

# JONES & BEACH ENGINEERS INC.

85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885  
603.772.4746 - JonesandBeach.com

April 2, 2024

Portsmouth Technical Review Advisory Committee  
Attn: Board Members  
1 Junkins Avenue, Suite 3<sup>rd</sup> Floor  
Portsmouth, NH 03801

**RE: TAC Work Session Application  
Friends of Lafayette House  
413 Lafayette Road, Portsmouth, NH  
Tax Map 230, Lot 23A  
JBE Project No. 23036**

Dear Board Members,

Jones & Beach Engineers, Inc., respectfully submits a TAC Work Session Application on behalf of the applicant and owner, Friends of Lafayette House. This structure houses 12 developmentally disabled residents with full-time inhouse care. The intent of this application is to add a 635 S.F. addition to the existing building for the use of the full-time caretaker onsite. Currently the caretaker has a unit inside the building and works 5 days a week all day. On weekends, they have a secondary caretaker that comes in and covers the weekend workload, but they have to live with the full-time caretaker in the same unit. It is tight quarters and they share a bathroom and kitchen and it's not an ideal living situation. The proposed addition is to give the full-time caretaker their own unit and then the weekend caretaker would use the existing space just on the weekends. There is no increase in staffing or residency proposed with this expansion.

The reason for this request to be heard at the work session is to determine what level of plans we need to submit for this small addition. There are no proposed changes to the utilities outside of the building. The addition will be plumbed internally from the existing building. There are no changes proposed for the parking area and minimal increase in impervious coverage. We are removing the existing sheds on the property. Therefore, we would prefer to not provide a full drainage report for these small changes to the site. We are also not proposing any additional landscaping and the lighting modifications will be minimal. The owner would just have a small light above the doorway providing access to the caretaker unit.

The following items are provided in support of this Application:

1. Completed TAC Work Session Application (submitted online).
2. Letter of Authorization.
3. Current Deed.
4. One (1) Full Size Plan Set Folded.
5. One (1) Full Size set of architectural drawings

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,

**JONES & BEACH ENGINEERS, INC.**



Joseph A. Coronati  
Vice President

cc: Melanie Merz, Friends of Lafayette House (via email)  
John Bosen, Esq (via email)  
Chris Mulligan, Esq (via email)

**Letter of Authorization**

Friends of Lafayette House, 400 Little Harbor Road, Suite 1104. Portsmouth, NH 03801, owner of property located in Portsmouth, NH, known as Tax Map 230, Lot 23A, do hereby authorize Jones & Beach Engineers, Inc., PO Box 219, Stratham, NH, and Bosen & Associates, 266 Middle Street, Portsmouth, NH 03801, to act on my behalf concerning the previously mentioned property. The parcel is located at 413 Lafayette Road in Portsmouth, NH.

We hereby appoint Jones & Beach Engineers, Inc., as my agent to act on my behalf in the review process, to include any required signatures.

\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Friends of Lafayette House

12/20/23  
Date



Ganz Law Office

Box 62

*Cathy Ann Tracy*

LCHIP	ROA474216	25.00
TRANSFER TAX	RO093549	2,884.00
RECORDING		14.00
SURCHARGE		2.00

**WARRANTY DEED**

KNOW ALL MEN BY THESE PRESENTS that **Community Home Solutions, Inc., a New Hampshire corporation**, of 14 New Zealand Road, Seabrook, New Hampshire 03874, for consideration paid, grant to **Friends of Lafayette House, a New Hampshire non-profit corporation**, with a mailing address of PO Box 4545, Portsmouth, New Hampshire 03802, with warranty covenants, the following:

A certain parcel of land, together with the buildings and improvements thereon, situate in Portsmouth, County of Rockingham and State of New Hampshire, identified as Lot 2 on subdivision plan entitled "Plan of Land of J. Philip McCaffery for Great Bay School and Training Center, by Richard P. Millette & Associates", dated December 1981, with Revision I dated January 7, 1982, and recorded in the Rockingham County Registry of Deeds as Plan No. D- 10590 (the "Premises"), as more particularly bounded and described as follows:

Beginning at a point which is 155 feet distant from the Southwest corner of land now or formerly of Lester A. and Priscilla M. Pettis, on a bearing S 79° 23' 39" E from Lafayette Road and from said point of beginning, and being at the Southerly side of Lot 3 on aforesaid plan; thence running S 79° 23' 39" E a distance of 154.32 feet to a point at land now or formerly of Church of Jesus Christ of Latter Day Saints; thence running South by said Church land S 22° 05' 21" W a distance of 179.22 feet to land now or formerly of the City of Portsmouth; thence running S 88° 21' 21"W a distance of 183.14 feet to Lot 1 on said Plan; thence running N 21° 15' 21" E a distance of 187.72 feet to a point at a right of way in common of fifty (50) feet in width; thence running S 79° 23' 39" E a distance of twenty (20) feet to a point; thence running N 21° 15' 21" E, a distance of 30.53 feet to the point of beginning.

There is granted herewith a fifty (50) foot easement right of way as shown on said Plan, extending from Lot 2 to Lafayette Road. This right of way shall run with the land, for all purposes of vehicular and pedestrian passage, for the benefit of Lot 1, Lot 2 and Lot 3 on said Plan, and also for the benefit of land abutting this right of way to the North, now or formerly owned by Lester A. Pettis and Priscilla M. Pettis.

Premises are conveyed subject to the terms of an Option Agreement, a Notice of which is recorded in Rockingham County Registry of Deeds at Book 5879, Page 1258.

Said conveyance is subject to the mortgage to the Newburyport Five Cents Savings Bank dated December 14, 2017 and recorded at Book 5879, Page 120, the Assignment of Rents to the Newburyport Five Cents Savings Bank dated December 14, 2017 and recorded at Book 5879, Page 1247 and a UCC-1 Financing Statement dated December 14, 2017 and recorded at Book 5888, Page 630.

The grantee herein has assumed the financial obligations to Newburyport Five Cents Savings Bank.

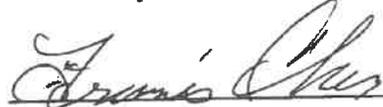
Subject to all rights, restrictions and easements of record.

This is not homestead property of Grantor.

Meaning and intending to describe the same premises conveyed to Grantor by deed of Great Bay Services, Inc. dated December 14, 2017 and recorded in the Rockingham County Registry of Deeds at Book 5879, Page 1225.

Executed this 10th day of December, 2019.

**Community Home Solutions, Inc.**



**By Francis G. Chase, President**

  
Witness

**STATE OF NEW HAMPSHIRE  
ROCKINGHAM, SS.**

**December 10, 2019**

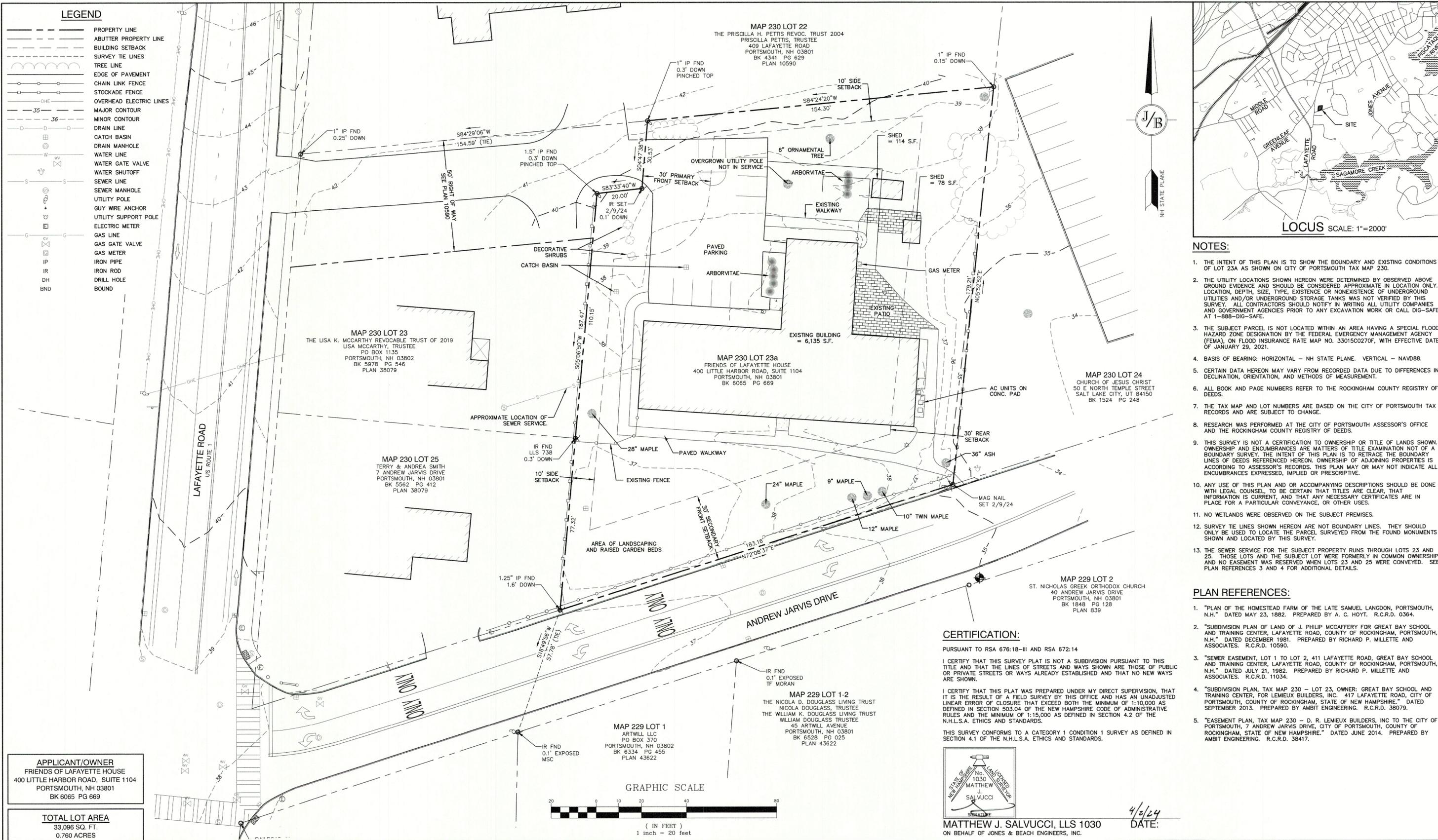
Then appeared the above-named **Francis G. Chase, duly authorized President of Community Home Solutions, Inc.**, known to me or satisfactorily proven through proof of identification (i.e. his driver's license) to be the individual who executed the foregoing instrument, and acknowledged same to be his voluntary act and deed.

Before me,

**Mary Keohan Ganz, Justice of the Peace  
State of New Hampshire  
My Commission Expires: August 28, 2024**

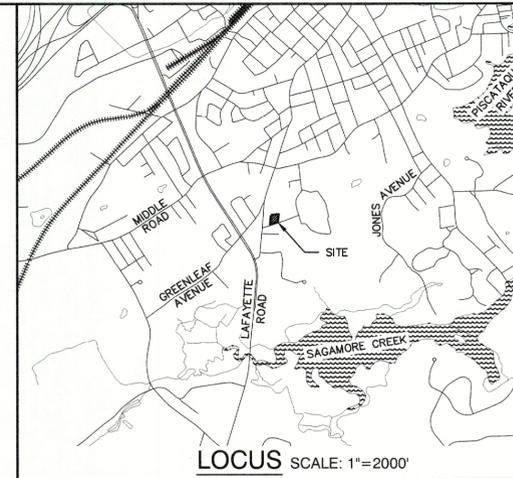
  
**Mary Keohan Ganz - Justice of the Peace  
My Commission Expires: 08/28/2024**

#8784-A/BF



**LEGEND**

- PROPERTY LINE
- - - ABUTTER PROPERTY LINE
- - - BUILDING SETBACK
- - - SURVEY TIE LINES
- - - TREE LINE
- - - EDGE OF PAVEMENT
- - - CHAIN LINK FENCE
- - - STOCKADE FENCE
- - - OVERHEAD ELECTRIC LINES
- - - MAJOR CONTOUR
- - - MINOR CONTOUR
- - - DRAIN LINE
- - - CATCH BASIN
- - - DRAIN MANHOLE
- - - WATER LINE
- - - WATER GATE VALVE
- - - WATER SHUTOFF
- - - SEWER LINE
- - - SEWER MANHOLE
- - - UTILITY POLE
- - - GUY WIRE ANCHOR
- - - UTILITY SUPPORT POLE
- - - ELECTRIC METER
- - - GAS LINE
- - - GAS GATE VALVE
- - - GAS METER
- - - IRON PIPE
- - - IRON ROD
- - - DRILL HOLE
- - - BOUND



**NOTES:**

1. THE INTENT OF THIS PLAN IS TO SHOW THE BOUNDARY AND EXISTING CONDITIONS OF LOT 23A AS SHOWN ON CITY OF PORTSMOUTH TAX MAP 230.
2. THE UTILITY LOCATIONS SHOWN HEREON WERE DETERMINED BY OBSERVED ABOVE GROUND EVIDENCE AND SHOULD BE CONSIDERED APPROXIMATE IN LOCATION ONLY. LOCATION, DEPTH, SIZE, TYPE, EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES AND/OR UNDERGROUND STORAGE TANKS WAS NOT VERIFIED BY THIS SURVEY. ALL CONTRACTORS SHOULD NOTIFY IN WRITING ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES PRIOR TO ANY EXCAVATION WORK OR CALL DIG-SAFE AT 1-888-DIG-SAFE.
3. THE SUBJECT PARCEL IS NOT LOCATED WITHIN AN AREA HAVING A SPECIAL FLOOD HAZARD ZONE DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33015C0270F, WITH EFFECTIVE DATE OF JANUARY 29, 2021.
4. BASIS OF BEARING: HORIZONTAL - NH STATE PLANE. VERTICAL - NAVD88.
5. CERTAIN DATA HEREON MAY VARY FROM RECORDED DATA DUE TO DIFFERENCES IN DECLINATION, ORIENTATION, AND METHODS OF MEASUREMENT.
6. ALL BOOK AND PAGE NUMBERS REFER TO THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
7. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE CITY OF PORTSMOUTH TAX RECORDS AND ARE SUBJECT TO CHANGE.
8. RESEARCH WAS PERFORMED AT THE CITY OF PORTSMOUTH ASSESSOR'S OFFICE AND THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
9. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO TRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.
10. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL, TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.
11. NO WETLANDS WERE OBSERVED ON THE SUBJECT PREMISES.
12. SURVEY TIE LINES SHOWN HEREON ARE NOT BOUNDARY LINES. THEY SHOULD ONLY BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY THIS SURVEY.
13. THE SEWER SERVICE FOR THE SUBJECT PROPERTY RUNS THROUGH LOTS 23 AND 25. THOSE LOTS AND THE SUBJECT LOT WERE FORMERLY IN COMMON OWNERSHIP, AND NO EASEMENT WAS RESERVED WHEN LOTS 23 AND 25 WERE CONVEYED. SEE PLAN REFERENCES 3 AND 4 FOR ADDITIONAL DETAILS.

**PLAN REFERENCES:**

1. "PLAN OF THE HOMESTEAD FARM OF THE LATE SAMUEL LANGDON, PORTSMOUTH, N.H." DATED MAY 23, 1882. PREPARED BY A. C. HOYT. R.C.R.D. 0384.
2. "SUBDIVISION PLAN OF LAND OF J. PHILIP MCCAFFERY FOR GREAT BAY SCHOOL AND TRAINING CENTER, LAFAYETTE ROAD, COUNTY OF ROCKINGHAM, PORTSMOUTH, N.H." DATED DECEMBER 1981. PREPARED BY RICHARD P. MILLETTE AND ASSOCIATES. R.C.R.D. 10590.
3. "SEWER EASEMENT, LOT 1 TO LOT 2, 411 LAFAYETTE ROAD, GREAT BAY SCHOOL AND TRAINING CENTER, LAFAYETTE ROAD, COUNTY OF ROCKINGHAM, PORTSMOUTH, N.H." DATED JULY 21, 1982. PREPARED BY RICHARD P. MILLETTE AND ASSOCIATES. R.C.R.D. 11034.
4. "SUBDIVISION PLAN, TAX MAP 230 - LOT 23, OWNER: GREAT BAY SCHOOL AND TRAINING CENTER, FOR LEMIEUX BUILDERS, INC. 417 LAFAYETTE ROAD, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE." DATED SEPTEMBER 2013. PREPARED BY AMBIT ENGINEERING. R.C.R.D. 38079.
5. "EASEMENT PLAN, TAX MAP 230 - D. R. LEMIEUX BUILDERS, INC TO THE CITY OF PORTSMOUTH, 7 ANDREW JARVIS DRIVE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE." DATED JUNE 2014. PREPARED BY AMBIT ENGINEERING. R.C.R.D. 38417.

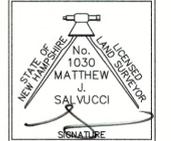
**CERTIFICATION:**

PURSUANT TO RSA 676:18-III AND RSA 672:14

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEED BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.



MATTHEW J. SALVUCCI, LLS 1030  
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

4/2/24  
DATE:

**APPLICANT/OWNER**  
FRIENDS OF LAFAYETTE HOUSE  
400 LITTLE HARBOR ROAD, SUITE 1104  
PORTSMOUTH, NH 03801  
BK 6065 PG 669

**TOTAL LOT AREA**  
33,096 SQ. FT.  
0.760 ACRES

Design: JAC	Draft: KDR	Date: 2/28/24
Checked: JAC	Scale: 1" = 20'	Project No.: 23036
Drawing Name: 23036-PLAN.dwg		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		

REV.	DATE	REVISION	BY
0	2/28/24	ADDING BUILDING SETBACKS	KDR

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**

Civil Engineering Services

85 Portsmouth Ave. PO Box 219 Stratham, NH 03885

603-772-4746

E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>EXISTING CONDITIONS PLAN</b>
Project:	<b>BUILDING ADDITION 413 LAFAYETTE ROAD, PORTSMOUTH, NH</b>
Owner of Record:	<b>FRIENDS OF LAFAYETTE HOUSE 400 LITTLE HARBOR ROAD, SUITE 1104, PORTSMOUTH, NH 03801</b>

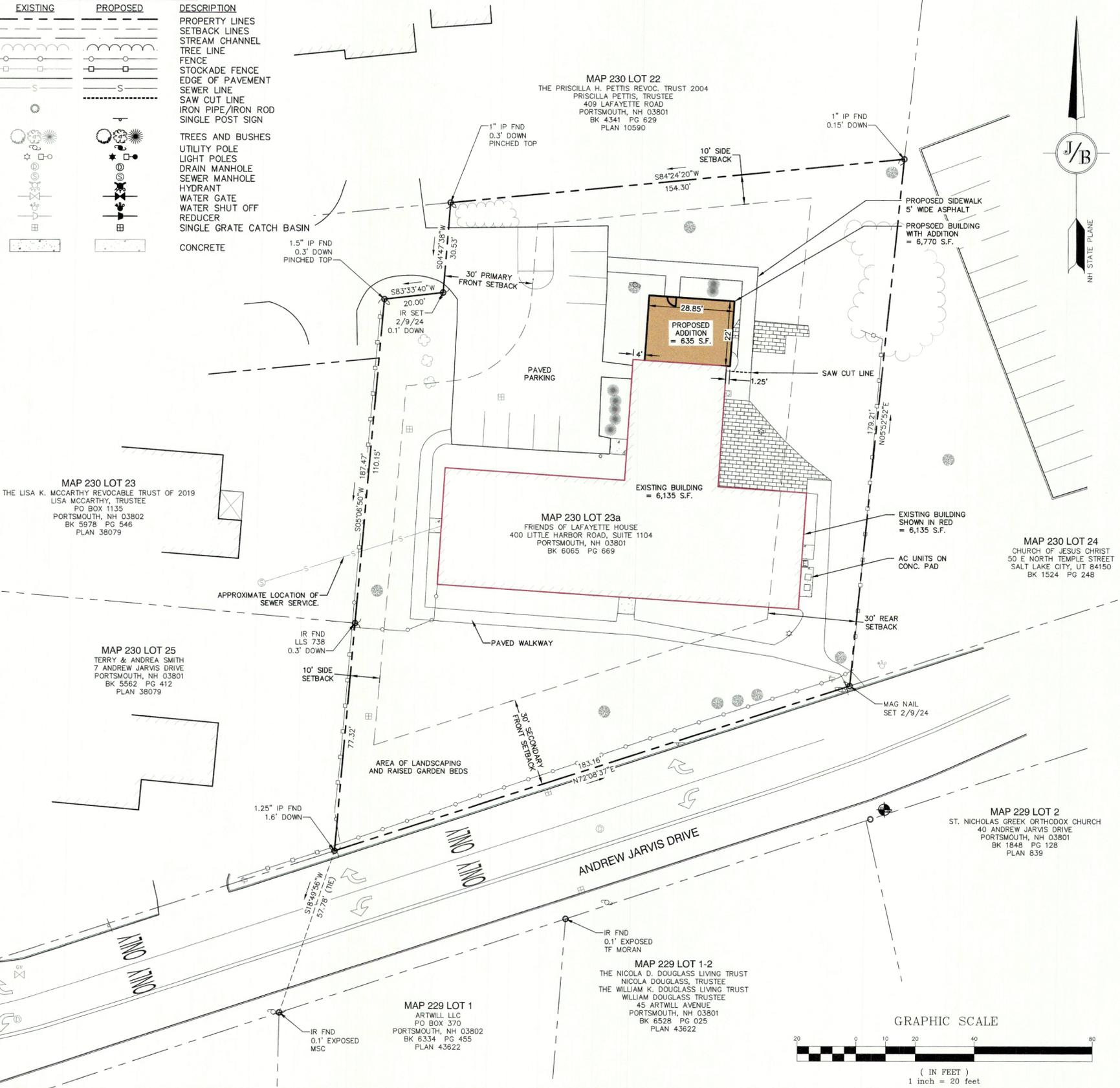
DRAWING No.

**C1**

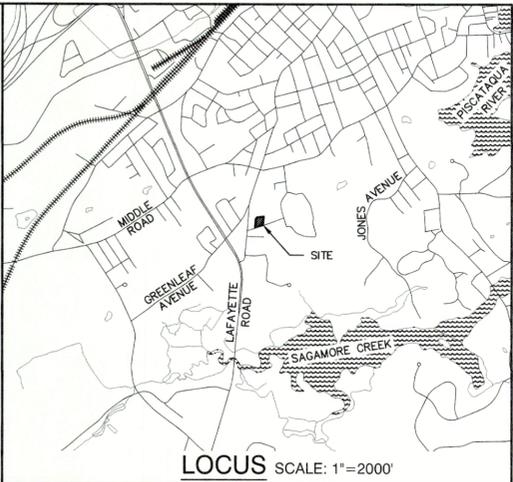
SHEET 1 OF 2  
JBE PROJECT NO. 23036

**GENERAL LEGEND**

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		STREAM CHANNEL
		TREE LINE
		FENCE
		STOCKADE FENCE
		EDGE OF PAVEMENT
		SEWER LINE
		SAW CUT LINE
		IRON PIPE/IRON ROD
		SINGLE POST SIGN
		TREES AND BUSHES
		UTILITY POLE
		LIGHT POLES
		DRAIN MANHOLE
		SEWER MANHOLE
		HYDRANT
		WATER GATE
		WATER SHUT OFF
		REDUCER
		SINGLE GRATE CATCH BASIN
		CONCRETE



	EXISTING & PROPOSED CONDITIONS		
	EXISTING	PROPOSED	PERMITTED/REQUIRED
LAND USE	GROUP HOME	CARE TAKING UNIT ADDITION TO EXISTING STRUCTURE	PRIMARILY RESIDENTIAL
LOT AREA (S.F.)	33,096	33,096	15,000
STREET FRONTAGE (ANDREW JARVIS DRIVE)(FT.)	183	183	100
LOT DEPTH (FT.)	173	173	100 MIN
FRONT YARD (FT.)	59'	59'	30 MIN.
LEFT YARD (FT.)	58.7'	37.6'	10 MIN.
RIGHT YARD (FT.)	25.7'	25.7'	10 MIN.
REAR YARD (FT.)	19.9'	19.9'	30 MIN.
HEIGHT (FT.)	18	18	35 MAX.
BUILDING COVERAGE (%)	19	20.4	20 MAX.
OPEN SPACE COVERAGE (%)	61	58.9	40 MIN.
PARKING	8	8	7

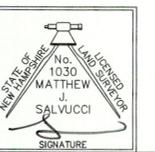


**SITE NOTES:**

- THE INTENT OF THIS PLAN IS TO ADD AN ADDITION FOR A CARETAKER UNIT.
- PARKING CALCULATIONS (ARTICLE 11, SECTION 10.1112.321.2 - ASSISTED LIVING FACILITY/RESIDENTIAL CARE FACILITY):  
REQUIREMENT: 5 PARKING SPACES PER BED OR RESIDENT  
13 TOTAL ROOMS EXISTING \* 5 SPACES PER BED = 6.5 ≈ 7  
7 PARKING SPACES REQUIRED  
8 PARKING SPACES PROVIDED
- THE FOLLOWING VARIANCES HAVE BEEN APPROVED BY THE ZONING BOARD OF ADJUSTMENT ON:  
A) SECTION 10.331 - TO EXTEND, ENLARGE, OR CHANGE THE LAWFUL NONCONFORMING USE WITHOUT CONFORMING TO THE ORDINANCE.  
B) SECTION 10.334 - TO EXTEND THE NONCONFORMING USE TO A REMAINING PORTION OF THE LAND.
- EXISTING IMPERVIOUS CALCULATIONS:  
EXISTING BUILDING = 6,135 S.F. (18.5%)  
PATIO, WALKWAY, CONCRETE = 2,745 S.F. (8.3%)  
PAVED SURFACES = 3,939 S.F. (11.9%)  
SHEDS = 192 S.F.  
TOTAL = 13,011 S.F. (39.3%)  
  
PROPOSED IMPERVIOUS CALCULATIONS:  
PROPOSED BUILDING FOOTPRINT = 6,770 S.F. (20.4%)  
PATIO, WALKWAY, CONCRETE = 2,898 S.F. (8.8%)  
PAVED SURFACES = 3,939 S.F. (11.9%)  
TOTAL = 13,607 S.F. (41.1%)
- THE FACILITY SHALL BE LIMITED TO 12 CARE RESIDENTS OR RESIDENTS UNDER CARE.
- THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED. CONTRACTOR TO ALWAYS CONTACT DIG SAFE PRIOR TO DIGGING ONSITE OR OFFSITE TO ENSURE SAFETY AND OBEY THE LAW.
- ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
- SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33015C0270FB, DATED JANUARY 29, 2021.
- LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
- ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.). THIS DOCUMENT IS TO BE KEPT ONSITE AT ALL TIMES AND UPDATED AS REQUIRED.
- THE CONTRACTOR SHALL READ AND FOLLOW ALL RECOMMENDATIONS MADE IN THE SITE GEOTECHNICAL ENGINEER REPORT, PREPARED BY \_\_\_\_\_, DATED \_\_\_\_\_.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
- ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.
- SNOW TO BE STORED AT EDGE OF PAVEMENT AND IN AREAS SHOWN ON THE PLANS, OR TRUCKED OFFSITE TO AN APPROVED SNOW DUMPING LOCATION.
- ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.

**CERTIFICATION:**

PURSUANT TO RSA 678:18-III AND RSA 672:14  
I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.  
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**MATTHEW J. SALVUCCI, LLS 1030**  
ON BEHALF OF JONES & BEACH ENGINEERS, INC. DATE: 4/3/24

APPROVED - PORTSMOUTH, NH  
PLANNING BOARD

**APPLICANT/OWNER**  
FRIENDS OF LAFAYETTE HOUSE  
400 LITTLE HARBOR ROAD, SUITE 1104  
PORTSMOUTH, NH 03801  
BK 6065 PG 669

**TOTAL LOT AREA**  
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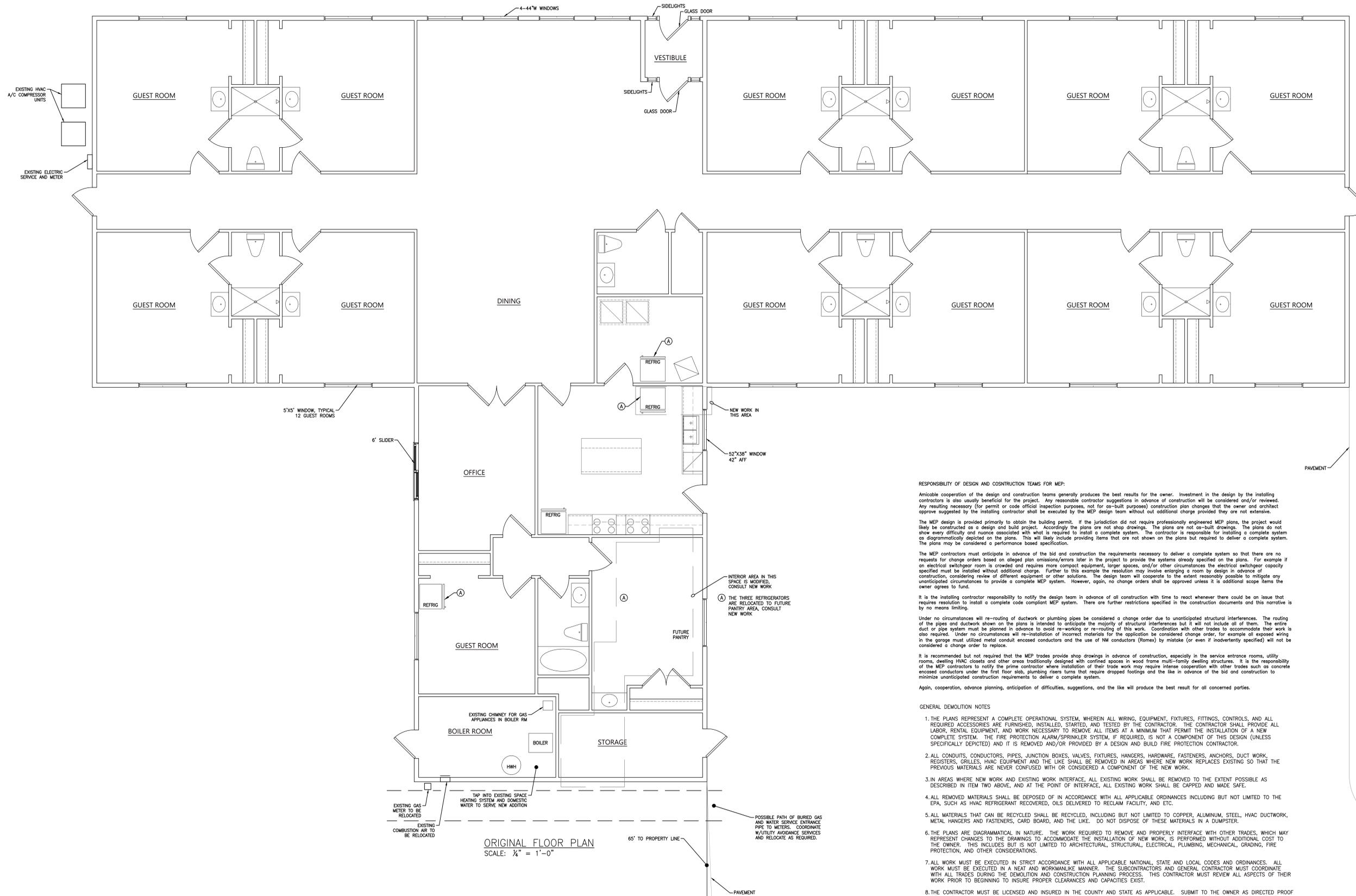
Design: JAC	Draft: KDR	Date: 2/28/24
Checked: JAC	Scale: 1" = 20'	Project No.: 23036
Drawing Name: 23036-PLAN.dwg		
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REV.	DATE	REVISION	BY
0	2/28/24	ADDING BUILDING SETBACKS	KDR

Designed and Produced in NH  
**J/B Jones & Beach Engineers, Inc.**  
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885  
Civil Engineering Services  
603-772-4746  
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>SITE PLAN</b> MAP 230 LOT 23a
Project:	<b>BUILDING ADDITION</b> 413 LAFAYETTE ROAD, PORTSMOUTH, NH
Owner of Record:	FRIENDS OF LAFAYETTE HOUSE 400 LITTLE HARBOR ROAD, SUITE 1104, PORTSMOUTH, NH 03801

DRAWING No.  
**C2**  
SHEET 2 OF 2  
JBE PROJECT NO. 23036



ORIGINAL FLOOR PLAN  
SCALE: 1/4" = 1'-0"

RESPONSIBILITY OF DESIGN AND CONSTRUCTION TEAMS FOR MEP:

Amicable cooperation of the design and construction teams generally produces the best results for the owner. Investment in the design by the installing contractors is also usually beneficial for the project. Any reasonable contractor suggestions in advance of construction will be considered and/or reviewed. Any resulting necessary (for permit or code official inspection purposes, not for as-built purposes) construction plan changes that the owner and architect approve suggested by the installing contractor shall be executed by the MEP design team without additional charge provided they are not extensive.

The MEP design is provided primarily to obtain the building permit. If the jurisdiction did not require professionally engineered MEP plans, the project would likely be constructed as a design and build project. Accordingly, the plans are not shop drawings. The plans are not as-built drawings. The plans do not show every difficulty and nuance associated with what is required to install a complete system. The contractor is responsible for installing a complete system as diagrammatically depicted on the plans. This will likely include providing items that are not shown on the plans but required to deliver a complete system. The plans may be considered a performance based specification.

The MEP contractors must anticipate in advance of the bid and construction the requirements necessary to deliver a complete system so that there are no requests for change orders based on alleged plan omissions/errors later in the project to provide the systems already specified on the plans. For example if an electrical switchgear room is crowded and requires more compact equipment, larger spaces, and/or other circumstances the electrical switchgear capacity specified must be installed without additional charge. Further to this example the resolution may involve enlarging a room by design in advance of construction, considering review of different equipment or other solutions. The design team will cooperate to the extent reasonably possible to mitigate any unanticipated circumstances to provide a complete MEP system. However, again, no change orders shall be approved unless it is additional scope items the owner agrees to fund.

It is the installing contractor responsibility to notify the design team in advance of all construction with time to react whenever there could be an issue that requires resolution to install a complete code compliant MEP system. There are further restrictions specified in the construction documents and this narrative is by no means limiting.

Under no circumstances will re-routing of ductwork or plumbing pipes be considered a change order due to unanticipated structural interferences. The routing of the pipes and ductwork shown on the plans is intended to anticipate the majority of structural interferences but it will not include all of them. The entire duct or pipe system must be planned in advance to avoid re-working or re-routing of this work. Coordination with other trades to accommodate their work is also required. Under no circumstances will re-installation of incorrect materials for the application be considered change order, for example all exposed wiring in the garage must utilize metal conduit enclosed conductors and the use of NM conductors (Romex) by mistake (or even if inadvertently specified) will not be considered a change order to replace.

It is recommended but not required that the MEP trades provide shop drawings in advance of construction, especially in the service entrance rooms, utility rooms, dwelling HVAC closets and other areas traditionally designed with confined spaces in wood frame multi-family dwelling structures. It is the responsibility of the MEP contractors to notify the prime contractor where installation of their trade work may require intense cooperation with other trades such as concrete enclosed conductors under the first floor slab, plumbing risers turns that require dropped footings and the like in advance of the bid and construction to minimize unanticipated construction requirements to deliver a complete system.

Again, cooperation, advance planning, anticipation of difficulties, suggestions, and the like will produce the best result for all concerned parties.

GENERAL DEMOLITION NOTES

1. THE PLANS REPRESENT A COMPLETE OPERATIONAL SYSTEM, WHEREIN ALL WIRING, EQUIPMENT, FIXTURES, FITTINGS, CONTROLS, AND ALL REQUIRED ACCESSORIES ARE FURNISHED, INSTALLED, STARTED, AND TESTED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL LABOR, RENTAL EQUIPMENT, AND WORK NECESSARY TO REMOVE ALL ITEMS AT A MINIMUM THAT PERMIT THE INSTALLATION OF A NEW COMPLETE SYSTEM. THE FIRE PROTECTION ALARM/SPRINKLER SYSTEM, IF REQUIRED, IS NOT A COMPONENT OF THIS DESIGN (UNLESS SPECIFICALLY DEPICTED) AND IT IS REMOVED BY A DESIGN AND BUILD FIRE PROTECTION CONTRACTOR.
2. ALL CONDUITS, CONDUCTORS, PIPES, JUNCTION BOXES, VALVES, FIXTURES, HANGERS, HARDWARE, FASTENERS, ANCHORS, DUCT WORK, REGISTER, GRILLES, HVAC EQUIPMENT AND THE LIKE SHALL BE REMOVED IN AREAS WHERE NEW WORK REPLACES EXISTING SO THAT THE PREVIOUS MATERIALS ARE NEVER CONFUSED WITH OR CONSIDERED A COMPONENT OF THE NEW WORK.
3. IN AREAS WHERE NEW WORK AND EXISTING WORK INTERFACE, ALL EXISTING WORK SHALL BE REMOVED TO THE EXTENT POSSIBLE AS DESCRIBED IN ITEM TWO ABOVE, AND AT THE POINT OF INTERFACE, ALL EXISTING WORK SHALL BE CAPPED AND MADE SAFE.
4. ALL REMOVED MATERIALS SHALL BE DEPOSED OF IN ACCORDANCE WITH ALL APPLICABLE ORDINANCES INCLUDING BUT NOT LIMITED TO THE EPA, SUCH AS HVAC REFRIGERANT RECOVERED, OILS DELIVERED TO RECLAIM FACILITY, AND ETC.
5. ALL MATERIALS THAT CAN BE RECYCLED SHALL BE RECYCLED, INCLUDING BUT NOT LIMITED TO COPPER, ALUMINUM, STEEL, HVAC DUCTWORK, METAL HANGERS AND FASTENERS, CARD BOARD, AND THE LIKE. DO NOT DISPOSE OF THESE MATERIALS IN A DUMPSTER.
6. THE PLANS ARE DIAGRAMMATICAL IN NATURE. THE WORK REQUIRED TO REMOVE AND PROPERLY INTERFACE WITH OTHER TRADES, WHICH MAY REPRESENT CHANGES TO THE DRAWINGS TO ACCOMMODATE THE INSTALLATION OF NEW WORK, IS PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING, MECHANICAL, GRADING, FIRE PROTECTION, AND OTHER CONSIDERATIONS.
7. ALL WORK MUST BE EXECUTED IN STRICT ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND ORDINANCES. ALL WORK MUST BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER. THE SUBCONTRACTORS AND GENERAL CONTRACTOR MUST COORDINATE WITH ALL TRADES DURING THE DEMOLITION AND CONSTRUCTION PLANNING PROCESS. THIS CONTRACTOR MUST REVIEW ALL ASPECTS OF THEIR WORK PRIOR TO BEGINNING TO INSURE PROPER CLEARANCES AND CAPACITIES EXIST.
8. THE CONTRACTOR MUST BE LICENSED AND INSURED IN THE COUNTY AND STATE AS APPLICABLE. SUBMIT TO THE OWNER AS DIRECTED PROOF OF INSURANCE INCLUSIVE OF LIMITS OF LIABILITY AND DEDUCTIBLE INFORMATION. ALL SUBCONTRACTORS OF SUBCONTRACTORS MUST BE LICENSED AND INSURED TOO.
9. SINCE THE PLANS ARE DIAGRAMMATICAL IN NATURE FOR CLARITY PURPOSES, THE CONTRACTOR MUST SUBMIT A SHOP DRAWING WHERE DEMOLITION IN COMPLEX OR COULD AFFECT OTHER ASPECTS OF THE WORK OR THAT MAY INCLUDE SUBSTANTIAL DIFFERENCES FROM THE PLANS, INCLUSIVE OF CALCULATIONS AND OTHER ITEMS TO THE OWNER PRIOR TO COMMENCING WORK. THE SHOP DRAWINGS MUST INCLUDE EXACT LOCATIONS, SPECIAL FITTINGS, AND VERIFICATION THAT THIS INFORMATION IS ACCURATE.
10. THE CONTRACTOR AND ALL SUBCONTRACTORS WARRANT THAT THEY HAVE VISITED THE PROJECT SITE, REVIEWED ALL OF THE CONTRACT DOCUMENTS, AND ARE OTHERWISE FAMILIAR WITH THE REQUIREMENTS NECESSARY TO COMPLETELY EXECUTE THE WORK REQUIRED TO COMPLY WITH THE DIAGRAMMATICAL WORK DEPICTED HEREIN. FURTHER, THE CONTRACTOR WARRANTS THAT, IN POSSESSING A THOROUGH KNOWLEDGE OF THE CODE AND INDUSTRY STANDARD CONSTRUCTION PRACTICES, THE BID FOR PERFORMING THE WORK WILL CONTAIN ALLOWANCES FOR NORMAL DIFFICULTIES EXPERIENCED DURING THE CONSTRUCTION OF A BUILDING OF THIS TYPE. MODIFICATIONS TO THE CONTRACT, WHICH DO NOT ADD VALUE TO THE PROJECT, WILL NOT BE CONSIDERED VALID.
11. THIS DESIGN IS NON TRANSFERABLE. IT IS INTELLECTUAL PROPERTY WITH TRADE SECRETS TO BE UTILIZED ON THIS PROJECT ONLY.
12. THE PLANS INDICATE QUANTITIES ON THE PLANS TO ENHANCE THE UNDERSTANDING OF THE DESIGN CONCEPT. THE QUANTITIES ARE RELIABLE, BUT NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE TO INSTALL THE CORRECT QUANTITIES OF ITEMS REQUIRED TO REMOVE AND DELIVER A COMPLETE FUNCTIONING BUILDING.
13. THIS PROJECT MAY HAVE AREAS OF AN UNUSUAL INTENSE MEP COORDINATION REQUIREMENT, AND IT IS THE RESPONSIBILITY OF THE MEP TRADES TO INSURE THAT ALL ASPECTS OF THE WORK ARE PROPERLY REMOVED AND PROVIDED TO DELIVER A COMPLETE AND FUNCTIONING MEP SYSTEM.
14. WHERE THERE EXISTS A DISCREPANCY BETWEEN THE PLANS, DOCUMENTS, OR CODE THE CONTRACTOR SHALL PROVIDE FOR THE MOST EXPENSIVE METHOD AND ADVISE THE ARCHITECT IN WRITING PRIOR TO PERFORMING ANY WORK.

ALL DIMENSIONS, SIZES AND CAPACITIES MUST BE FIELD AND CODE VERIFIED.

PROJECT: LAFAYETTE HOUSE  
PORTSMOUTH, NEW HAMPSHIRE  
ARCHITECT: JOSHUA W. CHAPMAN P.E., LEED AP, PRINCIPAL

DESIGNED BY: RSM/JWC  
DRAWN BY: LFG/DMC  
SCALE: AS NOTED

DATE: 10/10/2022  
CHECKED BY: RSM/JWC

THIS DIAGRAMMATIC DESIGN IS NON TRANSFERABLE, AND REPRESENTS A COMPLETE SYSTEM.

FLOOR PLAN

A-1

IGSHPA  
International Ground Source Heat Pump Association

SCOT ENGINEERING  
CONSULTING ENGINEER  
800 BUNNING FORD COURSE SUITE 100 FINEA ST FLDVA, VA 23039-2723  
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PROFESSIONAL ENGINEER  
JOSHUA W. CHAPMAN P.E., LEED AP, PRINCIPAL

REVISIONS

DESIGNED BY: RSM/JWC  
DRAWN BY: LFG/DMC  
DATE: 10/10/2022  
CHECKED BY: RSM/JWC

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**ELECTRICAL SYMBOL LEGEND**

- ALL ITEMS SHOWN MAY NOT APPEAR ON DRAWINGS.
- PER ADA REQUIREMENTS, ALL CONTROL DEVICES MUST BE A MINIMUM OF 15" AFF. TO WITHIN 48" AFF. FOR REACHING ACCESSIBILITY.
- HEIGHTS ARE GIVEN FROM THE FINISHED FLOOR. VERIFY THICKNESS OF FLOORING ASSEMBLY WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
- JUNCTION BOX, +15" AFF. TO THE BOTTOM OF BOX
  - JUNCTION BOX, ABOVE IN CEILING
  - JUNCTION BOX, FLUSH IN FLOOR
  - ⊕ DUPLEX CONVENIENCE OUTLET, +15" AFF. TO THE CENTER OF THE BOTTOM OUTLET.
  - ⊕ DUPLEX CONVENIENCE OUTLET, MOUNT 8" ABOVE TOP OF COUNTER OR +46" AFF. TO THE CENTER OF THE TOP OUTLET, WHERE SHOWN UNDER A COUNTER TOP OVERHANG OF LESS THAN 6"; OUTLET NOT TO BE MORE THAN 12" BELOW COUNTER TO CENTER OF OUTLET. FOR A COUNTER TOP OVERHANG OF GREATER THAN 6", MOUNT RECEPTACLE AT 15" AFF. TO CENTER OF THE BOTTOM OUTLET.
  - ⊕ LEVITON 15832 TAMPER-PROOF COMBINATION USB/DUPLEX RECEPTACLE MOUNTED +15" AFF. TO THE CENTER OF BOTTOM OUTLET. OR AS NOTED
  - ⊕ DUPLEX CONVENIENCE OUTLET, HALF HOT, HALF SWITCHED, +15" AFF. TO THE CENTER OF BOTTOM OUTLET. OR AS NOTED
  - SINGLE OUTLET WITH PLUG CONFIGURATION AS INDICATED ON PLANS, +15" AFF. TO THE CENTER OF OUTLET OR AS NOTED
  - ⊕ QUADPLEX CONVENIENCE OUTLET, +15" AFF. TO THE CENTER OF THE BOTTOM OUTLET OR AS NOTED
  - ⊕ DUPLEX FLUSH MOUNTED POP-UP, SPILL-PROOF COUNTERTOP RECEPTACLE AS MANUFACTURED BY LEV ELECTRIC (SPUR20 FINISH) TO BE SELECTED BY OWNER/ARCHITECT. DEVICE REQUIRED AN UNDER COUNTER RECEPTACLE FOR A PLUG-IN CONNECTION.
  - ⊕ DUPLEX OUTLET FLOOR BOX, PEDESTAL MOUNTED
  - ⊕ DUPLEX OUTLET CEILING MOUNTED
  - ⊕ DUPLEX FLUSH FLOOR BOX WITH 3/4" CONDUIT TO NEAREST WALL
  - ⊕ CABLE TV OUTLET, +15" AFF. TO MIDDLE OF BOX OR AS NOTED
  - ⊕ COMBINATION VOICE/DATA/CABLE TV OUTLET UNDER ONE COVER PLATE AND SINGLE GANG BOX, +15" AFF. TO MIDDLE OF BOX OR AS NOTED
  - ⊕ MOTOR STARTER
  - ⊕ CONTROL DEVICE AS INDICATED
  - CM = CARBON MONOXIDE DETECTOR WITH INTEGRAL ALARM CR = ENTRY SYSTEM CARD READER IC = TENANT INTERCOM SYSTEM
  - DISCONNECT SWITCH- 30/3 INDICATES 30 AMP RATED 3-POLE
  - DISCONNECT SWITCH- 100/3/70 INDICATES 100 AMP RATED 3-POLE SWITCH WITH 70 AMP FUSES
  - MOTOR, H.P. AS INDICATED
  - △ DATA OUTLET WITH 1" TO NEAREST ACCESSIBLE CEILING, +15" AFF. TO MIDDLE OF BOX OR AS NOTED FOR COMPUTER WIRING BY OTHERS
  - ▲ VOICE/DATA OUTLET WITH 1" TO NEAREST ACCESSIBLE CEILING, +15" AFF. TO MIDDLE OF BOX OR AS NOTED
  - ▲ VOICE/DATA OUTLET WITH 1" TO NEAREST ACCESSIBLE CEILING, +48" AFF. TO TOP OF BOX OR AS NOTED
  - ⊕ VOICE/DATA FLUSH FLOOR OUTLET WITH 1" EMPTY CONDUIT TO NEAREST WALL
- LETTERS INDICATE PANEL BOARD DESIGNATION WHERE REQUIRED FOR ACCESSIBILITY, TOP BREAKER NOT TO EXCEED 48" AFF.
- ⊕ PUSH-BUTTON STATION-SINGLE BUTTON, +46" AFF. TO THE CENTER OF THE BUTTON OR AS NOTED
  - ⊕ START/STOP PUSH-BUTTON, +46" AFF. TO THE CENTER OF THE TOP BUTTON OR AS NOTED
  - ⊕ BUZZER OUTLET, +84" OR AS NOTED
  - 2'X4' LIGHTING FIXTURE RECESSED WHEN POSSIBLE
  - 2'X4' LIGHTING FIXTURE RECESSED WHEN POSSIBLE
  - LIGHTING FIXTURE SURFACE STRIP (C) TUBE
  - LIGHTING FIXTURE SURFACE STRIP (D) TUBE
  - LIGHT FIXTURE RECESSED MOUNTED WHEN POSSIBLE 2'X2' SHOWN
  - ⊕ SURFACE MOUNTED CEILING LIGHT
  - ⊕ WALL MOUNTED LIGHT, IF FIXTURE MOUNTING PROTRUDES MORE THAN 4" IN DEPTH FROM WALL, MOUNT AT 80" AFF. TO BOTTOM OF FIXTURE.
  - DECORATIVE CHANDELIER/PENDANT
  - RECESSED DOWNLIGHT LIGHT W/FRAME-IN KIT TO MATCH CEILING RATINGS
  - ⊕ EXIT LIGHT FIXTURE, SHADED PORTION INDICATES FACE WITH DIRECTIONAL ARROWS AS INDICATED
  - ⊕ EMERGENCY LIGHTING UNIT
  - ⊕ EMERGENCY LIGHTING REMOTE HEADS
  - ⊕ SINGLE POLE TOGGLE SWITCH +46" AFF. TO THE CENTER OF THE CONTROL OR AS NOTED. SUBSCRIPTS INDICATE THE FOLLOWING:
    - 2 - DOUBLE POLE P - PILOT LIGHT, RED
    - 3 - THREE WAY R - REMOTE CONTROL SWITCH
    - 4 - FOR WAY M - MOTOR SWITCH
    - K - KEY OPERATED I - ILLUMINATED
    - T - ROTARY TIMER 0-2 HR
  - ⊕ DIMMER SLID STATE +46" AFF. TO THE CENTER OF THE CONTROL OR AS NOTED
  - CONDUIT & WIRE CONCEALED UNDERGROUND OR IN CONCRETE SLAB OR UNDER FLOOR - 3/4" C. 2 # 12 DR AS NOTED
  - CONDUIT & WIRE CONCEALED IN WALL PARTITIONS OR CEILING SPACE ABOVE - 3/4" C. 2 # 12 DR AS NOTED
  - ||| STRIKES INDICATE QUANTITY OF #12 A.W.G.
  - ⊕ LINE VOLTAGE THERMOSTAT SUPPLIED AND INSTALLED BY HVAC CONTRACTOR. WIRED BY ELECTRICAL. THERMOSTAT TO BE MOUNTED AT A MAXIMUM OF 48" AFF. TO TOP OF CONTROLS.
  - SUBSCRIPTS AT SIDE OF OUTLET
    - WP - WEATHER PROOF RT - RAIN TIGHT
    - GF - GROUND FAULT PROTECTION DE - DUAL ELEMENT
    - IG - ISOLATED GROUND TD - TIME DELAY
    - HCR - HVAC & REFRIGERATION H - MOUNT HORIZONTAL
    - EQUIP RATED CKT BRKR
  - 12 THE NUMBER 12 INDICATES THE CIRCUIT NUMBER THAT POWERS THE ELECTRICAL DEVICE, IT MAY NOT REQUIRE A HOME RUN
  - 12 THE "P" IS THE PANEL DESIGNATION AND THE NUMBER "12" IS THE CIRCUIT ON PANEL "P" - IF THE PANEL DESIGNATION IS ABSENT IT IS WIRED TO THE LOCAL PANEL IN THE DWELLING
  - ⊕ DWELLING UNIT SMOKE DETECTOR 120V WITH BATTERY BACK-UP - SINGLE STATION UNIT - ALL IN EACH SEPARATE DWELLING TO BE WIRED TOGETHER TO SOUND ONE ALARM. DO NOT WIRE TO BUILDING ADDRESSABLE FIRE ALARM SYSTEM.
  - ⊕ DWELLING UNIT COMBINATION SMOKE/CARBON MONOXIDE DETECTOR 120V WITH BATTERY BACK-UP - SINGLE STATION UNIT, ALL IN EACH SEPARATE DWELLING TO BE WIRED TOGETHER TO SOUND ONE ALARM. DO NOT WIRE TO BUILDING ADDRESSABLE FIRE ALARM SYSTEM.
- SHADING INDICATES WIRED TO EMERGENCY CIRCUIT OR EQUIPPED WITH EMERGENCY BATTERY BACK-UP

**ELECTRICAL NOTES:**

- ALL ELECTRICAL WORK TO BE INSTALLED IN ACCORDANCE WITH THE GOVERNING EDITION OF THE NATIONAL ELECTRICAL CODE AND ANY OTHER LOCAL AUTHORITIES HAVING JURISDICTION.
  - ALL ELECTRICAL MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY APPROVED.
  - PROVIDE ALL NECESSARY PERMITS, INSPECTIONS AND LICENSES AND PAY ALL REQUIRED FEES.
  - SUBMIT TO THE OWNER CERTIFICATES OF INSPECTION IN DUPLICATE FROM APPROVED INSPECTION AGENCY UPON COMPLETION.
  - ON COMPLETION OF THE WORK, THE ENTIRE WIRING SYSTEM SHALL BE ENTIRELY FREE FROM GROUNDS, SHORT CIRCUITS, OPEN, OVERLOADS, AND IMPROPER VOLTAGES AND THOROUGH TESTS SHALL BE MADE. FURNISH ALL LABOR, MATERIAL AND INSTRUMENTS.
  - PRIOR TO FINAL ACCEPTANCE OF THE WORK, THE WRITTEN STATEMENT TO THE OWNER GUARANTEEING ALL EQUIPMENT AND SYSTEMS AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. UPON WRITTEN NOTICE AND AT NO EXPENSE TO THE OWNER, PROMPTLY REPAIR ALL DEFECTIVE MATERIAL.
  - PROVIDE NEATLY TYPED SCHEDULES OUTLINING CIRCUIT CONTROL FOR ALL PANEL BOARDS.
  - CONTRACT DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC, THEREFORE, THE CONTRACTOR SHALL APPLY FOR DETAILED INFORMATION REGARDING THE LOCATION OF ALL EQUIPMENT BEFORE ROUGH-IN AS THE FINAL LOCATION MAY DIFFER FROM THAT SHOWN ON THE DRAWINGS. OUTLETS, ETC., IMPROPERLY PLACED BECAUSE OF FAILURE TO OBTAIN THIS INFORMATION SHALL BE RELOCATED AND REINSTALLED WITHOUT ADDITIONAL CHARGE.
  - WIRE ALL FIXTURES, DEVICES, ETC., TO RESPECTIVE PANELS AND CONTROLS AS SHOWN ON THE PLANS. IN SYMBOL FORM, BRANCH CIRCUIT WIRING IS NOT COMPLETELY SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO WIRE ALL DEVICES AS CIRCUITED SYMBOLICALLY.
  - ALL WIRE AND CABLE SHALL BE COPPER 75% RATED, 600 VOLT INSULATION, TYPE THW, THHN OR THWN, WIRE SIZE #10 AND SMALLER SHALL BE SOLID, #8 AND LARGER SHALL BE STRANDED. MINIMUM SIZE WIRE FOR 20A GROUND AND POWER CIRCUITS SHALL BE #12 AWG ON CIRCUIT LENGTHS OF UP TO 100 FEET, ON CIRCUIT LENGTHS 100 TO 200 FEET, #10 AWG SHALL BE INSTALLED TO THE CENTER CIRCUIT LOAD AND #12 TO THE OTHER CIRCUIT LOADS. WIRE REQUIRED DUE TO VOLTAGE DROP, FOR 15A LIGHTING AND POWER CIRCUITS, #14 AWG WIRE MAY BE INSTALLED. CONTRACTOR MAY USE ALUMINUM WIRE AND CABLE ON THE SECONDARY SIDE OF THE UTILITY COMPANY TRANSFORMERS AND ON THE PRIMARY SIDE OF PANEL BOARDS IF 75% LUGS ARE USED, IMPACT IS 60A OR GREATER, AND INSTALLED IN COMPLIANCE WITH THE N.E.C. ALUMINUM WIRE SIZES ARE INDICATED ON PLANS WHERE ALLOWABLE.
  - IN REFERENCE TO NOTE #10, ELECTRICAL CONTRACTOR MAY USE ARMORED CLAD CABLE TYPE "AC" AND METAL CLAD CABLE TYPE "MC" WITH BUILDING CONSTRUCTION TYPE I AND TYPE II WHERE ALLOWABLE BY NOTE #1. NONMETALLIC SHEATHED CABLE TYPE "NM-C" MAY BE USED WITH BUILDING CONSTRUCTION TYPE V WHERE ALLOWABLE BY NOTE #1.
  - VERIFY ALL DOOR SWINGS PRIOR TO SWITCH ROUGH-IN.
  - VERIFY ALL CEILING CONSTRUCTION INCLUDING METHOD AND TYPE OF BUILDING INSULATION BEFORE ORDERING FIXTURES AND PROVIDE FIXTURES COMPATIBLE WITH CEILING CONSTRUCTION, INCLUDING BUILDING INSULATION METHODS (I/C OR NON I/C RATED) AS REQUIRED.
  - PROVIDE ALL LIGHTING FIXTURES RECESSED IN A CEILING WHICH HAVE A FIRE RESISTIVE RATING OF ONE HOUR OR MORE WITH A BOX ENCLOSURE WHICH HAS A FIRE RATING EQUAL TO THAT OF THE CEILING. THE SPACE FROM THE FIXTURE TO THE ENCLOSURE SHALL BE A MINIMUM OF 1" FOR FLUORESCENT AND 3" FOR INCANDESCENT FIXTURES.
  - ELECTRICAL CONTRACTOR TO SECURE SHOP DRAWINGS FROM OTHER SUBCONTRACTORS AND VERIFY EXACT ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE WIRED. THIS IS TO BE DONE BEFORE ELECTRICAL CONTRACTOR ROUGH-IN FOR SUBJECT EQUIPMENT. IF DISCREPANCIES ARE NOTED BETWEEN THE ELECTRICAL CONTRACTOR DRAWINGS AND OTHER CONTRACTOR SHOP DRAWINGS, ELECTRICAL CONTRACTOR IS TO NOTIFY ENGINEER AT ONCE. FAILURE BY THE ELECTRICAL CONTRACTOR TO PERFORM THIS DUTY WILL NOT RELIEVE HIM OF THE RESPONSIBILITY TO CORRECT WRITING DEFICIENCIES AT HIS EXPENSE.
  - PROVIDE ALL WIRING, CONNECTIONS AND DEVICES, ETC., NECESSARY TO COMPLY WITH THE GROUNDING REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND AS SHOWN ON THE DRAWINGS. ALL EXPOSED NON-CURRENT CARRYING METALLIC PARTS OF THE ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS, GROUNDING CONDUCTORS OF NONMETALLIC COVERED CABLE AND NEUTRAL CONDUCTOR OF THE WIRING SYSTEM SHALL BE GROUNDED.
  - ALL WIRING, UNLESS SPECIFICALLY SPECIFIED OTHERWISE, IS TO BE INSTALLED IN THE CONSTRUCTION IN A CONCEALED MANNER.
  - CONTRACTOR TO PROPERLY SEAL ALL FIRE RATED WALL/CEILING PENETRATIONS.
- GENERAL CONSTRUCTION NOTES**
- THE PLANS REPRESENT A COMPLETE OPERATIONAL SYSTEM, WHEREIN ALL WIRING, EQUIPMENT, FIXTURES, FITTINGS, CONTROLS, AND ALL REQUIRED ACCESSORIES ARE FURNISHED, INSTALLED, STARTED, AND TESTED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, AND SUPERVISION TO DELIVER A COMPLETE SYSTEM. THE FIRE PROTECTION ALARM/SPRINKLER SYSTEM, IF REQUIRED, IS NOT A COMPONENT OF THIS SYSTEM UNLESS SPECIFICALLY DEPICTED; AND IT IS PROVIDED BY A DESIGN AND BUILD FIRE PROTECTION CONTRACTOR.
  - THE PLANS ARE DIAGRAMMATIC IN NATURE. THE WORK REQUIRED TO PROPERLY INTERFACE WITH OTHER TRADES, WHICH MAY REPRESENT CHANGES TO THE DRAWINGS TO ACCOMMODATE THE INSTALLATION OF THIS WORK, IS PERFORMED WITHOUT ADDITIONAL COST TO THE OWNER; THIS INCLUDES BUT IS NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING, MECHANICAL, GRADING, FIRE PROTECTION, AND OTHER CONSIDERATIONS.
  - ALL WORK MUST BE EXECUTED IN STRICT ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND ORDINANCES. ALL WORK MUST BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER. THE SUBCONTRACTORS AND GENERAL CONTRACTOR MUST COORDINATE WITH ALL TRADES DURING THE CONSTRUCTION PROCESS. THIS CONTRACTOR MUST REVIEW ALL ASPECTS OF THEIR WORK PRIOR TO INSTALLATION TO ENSURE PROPER CLEARANCES AND CAPACITIES EXIST.
  - THE CONTRACTOR MUST BE LICENSED AND ENSURED IN THE COUNTY AND STATE AS APPLICABLE. SUBMIT TO THE OWNER AS DIRECTED PROOF OF INSURANCE INCLUSIVE OF LIMITS OF LIABILITY AND DEDUCTIBLE INFORMATION. ALL SUBCONTRACTORS OF SUBCONTRACTORS MUST BE LICENSED AND ENSURED TO.
  - SINCE THE PLANS ARE DIAGRAMMATIC IN NATURE FOR CLARITY PURPOSES, THE CONTRACTOR MUST SUBMIT A SHOP DRAWING WHERE THE CONTRACTOR INTENDS TO INSTALL WORK THAT INCLUDES SUBSTANTIAL DIFFERENCES FROM THE PLANS, INCLUSIVE OF CALCULATIONS AND OTHER ITEMS TO THE OWNER PRIOR TO COMMENCING WORK. THE SHOP DRAWINGS MUST INCLUDE EXACT LOCATIONS, SPECIAL FITTINGS, AND VERIFICATION THAT THIS INFORMATION IS ACCURATE.
  - THE CONTRACTOR AND ALL SUBCONTRACTORS WARRANT THAT THEY HAVE VISITED THE PROJECT SITE, REVIEWED ALL OF THE CONTRACT DOCUMENTS, AND ARE OTHERWISE FAMILIAR WITH THE REQUIREMENTS NECESSARY TO COMPLETELY EXECUTE THE WORK REQUIRED TO COMPLY WITH THE DIAGRAMMATIC CONTRACT DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSSESSING A THOROUGH KNOWLEDGE OF THE CODE AND INDUSTRY STANDARD CONSTRUCTION PRACTICES. THE BID FOR PERFORMING THE WORK WILL CONTAIN ALLOWANCES FOR NORMAL DIFFICULTIES EXPERIENCED DURING THE CONSTRUCTION OF A BUILDING OF THIS TYPE. MODIFICATIONS TO THE CONTRACT, WHICH DO NOT ADD VALUE TO THE PROJECT, WILL NOT BE CONSIDERED VALID.
  - THIS DESIGN IS NON TRANSFERABLE. IT IS INTELLECTUAL PROPERTY WITH TRADE SECURITIES TO BE UTILIZED ON THIS PROJECT ONLY.
  - WHERE THE CONTRACTOR FURNISHES CERTAIN MODELS OR PROTOTYPES OF DESIGN SPECIFIED ON THE DRAWINGS, SPECIFIED DATA IS NOT NECESSARY. SIMPLY NOTIFY THE OWNER IN WRITING THAT THE SUBMITTED ITEM WILL BE USED AND PROCEED WITH THE WORK. IF EQUAL DEVIATIONS FROM THE SPECIFIED PRODUCT ARE UTILIZED, THE PRODUCT MUST BE SUBMITTED TO THE OWNER FOR APPROVAL. IT IS THE INTENT OF THE DESIGN TO MAKE A COMPETITIVE BID. EQUAL PRODUCTS WILL BE CONSIDERED AS SUBMITTED.
  - ALL SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH INDUSTRY ACCEPTED STANDARDS AND CODE REQUIREMENTS. ALL ELECTRICAL PHASES FOR THREE PHASE SERVICE SHALL BE BALANCED. AIR DISTRIBUTION SYSTEMS SHALL BE BALANCED, AND ALL OTHER APPLICABLE MEP SYSTEMS SHALL BE PROPERLY COMMISSIONED AND BALANCED.
  - ALL MEP SYSTEMS SHALL PROVIDE FOR NO POOLING OF WATER TO THE EXTENT POSSIBLE. THE SAFE PANS, TRAY PANS AND CONDENSER PANS SHALL ALL SLOPE TO AVOID POOLING OF WATER. IT IS ACCEPTABLE TO HAVE A 1/8" DEPTH POOL OF WATER IN CONDENSATE PANS DURING COOLING OPERATION.
  - ALL ACCESS PANELS SHALL BE LABELED BY THE TRADE THAT RECEIVES THE BENEFIT OF THE ACCESS PANEL. THE BUILDER PROVIDES MANY ACCESS DOORS FOR PLUMBING CLEANOUTS OR FIRE BARRIERS. THE BUILDER OR HVAC CONTRACTOR SHALL PROVIDE THE LABEL. THE LABEL SHALL BE WITH 3/8" HEIGHT LETTERS IN NON CARBONAD OR PAPER TYPE MATERIAL, PERMANENTLY AFFIXED TO THE ACCESS DOOR. DUCT ACCESS DOORS INSTALLED IN DUCTWORK SHALL BE MADE AND LABELED BY THE HVAC CONTRACTOR.
  - THE FIRE DAMPERS THAT PENETRATE THE CEILING ON THE DISCHARGE OF THE AIR HANDLER SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PUBLISHED BY THE MANUFACTURER. SUBMIT THE ILLUSTRATION OF THE INSTALLATION OF THE INSTRUCTIONS PRIOR TO CONSTRUCTION AND THAT WILL SUFFICE AS THE DETAIL. THE DAMPER SHALL BE INSTALLED IN A SLEEVE WITH SIX INCHES OF THE PLANE OF THE CEILING AT A MINIMUM, COMPLETE WITH A DUCT ACCESS DOOR.
  - THE PLANS INDICATE QUANTITIES ON THE PLANS TO ENHANCE THE UNDERSTANDING OF THE DESIGN CONCEPT. THE QUANTITIES ARE RELIABLE, BUT NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE TO INSTALL THE CORRECT QUANTITIES OF ITEMS REQUIRED TO DELIVER A COMPLETE FUNCTIONING BUILDING.
  - THIS PROJECT HAS AN UNUSUAL INTENSE MEP COORDINATION REQUIREMENT, AND IT IS THE RESPONSIBILITY OF THE MEP TRADES TO ENSURE THAT ALL ASPECTS OF THE WORK ARE PROVIDED TO DELIVER A COMPLETE AND FUNCTIONING MEP SYSTEM.
  - WHERE THERE EXISTS A DISCREPANCY BETWEEN THE PLANS, DOCUMENTS, OR CODE THE CONTRACTOR SHALL PROVIDE FOR THE MOST EXPENSIVE METHOD AND ADVISE THE ARCHITECT IN WRITING PRIOR TO PERFORMING ANY WORK.

**RESPONSIBILITY OF DESIGN AND CONSTRUCTION TEAMS FOR MEP:**

AMICABLE COOPERATION OF THE DESIGN AND CONSTRUCTION TEAMS GENERALLY PRODUCES THE BEST RESULTS FOR THE OWNER. INVESTMENT IN THE DESIGN BY THE INSTALLING CONTRACTORS IS ALSO USUALLY BENEFICIAL FOR THE PROJECT. ANY REASONABLE CONTRACTOR SUGGESTIONS IN ADVANCE OF CONSTRUCTION WHICH ARE NOT AS-BUILT DRAWINGS, BUT ARE CONSIDERED NECESSARY FOR PERMIT OR CODE OFFICIAL INSPECTION PURPOSES, NOT FOR AS-BUILT PURPOSES) CONSTRUCTION PLAN CHANGES THAT THE OWNER AND ARCHITECT APPROVE SUGGESTED BY THE INSTALLING CONTRACTOR SHALL BE EXECUTED BY THE MEP DESIGN TEAM WITHOUT BUT ADDITIONAL CHARGE PROVIDED THEY ARE NOT EXTENSIVE.

THE MEP DESIGN IS PROVIDED PRIMARILY TO OBTAIN THE BUILDING PERMIT. IF THE JURISDICTION DID NOT REQUIRE PROFESSIONALLY ENGINEERED MEP PLANS, THE PROJECT WOULD LIKELY BE CONSTRUCTED AS A DESIGN AND BUILD PROJECT. ACCORDINGLY THE PLANS ARE NOT SHOP DRAWINGS. THE PLANS ARE NOT AS-BUILT DRAWINGS. THE PLANS DO NOT SHOW EVERY DIFFICULTY AND NUANCE ASSOCIATED WITH WHAT IS REQUIRED TO INSTALL A COMPLETE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING A COMPLETE SYSTEM AS DIAGRAMMATICALLY DEPICTED ON THE PLANS. THIS WILL LIKELY INCLUDE PROVIDING ITEMS THAT ARE NOT SHOWN ON THE PLANS BUT REQUIRED TO DELIVER A COMPLETE SYSTEM. THE PLANS MAY BE CONSIDERED A PERFORMANCE BASED SPECIFICATION.

THE MEP CONTRACTORS MUST ANTICIPATE IN ADVANCE OF THE BID AND CONSTRUCTION THE REQUIREMENTS NECESSARY TO DELIVER A COMPLETE SYSTEM SO THAT THERE ARE NO REQUESTS FOR CHANGE ORDERS BASED ON ALLEGED PLAN OMISSIONS/ERRORS LATER IN THE PROJECT TO PROVIDE THE SYSTEMS ALREADY SPECIFIED ON THE PLANS. FOR EXAMPLE IF AN ELECTRICAL SWITCHGEAR ROOM IS CROWDED AND REQUIRES MORE COMPACT EQUIPMENT, LARGER SPACES, AND/OR OTHER CIRCUMSTANCES THE ELECTRICAL SWITCHGEAR CAPACITY SPECIFIED MUST BE INSTALLED WITHOUT ADDITIONAL CHARGE. FURTHER TO THIS EXAMPLE THE RESOLUTION MAY INVOLVE ENLARGING A ROOM BY DESIGN IN ADVANCE OF CONSTRUCTION, CONSIDERING REVIEW OF DIFFERENT EQUIPMENT OR OTHER SOLUTIONS. THE DESIGN TEAM WILL COOPERATE TO THE EXTENT REASONABLY POSSIBLE TO MITIGATE ANY UNANTICIPATED CIRCUMSTANCES TO PROVIDE A COMPLETE MEP SYSTEM. HOWEVER, AGAIN, NO CHANGE ORDERS SHALL BE APPROVED UNLESS IT IS ADDITIONAL SCOPE ITEMS THE OWNER AGREES TO FUND.

IT IS THE INSTALLING CONTRACTOR RESPONSIBILITY TO NOTIFY THE DESIGN TEAM IN ADVANCE OF ALL CONSTRUCTION WITH TIME TO REACT WHENEVER THERE COULD BE AN ISSUE THAT REQUIRES RESOLUTION TO INSTALL A COMPLETE CODE COMPLIANT MEP SYSTEM. THERE ARE FURTHER RESTRICTIONS SPECIFIED IN THE CONSTRUCTION DOCUMENTS AND THIS NARRATIVE IS BY NO MEANS LIMITING.

UNDER NO CIRCUMSTANCES WILL RE-ROUTING OF DUCTWORK OR PLUMBING PIPES BE CONSIDERED A CHANGE ORDER DUE TO UNANTICIPATED STRUCTURAL INTERFERENCES. THE ROUTING OF THE PIPES AND DUCTWORK SHOWN ON THE PLANS IS INTENDED TO ANTICIPATE THE MAJORITY OF STRUCTURAL INTERFERENCES BUT IT WILL NOT INCLUDE ALL OF THEM. THE ENTIRE DUCT OR PIPE SYSTEM MUST BE PLANNED IN ADVANCE TO AVOID RE-WORKING OR RE-ROUTING OF THIS WORK. COORDINATION WITH OTHER TRADES TO ACCOMMODATE THEIR WORK UNDER NO CIRCUMSTANCES WILL RE-INSTALLATION OF INCORRECT MATERIALS FOR THE APPLICATION BE CONSIDERED CHANGE ORDER, FOR EXAMPLE ALL EXPOSED WIRING IN THE GARAGE MUST UTILIZED METAL CONDUIT ENCASED UNDER THE FIRST FLOOR SLAB. PLUMBING RISERS TURNING THAT REQUIRE DROPPED FEETINGS AND THE LIKE IN ADVANCE OF THE BID AND CONSTRUCTION TO MINIMIZE UNANTICIPATED CONSTRUCTION REQUIREMENTS TO DELIVER A COMPLETE SYSTEM.

IT IS RECOMMENDED BUT NOT REQUIRED THAT THE MEP TRADES PROVIDE SHOP DRAWINGS IN ADVANCE OF CONSTRUCTION, ESPECIALLY IN THE SERVICE ENTRANCE ROOMS, UTILITY ROOMS, DWELLING HVAC CLOSETS AND OTHER AREAS TRADITIONALLY DESIGNED WITH CONFINED SPACES IN WOOD FRAME MULTI-FAMILY DWELLING STRUCTURES. IT IS THE RESPONSIBILITY OF THE MEP CONTRACTORS TO NOTIFY THE PRIME CONTRACTOR WHERE INSTALLATION OF THEIR TRADE WORK MAY REQUIRE INTENSE COOPERATION WITH OTHER TRADES SUCH AS CONCRETE ENCASED CONDUCTORS UNDER THE FIRST FLOOR SLAB. PLUMBING RISERS TURNING THAT REQUIRE DROPPED FEETINGS AND THE LIKE IN ADVANCE OF THE BID AND CONSTRUCTION TO MINIMIZE UNANTICIPATED CONSTRUCTION REQUIREMENTS TO DELIVER A COMPLETE SYSTEM.

AGAIN, COOPERATION, ADVANCE PLANNING, ANTICIPATION OF DIFFICULTIES, SUGGESTIONS, AND THE LIKE WILL PRODUCE THE BEST RESULT FOR ALL CONCERNED PARTIES.

**ELECTRICAL DEMOLITION AND ALTERATIONS**

- THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT AND WIRING NO LONGER REQUIRED. HE SHALL CUT ALL EXISTING CONDUIT WHICH WILL NOT BE COVERED OR HIDDEN BY THE NEW CONSTRUCTION BACK TO THE CONCRETE CEILING AND FLOOR SLABS. THIS CONTRACTOR, IF FEASIBLE MAY UTILIZE ANY EXISTING CONDUIT, OUTLET BOXES OR JUNCTION BOXES THAT DO NOT INTERFERE WITH THE NEW CONSTRUCTION. ALL EXISTING WIRING ON NOT BEING UTILIZED SHALL BE REMOVED BACK TO THE POINTS OF CONNECTION.
- ANY WIRING THAT IS TO REMAIN, WHICH RUNS THROUGH AREAS OF WORK SHALL REMAIN OPERATIONAL. IF ANY WORK INTERFERES WITH THE CONSTRUCTION, IT SHALL BE REROUTED AND REWORKED AS REQUIRED TO SATISFY THE NEW CONDITIONS.
- IF ANY EXISTING ELECTRICAL EQUIPMENT IS TO REMAIN FOR THE OPERATION OF SYSTEMS IN OTHER AREAS OF THE BUILDING, IT SHALL BE RELOCATED AS REQUIRED TO THE SATISFACTION OF THE ARCHITECT.
- ANY INTERRUPTION OF BUILDING SERVICES TO ANY SECTION OF THE BUILDING SUCH AS ELECTRIC LIGHT AND POWER, FIRE ALARM SYSTEM, TELEPHONE SYSTEM AND THE LIKE SHALL BE SCHEDULED. THE ARCHITECT SHALL APPROVE ALL SCHEDULES BEFORE ANY INTERRUPTIONS ARE PERMITTED. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME WORK NECESSARY TO MEET THIS REQUIREMENT. IF INTERRUPTIONS MUST OCCUR DURING NORMAL HOURS AT THE BUILDING, THE ELECTRICAL CONTRACTOR SHALL, AT HIS EXPENSE, PROVIDE TEMPORARY SERVICES AS REQUIRED TO PERMIT THE NORMAL FUNCTIONING OF ALL FACILITIES DURING INTERRUPTION.
- THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE OF WORK AND BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS BEFORE SUBMITTING BID. NO EXTRA COMPENSATION WILL BE PAID FOR EXTRA WORK, WHICH MAY ARISE BECAUSE OF FAILURE TO DO SO.
- IT SHOULD BE NOTED THAT THE NEW CONSTRUCTION IS TO BE CONNECTED TO AND INSTALLED IN EXISTING FACILITIES AND THE DRAWINGS GENERALLY SHOW ONLY THE NEW WORK THAT IS REQUIRED. UNLESS SPECIFICALLY INDICATED, AS TO OVERCOME ALL OBSTRUCTIONS AND DIFFICULTIES AT THE SITE, ALL SUCH WORK SHALL BE DONE IN FULL COOPERATION WITH THE ARCHITECT, WHO SHALL DECIDE AT THE SITE HOW SUCH WORK SHALL BE DONE.
- CONTRACTOR SHALL CHECK THE CONDITION OF ALL PANELBOARDS, CIRCUIT BREAKERS, AND WIRING TO REMAIN AND INFORM ARCHITECT OF ANY FAULTY EQUIPMENT. CONTRACTOR TO PROVIDE NEATLY TYPED PANEL SCHEDULE LISTING ALL NEW AND USED CIRCUITS.

**NEC LOAD CALCULATIONS**

Lafayette House Renovations  
Existing Service: 400A, 120/240V 1-phase 3-wire

**EXISTING LOADS:**  
**GENERAL LOADS**  
LIGHTING & RECEIPTS (6200R2 @ 3W/R2) 18,600 VA  
EXISTING GENERAL LOADS SUBTOTAL 18,600 VA

**SPECIAL LOADS**  
ELECTRIC RANGES/OVENS (2@9000W) 18,000 VA  
ELECTRIC CLOTHES DRYER 5,000 VA  
SMALL APPLIANCE (2@1500W) 3,000 VA  
REFRIGERATOR (3@1100W) 3,300 VA  
CLOTHES WASHER 1,500 VA  
DISHWASHER 1,200 VA  
EXISTING SPECIAL LOADS SUBTOTAL 30,000 VA

**HVAC LOADS**  
5.0 TON AC COMPRESSOR (1.9kW/ton) 9,500 VA  
5.0 TON AC COMPRESSOR (1.9kW/ton) 9,500 VA  
AIR HANDLERS (2@1100W) 2,200 VA  
EXISTING HVAC LOADS SUBTOTAL 21,200 VA

**NEW LOADS:**  
**GENERAL LOADS**  
LIGHTING & RECEIPTS (570R2 @ 3W/R2) 1,710 VA  
NEW GENERAL LOADS SUBTOTAL 1,710 VA

**SPECIAL LOADS**  
ELECTRIC RANGE/OVEN 8,000 VA  
ELECTRIC CLOTHES DRYER 5,000 VA  
SMALL APPLIANCE (2@1500W) 3,000 VA  
CLOTHES WASHER 1,500 VA  
DISHWASHER 1,200 VA  
REFRIGERATOR 3,300 VA  
DISPOSAL 1,000 VA  
NEW SPECIAL LOADS SUBTOTAL 20,800 VA

**COMBINED DWELLING LOAD PER NEC TABLE 220-30(4)**  
First 10KW@100% + Remaining @40% + HVAC @100% + Backup Heat @65%  
Existing + New General Loads 20,310 VA  
Existing + New Special Loads 50,800 VA  
Existing + New HVAC Loads 25,000 VA  
FIRST 10KW 10,000 VA  
REMAINING @40% 24,444 VA  
HVAC @100% 25,000 VA  
**COMBINED TOTAL LOAD 59,444 VA**  
CURRENT @240V/1 247.7 A

Therefore the existing 400A service is sufficient.

**PANEL DEMAND LOAD CALCULATIONS**

Lafayette House Renovations  
Existing Panel "PP1" - 200A, 120/240V 1-phase with new dwelling sub-panel "A"

**EXISTING PANEL "PP1" LOADS:**  
5.0 TON AC COMPRESSOR (1.9kW/ton) 9,500 VA  
5.0 TON AC COMPRESSOR (1.9kW/ton) 9,500 VA  
AIR HANDLERS (2@1100W) 2,200 VA  
**TOTAL EXISTING PANEL LOAD 21,200 VA**

**NEW DWELLING SUB-PANEL "A" LOADS:**  
**GENERAL LOADS**  
LIGHTING & RECEIPTS (570R2 @ 3W/R2) 1,710 VA  
NEW GENERAL LOADS SUBTOTAL 1,710 VA

**SPECIAL LOADS**  
ELECTRIC RANGE/OVEN 8,000 VA  
ELECTRIC CLOTHES DRYER 5,000 VA  
SMALL APPLIANCE (2@1500W) 3,000 VA  
CLOTHES WASHER 1,500 VA  
DISHWASHER 1,200 VA  
REFRIGERATOR 3,300 VA  
DISPOSAL 1,000 VA  
NEW SPECIAL LOADS SUBTOTAL 20,800 VA

**HVAC LOADS**  
2.0 TON DUCTLESS MINI SPLIT (1.9kW/ton) 3,800 VA  
NEW HVAC LOADS SUBTOTAL 3,800 VA

**NEW DWELLING LOAD PER NEC TABLE 220-30(4)**  
GENERAL LOADS  
First 10KW@100% + Remaining @40% + HVAC @100% + Backup Heat @65%  
FIRST 10KW 10,000 VA  
REMAINING @40% 12,510 VA  
HVAC @100% 3,800 VA  
**TOTAL NEW DWELLING SUB-PANEL LOAD 26,310 VA**  
CURRENT AT 240V/1 109.6 A

Therefore sub-panel "A" shall be rated for 125A.

**COMBINED PANEL LOAD**  
EXISTING PANEL "PP1" LOAD 21,200 VA  
NEW DWELLING SUB-PANEL "A" LOAD 26,310 VA  
**TOTAL NEW PANEL "PP1" LOAD 47,510 VA**  
CURRENT AT 240V/1 198.9 A

Therefore the existing 200A panel "PP1" can be used.

**PANEL PP1 - HOUSE POWER PANEL**

200A MLO		240/120V 1-phase 3-wire										SERIES RATED 22,000 AIC						
LOCATION	A	B	LTG	REC	MIS	WIRE	CKT	BRKR	PHASE	BRKR	CKT	WIRE	MIS	REC	LTG	A	B	LOCATION
AHU							1	15/2	A	50/2	2							AC COMPRESSOR
---							3	---	B	---	4							AC COMPRESSOR
AHU							5	15/2	A	50/2	6							AC COMPRESSOR
---							7	---	B	---	8							EXISTING EQUIPT
---							9	20/1	A	20/1	10							EXISTING EQUIPT
EXISTING EQUIPT							11	125/2	B	15/1	12							EXISTING EQUIPT
NEW PANEL "A"	13,580	14,670					15	---	A	---	14							
---							17	---	B	---	16							
---							19	---	B	---	20							
---							21	---	A	---	22							
---							23	---	B	---	24							
---							25	---	A	---	26							
---							27	---	B	---	28							
---							29	---	A	---	30							
---							33	---	B	---	34							
---							35	---	A	---	36							
---							37	---	B	---	40							
---							39	---	A	---								
CONN LOAD:	13,580	14,670													0	0		
FDR AMPS: 240/1																		

Existing circuits & equipment to remain. See Panel Demand Load Calculations.

**PANEL PP2 - HOUSE LIGHTING & RECEIPTS PANEL**

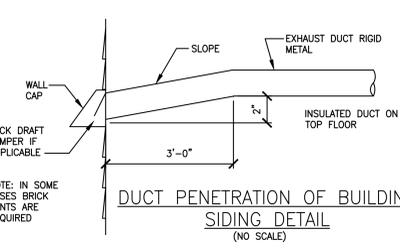
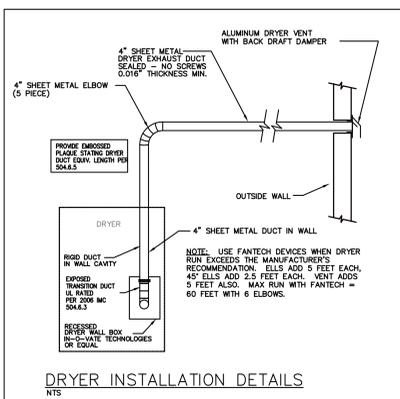
200A MLO		240/120V 1-phase 3-wire										SERIES RATED 22,000 AIC		
LOCATION														



LEGENDS	ABBREVIATION
IN RETURN DUCT	AD ACCESS DOOR
⊙ CARBON DIOXIDE SENSOR, W/ RELAY	AFF ABOVE FINISHED FLOOR
⊙ SHOW IN GARAGE	AHU AIR HANDLING UNIT
⊙ CARBON MONOXIDE SENSOR W/ RELAY	ALU ALUMINUM
⊙ THERMOSTAT INSTALL 46" AFF	BD BALANCE DAMPER
⊙ CEILING REGISTER WITH RADIATION DAMPER	BDD BACK DRAFT DAMPER
⊙ SUPPLY AIR REGISTER ONE FOOT ABOVE FINISHED FLOOR	BE BOTTOM ELEVATION
⊙ EXHAUST FAN SEVEN FEET ABOVE FINISHED FLOOR	BS BIRD SCREEN
⊙ GAS FURNACE	CA COMBUSTION AIR
⊙ AIR HANDLER	CD CEILING DIFFUSER, LOUVERED FACE
⊙ IN-WALL MOUNTED AIR HANDLER	CG CEILING GRILLE
⊙ RETURN GRILLE WITH RADIATION DAMPER	CR CEILING REGISTER
⊙ FLOOR REGISTER WITH FIRE DAMPER	CSW DISCONNECT SWITCH
⊙ WALL HEATER 2.0 KW	EA EXHAUST AIR
⊙ SUPPLY AIR DUCT UP	ER ENERGY RECOVERY
⊙ RETURN OR EXHAUST DUCT UP	ER EXHAUST REGISTER
⊙ SUPPLY AIR DUCT DOWN	FOT FLAT ON TOP
⊙ RETURN OR EXHAUST DUCT DOWN	FR FLOOR REGISTER
⊙ MOTORIZED DAMPER 24VAC OR 115VAC	HP HEAT PUMP
⊙ FIRE DAMPER	IBJ INSTALL BETWEEN JOISTS
⊙ VOLUME DAMPER	INS INSULATION
⊙ FLEXIBLE DUCT UL181, CLASS 1 (SIZE IN CIRCLE IS DIAMETER), R-8-NO LENGTH LIMIT	IS INSECT SCREEN
⊙ RIGID METAL DUCT, ROUND (SIZE IN CIRCLE IS DIAMETER)	LSW LOW SIDE WALL
⊙ FLEXIBLE CONNECTOR DUCT MAXIMUM LENGTH 14" (ZIP-FLEX)	MUA MAKE UP AIR
	OA OUTSIDE AIR
	ODD OPPOSED BLADE DAMPER
	OC COOLING 0 CFMs
	OHO 0 HEATING 0 CFMs
	R-6 INSULATION R-6
	R-8 INSULATION R-8
	R/A RETURN AIR
	RC RETURN GRILLE
	RR RETURN REGISTER
	SR SUPPLY REGISTER
	TE TOP ELEVATION
	TG TRANSFER GRILLE
	VD VOLUME DAMPER
	W/C WALL CAP
	WMS WIRE MESH SCREEN
	W/RD WITH RADIATION DAMPER

NOTE: NOT ALL ITEMS SHOWN ARE USED ON THIS PROJECT

- GENERAL HVAC CONSTRUCTION NOTES, NOT ALL APPLY
- The plans represent a complete operational system, wherein all wiring, equipment, fixtures, fittings, controls, and required accessories are furnished, installed, started, and tested by the sub-contractor. The sub-contractor shall provide all materials, equipment, labor, and supervision to deliver a complete system. The fire protection alarm/sprinkler system is not a component of this design (unless specifically depicted) and it is provided by a design and build fire protection contractor.
  - The plans are diagrammatical in nature. The work required to properly interface with other trades, which may represent changes to the drawings to accommodate the installation of this system, is performed without additional cost to the builder. This includes but is not limited to architectural, structural, electrical, plumbing, mechanical, grading, fire protection, and other considerations.
  - All work must be executed in strict accordance with all applicable national, state and local codes and ordinances. All work must be executed in a neat and workmanlike manner. The sub-contractors and builder must coordinate with all trades during the construction process. This sub-contractor must review all aspects of their work prior to installation to ensure proper clearances and capacities exist.
  - All air conditioning equipment installed shall be minimum 15 SEER efficiency minimum. All air conditioning equipment must be AHRI matched and rated.
  - The sub-contractor must be licensed and insured in the Township, County and State as applicable. Submit to the owner as directed proof of insurance.
  - Since the plans are diagrammatical in nature for clarity purposes, the sub-contractor must submit a shop drawing where the contractor intends to install work that includes substantial differences from the plans, inclusive of calculations and other items to the owner prior to commencing work. The shop drawings must include exact locations, special fittings, and verification that this information is accurate.
  - The sub-contractor warrants that they have visited the project site, reviewed all of the contract documents, and are otherwise familiar with the requirements necessary to completely execute the work required to comply with the diagrammatical work depicted herein. Further, the sub-contractor warrants that, in possessing a thorough knowledge of the code and industry standard construction practices, the bid for performing the work will contain allowances for normal difficulties experienced during the construction of a building of this type. Modifications to the contract, which do not add value to the project, will not be considered valid.
  - The design conditions for this project are heating and cooling per ASHRAE 1% and 99% design temperature extremes minimum of 17°F and 91°F outdoor and 70°F indoor heating and 75°Fdb/50°Frh indoor cooling. The cooling and heating requirements were calculated according to ACCA Manual J with average construction, East/West Front/Back exposure, and blinds on some windows.
  - Provide fire protection dampers whenever a rated assembly is penetrated by ductwork. It is the intent of this plan set to show all fire protection dampers. Inadvertently, a fire protection damper may be shown in a non-rated wall and not be required. Also a fire damper may not be shown in a rated wall but remain a requirement.
  - All supply air, return air, and exhaust air duct work installed in an unconditioned space must be insulated with R-8 insulation wrap minimum, or per code if it is stricter. R-8 duct board with a tough guard interior water proof coating installed in strict accordance with the installation instructions published by the manufacturer is acceptable as insulated duct work for top floor dwellings only, in lieu of metal rectangular duct with an insulation wrap. Round ductwork installed in an unconditioned space shall be R-8 insulated class 1 flexible air duct, UL rated, 181 or rigid metal duct wrapped with insulation. Flexible air duct shall be provided with a reflective outer casing, black colored flex duct outer casing is strictly prohibited. The HVAC contractor shall be responsible for installing air conveyance systems in unconditioned spaces which comply with this requirement, to the extent that higher than specified insulation values may be required. All ductwork shall be properly supported.
  - All ductwork shall be G60 galvanized metal 26-gauge minimum for rectangular, and 28 gauge minimum for smaller round ductwork. Duct board is not acceptable, except for the top floor dwelling discharge plenums, air distribution manifolds and register boots. Where duct board is utilized it shall be "Toughguard" or equal with the moisture/erosion resistant black coating without exception. Duct board cannot be used for other purposes.
  - Seal all duct building penetrations, especially floor register and ceiling register boots.
  - All dryer exhaust duct shall be rigid round duct without protrusions (such as screws) into the air stream. The developed length shall not exceed twenty-five feet total, where 90° elbows count as five feet of length. Where the dryer proposed is capable of performing with dryer exhaust developed lengths in excess of 25', longer lengths are permitted where they are within the manufacturer's published requirements. Coordinate with the builder in advance of installation.
  - Kitchen exhaust shall be ducted. Coordinate with the builder for installation requirements. Comply with the written installation instructions published by the kitchen hood manufacturer.
  - All ductwork shall be leak tested by a third independent party (duct blaster test) for leakage. Leakage shall not exceed five percent @ 0.20" without exception. Seal the ductwork to prevent leaks with metal tape (no tape on round branch to rectangular trunk duct connections) or mastic. Duct sealing shall include the snap lock longitudinal seams, and the end boots, elbow boots and other riveted type manufactured fittings. All ductwork operates at less than 3.0" w.g.
  - The plumber shall provide a PVC condensate drain within five feet of the mechanical equipment to drain the g/c condensate (not to the storm water management system or to the irrigation system). The HVAC contractor shall furnish a clean out tee and approximately five feet or less of PVC condensate drip/pipe from the HVAC equipment to the plumber furnished drains within the closet. All furnaces and air handlers shall receive an emergency drain pan with a float switch wired to stop the equipment if moisture is detected. Coordinate equipment location with the builder.
  - The plans indicate quantities of items to enhance the understanding of the design concept. The quantities are reliable, but not guaranteed. The contractor is responsible to install the correct quantities of items required to deliver a complete functioning building.
  - This design is non-transferable. It is intellectual property with trade secrets to be utilized on this project only.
  - The sub-contractor shall provide an air balance as a component of the HVAC system start-up for the residential systems. The HVAC sub-contractor shall provide adjustments as required to meet temperature uniformity throughout the dwellings, should a temperature disparity exist without additional cost to the builder.
  - The thermostat shall comply with 503.2.4.1 where a humidity control is included with programmable operation.
  - Provide a plaque adjacent to each clothes dryer, within site of dryer not further than 6' away, that specifies max exhaust duct length and dryer exhaust capacity minimum.
  - Provide fire smoke dampers 115v-1 whenever a duct penetrates a shaft.
  - Provide a water detection device for every AHU in the drain pan to stop equipment to prevent a pan overflow. HVAC systems shall utilize in-line sensors to detect moisture in drain pans, such as Goodman model AG 3175 or similar. Do not use "hockey puck" style drain pan switches.
  - All MEP systems shall provide for no pooling of water to the extent possible. The safe pans, drain pans, and condenser pads shall all slope to avoid pools of water. It is acceptable to have a 1/8" depth pool of water in condensate pans during cooling operation.
  - All access panels shall be labeled by the trade that receives the benefit of the access panel. The builder provides many access doors for plumbing cleanouts or fire dampers, but the plumber or hvac contractor shall provide the label. The label shall be with 3/8" height letters on non-cardboard or paper type material, permanently affixed to the access door. Duct access doors installed in ductwork shall be made and labeled by the hvac contractor.
  - The fire dampers that penetrate the ceiling on the discharge of the air handler shall be installed in strict accordance with the installation instructions published by the manufacturer. Submit the illustration of the installation to the instructions prior to construction and that will suffice as the detail. The damper shall be installed in a sleeve within six inches of the plane of the ceiling at a minimum, complete with a duct access door.
  - The registers and grilles shall be residential stamped steel type for dwellings and commercial as shown on the plans for public spaces. The supply devices shall include a manually operated volume damper. The size of the registers and grilles refers to duct connection size internal dimension, equipment of similar size and adequate performance are acceptable (for example if the contractor utilizes 12x8 or 12x4 supply registers as their standard they are acceptable if their performance is similar to the 10x8 size specified). The return air conveyance system shall not include any adjustable devices to restrict air volume. The return air grilles shall be installed such that the blades are positioned to minimize dust into the return air duct.
  - Where there exists a discrepancy between the plans, documents, or code the sub-contractor shall provide for the most expensive method and advise the builder in writing prior to performing any work.



RESPONSIBILITY OF DESIGN AND CONSTRUCTION TEAMS FOR MEP:

Amicable cooperation of the design and construction teams generally produces the best results for the owner. Investment in the design by the installing contractors is also usually beneficial for the project. Any reasonable contractor suggestions in advance of construction will be considered and/or reviewed. Any resulting necessary (for permit or code official inspection purposes, not for as-built purposes) construction plan changes that the owner and architect approve suggested by the installing contractor shall be executed by the MEP design team without additional charge provided they are not extensive.

The MEP design is provided primarily to obtain the building permit. If the jurisdiction did not require professionally engineered MEP plans, the project would likely be constructed as a design and build project. Accordingly the plans are not shop drawings. The plans are not as-built drawings. The plans do not show every difficulty and nuance associated with what is required to install a complete system. The contractor is responsible for installing a complete system as diagrammatically depicted on the plans. This will likely include providing items that are not shown on the plans but required to deliver a complete system. The plans may be considered a performance based specification.

The MEP contractors must anticipate in advance of the bid and construction the requirements necessary to deliver a complete system so that there are no requests for change orders based on alleged plan omissions/errors later in the project to provide the systems already specified on the plans. For example if an electrical switchgear room is crowded and requires more compact equipment, larger spaces, and/or other circumstances the electrical switchgear capacity specified must be installed without additional charge. Further to this example the resolution may involve enlarging a room by design in advance of construction, considering review of different equipment or other solutions. The design team will cooperate to the extent reasonably possible to mitigate any unanticipated circumstances to provide a complete MEP system. However, again, no change orders shall be approved unless it is additional scope items the owner agrees to fund.

It is the installing contractors responsibility to notify the design team in advance of all construction with time to react whenever there could be an issue that requires resolution to install a complete code compliant MEP system. There are further restrictions specified in the construction documents and this narrative is by no means limiting.

Under no circumstances will re-routing of ductwork or plumbing pipes be considered a change order due to unanticipated structural interferences. The proper routing of the pipes and ductwork shown on the plans is intended to anticipate the majority of structural interferences but it will not include all of them. The entire duct or pipe system must be planned in advance to avoid re-working or re-routing of this work. Coordination with other trades to accommodate their work is also required. Under no circumstances will re-installation of incorrect materials for the application be considered change order, for example all exposed wiring in the garage must utilize metal conduit enclosed conductors and the use of NM conductors (Romex) by mistake (or even if inadvertently specified) will not be considered a change order to replace.

It is recommended but not required that the MEP trades provide shop drawings in advance of construction, especially in the service entrance rooms, utility rooms, dwelling HVAC closets and other areas traditionally designed with confined spaces in wood frame multi-family dwelling structures. It is the responsibility of the MEP contractors to notify the prime contractor where installation of their trade work may require intense cooperation with other trades such as concrete enclosed conductors under the first floor slab, plumbing risers turns that require dropped footings and the like in advance of the bid and construction to minimize unanticipated construction requirements to deliver a complete system.

Again, cooperation, advance planning, anticipation of difficulties, suggestions, and the like will produce the best result for all concerned parties.

EQUIPMENT NOTES, NOT ALL APPLY

All equipment includes ECM motors. All equipment is minimum 15 SEER AHRI rated without utilizing oversized air handlers (poor humidity removal).

Return air conditions are 75°Fdb/64°Fwb for cooling, and 70°Fdb for heating. ER ratings are based upon 95°Fdb/78°Fwb outside and return air conditions. For common areas and amenity areas, return air conditions are 80°Fdb/67°Fwb to account for outside air conditions mixing with return air.

All air distribution registers and grilles for common areas shall be commercial type, not stamped steel with manual exposed operating levers suitable for the dwellings. For all bathrooms, lockers, and mech. closets, provide 100% aluminum construction for the registers and grilles. The sizes and locations shown on plans accommodate occupant comfort, performance and trusses - do not vary sizes or locations based upon interior designer suggestions without EOR approval.

- All equipment includes high and low refrigerant compressor protection switches.
- All commercial equipment serving common areas includes auto change over thermostats with remote sensors, where the main control is locked in the mechanical closet to be set by management. The location of the thermostat shown on the plans is the sensor location; main controller is in mechanical closet and not shown on the plans.
- The thermostats shall be the type that when the heating load can be accomplished without operating the resistance heat (except during defrost) and just running the compressor, the thermostat shall control the heat pump accordingly. When the temperature set point is above the room temperature sensed, the compressor shall operate alone unless the sensed temperature falls 5°F below the set point. The thermostat shall gradually ramp up temperature using just the compressor during the end of a night set back temperature period. This is specified to meet code section 6.4.3.5. The thermostat also includes an outdoor temperature sensor to lock out the resistance heat at a point which above it the compressor is able to manage the heat load. Each dwelling will need to program the lockout temperature.
- Provide MERV 8 filters on AHU systems. Provide MERV 6 on all outdoor air inlets.
- All refrigeration pipe insulation shall be 1/2" thick minimum, with protection from both physical and UV damage.
- Provide a moisture detection (water level) switch that will shut off the equipment if the primary drain pan (or pan underneath the air handler) drain becomes blocked to prevent property damage. The device that senses water level rise shall conform to UL508.

Prototype of Design Models manufactured by Goodman and Carrier (OTHER MANUFACTURERS WILL BE REVIEWED):

Dwellings: Air handlers, variable speed with ECM motors capable AS NOTED PER THE HVAC SCHEDULE. ALL SYSTEMS SHALL BE AHRI or DOE WATCHED OF EQUAL OR BETTER SEER AND HSPF RATING AS LISTED.

Corridors and Common Areas: AHFC series air handlers matched with DS2C16 two stage series heat pumps for corridors.

Sequence of operation:

General: The fan is always energized and the compressor is cycled to maintain humidity and temperature settings. On a call for heating the compressor cycles in concert with the back-up heat (defrost and extreme conditions) for heat pump operations.

- All dwelling heat pump split systems:
  - Programmable thermostat with humidity control cycles the HVAC equipment to maintain the thermostat setting.
  - The fan should remain in the on position during occupancy to insure maximum comfort and ventilation.
  - The outside air intake receives a gravity actuated automatic damper at the exterior wall in every case.
- Common area split system heat pumps:
  - The thermostat is a 7 day programmable unit (for AHREA 90.1, 6.4.3.3.2 set back controls and off hours controls ASHREA 90.1, 6.4.3.3), rather than daily for the dwellings. The programming shall include off hours scheduling as per ASHREA 90.1, 6.4.3.3. The programming shall include a battery back up in each thermostat to prevent each thermostat from having to be reprogrammed as per ASHREA 90.1, 6.4.3.3.1.
  - The thermostat is an auto change over type that switches automatically from heating to cooling as determined by the measured return air temperature (wall sensor adjacent to thermostat) and the heating and cooling set points for both occupied and unoccupied, (optimum start controls). The thermostats shall include a 5°F dead-band between heating and cooling as per ASHRAE 90.1, 6.4.3.1.2. Further, the heating and cooling set point can never overlap (hence the dead-band) as per ASHRAE 90.1, 6.4.3.2.
  - The thermostat is installed inside the mechanical closet for the control and operation by management. The remote sensor is installed where shown on the plans adjacent to the return air grille.
  - In some instances with large volumes of outside air as identified on the floor plans, the outside air is restricted partially by a motorized outside air damper that allows 25% of outside air through an opposed blade damper during unoccupied and full 100% outside air during full occupancy. Full occupancy is determined by a carbon dioxide sensor with an adjustable setting of 1,100ppm set point mounted in the return air duct with a relay option.
- All refrigeration pipe insulation shall be 1" thick minimum.

THIS DIAGRAMMATIC DESIGN IS NON TRANSFERABLE, AND REPRESENTS A COMPLETE SYSTEM.

ALL DIMENSIONS, SIZES AND CAPACITIES MUST BE FIELD AND CODE VERIFIED.

PROJECT: LAFAYETTE HOUSE  
PORTSMOUTH, NEW HAMPSHIRE

PROJECT ARCHITECT:  
SCOTT ENGINEERING

PROJECT CONSULTING ENGINEER:  
SCOTT ENGINEERING

JOSHUA W. CHAPMAN PE, LEED AP, PRINCIPAL  
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MECHANICAL NOTES & DETAILS

DRAWING TITLE: MECHANICAL NOTES & DETAILS

OWNER: ...

DESIGNED BY: RSM/JWC DATE: 10/10/2022

DRAWN BY: DPG/DMC

SCALE: AS NOTED

CHECKED BY: RSM/JWC

SHEET IDENTIFICATION

M-1

IGSHPA  
International Ground Source Heat Pump Association

CEE  
of Energy Engineers

GEOTHERMAL HVAC EXPERT



1. SECTION 15100 - BASIC MECHANICAL REQUIREMENTS

A. THE WORK OF EACH OF THE MECHANICAL SECTIONS INCLUDES FURNISHING AND INSTALLING THE MATERIAL, EQUIPMENT, AND SYSTEMS COMPLETE AS SPECIFIED AND/OR INDICATED ON THE DRAWINGS. THE MECHANICAL INSTALLATIONS, WHEN FINISHED, SHALL BE COMPLETE AND COORDINATED, READY FOR SATISFACTORY SERVICE.

ALL WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE, COUNTY, NFPA AND 2009 ICC CODES THAT GOVERN EACH PARTICULAR TRADE.

B. THE CONTRACTOR SHALL MAKE APPLICATIONS AND PAY ALL CHARGES FOR ALL NECESSARY PERMITS, LICENSES AND INSPECTIONS AS REQUIRED UNDER THE ABOVE CODES. UPON COMPLETION OF THE WORK, THE CUSTOMARY CERTIFICATIONS OF APPROVAL SHALL BE FURNISHED.

C. NO MATERIALS OR EQUIPMENT SHALL BE USED IN THE WORK UNTIL APPROVED. BEFORE SUBMISSION OF THE SHOP DRAWINGS, AND NOT MORE THAN THIRTY (30) DAYS AFTER AWARD OF THE CONTRACT, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A COMPLETE LIST OF MATERIALS AND EQUIPMENT WHICH HE INTENDS TO FURNISH, GIVING MANUFACTURER AND CATALOG NUMBERS. A COMPLETE LIST OF PROPOSED SUBCONTRACTORS SHALL ALSO BE SUBMITTED.

D. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND SHALL INSPECT THE EXISTING CONDITIONS OF THE SITE. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR COMPLYING WITH THE INTENT OF THE CONTRACT DOCUMENTS.

E. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF THE PLUMBING INSTALLATIONS. DETAILS OF PROPOSED REPAIRS DUE TO ACTUAL FIELD CONDITIONS OR OTHER CAUSES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. REWORKING OF COMPLETED ITEMS DUE TO IMPROPER FIELD COORDINATION SHALL BE AT THE CONTRACTOR'S EXPENSE.

F. PROVIDE SUFFICIENT ACCESS AND CLEARANCE FOR ALL ITEMS OF EQUIPMENT REQUIRING SERVICING AND MAINTENANCE, SUCH AS VALVES, CONTROLS, DRAINS, VENTS, SWITCHES, FILTERS, TRAPS, AND MAJOR ITEMS OF EQUIPMENT.

G. THE CONTRACTOR SHALL PREPARE THREE (3) COPIES OF A RECORD AND INFORMATION BOOKLET. THE BOOKLET SHALL BE BOUND IN A THREE-RING LOOSE-LEAF BINDER. PROVIDE THE FOLLOWING DATA IN THE BOOKLET:

- CATALOG DATA ON EACH PIECE OF EQUIPMENT FURNISHED.
- APPROVED SHOP DRAWINGS ON EACH PIECE OF EQUIPMENT FURNISHED.
- MAINTENANCE, OPERATION AND LUBRICATION INSTRUCTION ON EACH PIECE OF EQUIPMENT FURNISHED.
- MANUFACTURER'S AND CONTRACTOR'S WARRANTIES.
- COMMISSIONING REPORTS.
- SCHEDULE/DESCRIPTION OF ALL SERVICE WORK/MAINTENANCE INSPECTIONS REQUIRED BY PARAGRAPHS D,P AND Q OF THIS SECTION.

I. THE ENTIRE NEW PLUMBING SYSTEM SHALL BE TESTED HYDROSTATICALLY BEFORE INSULATION COVERING IS APPLIED AND PROVIDED TIGHT UNDER THE FOLLOWING GAUGE PRESSURES:

SANITARY AND STORM WATER PIPING.....AS SPECIFIED BELOW  
DOMESTIC WATER.....100 PSI  
FIRE PROTECTION.....100 PSI

J. ALL SOIL, WASTE AND VENT PIPING SHALL BE TESTED BY THE CONTRACTOR. THE ENTIRE NEW DRAINAGE SYSTEM AND VENTING SYSTEM SHALL HAVE ALL NECESSARY OPENINGS PLUGGED AND FILLED WITH WATER TO THE LEVEL OF TEN (10) FEET ABOVE THE MAIN OR BRANCH BEING TESTED. THE SYSTEM SHALL BE TESTED WITH WATER FOR THIRTY (30) MINUTES WITHOUT SHOWING A DROP GREATER THAN FOUR (4) INCHES.

NOTE: IF ANY CODE OR AUTHORITY REQUIRES TESTING WHICH IS DIFFERENT THAN THE TEST LISTED ABOVE, THE MORE STRINGENT TEST SHALL BE PERFORMED.

K. UPON COMPLETION OF THE PLUMBING INSTALLATIONS, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS OF THE PLUMBING CONTRACT DRAWINGS WHICH SHALL BE LEGIBLY MARKED IN RED PENCIL TO SHOW ANY CHANGES AND DEPARTURES OF THE INSTALLATION AS COMPARED WITH THE ORIGINAL DESIGN. THEY SHALL BE SUITABLE FOR USE IN PREPARATION OF RECORD DRAWINGS.

L. ALL PIPING AND VALVE SYSTEMS SHALL BE IDENTIFIED WITH LABELS AND TAGS. MATERIALS SHALL BE MANUFACTURED BY SETON NAME PLATE CORPORATION.

M. ALL NEW PLUMBING INSTALLATIONS, INCLUDING ALL MATERIALS AND LABOR SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF OWNER ACCEPTANCE. THE ABOVE SHALL NOT IN ANY WAY VOID OR ABROGATE EQUIPMENT MANUFACTURER'S GUARANTEE OR WARRANTY. CERTIFICATES OF GUARANTEE SHALL BE DELIVERED TO THE OWNER.

N. CONTRACTOR SHALL ALSO PROVIDE ONE (1) YEAR FREE SERVICE TO KEEP THE EQUIPMENT IN OPERATING CONDITION. THIS SERVICE SHALL BE PROVIDED PER THE FOLLOWING SCHEDULE AND RENDERED UPON REQUEST WHEN NOTIFIED OF ANY EQUIPMENT MALFUNCTION.

O. IN ADDITION TO THE FIRST YEAR WARRANTY PERIOD, THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST TO THE OWNER, A MINIMUM OF FOUR (4) SERVICE CALLS AND MAINTENANCE INSPECTIONS PER BUILDING. A COMPLETE OUTLINE OF THE REQUIRED MAINTENANCE AND THE PREPARED SCHEDULE SHALL BE INCLUDED IN THE RECORD AND INFORMATION BOOKLET DETAILED IN SECTION 15100. BASIC MECHANICAL REQUIREMENTS, PARAGRAPH I, FOR REVIEW AND ACCEPTANCE BY THE OWNER/REPRESENTATIVE AND ENGINEER. THE INSPECTIONS ARE TO BE PERFORMED AT THREE (3) MONTH INTERVALS FOR A TOTAL OF FOUR (4) SERVICE CALLS AND INSPECTIONS DURING THE FIRST YEAR WARRANTY PERIOD (THREE (3) TIMES DURING THE YEAR PLUS THE ORIGINAL SYSTEM STARTUP COMMISSIONING).

THE SERVICE WORK AND INSPECTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- CLEAN DRAIN PANS AND DRAIN LINES;
- CHECK AND TIGHTEN ALL ELECTRICAL CONNECTIONS;
- INSPECT AND CLEAN ALL WATER STRAINERS;
- CHECK OPERATING PRESSURES;
- INSPECT ALL CONTROLS FOR CORRECT OPERATION AND CALIBRATE AS REQUIRED;
- PERFORM ALL MAINTENANCE AS OUTLINED IN THE EQUIPMENT MANUFACTURERS' OPERATION AND MAINTENANCE MANUALS.

UPON COMPLETION OF EACH SCHEDULED INSPECTION, THE CONTRACTOR SHALL DELIVER TO THE BUILDING OWNER/OWNER'S REPRESENTATIVE WITHIN FORTY-EIGHT (48) HOURS OF COMPLETION, TWO (2) COPIES OF THE COMPLETED INSPECTION REPORT FOR RECORD PURPOSES.

P. THE PLUMBING OR SERVICE CONTRACTOR SHALL, AT THE NINTH MONTH, ADVISE THE OWNER OF THE TERMINATION DATE OF THE ABOVE SERVICE. THIS CONTRACTOR SHALL ALSO PROVIDE THE OWNER WITH A DETAILED PROPOSAL, REFLECTING ANNUAL ESCALATION, FOR THE CONTINUATION OF THE SERVICE AND INSPECTIONS DESCRIBED ABOVE.

2. SECTION 15200 - BASIC MECHANICAL PIPING MATERIAL & METHODS

A. PROVIDE ALL LABOR AND MATERIALS NECESSARY TO FURNISH AND INSTALL ALL PIPING SYSTEMS ON THE PROJECT, INCLUDING INTERIOR STORM, SANITARY, SANITARY VENT, DOMESTIC WATER, CONDENSATE DRAINAGE, HEATING WATER AND NATURAL GAS PIPING SYSTEMS.

B. PROVIDE DIELECTRIC COUPLINGS WHERE NON-FERROUS METAL PIPING IS JOINED TO FERROUS METAL PIPING. THE GASKET MATERIAL SHALL BE CAPABLE OF WITHSTANDING THE TEMPERATURES AND PRESSURES WITHIN THE PIPING SYSTEM IN WHICH INSTALLED. SUBMIT DIELECTRIC COUPLING AND GASKET MATERIAL FOR APPROVAL.

SECTION 15250 - MECHANICAL INSULATION

A. ALL DOMESTIC WATER PIPING SYSTEMS SHALL BE INSULATED WITH CLOSED CELL FOAM INSULATION FOR HOT WATER HEATING APPLICATIONS PER IECC AND AS REQUIRED TO PREVENT CONDENSATION.

B. ALL HYDRON/MECHANICAL PIPING WITH FLUID TEMPS ABOVE 105F OR BELOW 55F MUST BE INSULATED WITH R-4 MINIMUM.

3. SECTION 15300 - FIRE PROTECTION

PROVIDE INTUMESCENT FITTINGS WHERE PVC PIPING PENETRATES FIRE RATED PARTITIONS. FIRE PROTECTION SYSTEM BY DESIGN AND BUILD SPRINKLER CONTRACTOR.

4. SECTION 15400 - PLUMBING

C. All hangers for copper piping shall be copper clad, split ring swivel type, having rods with machine threads and threaded copper clad ceiling flange. Cast iron and steel piping supports shall be similar without copper clad and prime paint finish. Hangers for plastic piping shall be plastic.

D. Provide dielectric couplings where non-ferrous metal piping is joined to ferrous metal piping. The gasket material shall be capable of withstanding the temperatures and pressures within the piping system in which installed. Submit dielectric coupling and gasket material for approval.

PLUMBING SPECIFICATIONS Section 15400 - Plumbing

A. The work covered by this section of the specifications consists of furnishing all labor, equipment and materials in connection with the rough-in, final setting and connections to all plumbing fixtures. The contractor shall carefully review the conditions at the site and all of the contract drawings to determine the extent of the plumbing work required.

B. All plumbing fixtures shall be complete in every detail with all trimmings and connections. All fixtures shall be designed to prevent the back flow of polluted water or waste into the water supply system.

C. The dwelling water heaters shall be manufactured by BRADFORD WHITE, GAS FIRED, 40 GPM INPUT, 40 GALLON MODEL, REGENT 4055A. A complete heater shall be rated as indicated on drawings and be listed by Underwriters' Laboratories. Heater shall have integral heat traps. Tank shall be factory fired with glass lining with 150 psi working pressure and equipped with extruded high density magnesium anode at 8 p relief valve. The controls shall include a thermostat and a high temperature cutoff. The jacket shall provide full size control compartments for performance of service and maintenance thru front panel openings and enclose the tank with insulation. The drain valve shall be baked enamel finish. Heater shall have a three (3) year limited warranty for commercial installation, as outlined in the written warranty. Fully illustrated instruction manual shall be included. Refer to drawings for size, capacity and voltage.

D. Potable water systems shall be disinfect prior to use. The method to be followed shall be that prescribed by the Health Authority and code requirements.

GENERAL CONSTRUCTION NOTES

1. THE PLANS REPRESENT A COMPLETE OPERATIONAL SYSTEM, WHEREIN ALL WIRING, EQUIPMENT, FIXTURES, FITTINGS, CONTROLS, AND ALL REQUIRED ACCESSORIES ARE FURNISHED, INSTALLED, STARTED, AND TESTED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, AND SUPERVISION TO DELIVER A COMPLETE SYSTEM. THE FIRE PROTECTION ALARM/SPRINKLER SYSTEM, IF REQUIRED, IS NOT A COMPONENT OF THIS DESIGN UNLESS SPECIFICALLY DEPICTED AND IT IS PROVIDED BY A DESIGN AND BUILD FIRE PROTECTION CONTRACTOR.

2. THE PLANS ARE DIAGRAMMATICAL IN NATURE. THE WORK REQUIRED TO PROPERLY INTERFACE WITH OTHER TRADES, WHICH MAY REPRESENT CHANGES TO THE DRAWINGS TO ACCOMMODATE THE INSTALLATION OF THIS WORK, IS THE RESPONSIBILITY OF THE CONTRACTOR. THIS INCLUDES BUT IS NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING, MECHANICAL, GRADING, FIRE PROTECTION, AND OTHER CONSIDERATIONS.

3. ALL WORK MUST BE EXECUTED IN STRICT ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND ORDINANCES. ALL WORK EXECUTED IN A NEW AND WORKMANLIKE MANNER. THE SUBCONTRACTORS AND GENERAL CONTRACTOR MUST COORDINATE WITH ALL TRADES DURING THE CONSTRUCTION PROCESS. THIS CONTRACTOR MUST REVIEW ALL ASPECTS OF THEIR WORK PRIOR TO INSTALLATION TO INSURE PROPER CLEARANCES AND CAPACITIES EXIST.

4. THE CONTRACTOR MUST BE LICENSED AND INSURED IN THE COUNTY AND STATE AS APPLICABLE. SUBMIT TO THE OWNER AS DIRECTED PROOF OF INSURANCE INCLUSIVE OF LIMITS OF LIABILITY AND DEDUCTIBLE INFORMATION. ALL SUBCONTRACTORS OF SUBCONTRACTORS MUST BE LICENSED AND INSURED TO.

5. SINCE THE PLANS ARE DIAGRAMMATICAL IN NATURE FOR CLARITY PURPOSES, THE CONTRACTOR MUST SUBMIT A SHOP DRAWING WHERE THE CONTRACTOR INTENDS TO INSTALL WORK THAT INCLUDES SUBSTANTIAL DIFFERENCES FROM THE PLANS, INCLUSIVE OF CALCULATIONS AND OTHER ITEMS TO THE OWNER PRIOR TO COMMENCING WORK. THE SHOP DRAWINGS MUST INCLUDE EXACT LOCATIONS, SPECIAL FITTINGS, AND VERIFICATION THAT THIS INFORMATION IS ACCURATE.

6. THE CONTRACTOR AND ALL SUBCONTRACTORS WARRANT THAT THEY HAVE VISITED THE PROJECT SITE, REVIEWED ALL OF THE CONTRACT DOCUMENTS, AND ARE OTHERWISE FAMILIAR WITH THE REQUIREMENTS NECESSARY TO COMPLETELY EXECUTE THE WORK REQUIRED TO COMPLY WITH THE DIAGRAMMATICAL WORK DEPICTED HEREIN. FURTHER, THE CONTRACTOR WARRANTS THAT, IN POSSESSING A THOROUGH KNOWLEDGE OF THE CODE AND INDUSTRY STANDARD CONSTRUCTION PRACTICES, THE BID FOR PERFORMING THE WORK WILL CONTAIN ALLOWANCES FOR NORMAL DIFFICULTIES EXPERIENCED DURING THE CONSTRUCTION OF A BUILDING OF THIS TYPE. MODIFICATIONS TO THE CONTRACT, WHICH DO NOT ADD VALUE TO THE PROJECT, WILL NOT BE CONSIDERED VALID.

7. THIS DESIGN IS NON TRANSFERABLE. IT IS INTELLECTUAL PROPERTY WITH TRADE SECRETS TO BE UTILIZED IN THIS PROJECT ONLY.

8. WHERE THE CONTRACTOR FURNISHES CERTAIN MODELS OR PROTOTYPES OF DESIGN SPECIFIED ON THE DRAWINGS, SUBMITTAL DATA IS NOT NECESSARY. SIMPLY NOTIFY THE OWNER IN WRITING THAT THE SPECIFIED ITEM WILL BE USED AND PROCEED WITH THE WORK. IF EQUAL DEVIATIONS FROM THE SPECIFIED PRODUCT ARE UTILIZED, THE PRODUCT DATA MUST BE SUBMITTED TO THE OWNER FOR APPROVAL. IT IS THE INTENT OF THE DESIGN TO MAKE A COMPETITIVE BID. EQUAL PRODUCTS WILL BE CONSIDERED AS SUBMITTER.

9. WHERE THERE EXISTS A DISCREPANCY BETWEEN THE PLANS, DOCUMENTS, OR CODE THE CONTRACTOR SHALL PROVIDE FOR THE MOST EXPENSIVE METHOD AND ADVISE THE ARCHITECT IN WRITING PRIOR TO PERFORMING ANY WORK.

RESPONSIBILITY OF DESIGN AND CONSTRUCTION TEAMS FOR MEP

AMICABLE COOPERATION OF THE DESIGN AND CONSTRUCTION TEAMS GENERALLY PRODUCES THE BEST RESULTS FOR THE OWNER. INVESTMENT IN THE DESIGN BY THE INSTALLING CONTRACTORS IS ALSO USUALLY BENEFICIAL FOR THE PROJECT. ANY REASONABLE CONTRACTOR SUGGESTIONS IN ADVANCE OF CONSTRUCTION WILL BE CONSIDERED AND/OR REVIEWED. ANY RESULTING NECESSARY FOR PERMIT OR CODE OFFICIAL INSPECTION PURPOSES, NOT FOR AS-BUILT PURPOSES) CONSTRUCTION PLAN CHANGES THAT THE OWNER AND ARCHITECT APPROVE SUGGESTED BY THE INSTALLING CONTRACTOR SHALL BE EXECUTED BY THE MEP DESIGN TEAM AS NECESSARY.

THE MEP DESIGN IS PROVIDED PRIMARILY TO OBTAIN THE BUILDING PERMIT. THE PLANS ARE NOT SHOP DRAWINGS. THE PLANS ARE NOT AS-BUILT DRAWINGS. THE PLANS DO NOT SHOW EVERY DIFFICULTY AND NUANCE ASSOCIATED WITH WHAT IS REQUIRED TO INSTALL A COMPLETE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING A COMPLETE SYSTEM AS DIAGRAMMATICALY DEPICTED ON THE PLANS. THIS WILL LIKELY INCLUDE PROVIDING ITEMS THAT ARE NOT SHOWN ON THE PLANS BUT REQUIRED TO DELIVER A COMPLETE SYSTEM. THE PLANS MAY BE CONSIDERED A PERFORMANCE BASED SPECIFICATION.

THIS PROJECT IS DESIGN BUILD. THE MEP CONTRACTORS MUST ANTICIPATE IN ADVANCE OF THE BID AND CONSTRUCTION THE REQUIREMENTS NECESSARY TO DELIVER A COMPLETE SYSTEM. THE DESIGN TEAM WILL COOPERATE TO THE EXTENT REASONABLY POSSIBLE TO MITIGATE ANY UNANTICIPATED CIRCUMSTANCES TO PROVIDE A COMPLETE MEP SYSTEM. HOWEVER, NO CHANGE ORDERS SHALL BE APPROVED UNLESS IT IS ADDITIONAL SCOPE ITEMS THE OWNER AGREES TO FUND.

IT IS THE INSTALLING CONTRACTOR RESPONSIBILITY TO NOTIFY THE DESIGN TEAM IN ADVANCE OF ALL CONSTRUCTION WITH TIME TO REACT WHENEVER THERE COULD BE AN ISSUE THAT REQUIRES RESOLUTION TO INSTALL A COMPLETE CODE COMPLIANT MEP SYSTEM. THERE ARE FURTHER RESTRICTIONS SPECIFIED IN THE CONSTRUCTION DOCUMENTS AND THIS NARRATIVE IS BY NO MEANS LIMITING.

UNDER NO CIRCUMSTANCES WILL RE-ROUTING OF DUCTWORK OR PLUMBING PIPES BE CONSIDERED A CHANGE ORDER DUE TO UNANTICIPATED STRUCTURAL INTERFERENCES. THE ROUTING OF THE PIPES AND DUCTWORK SHOWN ON THE PLANS IS INTENDED TO ANTICIPATE THE MAJORITY OF STRUCTURAL INTERFERENCES BUT IT WILL NOT INCLUDE ALL OF THEM. THE ENTIRE DUCT OR PIPE SYSTEM MUST BE PLANNED IN ADVANCE TO AVOID RE-WORKING OR RE-ROUTING OF THIS WORK. COORDINATION WITH OTHER TRADES TO ACCOMMODATE THEIR WORK IS ALSO REQUIRED. UNDER NO CIRCUMSTANCES WILL RE-INSTALLATION OF INCORRECT MATERIALS FOR THE APPLICATION BE CONSIDERED CHANGE ORDER, FOR EXAMPLE ALL EXPOSED PIPING IN THE GARAGE MUST UTILIZED METAL CONDUIT ENCASED CONDUCTORS AND THE USE OF NM CONDUCTORS (ROMEX) BY MISTAKE OR EVEN IF INADVERTENTLY SPECIFIED WILL NOT BE CONSIDERED A CHANGE ORDER TO REPLACE.

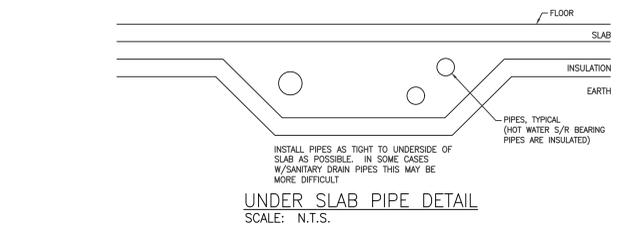
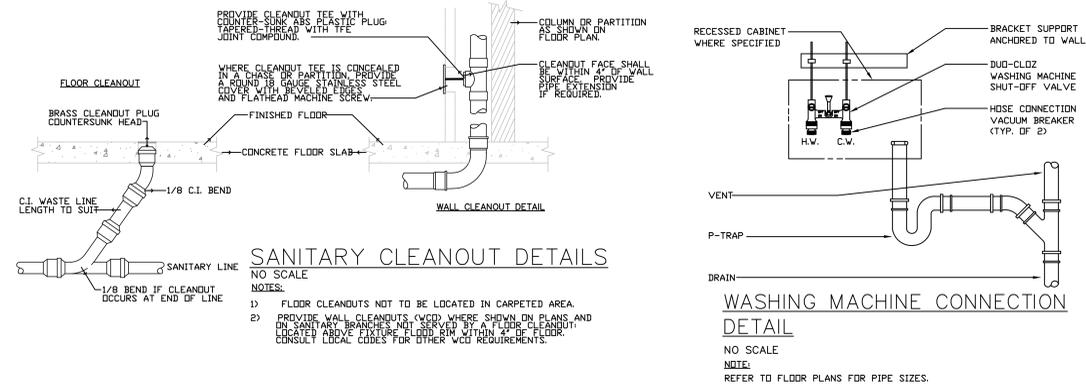
IT IS RECOMMENDED BUT NOT REQUIRED THAT THE MEP TRADES PROVIDE SHOP DRAWINGS IN ADVANCE OF CONSTRUCTION, ESPECIALLY IN THE SERVICE ENTRANCE ROOMS, UTILITY ROOMS, DWELLING HVAC CLOSETS AND OTHER AREAS TRADITIONALLY DESIGNED WITH CONFINED SPACES IN WOOD FRAME MULTI-FAMILY DWELLING STRUCTURES. IT IS THE RESPONSIBILITY OF THE MEP CONTRACTORS TO NOTIFY THE PRIME CONTRACTOR WHERE INSTALLATION OF THEIR TRADE WORK MAY REQUIRE INTENSE COOPERATION WITH OTHER TRADES SUCH AS CONCRETE ENCASED CONDUCTORS UNDER THE FIRST FLOOR SLAB. PLUMBING RISERS TURNS THAT REQUIRE DROPPED FOOTINGS AND THE LIKE IN ADVANCE OF THE BID AND CONSTRUCTION TO MINIMIZE UNANTICIPATED CONSTRUCTION REQUIREMENTS TO DELIVER A COMPLETE SYSTEM. AGAIN, COOPERATION, ADVANCE PLANNING, ANTICIPATION OF DIFFICULTIES, SUGGESTIONS, AND THE LIKE WILL PRODUCE THE BEST RESULT FOR ALL CONCERNED PARTIES.

ITEM	FIXTURE	ROUGH-IN PIPE SIZES				TRAP TYPE	REMARKS
		C.W.	H.W.	SAN.	VENT		
WC	WATER CLOSET	1/2"	-	3"	1 1/2"	INTEGRAL	FLOOR MOUNTED, TANK TYPE
LAV	COUNTERTOP LAVATORY	1/2"	1/2"	1 1/4"	1 1/4"	*P*	
TUB	TUB/SHOWER	1/2"	1/2"	1 1/2"	1 1/4"	*P*	
SHWR	SHOWER	1/2"	1/2"	1 1/2"	1 1/4"	*P*	
KS	SINGLE COMPARTMENT SINK	1/2"	1/2"	1 1/2"	1 1/4"	*P*	WITH GARBAGE DISPOSAL
KD	DOUBLE COMPARTMENT SINK	1/2"	1/2"	1 1/2"	1 1/4"	*P*	WITH GARBAGE DISPOSAL
WA	WASHING MACHINE	1/2"	1/2"	2"	2"	*P*	WITH DDU-CLOZ VALVE
LT	LAUNDRY TUB	1/2"	1/2"	1 1/2"	1 1/4"	*P*	
TUB	SPA TUB	1/2"	1/2"	2"	1 1/2"	*P*	
MR	JANITOR'S MOP SINK	3/4"	3/4"	3"	2"	*P*	

PLUMBING LEGEND & SYMBOL LIST		(ALL ITEMS SHOWN MAY NOT APPEAR ON DRAWING)	
ACD	ACCESS DOOR	LT	LAUNDRY TUB
ADR	AUTODRAINER	MC	MECHANICAL CONTRACTOR
AP	ACCESS PANEL	MH	MANHOLE
BPS	BED PAN SANITIZER	MR	MOP RECEPTOR
BT	BATH TUB	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	RWC	RAINWATER CONDUCTOR
CI	CAST IRON	SHWR	SHOWER
CMP	CORRUGATED METAL PIPE	SP	SPRINKLER
CO	CLEANOUT	SS	SERVICE SINK
CS	CUP SINK	STK	STACK
CW	COLD WATER	TMR	THERMOMETER
DF	DRINKING FOUNTAIN	UR	URNAL
DL	DOOR LOUVER	V	VENT
DN	DOWN	VB	VACUUM BREAKER
DR	DRYER	VTR	VENT THRU ROOF
EL	ELECTRICAL CONTRACTOR	WA	WASHING MACHINE
FAI	FRESH AIR INTAKE	WC	WATER CLOSET
FD	FLOOR DRAIN	WMS	WIRE MESH SCREEN
FHC	FIRE HOSE CABINET	X	SPRINKLER HEAD
FHR	FIRE HOSE REACK	Y	DRAIN COOK
FX	FIRE EXTINGUISHER	Z	FLOOR DRAIN
GB	GREASE INTERCEPTOR	⊗	CONNECT TO EXISTING
H	HOT WATER		
HW	HOT WATER REGIC.		
JC	JANITOR'S CLOSET		
LAV	LAVATORY		
		— A —	AIR PIPING
		— B —	DOMESTIC HOT WATER
		— C —	DOMESTIC WATER REGIC.
		— D —	FIRE PROTECTION
		— E —	GAS
		— F —	NITROUS OXIDE
		— G —	OXYGEN
		— H —	SANITARY SEWER
		— I —	STORM SEWER
		— J —	VACUUM
		— K —	ANGLE VALVE
		— L —	AUTOMATIC AIR VALVE
		— M —	AUTO THREE-WAY VALVE
		— N —	AUTO TWO-WAY VALVE
		— O —	BALANCING VALVE
		— P —	CHECK VALVE
		— Q —	GATE VALVE
		— R —	GLOBE VALVE
		— S —	PLUG OR BALL VALVE
		— T —	PRESSURE REDUCING VALVE
		— U —	RELIEF VALVE
		— V —	CLEAN OUT
		— W —	F-T, TEMPERATURE CONTROL, P-PRESSURE
		— X —	FLEXIBLE PIPE CONNECTOR
		— Y —	GAS COOK STRAINER
		— Z —	THERMOMETER
		— AA —	PRESSURE GAUGE W/ GAUGE COCK
		— AB —	SIAMISE CONNECTION
		— AC —	UNION
		— AD —	WALL HYDRANT

SYSTEM	SYMBOL	PIPE	FITTING	JOINT	REMARKS
SANITARY WASTE & VENT, (UNDERGROUND)	SAN SW	PVC FOAM CORE ASTM D 2665, ASTM F 1488, ASTM F 891	PVC, ASTM D 2665, ASTM F 1866	PVC SOLVENT SEALER, PURPLE PRIMER ASTM F 656, CEMENT ASTM D 2564, CSA B137.3 CSA B181.2 OR CSA B182.1	PVC PIPING SYSTEM: SOLID-WALL PVC PIPE ASTM D 2665, & FITTINGS MADE TO ASTM D3311 DRAIN, WASTE & VENT PATTERNS. VERTICAL STACK ALLOWED INSIDE DWELLING UNITS.
SANITARY WASTE & VENT, STORM DRAINAGE (ABOVE-GROUND)	SAN SW	PVC FOAM CORE ASTM D 2665, ASTM F 1488, ASTM F 891	PVC, ASTM D 2665, ASTM F 1866	PVC SOLVENT SEALER, PURPLE PRIMER ASTM F 656, CEMENT ASTM D 2564, CSA B137.3 CSA B181.2 OR CSA B182.1	PVC PIPING SYSTEM: SOLID-WALL PVC PIPE ASTM D 2665, & FITTINGS MADE TO ASTM D3311 DRAIN, WASTE & VENT PATTERNS. VERTICAL STACK ALLOWED INSIDE DWELLING UNITS.
DOMESTIC COLD WATER, HOT WATER SUPPLY & RETURN (ABOVE-GROUND)	CW HW	CPVC, ASTM D 2846, ASTM F 441, ASTM F 442 CSA B137.6	CPVC ASSE 1061, ASTM D2846, ASTM F 437, ASTM F 438, ASTM F 439, CSA B137.6	CPVC SOLVENT SEALER; ASTM F493	CPVC PIPING SYSTEM: ASTM D2846 SDR 11, PIPE AND SOCKET FITTINGS, ALLOWED INSIDE DWELLING UNITS.
NATURAL GAS (IF APPLICABLE)	G	BLACK STEEL PIPE, ASTM A53 GRADE B, TYPE S SEAMLESS SCHEDULE 40	BLACK MALLEABLE IRON THREADED FITTINGS	THREADED USING AMERICAN STANDARD FOR PIPE THREADS, ANSI B2.1 WITH THREAD SEALANT OR TEFLON TAPE MATERIAL, ESPECIALLY LISTED COMPATIBLE WITH SYSTEM CONTENTS, PIPE MATERIALS, AND OPERATING CONDITIONS.	SCHEDULE 40 BLACK STEEL PIPING;

- NOTES:
- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - CONTACT BETWEEN DISSIMILAR METALS SHALL BE MADE WITH DIELECTRIC COUPLINGS OR DIELECTRIC FLANGES. CONTACT BETWEEN FERROUS AND BOLTS AND BRONZE OR COPPER FLANGES SHALL BE ELECTRICALLY INSULATED WITH NON-METALLIC WASHERS. PROVIDE UNION CONNECTIONS TO ALL PNEUMATICALLY OPERATED EQUIPMENT.
  - INSTALLATION, INCLUDING SUPPORT SPACING, COMPENSATION FOR EXPANSION AND CONTRACTION, AND JOINING SHALL BE IN COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  - JOINTS AND CONNECTIONS SHALL BE PERMANENT AND GAS AND WATER TIGHT. JOINTING SHALL BE TYPES SPECIFIED FOR SERVICE INDICATED. JOINTS AND CONNECTIONS SHALL MEET REQUIREMENTS OF MANUFACTURER'S BEST RECOMMENDED PRACTICE. ALL TRANSITIONS BETWEEN DIFFERENT PIPING MATERIALS SHALL BE USING APPROVED ADAPTERS. ADAPTERS FOR TRANSITIONS BETWEEN TWO TYPES OF PIPING MATERIALS SHALL BE MANUFACTURED FOR PURPOSE INTENDED.
  - ALL FLOOR DRAINS AND/OR PRODUCTS CONNECTED TO SPECIAL DRAINAGE SYSTEM MUST BE COORDINATED FOR CORROSION RESISTANCE, SIZE AND CONNECTION COMPATIBILITY PRIOR TO ORDERING ANY MATERIAL.



CODES	PLUMBING SHEET INDEX
2015 MC	P-1 PLUMBING NOTES & LEGEND
2015 BC	P-2 PLUMBING DETAILS & RISERS
2015 PC	P-3 FLOOR PLAN
2015 BC	
2017 NEC	

ALL DIMENSIONS, SIZES AND CAPACITIES MUST BE FIELD AND CODE VERIFIED.

PROJECT: LAFAYETTE HOUSE  
PORTSMOUTH, NEW HAMPSHIRE

PROJECT ARCHITECT:  
PROJECT CONSULTING ENGINEER:

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