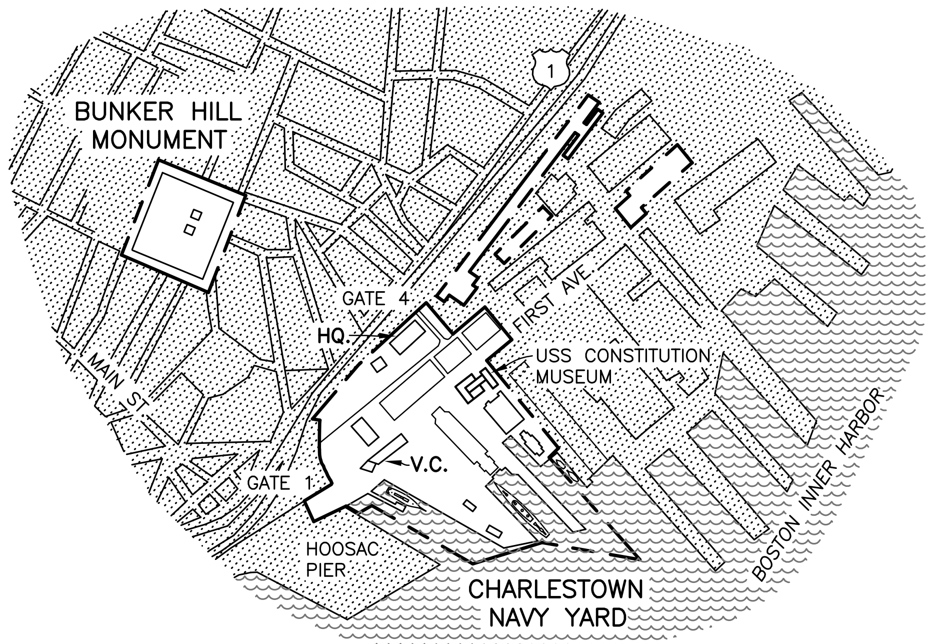
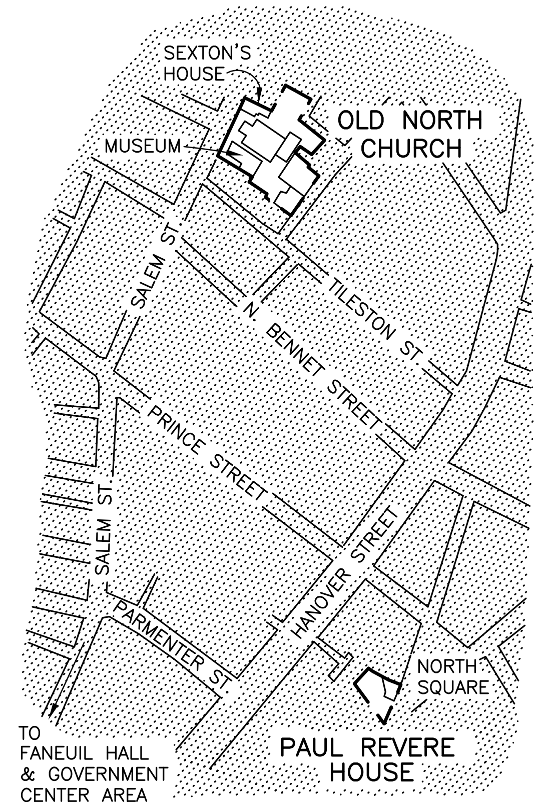
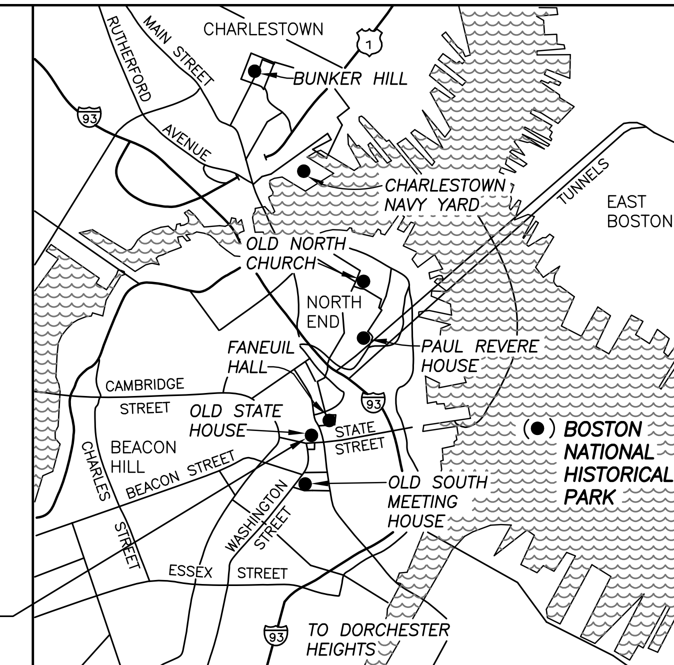






PROJECT LOCATION

LOCATION WITHIN STATE
MASSACHUSETTS

1,000 0 1,000
SCALE OF FEET

LEGEND

— — —	HISTORICAL PARK BOUNDARY
V.C.	VISITOR CENTER
HQ.	PARK HEADQUARTERS

MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE

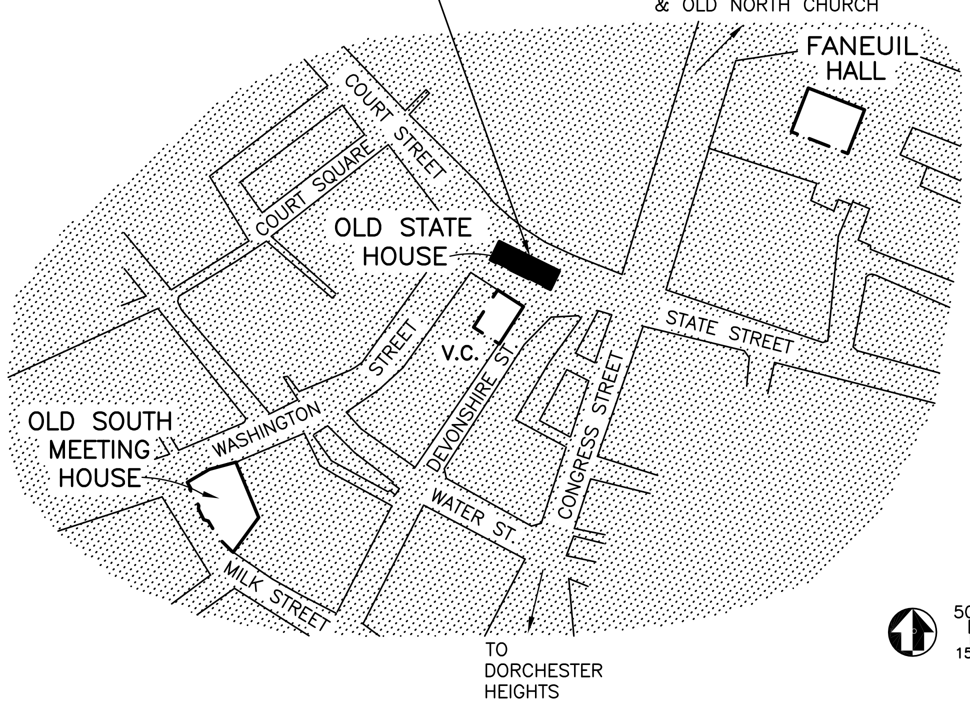
PMIS NUMBER: BOST 232487

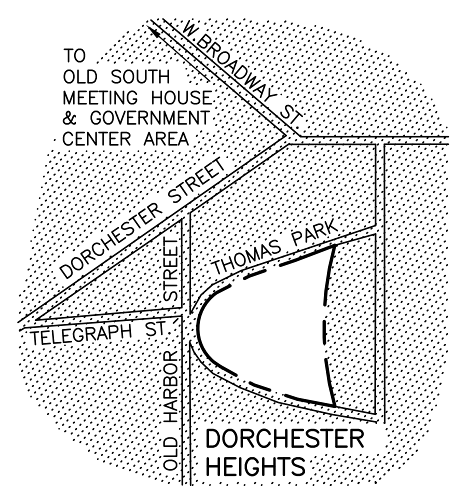
SOLICITATION NUMBER: TBD

DATE: APRIL 24, 2020

REVISED JULY 26, 2021

PROJECT LOCATION





SCALE OF FEET
500 0 500
150 0 150
SCALE OF METERS

BOSTON NATIONAL HISTORICAL PARK

INDEX OF DRAWINGS

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1	–	COVER SHEET
~~2~~	~~A1~~	~~EXTERIOR ELEVATIONS – EAST~~
~~3~~	~~A2~~	~~EXTERIOR ELEVATIONS – SOUTH~~
~~4~~	~~A3~~	~~EXTERIOR ELEVATIONS – WEST~~
~~5~~	~~A4~~	~~EXTERIOR ELEVATIONS – NORTH~~
6	A5	BASEMENT FLOOR PLAN
7	A6	THIRD FLOOR PLAN
~~8~~	~~A7~~	~~STORM WINDOW SCHEDULE~~
9	CO1	SITE PLAN
10	E1	ELECTRICAL RISER, LEGEND & NOTES
11	E2	ELECTRICAL PANEL SCHEDULES
12	E3	ELECTRICAL PLANS
13	E4	ELECTRICAL PLAN – BASEMENT
14	E5	ELECTRICAL PLAN – FIRST FLOOR
15	E6	ELECTRICAL PLAN – SECOND FLOOR
16	E7	LIGHTING CONTROL SYSTEM DETAILS
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18	E9	EXISTING LIGHTING CONTROL SYSTEM
19	FA1	FIRE ALARM RISER DIAGRAM
20	FA2	FIRE ALARM PLAN BSMT & SUB–BSMT
21	FA3	FIRE ALARM PLAN FIRST FLOOR
22	FA4	FIRE ALARM PLAN SECOND FLOOR
23	FA5	FIRE ALARM PLAN THIRD FLOOR
24	FA6	FIRE ALARM PLAN ATTIC
25	FP01	SYMBOLS, NOTES & DETAILS
26	FP1	FIRE PROTECTION FLOOR PLANS
27	M0	MECHANICAL NOTES & LEGEND
28	M1	MECHANICAL DEMO PLANS
29	M2	MECHANICAL DEMO PLANS
30	M3	MECHANICAL PLANS
31	M4	MECHANICAL PLANS
32	M5	MECHANICAL PIPING DIAGRAM
33	M6	MECHANICAL DETAILS
34	M7	MECHANICAL SCHEDULES
35	P1	PLUMBING SYMBOLS, NOTES & DETAILS
36	P2	PLUMBING FLOOR PLANS
37	SU1	PLUMBING SITE UTILITY PLAN
38	S00	STRUCTURAL GENERAL NOTES (1 OF 2)
39	S01	STRUCTURAL GENERAL NOTES (2 OF 2)
40	S10	FRAMING PLANS & DETAILS
41	S11	SECTIONS & DETAILS
42	W1	PLAN AND ELEVATIONS
43	W2	WATERPROOFING DETAILS
44	F01	SECTIONS AND DETAILS

A / E FIRM INFORMATION

ARCHITECTURE:
STORYGARD ASSOCIATES ARCHITECTS
BOSTON, MA

M.E.P.:
LANDMARK FACILITIES GROUP
NORWALK, CT

HISTORIC PRESERVATION
PRESERVATION TECHNOLOGY ASSOC., LLC
CHESTNUT HILL, MA

STRUCTURAL:
SIMPSON GUMPERTZ & HEGER
WALTHAM, MA

Mark	Sheet	REVISION	Date	Initial

CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

TITLE OF DRAWING
MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~

LOCATION WITHIN PARK
THE OLD STATE HOUSE

NAME OF PARK
BOSTON NATIONAL HISTORICAL PARK

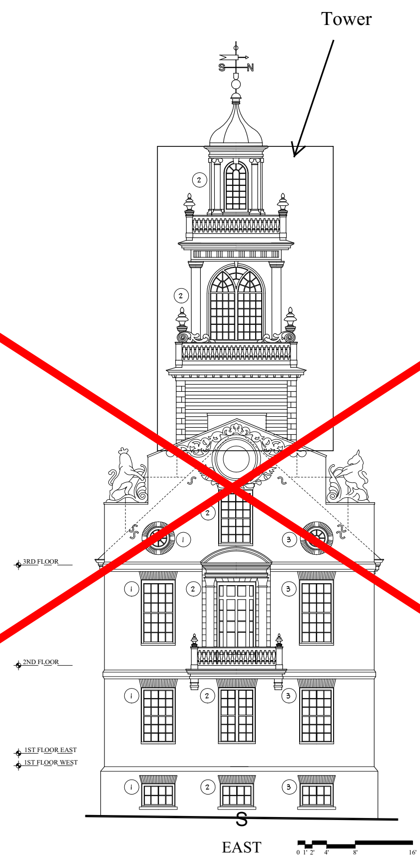
REGION: NORTHEAST
COUNTY: SUFFOLK
STATE: MASSACHUSETTS

DRAWING NO.
457
144,213

PKG. NO.
232487

SHEET 1 OF 44

BASIC DATA: BASICDATA



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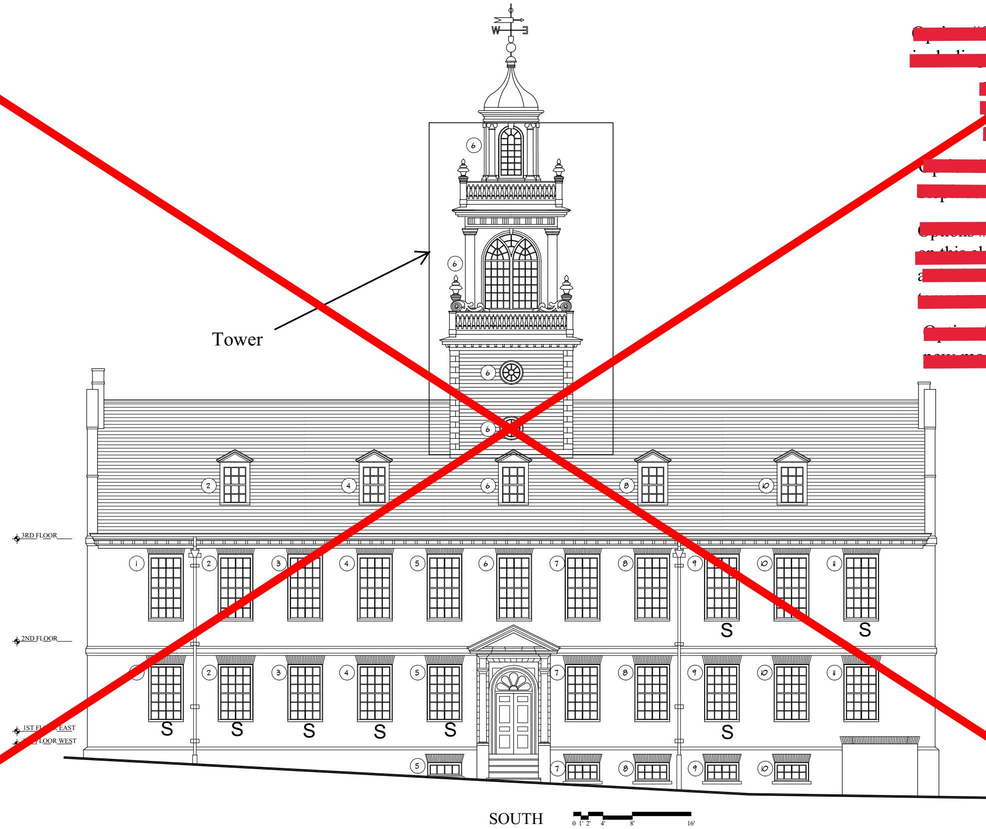
A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 457 / 144213
STOREYGARD ASSOCIATES ARCHITECTS	CADD:	A1	EXTERIOR ELEVATIONS	PMIS/PKG NO. 232487
	TECH REVIEW: DNS		MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	SHEET 2 OF 44
	DATE: 4/24/20		NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK; REGION: NORTHEAST; COUNTY: SUFFOLK; STATE: MASSACHUSETTS	

[illegible]



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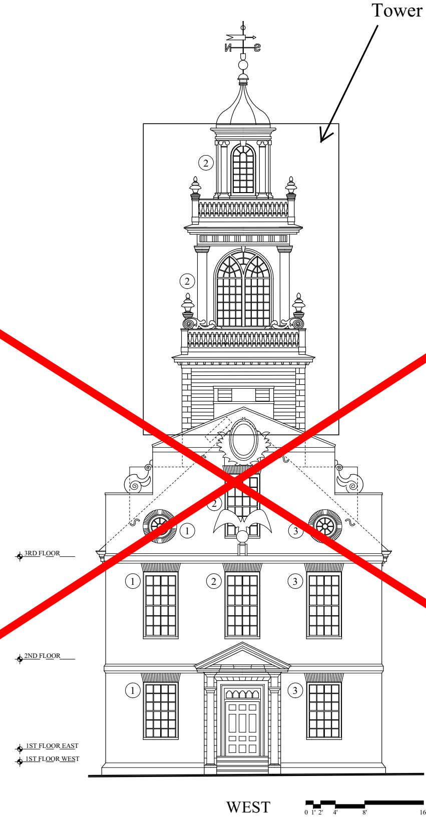
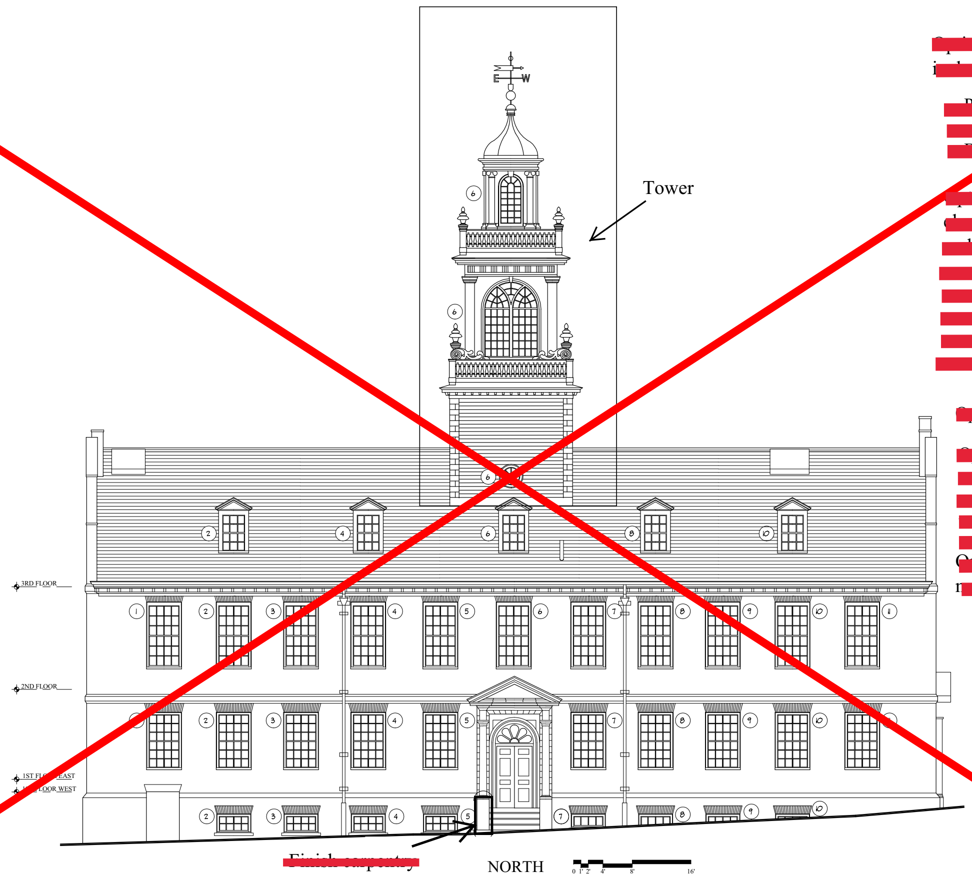
A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 457 144213
STOREYGARD ASSOCIATES ARCHITECTS	CADD:	A2	EXTERIOR ELEVATIONS	PMIS/PKG NO. 232487
	TECH REVIEW: DNS		MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	SHEET K OF 44
	DATE: 4/24/20		NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK; REGION: NORTHEAST; COUNTY: SUFFOLK; STATE: MASSACHUSETTS	



WEST

NIC

A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 457 / 144213
STOREYGARD ASSOCIATES ARCHITECTS	CADD:	A3	**EXTERIOR ELEVATIONS** MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PMIS/PKG NO. 232487
	TECH REVIEW: DNS		NAME OF PARK BOSTON NATIONAL HISTORICAL PARK	SHEET 4 OF 44
	DATE: 4/24/20		REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	



[illegible]

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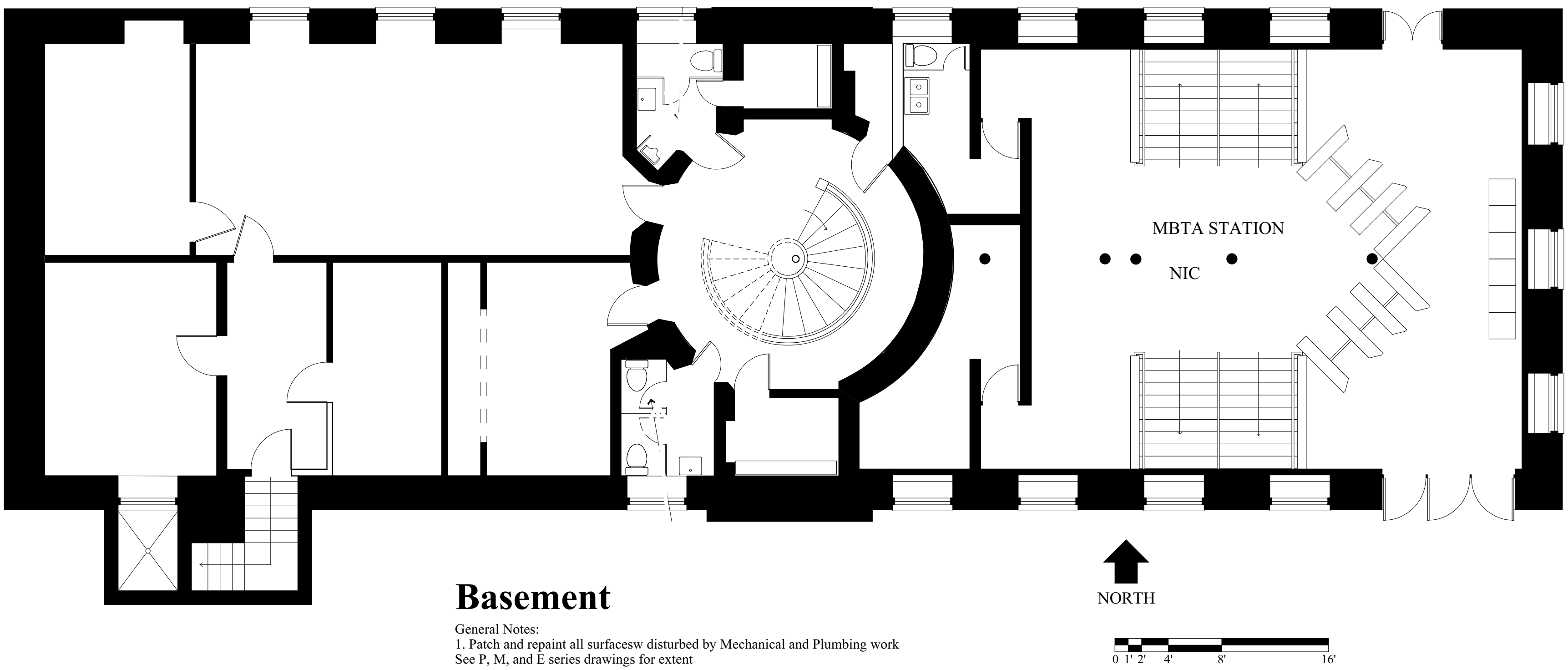
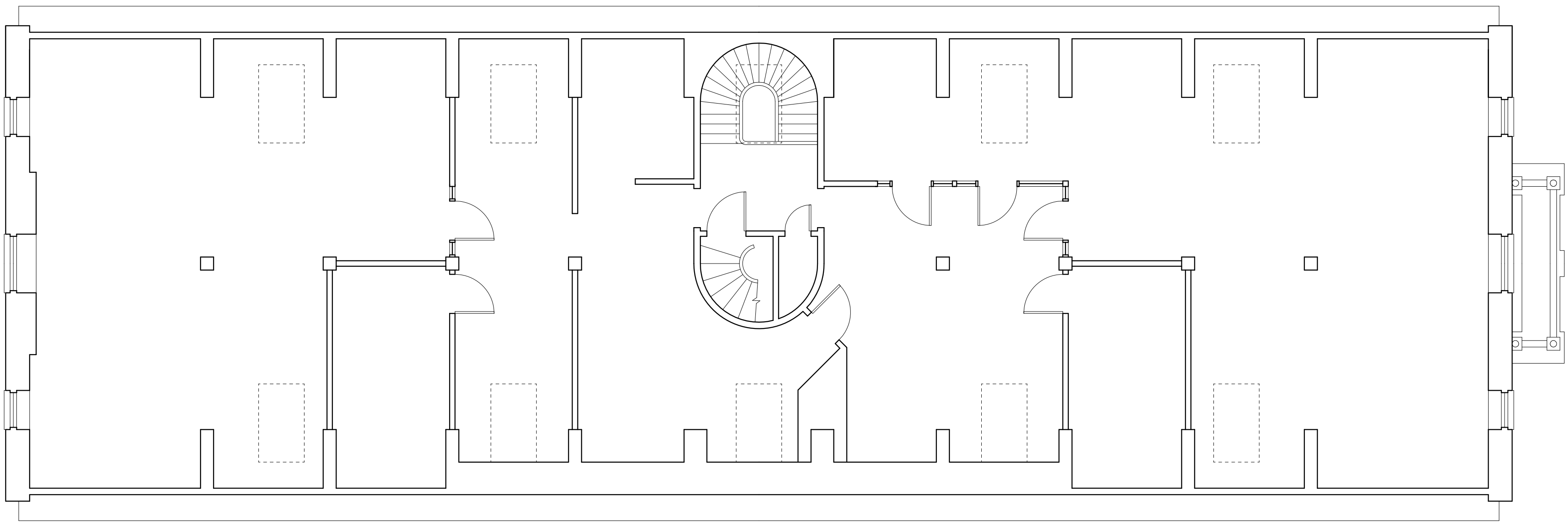
A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 457 / 144213
STOREYGARD ASSOCIATES ARCHITECTS	CADD:	A4	EXTERIOR ELEVATIONS MECHANICAL & STRUCTURAL UPGRADES [illegible] AT THE OLD STATE HOUSE	PMIS/PKG NO. 232487
	TECH REVIEW: DNS		NAME OF PARK BOSTON NATIONAL HISTORICAL PARK	SHEET ___ OF ___
	DATE: 4/24/20		REGION: NORTHEAST / COUNTY: SUFFOLK / STATE: MASSACHUSETTS	



Basement

General Notes:
1. Patch and repaint all surfacesw disturbed by Mechanical and Plumbing work
See P, M, and E series drawings for extent

A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 457 144213
STOREYGARD ASSOCIATES ARCHITECTS	CADD:	A5	BASEMENT FLOOR PLAN MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PMIS/PKG NO. 232487
	TECH REVIEW: DNS		NAME OF PARK BOSTON NATIONAL HISTORICAL PARK	
	DATE: 4/24/20		REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	SHEET 6 OF 44



3rd Floor Plan

General Notes:
1. Patch and repaint all surfacesw disturbed by Mechanical and Plumbing work
See P, M, and E series drawings for extent

A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 457 / 144213
STOREYGARD ASSOCIATES ARCHITECTS	CADD:	A6	**THIRD FLOOR PLAN** MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PMIS/PKG NO. 232487
	TECH REVIEW: DNS		NAME OF PARK BOSTON NATIONAL HISTORICAL PARK	SHEET 7 OF 44
	DATE: 4/24/20		REGION: NORTHEAST; COUNTY: SUFFOLK; STATE: MASSACHUSETTS	

OLD STATE HOUSE STORM WINDOW SCHEDULE

Option #5

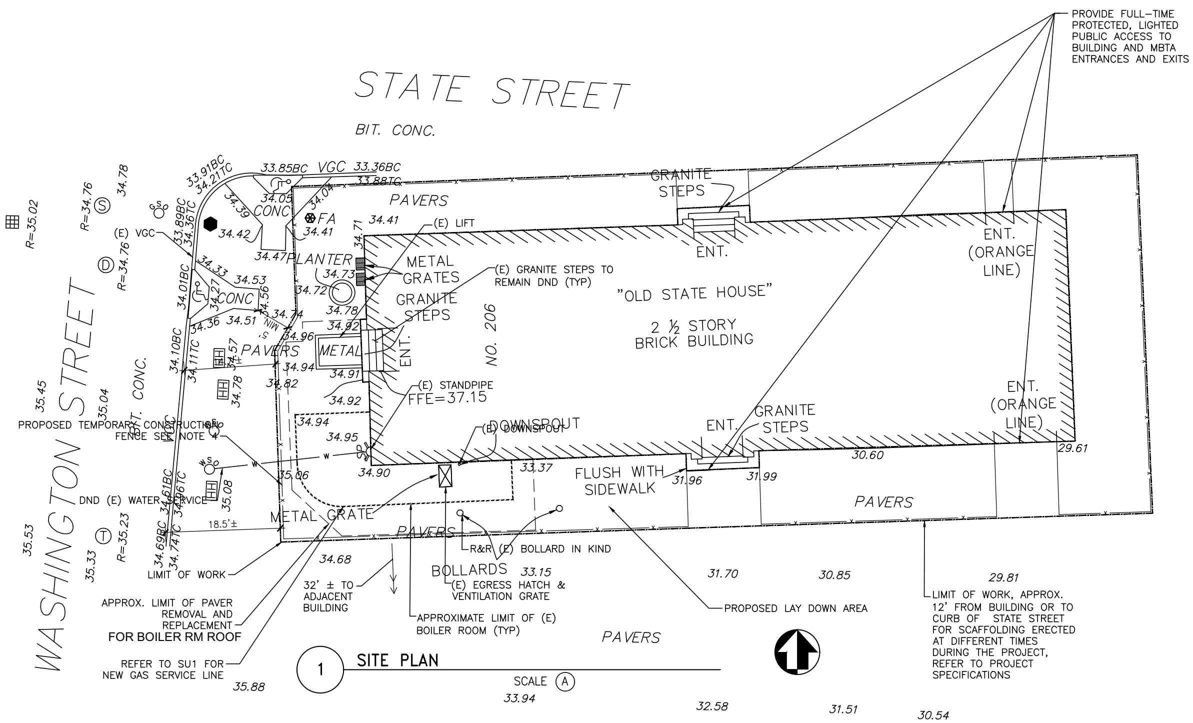
** Obscure Glass: Provide 1/8" Pattern 62 obscure glass (generic specification).

Window Number/Location	Approximate size	Notes **
1 East Basement	-	
2 East Basement	-	
3 East Basement	-	
5 South Basement	46"+/- x 16"+/-	Obscure Glass
7 South Basement	-	
8 South Basement	-	
9 South Basement	-	
10 South Basement	-	
2 North Basement	-	
3 North Basement	-	
4 North Basement	-	
5 North Basement	-	
7 North Basement	49"+/- x 21"+/-	Obscure Glass
8 North Basement	49"+/- x 21"+/-	
9 North Basement	49"+/- x 21"+/-	
10 North Basement	49"+/- x 21"+/-	
1 East 1st Floor	44"+/- x 80"+/-	
2 East 1st Floor	2 x 24"+/- x 16"+/-	
3 East 1st Floor	44"+/- x 80"+/-	
1 South 1st Floor	44"+/- x 81"+/-	
2 South 1st Floor	44"+/- x 81"+/-	
3 South 1st Floor	44"+/- x 81"+/-	
4 South 1st Floor	44"+/- x 81"+/-	
5 South 1st Floor	44"+/- x 81"+/-	
7 South 1st Floor	44"+/- x 80"+/-	
8 South 1st Floor	44"+/- x 80"+/-	
9 South 1st Floor	44"+/- x 80"+/-	
10 South 1st Floor	44"+/- x 80"+/-	
11 South 1st Floor	44"+/- x 80"+/-	
1 West 1st Floor	44"+/- x 81"+/-	
3 West 1st Floor	44"+/- x 81"+/-	
1 North 1st Floor	44"+/- x 80"+/-	
2 North 1st Floor	44"+/- x 80"+/-	
3 North 1st Floor	44"+/- x 80"+/-	
4 North 1st Floor	44"+/- x 80"+/-	
5 North 1st Floor	44"+/- x 80"+/-	
7 North 1st Floor	44"+/- x 81"+/-	
8 North 1st Floor	44"+/- x 81"+/-	
9 North 1st Floor	44"+/- x 81"+/-	
10 North 1st Floor	44"+/- x 81"+/-	
11 North 1st Floor	44"+/- x 81"+/-	
1 East 2nd Floor	45"+/- x 97"+/-	
3 East 2nd Floor	45"+/- x 97"+/-	
1 South 2nd Floor	45"+/- x 97"+/-	
2 South 2nd Floor	45"+/- x 97"+/-	
3 South 2nd Floor	45"+/- x 97"+/-	
4 South 2nd Floor	45"+/- x 97"+/-	
5 South 2nd Floor	45"+/- x 97"+/-	
6 South 2nd Floor	45"+/- x 97"+/-	
7 South 2nd Floor	45"+/- x 97"+/-	
8 South 2nd Floor	45"+/- x 97"+/-	
9 South 2nd Floor	45"+/- x 97"+/-	
10 South 2nd Floor	45"+/- x 97"+/-	
11 South 2nd Floor	45"+/- x 97"+/-	
1 West 2nd Floor	45"+/- x 97"+/-	
2 West 2nd Floor	45"+/- x 97"+/-	
3 West 2nd Floor	45"+/- x 97"+/-	
1 North 2nd Floor	45"+/- x 97"+/-	
2 North 2nd Floor	45"+/- x 97"+/-	
3 North 2nd Floor	45"+/- x 97"+/-	
4 North 2nd Floor	45"+/- x 97"+/-	
5 North 2nd Floor	45"+/- x 97"+/-	
6 North 2nd Floor	45"+/- x 97"+/-	
7 North 2nd Floor	45"+/- x 97"+/-	
8 North 2nd Floor	45"+/- x 97"+/-	
9 North 2nd Floor	45"+/- x 97"+/-	
10 North 2nd Floor	45"+/- x 97"+/-	
11 North 2nd Floor	45"+/- x 97"+/-	
1 East 3rd Floor	31"+/- Diameter	
2 East 3rd Floor	44"+/- x 92"+/-	
3 East 3rd Floor	31"+/- Diameter	

Window Number/Location	Approximate size	Notes
2 South 3rd Floor	38"+/- x 57"+/-	
4 South 3rd Floor	38"+/- x 57"+/-	
6 South 3rd Floor	38"+/- x 57"+/-	
8 South 3rd Floor	38"+/- x 57"+/-	
10 South 3rd Floor	38"+/- x 57"+/-	
1 West 3rd Floor	31"+/- Diameter	
2 West 3rd Floor	45"+/- x 97"+/-	
3 West 3rd Floor	31"+/- Diameter	
2 North 3rd Floor	38"+/- x 57"+/-	
4 North 3rd Floor	38"+/- x 57"+/-	
6 North 3rd Floor	38"+/- x 57"+/-	
8 North 3rd Floor	38"+/- x 57"+/-	
10 North 3rd Floor	38"+/- x 57"+/-	

NIC

A/E FIRMS	DESIGNED: DNS	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
STOREYGARD ASSOCIATES ARCHITECTS 76 Canal Street Boston, MA 02114 781-640-5761	CADD: TECH REVIEW: DNS DATE: 4/24/20	A7	STORM WINDOW SCHEDULE MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST · COUNTY: SUFFOLK · STATE: MASSACHUSETTS	457 144213 PMIS/PKG NO. 232487 SHEET 8 OF 44



NOTES:

1. THE EXISTING CONDITIONS ARE BASED ON A DIGITAL PLAN TITLED "PARTIAL TOPOGRAPHIC PLAN 206 WASHINGTON STREET BOSTON, MASS." BY FELDMAN, INC. RECEIVED DECEMBER 6, 2012.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL NOTIFY THE CO AND STRUCTURAL DESIGNER OF RECORD IN WRITING OF ANY DISCREPANCIES PRIOR TO UNDERTAKING ANY AFFECTED WORK. THE CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-800-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
3. DO NOT EXCEED 100 PSF OF ADDITIONAL LOAD ON THE EXISTING STRUCTURE.
4. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESSIBLE ROUTE AROUND REPAIR WORK, AND PROVIDING TEMPORARY BARRIERS AT THE LIMIT OF WORK. TEMPORARY BARRIERS TO PREVENT PEDESTRIAN ENTRY AT ALL TIMES AND INCLUDE FENCE WITH SCRIM AS A MINIMUM. THE CONTRACTOR SHALL AVOID CROSSING OR ENTERING ACTIVE PEDESTRIAN PATH AND SHALL MAINTAIN THE PEDESTRIAN PATHS CLEAR OF MATERIALS, DEBRIS, EQUIPMENT AND HAZARDS AT ALL TIMES.
5. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAGING INCLUDING THE STORAGE OF SALVAGED ITEMS AND SOIL MATERIAL FOR RE-USE. STORAGE SHALL NOT BE PERMITTED OUTSIDE LIMIT OF WORK. NO WORK ACTIVITY OR STORAGE OF MATERIALS SHALL TAKE PLACE OUTSIDE OF THE LIMIT OF WORK AS INDICATED WITHOUT OWNER APPROVAL.
6. CONTRACTOR SHALL INSTALL 8" ø SEDIMENT FILTER TUBE AT LOW EDGES OF LIMIT OF WORK PRIOR TO CONSTRUCTION. SUBMIT PRODUCT INFORMATION TO CO AND STRUCTURAL DESIGNER OF RECORD FOR APPROVAL PRIOR TO CONSTRUCTION.
7. PROTECT THE EXISTING ADJACENT MASONRY BUILDING FINISHES FROM PHYSICAL DAMAGE, MORTAR DROPPINGS, OIL, GREASE, PAINT OR OTHER MATERIAL WHICH WILL STAIN OR MAR THE FINISH SURFACE DURING CONSTRUCTION. CONTRACTOR TO PROVIDE A TEMPORARY PROTECTION PLAN THAT MUST INCLUDE AT A MINIMUM, UP TO 8' TALL RIGID FOAM INSULATION AND PLYWOOD PROTECTION OR APPROVED EQUAL OVER ALL ADJACENT WALLS. AFTER WORK IS PROPERLY COMPLETED, CONTRACTOR IS RESPONSIBLE FOR REPAIRING, REPLACING, AND CLEANING OF DAMAGED WORK DURING CONSTRUCTION SO THAT ALL WORK IS RESTORED TO ITS PRE-CONSTRUCTION CONDITION AT THE TIME OF ACCEPTANCE OF THE WORK.
7. SEE SPECIFICATIONS, INCLUDING SECTIONS 012300, 015000, AND 024119, FOR OTHER REQUIREMENTS FOR PROTECTION OF HISTORIC FABRIC AND THE PUBLIC.
8. SEE WINDOW RESTORATION AND MASONRY SPECIFICATIONS FOR SCOPE OF WORK.

ABBREVIATION	WORD OR PHRASE
ADJ	ADJACENT
D	DEPTH
DND	DO NOT DISTURB
(E)	EXISTING
EOR	ENGINEER OF RECORD
FG	FINISHED GRADE
FT OR '	FEET
LOW	LIMIT OF WORK
M.E.	MATCH EXISTING
(N)	NEW
(P)	PROPOSED
R & R	REMOVE AND REINSTALL
R & D	REMOVE AND DISPOSE
SIM	SIMILAR
SOG.	SLAB ON GRADE
TYP. OR (TYP.)	TYPICAL
VGC	VERTICAL GRANITE CURB
WP	WATERPROOFING

SCALE (A) 10 0 10 20 SCALE OF FEET

DESIGNED: ---	SUB SHEET NO.	SITE PLAN	DRAWING NO. 457 / 144213	
CADD: ---	C01	MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PKG. NO. 232 / 487	SHEET 9 OF 44
TECH REVIEW:		BOSTON NATIONAL HISTORICAL PARK		
DATE: 4/24/20				

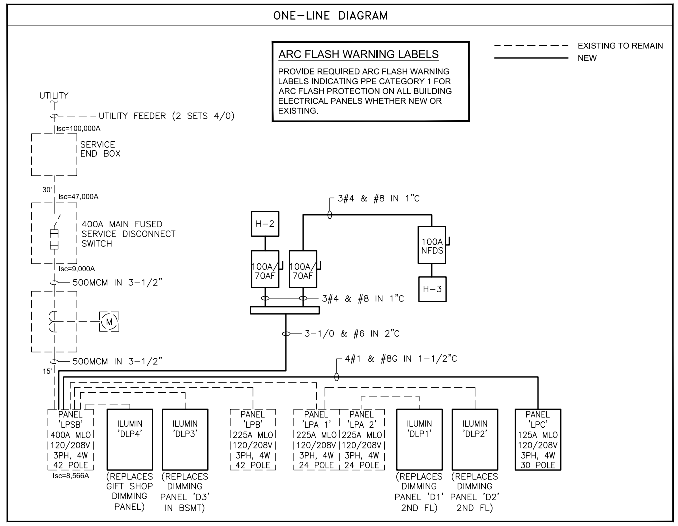
BASIC DATA:

10/9/2017 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\C01 LAYOUT PLAN.DWG

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES, REGULATIONS, BUILDING STANDARDS AND THE BEST PRACTICES OF THE TRADE FOR FIRST CLASS ELECTRICAL INSTALLATION.
2. THE DRAWINGS INDICATE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. THE EXACT LOCATION AND ELEVATION OF ALL ELECTRICAL EQUIPMENT SHALL BE COORDINATED IN FIELD WITH RESPECTIVE CONTRACTOR/OWNER.
3. ALL WORK WHERE SHOWN WITH DARK/SOLID LINES ON THE DRAWINGS IS NEW AND UL LISTED UNLESS OTHERWISE NOTED. WHERE SHOWN DOTTED LINES WITH LETTER (E) IS EXISTING TO REMAIN, WITH LETTER (R) IS EXISTING TO BE REMOVED, WITH LETTER (ER) IS EXISTING RELOCATED, WITH LETTER (RN) IS EXISTING TO BE REPLACED WITH NEW AND WITH LETTER (RR) IS EXISTING TO BE REMOVED AND RELOCATED.
4. CIRCUIT NUMBERS TO EXISTING PANELS ARE SHOWN FOR INTENT ONLY. ACTUAL CIRCUIT NUMBERS TO BE USED SHALL BE AS PER FIELD CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL BALANCE LOAD OF CIRCUITS EVENLY ON ALL PHASES.
5. FEEDERS AND BRANCH CIRCUITRY SHALL BE RUN IN CONDUIT MINIMUM 1/2" CONDUIT UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO MOTORS MAY BE DONE WITH FLEXIBLE METALLIC CONDUIT (NO LONGER THAN 18"). IN UNFINISHED AREA CONDUIT SHALL BE RUN EXPOSED AND IN FINISHED AREAS CONDUIT SHALL BE RUN CONCEALED.
6. PROVIDE PANEL NAME PLATE MADE OF BLACK LAMINATED PLASTIC WITH WHITE ENGRAVED LETTERING AND TYPE WRITTEN DIRECTORY FOR ALL NEW PANELS BEING USED FOR THIS PROJECT.
7. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN INSULATED. ALL CONDUCTORS SHALL HAVE 600 VOLT RATED INSULATION UNLESS OTHERWISE NOTED.
8. PROVIDE LOCK-ON CIRCUIT BREAKERS FOR CIRCUITS SERVING EXIT SIGN FIXTURES AND EMERGENCY BATTERY PACK FIXTURES.
9. REFER TO ARCHITECT'S REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES AND OTHER CEILING INSTALLED ITEMS.
10. THE USE OF FLEXIBLE CONDUIT FROM LIGHTING FIXTURES TO JUNCTION BOX IS PERMITTED ONLY WHEN A SEPARATE GROUND WIRE IS INSTALLED WITH THE CONDUCTORS INSIDE FLEXIBLE CONDUIT. THE GROUND WIRE MUST BOND THE FIXTURE HOUSING TO THE JUNCTION BOX. MAXIMUM LENGTH 6'-0".
11. EXACT LOCATION AND MOUNTING HEIGHTS OF ALL WIRING DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO THE INSTALLATION.
12. CONDUIT RUNS SHALL BE PARALLEL WITH OR AT RIGHT ANGLES TO WALLS AND CEILINGS. CONDUIT SHALL BE SUPPORTED BY APPROVED MEANS. SUPPORTS FOR HORIZONTAL RUNS OF CONDUIT SHALL NOT EXCEED SEVEN FEET ON CENTERS.
13. PROVIDE PULL BOXES, JUNCTION BOXES, CONDUIT ELBOWS AND OFFSETS TO SUIT FIELD CONDITIONS AND THE NATIONAL ELECTRICAL CODE AND MASSACHUSETTS ELECTRICAL CODE.
14. CONTRACTOR SHALL COORDINATE WITH THE FIRE DEPARTMENT AND F.A. VENDOR BEFORE PROCEEDING WITH WORK INVOLVING FIRE ALARM SYSTEM AND SHALL BE ACCEPTABLE TO THE NPS AUTHORITY HAVING JURISDICTION.
15. ALL EMPTY CONDUIT SHALL BE PROVIDED WITH A DRAGWIRE.
16. THE MINIMUM WIRE SIZE FOR 120 VOLT BRANCH CIRCUITS SHALL BE NO. 12 AWG, EXCEPT OVER 100' IN LENGTH SHALL BE NO. 10 AWG.
17. PROVIDE ALL REQUIRED AND NECESSARY ACCESSORIES (EX. CONNECTORS, ADAPTERS, BUSHINGS, CLAMPS, ETC.) TO FACILITATE COMPLETE INSTALLATION.
18. THE ELECTRICAL CONTRACTOR SHALL CONFIRM THE CONFIGURATION TYPE FOR ALL SPECIAL RECEPTACLES FOR COPIERS, DATA PROCESSING EQUIPMENT. ETC. WITH OWNER AND ENGINEER PRIOR TO ORDERING.
19. COORDINATE LOCATION OF ALL MECHANICAL EQUIPMENT WITH HVAC CONTRACTOR IN FIELD. FUSES FOR ALL MOTOR LOADS SHALL BE DUAL ELEMENT TIME DELAY TYPE.
20. ALL JUNCTION OR OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO COVER. PROVIDE ARCHITECT APPROVED ACCESS DOORS OR PLATES AS REQUIRED IN AREAS WHERE UNOBSTRUCTED ACCESS TO BOX OR OUTLET IS NOT POSSIBLE.
21. PRIOR TO ORDERING LIGHTING FIXTURES, COORDINATE WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. IF DISCREPANCIES EXIST BETWEEN ARCHITECTURAL AND ENGINEERING INFORMATION OBTAIN CLARIFICATION PRIOR TO PROCEEDING.
22. MULTIPLE SWITCHES SHOWN IN SAME LOCATION SHALL BE GANGED TOGETHER WITH A COMMON FACEPLATE.
23. ALL LIGHTING FIXTURES UTILIZING ELECTRONIC BALLASTS SHALL BE PROVIDED WITH A DEDICATED NEUTRAL OR AN OVERSIZED NEUTRAL WHEN SHARED.
24. ALL LIGHTING FIXTURES CONTROLLED BY DIMMER SWITCHES SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR.
25. OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRE STOPPED USING APPROVED METHODS. ALL SLEEVES MUST HAVE BUSHINGS. SEALANT SHALL BE 3 HOUR FIRE BARRIER #CP-25 (NO LESS THAN 3' THICK BACKED UP WITH MINERAL WOOL).
26. ALL PANELBOARD COVERS SHALL BE INSTALLED IN PLACE AT THE COMPLETION OF EACH DAYS WORK.
27. PREPARE 'AS-BUILT' TRACINGS SHOWING ALL CHANGES IN WIRE SIZE, CIRCUIT NUMBERING, CIRCUIT ROUTING, EQUIPMENT LOCATIONS AND ALL ELECTRICAL WORK AS ACTUALLY INSTALLED.
28. LIGHT FIXTURES SHALL BE CONSTRUCTED TO SUIT PARTICULAR TYPE OF CEILING AND WALL CONSTRUCTION AND SHALL BE PROVIDED WITH APPROPRIATE TRIMS, MOUNTING FRAMES AND ADAPTERS AS REQUIRED.

ONE-LINE DIAGRAM



LEGEND

- DUPLEX RECEPTACLE
  WP - WEATHERPROOF
  gfi - GROUND FAULT PROTECTION
- DUPLEX RECEPTACLE W/GROUND FAULT PROTECTION
- VANITY LIGHT FIXTURE
- CEILING LIGHT FIXTURE
- STRIP LIGHT FIXTURE W/WIRE GUARD
- MS — WALL MOTION SENSOR
- OS — CEILING OCCUPANCY SENSOR
- $ — SINGLE POLE SNAP SWITCH
- 100A 70AF — DISCONNECT SWITCH WITH RATING W/FUSE RATING FOR FUSED SWITCHES 3R - NEMA 3R ENCLOSURE
- PP/# — HOMERUN WITH CIRCUIT #
- VFD — COMBINATION VARIABLE FREQUENCY DRIVE
- ELECTRICAL PANEL
- ELECTRIC METER

ELECTRICAL LOAD SUMMARY

120/240V SYSTEM

	DESCRIPTION	CONNECTED kVA	DEMAND FACTOR	DEMAND kVA
NEW LOADS	RECEPTACLE	0.7	1.0 < 10KW 0.5 REMAINING KW	0.7
	HVAC (WORST CASE)	79.7	1.0	79.7
REMOVED LOADS	AHU-1	9.108	1.0	-9.108
	AHU-2	9.108	1.0	-9.108
	AHU-3	9.108	1.0	-9.108
	AHU-4	6.300	1.0	-6.300
	P1.1A	2.808	1.0	-2.808
			NET LOAD CHANGES	44.0

PEAK DEMAND: 34.4KW @208V/3 PHASE. 0.9PF = 112.4A
NET ADDITIONAL LOAD: 44.0kVA @ 208V, 3ø = 122.2A
TOTAL NEW LOAD FOR BUILDING: 234.6A
SERVICE SIZE: 400A

EXISTING SERVICE IS ADEQUATE

CODE REFERENCES

ASHRAE 90.1 2016 (AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS)
IEEE STANDARDS
NESC 2017 (NATIONAL ELECTRIC SAFETY CODE)
NFPA 70 NEC (NATIONAL ELECTRIC CODE) 2017
UL (FORMELY UNDERWRITER'S LABORATORIES)

A/E FIRMS
ENGINEEERS:

LANDMARK FACILITIES GROUP, INC
ENGINEERS
252 EAST AVENUE
NORWALK,
CONNECTICUT 06855
203.866.4626

DESIGNED: DLG
CADD FILE
TECH. REVIEW: RS
DATE: 4/24/20

SUB SHEET NO. E1

TITLE OF SHEET
ELECTRICAL RISER, LEGEND & NOTES
MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE
NAME OF PARK
BOSTON NATIONAL HISTORICAL PARK
REGION NORTHEAST   COUNTY SUFFOLK   STATE MASSACHUSETTS

DRAWING NO. 457 / 144213
PKG. NO. 232487

KEYED NOTES:

1. REPLACE EXISTING 20A/3P CIRCUIT BREAKER SERVING EXISTING HWP PUMP TO BE REPLACED WITH NEW 25A/2P CIRCUIT BREAKER TO SERVE NEW HWP PUMP. PROVIDE FILLER PLATE FOR REMAINING UNUSED POLE SPACE.
2. RE-USE EXISTING BREAKER AND FEEDER TO SERVE NEW DIMMING PANEL.

EXISTING PANEL SCHEDULE "LPSB"

PANEL "LPSB" | BUS 400 AMP MAIN LUGS ONLY | VOLTAGE 120/208V, 3PH, 4 WIRE
LOAD – | POLES 42
MOUNTING SURFACE | SPEC | AIC SYMM

DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	KVA A PHASE	KVA B PHASE	KVA C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION
[2] **DIMMING PANEL 'DLP4'** * (FORMERLY LUTRON PANEL)				30A	1				2	20A				EXISTING LOAD
					3				4	20A				EXISTING LOAD
					5				6	20A				EX FAN 1
JOHNSON CONTROLS				20A	7				8	20A				EMER. BATTERY
EXISTING LOAD				20A	9				10	20A				RCPT BASEMENT
BASEMENT LIGHTS				20A	11				12	20A				U.H. 1
PUMP 1A				20A	13				14	20A				PUMP 1
					15				16					
					17				18					
AIR COMPRESSOR				20A	19	1373			20	25A	1/2"	10	10	**HWP-1A (LEAD)** * [1]
					21		1373		22					
					23			200	24	20A	1/2"	12	12	**FIRE ALARM CONTROL PANEL** 2*
[1] **HWP-1B (LAG)** *	1/2"	10	10	25A	25	1373			26	30A				WATER HEATER
					27		1373		28					
SPACE					29				30					
AHU 1 1 *	3/4"	10	8	45A	31	3060			32	70A				**DIMMING PANEL 'DLP3'** * (FORMERLY DCP 'D3') [2]
					33		3060		34					
					35			3060	36					
PANEL LPC *	1-1/2"	8	1	100A	37	6062 12456			38	150A	2"	6	1/0	**H-2 & H-3** *
					39		5112 12456		40					
					41			4682 12456	42					
SUB FEED – LPB				200A						200A				SUB FEED – LPA

*BOLD TEXT INDICATES NEW CIRCUIT

EXISTING PANEL SCHEDULE "LPB"

PANEL "LPB" | BUS 225 AMP MAIN LUGS ONLY | VOLTAGE 120/208V, 3PH, 4 WIRE
LOAD – | POLES 42
MOUNTING RECESSED | SPEC | AIC SYMM

DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	KVA A PHASE	KVA B PHASE	KVA C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION
FIRE ALARM 2				20A	1	50			2	20A	1/2"	12	12	**RCPT FOR ILUMEN TOUCHSCREEN-BSMT** *
					3				4	20A				PLUGMOLD WHITMORE N.
FLOOR RECEPT. KEAYNE				20A	5				6	20A				PLUGMOLD WHITMORE N.
FLOOR RECEPT. KEAYNE				20A	7				8	20A				CAMERA HEATER
				20A	9				10	20A				
				20A	11				12	20A				PLUGMOLD LIBRARY MBTA
RECEPT. KEAYNE				20A	13				14	20A				PLUGMOLD LIBRARY
PLUGMOLD B-14				20A	15				16	20A				RECEPT. B05
RECEPT. B03 HVAC				20A	17				18	20A				RECEPT. B01, B12, B13
RECEPT. REF LOUNGE				20A	19				20	20A				EXHAUST FAN #1
KITCHEN GFCI				15A	21				22					
GARBAGE DISPOSAL				20A	23				24	20A				
				20A	25				26					L
DIMMER SYSTEM WHITMORE				20A	27				28					HP LIFT
PLUGMOLD WHITMORE S.				20A	29				30	20A				PLUGMOLD SEC. OFFICE
PLUGMOLD WHITMORE W.				20A	31				32	20A				SECURITY RECEPT.
LIGHT LOUNGE				20A	33				34	20A				LIGHT BASEMENT
LIGHTS GENERAL				20A	35				36	20A				
DOOR BELL				20A	37				38					SPACE
HEATER MEN'S ROOM				20A	39				40	20A				RECEPTS WHITMORE DESK
HEATER LADIES ROOM				20A	41				42	20A				RECEPTS WHITMORE DESK

*BOLD TEXT INDICATES NEW CIRCUIT

PANEL SCHEDULE "LPC"

PANEL "LPC" | BUS 125 AMP MAIN LUGS ONLY | VOLTAGE 120/208V, 3PH, 4 WIRE
LOAD – | POLES 30
MOUNTING SURFACE | SPEC | AIC SYMM 18,000

DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	KVA A PHASE	KVA B PHASE	KVA C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION
HWB-1	12	12	1/2"	20A	1	1380			2					
HWB-2	12	12	1/2"	20A	3		1380		4					
					5				6					
					7				8					
					9				10					
					11				12					
H-1	8	10	3/4"	40A	13	3732			14					
					15		3732		16					
					17			3732	18					
					19				20					
					21				22					
					23				24					
					25				26					
					27				28					
					29				30					
	SUBTOTAL					6062	5112	4682						
	TOTAL DESIGN LOAD					16440 va	45.7 amps							
	TOTAL CONNECTED LOAD					16440 va	45.7 amps							
	125% TOTAL LOAD					20.6 kva	57.1 amps							

$$\left(\frac{XXX\ KVA}{208V * \sqrt{3}}\right) = \text{AMPERES}$$

PANEL SCHEDULE NOTES:

1. PROVIDE HACR TYPE CIRCUIT BREAKERS
2. PROVIDE LOCKING CLIPS

EXISTING PANEL SCHEDULE "LPA, 1 OF 2"

PANEL "LPA-1" | BUS 225 AMP MAIN LUGS ONLY | VOLTAGE 120/208V, 3PH, 4 WIRE
LOAD – | POLES 24
MOUNTING RECESSED | SPEC | AIC SYMM

DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	KVA A PHASE	KVA B PHASE	KVA C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION
RCPT-ILUMEN TOUCHSCREEN-2ND FLR *	12	12	1/2"	20A	1	180			2	20A	1/2"	12	12	RECEPTACLE ANTEROOM N.W.
AHU-3 1 *				30A	3		2100		4	20A	1/2"	12	12	RECEPTACLE
								2100	6	20A	1/2"	12	12	RECEPTACLE-SECOND FL. OUTLET
						2100			8	20A	1/2"	12	12	RECEPTACLE-SECOND FL. OUTLET
AHU-2 1 *				30A	5		2100		10	20A	1/2"	12	12	LTS BATHROOM DINING RM
								2100	12	20A	1/2"	12	12	RECEPT.-COUNCIL CHAMBER
						2100			14	20A	1/2"	12	12	2P WALL HEATER NORTH
RECEPTACLES ANTEROOM S.E.				20A	7									
RECEPTACLES ANTEROOM N.E.				20A	9			1272	16	15A	1/2"	12	12	**AHU-4** 1 *
SPARE				20A	11	1272								
2P WATER HEATER SOUTH				30A	13		1272							
									18	20A	1/2"	12	12	GLYCOL TANK
SPARE				20A	15				20	20A	1/2"	12	12	HP-9
HEATER UPPER ATTIC				20A	17				22	20A				
RECEPTACLE UPPER ATTIC TOWER				20A	19				24	20A	1/2"	12	12	ELEV. CAR LTS.

*BOLD TEXT INDICATES NEW CIRCUIT

REFER TO PANEL SCHEDULE NOTES AT END OF PANEL SCHEDULES (TYPICAL)

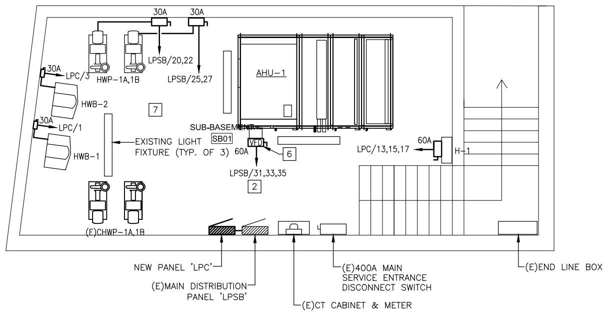
EXISTING PANEL SCHEDULE "LPA, 2 OF 2"

PANEL "LPA-2" | BUS 225 AMP MAIN LUGS ONLY | VOLTAGE 120/208V, 3PH, 4 WIRE
LOAD – | POLES 30
MOUNTING RECESSED | SPEC | AIC SYMM

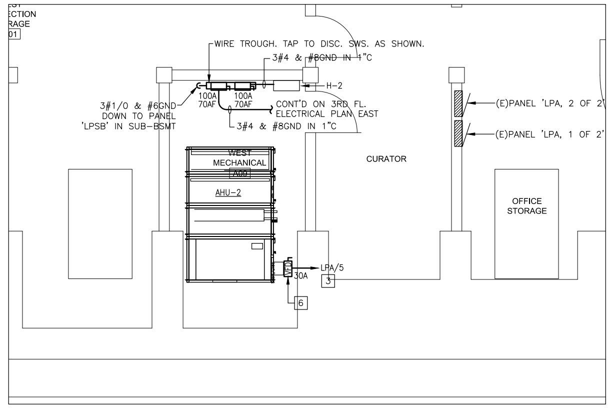
DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	KVA A PHASE	KVA B PHASE	KVA C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION
EXISTING				20A	21				26	20A				EXISTING
EXISTING				20A	23				28	50A				**DIMMING PANEL 'DLP2'** * (FORMERLY DCP 'D2') [2]
EXISTING				20A	25									
[2] **DIMMING PANEL 'DLP1'** * (FORMERLY DCP 'D1')				70A	27									
									30	20A				EXISTING
									32	20A				EXISTING
EXISTING				20A	29				34	20A				EXISTING
EXISTING				20A	31				36	20A				EXISTING
EXISTING				20A	33				38	20A				EXISTING
EXISTING				20A	35				40	100A				DEICING & MELTING EQUIPMENT
EXISTING				20A	37									
DEICING & MELTING EQUIPMENT				100A	39				42	20A				EXISTING
									44	20A				EXISTING
RP-1 & RP-2 *	8	10	3/4"	40A	41		1373		46	20A				EXISTING
								1373	48					SPACE

*BOLD TEXT INDICATES NEW CIRCUIT

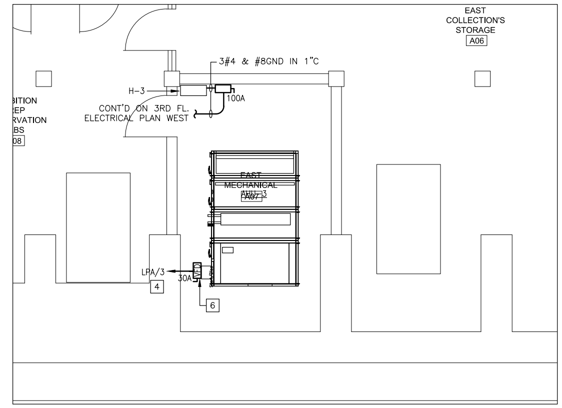
A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	E2	ELECTRICAL PANEL SCHEDULES MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST COUNTY: SUFFOLK STATE: MASSACHUSETTS	457 / 144213 PKG. NO. 232487 SHEET 11 OF 44



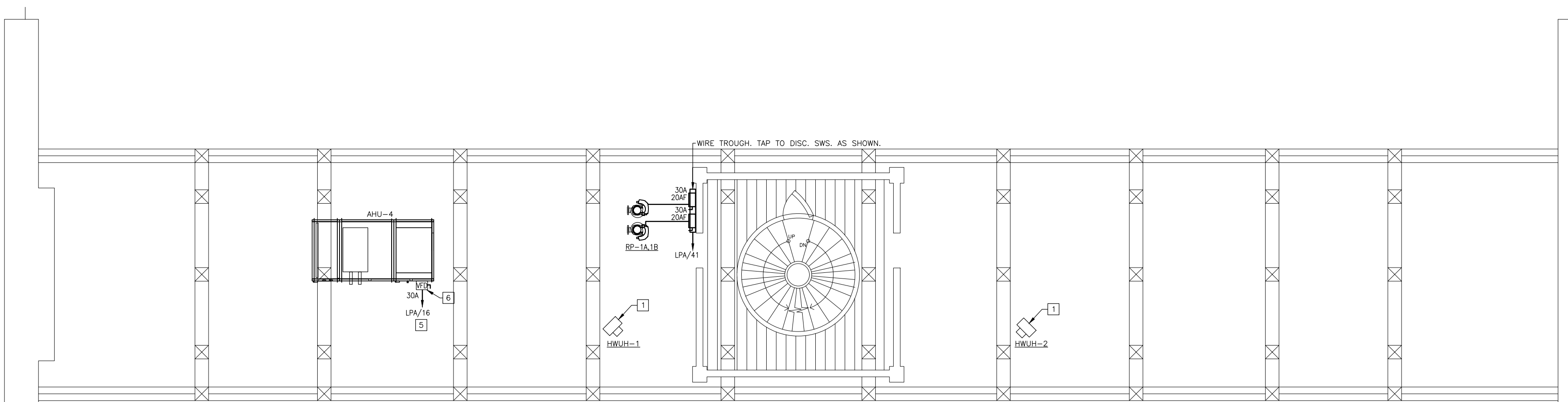
1 ELECTRICAL PLAN - SUB-BASEMENT



2 ELECTRICAL PLAN - 3RD FLOOR WEST



3 ELECTRICAL PLAN - 3RD FLOOR EAST



4 ELECTRICAL PLAN - ATTIC

NOTES:

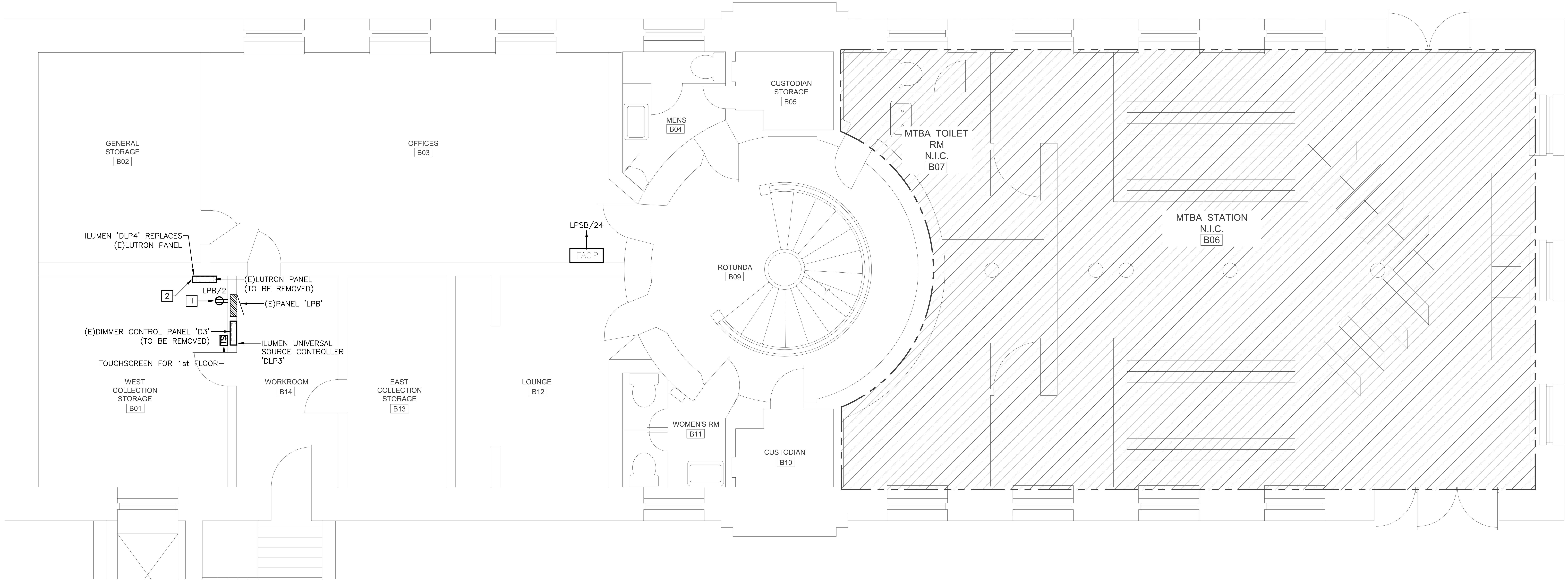
1. RE-USE EXISTING BRANCH CIRCUIT(S) SERVING UNIT HEATER TO BE REMOVED TO SERVE HWUH-1 & 2. PROVIDE NEW DISCONNECT SWITCH.
2. RE-USE EXISTING BRANCH CIRCUIT SERVING AHU-1 TO BE REMOVED TO SERVE NEW AHU-1. REPLACE EXISTING 50A/3P CIRCUIT BREAKER WITH NEW 45A/3P CIRCUIT BREAKER AS SHOWN ON PANEL SCHEDULE. PROVIDE NEW DISCONNECT SWITCH.
3. RE-USE EXISTING BRANCH CIRCUIT SERVING AHU-2 TO BE REMOVED TO SERVE NEW AHU-2. REPLACE EXISTING 50A/3P CIRCUIT BREAKER WITH NEW 30A/3P CIRCUIT BREAKER AS SHOWN ON PANEL SCHEDULES FOR 'LPA'. PROVIDE NEW DISCONNECT SWITCH.
4. RE-USE EXISTING BRANCH CIRCUIT SERVING AHU-3 TO BE REMOVED TO SERVE NEW AHU-3. REPLACE EXISTING 50A/3P CIRCUIT BREAKER WITH NEW 30A/3P CIRCUIT BREAKER AS SHOWN ON PANEL SCHEDULES FOR 'LPA'. PROVIDE NEW DISCONNECT SWITCH.
5. RE-USE EXISTING BRANCH CIRCUIT SERVING AHU-4 TO BE REMOVED TO SERVE NEW AHU-4. REPLACE EXISTING 30A/3P CIRCUIT BREAKER WITH NEW 15A/3P CIRCUIT BREAKER AS SHOWN ON PANEL SCHEDULES FOR 'LPA'. PROVIDE NEW DISCONNECT SWITCH.
6. VFD PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
7. DEMO EXISTING (3) FLUORESCENT LIGHT FIXTURES. UPON COMPLETION OF REPLACEMENT SLAB, INSTALL (3) NEW 4' LED LINEAR STRIP FIXTURES (LITHONIA CLX L48 5000LM SEF WDL 120 GZ10 40K 80CRI WH OR APPROVED EQUAL) AT SAME LOCATIONS REUSING EXISTING LIGHTING BRANCH CIRCUIT AND SWITCH. NEW FIXTURES WILL BE WIRED USING 2/12 & #12G IN 1/2" EMT CONDUIT SURFACE MOUNTED.

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DCG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	E3	ELECTRICAL PLANS MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST COUNTY: SUFFOLK STATE: MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 12 OF 44

NOTES:

1. RECEPTACLE FOR ILUMEN TOUCHSCREEN. CIRCUIT TO SPARE 20A/1P CIRCUIT BREAKER IN PANEL LPB OR TIE INTO EXISTING RECEPTACLE CIRCUIT (VERIFY CAPACITY) IF SPARE IS NOT AVAILABLE.
2. REUSE EXISTING CONDUIT BETWEEN BASEMENT AND 2ND FLOOR FOR LIGHTING CONTROL COMMUNICATIONS. VERIFY IN FIELD.

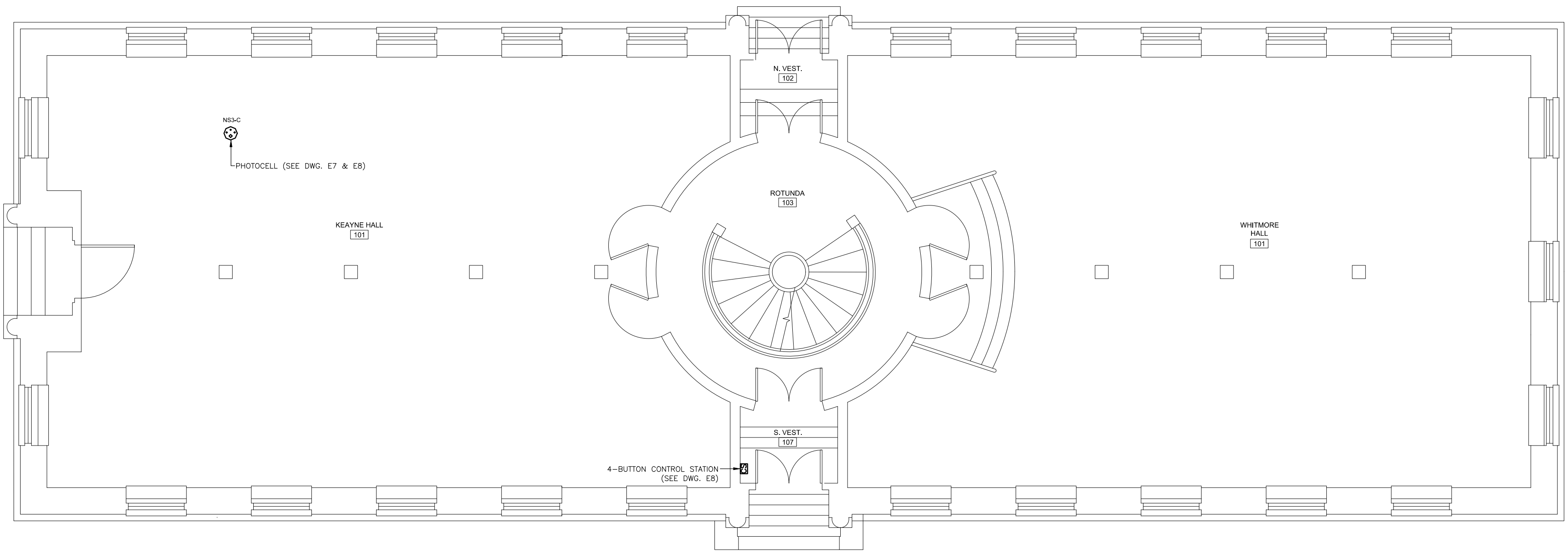


1 ELECTRICAL PLAN - BASEMENT

4' 0' 4' 8'

OPTION 2

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEERS: LANDMARK FACILITIES GROUP, INC. ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	BCG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	E4	ELECTRICAL PLAN – BASEMENT MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST COUNTY SUFFOLK STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 13 OF 44



1 ELECTRICAL PLAN - FIRST FLOOR

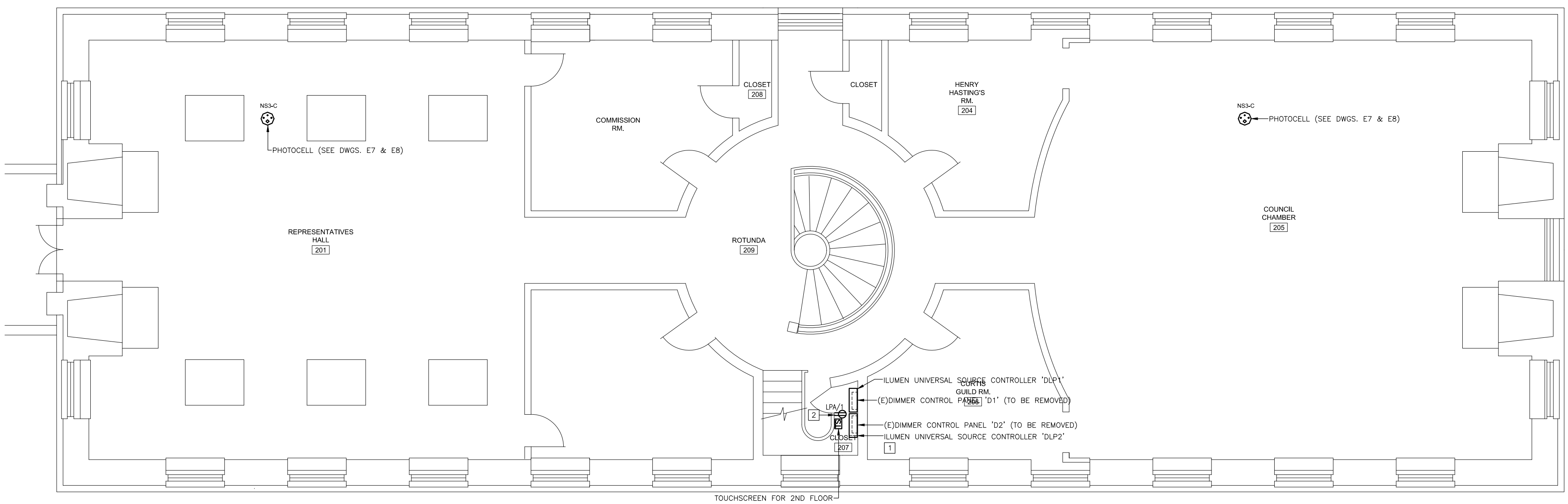
OPTION 2

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DCG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	E5	ELECTRICAL PLAN - FIRST FLOOR MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 14 OF 44

NOTES:

1. REUSE EXISTING CONDUIT BETWEEN BASEMENT AND 2ND FLOOR FOR LIGHTING CONTROL COMMUNICATIONS. VERIFY IN FIELD.
2. RECEPTACLE FOR ILUMEN TOUCHSCREEN.

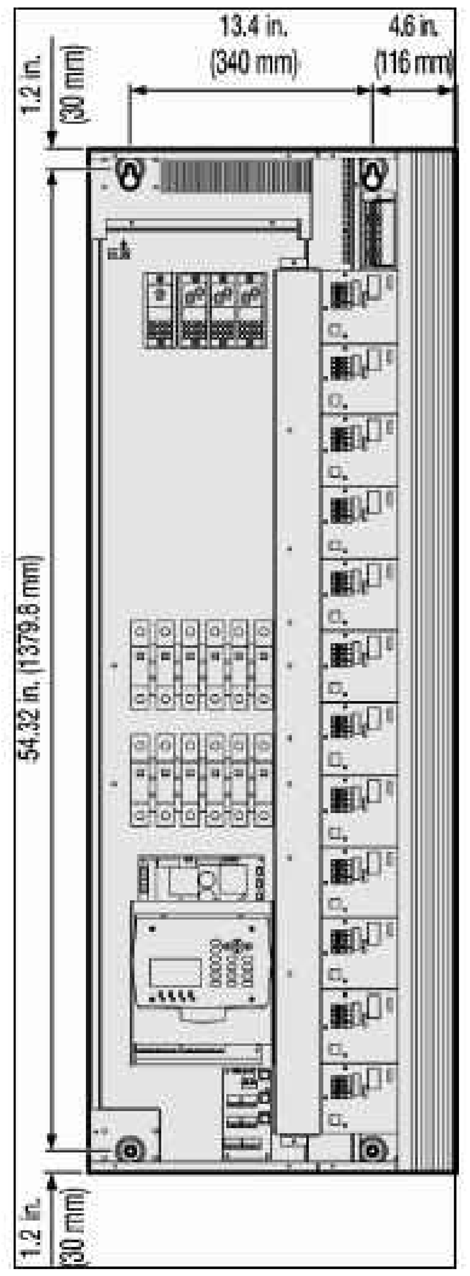


1 ELECTRICAL PLAN - SECOND FLOOR

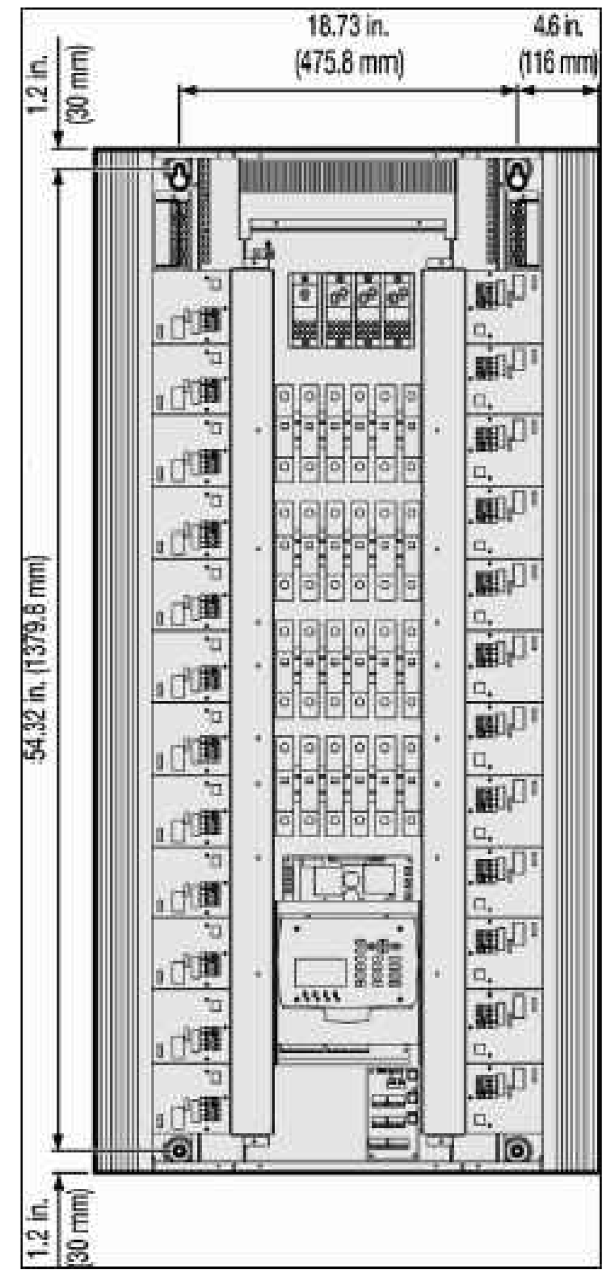
OPTION 2

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DCG; CADD FILE; TECH. REVIEW: RS; DATE: 4/24/20	E6	ELECTRICAL PLAN – SECOND FLOOR MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST; COUNTY: SUFFOLK; STATE: MASSACHUSETTS	457 / 144213; PKG. NO. 232487; SHEET 15 OF 44



12-circuit Universal Source Controller
SC120-12-UN-3P-ML-20



24-circuit Universal Source Controller
SC120-24-UN-3P-ML-20

Bill of Materials

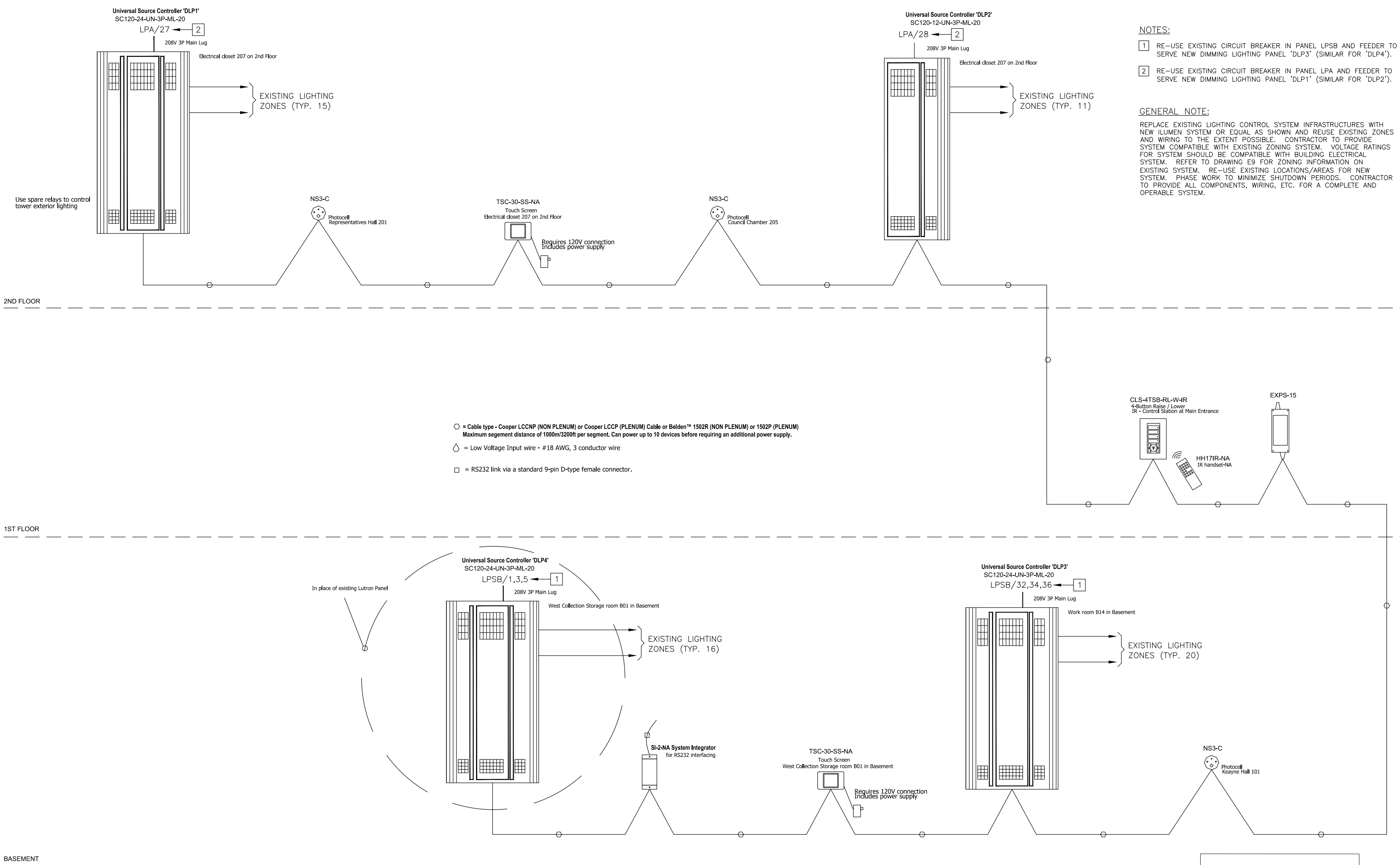
Qty.	Brand	Catalog #
1	iLumin	SI-20NA System Integrator-NA
3	Cooper Controls	LCCP Communication Cable 500' spool-Plenum Rated Used for Digital Switch Networks Only
3	iLumin	SC120-24-UN-3P-ML-20 24 Channel Source Controller 120V 20amp 3phase
3	iLumin	NSC-3 Combination Occupancy and daylight sensor
2	iLumin	TSC-30-SS-NA 3.5" Color Touchscreen, NA, Stainless Steel
1	iLumin	HH17IR-NA IR handset-NA
1	iLumin	SC120-12-UN-3P-ML-20 12 Channel Source Controller 120V 20amp 3phase
1	iLumin	CLS-4TSB-RL-W-IR 4-Button Raise/Lower IR - Control Station at Main Entrance
1	iLumin	EXPS-15 External Power Supply

3 days — Certified Factory Startup
Scheduled Room Controller, Green Gate or ILumin Commissioning trip and training by Eaton Lighting System Factory Representative

Standard Warranty
Standard product warranty based on date of product shipment. See product documentation for standard warranty information.

OPTION 2

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	E7	LIGHTING CONTROL SYSTEM DETAILS MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 16 OF 44



NOTES:

1. RE-USE EXISTING CIRCUIT BREAKER IN PANEL LPSB AND FEEDER TO SERVE NEW DIMMING LIGHTING PANEL 'DLP3' (SIMILAR FOR 'DLP4').
2. RE-USE EXISTING CIRCUIT BREAKER IN PANEL LPA AND FEEDER TO SERVE NEW DIMMING LIGHTING PANEL 'DLP1' (SIMILAR FOR 'DLP2').

GENERAL NOTE:

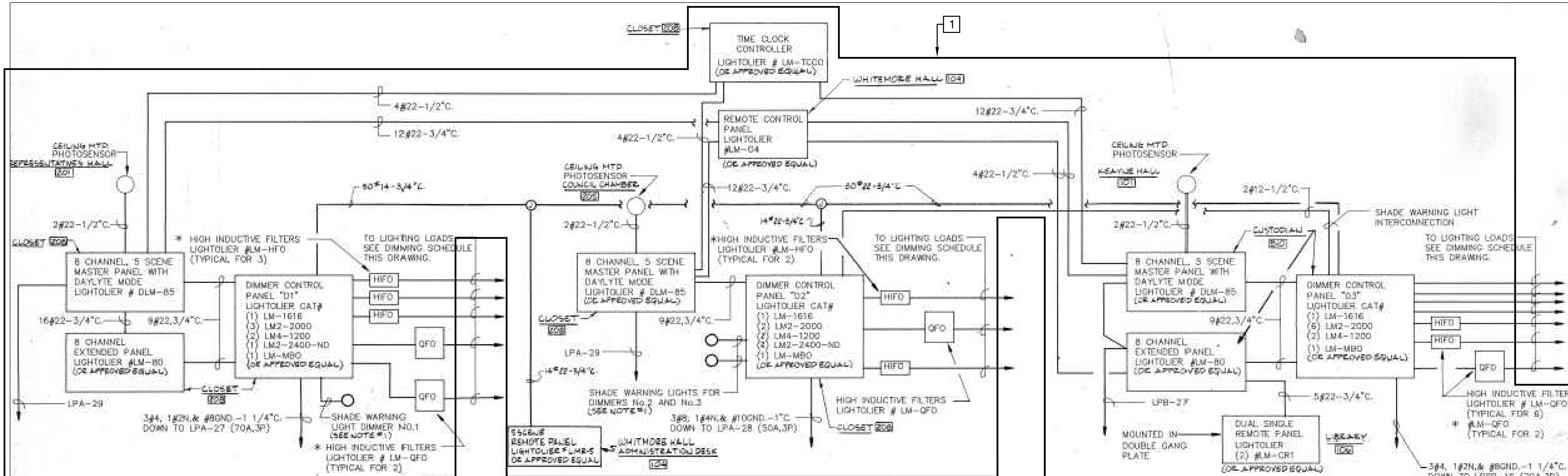
REPLACE EXISTING LIGHTING CONTROL SYSTEM INFRASTRUCTURES WITH NEW ILUMEN SYSTEM OR EQUAL AS SHOWN AND REUSE EXISTING ZONES AND WIRING TO THE EXTENT POSSIBLE. CONTRACTOR TO PROVIDE SYSTEM COMPATIBLE WITH EXISTING ZONING SYSTEM. VOLTAGE RATINGS FOR SYSTEM SHOULD BE COMPATIBLE WITH BUILDING ELECTRICAL SYSTEM. REFER TO DRAWING E9 FOR ZONING INFORMATION ON EXISTING SYSTEM. RE-USE EXISTING LOCATIONS/AREAS FOR NEW SYSTEM. PHASE WORK TO MINIMIZE SHUTDOWN PERIODS. CONTRACTOR TO PROVIDE ALL COMPONENTS, WIRING, ETC. FOR A COMPLETE AND OPERABLE SYSTEM.

OPTION 2

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEERS: LANDMARK FACILITIES GROUP, INC. ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	E8	LIGHTING CONTROL SYSTEM SCHEMATIC MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 17 OF 44

NOTES:

1 EXISTING DIMMING EQUIPMENT IN ENCLOSED AREA TO BE REPLACED WITH NEW ILUMEN SYSTEM AND RETAIN EXISTING LIGHTING ZONES. REFER TO DRAWING E7 & E8 FOR INFORMATION ON NEW DIMMING SYSTEM. REPLICATE DIMMING PANEL SCHEDULES FOR NEW SYSTEM AND INCLUDE ANY UPDATES TO TO MEET CURRENT ZONING CONDITIONS.



DIMMING SYSTEM NO. 1
2ND FLOOR WEST
N.T.S.

NOTE 1:
1) SHADE WARNING LIGHTS LOCATED AT ADMINISTRATION DESK (1ST FLOOR). PROVIDE A STANDARD 3 GANG BOX AND BRASS COVERPLATE WITH 3 PLASTIC RED JEWEL PILOT LIGHTS, COORDINATE EXACT LOCATION OF BOX IN DESK UNIT WITH CONTRACTING OFFICER. REFER TO DETAIL 2-E21 FOR FURTHER INFORMATION

DIMMING SYSTEM NO. 2
2ND FLOOR EAST
N.T.S.

DIMMING SYSTEM NO. 3
1ST FLOOR
N.T.S.

DIMMING CABINET "D1" LOAD SCHEDULE

70A.-3P MAIN BREAKER OPTION — 120/208V., 3Ø ,4W., INPUT

ROOM/ AREA	CIRCUIT NO. NORM.	CIRCUIT NO. EMERG.	ZONE NO.	DESCRIPTION	LAMP TYPE	TOTAL # OF LAMPS	TOTAL CONNECTED LOAD (WATTS)	NOTES
REPS.HALL	D1-1	N/A	1	NORTH TRACK A	VARIES	VARIES	1800	
REPS.HALL	D1-2		1	NORTH TRACK B			1800	
REPS.HALL	D1-3		2	SOUTH TRACK A			1800	
REPS.HALL	D1-4		2	SOUTH TRACK B			1800	
REPS.HALL	D1-5		3	INNER TRACK A			1800	
REPS.HALL	D1-6		3	INNER TRACK B			1800	
COMMISSION	D1-7		4	ACCENT			450	
H.HASTINGS	D1-8		4	ACCENT			450	
PATRIOTS	D1-9		4	ACCENT			450	
CURTIS GUILD	D1-10		4	ACCENT			450	
ANTIROOMS	D1-11		5	GENERAL			800	
ROTUNDA	D1-12		5	MONOPOINTS			600	
ROTUNDA	D1-13		5	PENDANT			240	
CORRIDOR	D1-14		5	MULTIPOINTS			675	
	D1-15		6	SHADE LAMPS			25	

DIMMING CABINET "D2" LOAD SCHEDULE

50A.-3P MAIN BREAKER OPTION — 120/208V., 3Ø ,4W., INPUT

ROOM/ AREA	CIRCUIT NO. NORM.	CIRCUIT NO. EMERG.	ZONE NO.	DESCRIPTION	LAMP TYPE	TOTAL # OF LAMPS	TOTAL CONNECTED LOAD (WATTS)	NOTES
COUNCIL CHAMBER	D2-1	N/A	1	CENTER PENDANT	VARIES	VARIES	800	
	D2-2		1	WEST WALL ACCENT			450	
	D2-3		1	EAST WALL ACCENT			150	
	D2-4		1	NORTH PILLAR			225	
	D2-5		1	SOUTH PILLAR			225	
	D2-6		2	NORTH INDIRECT			1500	
	D2-7		3	SOUTH INDIRECT			1500	
	D2-8		4	SHADE WARNING D2			25	
	D2-9		5	SHADE WARNING D3			25	
SEC.OFFICE	D2-10		6	TRACK CKT. A			1000	
SEC. OFFICE	D2-11		6	TRACK CKT. B			1000	

DIMMING CABINET "D3" LOAD SCHEDULE

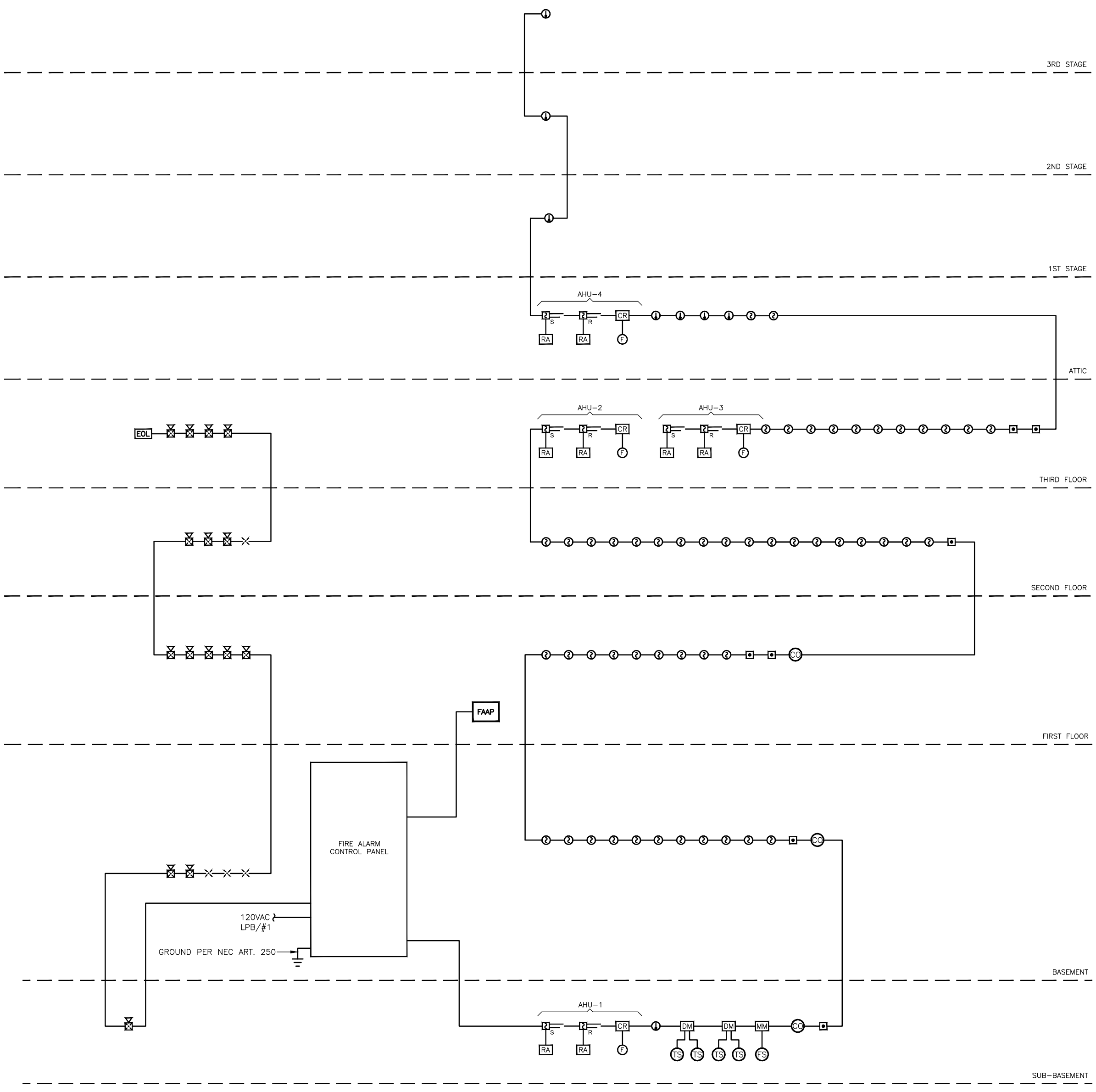
70A.-3P MAIN BREAKER OPTION — 120/208V., 3Ø ,4W., INPUT

ROOM/ AREA	CIRCUIT NO. NORM.	CIRCUIT NO. EMERG.	ZONE NO.	DESCRIPTION	LAMP TYPE	TOTAL # OF LAMPS	TOTAL CONNECTED LOAD (WATTS)	NOTES
KEAYNE	D3-1A	N/A	1	NORTH TRACK A	VARIES	VARIES	1900	
KEAYNE	D3-1B		1	NORTH TRACK B			1900	
KEAYNE	D3-2A		2	NORTH TRACK A			1900	
KEAYNE	D3-2B		2	NORTH TRACK B			1900	
KEAYNE	D3-3A		3	SOUTH TRACK A			1900	
KEAYNE	D3-3B		3	SOUTH TRACK B			1900	
KEAYNE	D3-4A		4	SOUTH TRACK A			1900	
KEAYNE	D3-4B		4	SOUTH TRACK B			1900	
ROTUNDA	D3-5		5	MONOPOINTS			600	
WHITMORE	D3-6		6	NORTH TRACK A			1800	
WHITMORE	D3-7		6	NORTH TRACK B			1800	
WHITMORE	D3-8		7	SOUTH TRACK A			1800	
WHITMORE	D3-9		7	SOUTH TRACK B			1800	
LIBRARY	D3-10		8	SOUTH TRACK A			900	
LIBRARY	D3-11		8	SOUTH TRACK B			600	
BSMT.ROTUNDA	D3-12		5	MONOPOINTS	50W	8	400	
1ST.FLR.ROTUNDA	D3-13		5	WALL BRACKETS	60W	4	240	
ENTRY/EXIT	D3-14		5	CHANDELIERS	32W	12	400	
LIBRARY	D3-15		8	NORTH TRACK A	VARIES	VARIES	1000	
LIBRARY	D3-16		8	NORTH TRACK B	VARIES	VARIES	1000	

OPTION 2

EXISTING DIMMING SYSTEM RISER AND SCHEDULES
(FOR REFERENCE ONLY)

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEERS: LANDMARK FACILITIES GROUP, INC. ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG	E9	EXISTING LIGHTING CONTROL SYSTEM	457 / 144213
	CADD FILE		MECHANICAL & STRUCTURAL UPGRADES & ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PKG. NO. 232487
	TECH. REVIEW: RS		NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK	SHEET 18 OF 44
	DATE: 4/24/20		REGION: NORTHEAST · COUNTY: SUFFOLK · STATE: MASSACHUSETTS	



FIRE ALARM RISER DIAGRAM

FIRE ALARM LEGEND

	MANUAL PULL STATION
	SMOKE DETECTOR
	DUCT MOUNTED SMOKE DETECTOR
	STROBE LIGHT MOUNTED @ 80" A.F.F.
	SPEAKER WITH STROBE MTD @ 80" A.F.F.
FAAP	FIRE ALARM ANNUNCIATOR PANEL (AS MANUFACTURED BY EDWARDS SIGNALING)
FACP	FIRE ALARM CONTROL PANEL (AS MANUFACTURED BY EDWARDS SIGNALING)
RA	REMOTE LED ANNUNCIATION LIGHT
MM	MONITOR MODULE
DM	DUAL MONITOR MODULE
EOL	END OF LINE DEVICE
CR	ADDRESSABLE CONTROL RELAY
135°	HEAT DETECTOR W/TEMP RATING
TS	TAMPER SWITCH
FS	FLOW SWITCH
CO	CARBON MONOXIDE
R	DEVICES DENOTED WITH 'R' ARE EXISTING TO BE REMOVED
MSB	MASTER SIGNALING BOX

DEMOLITION NOTE:

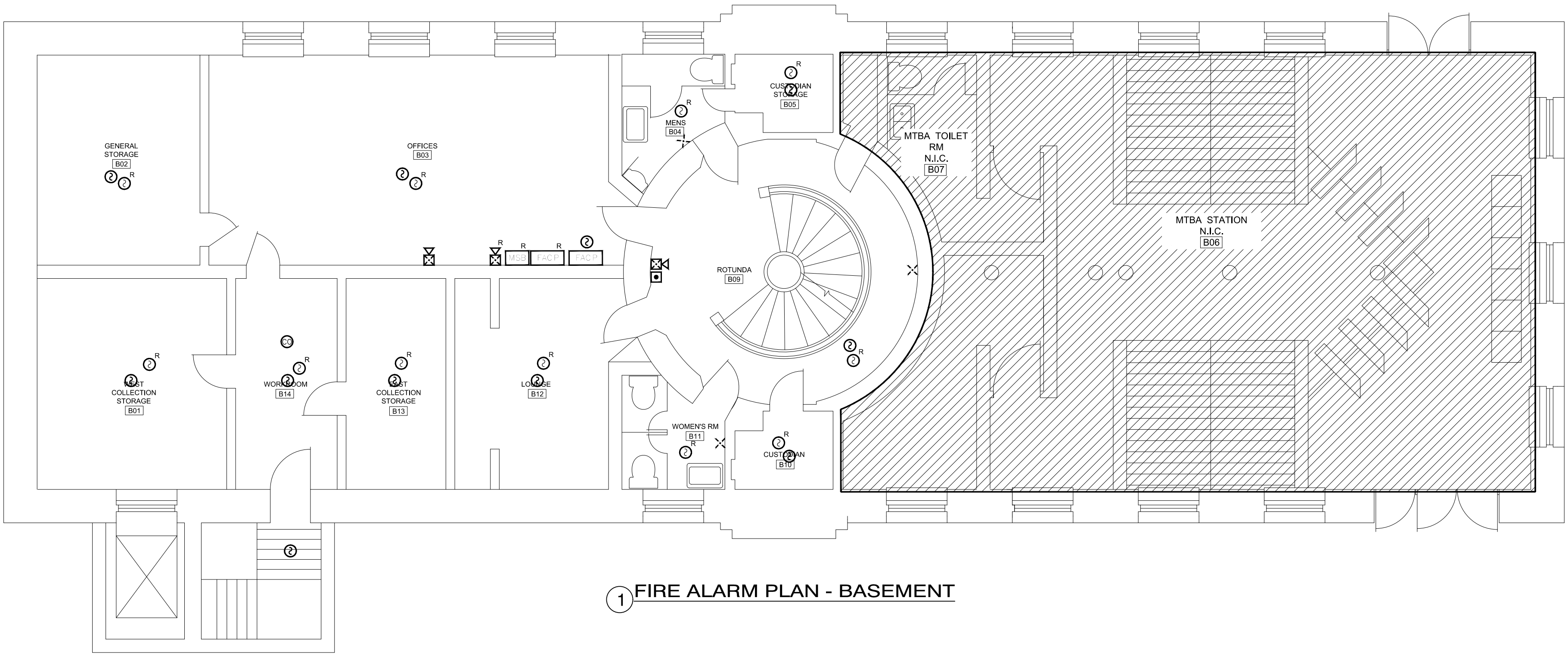
REMOVE ALL EXISTING FIRE ALARM SYSTEM DEVICES AND COMPONENTS WHETHER SHOWN OR NOT, ONLY AFTER NEW SYSTEM HAS BEEN INSTALLED AND COMPLETELY OPERATIONAL.

FIRE ALARM SYSTEM SEQUENCE OF OPERATION –

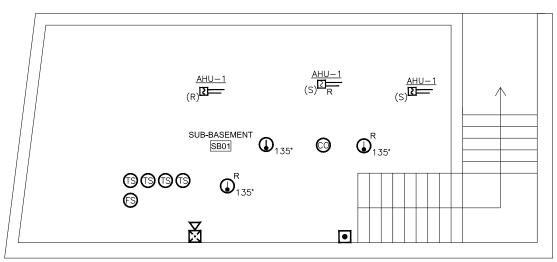
1. THE MANUAL PULL STATIONS SHALL ACTIVATE THE FOLLOWING EVENTS;
   - A. ACTIVATE THE ALL FLOORS SPEAKERS.
   - B. ACTIVATE THE ALL FLOORS STROBES.
   - C. ACTIVATE THE FAN SHUTDOWN.
   - D. ACTIVATE THE MANUAL PULL STATION ALARM ZONE AT THE CENTRAL OFFICE (STATION).
   - E. ACTIVATE THE AUDIO ALARM AT THE FIRE ALRAM CONTROL PANEL.
   - F. PROVIDE STATUS AT THE FIRE ALARM CONTROL PANEL.
2. THE SMOKE DETECTORS SHALL ACTIVATE THE FOLLOWING EVENTS;
   - A. ACTIVATE THE ALL FLOORS SPEAKERS.
   - B. ACTIVATE THE ALL FLOORS STROBES.
   - C. ACTIVATE THE FAN SHUTDOWN.
   - D. ACTIVATE THE DETECTOR ALARM ZONE AT THE CENTRAL OFFICE (STATION).
   - E. ACTIVATE THE AUDIO ALARM AT THE FIRE ALRAM CONTROL PANEL.
   - F. PROVIDE STATUS AT THE FIRE ALARM CONTROL PANEL.
3. THE HEAT DETECTORS SHALL ACTIVATE THE FOLLOWING EVENTS;
   - A. ACTIVATE THE ALL FLOORS SPEAKERS.
   - B. ACTIVATE THE ALL FLOORS STROBES.
   - C. ACTIVATE THE FAN SHUTDOWN.
   - D. ACTIVATE THE HEAT DETECTOR ALARM ZONE AT THE CENTRAL OFFICE (STATION).
   - E. ACTIVATE THE AUDIO ALARM AT THE FIRE ALRAM CONTROL PANEL.
   - F. PROVIDE STATUS AT THE FIRE ALARM CONTROL PANEL.
4. THE CARBON MONOXIDE DETECTOR SHALL ACTIVATE THE FOLLOWING EVENTS;
   - A. ACTIVATE THE LOCAL BUILT–IN SOUNDER BASE FOR THE CO DETECTOR.
   - B. ACTIVATE THE CARBON MONOXIDE DETECTOR ALARM ZONE AT THE CENTRAL OFFICE (STATION).
   - C. ACTIVATE SUPERVISORY AUDIO AT THE FIRE ALARM CONTROL PANEL.
   - D. PROVIDE STATUS AT THE FIRE ALARM CONTROL PANEL.
   - E. ACTIVATE THE BOILER SHUTDOWN.
5. THE DUCT SMOKE DETECTORS SHALL ACTIVATE THE FOLLOWING EVENTS;
   - A. ACTIVATE THE ALL FLOORS SPEAKERS.
   - B. ACTIVATE THE ALL FLOORS STROBES.
   - C. ACTIVATE THE FAN SHUTDOWN.
   - D. ACTIVATE THE SMOKE DETECTOR ALARM ZONE AT THE CENTRAL OFFICE (STATION).
   - E. ACTIVATE THE AUDIO ALARM AT THE FIRE ALARM CONTROL PANEL.
   - F. PROVIDE STATUS AT THE FIRE ALARM CONTROL PANEL.
6. VERIFY THE OPERATION OF A TROUBLE CONDITION TO ENSURE THAT THE CORRECT ACTIVATION OF EVENTS TAKES PLACE, WHICH ARE AS FOLLOWS;
   - A. DISPLAY AT THE FIRE ALARM CONTROL PANEL.
   - B. DISPLAY APPROPRIATE ZONE AT THE FIRE ALARM CONTROL PANEL.
   - C. ACTIVATE LOCAL TROUBLE SOUNDER.
   - D. ACTIVATE OERATING RELAYS TO TRANSMIT TROUBLE SIGNAL TO THE CENTRAL STATION.
7. THE FLOW SWITCH SHALL ACTIVATE THE FOLLOWING EVENTS;
   - A. ACTIVATE THE ALL FLOORS SPEAKERS.
   - B. ACTIVATE THE ALL FLOORS STROBES.
   - C. ACTIVATE THE FAN SHUTDOWN.
   - D. ACTIVATE THE SMOKE DETECTOR ALARM ZONE AT THE CENTRAL OFFICE (STATION).
   - E. ACTIVATE THE AUDIO ALARM AT THE FIRE ALARM CONTROL PANEL.
   - F. PROVIDE STATUS AT THE FIRE ALARM CONTROL PANEL.

OPTION 1

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	ECL CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FA1	NONE 10/20/17 FIRE ALARM RISER DIAGRAM MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK OSH\ELEC REGION NORTHEAST / COUNTY SUFFOLK / STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 19 OF 44



1 FIRE ALARM PLAN - BASEMENT

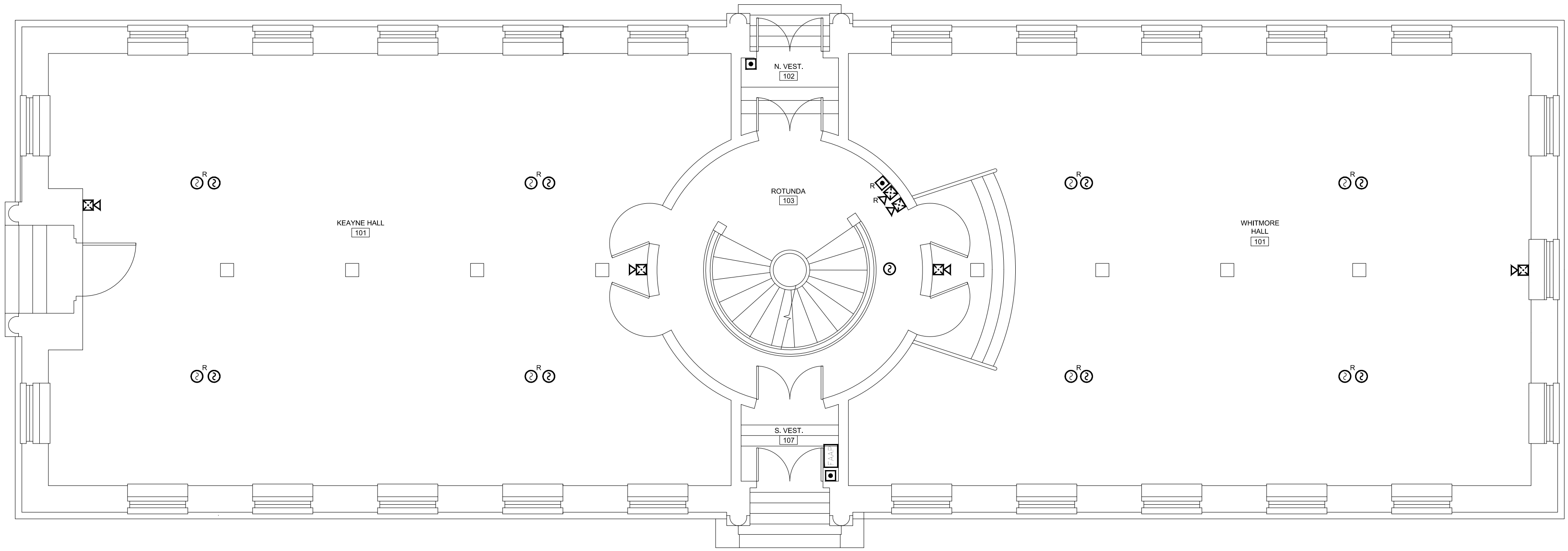


2 FIRE ALARM PLAN - SUB-BASEMENT

OPTION 1

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	ECL CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FA2	FIRE ALARM PLAN BSMT & SUB-BSMT MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 20 OF 44

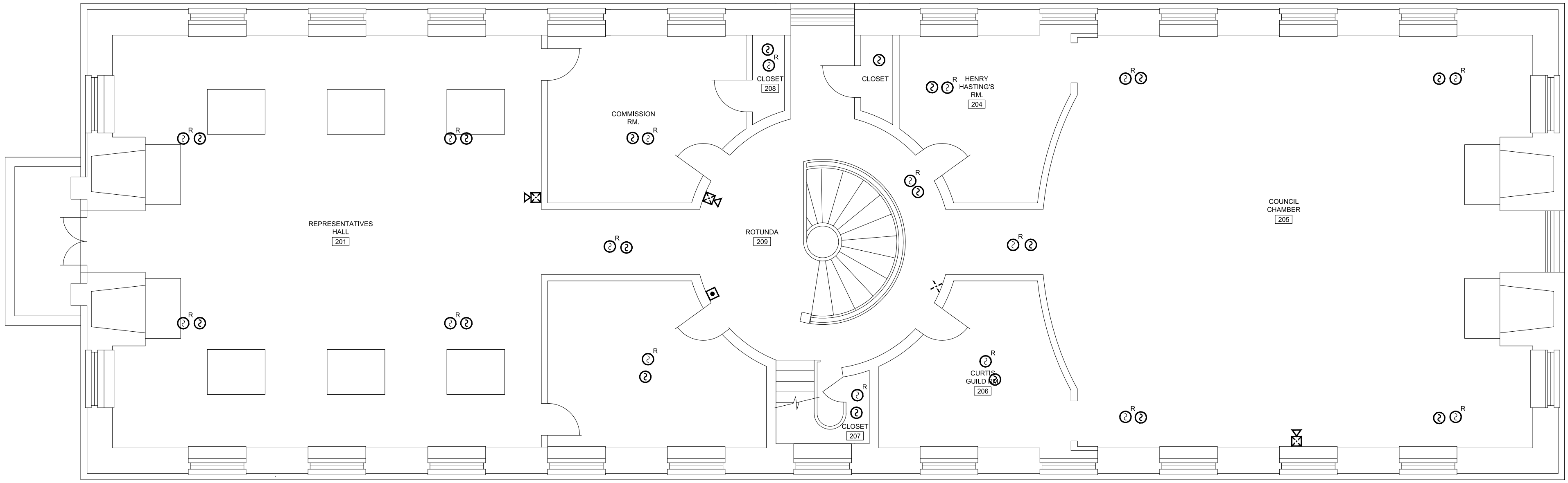


1 FIRE ALARM PLAN - FIRST FLOOR

OPTION 1

4' 0' 4' 8'

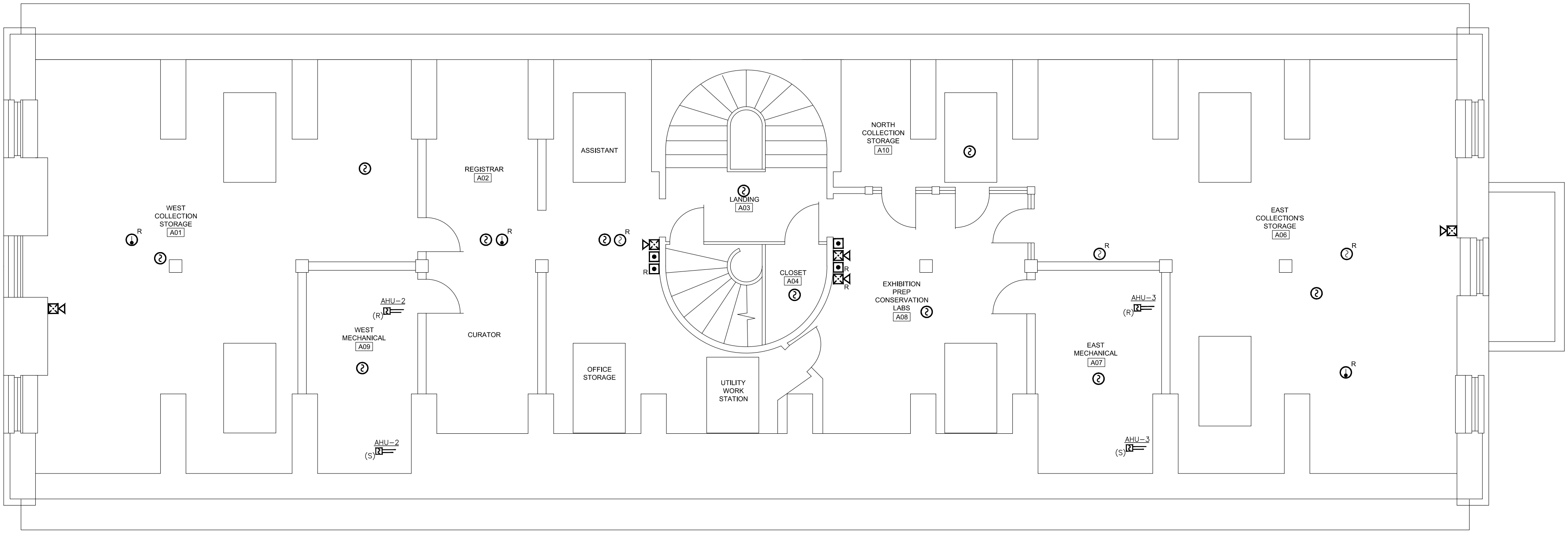
A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	ECL CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FA3	FIRE ALARM PLAN FIRST FLOOR MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 21 OF 44



1 FIRE ALARM PLAN - SECOND FLOOR

OPTION 1

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC. ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	ECL CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FA4	FIRE ALARM PLAN SECOND FLOOR MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK OSH\ELEC REGION NORTHEAST COUNTY SUFFOLK STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 22 OF 44

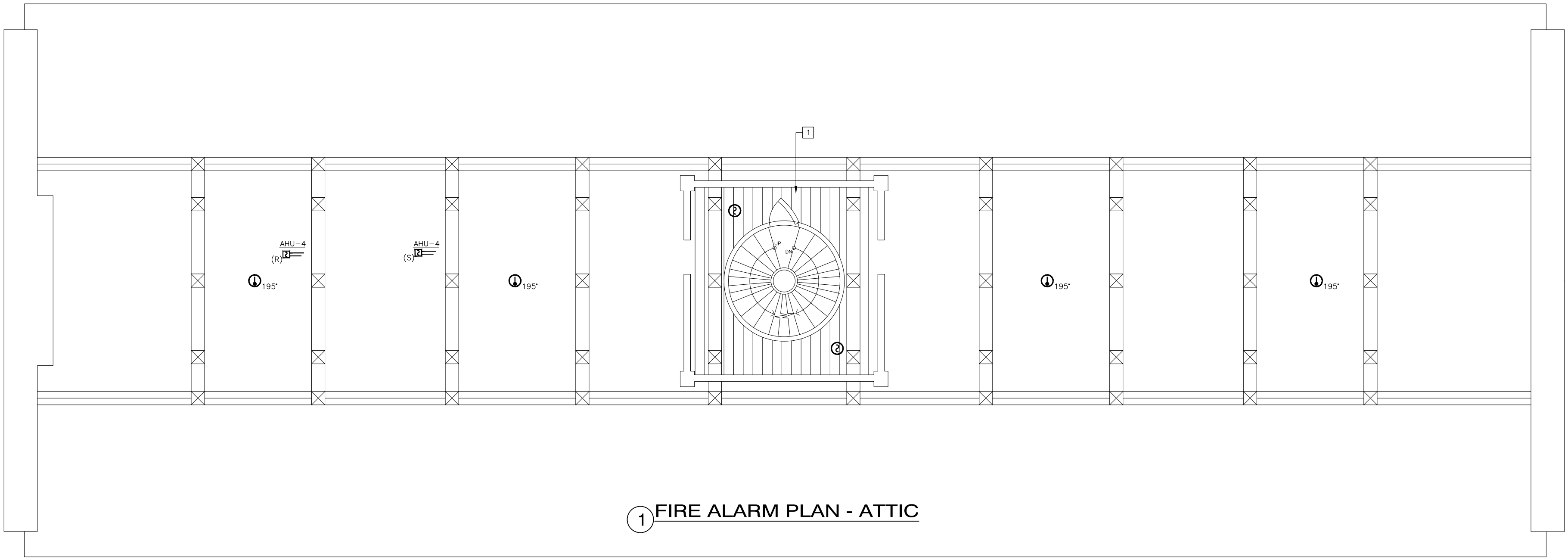


1 FIRE ALARM PLAN - THIRD FLOOR

OPTION 1

4' 0' 4' 8'

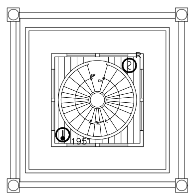
A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	ECL	FA5	FIRE ALARM PLAN THIRD FLOOR	457 / 144213
	CADD FILE		MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PKG. NO. 232487
	TECH. REVIEW: RS		NAME OF PARK BOSTON NATIONAL HISTORICAL PARK OSH\ELEC	SHEET 23
	DATE: 4/24/20		REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	OF 44



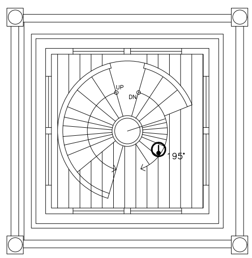
1 FIRE ALARM PLAN - ATTIC

NOTES:

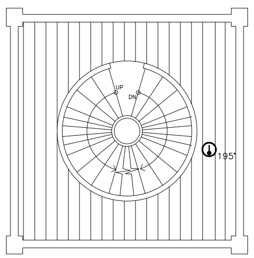
1 PROVIDE A HEAT DETECTOR AT EACH STAGE LEVEL AND AT TOP OF PLATFORM STAIRS.



4 FIRE ALARM PLAN - 3RD STAGE



3 FIRE ALARM PLAN - 2ND STAGE

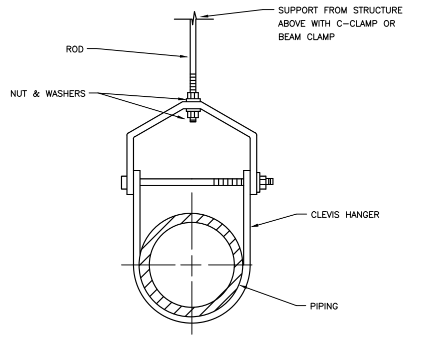


2 FIRE ALARM PLAN - 1ST STAGE

4' 0' 4' 8'

OPTION 1

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	ECL CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FA6	FIRE ALARM PLANS – ATTIC MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 24 OF 44



TYP. PIPE HANGER

NO SCALE

FIRE PROTECTION EQUIPMENT

SPRINKLER GUARD
WIRE-CAGE TYPE, INCLUDING FASTENING DEVICE FOR ATTACHING TO SPRINKLER. INSTALL PER MANUFACTURERS RECOMMENDATIONS. LOCATED AS NOTED ON DWGS.
MANUFACTURER: CENTRAL MODEL: G-1 | VIKING MODEL: D-1
RELIABLE MODEL: D-1 | OR APPROVED EQUAL

BUTTERFLY VALVE
2-1/2 AND LARGER: BRONZE, CAST-IRON, OR DUCTILE-IRON BODY; WAFER TYPE OR WITH FLANGED OR GROOVED ENDS.
MANUFACTURER: GRINNEL MODEL: | CENTRAL MODEL:
WATTS MODEL: | OR APPROVED EQUAL

GATE VALVES
2" AND SMALLER: CAST BRONZE, THREADED ENDS; SOLID WEDGE; OS&Y; AND RISING STEM.
MANUFACTURER: GRINNEL MODEL: SMITH 1500 | STOCKHAM MODEL: B-122
WATTS MODEL: B-3030-BS | OR APPROVED EQUAL

CHECK VALVES
SWING CHECK VALVES, 2" AND SMALLER: BRONZE BODY WITH BRONZE DISC AND THREADED ENDS.
MANUFACTURER: STOCKHAM MODEL: B-321 | CENTRAL MODEL: F18
WATTS MODEL: B-5030 | OR APPROVED EQUAL

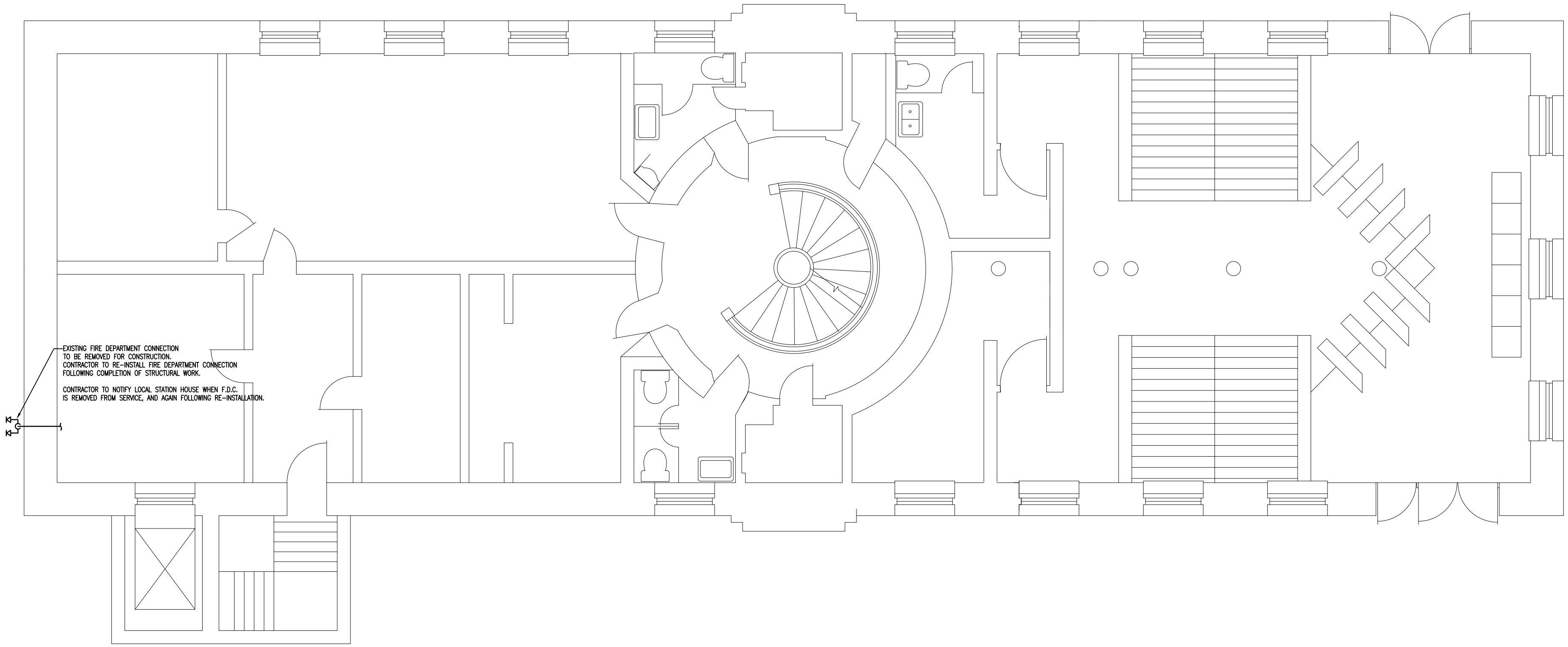
CHECK VALVES
SWING CHECK VALVES, 2 1/2" AND LARGER: CAST-IRON BODY AND BOLTED CAP, W\BRONZE DISC OR CAST-IRON DISC W\BRONZE-DISC RING AND FLANGED ENDS.
MANUFACTURER: STOCKHAM MODEL: G-933 | WATTS MODEL: SERIES 411
OR APPROVED EQUAL

BALL DRIP VALVES
AUTOMATIC DRAIN VALVE, 3/4", BALL CHECK DEVICE W/THREADED ENDS.
MANUFACTURER: GRINNEL MODEL: F789 | VIKING MODEL: MODEL J-1
RELIABLE MODEL: MODEL C | OR APPROVED EQUAL

INSPECTOR'S TEST FITTING
CAST OR DUCTILE_IRON HOUSING;
WITH THREADED INLET AND DRAIN OUTLET AND SIGHT GLASS.
MANUFACTURER: GRINNEL MODEL: F350 | CENTRAL MODEL: MODEL A-1
RELIABLE MODEL: MODEL B | OR APPROVED EQUAL

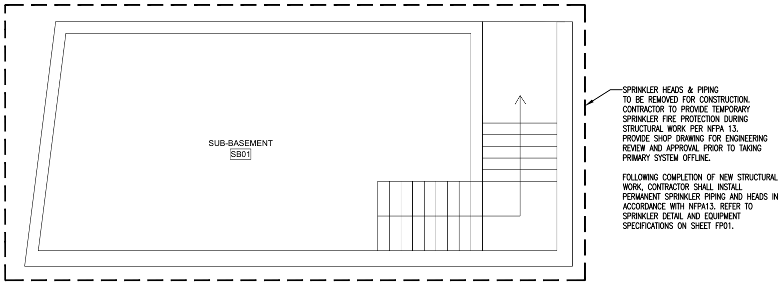
OPTION 1

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FP01	SYMBOLS, NOTES & DETAILS MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST COUNTY: SUFFOLK STATE: MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 25 OF 44



FIRE PROTECTION – BASEMENT PLAN

1/4"=1'-0"



FIRE PROTECTION – SUB-CELLAR PLAN

1/4"=1'-0"

OPTION 1

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	FP1	FIRE PROTECTION FLOOR PLANS MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST COUNTY: SUFFOLK STATE: MASSACHUSETTS	457 / 144213 PKG. NO. 232487 SHEET 26 OF 44

GENERAL DEMOLITION NOTES

1. ALL DEMOLITION WORK TO BE COORDINATED WITH CONTRACTING OFFICER'S TECHNICAL REP (COR) TO AVOID DISTURBANCES TO OTHER OCCUPANTS. ALL DEMOLITION WORK TO BE DONE DURING THE HOURS DESIGNATED.

2. MAINTAIN STABLE AND SAFE CONDITIONS AT ALL TIMES, TAKING CAUTION TO PROTECT THE EXISTING AND ADJACENT BUILDINGS, THEIR OCCUPANTS, STREET FRONT AND THE PUBLIC.

3. DEMOLISHED MATERIAL, NOT IDENTIFIED FOR SALVAGE BY THE GOVERNMENT, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE COMPLETELY REMOVED FROM THE JOB SITE.

4. PROVIDE PROTECTION TO ALL EXISTING ELECTRICAL, MECHANICAL, PLUMBING, AND SPRINKLER EQUIPMENT TO REMAIN.

5. COORDINATE WITH GENERAL CONTRACTOR TO HAVE ALL ABANDONED ELECTRICAL CABLES REMOVED FROM EXISTING LOCATIONS, TRACED BACK TO THEIR SOURCE AND TAGGED BY DIVISION 26.

6. ALL LIFE SAFETY EQUIPMENT AND ASSOCIATED CONDUIT AND WIRING SHALL BE PROTECTED FROM ANY PHYSICAL DAMAGE DURING DEMOLITION AND/OR CONSTRUCTION.

7. THE SCOPE OF THE DEMOLITION WORK HAS GENERALLY BEEN INDICATED ON THE DRAWING FOR CONTRACTORS INFORMATION. CONTRACTOR SHALL CAREFULLY REVIEW FIELD CONDITIONS PRIOR TO SUBMISSION OF BID TO VERIFY THE FULL SCOPE, EXTENT, NATURE AND MANNER OF DEMOLITION REQUIRED.

8. ONLY WORKMEN SKILLED AND KNOWLEDGEABLE IN THEIR RESPECTIVE TRADES SHALL BE ENGAGED IN THE DEMOLITION OF ANY WORK.

9. CONTRACTORS SHALL TAKE SPECIAL CARE TO DEMOLISH ONLY THAT WORK WHICH IS REQUIRED TO BE DEMOLISHED AND NOT TO DISTURB ANY WORK WHICH IS TO REMAIN. IF IN THE COURSE OF DEMOLITION, CONTRACTOR DESTROYS OR DISTURBS ANY WORK WHICH IS TO REMAIN, THEN HE SHALL AT HIS OWN EXPENSE, REPAIR OR REPLACE SUCH WORK AS NECESSARY.

10. REMOVE AND DISCARD ALL DEMOLISHED ITEMS IN A MANNER FULLY APPROVED BY THE GOVERNMENT.

11. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES.

12. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS PRIOR TO SUBMITTING BIDS AND SHALL REPORT TO THE GOVERNMENT'S REPRESENTATIVE ANY DISCREPANCIES OR OMISSIONS WHICH WOULD INTERFERE WITH SATISFACTORY COMPLETION OF WORK. ALL BUILDING DEPARTMENT PERMITS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION WORK.

13. CONTRACTOR SHALL NOTE THAT DEMOLITION OF UTILITY STEAM PIPING MAY INTERRUPT OPERATION OF THE HEATING SYSTEM. AT NO TIME SHALL BUILDING BE LEFT WITHOUT HEAT WHEN OUTDOOR TEMPERATURES ARE 60°F OR BELOW. IN SUCH AN EVENT, CONTRACTOR SHALL FURNISH TEMPORARY HEAT AT HIS EXPENSE.

PROJECT NOTES:

1. REFER TO WRITTEN (BOOK) SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. ALL BIDDERS SHALL VISIT PROJECT SITE TO THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. CLAIMS FOR EXTRA PAYMENTS FOR WORK, WHICH COULD HAVE BEEN IDENTIFIED VIA CAREFUL SITE INSPECTION, WILL NOT BE ACKNOWLEDGED.

3. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED LABOR AND MATERIALS REQUIRED TO ACCOMPLISH WORK SCOPE DEPICTED ON DRAWINGS, WHICH INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

- DEMOLITION OF EXISTING STEAM STATION AND ALL ASSOCIATED EQUIPMENT, PIPING, RISERS, ETC.
- REPLACEMENT OF (4) MODULAR AIR HANDLING UNITS
- REPLACEMENT OF (2) HOT WATER PUMPS
- REPLACEMENT OF SELECT HOT WATER PIPING AS DEPICTED ON PLANS
- INSULATION AND LABELING OF ALL NEW PIPING.
- INSTALLATION OF (2) GAS–FIRED CAT IV BOILERS AND ASSOCIATED PUMPS, PIPING, BREECHING
- INSTALLATION OF (3) ELECTODE STEAM HUMIDIFIERS
- INSTALLATION OF NEW RUNAROUND COILS, PUMPS AND PIPING IN ATTIC
- REPLACEMENT OF EXISTING END DEVICES (CONTROLS)
- REPLACEMENT OF EXISTING HOT WATER EXPANSION TANK AND AIR SEPARATOR
- REPLACEMENT OF EXISTING HOT WATER CHEMICAL FEED TANKS.
- TESTING AND BALANCING OF ALL AIR AND WATER SYSTEMS

4. CLEANING OF EXISTING DUCTWORK

CONTRACTOR SHALL ENGAGE A LICENSED CONTRACTOR TO PERFORM PROFESSIONAL CLEANING ON ALL EXISTING DUCTWORK. DUCT CLEANING SCOPE SHALL INCLUDE CREATION OF ANY REQUIRED ACCESS OPENINGS INTO DUCTWORK. CONTRACTOR SHALL SCHEDULE INSPECTION WITH FACILITY DIRECTOR FOR ACCEPTANCE PRIOR TO COMPLETION OF JOB.

CONTRACTOR SHALL PERFORM DUCT CLEANING AND INSPECTION AT START OF JOB TO IDENTIFY ANY AREAS WHERE INTERNAL LINING MAY BE COMPROMISED.

DUCT CLEANING SCOPE SHALL INCLUDE CLEANING OF (8) EXISTING SOUND ATTENUATORS PER MANUFACTURER'S INSTRUCTIONS.

PHASING OF WORK

1. CONTRACTOR SHALL RECOGNIZE THAT MUSEUM WILL REMAIN OPERATION AND OPEN TO THE PUBLIC DURING CONSTRUCTION. WORK SHALL BE DONE IN A MANNER SO AS TO MINIMIZE DISRUPTION TO BUILDING STAFF AND VISITORS.

REPLACEMENT OF AIR HANDLERS WILL RESULT IN A LOSS OF CLIMATE CONTROL IN ZONES SERVED BY EACH UNIT AND THUS THIS WORK MUST BE CAREFULLY COORDINATED WITH CONTRACTING OFFICER'S TECHNICAL REP (COR) AND OTHER TRADES. AIR HANDLER REPLACEMENT WORK IS EXPECTED TO FOLLOW A SEQUENCE SUCH AS:

- DECOMMISSION
- DEMOLITION
- EXISTING EQUIPMENT REMOVAL
- NEW EQUIPMENT INSTALLATION
- STARTUP & FUNCTIONAL TESTING

ANY NEW SHEET METAL FITTINGS REQUIRED TO CONNECT NEW UNITS TO EXISTING DUCTWORK SHALL BE MEASURED AND FABRICATED PRIOR TO DECOMMISIONING OF EQUIPMENT.

CONTRACTORS WILL BE GIVEN A 72 HOUR WINDOW WITH WHICH TO PERFORM THESE TASKS FOR A GIVEN AIR HANDLER. IF OVERTIME LABOR IS REQUIRED TO ACHIEVE THIS SCHEDULE, CONTRACTOR SHALL INCLUDE THIS COST IN BASE BID.

PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL SUBMIT A WORK PLAN TO THE GOVERNMENT AND GENERAL CONTRACTOR FOR REVIEW AND APPROVAL.

CAMERA INSPECTION WORK

1. PRIOR TO PREPARING SUBMITTALS FOR NEW BOILERS, CONTRACTOR SHALL PERFORM A VIDEO CAMERA INSPECTION OF EXISTING CHIMNEY TO VERIFY THAT A CLEAR, UNOBSTRUCTED PATH EXISTS FOR NEW BOILER BREECHING. VIDEO DATA SHALL BE FORWARDED TO THE GOVERNMENT AND DESIGN ENGINEER FOR REVIEW AND COMMENT.

2. ANY SCAFFOLDING AND/OR LIFTS REQUIRED TO CONDUCT VIDEO INSPECTION SHALL BE INCLUDED IN CONTRACTOR'S BASE BID. THIS INCLUDES ANY REQUIRED PERMITS AND SIDEWALK AND/OR STREET CLOSURES.

EXISTING UTILITY STEAM

1. IN ADDITION TO DEMOLITION OF STEAM PIPING AND EQUIPMENT INSIDE BUILDING, CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND CAPPING OF UTILITY STEAM PIPING IN PLAZA AT SOUTHWEST CORNER OF BUILDING.

CONTROLS END DEVICES

CONTRACTOR SHALL FOLLOW THE MATRIX BELOW REGARDING END DEVICE CONTROLS AT AIR HANDLING UNITS AND IN THE PIPING DISTRIBUTION SYSTEM.

DEVICE MATRIX	STATUS	
TYPE	E	R
TEMPERATURE SENSOR, IN DUCT		X
TEMPERATURE SENSOR, IN PIPE		X
SMOKE DETECTOR, IN DUCT	X	
MOTOR STARTER (H–O–A)	X	
VARIABLE FREQUENCY DRIVES	X	
DIFF. PRESSURE SWITCH, IN DUCT		X
PRESSURE TRANSDUCER, IN PIPE	X	X
PRESSURE TRANSDUCER, IN DUCT	X	X
WATER CONTROL VALVE, BODY		X
WATER CONTROL VALVE, ACTUATOR		X
AIR DAMPER	X	
AIR DAMPER ACTUATOR	X	
LOW LIMIT SWITCH, IN DUCT (FREEZESTAT)		X
CONTROL RELAY	X	X
CURRENT SWITCH (RUN INDICATOR)	X	
OUTDOOR TEMPERATURE & HUMIDITY SENSOR	X	X
CO2 SENSOR, IN DUCT		X

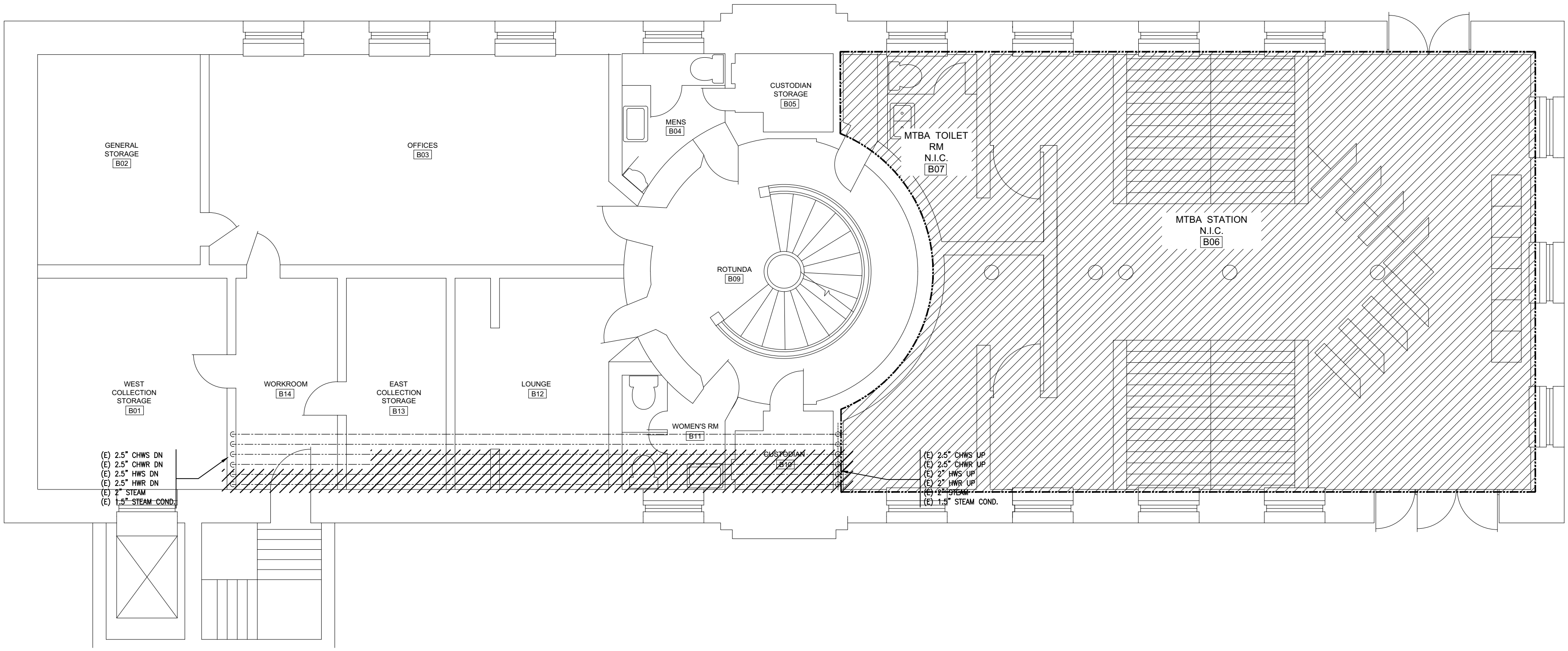
LEGEND

E = EXISTING TO REMAIN
R = REPLACE WITH NEW DEVICE, CONNECT TO EXISTING WIRING

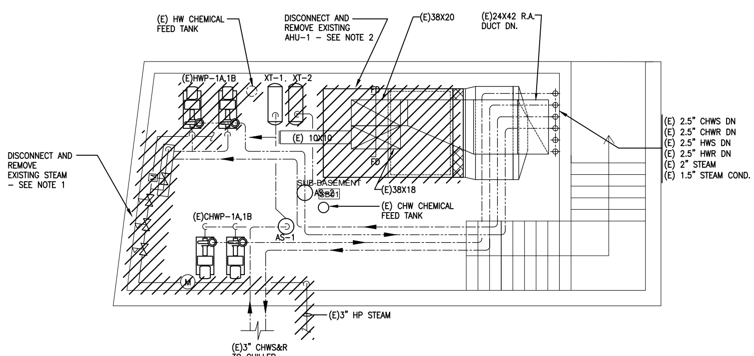
LEGEND

	FAN OR PUMP
TT	TEMPERATURE TRANSMITTER
HT	HUMIDITY TRANSMITTER
FS	FLOW SWITCH
HOA	HAND OFF AUTO
M, MD	MOTORIZED OPERATOR
DPS	DIFFERENTIAL PRESSURE SWITCH
VFD	VARIABLE FREQUENCY DRIVE
	ISOLATION VALVE
	CHECK VALVE
	AUTOMATIC BALANCING VALVE
AD	ACCESS DOOR
ACCU	AIR COOLED CONDENSING UNITS
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BAS	BUILDING AUTOMATION SYSTEM
CD	CEILING DIFFUSER
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CV	CONTROL VALVE (MODULATING)
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
(E)	EXISTING EQUIPMENT
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
FC	FLEXIBLE DUCT CONNECTOR
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FSD	COMB. FIRE/SMOKE DAMPER
GPM	GALLONS PER MINUTE
HOA	HAND–OFF–AUTO SWITCH
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
LAT	LEAVING AIR TEMPERATURE
LPS	LOW PRESSURE STEAM
O/A	OUTSIDE AIR
(N)	NEW EQUIPMENT
TDV	TRIPLE DUTY VALVE
TX	TOILET EXHAUST
R/A	RETURN AIR
RI	RUN INDICATOR
S/A	SUPPLY AIR
SD	SMOKE DETECTOR
SP	STATIC PRESSURE
SS	START/STOP
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
XT	EXPANSION TANK
T	THERMOSTAT
H	HUMIDISTAT
XX / X–X	DDC INTERFACE POINT
	POINT OF CONNECTION, NEW WORK TO EXISTING

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	MO	MECHANICAL NOTES & LEGEND MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 27 OF 44



1 MECHANICAL DEMO PLAN - BASEMENT
SCALE = 1/4" = 1'-0"



2 MECHANICAL DEMO PLAN - SUB-BASEMENT
SCALE = 1/4" = 1'-0"

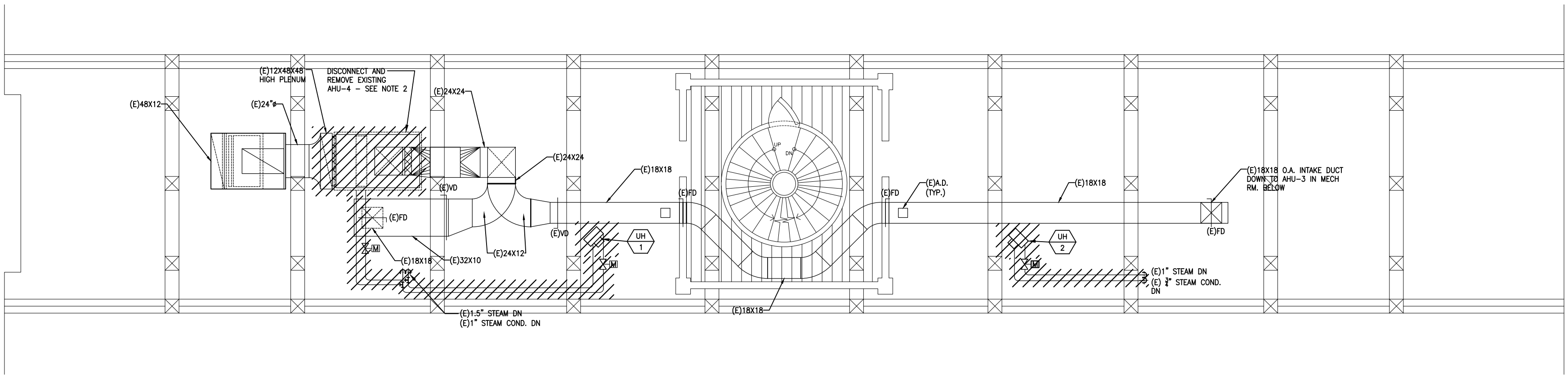
NOTES:

1. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING STEAM SERVICE INCLUDING PIPING, METER, PRVs, CONVERTOR, VALVES, INSULATION, SUPPORTS, AND CONDENSATE TEMPERING DEVICE. COORDINATE WITH STEAM UTILITY TO CUT AND CAP P.O.E. IN STREET. PIPING DEMO SHALL INCLUDE ALL STEAM AND CONDENSATE PIPING IN SUB-BASEMENT AND ATTIC; RISERS SHALL BE ABANDONED IN PLACE.

2. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT. DISCONNECT DUCTWORK, CHILLED AND HOT WATER PIPING AND CAP AT LOCATION SUITABLE FOR REUSE.

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	RS CADD FILE TECH. REVIEW: RS DATE: 4/24/20	M1	MECHANICAL DEMO PLANS MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 / 144213 PKG. NO. 232487 SHEET 28 OF 44



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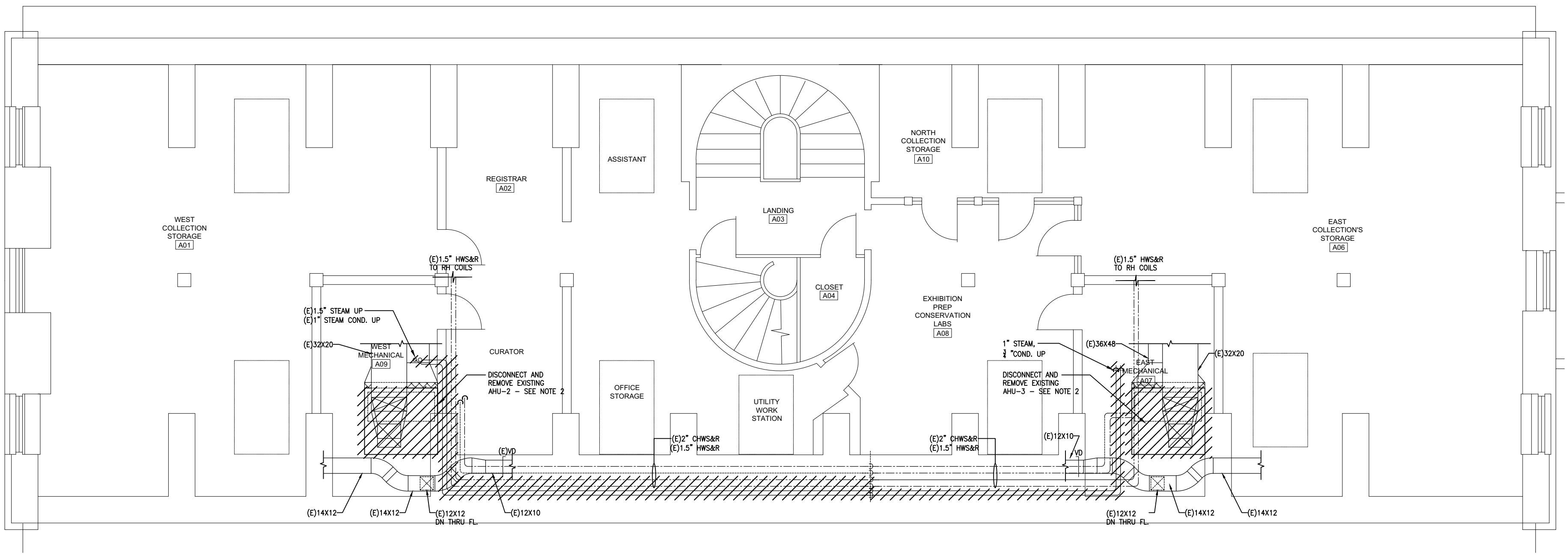
1 MECHANICAL DEMO PLAN - ATTIC

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

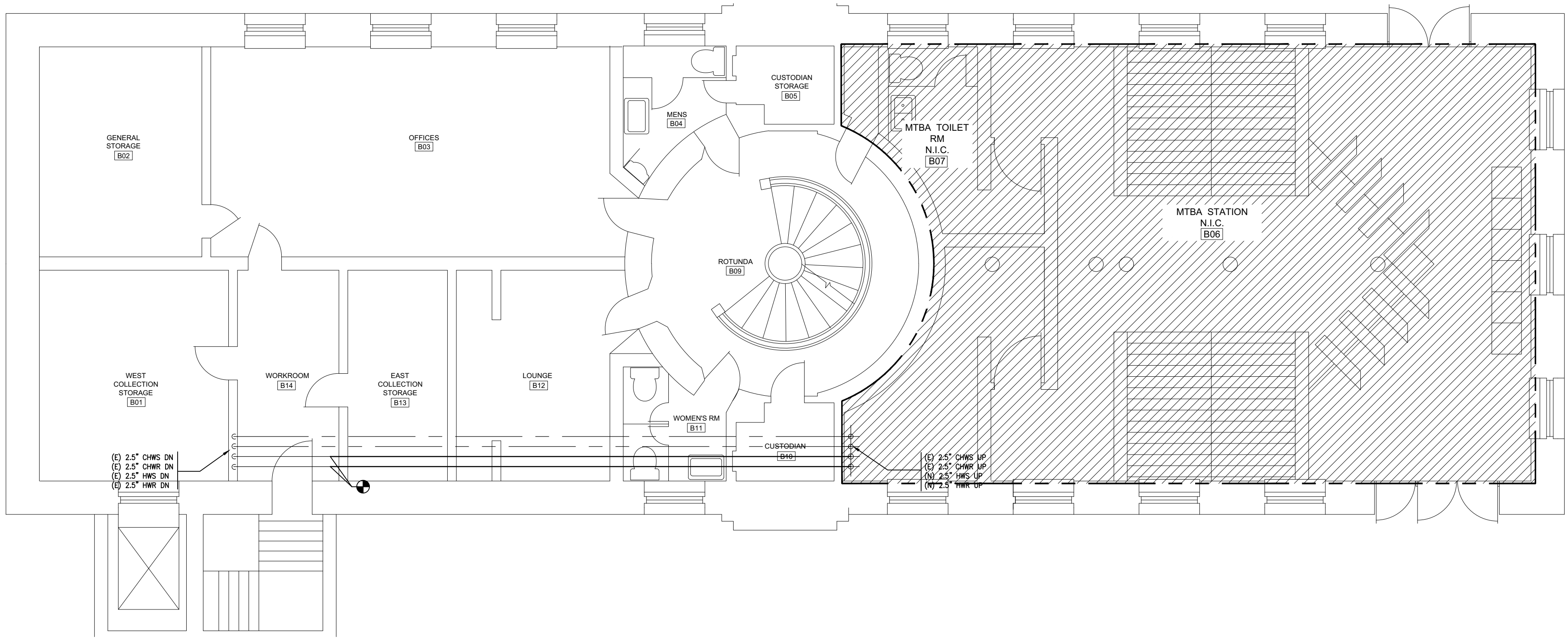


2 MECHANICAL DEMO PLAN - 3RD FLOOR

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

4' 0' 4' 8'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	M2	MECHANICAL DEMO PLANS MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK: BOSTON NATIONAL HISTORICAL PARK REGION: NORTHEAST · COUNTY: SUFFOLK · STATE: MASSACHUSETTS	457 / 144213 PKG. NO. 232487 SHEET 29 OF 44



1 MECHANICAL PLAN - BASEMENT
SCALE = 1/4" = 1'-0"

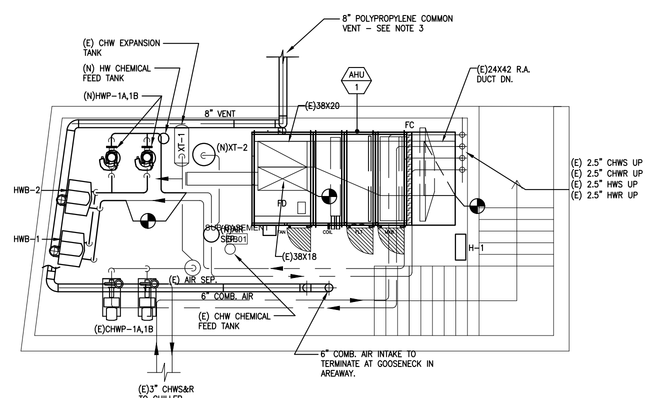
NOTES:

1. CONTRACTOR SHALL CONNECT EXISTING HOT AND CHILLED WATER PIPING TO COILS AT NEW AHUs. EXISTING CONTROL VALVES SHALL REMAIN. ALL PIPING TO BE INSULATED PER SPECIFICATIONS.

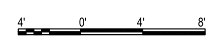
2. CONTRACTOR SHALL FURNISH AND INSTALL COMMON BOILER VENT IN STRICT ACCORDANCE WITH BOILER MANUFACTURER'S INSTALLATION INSTRUCTIONS. VENT SHALL BE ROUTED HORIZONTALLY INTO BASEMENT FACILITIES DIRECTOR'S OFFICE AND UP EXISTING ABANDONED CHIMNEY. FOR PRICING PURPOSES, USE 90FT OF TOTAL RUN (HORIZONTAL & VERTICAL).

3. CONTRACTOR SHALL FIELD VERIFY THAT MODULAR AHUs CAN BE RIGGED INTO PLACE USING EXISTING ACCESS OPENINGS. PROVIDE WRITTEN NOTIFICATION TO THE CONTRACTING OFFICER'S TECHNICAL REP (COR) OF ANY CONFLICTS REQUIRING CUTTING, PATCHING, OR OTHER BUILDING ALTERATONS PRIOR TO ORDERING NEW EQUIPMENT.

4. NEW CHEMICAL FEED TANK SHALL BE MODEL DBF-5HP AS MANUFACTURED BY NEPTUNE (OR APPROVED EQUAL).



2 MECHANICAL PLAN - SUB-BASEMENT
SCALE = 1/4" = 1'-0"



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NOTES:

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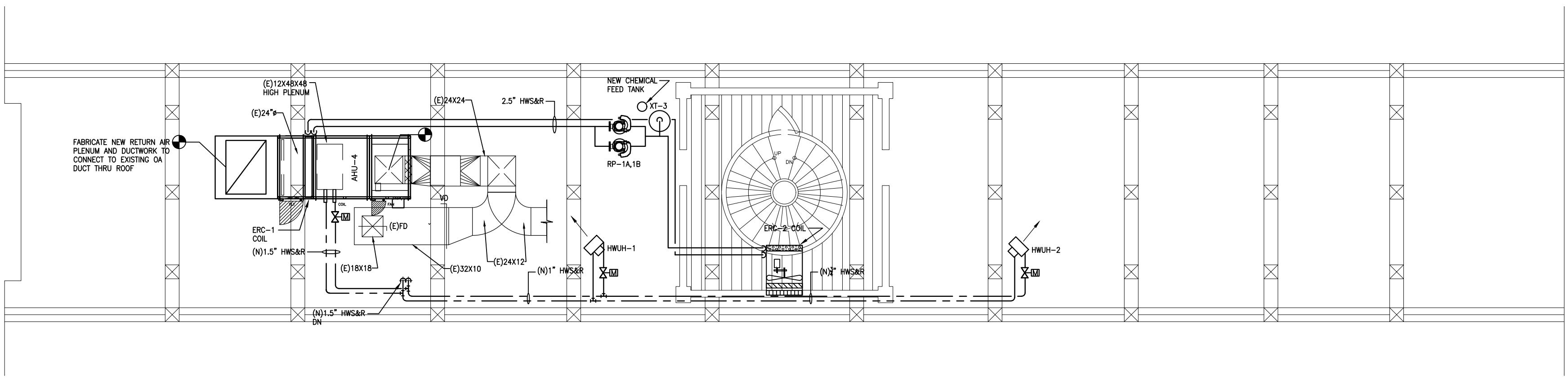
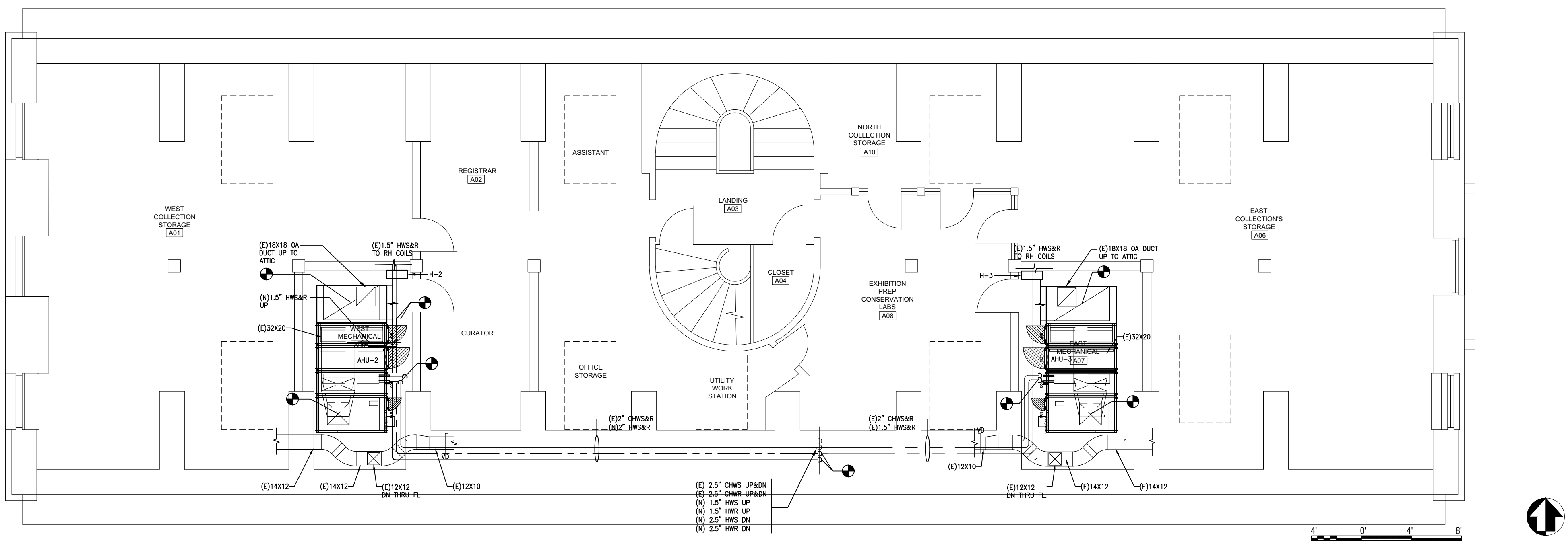
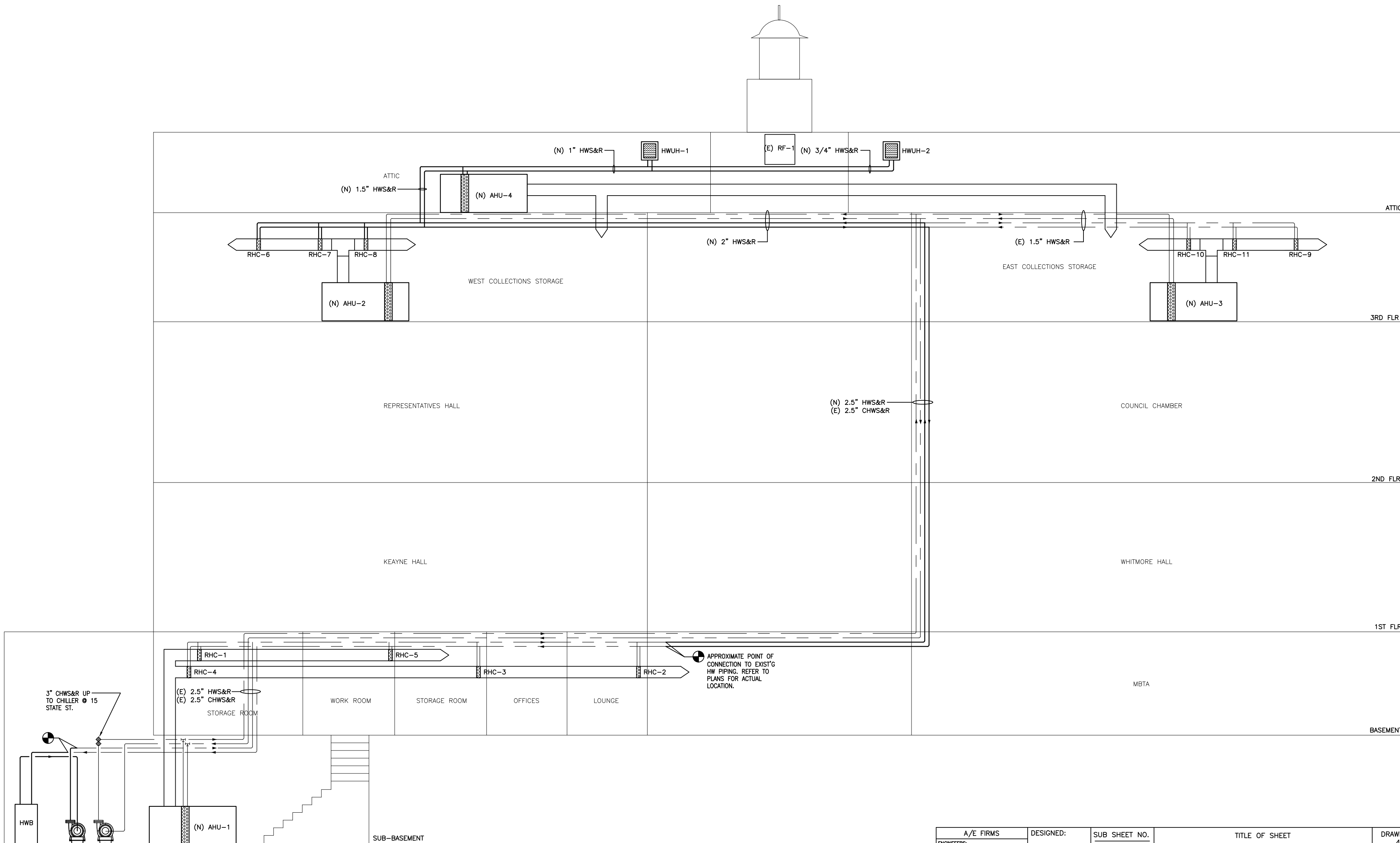


① MECHANICAL PLAN - ATTIC
SCALE = 1/4" = 1'-0"



② MECHANICAL PLAN - 3RD FLOOR
SCALE = 1/4" = 1'-0"

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEERS: LANDMARK FACILITIES GROUP, INC. ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD: FILE TECH. REVIEW: RS DATE: 4/24/20	M4	MECHANICAL PLANS MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 31 of 44



HOT/CHILLED WATER PIPING DIAGRAM

NO SCALE

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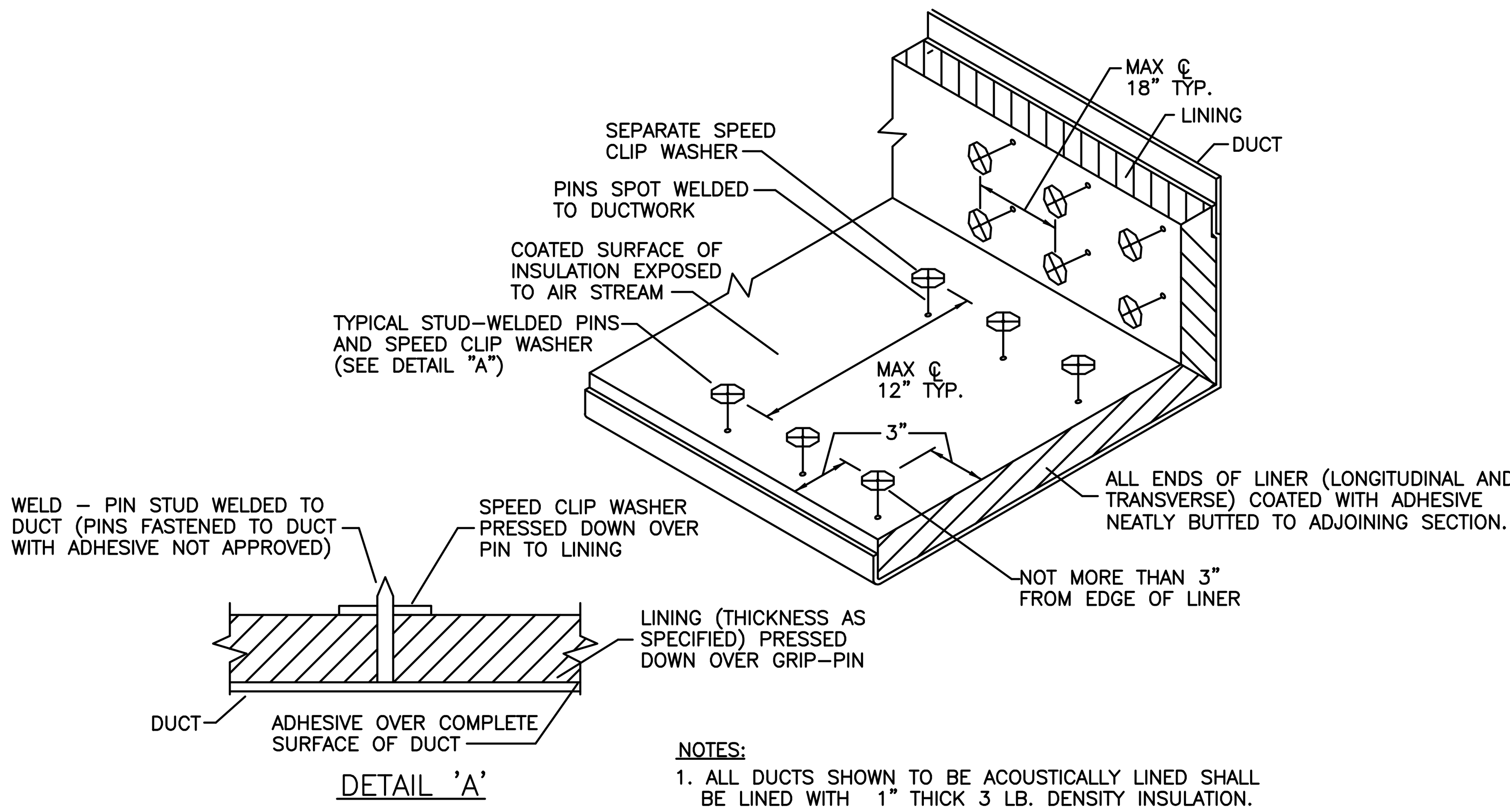
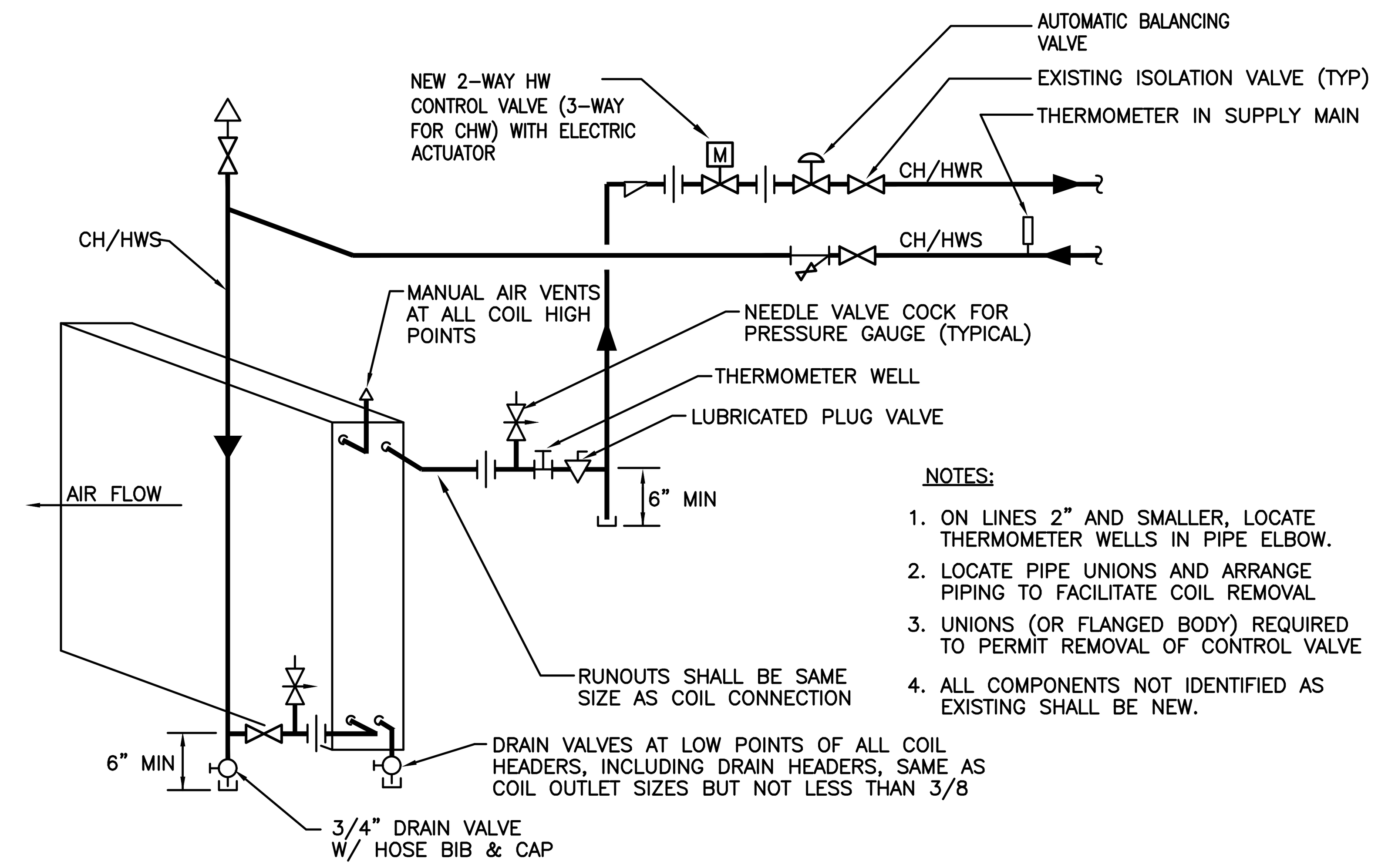
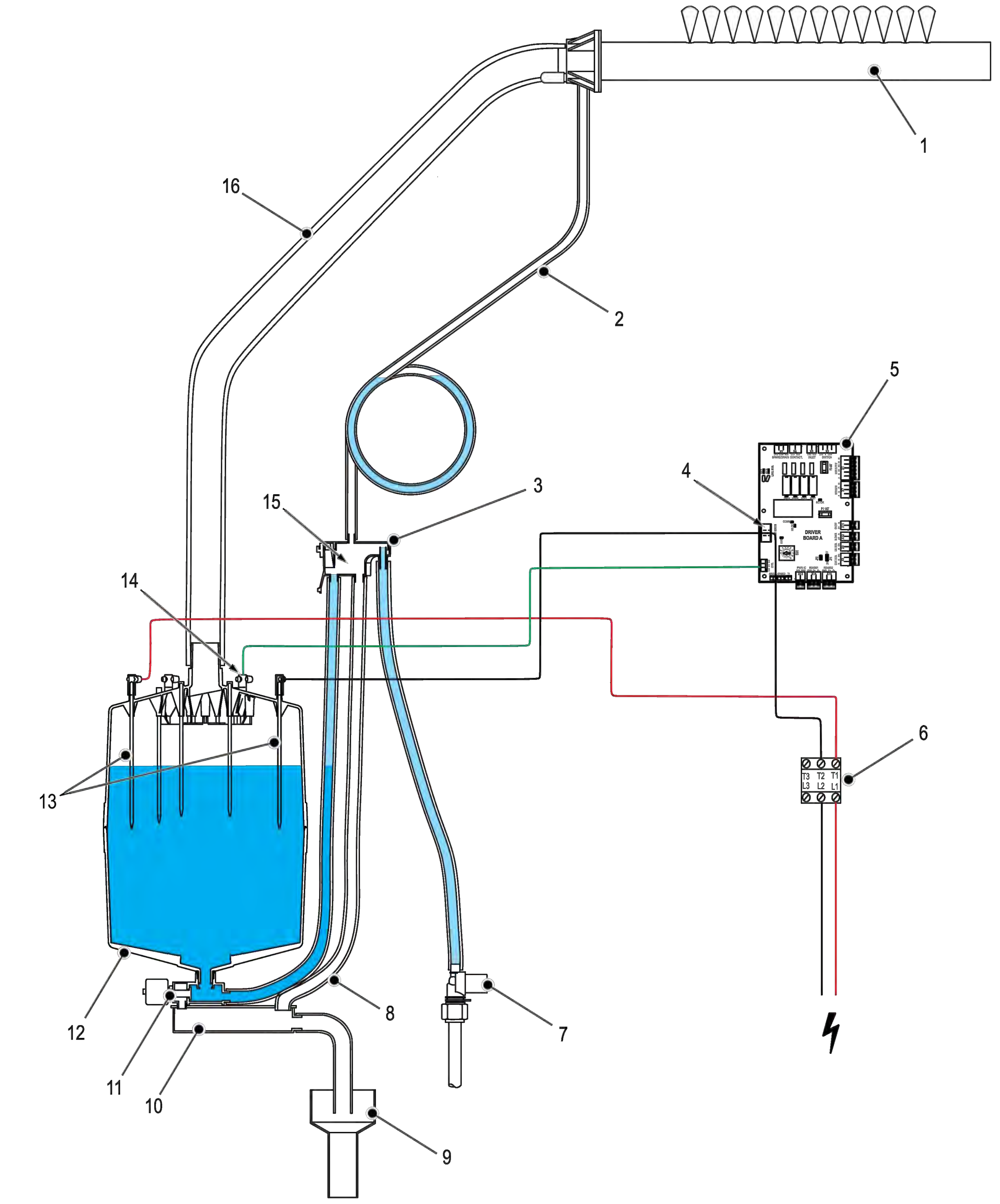


SOUND LINING INSTALLATION DETAIL
NO SCALE



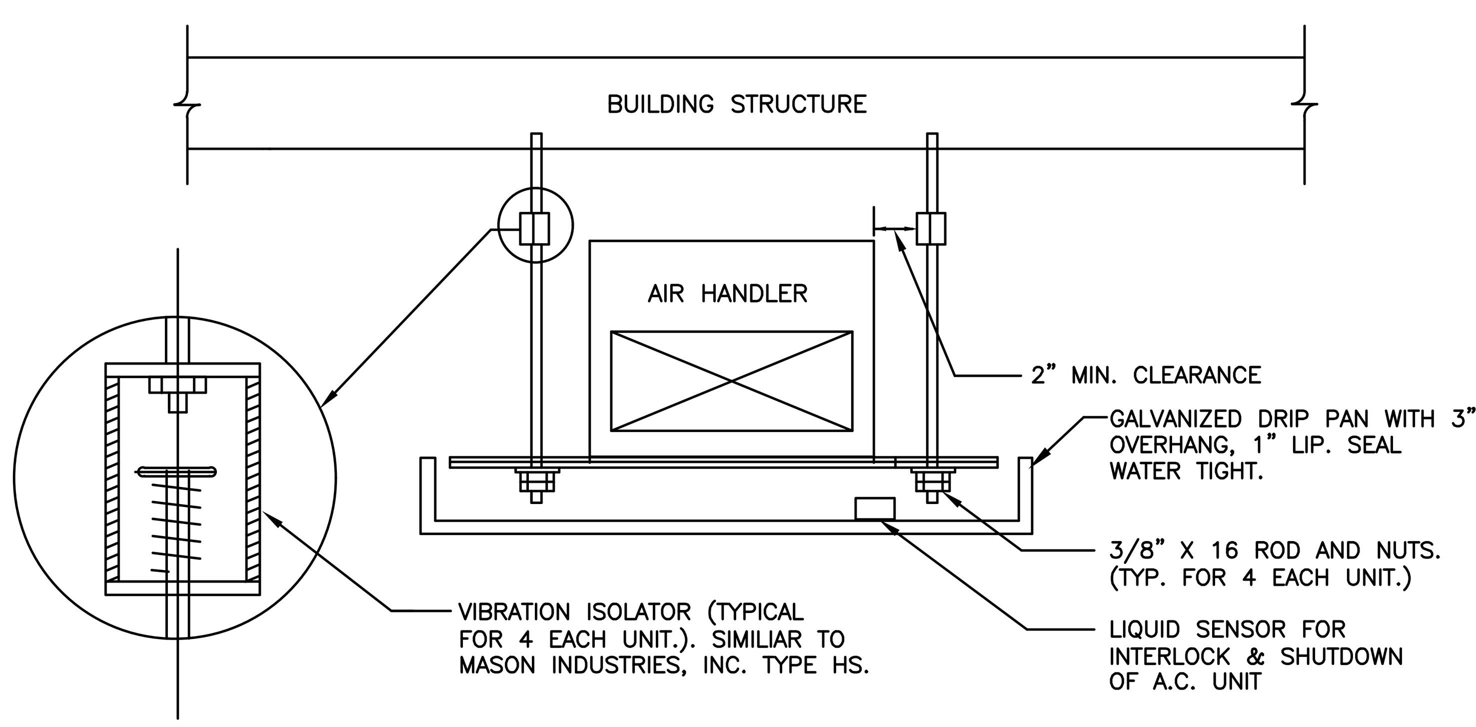
HOT/CHILLED WATER COIL CONNECTIONS
NO SCALE



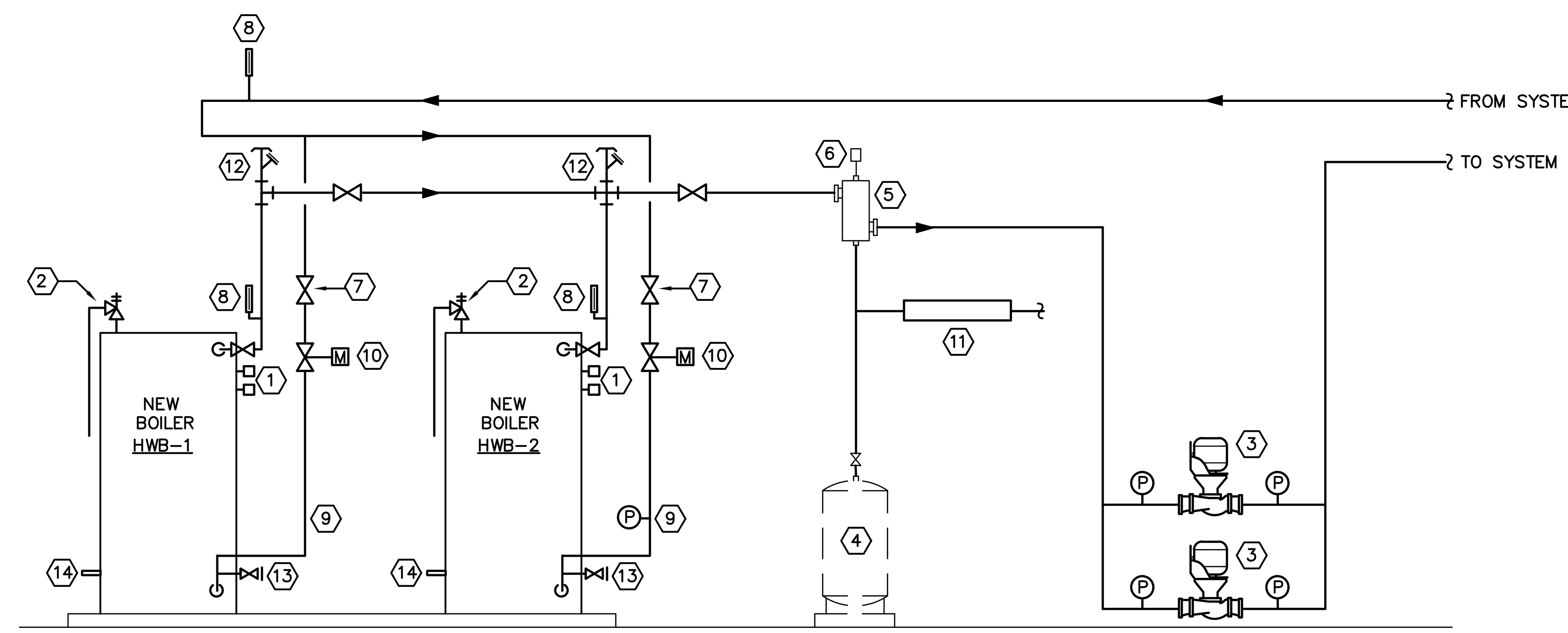
ELECTRODE STEAM HUMIDIFIER
NO SCALE

KEY

1. STEAM DISTRIBUTOR
2. CONDENSATE DRAIN LINE
3. FILL CUP
4. CURRENT SENSOR
5. DRIVER BOARD
6. CONTACTOR
7. FILL VALVE
8. OVERFLOW
9. AIR GAP FUNNEL
10. DRAIN CANAL
11. DRAIN VALVE
12. STEAM CYLINDER
13. ELECTRODES
14. HIGH WATER SENSOR
15. AIR GAP
16. STEAM LINE



HORIZONTAL AIR HANDLER HANGING DETAIL
NO SCALE

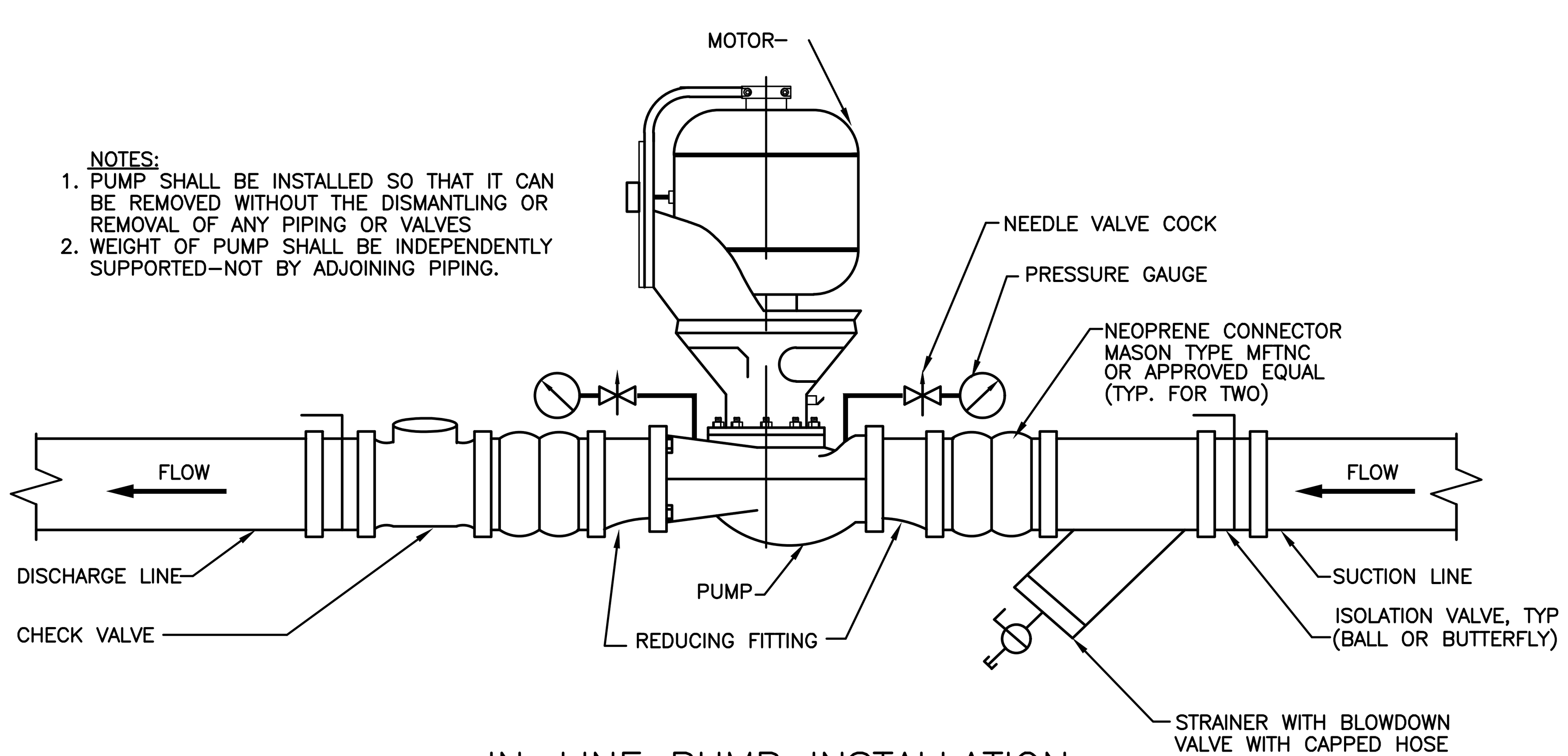


BOILER PIPING DETAIL
N.T.S.

KEY

1. HIGH LIMIT AND LOW WATER CUTOFFS (TYP)
2. RELIEF VALVE PIPE TO 3" ABV. FLOOR DRAIN (TYP)
3. INLINE HOT WATER PUMPS
4. EXPANSION TANK
5. AIR SEPARATOR
6. AUTO AIR VENT
7. SHUT-OFF VALVE
8. THERMOMETER
9. PRESSURE GAGE
10. MOTORIZED CONTROL VALVE (2-POSITION)
11. COLD WATER FILL CONNECTION WITH PRESS. REDUCING VALVE AND BACKFLOW PREVENTER (BY PLBG CONTRACTOR)
12. PURGE VALVE
13. DRAIN VALVE
14. BOILER CONDENSATE CONNECTION WITH NEUTRALIZER AND PIPING ROUTED TO FLOOR DRAIN

NOTES:
1. PUMP SHALL BE INSTALLED SO THAT IT CAN BE REMOVED WITHOUT THE DISMANTLING OR REMOVAL OF ANY PIPING OR VALVES
2. WEIGHT OF PUMP SHALL BE INDEPENDENTLY SUPPORTED-NOT BY ADJOINING PIPING.



IN-LINE PUMP INSTALLATION
NO SCALE

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ENGINEERS: LANDMARK FACILITIES GROUP, INC. ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	RS CADD FILE TECH. REVIEW: RS DATE: 4/24/20	M6	MECHANICAL DETAILS MECHANICAL & STRUCTURAL UPGRADES ~~&~~ ~~EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST / COUNTY SUFFOLK / STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 33 OF 44

NEW EXPANSION TANK SCHEDULE

UNIT NUMBER	XT-2	XT-3
SERVICE	HOT WATER	RUNAROUND LOOP
MANUFACTURER	B&G	B&G
MODEL	D-100V	HFT-30
TYPE	DIAPHRAGM	DIAPHRAGM
CAPACITY (GAL.)	55.7	4.4
ACCEPTANCE VOLUME (GAL.)	22.6	2.5
WEIGHT (LBS)	167	9
FIELD CHARGE (PSI)	36.6	13.2

NOTES:
1. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE HOUSEKEEPING PAD FOR TANK IN SUB-BASEMENT AND STAND FOR TANK IN ATTIC.
2. CONTRACTOR SHALL PROVIDE LINE SIZE 'ROLAIRTROL' AIR SEPARATOR – REFER TO EXPANSION TANK DETAIL. COORDINATE WITH PLUMBING CONTRACTOR TO PROVIDE BACKFLOW PREVENTER AND MAKEUP WATER CONNECTION.

NEW AIR HANDLING UNIT SCHEDULE

TAG	MFG	MODEL	AIR FLOW (CFM)	CHILLED WATER COOLING													HOT WATER HEATING										VOLTAGE	MCA	MOCP	NOTES
				TOTAL (BTUH)	SENSIBLE (BTUH)	EWT (°F)	LWT (°F)	FLOW (GPM)	P.D. (FT)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	P.D. (IN.WC)	# OF ROWS	FPI	TOTAL (BTUH)	EWT (°F)	LWT (°F)	FLOW (GPM)	P.D. (FT)	EAT (°F)	LAT (°F)	P.D. (IN.WC)	# OF ROWS	FPI				
AHU-1	CARRIER	39MN SIZE 14W	6600	179,520	163,140	44	55.93	30.0	1.0	77.0	63.0	53.82	53.39	0.69	6	14	–	–	–	–	–	–	–	–	–	–	208/3	25.5	45	1,2
AHU-2	CARRIER	39MN SIZE 10W	5200	205,970	152,420	44	56	34.2	7.0	81.5	67.0	53.79	53.47	1.06	8	8	–	–	–	–	–	–	–	–	–	–	208/3	17.5	30	1,2
AHU-3	CARRIER	39MN SIZE 10W	4850	195,840	143,940	44	56	32.6	6.3	81.5	67.0	53.44	53.17	0.95	8	8	–	–	–	–	–	–	–	–	–	–	208/3	17.5	30	1,2
AHU-4	CARRIER	39MN SIZE 06W	2725	–	–	–	–	–	–	–	–	–	–	–	–	–	226,210	180	150	15.1	XXX	0.0	66.95	.59	XXX	XXX	208/3	10.6	15	1,2

NOTES:
1 UNIT SHALL BE FURNISHED WITH FACTORY VFD.
2. FILTER SECTION SHALL BE CONFIGURED FOR 2" PREFILTER AND 12" FINAL FILTER.
3. ALL CONTROL VALVES SHALL BE 2-WAY TYPE EXCEPT FOR AHU-4 WHICH SHALL BE EQUIPPED WITH A 3-WAY VALVE.

NEW AUTOMATIC BALANCING VALVE SCHEDULE

UNIT NUMBER	BV-1	BV-2	BV-3	BV-4	BV-5	BV-6	BV-7	BV-8	BV-9	BV-10	BV-11	BV-12	BV-13	BV-14	BV-15
SERVICE	HWC-1	HWC-2	HWC-3	HWC-4	HWC-5	HWC-6	HWC-7	HWC-8	HWC-9	HWC-10	HWC-11	AHU-1	AHU-2	AHU-3	AHU-4
MANUFACTURER	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS	HAYS
MODEL	–	–	–	–	–	–	–	–	–	–	–	2535	2535	2535	2535
FLOW RATE (GPM)	3.9	6.8	4.3	3.0	4.7	8.6	3.9	4.2	9.5	3.4	3.0	30.0	34.2	32.6	23.1
SIZE (IN.)	0.5	0.75	0.75	0.5	0.75	1.0	0.5	2.5	1.0	0.5	0.5	2.0	2.0	2.0	2.0

NOTES:

NEW PUMP SCHEDULE

UNIT NUMBER		HWP-1A,1B	RP-1A,1B
SERVICE		HOT WTR SYSTEM	RUNAROUND LOOP
MANUFACTURER		B&G	B&G
MODEL		ECOCIRC XL_70-145	
FLUID DATA	FLUID	WATER	WATER
	TEMPERATURE (F)	130	55
	FLOW RATE (GPM)	75.8	80
	T.D.H. (FT)	47.7	43
	MAX. PRESS. (PSI)	175	175
PUMP DATA	TYPE	INLINE	INLINE
	SPEED (RPM)	3300	3300
	FRAME SIZE	–	–
	IMPELLER DIA. (IN.)	–	–
MOTOR	BRAKE HP		–
	H.P.	2	2
	R.P.M	1750	1750
	VOLTAGE/PHASE	208/1ø	208/1ø
	F.L.A.	13.2	13.2
INTEGRAL VARIABLE FREQ. DRIVE?		YES	YES

NOTES:
1. ALL PUMPS SHALL BE FURNISHED WITH B&G SUCTION DIFFUSER, STRAINER, AND TRIPLE DUTY VALVE. REFER TO PUMP DETAIL FOR ADDITIONAL INFORMATION.

GAS-FIRED BOILER SCHEDULE

UNIT NUMBER	HWB-1,2
SERVICE	HOT WATER
MANUFACTURER	LOCHINVAR
MODEL	FTX725
INPUT EACH (MBH)	725
GROSS OUTPUT EACH (MBH)	705
GAS INPUT (CFH)	725
MIN. GAS PRESSURE (IN. W.C.)	4.0
VENT SIZE EACH (IN)	6
VOLTAGE	115/1
AMPS (EACH)	12.0
OPERATING WEIGHT, EACH (LBS)	672

NOTES:
1. BOILER SHALL BE FURNISHED WITH ALL FACTORY TRIM AND CONTROLS, CONDENSATE NEUTRALIZER, SYSTEM SENSOR, OUTDOOR AIR RESET CONTROL, SPARE PARTS KIT, BACNET CONTROLLER.

NEW HW UNIT HEATER SCHEDULE

UNIT NUMBER		HWUH-1,2
SERVICE		ATTIC
MANUFACTURER		MODINE
MODEL		HC 47
FLUID DATA	FLUID	WATER
	CAPACITY (BTUH)	47,000
	FLOW RATE (GPM)	3.1
	EWT (°F)	180
	LWT (°F)	150
ELECTRICAL	VOLTAGE	115/1
	MOTOR	1/12
	FLA	–
	MOCP	15

NOTES:
1. CONTRACTOR SHALL PROVIDE 2-WAY CONTROL VALVE, BALANCE VALVE AND FACTORY HANGING KIT.

NEW ELECTRODE STEAM HUMIDIFIER SCHEDULE

TAG	MFG	MODEL	HUMID. LOAD (LBS/HR)	DISTRIBUTION MANIFOLD				VOLTAGE	FLA	MOCP	LOCATION
				TYPE	O.C. SPACING (IN.)	QTY	ABSORPTION DIST. (FT)				
H-1	NORTEC	EL-30	22.1	SAM-E	XXX	1	XXX	208/3	31.1	40	AHU-1
H-2	NORTEC	EL-50	40.7	SAM-E	XXX	1	XXX	208/3	51.9	70	AHU-2
H-3	NORTEC	EL-50	40.8	SAM-E	XXX	1	XXX	208/3	51.9	70	AHU-3

NOTES:

HYDRONIC ENERGY RECOVERY COIL SCHEDULE

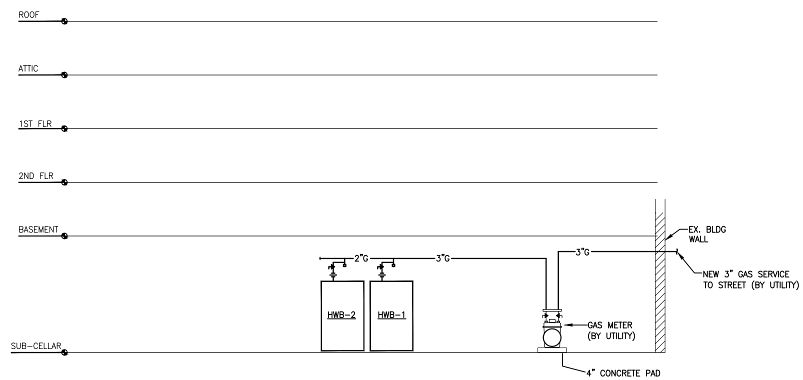
TAG		ERC-1	ERC-2
LOCATION		AHU-4	RF-1
MANUFACTURER		COLMAC COIL	COLMAC COIL
MODEL		BWL-34.5X23.5-6R-10.0F-WR-R	BWL-30X30.0-4R-11.0F-WR-R
QTY		1	1
TOTAL CAPACITY (MBH)		115.2	33.3
# OF ROWS		6	4
FINS PER INCH		10	11
DIMENSIONS (H X W)		34.5 X 23.5	30 X 30
WEIGHT (LBS)		151	130
AIR DATA	CFM	2500	2150
	VELOCITY (FPM)	444	344
	EAT – D.B. (°F)	0.0	68.0
	LAT – D.B. (°F)	42.8	53.9
	PRESS. DROP (IN. W.C.)	0.43	0.23
WATER DATA	FLUID VELOCITY (FPS)	3.8	4.5
	FLOW RATE (GPM)	80.0	80.0
	TEMP. ENTERING (F)	53.0	49.6
	TEMP. LEAVING (F)	49.8	52.5
	PRESS. DROP (FT)	7.2	6.0
MAX. PRESSURE (PSI)		150	150
SUPPLY/RETURN PIPE SIZE (IN.)		2.5	2.5

NOTES:
1. COIL SHALL BE CONSTRUCTED WITH COPPER TUBES AND ALUMINUM FINS.
2. PIPING CONNECTIONS (LEFT/RIGHT HAND) SHALL BE DESIGNATED IN FIELD BASED ON AVAILABLE SPACE.
3. CONTRACTOR SHALL PROVIDE 40% GLYCOL SOLUTION FOR RUNAROUND COIL LOOP. GLYCOL TO BE INTRODUCED AT CHEMICAL FEED TANK.

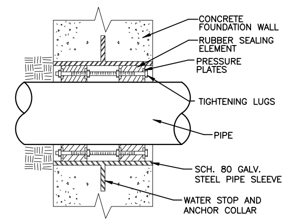
LEGEND

	FAN OR PUMP
TT	TEMPERATURE TRANSMITTER
HT	HUMIDITY TRANSMITTER
FS	FLOW SWITCH
HOA	HAND OFF AUTO
M, MD	MOTORIZED OPERATOR
DPS	DIFFERENTIAL PRESSURE SWITCH
VFD	VARIABLE FREQUENCY DRIVE
	ISOLATION VALVE
	CHECK VALVE
	AUTOMATIC BALANCING VALVE
AD	ACCESS DOOR
ACCU	AIR COOLED CONDENSING UNITS
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BAS	BUILDING AUTOMATION SYSTEM
CD	CEILING DIFFUSER
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CV	CONTROL VALVE (MODULATING)
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
(E)	EXISTING EQUIPMENT
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
FC	FLEXIBLE DUCT CONNECTOR
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FSD	COMB. FIRE/SMOKE DAMPER
GPM	GALLONS PER MINUTE
HOA	HAND-OFF-AUTO SWITCH
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
LAT	LEAVING AIR TEMPERATURE
LPS	LOW PRESSURE STEAM
O/A	OUTSIDE AIR
(N)	NEW EQUIPMENT
TDV	TRIPLE DUTY VALVE
TX	TOILET EXHAUST
R/A	RETURN AIR
RI	RUN INDICATOR
S/A	SUPPLY AIR
SD	SMOKE DETECTOR
SP	STATIC PRESSURE
SS	START/STOP
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
XT	EXPANSION TANK
T	THERMOSTAT
H	HUMIDISTAT
XX X-X	DDC INTERFACE POINT
	POINT OF CONNECTION, NEW WORK TO EXISTING

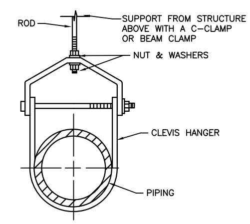
A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ENGINEEERS: LANDMARK FACILITIES GROUP, INC ENGINEERS 252 EAST AVENUE NORWALK, CONNECTICUT 06855 203.866.4626	DLG CADD FILE TECH. REVIEW: RS DATE: 4/24/20	M7	MECHANICAL SCHEDULES MECHANICAL & STRUCTURAL UPGRADES ~~& EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE NAME OF PARK BOSTON NATIONAL HISTORICAL PARK REGION NORTHEAST · COUNTY SUFFOLK · STATE MASSACHUSETTS	457 144213 PKG. NO. 232487 SHEET 34 OF 44



GAS RISER DIAGRAM
NOT TO SCALE



DETAIL PIPE THRU EXT. WALL
NOT TO SCALE



PIPE HANGER
NO SCALE

PLUMBING SYMBOL LIST

	NOTE: NOT ALL SYMBOLS ARE USED
SYMBOL	DESCRIPTION
G	GAS PIPING (G)
	DIRECTION OF FLOW
	PIPE RISE OR UP THRU SLAB
	PIPE DROP OR DOWN THRU SLAB
	BOTTOM OF PIPE TAKE-OFF CONNECTION
	TOP OF PIPE TAKE-OFF CONNECTION
	P-TRAP
	CAP PIPE OUTLET
	UNION
	GAS VALVE
X	EQUIPMENT TAG

PLUMBING ABBREVIATION LIST

	NOTE: NOT ALL SYMBOLS ARE USED
SYMBOL	DESCRIPTION
CV	CHECK VALVE
DN	DOWN (PENETRATES FLOOR SLAB)
UP	UP (PENETRATES FLOOR SLAB)
FL	FLOOR
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
PSI	POUNDS PER SQUARE INCH (GAUGE)
TYP	TYPICAL
VB	VACUUM BREAKER
VIF	VERIFY IN FIELD

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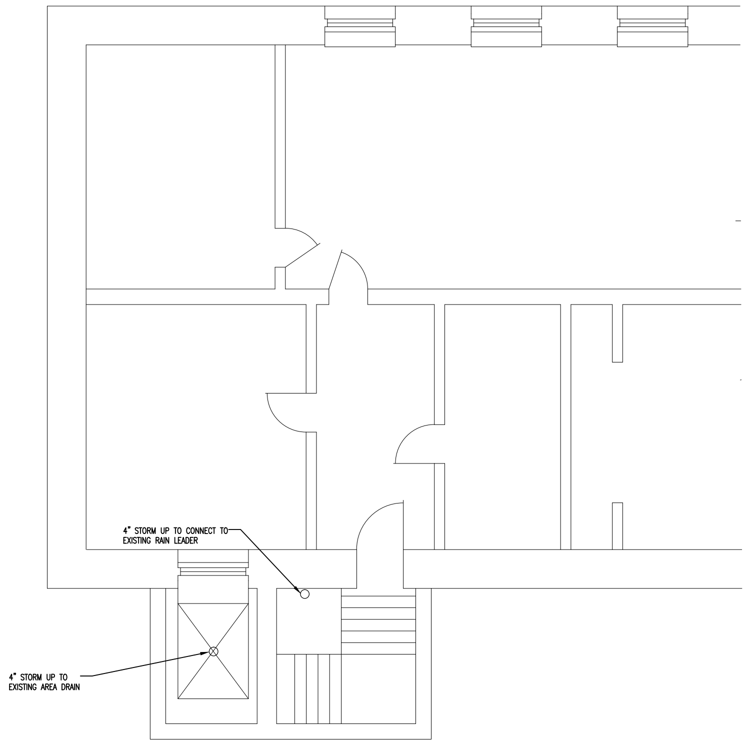
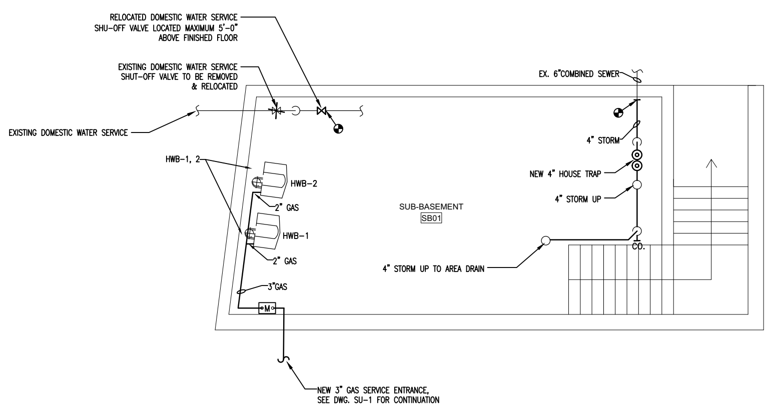


PLUMBING – BASEMENT PART PLAN
1/4"=1'-0"



PLUMBING – SUB-CELLAR PLAN
1/4"=1'-0"

4' 0' 4' 8'

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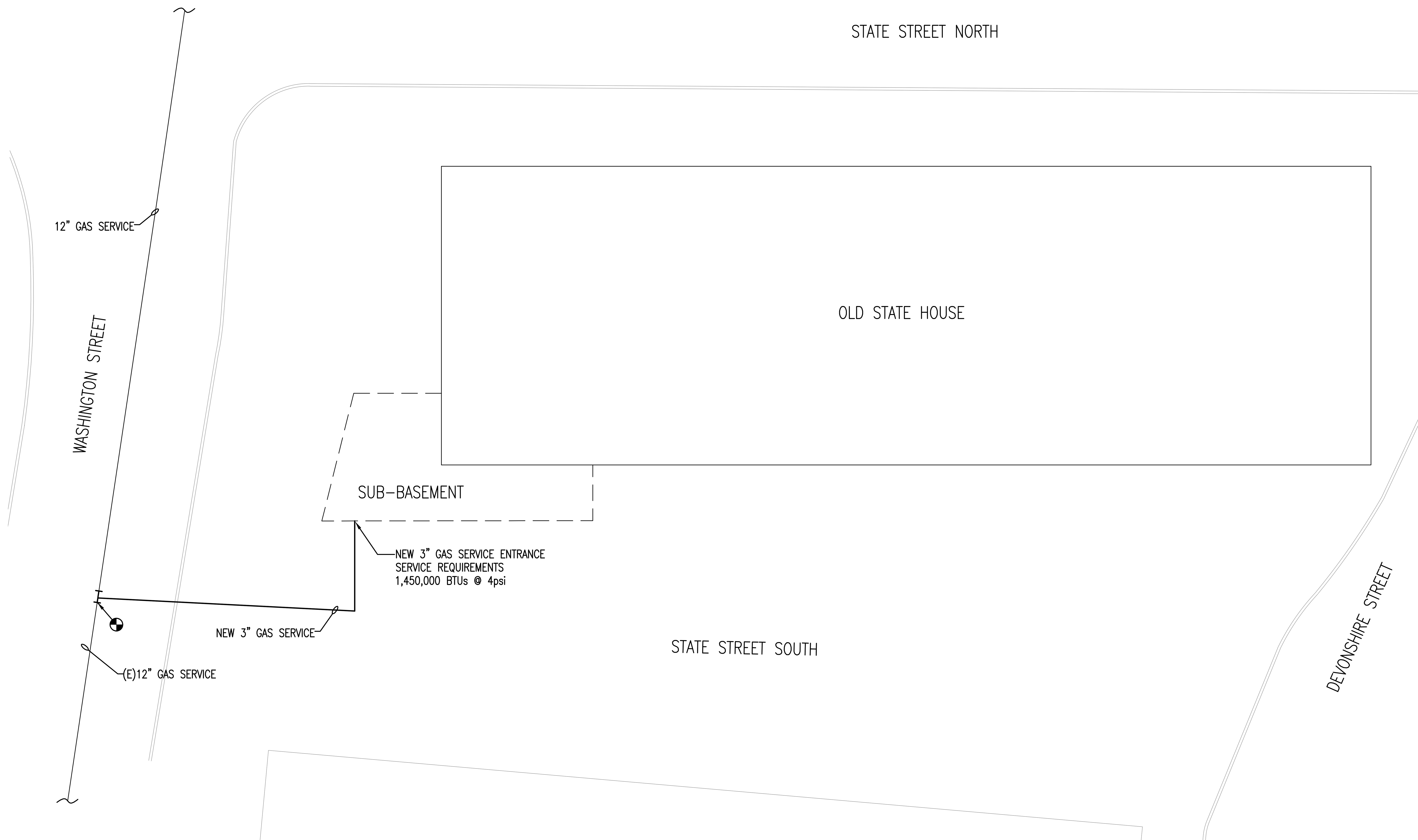


NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR FULL COORDINATION OF NEW GAS SERVICE WITH UTILITY COMPANY. VERIFY GAS DELIVERY PRESSURE AND PROVIDE TO CONTRACTING OFFICER FOR PREPARATION OF LOAD LETTER FOR NEW SERVICE. CONTRACTOR SHALL INCLUDE ALL COST OF EXCAVATION AND BACKFILL IN BASE BID. COORDINATE LOCATION OF GAS METER WITH CONTRACTING OFFICER PRIOR TO INSTALLATION.

2. CONTRACTOR SHALL VERIFY POINT OF NEW CONNECTION WITH UTILITY COMPANY PRIOR TO CONSTRUCTION.

3. CONTRACTOR SHALL COORDINATE EXCAVATION, TRENCHING, BACKFILL AND OTHER SITE DISTURBANCE RELATED WORK WITH GENERAL CONTRACTOR. COORDINATE WITH STRUCTURAL WORK ON SITE PLAN (SHEET CO1) AND PROVIDE TEMPORARY PROTECTION DURING CONSTRUCTION AS REQUIRED.

4. BASIC REQUIREMENTS TO INCLUDE GAS LINE, RESET CLEAN EXISTING PAVERS (APPROX. 160 SQ.FT.) AS WELL AS FURNISH AND INSTALL NEW PAVERS TO MATCH EXISTING (APPROX. 20 SQ.FT.).

PLUMBING – SITE UTILITY PLAN

1/8"=1'-0"

N

nationalgrid

HERE WITH YOU. HERE FOR YOU.

Contractor

Trenching Requirements

Customer Obligations

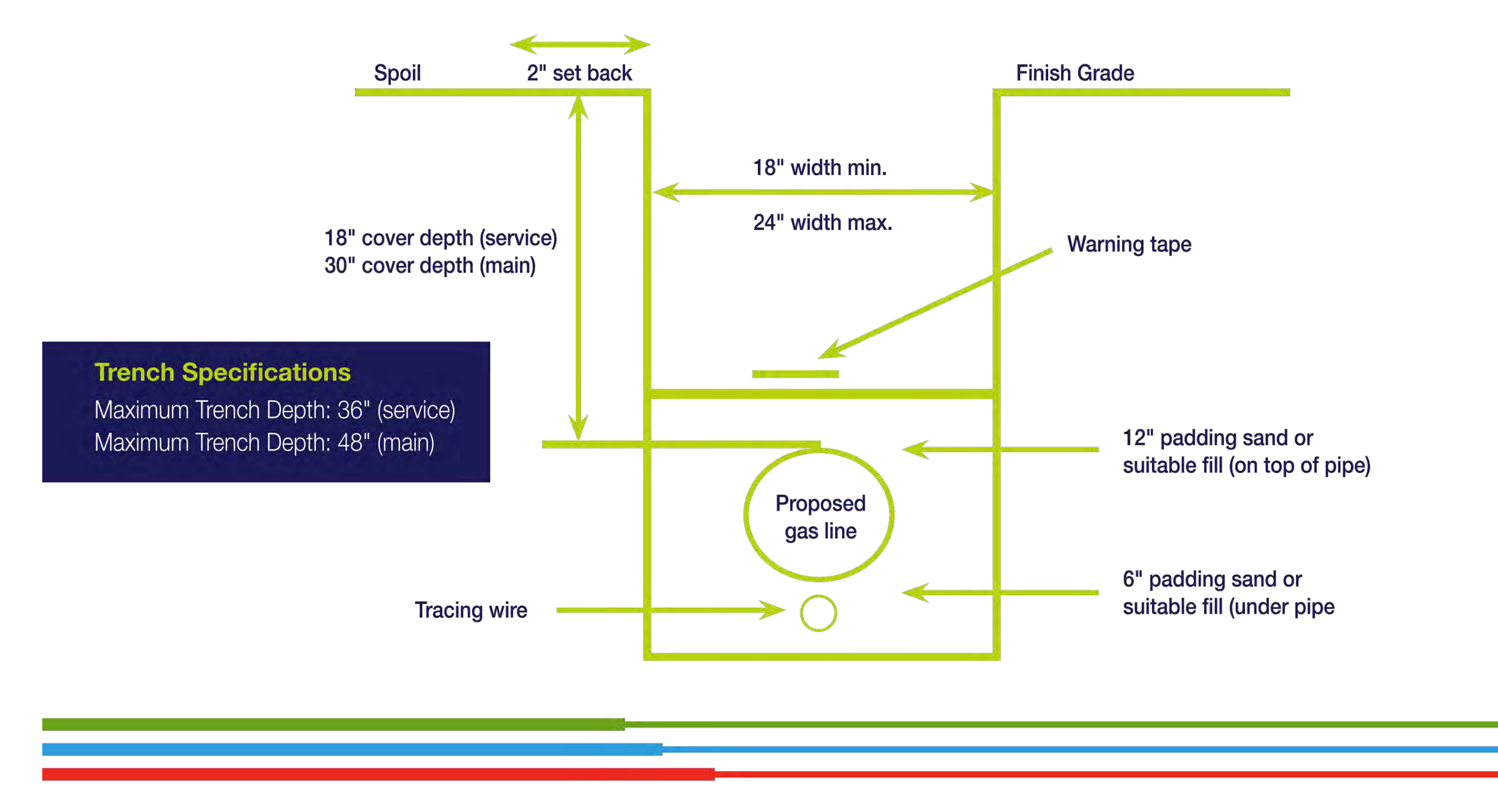
- Prior to beginning any outdoor construction that involves digging, excavating, trenching or grading, remember to call **811** or Dig Safe at **888-DIG-SAFE** (888-344-7233). State laws require advance notice of at least 48 to 72 hours (excluding weekends and holidays) before you get ready to begin your outdoor project.
- Coordinate installation schedule with National Grid.
- Expose existing gas service stub or main (where applicable) and fully excavate trench in accordance with trench specifications below. Any excavation within 18 inches of existing mains and/or services shall be hand dug.
- Provide and place a minimum of 6 inches of padding sand or suitable fill (subject to gas company approval) in the bottom of trench prior to gas company arrival.
- Provide and place sufficient padding sand at the edge of of the trench along the entire length to provide 12 inches of cover.
- Backfill balance of entire trench with suitable fill.

National Grid Obligations

- Inspect for trench specification compliance.
- Provide the necessary pipe-related materials for installation.
- Place padding sand on top of pipe. Install warning tape.
- Observe backfilling as required for compliance.

Trench Specifications

- Bottom of trench must be smooth and level as practical and free of rocks and other abrasives.
- Padding sand and suitable fill (subject to approval by National Grid) should be free of stones or other abrasive material.
- Gas service must have a minimum separation of 3 feet from parallel utilities.
- Maintain a minimum of 1 foot separation when crossing other utilities.
- Crossing other utilities - subject to approval by National Grid.



(6/13) Contractor Trenching Requirements

Printed on recycled paper

8' 0' 8' 16'

A/E FIRMS	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
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GENERAL STRUCTURAL NOTES

PART 1 – GENERAL REQUIREMENTS AND DESIGN CRITERIA

1.1 DEFINITIONS

A. THE CONTRACTING OFFICER (CO) REPRESENTS THE GOVERNMENT AND HAS ULTIMATE APPROVAL AUTHORITY.

B. THE STRUCTURAL ENGINEER OF RECORD IS A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS AND ENGAGED BY THE CONTRACTOR SUBJECT TO APPROVAL BY THE GOVERNMENT CO.

C. THE STRUCTURAL DESIGNER OF RECORD (SIMPSON GUMPERTZ & HEGER INC.) IS ENGAGED BY THE GOVERNMENT (BOSTONIAN SOCIETY) WITH DELEGATED REVIEW AUTHORITY UNDER THE GOVERNMENT CO.

1.2 SPECIFICATIONS

A. THE WORK OF THESE DRAWINGS ADDRESSES STRUCTURAL INFORMATION ONLY. THE STRUCTURAL DOCUMENTS INCLUDE THESE S-SERIES DRAWINGS AND GENERAL NOTES.

1.3 GENERAL

A. THE INTENT OF THE STRUCTURAL DRAWINGS IS TO SHOW THE MAIN STRUCTURAL FEATURES AND DESIGN FOR THE COMPLETED PROJECT.

B. UNLESS OTHERWISE NOTED, DETAILS, SECTIONS AND NOTES CONTAINED IN THE STRUCTURAL CONTRACT DOCUMENTS SHALL BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS EVEN IF NOT EXPLICITLY REFERENCED.

C. CONTRACTOR SHALL NOT SCALE DRAWINGS TO OBTAIN ANY MISSING INFORMATION OR TO OBTAIN ANY MISSING INFORMATION OR TO INTERPRET ANY INFORMATION NOT SPECIFICALLY DIMENSIONED FOR EXACT DETAILING OR CONSTRUCTION PURPOSES.

D. DEFICIENT WORK AND/OR WORK NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL COMPENSATE THE GOVERNMENT FOR SERVICES ARISING FROM DEFICIENT WORK, REVIEW OF MODIFICATIONS/CONTRACTOR SUBSTITUTION, OR EXPEDITING OF SUBMITTALS.

E. COST OF INVESTIGATION AND/OR REDESIGN INCURRED BY THE ENGINEER OF RECORD DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.

F. THE CONTRACTOR SHALL SUBMIT A SINGLE DIMENSIONED AND COORDINATED DRAWING FOR EACH AREA OF WORK INCORPORATING WORK OF A MULTIPLE SUBCONTRACTORS AS REQUIRED FOR REVIEW BY THE CO AND STRUCTURAL DESIGNER OF RECORD. IF WORK IS NOT COORDINATED ON THE SHOP DRAWINGS, THIS WILL BE A REASON FOR THE CO TO REJECT THE SUBMITTAL.

G. OPENINGS IN SLABS AND WALLS LESS THAN 12-IN. MAXIMUM DIMENSION ARE GENERALLY NOT SHOWN ON STRUCTURAL DRAWINGS. OPENINGS SHOWN ON STRUCTURAL DRAWINGS SHALL NOT BE REVISED WITHOUT PRIOR WRITTEN APPROVAL OF THE CO AND STRUCTURAL DESIGNER OF RECORD.

H. LOADS IMPOSED ON THE BASE BUILDING STRUCTURE AND TEMPORARY CONDITIONS INTENDED TO ACCOMMODATE CONSTRUCTION MEANS AND METHODS ARE NOT EXPLICITLY CONSIDERED IN THIS DESIGN. THE CONTRACTOR SHALL ADVISE THE CO AND STRUCTURAL DESIGNER OF RECORD REGARDING CONSTRUCTION LOADS AND TEMPORARY CONDITIONS IMPOSED ON THE BUILDING STRUCTURE AND SHALL ENGAGE A STRUCTURAL ENGINEER OF RECORD TO REVIEW TEMPORARY CONSTRUCTION LOADS AND THEIR IMPACT ON THE BASE BUILDING STRUCTURE.

I. WORK SHALL BE MONITORED AND INSPECTED BY AN INDEPENDENT TESTING AGENCY, RETAINED BY THE GOVERNMENT, IN ACCORDANCE WITH THE PROJECT PROGRAM OF STRUCTURAL INSPECTIONS. SUBMIT ALL INSPECTION REPORTS TO CO AND STRUCTURAL DESIGNER OF RECORD FOR REVIEW.

J. CONTRACTOR SHALL CAREFULLY CHECK STABILITY OF ALL ELEMENTS OF THE BUILDING BEFORE DOING ANY WORK ON EXISTING STRUCTURES. BRACE OR STRENGTHEN ALL PORTIONS OF STRUCTURE WHICH MAY BE WEAKENED BY REMOVAL OF EXISTING CONSTRUCTION UNTIL NEW CONSTRUCTION IS IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF TEMPORARY BRACING, SHORING, AND STRENGTHENING. SUBMIT DESIGN AND SUPPORTING CALCULATIONS SEALED BY THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW BY CO AND STRUCTURAL DESIGNER OF RECORD.

K. STRUCTURAL SCOPE COMPRISES THE NEW STRUCTURAL COMPONENTS AND DETAILS IN THE SPECIFIC AREA OF THE EXISTING BUILDING AS DESIGNATED IN THE STRUCTURAL DRAWINGS. THE EXISTING STRUCTURE OUTSIDE OF THE SCOPE OF WORK SHOWN IS NOT PART OF THIS PROJECT.

L. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF ADJACENT STRUCTURES, PROPERTY, HIS WORKMEN, AND THE PUBLIC, AS AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.

1.4 ELEVATIONS AND DIMENSIONS

A. ALL ELEVATIONS AND DIMENSIONS SHOWN FOR NEW CONSTRUCTION ARE FOR INFORMATION ONLY. FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS BEFORE PROCEEDING WITH CONSTRUCTION.

B. EXISTING DIMENSIONS: EXISTING DIMENSIONS ARE TAKEN FROM THE REFERENCE PLANS AND ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR, AS APPROPRIATE, PRIOR TO FABRICATION OF MEMBERS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE CO PRIOR TO PROCEEDING WITH WORK.

1.5 BUILDING CODE

A. INTERNATIONAL BUILDING CODE 2015 WITH MASSACHUSETTS AMENDMENTS (MSBC 9TH EDITION). MASSACHUSETTS AMENDMENTS REFERENCE THE 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC).

B. ASCE/SEI 7-10, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

C. ADDITIONAL CODES FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW. SEE THOSE SECTIONS FOR THE APPLICABLE CODES.

D. THIS WORK IS CLASSIFIED AS "REPAIRS" UNDER IEBC PRESCRIPTIVE COMPLIANCE PROVISIONS.

1.6 DESIGN LOADS

A. DEAD LOADS

1.	ALL PERMANENT STATIONARY CONSTRUCTION	
2.	PAVERS	30 PSF
3.	TOPPING SLAB	30 PSF
4.	STRUCTURAL SLAB	150 PSF
5.	MEP	20 PSF

B. PLAZA LIVE LOADS

1.	DISTRIBUTED	250 PSF
2.	CONCENTRATED	8,000 LB
3.	TRUCK	HS20 (32 KIP AXLE LOAD)

1.7 SUBMITTALS

A. SUBMIT SHOP DRAWINGS, CERTIFICATIONS, PRODUCT DATA, ETC. AS DESCRIBED HEREIN TO THE CO FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION. ANY WORK FABRICATED AND INSTALLED BY THE CONTRACTOR PRIOR TO SUBMITTAL APPROVAL IS AT THE CONTRACTOR'S RISK.

PART 2 – PROCEDURE

A. THE GOVERNMENT SHALL ENGAGE A SPECIAL INSPECTOR TO PROVIDE SPECIAL INSPECTIONS FOR ALL STRUCTURAL WORK AS REQUIRED BY THE MASSACHUSETTS STATE BUILDING CODE, AND IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS. THE CONTRACTOR SHALL PROVIDE FULL AND AMPLE MEANS AND ASSISTANCE FOR TESTING MATERIALS AND WORKMANSHIP AND PROPER FACILITIES FOR INSPECTION OF THE WORK IN THE SHOP AND IN THE FIELD.

B. (NOT USED).

C. ALL ELEVATIONS AND DIMENSIONS SHOWN FOR THE NEW CONSTRUCTION ARE BASED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS OF THE EXISTING BUILDING. VERIFICATION AND DOCUMENTATION OF EXISTING CONDITIONS SHALL BE COMPLETED PRIOR TO SHOP FABRICATION. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS AND FIT.

D. (NOT USED)

E. APPROVAL OF SUBMITTALS IS FOR GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND DOES NOT RELIEVE THE CONTRACTOR RESPONSIBILITY FOR DIMENSIONS, FABRICATIONS, AND CORRECT FIT OF STRUCTURAL MEMBERS. THE CONTRACTOR IS WHOLLY RESPONSIBLE FOR THE CONFORMITY OF DIMENSIONS AND DETAILS OF THE SHOP DRAWINGS WITH THE CONTRACT DOCUMENTS.

F. UNAUTHORIZED REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RE-SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED

G. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS, INCLUDING MAINTAINING TEMPORARY STABILITY OF THE STRUCTURE DURING ERECTION. PROTECT THE BUILDING AND INTERIOR AREAS DURING THE WORK FROM ALL RISKS ASSOCIATED WITH THE WORK. ALL EQUIPMENT USED ON THE PROJECT SHALL COMPLY WITH THE APPLICABLE MUNICIPAL AND SAFETY REGULATIONS, INCLUDING OSHA GUIDELINES. THE CONTRACTOR SHALL PROVIDE FOR THE SAFETY OF THE GENERAL PUBLIC IN THE VICINITY OF ALL WORK AREAS. TAKE ADEQUATE PROTECTION AGAINST FIRE DURING FIELD WELDING, INCLUDING, BUT NOT LIMITED TO, ADEQUATE FIRE WATCHES. DEVELOPING AND IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

H. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES AND THE DETAILS, THE MORE STRINGENT SHALL GOVERN.

PART 3 – FOUNDATIONS

3.1 BACKFILL UNDER SLAB ON GRADE:

A. BACKFILL WHERE REQUIRED BELOW SLABS WITH APPROVED GRANULAR SOIL PLACED IN 6 IN. LAYERS AND COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT AS DEFINED BY ASTM D-1557, METHOD D. PROVIDE VAPOR BARRIER UNDER INTERIOR SLABS ON GRADE.

PART 4 – CONCRETE WORK

4.1 CONCRETE MIX PROPERITES

A. ELEMENT (NORMAL WEIGHT U.O.N.)

1. ALL CONCRETE U.O.N.:

28 DAY STRENGTH	MAX W/C RATIO	AIR CONTENT
5,000 PSI	0.40	6%±1.5%

B. PORTLAND CEMENT: ASTM C150, TYPE II.

C. DENSITY: NORMAL WEIGHT = 145 PCF.

D. AIR ENTRAINMENT: ASTM C260

E. FOR CELLULAR CONCRETE REQUIREMENTS SEE SPECIFICATIONS.

4.2 BASE PLATE GROUT:

8,000 PSI 28-DAY COMPRESSIVE STRENGTH AT FLUID CONSISTENCY.

4.3 STEEL REINFORCEMENT:

A. ASTM A615 GRADE 60, DEFORMED, EPOXY COATED.

B. ASTM A1022 FOR WIRE REINFORCEMENT (USE FLAT SHEETS ONLY), STAINLESS STEEL.

C. PROVIDE #6 CHAIR BARS, HIGH CHAIRS, TIES, CLIPS, SLAB BOLSTERS, STANDEES, AND OTHER ACCESSORIES WHERE NOT SPECIFIED ON THE DRAWINGS IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OR DETAILING REINFORCING CONCRETE STRUCTURES ACI 315 OR CRSI-WRSI MANUAL OF STANDARD PRACTICE. USE PLASTIC TIPS ON ALL CHAIRS PLACED ON THE SIDES OF CONCRETE FORMWORK.

D. DO NOT TACK OR SPOT-WELD CROSSING BARS.

E. CONTRACTOR SHALL SET AND TIE ALL REINFORCEMENT PRIOR TO PLACING CONCRETE. SETTING OF DOWELS AND REINFORCEMENT INTO WET CONCRETE SHALL NOT BE PERMITTED.

4.4 REINFORCEMENT AT OPENINGS:

U.O.N., PROVIDE 2 – #6 AT EACH SIDE OF ALL OPENINGS IN WALLS AND SLABS AND EXTEND 2 FT-6 IN. BEYOND THE OPENING OR AS DETAILED, EXCEPT VERTICAL BARS AT SIDES OF OPENINGS IN WALLS ARE TO EXTEND FROM FLOOR TO FLOOR. BARS MAY BE MOVED ASIDE AT OPENINGS OR SLEEVES, BUT DO NOT CUT OR OMIT.

4.5 ... (continued)

A. #4 BARS: 35".

#6 BARS: 51".

B. PROVIDE A LAP OF 8 IN OR TWO WIRE SPACES, WHICHEVER IS LARGER, FOR WWR. TIE WIRES TOGETHER AT LAP.

4.6 REINFORCEMENT SHOP DRAWINGS:

SUBMIT FOR APPROVAL, COMPLETE BENDING AND PLACING DETAILS OF ALL REINFORCEMENT INCLUDING WELDED WIRE REINFORCEMENT, INDICATING POSITION OF SPLICES. INCLUDE ACCESSORY DRAWINGS.

4.7 MINIMUM CONCRETE CLEAR COVER:

A.	CONCRETE PLACED AGAINST EARTH:	3 IN.
B.	SLABS-ON-GRADE BOTTOM:	3 IN.
C.	SLABS-ON-GRADE TOP:	2 IN.
D.	PAVEMENT SLABS TOP:	2 IN.
E.	FORMED CONCRETE EXPOSED TO EARTH, WATER OR WEATHER:	2 IN.
F.	FORMED SLABS, TOP AND BOTTOM:	1 IN.
G.	INTERIOR FACES OF WALLS:	1 IN.
H.	COLUMNS OR PIERS (MAIN REINFORCEMENT):	2 IN.

4.8 STANDARD SPECIFICATIONS:

A. CRSI MANUAL OF STANDARD PRACTICE

B. ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

C. FOLLOW THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE:

1. ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE
2. ACI 302 CONCRETE FLOOR AND SLAB CONSTRUCTION
3. ACI 304 GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE
4. ACI 305 HOT WEATHER CONCRETING
5. ACI 306 COLD WEATHER CONCRETING
6. ACI 315 ACI DETAILING MANUAL
7. ACI 347 GUIDE TO FORMWORK FOR CONCRETE

D. AWS D1.4:2011 REINFORCING STEEL

4.9 EXISTING SURFACE TREATMENT:

ROUGHEN ALL EXISTING CONCRETE SURFACES COMMON WITH NEW CONCRETE TO AMPLITUDE OF 1/4 INCH.

4.10 STRUCTURAL TESTING AND INSPECTIONS

A. NO CONCRETE SHALL BE PLACED PRIOR TO REBAR INSPECTION AND APPROVAL.

4.11 ALL CURING COMPOUNDS MUST BE APPROVED BY THE CO AND STRUCTURAL DESIGNER OF RECORD. SEE SPECIFICATIONS FOR REQUIREMENTS. CURING COMPOUNDS SHALL NOT BE USED ON FLATWORK.

4.12 CORE-DRILLED AND SAW-CUT OPENINGS IN CONCRETE CONSTRUCTION

A. TO THE GREATEST EXTENT POSSIBLE, OPENINGS FOR PLUMBING, FIRE PROTECTION, ELECTRICAL CONDUITS, AND MECHANICAL DUCTWORK IN CONCRETE WALLS AND SLABS SHALL BE COORDINATED PRIOR TO CONSTRUCTION; THESE OPENINGS SHALL BE SLEEVED. A CERTAIN AMOUNT OF CORE-DRILLING AND SAW-CUTTING MAY BE REQUIRED. THE CONTRACTOR SHALL SUBMIT A CORE REQUEST TO THE CO FOR REVIEW AND APPROVAL PRIOR TO MAKING ANY CUTS OR CORES. THE CO WILL CARRY OUT SUCH REVIEWS AS THE CO'S SCHEDULE PERMITS. AT A MINIMUM, ALL CUT AND CORE REQUESTS MUST INCLUDE: THE REASON FOR THE CUT OR CORE; AN OVERALL PHOTOGRAPH OF THE AREA TO BE CUT OR CORED INDICATING THE PROJECT NORTH DIRECTION AND OTHER NEARBY OPENINGS; AND A PLAN (FOR SLABS) OR AN ELEVATION (FOR WALLS) SHOWING THE SIZE AND DIMENSIONS OF THE CUT OR CORE WITH RESPECT TO COLUMN LINES AND FLOOR LEVELS. THE CO WILL NOT REVIEW REQUESTS WITHOUT ALL OF THIS INFORMATION. A REQUEST FOR APPROVAL OF A CUT OR CORE DOES NOT GUARANTEE THAT THE CO WILL APPROVE THE CUT OR CORE.

PART 5 – STRUCTURAL STEEL

5.1 STRUCTURAL SHAPES:

A.	WIDE FLANGE SHAPES:	ASTM A992
B.	ANGLES:	ASTM A36, U.O.N.
C.	CHANNELS:	ASTM A36, U.O.N.
D.	PLATES:	ASTM A36, U.O.N.

5.2 HOLLOW STRUCTURAL SHAPES (HSS):

ASTM A500 GRADE B – (FY = 46,000 PSI) OR ASTM A1085 (FY=50,000 PSI)

5.3 STRUCTURAL PIPE:

ASTM A53, TYPE E, GRADE B OR ASTM A501

5.4 BOLTED CONNECTIONS:

A. ASTM A325.

B. ALL BOLTS SHALL BE TIGHTENED TO A "SNUG-TIGHT" CONDITION, UNLESS NOTED OTHERWISE.

C. AT CONNECTIONS BETWEEN NEW BEAMS, PROVIDE (2) $\frac{7}{8}$" ø BOLT SINGLE. PLATE CONNECTIONS IN CONFORMANCE WITH TABLE 10-102 OF AISC STEEL CONSTRUCTION MANUAL (14TH ED.) U.O.N. USE $\frac{5}{16}$" CONNECTION PLATES.

5.5 ANCHOR RODS:

ASTM F1554 GRADE 36 BOLTS U.O.N.

BASIC DATA:

5/20/2019 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\S0 GENERAL NOTES AND ABBREVIATIONS.DWG

A/E FIRMS:	DESIGNED:	SUB SHEET NO.		DRAWING NO.
ENGINEER: SIMPSON GUMPERTZ & HEGER INC. WALTHAM, MA. 02453	M. WEBSTER	S00	STRUCTURAL GENERAL NOTES (1 OF 2)	457 / 144213
	CADD: F. BOU-NASSIF		MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	PKG. NO. 232 / 487
	TECH REVIEW:		BOSTON NATIONAL HISTORICAL PARK	SHEET 38 OF 44
	DATE: 4/24/2020			

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5.5 ANCHOR RODS:
ASTM F1554 GRADE 36 BOLTS U.O.N.

5.6 WELDING ELECTRODES:
A. CONFORM TO AWS SPECIFICATIONS FOR ELECTRODES BASED ON WELDING PROCESS AND THE TYPE AND GRADE OF STEEL. E70XX ELECTRODES (MIN.) FOR FILLET WELDS.

5.7 FABRICATION:
A. SHOP FABRICATE TO GREATEST EXTENT POSSIBLE BY WELDING INCLUDING BEAM STIFFENERS, COLUMN CAPS AND BASES, HOLES AND CONNECTIONS.
B. SUBMIT COMPLETE SHOP DRAWINGS FROM FIELD DIMENSIONS FOR THE CO'S APPROVAL OF ALL STRUCTURAL STEEL PRIOR TO FABRICATION.

5.8 ERECTION:
A. PROVIDE ANCHOR RODS, STEEL WEDGES, THREADED SCREWS OR SHIMS TO SUPPORT AND PLUMB ALL COLUMNS.
B. PROVIDE BEARING PLATES AND WALL ANCHORS OR ANCHOR RODS FOR ALL BEAMS RESTING ON CONCRETE AND ALL OTHER NECESSARY CONNECTING HARDWARE.
C. SET ANCHOR RODS USING TEMPLATE. PLATES SHALL BE SET IN FULL BEDS OF NON-SHRINK GROUT.
D. DO NOT FIELD CUT OR FIELD MODIFY ANY STRUCTURAL STEEL WITHOUT PRIOR WRITTEN APPROVAL BY CO FOR EACH SPECIFIC CASE. STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

5.9 HOT-DIP GALVANIZING:
A. ALL STEEL, INCLUDING BUT NOT LIMITED TO STRUCTURAL MEMBERS, CONNECTION MATERIALS AND MISC. METALS, SHALL BE HOT-DIP GALVANIZED, UNLESS OTHERWISE NOTED. ALL FIELD WELDS, OR AREAS WHERE HOT-DIP GALVANIZING IS DAMAGED, SHALL BE TOUCHED-UP WITH A ZINC-RICH PAINT ("COLD GALVANIZING") AFTER STEEL IS COMPLETELY INSTALLED.
B. PLUG WELD VENT HOLES AFTER GALVANIZING.
C. SEAL WELD ALL SEAMS NOT OTHERWISE WELDED.

5.10 STANDARD SPECIFICATIONS AND REFERENCE STANDARDS
A. AISC 360-10 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
B. AISC 341-10 SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, INCLUDING SUPPLEMENT NO.1
C. AWS D1.1:2015 – STRUCTURAL WELDING CODE – STEEL

PART 6 – STEEL DECK AND SHEAR STUDS

6.1 STEEL DECK:
A. PROVIDE STEEL DECK MADE FROM GALVANIZED STEEL CONFORMING TO ASTM A653 WITH MINIMUM YIELD STRENGTH OF 33 KSI.
B. SEE DRAWINGS AND SPECIFICATIONS FOR GAUGE AND PROFILE.
C. PROVIDE SHEET METAL POUR STOPS WITH THICKNESS BASED ON SDI CRITERIA (SDI PUBLICATION #31); 14 GAUGE MIN. THICKNESS.
D. STEEL DECK SHALL TYPICALLY BE STORED OFF THE GROUND AT THE JOBSITE, AND BE PROTECTED FROM THE ELEMENTS WITH A WATERPROOF COVERING WHERE REQUIRED.
E. DECK SHALL INCLUDE ANY MISCELLANEOUS CLOSURE PIECES, METAL SCREEDS, ROOF CURBS, DRAIN SUMP PANS, REINFORCING AROUND OPENINGS, ETC., REQUIRED TO MAKE A COMPLETE JOB. MISCELLANEOUS ITEMS SHALL BE GALVANIZED AND SHALL BE NO THINNER THAN 18 GAGE.

6.2 SHEAR STUDS:
A. PROVIDE HEADED TYPE STUDS WHICH CONFORM TO ASTM A108 GRADE 1015 OR 1020 COLD FINISHED CARBON STEEL.
B. SEE THE DRAWINGS FOR NUMBER AND LOCATIONS OF STUDS.
C. PROVIDE A MINIMUM OF 1 IN. FROM THE EDGE OF ANY STUD AND THE FACE OF CONCRETE, A METAL DECK RIB OR SIMILAR DISCONTINUITY.

6.3 STANDARD SPECIFICATIONS:
A. AISI S100-12 – NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STRUCTURAL STEEL MEMBERS.
B. ANSI/SDI C-2011 STANDARD FOR COMPOSITE STEEL FLOOR DECK-SLABS
C. AWS STRUCTURAL WELDING CODE D1.3:2008 STRUCTURAL WELDING CODE – SHEET STEEL

6.4 DO NOT PLACE EMBEDDED CONDUIT WITHIN METAL DECK SUPPORTED SLABS.

PART 7 – POST-INSTALLED ANCHORS

7.1 EXPANSION ANCHORS FOR CONCRETE: HILTI KWIK BOLT 3 OR APPROVED EQUAL WITH EQUIVALENT OR GREATER STRENGTH.
A. INSTALL PER MFR INSTALLATION RECOMMENDATIONS.
B. PROVIDE STANDARD DEPTH OF EMBEDMENT AS LISTED BY MFR, UON.
C. PROVIDE STAINLESS STEEL ANCHORS AND HARDWARE IN ALL EXTERIOR APPLICATIONS.

7.2 ADHESIVE ANCHORS FOR CONCRETE: HILTI HIT-HY 200 ADHESIVE ANCHORS OR APPROVED EQUAL WITH EQUIVALENT OR GREATER STRENGTH.
A. INSTALL PER MFR INSTALLATION RECOMMENDATIONS.
B. PROVIDE STANDARD DEPTH OF EMBEDMENT AS LISTED BY MFR, UON.
C. DO NOT USE IN AN OVERHEAD APPLICATION.
D. PROVIDE STAINLESS STEEL ANCHORS AND HARDWARE IN ALL EXTERIOR APPLICATIONS.

7.3 ADHESIVE ANCHORS FOR BRICK AND STONE MASONRY: HILTI HIT-HY 270 OR APPROVED EQUAL WITH EQUIVALENT OR GREATER STRENGTH.
A. INSTALL PER MFR INSTALLATION RECOMMENDATIONS.
B. PROVIDE STANDARD DEPTH OF EMBEDMENT AS LISTED BY MFR, UON.
C. SET DRILLS TO ROTATION-ONLY MODE WHEN DRILLING INTO BRICK MASONRY, NO IMPACT.
D. PROVIDE STAINLESS STEEL ANCHORS AND HARDWARE IN ALL EXTERIOR APPLICATIONS.

ABBREVIATIONS:

ABBREVIATION	WORD OR PHRASE
ADJ.	ADJACENT
ASD	ALLOWABLE STRESS DESIGN
ALT.	ALTERNATE
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
AB	ANCHOR BOLT
ARCH.	ARCHITECT
@	AT
BAL.	BALANCE
BM	BEAM
B OR BOT.	BOTTOM
BEW	BOTTOM EACH WAY
CEP	CENTRAL ENERGY PLANT
CIP	CAST-IN-PLACE
CJP	COMPLETE JOINT PENETRATION WELD
CG	CENTER OF GRAVITY
CTRD.	CENTERED
℄	CENTERLINE
CO	CLEAN OUT
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONST. JT. OR CJ	CONSTRUCTION JOINT
CONT.	CONTINUOUS
DEPR.	DEPRESSION
DET.	DETAIL
DIA. OR ø	DIAMETER
DIM.	DIMENSION
DIR.	DIRECTION
DO	DITTO
DWLS	DOWELS
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA.	EACH
EE	EACH END
EF	EACH FACE
ES	EACH SIDE
EW	EACH WAY
E	EAST
EL.	ELEVATION
ELEV.	ELEVATOR
EOS	EDGE OF SLAB
EOR	ENGINEER OF RECORD
EP	EMBED PLATE
EQ.	EQUAL
EXP. BOLT	EXPANSION BOLT
EXP. JT OR EJ	EXPANSION JOINT
EXT.	EXTERIOR

ABBREVIATION	WORD OR PHRASE
FF	FAR FACE
FT OR '	FEET
FIN.	FINISH
FIN. FL.	FINISH FLOOR
FL.	FLOOR
FD	FLOOR DRAIN
FTG.	FOOTING
FND	FOUNDATION
FS	FOOTING STEPS
GALV.	GALVANIZED
GA	GAUGE
GENL	GENERAL
GR.	GRADE
GB	GRADE BEAM
HP	HIGH POINT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
H OR HORIZ.	HORIZONTAL
HEF	HORIZONTAL EACH FACE
HIF	HORIZONTAL INSIDE FACE
HOF	HORIZONTAL OUTSIDE FACE
IN. OR "	INCH
INCL.	INCLUSIVE OR INCLUDING
INFO.	INFORMATION
JT	JOINT
K	KIP (1000 POUNDS)
KSF	KIPS/SQUARE FOOT
LE	LEFT END
LW	LIGHTWEIGHT
LWC	LIGHTWEIGHT CONCRETE
LRFD	LOAD & RESISTANCE FACTOR DESIGN
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
MFR	MANUFACTURER
MATL	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MEP+T	MECHANICAL, ELECTRICAL, PLUMBING AND TECHNOLOGY
MIN.	MINIMUM
(N)	NEW
NF	NEAR FACE
NIC	NOT IN CONTRACT
NWC	NORMAL WEIGHT CONCRETE
N	NORTH
NTS	NOT TO SCALE
NO. OR #	NUMBER

ABBREVIATION	WORD OR PHRASE
OC	ON CENTER
OD	OUTER DIAMETER
OPNG	OPENING
PC	PIECE
PL. OR ℘	PLATE
PLF	POUNDS/LINEAR FOOT
PVC	POLYVINYL CHLORIDE
PSF	POUNDS/SQUARE FOOT
PSI	POUNDS/SQUARE INCH
P/C	PRE-CAST
REF.	REFERENCE
REINF.	REINFORCE OR REINFORCEMENT
REM.	REMAINDER
RE	RIGHT END
RD	ROOF DRAIN
SECT.	SECTION
SC	SHEAR CONNECTOR OR SLIP CRITICAL BOLT
SCJ	SLAB CONTROL JOINT
SH	SHEAR HEAD
SHT	SHEET
SLV	SHORT LEG VERTICAL
SIM.	SIMILAR
SJI	STEEL JOIST INSTITUTE
SPA.	SPACES
SOG	SLAB-ON-GRADE
S	SOUTH
SQ.	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SDI	STEEL DECK INSTITUTE
STIFF.	STIFFENER
STR.	STRUCTURAL
SP	SUMP PIT
SUP.	SUPPORT
SYM.	SYMMETRICAL
T	TOP
T&B	TOP & BOTTOM
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
V OR VERT.	VERTICAL
VEF	VERTICAL EACH FACE
VIF	VERTICAL INSIDE FACE
VIF	VERIFY IN FIELD
VOF	VERTICAL OUTSIDE FACE
WWR	WELDED WIRE REINFORCEMENT
W	WEST
W/	WITH
WP	WORKING POINT
W.P.	WATERPROOFING

BASIC DATA:

A/E FIRMS:
ENGINEER:
SIMPSON GUMPERTZ & HEGER INC.
WALTHAM, MA. 02453

DESIGNED: M. WEBSTER
CADD: F. BOU-NASSIF
TECH REVIEW:
DATE: 4/24/2020

SUB SHEET NO. S01

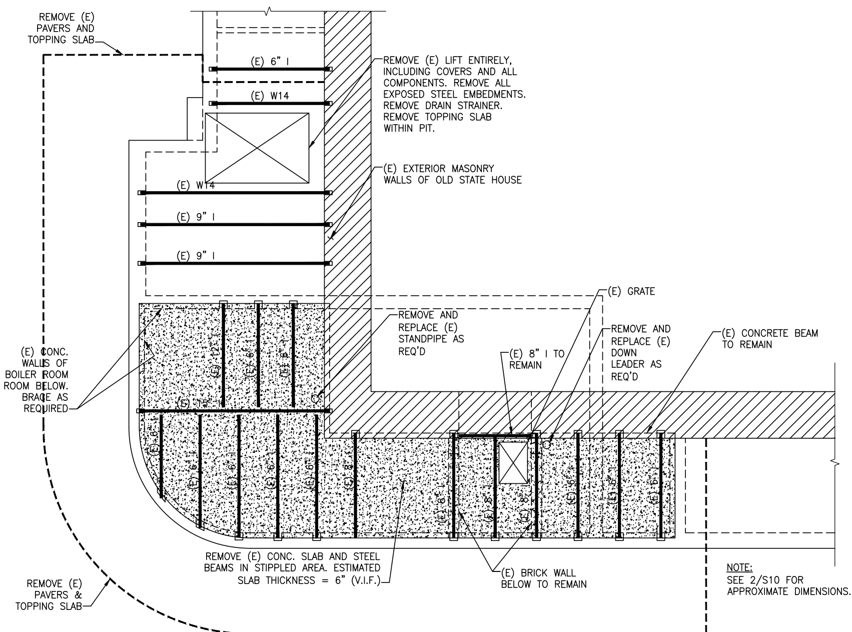
STRUCTURAL GENERAL NOTES (2 OF 2)

MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE

BOSTON NATIONAL HISTORICAL PARK

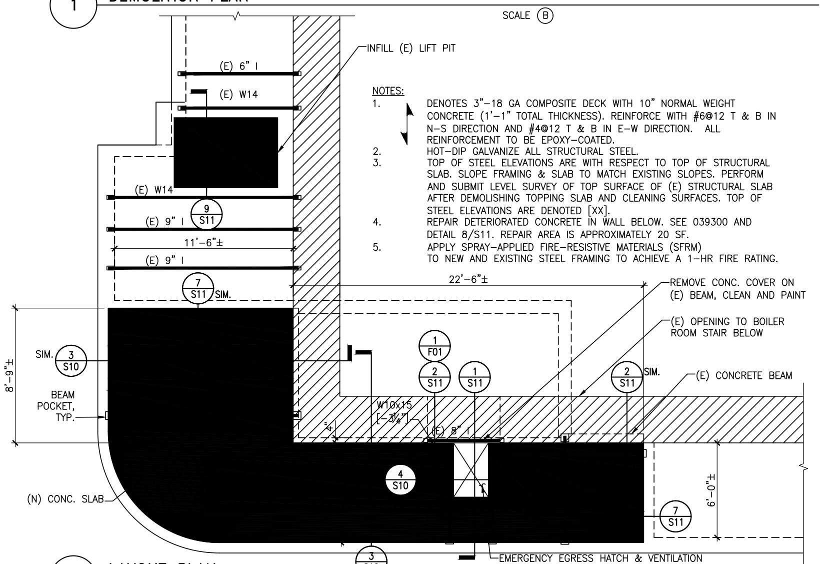
DRAWING NO. 457 / 144213

PKG. NO. 232 / 487



1 DEMOLITION PLAN

SCALE (B)

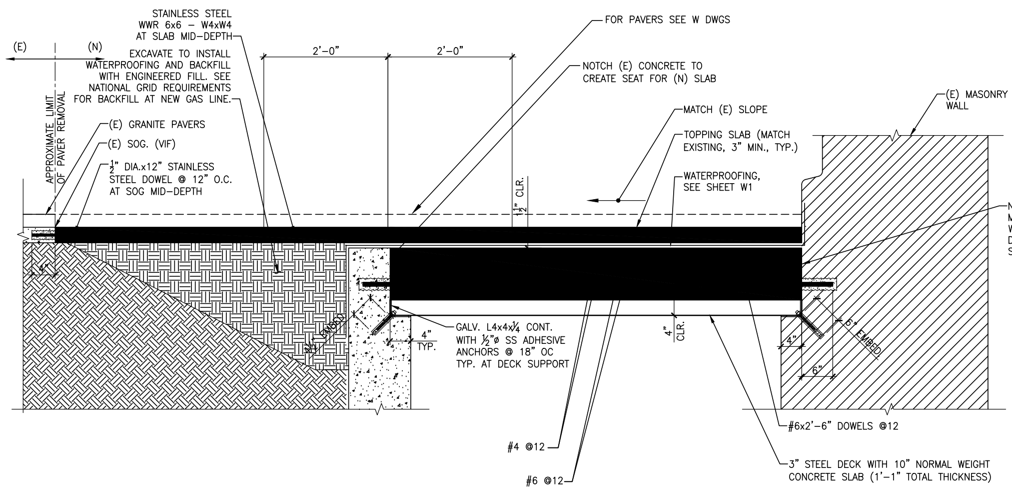


NOTES:

1. DENOTES 3"-18 GA COMPOSITE DECK WITH 10" NORMAL WEIGHT CONCRETE (1'-1" TOTAL THICKNESS). REINFORCE WITH #6@12 T & B IN N-S DIRECTION AND #4@12 T & B IN E-W DIRECTION. ALL REINFORCEMENT TO BE EPOXY-COATED.
2. HOT-DIP GALVANIZE ALL STRUCTURAL STEEL.
3. TOP OF STEEL ELEVATIONS ARE WITH RESPECT TO TOP OF STRUCTURAL SLAB. SLOPE FRAMING & SLAB TO MATCH EXISTING SLOPES. PERFORM AND SUBMIT LEVEL SURVEY OF TOP SURFACE OF (E) STRUCTURAL SLAB AFTER DEMOLISHING TOPPING SLAB AND CLEANING SURFACES. TOP OF STEEL ELEVATIONS ARE DENOTED [XX].
4. REPAIR DETERIORATED CONCRETE IN WALL BELOW. SEE 039300 AND DETAIL 8/S11. REPAIR AREA IS APPROXIMATELY 20 SF.
5. APPLY SPRAY-APPLIED FIRE-RESISTIVE MATERIALS (SFRM) TO NEW AND EXISTING STEEL FRAMING TO ACHIEVE A 1-HR FIRE RATING.

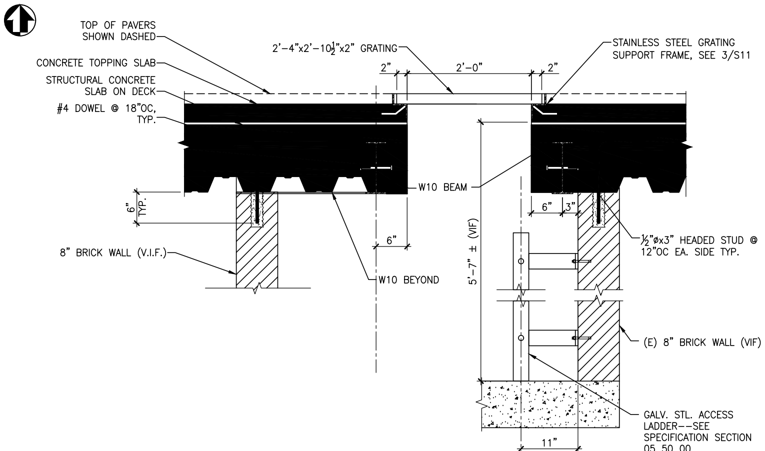
2 LAYOUT PLAN

SCALE (B)



3 TYPICAL BOILER ROOM ROOF SLAB SECTION

SCALE (A)



4 SECTION AT GRATING

SCALE (A)

SCALE (B) 4 0 4 8 SCALE OF FEET

SCALE (A) 1 0 1 2 SCALE OF FEET

A/E FIRMS:	DESIGNED:	SUB SHEET NO.	
ENGINEER: SIMPSON GUMPERTZ & HEGER INC. WALTHAM, MA. 02453	M. WEBSTER	S10	FRAMING PLANS AND DETAILS
	CADD: F. BOU-NASSIF		MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE
	TECH REVIEW:		BOSTON NATIONAL HISTORICAL PARK
	DATE: 4/24/2020		

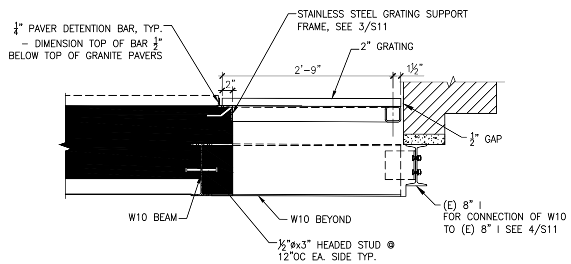
DRAWING NO. 457 144213

PKG. NO. 232 487

SHEET 40 OF 44

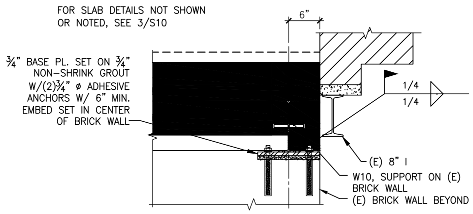
5/20/2019 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\S1 LAYOUT PLAN.DWG

BASIC DATA:



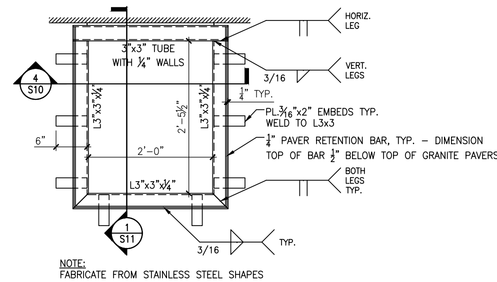
1 SECTION

SCALE (B)



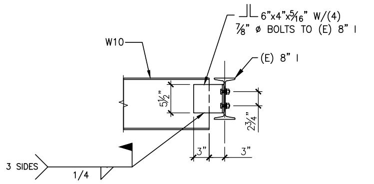
2 SECTION

SCALE (B)



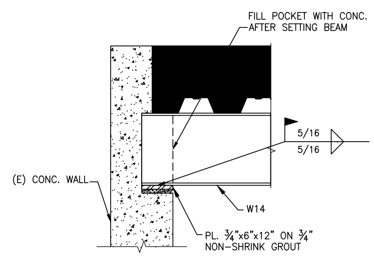
3 STAINLESS STEEL GRATING SUPPORT FRAME

SCALE (B)



4 CONNECTION DETAIL

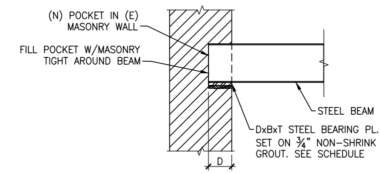
SCALE (B)



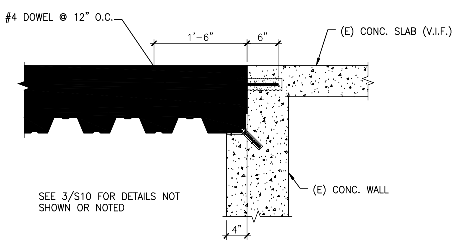
5 W14 BEAM POCKET AT CONC.

SCALE (B)

BEAM	THICKNESS T	WIDTH D	LENGTH B
W14x34	1"	8"	1'-6"
W8x18	3/4"	6"	1'-0"

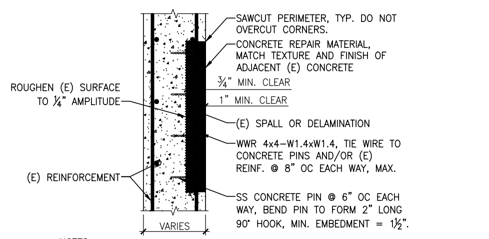


6 TYPICAL STEEL BEAM POCKET AT MASONRY WALL



7 SECTION

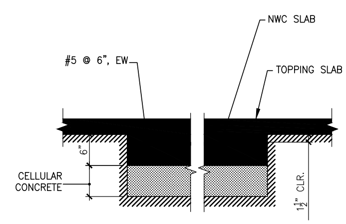
SCALE (B)



NOTES:
1. HAND LAYUP IS ACCEPTABLE AT LOCATIONS LESS THAN 1 SQ FT.
2. WWR NOT REQUIRED IF REPAIR EXPOSES MORE THAN TWO BARS IN EACH DIRECTION.
3. WHERE HAND APPLIED REPAIR MATERIAL IS USED, THE CONCRETE PINS SHALL ENGAGE THE OUTER LIFT.

8 CONCRETE REPAIR – WALL

NO SCALE



9 LIFT PIT INFILL

SCALE (B)

SCALE (B) 1 0 1 2 SCALE OF FEET

3/26/2019 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\S11 STRUCTURAL DETAILS.DWG

BASIC DATA:

A/E FIRMS:
ENGINEER:
SIMPSON GUMPERTZ & HEGER INC.
WALTHAM, MA. 02453

DESIGNED: M. WEBSTER
CADD: F. BOU-NASSIF
TECH REVIEW:
DATE: 4/24/2020

SUB SHEET NO. S11

SECTIONS AND DETAILS

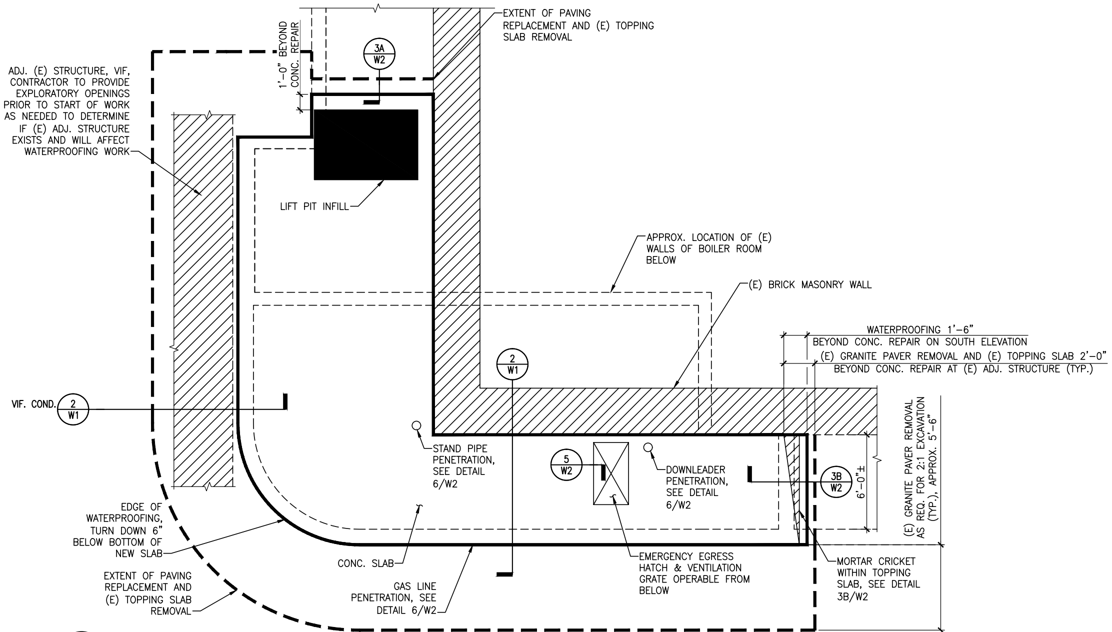
MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE

BOSTON NATIONAL HISTORICAL PARK

DRAWING NO. 457 144213

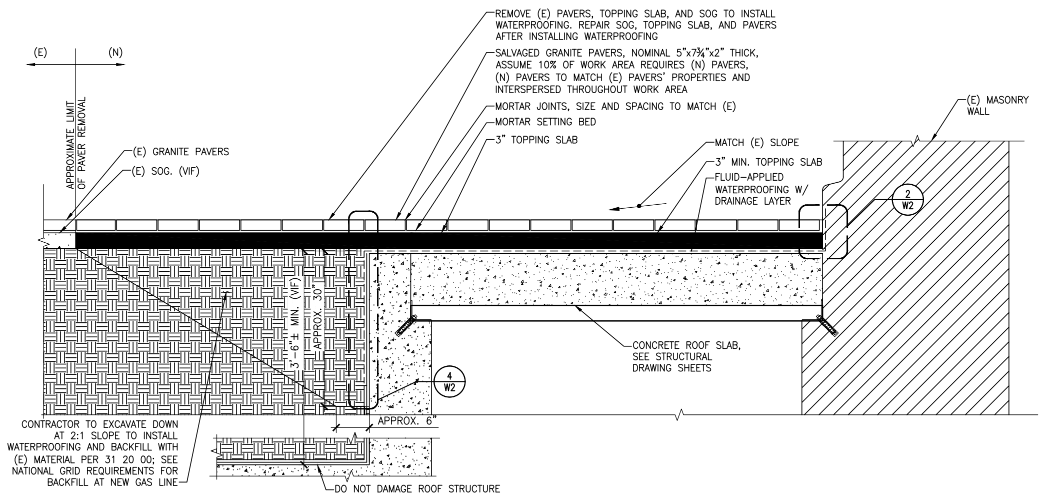
PKG. NO. 232 487

SHEET 41 OF 44



1 LAYOUT PLAN

SCALE (B)



2 BOILER ROOM ROOF SLAB SECTION

SCALE (A)

WATERPROOFING NOTES:

1. REFER TO SPECIFICATION SECTION 071416 COLD FLUID-APPLIED WATERPROOFING FOR MATERIAL AND EXECUTION REQUIREMENTS.
2. WATERPROOFING APPLICATOR AND CONTRACTOR SHALL ASSIST AND FACILITATE CONTRACTING OFFICER'S FIELD ADHESION TESTING. FLUID-APPLIED MEMBRANE ADHESION MUST MEET MANUFACTURER'S AND CONTRACTING OFFICER'S APPROVAL.

SCALE (B) 4 0 4 8 SCALE OF FEET

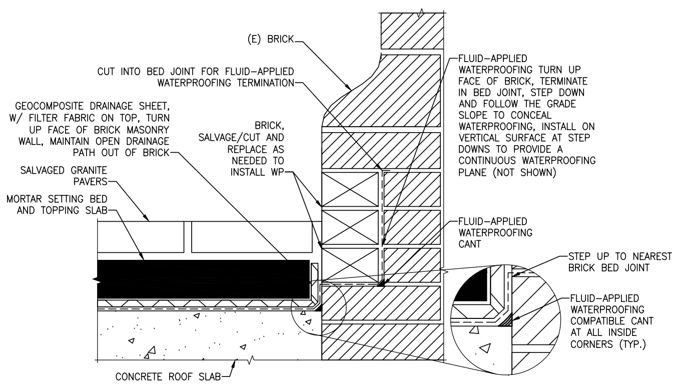
SCALE (A) 1 0 1 2 SCALE OF FEET

A/E FIRMS:	DESIGNED:	SUB SHEET NO.	PLAN AND ELEVATIONS	DRAWING NO.
ENGINEER: SIMPSON GUMPERTZ & HEGER INC. WALTHAM, MA. 02453	G. DOELP	W1	MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	457 144213
	CADD: F. BOU-NASSIF		BOSTON NATIONAL HISTORICAL PARK	PKG. NO. 232 487
	TECH REVIEW:			SHEET 42 OF 44
	DATE: 4/24/2020			

BASIC DATA:

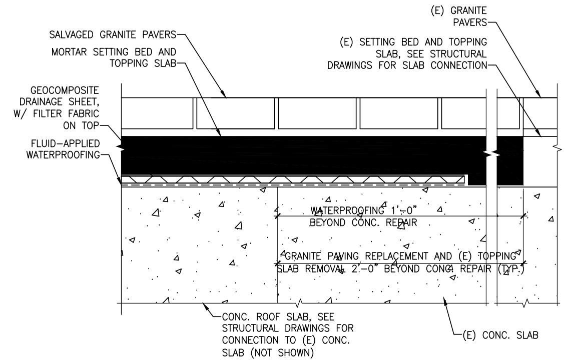
5/20/2019 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\W1 WATERPROOFING DETAILS.DWG

1 NOT USED



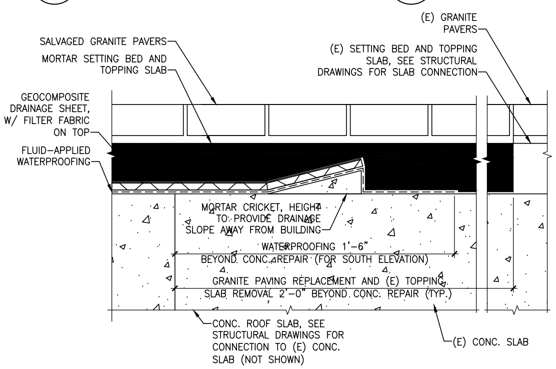
2 BASE OF BRICK MASONRY WALL

SCALE (B)

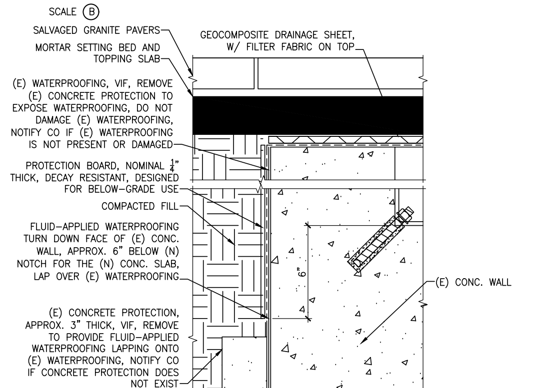


3A ADJ. (E) STRUCTURE AT WORK AREA LIMIT (EAST ELEVATION)

SCALE (B)

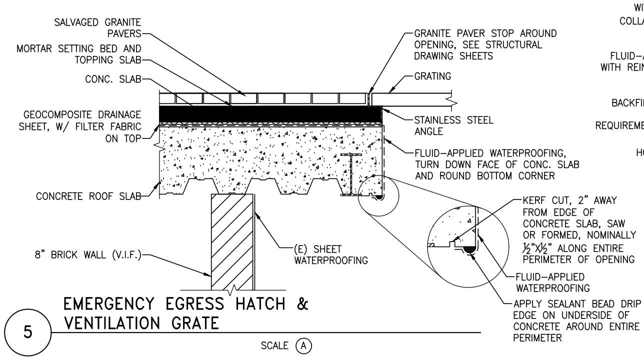


3B ADJ. (E) STRUCTURE AT WORK AREA LIMIT (SOUTH ELEVATION)



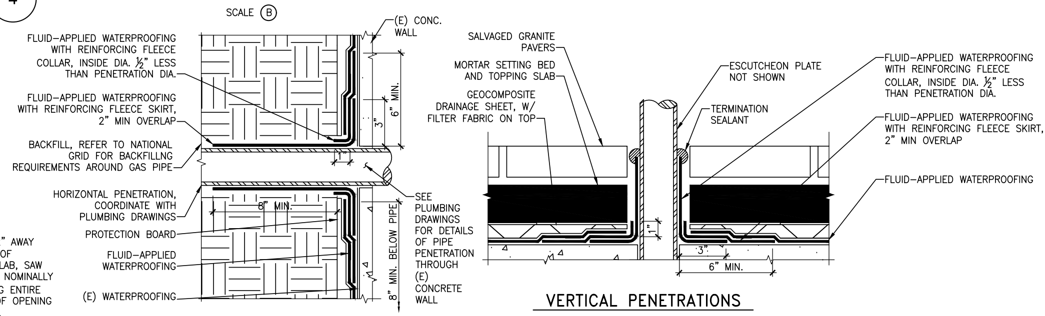
4 EDGE OF BELOW GRADE STRUCTURE

SCALE (B)



5 EMERGENCY EGRESS HATCH & VENTILATION GRATE

SCALE (A)



6 TYPICAL PIPE PENETRATION FLASHING

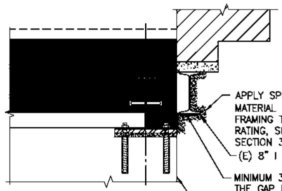
SCALE (B) 6 3 0 6 SCALE OF INCHES

SCALE (A) 4 0 4 8 SCALE OF FEET

A/E FIRMS:	DESIGNED:	SUB SHEET NO.	WATERPROOFING DETAILS	DRAWING NO.
ENGINEER: SIMPSON GUMPERTZ & HEGER INC. WALTHAM, MA. 02453	G. DOELP	W2	MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE	457 144213
	CADD: F. BOU-NASSIF			PKG. NO. 232 487
	TECH REVIEW:			SHEET 43 OF 44
	DATE: 4/24/2020		BOSTON NATIONAL HISTORICAL PARK	

BASIC DATA:

5/20/2019 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\W2 WATERPROOFING DETAILS.DWG



NOTE:
APPLY SPRAY-APPLIED FIRE-RESISTIVE - MATERIAL (SFRM) TO NEW AND EXISTING STEEL FRAMING PER SPECIFICATION 078100.

1 SECTION

SCALE (B)

SCALE (B) 1 0 1 2
SCALE OF FEET

3/26/2019 I:\BOS\PROJECTS\2016\161749.01-PLZA\DRAWINGS\WORKING_SET\F01 STRUCTURAL DETAILS SFRM.DWG

BASIC DATA:

A/E FIRMS: ENGINEER: SIMPSON GUMPERTZ & HEGER INC. WALTHAM, MA. 02453	DESIGNED: C. SCANGAS CADD: F. BOU-NASSIF TECH REVIEW: DATE: 4/24/2020	SUB SHEET NO. F01	SECTIONS AND DETAILS MECHANICAL AND STRUCTURAL UPGRADES ~~AND EXTERIOR ENVELOPE IMPROVEMENTS~~ AT THE OLD STATE HOUSE BOSTON NATIONAL HISTORICAL PARK	DRAWING NO. 457 / 144213 PKG. NO. 232 / 487 SHEET 44 OF 44