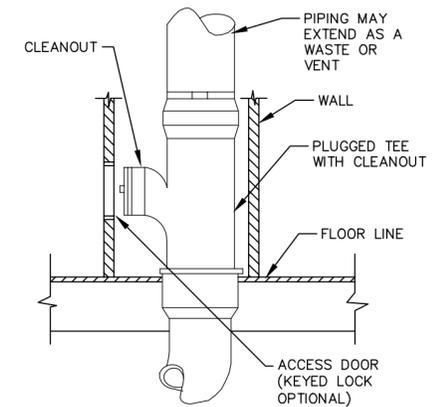
- NOTES:
1. WHERE A DISCHARGE PIPE DRAINS TO A MOP SINK, AIR GAP SHALL BE MEASURED FROM RIM OF SINK, NOT FROM DRAIN.

OPEN SITE CONDENSATE DISPOSAL  
 NTS



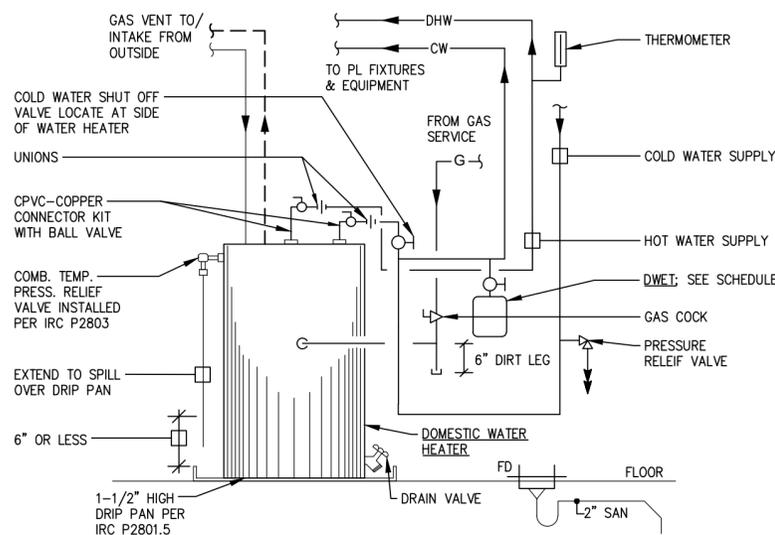
- NOTES:
1. PROVIDE AND COORDINATE ACCESS TYPE AND LOCATION TO ALL CLEAN OUTS WITH OWNER.

FLOOR CLEANOUT  
 NTS

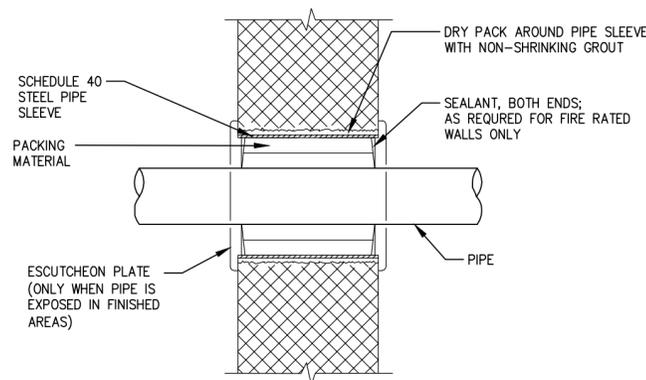


- NOTES:
1. PROVIDE AND COORDINATE ACCESS TYPE AND LOCATION TO ALL CLEAN OUTS WITH OWNER.

WALL CLEANOUT  
 NTS

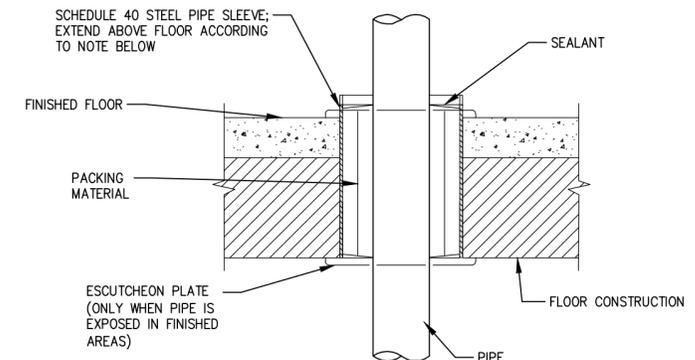


HOT WATER HEATER - GAS  
 NTS



- NOTES:
1. THIS DETAIL APPLIES TO INTERIOR MASONRY WALLS.
  2. THIS DETAIL APPLIES TO INSULATED AND NON-INSULATED PIPE.
  3. PROVIDE APPROVED FIRE STOPPING FOR FIRE RATED WALLS AS REQUIRED TO MAINTAIN FIRE RATING OF THE WALL ASSEMBLY.

PIPE INTERIOR WALL PENETRATION - MASONRY  
 NTS



- NOTES:
1. THIS DETAIL APPLIES TO INSULATED AND NON-INSULATED PIPE.
  2. PROVIDE APPROVED FIRE STOPPING FOR FIRE RATED WALLS AS REQUIRED TO MAINTAIN FIRE RATING OF THE WALL ASSEMBLY.
  3. EXTEND SLEEVE 1" AFF IN MECHANICAL ROOMS, 3/8" IN OTHER AREAS.

PIPE FLOOR PENETRATION  
 NTS



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03/29/2023 ISSUE FOR PERMIT  
 NO. DATE: REMARKS:

REVISIONS:  
 DRAWING TITLE:  
**PLUMBING DETAILS**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
 DRAWN BY: TH CHECKED BY: JLA  
 SHEET NUMBER:

0045-P=  
**P303**



**City of Baltimore**  
**SIGNATURE READY SET**  
 2023-925

Plan Number: \_\_\_\_\_

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**GENERAL WORK REQUIREMENTS**

- ALL APPLICABLE CODES LISTED ON THIS DRAWING, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER.
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING AND SITE CONDITIONS, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH THE EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION.
- INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM THE MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF THE DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR OF THE BUILDING. REMOVE EXCESS MATERIALS FROM THE SITE AND DISPOSE OF MATERIALS ON A DAILY BASIS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FROM DAMAGE, ALL BUILDING COMPONENTS AND FINISHES. THE CONTRACTOR SHALL, AT HIS EXPENSE, RESTORE TO ORIGINAL CONDITION AREAS OR FINISHES DAMAGED BY HIS WORK.
- ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS, AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING TO AVOID OBSTRUCTIONS.
- PRIOR TO CORE DRILLING, THE AREA TO BE DRILLED SHALL BE X-RAYED AND WRITTEN APPROVAL SHALL BE OBTAINED FROM THE PROJECT'S STRUCTURAL ENGINEER AND OWNER BEFORE PROCEEDING.
- MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND FIRE ALARM CONTRACTORS SHALL BE RESPONSIBLE TO COORDINATE THE INSTALLATION OF THEIR WORK AMONGST EACH OTHER AND WITH THE GENERAL CONTRACTOR SO AS TO MEET ARCHITECTURAL AND ENGINEERING DESIGN INTENT, MEET CODE REQUIREMENTS, AND AVOID INTERFERENCE AND CONFLICT WITH STRUCTURAL ELEMENTS.
- MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS, IF EXISTS. MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND FIRE ALARM CONTRACTORS SHALL BE RESPONSIBLE TO OBTAIN BUILDING STANDARDS FROM GENERAL CONTRACTOR, BUILDING OWNER, AND/OR LANDLORD.
- ALL EQUIPMENT, FIXTURES, AND MATERIALS SHALL BE NEW. OWNER FURNISHED EQUIPMENT, IF EXISTS, IS SCHEDULED ON THE PLUMBING DRAWINGS. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING AND WEATHERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OF PIPES, DUCTS, CONDUIT AND EQUIPMENT. COORDINATE MATERIALS AND METHODS TO MAINTAIN THE INTEGRITY OF THE ROOFING BOND.
- PLUG OR CAP ALL PIPING WHERE NECESSARY AND APPROPRIATE DURING CONSTRUCTION OR FOR FUTURE TENANT CONNECTION. DO NOT LEAVE PIPING OPEN ENDED.
- SUPPORT NEW PIPING FROM BUILDING STRUCTURE AND OR FRAMING IN AN APPROVED MANNER. PROVIDE SUPPORTS AT EIGHT (8) LINEAR FEET INTERVALS, AT ALL CHANGES IN DIRECTION, AND MORE FREQUENTLY IF RECOMMENDED BY PIPE MANUFACTURER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, PROVIDE ADDITIONAL FRAMING.
- SEAL ALL OPENINGS AROUND PIPES, DUCTS, AND CONDUIT THROUGH PARTITIONS AND WALLS WITH APPROVED FIRESTOPPING MATERIAL MEETING ASTM E814 AND NFPA-101.
- ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES AND EQUIPMENT. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED.
- THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS, RIGGING, APPURTENANCES, AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLATION AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE PROVIDED IN A NEAT, WORKMANLIKE MANNER. INCLUDE ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING, AND INSPECTIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL COMPONENTS OF THE INSTALLATION FOR A MINIMUM OF TWO 6 HOUR SESSIONS CONDUCTED ON TWO DIFFERENT DAYS.
- FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF ACTUAL USE OF EQUIPMENT. WHERE DEFECTS OCCUR, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF THE OTHER TRADES AFFECTED BY DEFECTS.

**ELECTRICAL SYMBOLS**

**WIRES & CABLE**

WIRING (IN CONDUIT) CONCEALED IN FLOOR OR IN ABOVE CEILING OF FLOOR BELOW.

WIRING (IN CONDUIT) CONCEALED IN CEILING OR WALL.

HOMERUN TO PANEL BOARD WITH PANEL NOMENCLATURE (LETTERS), CIRCUIT NUMBERS (NUMBERS), NUMBER OF PHASE AND NEUTRAL CONDUCTORS WHEN MORE THAN TWO (HASH MARKS), NUMBER OF CIRCUITS (NUMBER OF ARROWS).

**WIRING DEVICES**

S<sup>D</sup> SINGLE POLE DIMMER SWITCH. LUTRON NOVA-T PRESET DIMMER.

S SINGLE-POLE TOGGLE SWITCH. LOW VOLTAGE.

S<sup>3</sup> THREE-WAY TOGGLE SWITCH. LOW VOLTAGE.

⊕ DUPLEX CONVENIENCE OUTLET, 20-AMPERE, 125-VOLT, NEMA 5-20R. USB= USB PORTS; S= SWITCH CONTROLLED

⊕ DUPLEX GFCI OUTLET, WALL MOUNTED, 20-AMPERE, 125 VOLT EACH.

⊕ DUPLEX GFCI OUTLET ABOVE COUNTER, WALL MOUNTED, 20-AMPERE, 125 VOLT EACH.

14-30R DRYER OUTLET, 30A NEMA TYPE NOTED.

14-50R RANGE OUTLET, 30A NEMA TYPE NOTED.

**EQUIPMENT**

■ BRANCH CIRCUIT PANELBOARD.

Ⓜ MOTOR, HORSEPOWER AS NOTED.

Ⓝ JUNCTION BOX.

□ NON-FUSED DISCONNECT SWITCH. 3P 30A NEMA 1 UNLESS NOTED OTHERWISE.

**LOW VOLTAGE**

▼ TELEPHONE OUTLET, FLUSH WALL MOUNTED.

▽ FLUSH MOUNTED SINGLE GANG BOX FOR CABLE TV OUTLET.

**FIRE SAFETY**

◆ RESIDENTIAL COMBINATION SMOKE/CARBON MONOXIDE DETECTOR-DUAL POWER 120V & BATTERY. INTERCONNECT ALL ALARMS WITHIN A DWELLING.

**TAGS & NOTES**

◆ SPECIFIC/SHEET/KEYED NOTE #

AHU 1 EQUIPMENT TAG

**APPLICABLE CODES**

ALL WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE, COUNTY AND OTHER LOCAL CODES THAT GOVERN EACH PARTICULAR TRADE.

BUILDING, FIRE, AND RELATED CODES OF BALTIMORE CITY LOCAL CODE AMENDMENTS  
 LOCAL FIRE MARSHAL'S OFFICE

STATE OF MARYLAND COMAR CODE  
 STATE OF MARYLAND FIRE PREVENTION CODE  
 MARYLAND STATE HEALTH DEPARTMENT  
 MARYLAND ACCESSIBILITY CODE  
 REGULATIONS OF THE LOCAL UTILITY COMPANIES WITH RESPECT TO METERING AND SERVICE ENTRANCE EQUIPMENT.

2018 INTERNATIONAL BUILDING CODE (IBC)  
 2018 INTERNATIONAL RESIDENTIAL CODE (IRC)  
 2017 NATIONAL ELECTRICAL CODE (NEC), NFPA 70  
 2018 INTERNATIONAL FUEL GAS CODE (IFGC)  
 2018 INTERNATIONAL MECHANICAL CODE (IMC)  
 2018 INTERNATIONAL PLUMBING CODE (IPC)  
 2018 INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC)  
 2018 INTERNATIONAL FIRE CODE (IFC)  
 2018 INTERNATIONAL ENERGY CONSERVATION CODE  
 2013 ANSI/ASHRAE/IES 90.1  
 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) - WITH STATE MODIFICATIONS  
 2012 INTERNATIONAL GREEN CONSTRUCTION CODE (IGCC)  
 2012 INTERNATIONAL SWIMMING POOL AND SPA CODE  
 NATIONAL FIRE PROTECTION ASSOCIATION STDS, NFPA 2017  
 FIRE LIFE SAFETY CODE, NFPA 101-2017

IN ADDITION TO THESE CODES, ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE FOLLOWING SPECIFIC CODES, REGULATIONS, AND/OR STANDARDS:

AIR MOVING AND CONDITIONING ASSOCIATION, AMCA  
 AMERICAN NATIONAL STANDARDS INSTITUTE, ANSI  
 AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, ASHRAE  
 AMERICAN SOCIETY OF MECHANICAL ENGINEERS, ASME  
 AMERICAN SOCIETY FOR TESTING AND MATERIALS, ASTM  
 AMERICANS WITH DISABILITIES ACT, ADA  
 ASSOCIATION AIR BALANCE COUNCIL, AABC  
 SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, SMACNA  
 PLUMBING DRAINAGE INSTITUTE, PDI  
 NATIONAL ENVIRONMENTAL BALANCING BUREAU, NEBB  
 NATIONAL SANITATION FOUNDATION, NSF  
 UNDERWRITERS LABORATORIES

**ELECTRICAL ABBREVIATIONS**

A	AMPERES	EP	EXPLOSION PROOF	OFI	OWNER FURNISHED, OWNER INSTALLED
AFCI	ARC FAULT CIRCUIT INTERRUPTER	EX	EXISTING TO REMAIN	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
AFF	ABOVE FINISHED FLOOR	F	FUSED	PC	PHOTO CELL
AFG	ABOVE FINISHED GRADE	FBO	FURNISHED BY OTHERS	PVC	POLYVINYL CHLORIDE RACEWAY
AHJ	AUTHORITY HAVING JURISDICTION	G	GROUND	UON	UNLESS OTHERWISE NOTED
AIC	AMPERES INTERRUPTING CAPACITY	GF	GROUND FAULT	V	VOLTS
AL	ALUMINUM	GFP	GROUND FAULT PROTECTED		
ATS	AUTOMATIC TRANSFER SWITCH	GRC	GALVANIZED RIGID CONDUIT		
AWG	AMERICAN WIRE GAUGE	H	HORIZONTAL		
C	COUNTERTOP	HP	HORSEPOWER		
C	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	KCMIL	THOUSAND CIRCULAR MILS		
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	KVA	KILOWATT - AMPERES		
CKTS	CIRCUITS	KW	KILOWATT		
CLG	CEILING	LT	LIQUID TIGHT FLEXIBLE METAL CONDUIT		
CU	COPPER	MTG	MOUNTING		
DAS	DISTRIBUTED ANTENNA SYSTEM	N	NEUTRAL		
EC	ELECTRICAL CONTRACTOR	NEC	NATIONAL ELECTRICAL CODE		
EM	EMERGENCY	NF	NON-FUSED		
		NIC	NOT IN CONTRACT		
		NL	NIGHT LIGHT		

**SCOPE OF WORK**

RENOVATION OF 3-STORY PLUS BASEMENT COMMERCIAL BUILDING AS BOARDING HOUSE WITH FIRST FLOOR OFFICE SPACE AND UPPER FLOOR BOARDING SPACE.

**ELECTRICAL SHEETS**

- 0050-E=E001 - ELECTRICAL COVER SHEET
- 0051-E=E002 - ELECTRICAL SPECIFICATIONS
- 0052-E=E101 - ELECTRICAL BASEMENT & FIRST FLOOR PLANS
- 0053-E=E102 - ELECTRICAL SECOND & THIRD FLOOR PLANS
- 0054-E=E201 - ELECTRICAL SCHEDULES & RISERS
- 0055-E=E301 - ELECTRICAL DETAILS



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REVISIONS:

DRAWING TITLE: <b>ELECTRICAL COVER SHEET</b>	
PROJECT NO.: 22-068	PROJECT DATE: FEB 2023
DRAWN BY: TH	CHECKED BY: JLA
SHEET NUMBER:	

0050-E=  
**E001**

**City of Baltimore**  
**SIGNATURE READY SET**  
 2023-925

Plan Number:

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**ELECTRICAL GENERAL SPECIFICATIONS**

**BASIC ELECTRICAL REQUIREMENTS**

DIVISION OF SPECIFICATIONS:  
 THIS DIVISION OF THE SPECIFICATIONS IS DIVIDED INTO THE FOLLOWING SECTIONS WHICH, WITH THEIR RESPECTIVE SUBSECTIONS, IS FOR CONVENIENCE ONLY AND NOT INTENDED TO ESTABLISH LIMITS OF WORK:

- BASIC ELECTRICAL REQUIREMENTS
- ELECTRICAL RELATED WORK
- RACEWAYS
- WIRES AND CABLES
- WIRING DEVICES
- CIRCUIT AND MOTOR DISCONNECTS
- ELECTRICAL IDENTIFICATION
- GROUNDING
- PANEL BOARDS
- LIGHTING

1. COMPLY WITH LOCAL CODES, OSHA, NEC, NFPA, IBC REQUIREMENTS, AND NATIONAL CODES.
2. COMPLETELY GROUND ENTIRE ELECTRICAL SYSTEM AS PER NATIONAL ELECTRICAL CODE.
3. APPLY FOR PERMIT AND PAY ALL FEES. PROVIDE FINAL INSPECTION CERTIFICATE.
4. WORKMANSHIP TO MEET N.E.C.A. GUIDELINES.
5. PUT INTO OPERATION AND TEST ALL ELECTRICAL EQUIPMENT.
6. PROVIDE COMPLETE INSTALLATION, INCLUDING ALL MINOR ITEMS.
7. ALL ELECTRICAL EQUIPMENT LOCATIONS ARE APPROXIMATE ONLY. FOR ALL MEASUREMENTS, USE ARCHITECTURAL PLANS AND FIELD SURVEYS. COORDINATE WITH MECHANICAL AND PLUMBING WORK, CABINET WORK, PARTITION WORK, ETC., WHEN REQUIRED.
8. SUBMIT ONE SET OF CLEARLY MARKED REPRODUCIBLE "RECORD" AS-BUILT DRAWINGS FOR ALL WORK, INDICATING CHANGES MADE DURING CONSTRUCTION. SUBMIT TO ARCHITECT FOR OWNER'S RECORD FILE. INSURE THAT ALL CIRCUITRY IS SHOWN AS WIRED IN THE FIELD, TO INCLUDE ACCURATE HOMERUN DESIGNATIONS.
9. UNLESS OTHERWISE NOTED ON THE DRAWINGS OR REQUIRED BY THE ARCHITECT, THE FOLLOWING MOUNTING HEIGHTS (CENTERLINE ABOVE FINISHED FLOOR) SHALL APPLY:

TOGGLE SWITCHES	4'-0"
RECEPTACLES	2'-0"
TELEPHONE/DATA/FIBER OPTIC OUTLETS	2'-0"

UPON APPROVAL OF THE ARCHITECT, MOUNTING HEIGHTS MAY BE ADJUSTED. LENGTH OF RECEPTACLES SHALL RUN VERTICALLY. DO NOT MOUNT OUTLETS BACK TO BACK ON OPPOSITE SIDES OF WALLS.

10. BIDDER'S SHALL VISIT THE SITE OF THE PROPOSED WORK TO UNDERSTAND THE COMPLEXITY, RESTRICTIONS, AND ALL THE REQUIREMENTS TO PERFORM WORK OF THESE DOCUMENTS IN SAID FACILITY. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED TO THE SUCCESSFUL BIDDER FOR FAILURE TO BE SO INFORMED.

**ELECTRICAL RELATED WORK**

1. WIRING FOR HVAC: BRING POWER TO MECHANICAL AND PLUMBING EQUIPMENT. INSTALL STARTERS WHERE REQUIRED. STARTERS, FIRESTATS AND CONTROL WIRING FURNISHED UNDER MECHANICAL SECTION. FRACTIONAL STARTERS TO BE SUPPLIED UNDER THIS SECTION.
2. ALL WORK IN FLOOR SLABS INCLUDING CORING, CHOPPING OR CHASING SHALL BE PROPOSED TO THE OWNER AND WRITTEN PERMISSION GRANTED BEFORE ACTUAL PERFORMANCE. X-RAY ALL PENETRATIONS, AFTER HOURS WITH A BUILDING ENGINEER PRESENT. CONTRACTOR SHALL HIRE A STRUCTURAL ENGINEER TO APPROVE X-RAYS AND INCLUDE PRICE IN THIS CONTRACT. NO CHASING OF SHAFT WALLS SHALL BE PERMITTED.

**RACEWAYS**

1. ALL CONDUITS FROM MECH./ELECT. RM. INTO TENANT SPACE SHALL BE EMT. MC CABLE SHALL BE USED IN TENANT SPACE EXISTING WALLS. USE MC CABLE WHIPS FOR CONNECTIONS TO LIGHT FIXTURES AND TO ANY VIBRATING EQUIPMENT.
2. ALL CONDUITS MOUNTED IN CEILING SPACE SHALL BE AS CLOSE AS POSSIBLE TO BEAMS AND/OR SLAB ABOVE. ALL JUNCTION BOXES IN CEILING CAVITY TO BE MOUNTED TO STRUCTURE.
3. MOUNT ALL BOXES USING UTILITY BRACKETS. IN EXISTING WALLS, USE "REWORK" BOXES. "F" CLIPS ARE NOT ALLOWED.
4. USE ANTI-SHORTING BUSHINGS WITH MC CABLE.
5. USE SET SCREW FITTINGS WITH EMT.
6. PROVIDE BUSHINGS AT ENDS OF ALL EMPTY RACEWAY.

**WIRES AND CABLES**

1. ALL WIRING SHALL BE #12 UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE COPPER. SIZES #10 AND SMALLER TO BE THWN/THHN, LARGER SIZES THW, THWN/THHN. ALL FINAL CONNECTIONS TO WIRING DEVICES WITH SCREW TERMINALS (SWITCHES, RECEPTACLE, ETC.) SHALL BE MADE WITH SOLID WIRE.

**WIRING DEVICES**

1. WIRING DEVICES ARE TO BE LEVITON DECORA SERIES OR APPROVED EQUAL SPEC GRADE WIRING DEVICES AS FOLLOWS:
  - A. WALL SWITCHES TO BE BUILDING STANDARD GE LOW-VOLTAGE. SWITCHES, WHEN MOUNTED ADJACENT TO ONE ANOTHER, SHALL BE GANGED TOGETHER WITH SINGLE MONOLITHIC COVER PLATE.
  - B. CONVENIENCE OUTLET RECEPTACLES TO BE BACK-AND-SIDE WIRED, 20-AMPERES, 125 VOLTS, 2-POLE, 2-WIRE, GROUNDING TYPE. DUPLEX: NO. 16352. GROUND FAULT INTERRUPTER DUPLEX: NO. 8898.
2. DIMMERS SHALL BE AS FOLLOWS:
  - A. DIMMERS SHALL BE LUTRON NOVA-T PRESET DIMMERS, 1000 WATT MINIMUM UNLESS NOTED OTHERWISE. COORDINATE DIMMER MODEL WITH FIXTURE TYPE. WHEN DIMMERS ARE MOUNTED ADJACENT TO SWITCHES THEY SHALL BE GANGED TOGETHER WITH SINGLE MONOLITHIC COVER PLATE. WHEN DIMMERS ARE MOUNTED ADJACENT TO OTHER DIMMERS THEY SHALL BE GANGED TOGETHER WITH SINGLE MONOLITHIC COVER PLATE.
3. OCCUPANCY SENSORS SHALL BE AS FOLLOWS:
  - A. WALL MOUNTED, ULTRASONIC, LUTRON LOS-SUS SERIES DEVICES.
4. COLOR OF DEVICES AND COVER PLATES SHALL SELECTED BY ARCHITECT.

**CIRCUIT AND MOTOR DISCONNECTS**

1. SAFETY SWITCHES:
  - OPERATING MECHANISM TO BE QUICK-MATE, QUICK BREAK. ENCLOSURE FOR INDOOR APPLICATIONS TO BE NEMA 1 GENERAL PURPOSE FOR 208Y/120V AND HEAVY DUTY FOR 480Y/277V. FOR OUTDOOR APPLICATIONS USE NEMA 3 RAIN TIGHT. ALL SWITCHES TO BE HORSEPOWER RATED. DUAL RATED FOR STANDARD AND TIME-DELAY FUSES.

**ELECTRICAL IDENTIFICATION**

1. LABEL CONDUITS FOR POWER, LIGHTING, FIRE ALARM AND TELEPHONE/DATA EVERY 50' OF ENTIRE RUN AND AT ALL VERTICAL AND WALL PENETRATIONS. LABEL ALL JUNCTION BOXES WITH CIRCUIT DESIGNATIONS.
2. IDENTIFY ALL ELECTRICAL EQUIPMENT AND CONTROLS, NEW AND EXISTING, WITH LAMINATE TAG WITH DOUBLE STICK TAPE.
3. PROVIDE TYPED PANEL BOARD DIRECTORY IN BOTH NEW AND EXISTING PANELBOARDS. TYPE THE REVISION DATE ON THE DIRECTORY CARD. INFORMATION SHALL CONSIST OF TENANT NAME/ROOM NUMBER/TYPE OF CIRCUIT, IE. OUTLETS, COPIER, ETC.

**GROUNDING**

1. RUN SEPARATE GROUND WIRE IN ALL BRANCH CIRCUITS AND FEEDER CIRCUITS. SIZE GROUND WIRE PER NEC TABLE 250-95. INCREASE CONDUIT SIZE ACCORDINGLY.

**PANEL BOARDS**

1. PANEL BOARDS SHALL BE MANUFACTURED IN ACCORDANCE WITH NEMA STANDARDS AND BEAR U.L. LABEL. MAIN BUSES TO BE RECTANGULAR COPPER OR ALUMINUM BARS, SILVER OR TIN PLATED, SECURELY FASTENED TO INSULATING BASES AND INDEPENDENT OF BRANCH CIRCUIT DEVICES FOR SUPPORT. COPPER GROUND BARS SHALL BE INCLUDED. NEUTRAL BARS TO BE PROVIDED WHERE NEEDED.
2. PANELBOARDS/LOADCENTERS SHALL BE EATON OR EQUAL.

**LIGHTING**

1. FURNISH ALL FIXTURES AND ACCESSORY EQUIPMENT UNLESS OTHERWISE NOTED. ALL EQUIPMENT TO BEAR U.L. LABEL FOR SERVICE INTENDED.
2. VERIFY THE EXACT TYPE OF CEILING CONSTRUCTION TO BE INSTALLED AND PROVIDE FIXTURES HAVING HOUSINGS, TRIM, ETC., CONSTRUCTED TO PROPERLY FIT IN CEILINGS INSTALLED. VERIFY THAT EACH FIXTURE WILL FIT IN ITS PROPOSED LOCATION PRIOR TO ORDERING FIXTURES. COORDINATE INSTALLATION OF LIGHTING FIXTURES WITH CEILING INSTALLATION.
3. LAY-IN FIXTURES TO BE SECURED WITH TWO WIRE HANGERS FROM STRUCTURE ABOVE AND FOUR HURRICANE CLIPS. THIS INCLUDES NEW AND EXISTING LIGHT FIXTURES IN TENANT SPACE.

**SHOP DRAWINGS**

1. PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.

LIGHT FIXTURE SCHEDULE					
SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG	LAMP	LUMENS/ LAMP
	5" RECESSED LED DOWNLIGHT AIR-TIGHT, WHITE TRIM	PROGRESS	P851-ICAT	12W PAR30 LED	850
	5" RECESSED LED DOWNLIGHT AIR-TIGHT, WHITE TRIM WET LOCATION	PROGRESS	P867WL-28	12W PAR30 LED	850
	DECORATIVE VANITY FIXTURE 3 LAMP	PROGRESS	P2812-15WB	3-10W A19 LED	800
	42" FAN LIGHT	KENNESAW	UC42V-WH-SHC	10W A19 LED	800
	WALL SCONCE	PROGRESS	P2959-09	10W A19 LED	800
	15" ROUND DECORATIVE LED CLOSE-TO-CEILING	PROGRESS	P350070-129	2-10W LED	800
	WALL MOUNTED LED EXTERIOR LANTERN, BUTTON PHOTOCELL	PROGRESS	P5712-31	9W BR30 LED	650
	4 FT SURFACE MOUNT LIGHT FIXTURE	LITHONIA	LBL4	50W	4000

- NOTES:
1. CONTRACTOR TO PROVIDE BID ALLOWANCE FOR LIGHTING FIXTURES. OWNER TO PROVIDE ALL LIGHTING FIXTURES.
  2. CONTRACTOR TO SUPPLY ALL NECESSARY HARDWARE TO COMPLETE INSTALLATION.
  3. INSTALL ALL LIGHT FIXTURES WITH HIGH EFFICIENCY LED LAMPS. (85% OF LIGHTING FIXTURE LAMPS MUST BE HIGH EFFICIENCY LED LAMPS; I.E. 17 OUT OF EVERY 20 LAMPS MUST BE LED.)
  4. ALL RECESSED DOWN LIGHTING SHALL BE IC RATED AND LABELED, AND SEALED AT INTERIOR FINISH AND LABELED TO ≤2.0 CFM LEAKAGE AT 75 Pa.
  5. REFER TO ARCHITECTURAL SHEETS FOR LENS, FINISH, REFLECTOR, COLOR, AND OTHER OPTIONAL REQUIREMENTS FOR ALL FIXTURES AND SWITCHES.
  6. SCHEDULE AND ELECTRICAL DESIGN BASED ON BOD FIXTURES FOR MAX WATTAGE; OWNER TO CHOOSE LIGHT FIXTURE BELOW OR EQUAL TO SPECIFIED WATTAGE.
  7. COORDINATE DIMMING REQUIREMENTS AND SWITCHES WITH OWNER.



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03/29/2023 ISSUE FOR PERMIT  
 NO. DATE REMARKS:

**REVISIONS:**

**DRAWING TITLE:**  
**ELECTRICAL SPECIFICATIONS**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
 DRAWN BY: TH CHECKED BY: JLA

SHEET NUMBER:

0051-E=  
**E002**

**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

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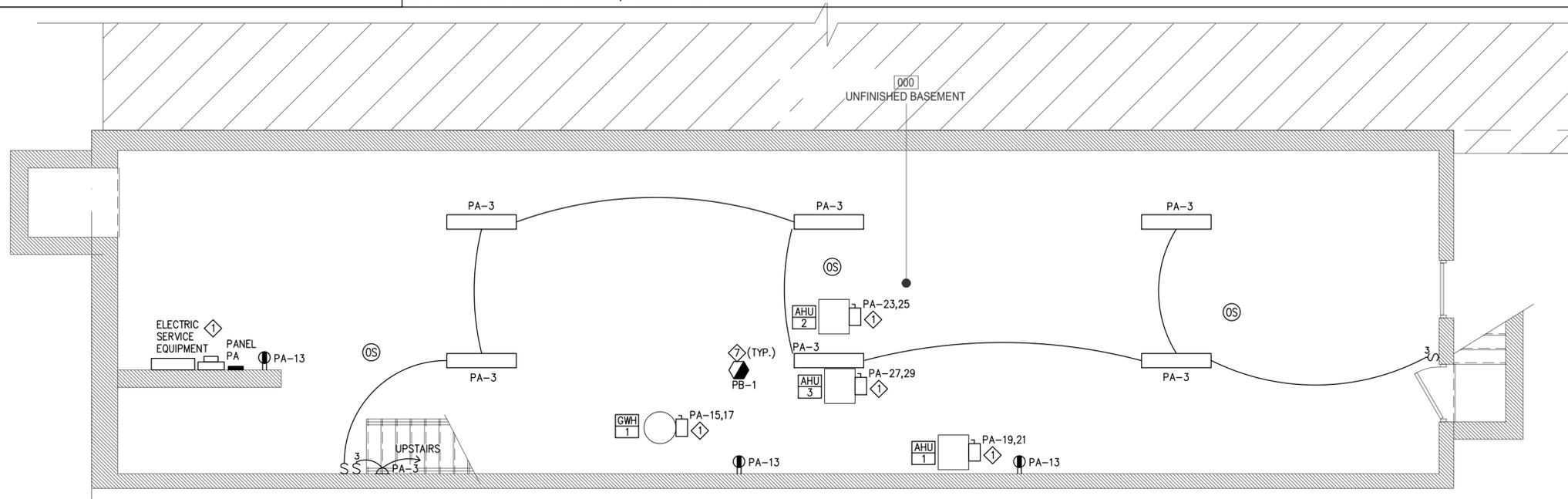
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- ALL WORK, METHODS, AND INSTALLATIONS INVOLVED IN THE BUILDING SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY/COUNTY BUILDING CODE AND INSPECTION REGULATIONS, AND ALL OTHER OFFICIALS HAVING JURISDICTION AS LISTED ON THE PLUMBING COVER SHEET(S).
- PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND METHODS BEING PROVIDED. SUBMIT TO ENGINEER OF RECORD AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION.
- CONTRACTOR SHALL COORDINATE ROUTING OF CONDUIT AND WIRING IN CEILING SPACES WITH PLUMBING AND MECHANICAL EQUIPMENT AND PIPING, AND WITH ARCHITECTURAL REFLECTED CEILING PLAN. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER PRIOR TO INSTALLING AN ALTERNATE PLAN.

- CONTRACTOR SHALL COORDINATE ALL APPLIANCE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
- CONTRACTOR SHALL COORDINATE ALL FINISH-OUT WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
- CONTRACTOR SHALL FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL CONDUIT AND WIRING.
- MECHANICAL CONTRACTOR TO PROVIDE ALL DISCONNECTS, STARTERS, AND/OR DRIVES FOR MECHANICAL EQUIPMENT. ELECTRICAL CONTRACTOR TO SUPPLY POWER TO DISCONNECTING MEANS. ELECTRICAL CONTRACTOR TO COORDINATE ALL MOTORS & ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
- APPLIANCES SHALL BE ENERGY STAR RATED AND EQUIPMENT SHALL MEET THE EFFICIENCY REQUIREMENTS OF ASHRAE STD. 90.1 OR LOCAL CODE REQUIREMENTS.

- MEP CONTRACTOR(S) SHALL COORDINATE ARCHITECTURAL ELEMENTS REQUIRED FOR MEP SYSTEMS WITH GC AND OWNER/ARCHITECT, INCLUDING BUT NOT LIMITED TO CHASES, BULKHEADS, FIRE RATINGS, DOOR UNDERCUTS, DOOR LOUVERS, ETC.
- ELECTRIC SERVICE
- ELECTRIC COMPANY SHALL BE RESPONSIBLE FOR CONNECTION TO POLE AS NEEDED PER LOCAL CODE & NEC.
- ELECTRIC PANELS
- ALL DWELLING UNITS SHALL HAVE CONTROL OVER THE MAIN CIRCUIT BREAKER OF ITS ELECTRIC PANEL LOCATED WITHIN THE DWELLING UNIT PER NEC 240-24(B).
- EQUIPMENT AND APPLIANCES
- CONTRACTOR TO PROVIDE DISCONNECT AT EACH ELECTRIC HOT WATER HEATER, FURNACE, OUTDOOR CONDENSING OR HEAT PUMP UNIT, AND CLOTHES DRYER.
- INDOOR AC UNITS TO BE PROVIDED WITH SINGLE POINT WIRING KIT.

- LOCATION OF EQUIPMENT FROM OTHER TRADES SUCH AS HVAC, PLUMBING, FIRE PROTECTION, ETC. INCLUDING BUT NOT LIMITED TO MOTORS, DAMPERS, CONTROL PANELS, MOTOR CONTROLLERS, ELECTRICAL VALVES, ETC. IS APPROXIMATE. COORDINATE WITH EACH TRADE DRAWINGS AND CONTRACTOR FOR EXACT LOCATION OF POWER CONNECTION TO SUCH EQUIPMENT. FAILURE TO COORDINATE WITH OTHER TRADES SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER.
- VERIFY WIRING DEVICE COVER PLACE FINISHES WITH THE ARCHITECT/OWNER REPRESENTATIVE BEFORE PURCHASING AND INSTALLATION OF SUCH DEVICES. WIRING DEVICE LOCATIONS ARE APPROXIMATE; FINAL LOCATION TO BE COORDINATED WITH THE ARCHITECT AND/OR OWNER REPRESENTATIVE.
- BRANCH CIRCUITS SHALL BE PROTECTED BY AFCI CIRCUIT BREAKERS OR AFCI RECEPTACLES FOR ALL DWELLING UNIT SPACES PER NEC 210.12, UNLESS NOTED OTHERWISE.
- NEW RECEPTACLES FOR ALL DWELLING UNIT SPACES SHALL BE TAMPER RESISTANT PER NEC 406.12. REPLACEMENT RECEPTACLES FOR ALL DWELLING UNIT SPACES SHALL BE

- TAMPER RESISTANT PER NEC 406.4(D)(5).
- ALL ELECTRICAL BOXES SHALL RECEIVE SOUND ATTENUATING PUTTY WRAP.
- LIGHTING
- CONTRACTOR TO COORDINATE LIGHTING FIXTURE TYPES WITH ARCHITECT/OWNER.
- LIGHTING BRANCH CIRCUIT RACEWAY SYSTEMS SHALL BE INDEPENDENT FROM RECEPTACLE/ POWER CIRCUIT WIRING.
- INSTALL LIGHTING FIXTURES WITH HIGH EFFICIENCY LED LAMPS. (85% OF LIGHTING FIXTURE LAMPS MUST BE HIGH EFFICIENCY LED LAMPS.)
- ALL DOWN LIGHTING SHALL BE IC RATED.
- LOW VOLTAGE
- COORDINATE CATV AND PHONE OUTLETS WITH ARCHITECT AND/OR OWNER.



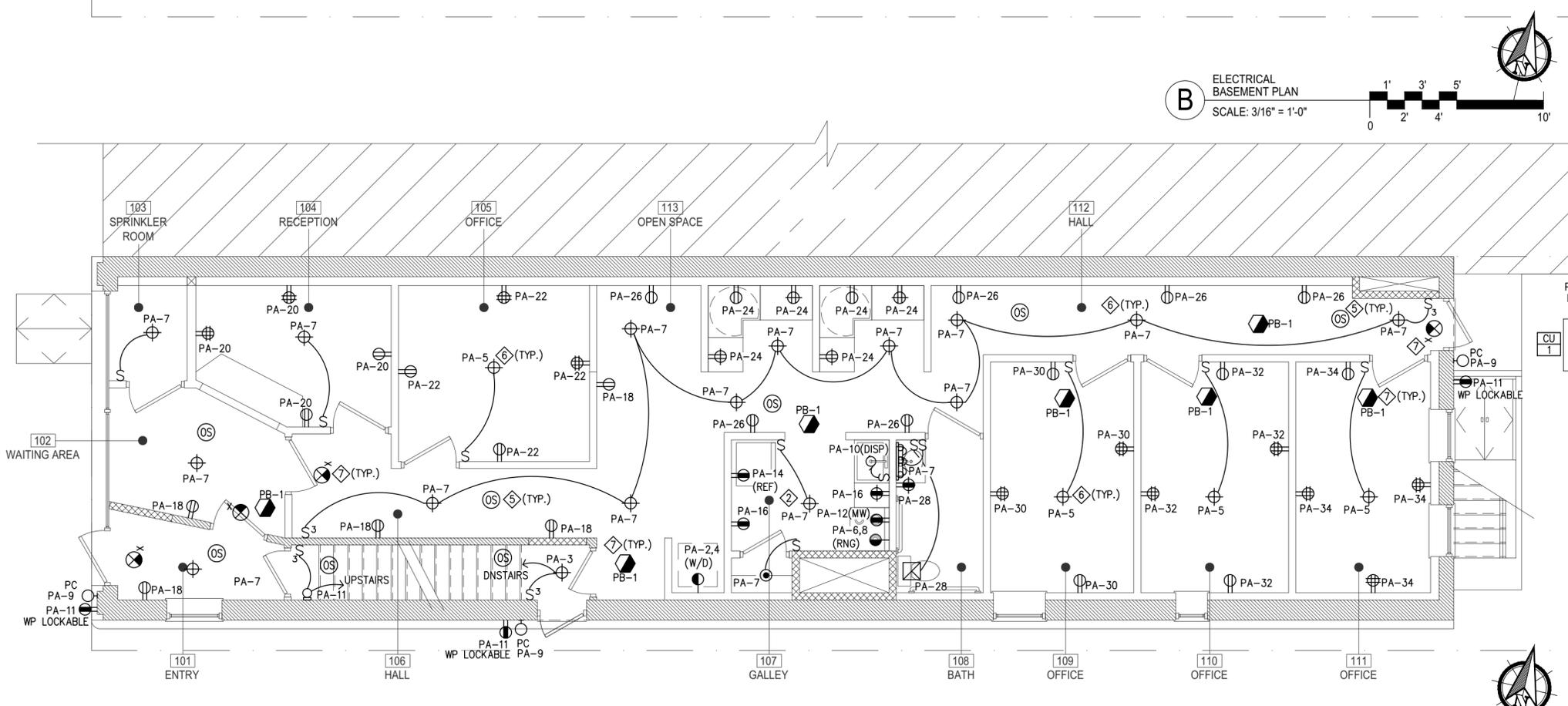
**LIGHT FIXTURE SYMBOLS**

SYMBOL	DESCRIPTION
⊙ W	RECESSED DOWNLIGHT (W-WET LISTED)
⊙	VANITY
⊙	FAN/LIGHT (ALTERNATE)
⊙	SURFACE MOUNT LIGHT
⊙ OR ⊙	WALL SCONCE
⊙	EXTERIOR LANTERN
⊙	4' SURFACE MOUNT
⊙	OCCUPANCY SENSOR
⊙ X	EMERGENCY EXIT SIGN
⊙	RESIDENTIAL COMBINATION SMOKE/CARBON MONOXIDE DETECTOR

NOTE: REFER TO ARCHITECTURE PLANS FOR RCP. REFER TO LIGHTING FIXTURE SCHEDULE FOR FULL SPECS.

**LIGHTING CONTROLS MATRIX**

SPACE TYPE	CONTROLS
OFFICE/ CORRIDORS	-AUTO ON/ AUTO OFF BY OCC. SENSOR -PROVIDE OVERRIDE SWITCH/DIMMERS WHERE INDICATED
BATHROOM	-AUTO ON/ AUTO OFF BY OCC. SENSOR -PROVIDE OVERRIDE SWITCH WHERE INDICATED



**KEYED NOTES**

- LOCATION OF EXISTING ELECTRIC SERVICE EQUIPMENT TO BE REPLACED. COORDINATE NEW SERVICE EQUIPMENT WITH UTILITY. REFER TO POWER RISER DIAGRAM.
- PROVIDE ELECTRICAL CONNECTION TO ALL MECHANICAL AND PLUMBING EQUIPMENT AS REQUIRED BY EQUIPMENT SPECS INCLUDING WIRING AND CONDUIT. COORDINATE FINAL EQUIPMENT SELECTIONS AND LOCATIONS WITH MECHANICAL AND PLUMBING CONTRACTORS.
- PROVIDE ELECTRICAL CONNECTION TO ALL KITCHEN APPLIANCES AS REQUIRED BY EQUIPMENT SPECS INCLUDING WIRING AND CONDUIT. COORDINATE FINAL COOKING EQUIPMENT SELECTIONS AND LOCATIONS WITH OWNER/ARCHITECT.
- COORDINATE EXACT HEIGHT OF ABOVE COUNTER RECEPTACLES WITH ARCHITECT AND/OR OWNER.
- ⊙ LIGHTING OCCUPANCY SENSOR.
- PROVIDE NEW LIGHTING FIXTURE AND SWITCH INCLUDING WIRING AND CONDUIT. FOR EXACT LOCATION AND MOUNTING HEIGHT, COORDINATE WITH ARCHITECTURAL DRAWINGS.
- EXIT SIGNS AND SMOKE DETECTORS SHOWN FOR COORDINATION ONLY. FIRE ALARM SYSTEM SHALL BE SUBMITTED BY OTHERS UNDER SEPARATE PERMIT.



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DRAWING TITLE:  
**ELECTRICAL BASEMENT & FIRST FLOOR PLANS**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
DRAWN BY: TH CHECKED BY: JLA  
SHEET NUMBER: 0052-E=  
**E101**

**City of Baltimore**  
**SIGNATURE READY SET**  
2023-925

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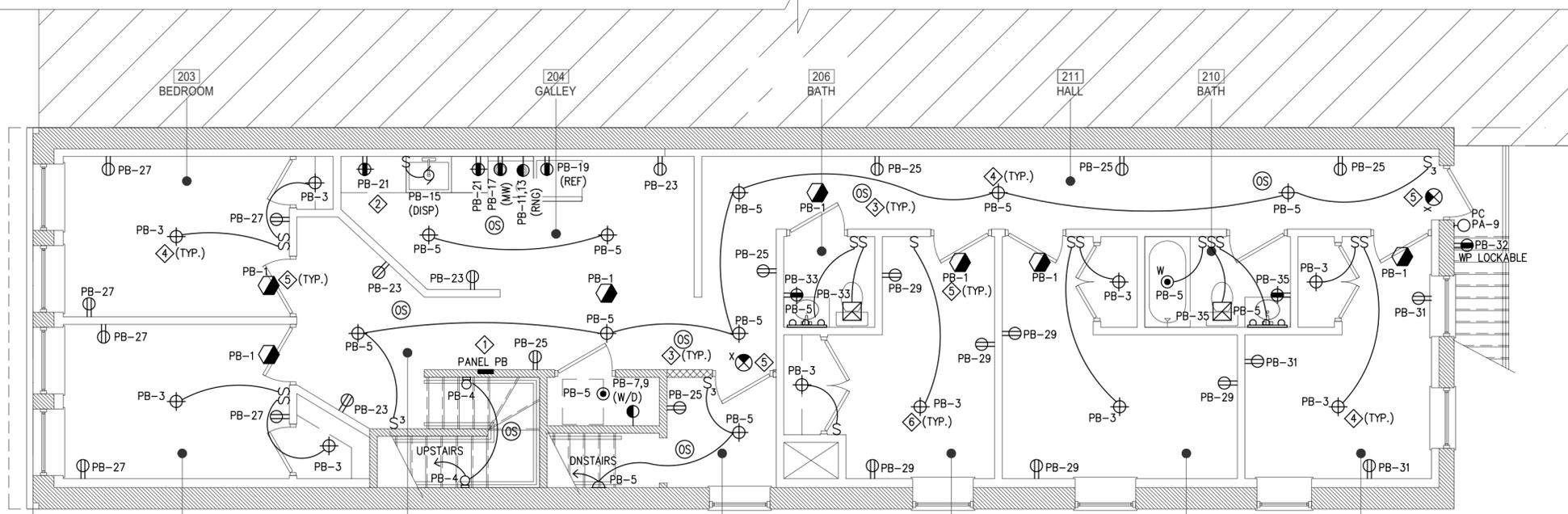
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- ALL DOWN LIGHTING SHALL BE IC RATED.
- LOW VOLTAGE
- COORDINATE CATV AND PHONE OUTLETS WITH ARCHITECT AND/OR OWNER.



**2 ELECTRICAL SECOND FLOOR PLAN**  
SCALE: 3/16" = 1'-0"  
1' 2' 3' 4' 5' 10'

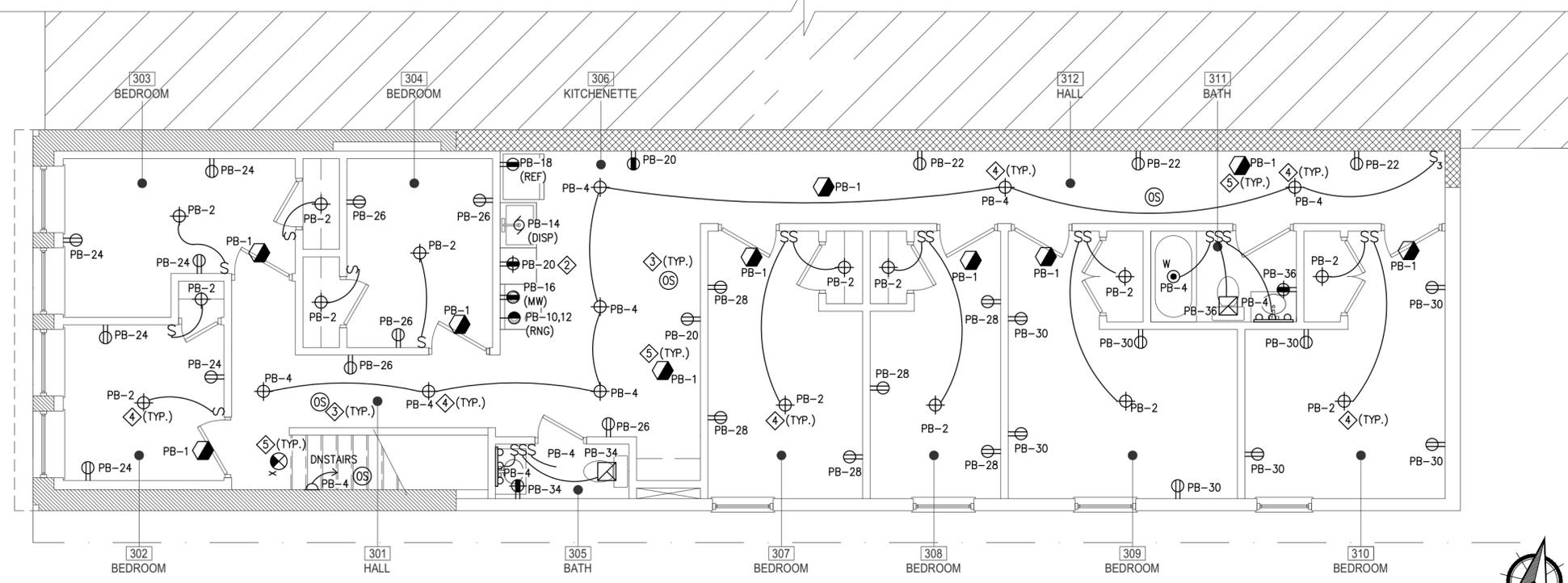
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NOTE: REFER TO ARCHITECTURE PLANS FOR RCP. REFER TO LIGHTING FIXTURE SCHEDULE FOR FULL SPECS.

**LIGHTING CONTROLS MATRIX**

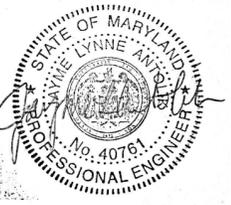
SPACE TYPE	CONTROLS
OFFICE/ CORRIDORS	-AUTO ON/ AUTO OFF BY OCC. SENSOR -PROVIDE OVERRIDE SWITCH/DIMMERS WHERE INDICATED
BATHROOM	-AUTO ON/ AUTO OFF BY OCC. SENSOR -PROVIDE OVERRIDE SWITCH WHERE INDICATED



**3 ELECTRICAL THIRD FLOOR PLAN**  
SCALE: 3/16" = 1'-0"  
1' 2' 3' 4' 5' 10'

**KEYED NOTES**

- COORDINATE EXACT LOCATION OF THE NEW ELECTRICAL PANEL WITH THE ARCHITECT AND/OR OWNER, PRIOR TO INSTALLATION.
- COORDINATE EXACT HEIGHT OF ABOVE COUNTER RECEPTACLES WITH ARCHITECT AND/OR OWNER.
- ⊙ LIGHTING OCCUPANCY SENSOR.
- PROVIDE NEW LIGHTING FIXTURE AND SWITCH INCLUDING WIRING AND CONDUIT. FOR EXACT LOCATION AND MOUNTING HEIGHT, COORDINATE WITH ARCHITECTURAL DRAWINGS.
- EXIT SIGNS AND SMOKE DETECTORS SHOWN FOR COORDINATION ONLY. FIRE ALARM SYSTEM SHALL BE SUBMITTED BY OTHERS UNDER SEPARATE PERMIT.



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REVISIONS:

DRAWING TITLE	PROJECT NO.	PROJECT DATE
ELECTRICAL SECOND & THIRD FLOOR PLANS	22-068	FEB 2023

DRAWN BY: TH  
CHECKED BY: JLA

SHEET NUMBER:  
**0053-E= E102**

**City of Baltimore**  
**SIGNATURE READY SET**  
**2023-925**

Plan Number: \_\_\_\_\_

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Load Description	kVA	Wire Size	Cond. Size	Brk	P	Ckt. No.	A	B	C	P	Brk	Cond. Size	Wire Size	kVA	Load Description	
SPARE	-	-	-	20	1	1	*	-	-	2	30	3/4"	10	2.2	WASHER/DRYER -1ST	
LIGHTING -BSTM	0.8	12	NM	20	1	3	-	*	-	4	-	-	-	2.2	-	
LIGHTING -1ST OFFICES	0.8	12	NM	20	1	5	-	*	-	6	2	50	3/4"	8	5.1	RANGE -1ST
LIGHTING -1ST OTHER	0.8	12	NM	20	1	7	*	-	-	8	-	-	-	-	-	
LIGHTING -OUTDOOR	0.8	12	NM	20	1	9	-	*	-	10	1	20	NM	12	0.5	G. DISPOSAL -1ST
RECPTS -OUTDOOR	0.0	12	NM	20	1	11	-	*	-	12	1	20	NM	12	1.2	MICROWAVE -1ST
RECPTS -BASEMENT	0.0	12	NM	20	1	13	*	-	-	14	1	20	NM	12	0.8	REFRIGERATOR -1ST
GWH-1	0.4	12	3/4"	20	2	15	-	*	-	16	1	20	NM	12	1.5	RECPTS -KITCHEN -1ST
-	0.4	-	-	-	-	17	-	*	-	18	1	20	NM	12	1.4	RECPTS -WAITING 102
AHU-1	1.4	12	3/4"	20	2	19	*	-	-	20	1	20	NM	12	1.4	RECPTS -RECEPTION 104
-	1.4	-	-	-	-	21	-	*	-	22	1	20	NM	12	1.4	RECPTS -OFFICE 105
AHU-2	1.4	12	3/4"	20	2	23	-	*	-	24	1	20	NM	12	1.4	RECPTS -OPEN 113
-	1.4	-	-	-	-	25	*	-	-	26	1	20	NM	12	1.4	RECPTS -HALL 112
AHU-3	1.7	10	3/4"	30	2	27	-	*	-	28	1	20	NM	12	1.4	RECPTS -BATH 108
-	1.7	-	-	-	-	29	-	*	-	30	1	20	NM	12	1.4	RECPTS -OFFICE 109
CU-1	2.8	8	3/4"	40	2	31	*	-	-	32	1	20	NM	12	1.4	RECPTS -OFFICE 110
-	2.8	-	-	-	-	33	-	*	-	34	1	20	NM	12	1.4	RECPTS -OFFICE 111
CU-2	2.8	8	3/4"	40	2	35	-	*	-	36	3	150	2"	3/0	23.3	PANEL B
-	2.8	-	-	-	-	37	*	-	-	38	-	-	-	AL	23.3	-
CU-3	3.1	8	3/4"	45	2	39	-	*	-	40	-	-	-	-	23.3	-
-	3.1	-	-	-	-	41	-	*	-	42	1	20	-	-	-	SPARE

Notes:

- PROVIDE AFCI CIRCUIT BREAKERS AS REQUIRED BY THE NEC.
- WIRING TYPE NM (ROMEX) WOOD CONSTRUCTION EXCEPT EXTERIOR CIRCUITS.
- THE EXACT AIC RATING OF ALL SERVICE EQUIPMENT AND PANELBOARDS SHALL BE COORDINATED WITH THE UTILITY COMPANY'S AVAILABLE FAULT CURRENT AND ADJUSTED ACCORDINGLY.
- PRIOR TO WORK, COORDINATE MECHANICAL AND PLUMBING POWER REQUIREMENTS WITH MECHANICAL AND PLUMBING CONTRACTORS.

	Connected kVA	Demand Factor	Demand kVA
Lighting:	3.2	125%	4.0
Receptacles (1st 10 kVA):	10.0	100%	10.0
Receptacles (> 10 kVA):	91.6	50%	45.8
Largest Motor Load:	0.0	125%	0.0
Remaining Motor Load:	0.0	100%	0.0
Miscellaneous:	27.4	100%	27.4
Kitchen Equipment:	0.0	100%	0.0
<b>TOTAL CONNECTED kVA =</b>	<b>132.2</b>		<b>87.2</b>
			<b>= TOTAL DEMAND kVA</b>
			<b>242.1</b>
			<b>= TOTAL DEMAND AMPS</b>

Load Description	kVA	Wire Size	Cond. Size	Brk	P	Ckt. No.	A	B	C	P	Brk	Cond. Size	Wire Size	kVA	Load Description	
SMOKE DETECTORS	0.5	12	NM	20	1	1	*	-	-	2	1	20	NM	12	0.8	LIGHTING -3RD BEDRMS
LIGHTING -2ND BEDRMS	0.8	12	NM	20	1	3	-	*	-	4	1	20	NM	12	0.8	LIGHTING -3RD OTHER
LIGHTING -2ND OTHER	0.8	12	NM	20	1	5	-	*	-	6	2	30	-	-	-	SPACE
WASHER/DRYER -2ND	2.2	10	NM	30	2	7	*	-	-	8	-	-	-	-	-	-
-	2.2	-	-	-	-	9	-	*	-	10	2	50	3/4"	8	5.1	RANGE -3RD
RANGE -2ND	5.1	8	3/4"	50	2	11	-	*	-	12	-	-	-	-	-	-
-	5.1	-	-	-	-	13	*	-	-	14	1	20	NM	12	0.5	G. DISPOSAL -3RD
G. DISPOSAL -2ND	0.5	12	NM	20	1	15	-	*	-	16	1	20	NM	12	1.2	MICROWAVE -3RD
MICROWAVE -2ND	1.2	12	NM	20	1	17	-	*	-	18	1	20	NM	12	0.8	REFRIGERATOR -3RD
REFRIGERATOR -2ND	0.8	12	NM	20	1	19	*	-	-	20	1	20	NM	12	1.5	RECPTS -KITCHEN -3RD
RECPTS -KITCHEN -2ND	1.5	12	NM	20	1	21	-	*	-	22	1	20	NM	12	1.4	RECPTS -HALL 312
RECPTS -HALL 211	1.4	12	NM	20	1	23	-	*	-	24	1	20	NM	12	1.4	RECPTS -BEDRM 302/303
RECPTS -HALL 211	1.4	12	NM	20	1	25	*	-	-	26	1	20	NM	12	1.4	RECPTS -BEDRM 304
RECPTS -BEDRM 202/203	1.4	12	NM	20	1	27	-	*	-	28	1	20	NM	12	1.4	RECPTS -BEDRM 307/308
RECPTS -BEDRM 207/208	1.4	12	NM	20	1	29	-	*	-	30	1	20	NM	12	1.4	RECPTS -BEDRM 309/310
RECPTS -BEDRM 209	1.4	12	NM	20	1	31	*	-	-	32	1	20	NM	12	1.4	RECPTS -OUTDOOR
RECPTS -BATH 206	0.7	12	NM	20	1	33	-	*	-	34	1	20	NM	12	1.4	RECPTS -BATH 305
RECPTS -BATH 210	0.7	12	NM	20	1	35	-	*	-	36	1	20	NM	12	1.4	RECPTS -BATH 311
SPARE	-	-	-	-	-	37	*	-	-	38	1	20	-	-	-	SPARE
SPACE	-	-	-	-	-	39	-	*	-	40	-	-	-	-	-	SPACE
SPACE	-	-	-	-	-	41	-	*	-	42	-	-	-	-	-	SPACE

Notes:

- PROVIDE AFCI CIRCUIT BREAKERS AS REQUIRED BY THE NEC.
- WIRING TYPE NM (ROMEX) WOOD CONSTRUCTION EXCEPT EXTERIOR CIRCUITS.
- THE EXACT AIC RATING OF ALL SERVICE EQUIPMENT AND PANELBOARDS SHALL BE COORDINATED WITH THE UTILITY COMPANY'S AVAILABLE FAULT CURRENT AND ADJUSTED ACCORDINGLY.
- PRIOR TO WORK, COORDINATE MECHANICAL AND PLUMBING POWER REQUIREMENTS WITH MECHANICAL AND PLUMBING CONTRACTORS.

	Connected kVA	Demand Factor	Demand kVA
Lighting:	3.7	125%	4.6
Receptacles (1st 10 kVA):	10.0	100%	10.0
Receptacles (> 10 kVA):	43.0	50%	21.5
Largest Motor Load:	0.0	125%	0.0
Remaining Motor Load:	0.0	100%	0.0
Miscellaneous:	0.0	100%	0.0
Kitchen Equipment:	0.0	100%	0.0
<b>TOTAL CONNECTED kVA =</b>	<b>56.7</b>		<b>36.1</b>
			<b>= TOTAL DEMAND kVA</b>
			<b>100.4</b>
			<b>= TOTAL DEMAND AMPS</b>

FEEDER SCHEDULE	FEEDER SCHEDULE
DESIGNATION	DESIGNATION
3W20	4W20
3W30	4W30
3W50	4W50
3W60	4W60
3W80	4W80
3W100	4W100
3W125	4W125
3W150	4W150
3W175	-
3W200	4W200
3W225	4W225
3W250	4W250
3W300	4W300
3W350	4W350
3W400	4W400

NOTES:

1. TYPE THWN/THHN INSULATED COPPER CONDUCTORS BASED ON 75 DEG C TEMPERATURE RATING IN RIGID METAL CONDUIT.
2. DRY INTERIOR LOCATIONS EMT WITH STEEL COMPRESSION FITTING.
3. WET EXTERIOR LOCATIONS WITH CAST FITTINGS.
4. UNDERGROUND INSTALLATIONS SCHEDULE 40PVC.
5. REFER TO NEC TABLE 310.15(B)(16) FOR SIZING OTHER WIRE TYPES.

FEEDER SCHEDULE	FEEDER SCHEDULE
DESIGNATION	DESIGNATION
3W100	4W100
3W125	4W125
3W150	4W150
3W175	4W175
3W200	4W200
3W225	4W225
3W250	4W250
3W300	4W300
3W350	4W350
3W400	4W400
3W500	4W500

NOTES:

1. TYPE THWN/THHN INSULATED ALUMINUM CONDUCTORS BASED ON 75 DEG C TEMPERATURE RATING IN RIGID METAL CONDUIT.
2. DRY INTERIOR LOCATIONS EMT WITH STEEL COMPRESSION FITTING.
3. WET EXTERIOR LOCATIONS WITH CAST FITTINGS.
4. UNDERGROUND INSTALLATIONS SCHEDULE 40PVC.
5. REFER TO NEC TABLE 310.15(B)(16) FOR SIZING OTHER WIRE TYPES.

**POWER RISER GENERAL NOTES**

NOTE FOR SOURCES OF POWER SUPPLY:  
 ALL SOURCES OF POWER SUPPLY SHALL BE LABELED ACCORDING TO NEC, SECTION 408.4 (B). LABEL ALL ELECTRIC PANELS WITH PANEL TAG AND IDENTIFY POWER SOURCE; ALSO REFER TO PANEL SCHEDULES AND FLOOR PLANS.

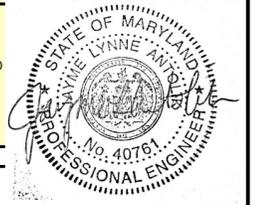
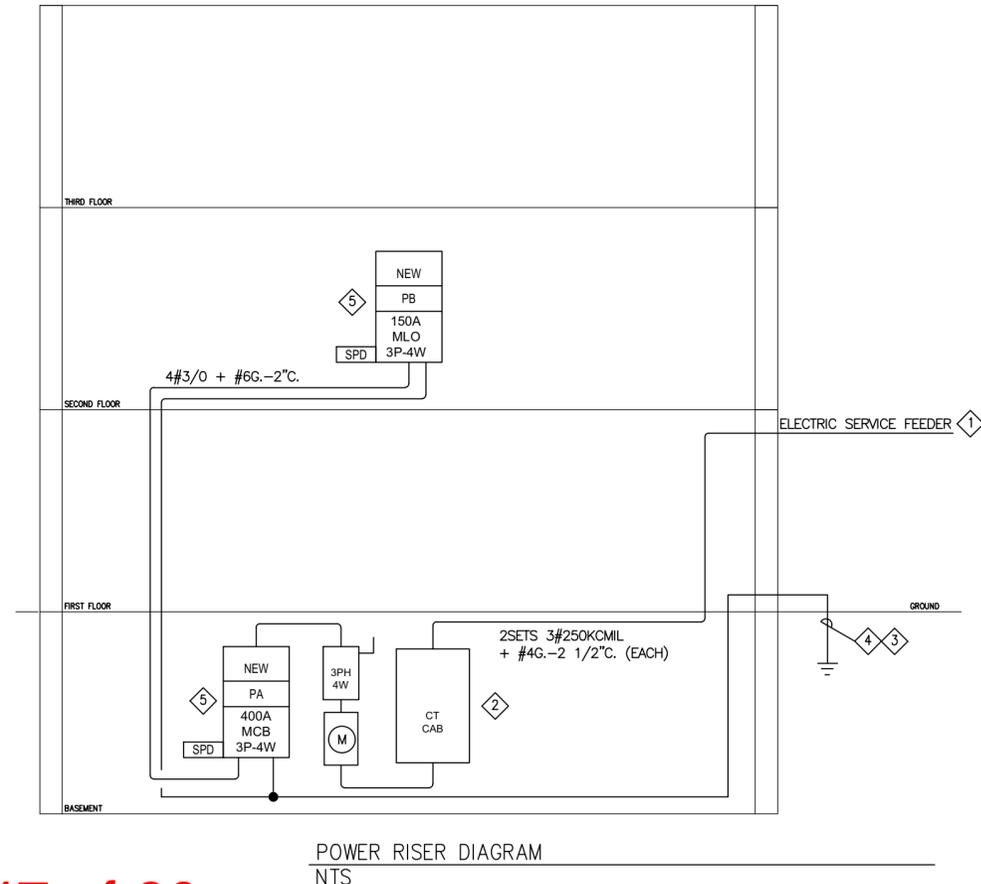
NOTES FOR AVAILABLE FAULT CURRENT:  
 PRIOR TO FINAL ORDERING OF PANELBOARDS, CIRCUIT BREAKERS, AND ALL ASSOCIATED EQUIPMENT, THE CONTRACTOR SHALL ARRANGE FOR AND PROVIDE TO THE ELECTRICAL ENGINEER OF RECORD VIA THE ARCHITECT A LETTER FROM THE LOCAL POWER COMPANY ON THEIR LETTERHEAD STATING THE MAXIMUM SHORT CIRCUIT FAULT CURRENT AVAILABLE AT THE SECONDARY OF THE UTILITY COMPANY TRANSFORMER. INFORMATION SHALL BE USED TO DETERMINE THE FINAL A.I.C. RATINGS OF THE PANELBOARDS, METER CENTERS, MAIN DISCONNECT SWITCHES, AND CIRCUIT BREAKERS.

NOTE FOR GROUNDING:  
 CONFIRM ALL ELECTRICAL SYSTEMS ARE PROPERLY GROUNDED TO OUTSIDE.

ARC FLASH HAZARD WARNING:  
 ELECTRICAL EQUIPMENT MUST BE MARKED TO WARN QUALIFIED PERSONS OF THE DANGER ASSOCIATED WITH AN ARC FLASH FROM SHORT CIRCUITS OR GROUND FAULTS. THE MARKING CAN BE MADE IN THE FIELD OR THE FACTORY, BUT IT MUST MEET THE REQUIREMENTS OF 2017 NATIONAL ELECTRICAL CODE, PARAGRAPH 110.16 AND BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

**KEYED NOTES**

1. NEW 208Y/120V, 400A, 3Ø, 4W, ELECTRICAL SERVICE BY UTILITY COMPANY. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY.
2. NEW CT CABINET WITH METER CAN AND DISCONNECT. CONTRACTOR TO PROVIDE AND INSTALL CT CABINET, METER CAN, ETC., AS PER LOCAL UTILITY REQUIREMENTS.
3. PROVIDE NEW #4 CU GROUNDING ELECTRODE CONDUCTOR CONNECTED TO NEW GROUND ROD. FOR MORE DETAIL, REFER TO ELECTRICAL GROUNDING AND BONDING DETAIL ON DRAWING E301.
4. PROVIDE NEW THREE (3) - 3/4" x 10 FT CU-CLAD DRIVEN GROUND RODS IN A 12FT EQUILATERAL TRIANGLE CONFIGURATION. SEE GROUND ROD INSTALLATION DETAIL.
5. PROVIDE AND INSTALL NEW PANELS PA AND PB, RATINGS AS SHOWN. FOR MORE DETAILS, SEE PANEL SCHEDULE.



JARED RUSSELL

27 S GAY ST  
 BALTIMORE, MD 21202



MEP ENGINEER  
**JLA ENGINEERING, LLC**  
 BALTIMORE, MD  
 443-890-0938

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40761, EXPIRATION DATE: 07/06/2023.

This drawing is the property of JLA Engineering, LLC and is not to be reproduced or copied in whole or part. It is not to be used on any other project and is to be returned upon request. Scales as stated herein are for reference only as normal reproduction processes may alter the accuracy of original.

**JLA ENGINEERING, LLC**

REVISIONS:

NO.	DATE	ISSUE FOR PERMIT	REMARKS
0	03/29/2023	ISSUE FOR PERMIT	

DRAWING TITLE:  
**ELECTRICAL PANEL SCHEDULES & RISER DIAGRAM**

PROJECT NO.: 22-068 PROJECT DATE: FEB 2023  
 DRAWN BY: TH CHECKED BY: JLA  
 SHEET NUMBER: 0054-E=  
**E201**



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**5 SITE SUSTAINABILITY 2023-925**  
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[6 WATER EFFICIENCY](#)  
The Department of Housing and Community Development's Permits and Code Enforcement division has completed a review of this document for code compliance.  
[7 ENERGY EFFICIENCY](#)  
As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.  
[8 INDOOR ENVIRONMENTAL QUALITY](#)  
**THIS DOCUMENT MAY NOT BE MODIFIED IN ANY WAY OTHER THAN TO AFFIX A SEAL, SIGNATURE AND DATE.**  
[9 MATERIALS & RESOURCES](#)  
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[10 CONSTRUCTION & OPERATIONS](#)  
**By signing this set, you are confirming that the "Signature Ready Set" has not been modified in any way that would make it different from the electronic document from which it was created.**  
[11 ELECTIVES](#)

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**City of Baltimore**  
**SIGNATURE READY SET**  
Instruction: **2023-925**

Plan Number: 2023-925

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**Baltimore City Building, Fire and Related Code, (Green Construction Code) Checklist**

Complete the Project Information and Compliance Tab for each project seeking permit in Baltimore City.

As applicable to the scope of the project (i.e., upgrade to plumbing fixtures would include Water Efficiency, 9 Materials & Resources, 10 Construction & Ops, and 11 Electives). If a section is not applicable to the project, an "N" must be placed in the Compliance Required column.

Tables are the tables that were included in the Baltimore City amendment of



**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT PERMITS AND CODE ENFORCEMENT**

**City of Baltimore**  
**SIGNATURE READY SET**

**Statement of Compliance**  
 and Related Code, Part XI (International Green Construction Code) INFORMATION

Submission Plan Number: **2023-925**

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Project Address: 27 S GAY ST

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Owner:


Architect:

**COMPLIANCE PATHWAY**

Options (Sec. 101.3.2)?	1 or 2 family dwelling
	Small Multi-Family Dwelling
	Temporary structure under Building Code SS 3103
	Equipment/ Systems for industrial or manufacturing
	Practical infeasibility determined by Building Official (Sec. 103.5)
Pursued by the Project.	IgCC (Baltimore City Adoption)
	ICC 700 (NGBS Silver)
	LEED Silver
	Green Globes 2 Globes
	Enterprise Green Communities

Submission number and date.

I hereby certify that the building located at the address provided on this sheet will comply with all applicable

Owner Name	
Address	
Signature	
Design Professional	
Address	
Signature	



Chapter 5 SITE SUSTAINABILITY										Responsible Party
Section #	Section Title	Section Requirements	Compliance	Where section	Responsible Party	Documentation	Compliance	PROJECT NOTES	TEAM ACTION	Responsible Party
501.1	Scope	(As in IgCC)								O-Owner
501.2										A-Architect
501.3										LA-Landscape Archt
501.3.1										ME-Mechanical Eng
501.3.2										EE-Electrical Eng
501.3.3										PE-Plumbing Eng
501.3.3.1										C-Contractor
501.3.3.2										*Contractor is always paired with a designer so the designer needs to give the contractor direction on plans or in specs/notes.
501.3.4										
501.3.4.1										
501.3.4.2										
501.3.4.3										
501.3.4.4										
501.3.5										
501.3.5.1										
501.3.5.2										
501.3.5.3										
501.3.5.3.1										
501.3.5.3.2										
501.3.5.3.3										
501.3.5.4										
501.3.5.5										
501.3.6										
501.3.6.1										
501.3.6.2										
501.3.6.3										
501.3.7										
501.3.7.1										
501.3.7.1.1										
501.3.7.1.2										
501.3.7.2										
501.3.7.2.1										
501.3.7.2.2										
501.3.7.2.3										
501.3.7.2.4										
501.3.7.2.5										
501.3.7.2.6										
501.3.7.3										
501.3.8										
501.3.8.1										

**City of Baltimore**

**SIGNATURE READY SET**

Plan Number: **2023-925**

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**City of Baltimore**  
**SIGNATURE READY SET**

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Quantity		INDOOR ENVIRONMENTAL QUALITY		Description		Unit		Material		Remarks	
001	1	001	1	City of Baltimore SIGNATURE READY SET							
001	1	001	1	Plan Number: 2023-925							
001	1	001	1	The Department of Housing and Community Development's Permits and Code Enforcement division has completed a review of this document for code compliance.							
001	1	001	1	As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.							
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Chapter 9 MATERIALS & RESOURCES

Section #	Section Title	Section Requirements	Compliance	Where section	Responsible Party	Documentation	Compliance	PROJECT NOTES
901.1	Scope	(As in IgCC)						
901.2								
901.3								
901.3.1								
901.3.1.1								
901.3.1.2								
901.3.2								
901.3.3								
901.3.4								
901.3.4.1								
901.3.4.2								
901.3.4.4								
901.3.5								
901.4								
901.4.1								
901.4.1.1								
901.4.1.1.1								
901.4.1.1.2								
901.4.1.3								
901.4.1.3.1								
901.4.1.4								
901.4.1.4.1								
901.4.1.4.2								
901.4.1.4.3								
901.4.1.4.4								
901.5								
901.5.1								
901.5.1.1								
901.5.1.2								
901.5.1.3								

**City of Baltimore**

# SIGNATURE READY SET

Plan Number: 2023-925

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Responsible Party
Owner
Architect
Structural
MEP
MEP/Plumbing Eng
MEP/Electrical Eng
MEP/Plumbing Eng
Contractor

\*Contractor is always paired with a designer so the designer needs to give the contractor direction on plans or in specs/notes.





Item No.	Description	Code	Quantity	Unit	Material	Notes	Remarks
<h1 style="margin: 0;">City of Baltimore</h1> <h2 style="margin: 0;">SIGNATURE READY SET</h2> <h3 style="margin: 0; color: red;">2023-925</h3> <p style="margin: 0;">Plan Number: <b>2023-925</b></p> <p style="margin: 0;">The Department of Housing and Community Development's Permits and Code Enforcement division has completed a review of this document for code compliance.</p> <p style="margin: 0;">As required by State Code, the professional responsible for the preparation and content of this document must provide a record copy with their seal, signature and the current date.</p> <p style="margin: 0; text-align: center;"><b>THIS DOCUMENT MAY NOT BE MODIFIED IN ANY WAY OTHER THAN TO AFFIX A SEAL, SIGNATURE AND DATE.</b></p> <p style="margin: 0;">The signed "Signature Ready Set" will give the electronic document from which it was created the same force and impact as if the electronic document were signed and sealed.</p> <p style="margin: 0; color: red; text-align: center;"><b>By signing this set, you are confirming that the "Signature Ready Set" has not been modified in any way that would make it different from the electronic document from which it was created.</b></p>							
1001.1	Professional Services	See 88C Section 2-2.1 (Professional Fee)	1	Fee			
1001.2	Address City Block Fee	\$5000 per 100' x 100' lot or fraction thereof plus \$100 per 100' x 100' lot	1	Fee			
1001.3	Construction Inspection	See Section 2-2.1 (Construction Inspection Fee)	1	Fee			
1001.4	Materials - Other Services	See Section 2-2.1 (Other Services Inspection Fee)	1	Fee			
1001.5	Materials - Other Services	See Section 2-2.1 (Other Services Inspection Fee)	1	Fee			
1001.6	Materials - Inspection	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.7	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.8	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.9	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.10	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.11	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.12	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.13	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.14	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.15	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.16	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.17	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.18	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.19	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.20	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.21	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.22	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.23	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.24	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.25	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.26	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.27	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.28	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.29	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.30	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.31	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.32	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.33	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.34	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.35	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.36	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.37	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.38	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.39	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.40	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.41	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.42	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.43	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.44	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.45	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.46	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.47	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.48	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.49	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.50	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.51	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.52	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.53	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.54	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.55	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.56	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.57	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.58	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.59	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.60	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.61	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.62	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.63	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.64	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.65	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.66	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.67	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.68	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.69	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.70	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.71	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.72	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.73	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.74	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.75	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.76	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.77	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.78	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.79	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.80	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.81	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.82	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.83	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.84	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.85	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.86	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.87	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.88	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.89	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.90	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.91	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.92	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.93	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.94	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.95	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.96	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.97	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.98	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1001.99	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
1002.00	Inspection Requirements	See Section 2-2.1 (Inspection Fee)	1	Fee			
				<b>Total Points Claimed</b>			

Continued on adjacent page with program by the program table page for complete details on prices or quantities.





