ABBREVIATIONS

AFE	ADOVE FINISHED FLOOD
AFF	ABOVE FINISHED FLOOR
APC	ACOUSTICAL PANEL CEILING
ALUM	ALUMINUM
ATL	ALTERNATE
ANOD	ANODIZED
ANOD	RIUDIZED
BLDG	BUILDING
B.O.D.	BASIS OF DESIGN
BOT	BOTTOM
RYDN	REYOND
BIDIN	CONTROL JOINT
CJ	CONTROL JUINT
CLNG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COL	COLOMIN
CONC	CONCRETE
CONT	CONTINUOUS
DEMO	DEMOLISH
DIA	DIAMETER
DIM	DIMENCION
DIM	DIMENSION
DN	DOWN
DPP	DEPARTMENT OF PUBLIC PROPERTY
DWG	DRAWING
(F)	FXISTING
	EAGU
EA	
EL	ELEVATION
ELEC	ELECTRICAL
EQ	EQUAL
FOUIP	EQUIPMENT
EW/	EACH WAY
	EXICTING
EX	EXISTING
EXIST	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FIN	
	FINISH
FLR	FLUUR
FND	FOUNDATION
FRT	FIRE RESISTANT TREATED
GA	GAUGE
GALV	GALVANIZED
CMD	
GWB	GIFSUM WALL BOARD
HDWR	HARDWARE
HM	HOLLOW METAL
HVAC	HEATING/VENTILATION/AIR CONDITIONING
MAT	MATERIAL
MAN	
MAA	
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
MO	MASONRY OPENING
MTI	MFTAL
NI /A	NOT APPLICAPLE
N/A	NOT AFFLICADLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
00	ON CENTER
PED	PHILADELPHIA FIRE DEPARTMENT

	PLASTIC LAMINATE
YD	PLYWOOD
51	POUNDS PER SQUARE INCH
	PRESSURE TREATED
D	PAINT OR PAINTED
CP	REFLECTED CEILING PLAN
INF	REINFORCEMENT
QD	REQUIRED
V	REVISION
ŝ	RESINOUS FLOORING
A	ROOM
)	ROUGH OPENING
CHED	SCHEDULE
М	SIMILAR
GT	STRUCTURAL GLAZED TILE
2	SQUARE
5	SOLID SURFACING
TL.	STEEL
)	TOP OF
)B	TOP OF BLOCK
P	TYPICAL
2	UNDER-COUNTER
NO	UNLESS NOTED OTHERWISE
CT	VINYL COMPOSITION TILE
F	VERIEY IN FIELD
1	WITH
D	WOOD
	1000

CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY

MAYOR - JAMES F. KENNEY MANAGING DIRECTOR - TUMAR ALEXANDER COMMISSIONER OF PUBLIC PROPERTY - BRIDGET COLLINS-GREENWALD COMMISSIONER OF PHILADELPHIA FIRE DEPARTMENT - ADAM K. THIEL

STRUCTURAL IMPROVEMENTS PHILADELPHIA, PA 13 - 21 - 4726 - 04

ARCHITECT

SEILER & DRURY ARCHITECTURE 420 DEKALB STREET NORRISTOWN, PA 19401 PHONE NO. 610-272-4809

	SYMBOLS	DRAWING LIST	
	SECTION TAG		
		CS-1	COVERSHEET
222 222AX.XX22 22		43-A1.0 43-A1.1 54-A1.0 54-A1.1 61-A1.0 64-A1.0 64-A1.1	ENGINE 43 PROPOSED BASEMENT ENGINE 43 PROPOSED FIRST FLOO ENGINE 54 PROPOSED BASEMENT ENGINE 54 PROPOSED SECOND F ENGINE 61 PROPOSED BASEMENT ENGINE 64 PROPOSED BASEMENT ENGINE 64 INTERIOR DETAILS
DOOR ROOM NAME ROOM-NAME	DOOR TAG - SEE DOOR SCHED ROOM TAG	S0.1 43-S1.0 54-S1.0 61-S1.0 64-S1.0 S2.0	STRUCTURAL GENERAL NOTES ENGINE 43 STRUCTURAL PLANS ENGINE 54 STRUCTURAL PLANS ENGINE 61 STRUCTURAL PLANS ENGINE 64 STRUCTURAL PLANS DETAILS & SECTIONS
100		MCS 54-M-1	MECHANICAL COVER SHEET ENGINE 54 MECHANICAL PLAN
	NEW DOOR	PCS 43-PD-1 43-P-1 43-P-2 54-P-1 64-P-1	PLUMBING COVER SHEET ENGINE 43 PLUMBING SELECTIVE ENGINE 43 BASEMENT PLUMBING ENGINE 43 FIRST FLOOR PLUMBIN ENGINE 54 PLUMBING PLANS ENGINE 64 PLUMBING PLANS
	EXISTING DOOR	ECS-1 ECS-2 43-ED-1 43-E-1 54-ED-1	ELECTRICAL COVER SHEET (1/2) ELECTRICAL COVER SHEET (2/2) ENGINE 43 ELECTRICAL SELECTIVE ENGINE 43 BASEMENT ELECTRICAL ENGINE 54 ELECTRICAL SELECTIVE
	EXISTING CONSTRUCTION	54-E-1 54-E-2	ENGINE 54 BASEMENT & FIRST F ENGINE 54 SECOND FLOOR ELECT CALCULATIONS
	NEW CONSTRUCTION	61-ED-1 61-E-1 64-ED-1 64-E-1	ENGINE 61 ELECTRICAL SELECTIVE ENGINE 61 BASEMENT ELECTRICAL ENGINE 64 ELECTRICAL SELECTIVE ENGINE 64 BASEMENT ELECTRICAL

ENGINES 43, 54, 61, 64 (MULTIPLE I

MEP ENGINEER

HUTEC ENGINEERING INC 304 MASTER ST, 1ST FLOOR PHILADELPHIA, PA 19122 PHONE NO. 267-800-3540

LOCATION PLAN PLAN OOR PLAN & INTERIOR DETAILS & FIRST FLOOR PLANS FLOOR PLAN & INTERIOR DETAILS & FIRST FLOOR PLANS & INTERIOR DETAILS & FIRST FLOOR PLANS ENGIN -ENGIN DEMO PLAN ENGINE 54 -PLAN ING PLAN -ENGINE 43 E DEMO PLAN PLAN E DEMO PLAN FLOOR ELECTRICAL PLAN TRICAL PLAN, SINGLE LINE DIAGRAM, & LOAD E DEMO PLAN PLAN ENGINE 43 DEMO PLAN 2108-14 MARKET ST. L PLAN PHILADELPHIA, PA 19103 ENGINE 54 1913 N 63RD ST. PHILADELPHIA, PA 19151 ENGINE 61 5334 RISING SUN AVE. PHILADELPHIA, PA 19120 ENGINE 64 6100 RISING SUN AVE. PHILADELPHIA, PA 19111

0	CATIONS)
RUCTU	RAL ENGINEER
G STF 37 N. GLERV ONE N	RUCTURAL CONSULTING ENGINEERS INC. GRAVEL PIKE /ILLE, PA 19492 NO. 610-831-0556
	PROJECT APPROVED
	L h-l
	COMMISSIONER DEPARTMENT OF PUBLIC PROPERTY
\sim	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY
$\overline{}$	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION
	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION
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64	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION ART COMMISSION HISTORICAL COMMISSION
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64	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION ART COMMISSION HISTORICAL COMMISSION SEALS SEALS CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY 1400 JFK BLYD TH FLOOR CITY HALL PHILADELPHIA PROJECT NO. DRAWING NO.
64	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION ART COMMISSION HISTORICAL COMMISSION SEALS CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY I 400 JFK BLVD TTH FLOOR CITY HALL PHILADELPHIA PROJECT NO. 13-21-4726-04
64	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION ART COMMISSION HISTORICAL COMMISSION SEALS CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY 1400 JFK BLYD TH FLOOR CITY HALL PHILADELPHIA PROJECT NO. 13-21-4726-04 DATE DECEMBER 9, 2021 SCALE
64	COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION ART COMMISSION HISTORICAL COMMISSION SEALS CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY I 4000 JFK BLVD TTH FLOOR CITY HALL PHILADELPHIA PROJECT NO. 13-21-4726-04 DATE DECEMBER 9, 2021 SCALE N/A DRAWN BY AD
64	COMMISSIONER / DEPARTMENT OF PUBLIC PROPERTY DEPUTY COMMISSIONER / DEPUTY DEPUTY DEPUTY COMMISSIONER / DEPUTY DEPU



SYMBOLS LEGEND :

GENERAL NOTES

SEE S-DWGS FOR STRUCTURAL REPAIR INFORMATION

COORDINATE TEMPORARY REMOVAL OF STORAGE ITEMS W/ DPP. DPP TO COORDINATE W/ PFD. CONTRACTOR TO PROVIDE 2 WEEKS NOTICE.

SEE MEP DWGS FOR MEP WORK SCOPE

#### CODE INFORMATION :

PHILADELPHIA CODES ENFORCED:

2018 ICC CODES WITH LOCAL AMENDMENTS.

2018 INTERNATIONAL BUILDING CODE 2009 ICC A117.1 2018 INTERNATIONAL EXISTING BUILDING CODE

2018 INTERNATIONAL ENERGY CONSERVATION CODE PHILADELPHIA ZONING CODE

2004 PHILADELPHIA PLUMBING CODE FOURTH PRINTING

PHILADELPHIA FIRE CODE PHILADELPHIA PROPERTY MANAGEMENT CODE

#### BUILDING CODE-RELATED PROJECT INFORMATION

CONCRETE MASONRY STEEL & MASONRY

MIXED

F	REV	ISIONS
ISSUE	DATE	REVISIONS



PROJECT COORDINATOR: FREDDA LIPPES





CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY CAPITAL PROJECTS DIVISION 1400 JFK BLVD 7TH FLR CITY HALL PHILADELPHIA PENNSYLVANIA PROJECT TITLE

ENGINES 43, 54, 61, 64 Structural improvements

ENGINE	43	_	PROPOSED
BAS	EME	ENT	' PLAN

DRAWING TITLE

PROJECT NO	).	DRAWING NO.
13-21-4	726-04	
DATE	DECEMBER 9, 2021	Δ3-Δ1 Ο
SCALE	AS INDICATED	
DRAWN BY	AD	
CHECKED BY	ſ КК	FILE: F:\CPOFORMS\PREDESIGN\24X3
NOTE:	ALL DIMENSIONS AND CO Verified by the contr Before proceeding	NDITIONS SHALL BE Actor at the site With the Work.



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PROJECT COORDI	NATOR: FREDDA	LIPPES
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420 DEK	ALB STRE	ET NORRISTOWN PA 19401
161 610	).2/2.40	309 www.sdarc.com
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CITY	ÓF	PHILADELPHIA
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	OF TMENT	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION
	OF TMENT apital f	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL
CITY DEPAF 1400 J PHILADELPHIA PROJECT TITLE	OF TMENT apital f	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA
CITY DEPAF 1400 J PHILADELPHIA PROJECT TITLE	OF TMENT APITAL F FK BLV	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA
CITY DEPAF 1400 J PHILADELPHIA PROJECT TITLE	COF CTMENT CAPITAL F FK BLV ENGINES STRUCTUR	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA
CITY DEPAF 0 1400 J PHILADELPHIA PROJECT TITLE	COF	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA
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CITN DEPAR 1400 J PHILADELPHIA PROJECT TITLE DRAWING TITLE EN 13-21-472	OF TMENT APITAL F FK BLV ENGINES STRUCTUR NGINE 4 FIRST F INTER 6-04	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA S 43, 54, 61, 64 PAL IMPROVEMENTS C 43 – PROPOSED LOOR PLAN & IOR DETAILS
CITN DEPAR 0 1400 J PHILADELPHIA PROJECT TITLE DRAWING TITLE EN J PROJECT NO. 13–21–472 DATE DE	CEMBER 9, 20	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA S 43, 54, 61, 64 AL IMPROVEMENTS C 43, 54, 61, 64 C 44 C 44 C 44 C 44 C 44 C 44 C 44 C
CITY DEPAF 0 1400 J PHILADELPHIA PROJECT TITLE DRAWING TITLE EN J PROJECT NO. 13-21-472 DATE DE SCALE AS	C OF CTMENT CAPITAL F CAPITAL	PHILADELPHIA OF PUBLIC PROPERTY PROJECTS DIVISION D 7TH FLR CITY HALL PENNSYLVANIA S 43, 54, 61, 64 CAL IMPROVEMENTS S - PROPOSED LOOR PLAN & IOR DETAILS DRAWING NO. 21 21 21 21 21 21 21 21 21 2
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<u>KEYNOTES</u>	
<ol> <li>REMOVE EXISTING TOP HANDRAIL BRACKET &amp; PATCH HOLE. PROVIDE NEW HANDRAIL BRACKET @ TOP OF STAIRS TO MATCH EXISTING ADJACENT HANDRAIL BRACKETS.</li> </ol>	
LOCATE NEW HANDRAIL BRACKET @ EXISTING STUD LOCATION. NEW HANDRAIL BRACKET TO BE WITHIN 60" O.C. OF ADJACENT HANDRAIL BRACKET TO REMAIN. PAINT	
BRACKET TO MATCH EXISTING ADJACENT BRACKETS.	
SYMBOLS LEGEND :	
TEMPORARY DUST PROTECTION	
	PHILADA KII
	MANETO
Δ	
ADJACENT	
MTL ANGLES	PROJECT COORDINATOR: FREDDA LIPPES
EX WINDOW	ET KOC
SASH	HILE
WINDOW INSULATION DETAIL	
.1/ SCALE: 3"=1'-0"	
3" 6" 9"	CO ST AND S
	DOUGLIUM
	SEILER + DRURY
24" WIDE BATTS W/ 1/2" GWB @ INTERIOR FACE	
TT PINS @ SEAL AROUND PIPE	ARCHITECTORE
STRAPS	420 DEKALB STREET NORRISTOWN PA 19401 Tel 610 272 4809 www.sdarc.com
L ANGLES WALL CAP BEYOND	
DOW SASH	
	CITY OF PHILADELPHIA
	DEPARTMENT OF PUBLIC PROPERTY
VVINDOVV ELEVATION	CAPITAL PROJECTS DIVISION
.1/ SCALE: 1/2"=1'-0"	1400 JFK BLVD 7TH FLR CITY HALL
2' 4'	PHILADELPHIA PENNSYLVANIA
	ENGINES 43, 54, 61, 64 Structural improvements
	DRAWING TITLE
	ENGINE 54 - PROPOSED SECOND
	FLOOR PLAN AND INTERIOR DETAILS
	13-21-4726-04
	DATE DECEMBER 9, 2021 ΓΛΔ1 1
	SCALE AS INDICATED
	DRAWN BY AD
	CHECKED BY
	NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE
	BEFORE PROCEEDING WITH THE WORK.

**GENERAL NOTES** 

SEE S-DWGS FOR STRUCTURAL REPAIR INFORMATION

SEE MEP-DWGS FOR MEP WORK SCOPE

REVISIONS

REVISIONS

ISSUE DATE



#### SEE S-DWGS FOR STRUCTURAL REPAIR INFORMATION

NEW GLAZED CMU TO MATCH EXISTING ADJACENT SIZE, FINISH, &

#### SYMBOLS LEGEND :

TEMPORARY DUST PROTECTION

#### KEYNOTES

— B

—(C)

61-A1.0 SCALE: 1/4"=1'-0"

- 1. REMOVE DAMAGED TERRAZZO BACK TO SOUND MATERIAL AND PATCH W/ 2 PART EPOXY RESIN W/ AGGREGATE TO MATCH EXISTING ADJACENT TERRAZZO.
- 2. ROUTE OUT EXISTING CRACK AND PATCH W/ 2 PART EPOXY RESIN W/ AGGREGATE TO MATCH EXISTING ADJACENT TERRAZZO.



#### CODE INFORMATION

PHILADELPHIA CODES ENFORCED:

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ISSUE	DATE		REVISIONS
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PROJECT COOF	RDINATOR: FREDDA	LIPPES	
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420 DE	KALB STRE	ET NOR	RISTOWN PA 19401
Tel 61	0.272.48	309	www.sdarc.com
	Y OF	PHIL	
DEPA	ARIMENT	UF PU	
1400	CAPITAL F	-ROJECT D 7TH	S DIVISION FLR CITY HALL
PHILADELPH	IA		PENNSYLVANIA
PROJECT TITLE			
	LNGINE: Structur	5 43, 54 Ral Impr	4, 61, 64 Rovements
DRAMME			
DRAWING TITLE	NGINE 6	31 — F	PROPOSED
	MENT &	FIRST	FLOOR PLANS
	& INTE	KIUR ]	
РКОЈЕСТ NO.	26-04		DRAWING NO.
SCALF	DECEMBER 9, 20	21	61-A1.0
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DRAWN BY			
DRAWN BY CHECKED BY	AD		BITE D managered

ALL DIMENSIONS AND CONDITIONS SHALL BE Verified by the contractor at the site Before proceeding with the work.

NOTE:

#### CODE INFORMATION :

PHILADELPHIA CODES ENFORCED: 2018 ICC CODES WITH LOCAL AMENDMENTS. 2018 INTERNATIONAL BUILDING CODE 2009 ICC A117.1 2018 INTERNATIONAL EXISTING BUILDING CODE 2018 INTERNATIONAL ENERGY CONSERVATION CODE

PHILADELPHIA ZONING CODE 2004 PHILADELPHIA PLUMBING CODE FOURTH PRINTING PHILADELPHIA FIRE CODE

PHILADELPHIA PROPERTY MANAGEMENT CODE

#### BUILDING CODE-RELATED PROJECT INFORMATION

BUILDING FOOTPRINT: RENOVATION AREA: NUMBER OF STORIES:

CONSTRUCTION TYPE: EXISTING CONSTRUCTION:

FLOORS: WALLS: COLUMNS: 2 STORIES W/ BASEMENT & UNOCCUPIED ATTIC IIIA

4,348 SF

±1,080 SF

CONCRETE / WOOD FRAMED MASONRY N/A

USE GROUP:

MIXED









#### DESIGN CRITERIA NOTES:

- 1. THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. USE THE LATEST EDITIONS UNLESS NOTED OTHERWISE.
- INTERNATIONAL BUILDING CODE, 2018 EDITION ASCE 7-16 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER
- STRUCTURES
- AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AISC 303-16 - CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND
- BRIDGES ACI 318-14 – BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND MASONRY
- ACI 530 SPECIFICATION FOR MASONRY STRUCTURES

#### CAST-IN-PLACE CONCRETE NOTES:

- 1. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITIONS OF THE ACI BUILDING CODE (ACI 318), ACI DETAILING MANUAL (ACI 315), AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).
- 2. CONCRETE, UNLESS OTHERWISE NOTED ON THE PLANS, SHALL BE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING 28 DAY COMPRESSIVE STRENGTH (PSI).

ALL CONC, U.N.O. = 4,000 N.W.C.

* N.W.C.-DENOTES NORMAL WEIGHT CONC. WITH A MAX. DRY DENSITY = 150 PCF

- CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS NOTED BELOW. SEE ACI 318 FOR CONDITIONS NOT NOTED.
- REINF. STEEL IN CONCRETE CAST AGAINST SOIL = 3" REINF. STEEL IN CONCRETE EXPOSED TO SOIL OR WEATHER: #5 BARS AND SMALLER = 1.5" #6 BARS AND LARGER = 2"
- 4. ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED (5%) PER THE SPECIFICATIONS.
- 5. WORKABILITY SHALL NOT BE ACHIEVED THROUGH ADDITION OF WATER. WATER REDUCING ADMIXTURES (PLASTICIZERS) SHALL BE USED TO INCREASE WORKABILITY. SEE SPECIFICATIONS FOR CONCRETE SLUMP REQUIREMENTS. ALL CONCRETE SHALL HAVE A 4" SLUMP PRIOR TO ADDITION OF ADMIXTURES AND SHALL HAVE A MAXIMUM SLUMP OF 8" AFTER THE ADDITION OF ADMIXTURES.
- 6. HORIZONTAL CONSTRUCTION JOINTS SHALL BE PERMITTED ONLY WHERE SHOWN ON THE STRUCTURAL DRAWINGS.
- CONTROL JOINTS FOR SLABS ON GRADE SHALL BE SAW CUT PER THE TYPICAL DETAILS ON THE STRUCTURAL DRAWINGS. DIAMOND LEAVE OUTS SHALL BE PROVIDED AT ALL COLUMNS.
- CONTRACTOR SHALL SUBMIT PLAN SHOWING POUR SEQUENCE, INCLUDING TYPE AND LOCATION OF PROPOSED JOINTS IN SLABS AND WALLS FOR APPROVAL.
- 9. ALL CONCRETE PLACED IN COLD WEATHER SHALL CONFORM TO ACI 306-COLD WEATHER CONCRETING. ALL CONCRETE PLACED IN HOT WEATHER SHALL CONFORM TO ACI 305-HOT WEATHER CONCRETING.
- 10. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL SLEEVES, INSERTS, ANCHOR BOLTS AND OTHER EMBEDDED ITEMS AS REQUIRED BY OTHER TRADES.
- 11. ALL CONCRETE POURS SHALL BE TERMINATED BY FORMS. FOOTINGS MAY BE UNFORMED PROVIDED THE TRENCH IS EXCAVATED AN ADDITIONAL 3" ON ALL SIDES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 12. ALL COLUMN FOOTINGS SHALL BE CENTERED UNDER COLUMN CENTERLINES, U.N.O.
- 13. GROUT ALL LEVELING AND BEARING PLATES WITH AN APPROVED NON-SHRINK GROUT.
- 14. CHAMFER CORNERS OF ALL EXPOSED CONCRETE AS DETAILED BY THE ARCHITECTURAL DRAWINGS.
- 15. A THIRD-PARTY TESTING LABORATORY SHALL BE EMPLOYED BY THE OWNER FOR EVALUATION AND QUALITY CONTROL OF CONCRETE PLACED. FREQUENCY OF CONCRETE TESTING SHALL MEET THE REQUIREMENTS OF ACI 318 AT A MINIMUM UNLESS OTHERWISE REQUIRED BY THE LOCAL BUILDING CODE.

#### STEEL NOTES:

A. STRUCTURAL STEEL

ANCHOR BOLTS

 STRUCTURAL STEEL CONSTRUCTION HAS BEEN DESIGNED IN ACCORDANCE WITH A.I.S.C. 360-05, "STEEL CONSTRUCTION MANUAL."
 STRUCTURAL STEEL SHAPES, PLATES, ETC., SHALL CONFORM TO THE

FOLI	LOWING ASTM DESIGNATIONS, U.N.O.	
	FLOOR/ROOF BEAMS AND GIRDERS	ASTM A992-50
	COLUMNS, WEB DOUBLER PLATES	ASTM A992-50
	CHANNELS, TEES, ANGLES, BARS, PLATES	ASTM A36
	STEEL TUBING (HSS SECTIONS) (Fy = 46 KSI)	ASTM A500-GR. B
	STEEL PIPE TYPE "E" OR "S"	ASTM A501 OR A53

ASTM F1554 GR. 36

ASTM F1554 GR. 55

- 3. CONNECTION BOLTS SHALL CONFORM TO ASTM A325. USE BEARING TYPE BOLTS WITH THREAD ALLOWED ACROSS THE SHEAR PLANE (TYPE N) AT TYPICAL BEAM SHEAR CONNECTIONS, U.N.O. USE TYPE "SC" BOLTS WITH EITHER DIRECT TENSION INDICATOR OR LOAD INDICATOR WASHERS AT ALL BOLTED SLIP CRITICAL CONNECTIONS.
- 4. STEEL BEAM CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED BY THE STRUCTURAL STEEL FABRICATOR. BEAM CONNECTIONS SHALL DEVELOP THE END REACTIONS GIVEN ON THE DRAWINGS. WHERE END REACTIONS ARE NOT SPECIFIED, THE BEAM CONNECTION SHALL DEVELOP 50% OF THE BEAMS WEB ALLOWABLE SHEAR CAPACITY. A MINIMUM CONNECTION CAPACITY OF 12 KIPS SHALL BE PROVIDED FOR ALL BEAMS, UNLESS NOTED OTHERWISE BY SPECIFIED REACTION. THE STRUCTURAL STEEL FABRICATOR SHALL PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF THE PROJECT, THAT THE CONNECTION DESIGN IS IN ACCORDANCE WITH ALL APPLICABLE CODES AND SPECIFICATIONS.
- 5. FOR ALL HIGH STRENGTH BOLTS, HARDENED WASHERS SHALL BE PROVIDED.
- 6. GALVANIZING OF STEEL MEMBERS SHALL CONFORM TO ASTM A123. GALVANIZE ALL STEEL PERMANENTLY EXPOSED TO WEATHER OR AS INDICATED ON THE DRAWINGS.
- 7. ALL STRUCTURAL STEEL SHALL BE SHOP PAINTED WITH A RUST INHIBITIVE PRIMER. DO NOT PRIME STEEL WHICH SHALL HAVE SPRAY-ON FIREPROOFING APPLIED. STEEL WHICH IS TO BE FIREPROOFED IS INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL EXPOSED STEEL AND LINTELS IN EXTERIOR WALLS SHALL BE HOT-DIP GALVANIZED.
- 8. HEADED STUDS AND DEFORMED BAR ANCHORS USED IN FABRICATION OF EMBEDDED ASSEMBLIES SHALL BE WELDED TO THOSE ASSEMBLIES USING A FULL FUSION PROCESS.
- 9. STEEL BEAMS SHALL BE ERECTED WITH NATURAL CAMBER UP.
- 10. ANCHOR BOLTS HAVE NOT BEEN DESIGNED FOR ANY SPECIFIC ERECTION FORCES. THE ERECTOR IS RESPONSIBLE FOR ANY AND ALL GUYING AND BRACING REQUIRED TO ERECT THE BUILDING.
- 11. THE RESPONSIBILITY FOR ANY TEMPORARY SHORING OR BRACING DURING THE CONSTRUCTION PHASE BEFORE COMPLETION OF CONNECTION AND POURING OF FLOOR SLAB IS ADDRESSED IN THE SPECIFICATIONS AND IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 12. STRUCTURAL STEEL MEMBERS SHALL NOT BE SPLICED OR HAVE PENETRATIONS UNLESS INDICATED ON THE STRUCTURAL CONTRACT DOCUMENTS OR AS REVIEWED BY THE STRUCTURAL ENGINEER.
- B. WELDING
- 1. WELDED CONSTRUCTION SHALL CONFORM TO THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE" D1.1; AWS D1.3-SHEET STEEL; AND AWS D1.4 "REINFORCING STEEL WELDING CODE".
- 2. ELECTRODES FOR FIELD AND SHOP WELDS OF STRUCTURAL STEEL SHALL BE E70XX, U.N.O.
- 3. ELECTRODES FOR WELDING OF REINFORCING STEEL SHALL BE E70XX.
- ELECTRODES FOR WELDING OF SHEET STEEL SHALL CONFORM TO AWS D1.3.
- 5. WHEN WELDS ARE NOT CALLED-OUT ON DRAWINGS, THEY ARE MINIMUM SIZE CONTINUOUS FILLET WELDS IN ACCORDANCE WITH AWS D1.1. FILLET WELDS NOT SPECIFIED AS TO LENGTH SHALL BE CONTINUOUS.
- 6. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL GROOVE WELDS SHALL BE FULL PENETRATION.
- 7. ONLY LOW HYDROGEN ELECTRODES SHALL BE USED ON REINFORCING STEEL AND ASTM A992 STEEL.
- 8. PROVIDE FILLET WELDS AT ALL CONTACT JOINTS BETWEEN STEEL MEMBERS SUFFICIENT TO DEVELOP THE ALLOWABLE TENSILE STRENGTH OF THE SMALLER MEMBER AT THE JOINT UNLESS DETAILED OTHERWISE ON THE DRAWINGS.

#### FOUNDATION NOTES

- 1. IN THE ABSENCE OF A GEOTECHNICAL SOILS REPORT, THE FOUNDATION DESIGN IS BASED ON AN ASSUMED SOIL BEARING CAPACITY OF 2000 PSF. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD WHICH VARIES FROM THOSE CONDITIONS ASSUMED FOR DESIGN. STRUCTURAL TESTING/INSPECTION AGENCY SHALL CERTIFY THE BEARING MEDIUM.
- 2. SPREAD FOOTINGS ARE DESIGNED FOR THE ALLOWABLE NET SOIL BEARING PRESSURE OF 2,000 PSF. SOIL BEARING CAPACITY SHALL BE VERIFIED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO FOUNDATION PLACEMENT.
- 4. FOUNDATIONS SHALL BEAR ON UNDISTURBED VIRGIN SOIL AND/OR SUPERVISED COMPACTED FILL, FREE OF FROST AND ANY ORGANIC MATERIALS.
- 5. ALL FOUNDATIONS AND EXCAVATIONS SHALL BE PROTECTED FROM FROST EXPOSURE DURING AND AFTER CONSTRUCTION. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 3'-0" BELOW EXTERIOR FINISHED GRADE, U.N.O.
- 6. DO NOT ALLOW SURFACE WATER TO ACCUMULATE AND/OR POND IN EXCAVATIONS. TEMPORARY DEWATERING SYSTEM TO BE USED DURING CONSTRUCTION WILL BE DESIGNED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT AND THE REQUIREMENTS OF THE GOVERNING BUILDING CODE.

#### CONCRETE REINFORCEMENT NOTES:

- 1. CONCRETE REINFORCING BARS SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615 GRADE 60, EXCEPT AS NOTED. [COLUMN TIES] AND FIELD BENT #3 DOWELS MAY BE ASTM A615, GRADE 40. REINFORCEMENT REQUIRED TO BE WELDED SHALL CONFORM TO ASTM A706, U.N.O.
- HEADED STUDS AND DEFORMED BAR ANCHORS USED IN FABRICATION OF EMBEDDED ASSEMBLIES SHALL BE WELDED TO THOSE ASSEMBLIES USING A FULL FUSION PROCESS.
- . REINFORCING BARS MAY BE SPLICED ONLY AS SHOWN ON THE DRAWINGS EXCEPT THAT REINFORCING DESIGNATED AS "CONTINUOUS" SHALL HAVE A CLASS "B" LAP SPLICE (ACI 318-02, SECTION 12.15.1). LAP SPLICES OF CONTINUOUS REINFORCING SHALL BE MADE OVER SUPPORTS FOR BOTTOM BARS AND FOR INTERMEDIATE BARS AND AT MIDSPAN FOR TOP BARS. AT EXTERIOR SUPPORTS, TOP AND BOTTOM BARS SHALL BE HOOKED AND INTERMEDIATE BARS SHALL EXTEND TO WITHIN 2" OF EXTERIOR FACE.
- 4. LAPS ARE ALLOWED IN THE PIER REINFORCING STEEL IF NO MORE THAN FIFTY PERCENT OF THE BARS ARE LAPPED WITHIN ANY 10'-0" LENGTH OF THE PIER. DO NOT SPLICE IN TOP 10'-0" OF PIER.
- ALL REINFORCING SHALL BE SECURELY WIRED TOGETHER IN THE FORMS PRIOR TO PLACING CONCRETE.
- 5. THE CONTRACTOR SHALL SUBMIT AND RECEIVE APPROVAL OF REINFORCING STEEL SHOP DRAWINGS PRIOR TO FABRICATION OR SHIPMENT OF MATERIAL. SHOP DRAWINGS SHALL CONTAIN INFORMATION FOR DETAILING, SPLICING, LAPPING, BENDING, SHAPES, QUANTITIES AND DIMENSIONS OF ALL BAR REINFORCEMENT INCLUDING SUPPORTING AND SPACING DEVICES.
- 7. ALL MECHANICAL COUPLERS SHALL DEVELOP 1.25 FY OF REBAR IN TENSION OR COMPRESSION AND COMPLY WITH ACI 318.

#### MISCELLANEOUS NOTES:

- 1. THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE DRAWINGS IN AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS, UNLESS NOTED OTHERWISE.
- ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS, AND DETAILS. DO NOT SCALE THE DRAWINGS.
- THE STRUCTURAL DRAWINGS ARE PART OF THE CONTRACT DOCUMENTS AND DO NOT BY THEMSELVES PROVIDE ALL THE INFORMATION REQUIRED TO PROPERLY COMPLETE THE PROJECT STRUCTURE. THE GENERAL CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND COORDINATE THE INFORMATION CONTAINED IN THESE DRAWINGS WITH THE STRUCTURAL DRAWINGS TO PROPERLY CONSTRUCT THE PROJECT. PRINCIPAL OPENINGS, CURBS, AND SLAB DEPRESSIONS ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, MECH'L, ELEC'L, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS, OTHER OPENINGS, AND SLAB DEPRESSIONS NOT SHOWN. THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, CURBS, AND SLAB DEPRESSIONS WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT. SIZE AND LOCATION OF OPENINGS SHALL BE VERIFIED WITH THE MECHANICAL CONTRACTOR. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR APPROVAL PRIOR TO PROCEEDING WITH ANY WORK.
- THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCH'L, MECH'L, ELEC'L, PLUMBING, AND CIVIL DRAWINGS TO CONFIRM ALL REQUIREMENTS OF THE WORK. REPORT ANY CONFLICT/DISCREPANCY BETWEEN THE DISCIPLINES TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL ELEMENTS. BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS TO PROPERLY SIZE OR FIT THE WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED BY THE OWNER RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT.
- THE HORIZONTAL AND VERTICAL DIMENSIONS OF EXISTING STRUCTURES SHALL BE VERIFIED BEFORE WORK IS BEGUN. ANY VARIATION BETWEEN DIMENSIONS SHOWN AND EXISTING DIMENSIONS SHALL BE REPORTED TO THE ARCHITECT.
- THE CONTRACTOR SHALL INSURE THAT CONSTRUCTION LOADS DO NOT EXCEED THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PUT ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT THE CONCRETE REACHES THE FULL DESIGN STRENGTH AND ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE.
- ALL STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LOADS LISTED ONLY AS COMPLETED STRUCTURES. THE GENERAL CONTRACTOR SHALL FULLY BRACE AND OTHERWISE PROTECT WORK IN PROGRESS UNTIL THE STRUCTURES ARE COMPLETED. THE GENERAL CONTRACTOR SHALL ALSO INSURE THAT ITS OPERATIONS AND PROCEDURES PROVIDE NO LOADING GREATER THAN THE DESIGN LOADS LISTED ON ANY MEMBER.
- PROVIDE CHAMFERS AS SPECIFIED AND/OR DETAILED ON THE ARCHITECTURAL DRAWINGS. CHAMFERS HAVE NOT BEEN SHOWN ON THE STRUCTURAL DRAWINGS.
- ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE SHOWN.



#### SYMBOLS LEGEND



PRIOR BOTTOM OF SLAB REPAIR LOCATIONS



CURRENT LOCATIONS OF EXPOSED REBAR, HEAVY EFFLORESCENCE, SPALLING, AND DAMAGED SLAB.

- EXPOSED REBAR



5' - 0"

- BEFORE PROCEEDING WITH REPAIRS. ALL EXISTING DIMENSIONS AND FRAMING SHALL BE FIELD VERIFIED.
- WZG RECOMMENDS EACH REPAIR AREA TO BE CLOSED OFF FROM ABOVE AND BELOW DURING
- REPAIRS. COORDINATE PHASING WITH ARCHITECTURAL DRAWINGS.
- ALL LOCATIONS OF PRIOR PATCHING AND OVERHEAD REPAIRS TO BE SOUND TESTED. LOOSE OR CRACKED EXISTING PATCHES TO BE REMOVED AND REPAIRED FOLLOWING THE CURRENT PROCEDURES AND MATERIALS.

#### APPARATUS BAY RECOMMENDATIONS

#### REPAIR ITEM DESCRIPTION

ADD LINE OF DRAINS TO THE APPARATUS BAY (1 PER BAY), APPROXIMATELY 9 TO 10 FEET BACK FROM THE CURRENT LINE OF DRAINS WHERE THE WATER CONTINUALLY POOLS. THIS WILL AID IN REMOVAL OF SURFACE WATER BUILD UP THAT CAN SEEP IN BETWEEN THE TOPPING AND THE SLAB. COORDINATE WITH THE ARCHITECTURAL AND PLUMBING DRAWINGS AND SPECIFICATIONS.

THE ENTRANCE THRESHOLD AND DOOR PLATE SHALL BE RESEALED AND SECTIONS OF BROKEN CONCRETE REMOVED AND REPLACED AS NEEDED TO IMPROVE THIS LOCATIONS DURABILITY TO TRAFFIC AND WATERPROOFING SEE ARCHITECTURAL SPECIFCIATIONS.

CLEAN AND PREPARE EXISTING SLAB SURFACE TO BE FREE OF DEBRIS AND OILS. INSTALL A SURFACE APPLIED EPOXY FLOOR FINISH PRODUCT TO PROTECT THE CONCRETE FLOOR AND SEAL THE ASSEMBLY. SEE ARCHITECTURAL SPECIFICATIONS FOR THE MIRACOTE FLOOR SYSTEM TO BE APPLIED.

RUCTURE REPAIR RECOMMENDATIONS AT SPALLS, PRIOR PATCHES, AND CONCRETE BEAM	
REPAIR ITEM DESCRIPTION	
AROUND CRACKED AREAS IS TO BE REMOVED. LOCAL CHIPPING MAY BE REQUIRED TO	

REMOVE LOOSE OR CRACKED CONCRETE BACK TO SOUND MATERIAL. ANY EXPOSED REBAR FROM PRIOR SPALLING, OR FROM NEW CONCRETE MATERIAL REMOVAL, IS TO BE CLEANED

CONCRETE SURROUNDING REBAR TO BE CHIPPED BACK A MINIMUM OF 1/2-INCHES AROUND THE EXPOSED REBAR AND HAVE A MINIMUM SURFACE AMPLITUDE OF 1/8-INCH TO ½-INCH. IF CLEANED REBAR MAINTAINS 75% AREA OR MORE, THE REBAR IS TO BE COATED WITH A CORROSION INHIBITOR PRODUCT SUCH AS SIKA ARMATEC 1C OR 110

SAW CUT AROUND THE PERIMETER OF THE EXPOSED REPAIR AREA TO PROVIDE CLEAN EDGES WITH A MINIMUM OF 3/8 INCH DEEP SHOULDER

PATCH THE EXPOSED AREA WITH SIKAREPAIR 223 REPAIR MORTAR OR AN EQUIVALENT HIGH STRENGTH BONDING REPAIR MORTAR. LOCALIZED FORMING AND PRESSURE INJECTION OF REPAIR MORTAR MAY BE REQUIRED IN THESE OVERHEAD APPLICATIONS.

BASEMENT STRUCTURE REPAIR AT DEEP CRACK AND STRUCTURAL SLAB

#### REPAIR ITEM DESCRIPTION

THE STRUCTURAL SLAB IS 6 1/2 INCHES THICK, AND AT THIS LOCATION IT IS LIKELY THAT A DEEPER STRUCTURAL REPAIR MAY BE REQUIRED WITH REBAR REPLACEMENT OR LAPPING WITH NEW STEEL REQUIRED. INITIAL EXPOSURE SHOULD BEGIN PER THE APPLICATION OUTLINE ABOVE FOR TYPICAL SPALLS AND CONDITIONS,

EXTENDING APPROXIMATELY 5 FEET WIDE AND FROM THE FACES OF EACH EXISTING CONCRETE BEAM ON EITHER SIDE. PENDING EXPOSURE, A DETERMINATION OF A FULL DEPTH REPAIR MAY BE REQUIRED. ANY EXPOSED REBAR IS TO BE CLEANED TO GOOD METAL. CONCRETE SURROUNDING REBAR TO BE CHIPPED BACK A MINIMUM OF 1/2-INCHES AROUND THE EXPOSED REBAR AND HAVE A MINIMUM SURFACE AMPLITUDE OF 1/8-INCH

TO ¼-INCH. IF CLEANED REBAR MAINTAINS 75% AREA OR MORE, THE REBAR IS TO BE COATED WITH A CORROSION INHIBITOR PRODUCT SUCH AS SIKA ARMATEC 1C OR 110 EPOCEM. FURTHER DETERIORATED DAMAGED REBAR IS TO BE LAP SPLICED AND TIED WITH A NEW ASTM GRADE 60 #7 REBAR IN THE PRIMARY SLAB SPAN DIRECTION.

ADDITIONAL REBAR DOWELS MAY BE REQUIRED TO BE INSTALLED INTO THE SIDE FACE OF THE CAST IN PLACE CONCRETE BEAMS. INSTALLATION WOULD BE RECOMMENDED WITH HILTI HY-200 EPOXY ADHESIVE TO SET THESE DOWELS IN PLACE.

PATCHING THIS AREA IS LIKELY TO REQUIRE STRUCTURAL FORMWORK AND PRESSURE INJECTION OF THE REPAIR MATERIAL IF PORTIONS OF THE EXISTING SLAB ARE ABLE TO REMAIN. IF A FULL DEPTH REPAIR IS REQUIRED, THEN FORMWORK WOULD BE INSTALLED AND THE SLAB WOULD BE REPLACED FROM ABOVE.

ADDITIONAL THICKNESS MAY BE POSSIBLE IN THIS LOCAL AREA TO ACHIEVE PROPER COVER OVER THE REPAIR REBAR OR TO INCREASE STRENGTH WHILE MAINTAINING CONSTRUCTABILITY. ENGINEERING REVIEW WITH THE REPAIR CONTRACTOR HIS HIGHLY RECOMMENDED AT THIS LOCATION ONCE THE EXPOSURE OF THE DAMAGE IS





- 1. SEE S0.1 FOR GENERAL NOTES AND S2.0 FOR TYPICAL DETAILS.
- 2. COORDINATE LOCATION OF REPAIRS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND
- PLUMBING DRAWINGS. 3. CONTRACTOR TO REVIEW REPAIR OPTIONS WITH ARCHITECT & PROJECT MANAGER BEFORE
- BEFORE PROCEEDING WITH REPAIR OPTIONS WITH ARCHITECT & PROJEC
- ALL EXISTING DIMENSIONS AND FRAMING SHALL BE FIELD VERIFIED.
- . WZG RECOMMENDS REPAIR AREA TO BE CLOSED OFF FROM ABOVE AND BELOW DURING REPAIRS. COORDINATE PHASING WITH ARCHITECTURAL DRAWINGS.

								REPORT ITEM #	REPORT ITEM DESCI
								S1	MINOR CORROSION AND DELAMINATION. MECHANICALLY CLEAN EX AND LIGHT POWER TOOL CLEANING TO OBTAIN CLEAN SURFACE TO RECOMMENDED TO BE INSTALLED ON EXPOSED STEEL BEAMS, BEA
								S2	EXISTING LINTELS AT EACH WINDOW SHALL BE CLEANED AND PAIN AT BEARING POINTS SHALL BE REVIEWED BY A MASON AND REPOIN STRUCTURE SURROUNDING THE BEARING POINT. WINDOW WELL S EXTERIOR OF THE BUILDING.
								S3	PREPARE AND PAINT THE STEEL BEARING PLATES PER ITEM NUMBE
								S4	REVIEW CONDITION OF EXISTING FLOOR DRAIN AND TRAP AND REP AROUND THE EXISTING DRAIN, THE BOTTOM OF CONCRETE SLAB IS REPAIRED WITH SIKAREPAIR 223 REPAIR MORTAR. SEE ITEM NUMB
								S5	<ul> <li>THE EXISTING SLAB PATCH IS TO BE REMOVED AND REPLACED. FO ARE RECOMMENDED TO BE REVIEWED AND IDENTIFIED FOR POSSIE REMOVED, THE FOLLOWING PROCEDURES ARE TO BE USED FOR TH</li> <li>LOOSE CONCRETE AROUND THE PRIOR PATCH AND SLAB SF LOOSE MATERIAL BACK TO SOUND SOLID MATERIAL.</li> <li>ANY EXPOSED REBAR IS TO BE CLEANED TO GOOD METAL B SURROUNDING THE REBAR TO BE CHIPPED BACK A MINIMUM AREA TO HAVE A MINIMUM SURFACE AMPLITUDE OF 1/8-INCF PRODUCT SUCH AS SIKA ARMATEC 1C OR 110 ECOCEM.</li> <li>SAW CUT AROUND THE PERIMETER OF THE EXPOSED AREA</li> <li>PATCH THE EXPOSED AREA WITH SIKAREPAIR 223 REPAIR M LOCALIZED FORMING AND PRESSURE INJECTION OF REPAIR</li> </ul>
								S6	<ul> <li>AT THE FORMER MANHOLE LOCATION, TWO OPTIONS ARE AVAILABL</li> <li>OPTION 1: KEEP THE MANHOLE IN PLACE FOR POSSIBLE USE CONCRETE AROUND THE EXISTING MANHOLE APPROXIMATE CHIP THE BOTTOM OF CONCRETE APPROXIMATELY 2-INCHE HOOP TIES SPACED 2 INCHES APART IN DIAMETER AROUND THE EXISTING REBAR AND SLAB AS OUTLINED IN ITEM #5, ST</li> <li>OPTION 2: REMOVE THE EXISTING MANHOLE AND REPLACE SECTION OF SLAB BETWEEN THE EXISTING BEAMS, LEAVING MANHOLE FRAME AND LID. PROVIDE NEW PIECES OF GRADI EXTENDING OVER TO EACH OF THE EXISTING BEAMS BELOW WEIGHT CONCRETE AFTER APPLYING A CONCRETE BONDIN 110 EPOCEM TO THE EXISTING REBAR.</li> </ul>
								S7	THE ONE NORTHERN (LANCASTER AVE SIDE) STEEL GIRDER IS VER
									ONCE THE BEAM IS REMOVED, THE EXISTING BEARING PLATE LOCA INSTALLED.
								S8	THE EXISTING STEEL BEAM SHOWN IS <b>UNSAFE</b> AND REQUIRES REPLENTIRELY BY SHORING THE EXISTING APPARATUS BAY FLOOR BEAN TO BE A W10X22 GRADE 50 STEEL BEAM WHICH IS TO BE WELDED D BEAM EXPOSED BOTTOM FLANGE IS THEN TO BE WELDED TO THE N
								S9	THIS EXISTING BEAM SPAN IS ALSO DAMAGED HEAVILY AND REQUIR NEW W10X22 GRADE 50 STEEL BEAM AT THIS LOCATION IS ALSO RE
								\$10	THE EXISTING BEAM SEGMENT LOCATED AT THE STAIR OPENING IS SEGMENT REPLACED. THIS CREATES AN <b>UNSAFE</b> CONDITION FOR T LEVEL. THE EXISTING STEEL LINTEL AND BRICK SUPPORTING THE E SUPPORT THE NEW BEAM. DUE TO THE NEW COLUMN, THE LOAD IS SECTIONS FOR THE RECOMMENDED METHOD OF REPAIR BY INSTAL SUPPORT OF THE EXISTING APPARATUS FLOOR.
		POSTS		S6					
(E) BEAM	(E) BEAM (E) BEAM (E) BEAM	(E) BEAM		(E) BEAM	(E) BEAM	(E) BEAM	(E) BEAM	(E) BEAM	
	W10X22	(S7)	    	     _ (E) GIRDER	     	     ⊥⊥(E)	       GIRDER		
	(E) GIRDER	; 	 	(E) GIRDER		(E)	GIRDER		
(E) BEAM	(E) BEAM	(E) BEAM	(E) BEAM		(E) BEAM	(E) BEAM	(E) BEAM	2'-0"	
								3:-0	

REPORT ITEM DESCRIPTION ECHANICALLY CLEAN EXPOSED STEEL BEAMS, BEARING PLATES, AND FLANGES BY HAND TOOL	
AIN CLEAN SURFACE TO PAINT. AN EPOXY MASTIC PAINT SUCH AS CARBOMASTIC 15 IS SED STEEL BEAMS, BEARING PLATES, AND FLANGES THROUGHOUT THE BASEMENT.	
BE CLEANED AND PAINTED WHERE ACCESSIBLE PER ITEM NUMBER S1 ABOVE. MASONRY JOINTS Y A MASON AND REPOINTED/REPAIRED AS NEEDED TO PROVIDE PROPER BEARING AND SOLID YOINT. WINDOW WELL SEALANTS SHOULD BE REVIEWED AND REPLACED AS NEEDED FROM THE	
LATES PER ITEM NUMBER S1 ABOVE.	
AIN AND TRAP AND REPLACE AS REQUIRED. SEAL THE SLAB AROUND THE FLOOR DRAIN BODY. I OF CONCRETE SLAB IS RECOMMENDED TO BE CHIPPED OF ANY LOOSE CONCRETE AND IRTAR. SEE ITEM NUMBER S5 BELOW FOR ADDITIONAL CONSIDERATIONS.	
ED AND REPLACED. FOLLOWING REMOVAL, REASONS FOR THE WATER INFILTRATION FROM ABOVE IDENTIFIED FOR POSSIBLE FLOOR SEALANTS, LEAKS, OR CAULKING THAT NEED REPAIR. ONCE ARE TO BE USED FOR THE SLAB REPAIR. IOR PATCH AND SLAB SPALL TO BE REMOVED. LOCAL CHIPPING MAY BE REQUIRED TO REMOVE THE SOLID MATERIAL. INED TO GOOD METAL BY USE OF HAND TOOL OR LIGHT DUTY POWER TOOLS. CONCRETE HIPPED BACK A MINIMUM OF ½-INCH AROUND THE EXPOSED REBAR AND THE PREPARED PATCHING AMPLITUDE OF 1/8-INCH TO ¼-INCH. REBAR IS TO BE COATED WITH A CORROSION INHIBITOR	
IC OR 110 ECOCEM. OF THE EXPOSED AREA TO PROVIDE CLEAN EDGES WITH A MINIMUM 3/8-INCH DEEP SHOULDER. (AREPAIR 223 REPAIR MORTAR OR AN EQUIVALENT HIGH STRENGTH BONDING REPAIR MORTAR. E INJECTION OF REPAIR MORTAR MAY BE REQUIRED IN THESE OVERHEAD APPLICATIONS.	
OPTIONS ARE AVAILABLE: ACE FOR POSSIBLE USE, AND REPAIR THE CONCRETE AROUND IT. REMOVE THE BOTTOM OF THE MANHOLE APPROXIMATELY 3 FEET WIDE, AND FOR THE FULL SPAN BETWEEN THE EXISTING BEAMS. PPROXIMATELY 2-INCHES TO 3-INCHES DEEP TO FULLY EXPOSE THE EXISTING REBAR. ADD (2) #3 I IN DIAMETER AROUND THE EXISTING MANHOLE OPENING, TIED TO THE EXISTING REBAR. REPAIR DUTLINED IN ITEM #5, STEPS A THRU D. ANHOLE AND REPLACE THE SLAB FULLY. TO DO THIS, REMOVE APPROXIMATELY A 3 FEET WIDE ISTING BEAMS, LEAVING EXISTING REBAR EXPOSED AND IN PLACE. REMOVE THE EXISTING METAL E NEW PIECES OF GRADE 60 REINFORCEMENT, #6, LAPPED WITH THE EXISTING REBAR AND EXISTING BEAMS BELOW. FORM BOTTOM OF SLAB, AND REPLACE WITH NEW 4000 PSI NORMAL G A CONCRETE BONDING AGENT TO THE EXISTING CONCRETE EDGES AND SIKA ARMATEC 1C OR R.	
RCHITECT AND PROJECT MANAGER UPON UNDERSTANDING FIELD CONDITIONS.	
) STEEL GIRDER IS VERY DAMAGED FROM PROLONGED RUST AND DETERIORATION WHICH POSES ACENT GIRDER IN THE SAME SPAN CAN LIKELY REMAIN BASED UPON CURRENT OBSERVATIONS. G BEARING PLATE LOCATED ON THE PIER MAY BE CLEANED TO GOOD METAL, AND THE NEW BEAM	
FE AND REQUIRES REPLACEMENT. IT IS RECOMMENDED TO REPLACE THIS STEEL GIRDER RATUS BAY FLOOR BEAMS TO REMOVE THE EXISTING DAMAGED GIRDER. THE NEW STEEL BEAM IS ICH IS TO BE WELDED DOWN UPON THE EXISTING STEEL BEARING PLATE. THE EXISTING FLOOR TO BE WELDED TO THE NEW BEAM TOP FLANGE AT EACH LOCATION.	
ED HEAVILY AND REQUIRES REPLACEMENT AS IT IS AN <b>UNSAFE</b> CONDITION. INSTALLATION OF A S LOCATION IS ALSO REQUIRED FOLLOWING THE PROCEDURES OUTLINED FOR ITEMS S7 AND S8	
THE STAIR OPENING IS SEVERELY DELAMINATED AND IT IS OUR RECOMMENDATION TO HAVE THIS ISAFE CONDITION FOR THE FLOOR SUPPORT AS WELL AS INDIVIDUALS USING THE STAIRS TO EACH ICK SUPPORTING THE END OF THIS BEAM IS STILL SATISFACTORY AND WILL BE RE-USED TO	
N COLUMN, THE LOAD IS REDUCED AS WELL ON THIS EXISTING BRICK LINTEL. PLEASE SEE DD OF REPAIR BY INSTALLING A NEW STEEL COLUMN AND FOOTING TO MAINTAIN STRUCTURAL DOR.	PROJECT
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ENGINE 61 - BASEMENT REFLECTED CEILING PLAN

#### PLAN NOTES:

- SEE S0.1 FOR GENERAL NOTES AND S2.0 FOR TYPICAL DETAILS.
   COORDINATE LOCATION OF REPAIRS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND
- PLUMBING DRAWINGS.
- CONTRACTOR TO REVIEW REPAIR OPTIONS WITH ARCHITECT & PROJECT MANAGER BEFORE BEFORE PROCEEDING WITH REPAIRS.
- ALL EXISTING DIMENSIONS AND FRAMING SHALL BE FIELD VERIFIED.
   WZG RECOMMENDS REPAIR AREA TO BE CLOSED OFF FROM ABOVE AND BELOW DURING REPAIRS. COORDINATE PHASING WITH ARCHITECTURAL DRAWINGS.

REPAIR ITEM #	REPAIR ITEM DESCRIPTION
S1	MINOR CORROSION AND DELAMINATION. MECHANICALLY CLEAN AND PAINT WITH AN EPOXY MASTIC PAINT SUCH AS CARBOMASTIC 15.
S2	MAJOR CORROSION AND DELAMINATION. REINFORCE BEAM PER STRUCTURAL DETAILS ON SHEET S2.0.
S3	EXISTING MINOR SLAB CRACKING. ROUT SURFACE TO "v" PROVILE AND FILL WITH APPROVED SEALANT COMPATIBLE WITH FLOOR COATING. SEE ARCHITECTURAL SPECIFICATIONS.
S4	PREVIOUSLY DEMOLISHED KNEE WALL. REFERENCE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
S5	AT ALL PRIOR PROBE LOCATIONS AT EXISTING BEAMS, FORM AND GROUT WITH NON-SHRINK HIGH STRENGTH GROUT TO MATCH EXISTING ENCASEMENT PROFILE.



ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.





#### PLAN NOTES:

- SEE S0.1 FOR GENERAL NOTES AND S2.0 FOR TYPICAL DETAILS. COORDINATE LOCATION OF REPAIRS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND
- PLUMBING DRAWINGS. CONTRACTOR TO REVIEW REPAIR OPTIONS WITH ARCHITECT & PROJECT MANAGER BEFORE
- 3. BEFORE PROCEEDING WITH REPAIRS.
- ALL EXISTING DIMENSIONS AND FRAMING SHALL BE FIELD VERIFIED. WZG RECOMMENDS REPAIR AREA TO BE CLOSED OFF FROM ABOVE AND BELOW DURING REPAIRS. -5
- COORDINATE PHASING WITH ARCHITECTURAL DRAWINGS.

REPORT ITEM #	REPORT ITEM DESCRIPTION
S1	MINOR CORROSION AND DELAMINATION. MECHANICALLY CLEAN AND PAINT WITH AN EPOXY MASTIC PAINT SUCH AS CARBOMASTIC 15.
S2	MAJOR CORROSION AND DELAMINATION. REPLACE SEGMENT OF (E) W12 BEAM PER EXTENT SHOWN ON PLAN AND STRUCTURAL DETAILS ON SHEET S2.0.
S3	ORIGINAL REBAR EXPOSED LIGHTLY. SAW CUT THE PERIMETER OF THE EXPOSED AREA TO PROVIDE CLEAN EDGES WITH A MIN. OF 3/8" DEEP SHOULDER. HAND TOOL CLEAN BOTTOM OF SLAB AROUND EXISTING REBAR TO REMOVE LOOSE MATERIAL AND PROVIDE SURFACE AMPLITUDE ROUGHNESS OF MIN. 1/4". COAT THE EXPOSED REBAR AND PREPARED CONCRETE SURFACE WITH SIKA ARMATEC 110 CORROSION INHIBITOR AND BONDING AGENT. PATCH THE EXPOSED AREA WITH SIKAREPAIR 223 REPAIR MORTAR OR AN APPROVED EQUIVALENT HIGH STRENGTH BONDING REPAIR MORTAR.
S4	CONDUIT IN SLAB EXPOSED. INSTALL L6x6x5/16" GALVANIZED STEEL ANGLE BY 5'-0" LONG (V.I.F.), CINCHED INTO STONE FOUNDATION WALL TO SUPPORT SLAB ABOVE. PROVIDE 5/8" DIA. HILTI HAS THREADED ROD INTO FOUNDATION WALL AT 12" O.C. USING HILTI HY-270 ADHESIVE SYSTEM.
S5	MECHANCIALLY CLEAN BEAM FLANGE, WEB, AND BEARING POINT. BEAM AND BEARING POINT SHALL BE MECHANICALLY CLEANED AND PAINTED WITH AN EPOXY MASTIC PAINT SUCH AS CARBOMASTIC 15.
S6	HEAVY RUST ON SLAB POUR STOP. MECHANICALLY CLEAN AND PAINT WITH AN EPOXY MASTIC PAINT SUCH AS CARBOMASTIC 15.



2 64-S1.0 1/4" = 1'-0"

# ENGINE 64 - FOUNDATION PLAN

#### FOUNDATION NOTES:

- 1. SHIM NEW POST BENEATH BASE PLATE AS NEEDED TO OBTAIN FULL CONTACT WITH CAP PLATE TO
- EXISTING BEAM. 2. FULLY GROUT BASE PLATE WITH NON-SHRINK, NON-METALLIC HIGH STRENGTH STRUCTURAL
- GROUT UPON COMPLETION. 3. DO NOT REMOVE SHORING SUPPORTS UNTIL GROUT HAS ACHIEVED MIN. 75% STRENGTH.





#### MECHANICAL SPECIFICATIONS

#### A. SCOPE OF WORK

- 1. PROVIDE ALL MATERIALS AND EQUIPMENT INDICATED ON THESE DRAWINGS. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
- 2. WORK TO BE PERFORMED UNDER THE MECHANICAL SPECIFICATIONS AND DRAWINGS CONSISTS OF FURNISHING ALL LABOR AND MATERIAL FOR THE INDICATED SPACE, INCLUDING BUT NOT LIMITED TO: - HVAC UNITS WITH SUPPORTS AND ACCESSORIES - AUTOMATIC TEMPERATURE CONTROLS
- CONDENSATE DISPOSAL PIPING AND PUMP - SYSTEM BALANCING AND TESTING

#### B. GENERAL

- 1. ALL EQUIPMENT SHALL BE INSTALLED IN A WORKMANLIKE MANNER, MEETING THE ACCEPTED STANDARDS OF THE HVAC INDUSTRY. WORK SHALL BE PERFORMED BY FIRMS AND CRAFTSMAN REGULARLY ENGAGING IN WORK OF THIS NATURE.
- 2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE OF THE TYPE AND CAPACITIES INDICATED ON THE DRAWINGS.
- 3. ALL EQUIPMENT AND MATERIALS PROVIDED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR THE PROPOSED SERVICE.
- 4. ALL MATERIALS SPECIFIED ARE BASIS OF DESIGN. MECHANICAL CONTRACTOR SHALL PROVIDE PRODUCTS K. DIFFUSERS SIMULAR IN NATURE AND MEETING DESIGN INTENT.
- 5. SUBSTITUTIONS AND/OR EQUAL PRODUCTS MUST BE APPROVED IN WRITING BY THE CITY, PRIOR TO INSTALLATION.
- 6. GUARANTEE IN WRITING ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. GUARANTEE SHALL BE UNCONDITIONAL.
- 7. DO NOT SCALE THESE DRAWINGS FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, DIMENSIONS, ETC. AT THE JOB SITE.
- 8. PRIOR TO SUBMISSION OF BID, MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND FIELD VERIFY EXISTING CONDITIONS. MECHANICAL CONTRACTOR SHALL BRING TO THE ATTENTION OF THE CITY ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND DESIGN DOCUMENTS.
- 9. MECHANICAL CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL EXISTING MATERIALS MADE OBSOLETE BY THIS WORK.
- 10. ALL MATERIALS SHALL BE CONSIDERED NEW UNLESS OTHERWISE INDICATED.
- 11. MECHANICAL CONTRACTOR SHALL VERIFY THAT WORK PERFORMED UNDER THIS CONTRACT WILL NOT ADVERSELY IMPACT ADJACENT SYSTEMS.
- 12. SEISMIC RATING: ALL WORK SHALL BE RATED FOR SEISMIC ZONE 4
- 13. FIRE STOP: ALL PENETRATIONS THROUGH FIRERATED WALLS AND CEILNGS PROVIDE FIRE DAMPERS AS REQUIRED.

#### C. CODES AND STANDARDS

- 1. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH 2018 INTERNATIONAL MECHANICAL CODE, THE CURRENT EDITION OF NFPA, SMACNA AND LOCAL CODES AND REGULATIONS GOVERNING WORK OF THIS NATURE.
- 2. MECHANICAL CONTRACTOR SHALL SECURE ALL PERMITS AND APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED.

#### D. SUBMITTALS

- 1. SUBMIT MANUFACTURERS LITERATURE TO CITY INDICATING THAT THE EQUIPMENT MEETS REQUIREMENTS OF THESE DRAWINGS AND SPECIFICATIONS. SUBMITTALS SHALL INCLUDE BUT NOT BE LIMITED TO HVAC INDOOR AND OUTDOOR UNITS.
- 2. PROVIDE SHOP DRAWINGS TO A SCALE OF NOT LESS THAN 1/4" = 1'-0" CLEARLY INDICATING COORDINATION ITEMS INCLUDING BUT NOT LIMITED TO LIGHTING, SPRINKLERS PLUMBING AND STRUCTURAL MEMBERS. MECHANICAL CONTRACTOR SHALL CLEARLY INDICATE ANY DEVIATIONS FROM DESIGN DOCUMENTS. UPON REQUEST OF DESIGN PROFESSIONAL, FURNISH DETAILS OR ELEVATIONS OF SPECIFIC FITTINGS OR LOCATIONS.
- 3. SUBMIT "AS-BUILT" DRAWINGS UPON COMPLETION OF CONSTRUCTION. "AS-BUILT" DRAWINGS SHALL BE TO A SCALE OF NOT LESS THAN 1/4"=1'-0". CLEARLY
- INDICATE ALL DEVIATIONS FROM CONTRACT DOCUMENTS AND SHOP DRAWINGS. 4. SUBMIT MANUFACTURERS INSTALLATION INSTRUCTIONS TO BUILDING INSPECTIONS

INDICATED ON THESE DRAWINGS AND LABLES APPLIED IN FIELD.

- DEPARTMENT OF CODE OFFICE. 5. PROVIDE 6 COPES OF O&M MANUALS FOR CITY. IDENTIFY EQUIPMENT WITH SYMBOLS
- E. COORDINATION
- 1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH 4726GCON TO PROVIDE FOR INTERIOR WALL OPENINGS FOR DUCT PENETRATIONS.
- 2. MECHANICAL CONTRACTOR SHALL COORDINATE WITH 4726ELEC FOR LOCATION OF WIRING FOR EACH HVAC UNIT.
- F. PERMITS AND SERVICE APPLICATIONS
- 1. MECHANICAL CONTRACTOR SHALL APPLY FOR ALL REQUIRED PERMITS.

- G. HEATING AND VENTILATING UNIT
- 1. PROVIDE AND INSTALL UNITS INDICATED ON DRAWINGS AND SCHEDULES. UNITS SHALL INCLUDE SUPPORTS AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE & WORKING SYSTEM.
- 2. PROVIDE 3 SETS OF PLEATED DISPOSABLE FILTERS. ONE SET TO BE USED UNTIL COMPLETION OF CONSTRUCTION PHASE. INSTALL ONE SET AT COMPLETION OF CONSTRUCTION PHASE AND DELIVER ONE SET TO CITY. FILTERS SHALL BE SIMILAR TO FARR D/C-22.

4. PROVIDE VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

- 3. PROVIDE MANUFACTURERS STANDARD WARRANTY ON UNITS.
- H. EXHAUST FANS
- NOT USED.
- I. DUCTWORK
- NOT USED.
- J. INSULATION
- 1. PROVIDE INSULATION TO REFRIGERATE PIPING AS SCHEDULE INDICATES.
- NOT USED. L. IDENTIFICATION
- 1. MECHANICAL CONTRACTOR SHALL PROVIDE EQUIPMENT MARKERS FOR EACH PIECE OF MAJOR MECHANICAL EQUIPMENT.
- 2. EQUIPMENT MARKERS SHALL BE COLOR CODED LAMINATED PLASTIC W/PERMANENT ADHESIVE.
- 3. IDENTIFY EQUIPMENT ACCORDING TO SYMBOLS INDICATED IN EQUIPMENT SCHEDULES.
- 4. LETTER SHALL BE MINIMUM 1/2" HIGH.
- 5. EQUIPMENT SIGNS SHALL BE BLACK WITH WHITE LETTERING.
- 6. SUPPLY PIPING SHALL BE LABLED WITH PRECOILED PLASTIC FORMED (SNAP ON) SEMI-RIGID
- 7. VALVE TAGS SHALL BE COLOR CODES LAMINATED PLASTIC WITH CHAIN ATTACHMENT.
- M. CONTROLS
- 1. MECHANICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL WIRING AND CONTROL DEVICES AS REQUIRED FOR ALL SYSTEMS INCLUDED BUT NOT LIMITED TO HVAC SYSTEMS. 2. COORDINATE FINAL CONTROLLER LOCATION W/CITY.
- 3. CONTROL SYSTEMS SHALL BE CAPABLE OF PROVIDING FOR THE SEQUENCE OF OPERATION
- INDICATED ON THIS DRAWING.
- N. TESTING AND BALANCING
- 1. MECHANICAL CONTRACTOR SHALL RETAIN A NEBB OR AABC CERTIFIED BALANCING CONTRACTOR. SYSTEMS SHALL BE BALANCED TO PROVIDE AIR FLOW RATES INDICATED ON DRAWINGS AND SCHEDULES. 2. PROVIDE REPORT TO ARCHITECT VERIFYING THE DESIGN REQUIREMENTS HAVE BEEN MET.
- O. ROOF WORK NOT USED.
- P. MOTORS
- NOT USED.

NOT USED.

- Q. VEHICLE EXHAUST EXTRACTION SYSTEMS
- R. <u>PIPING GENERAL REQUIREMENTS</u>
- 1. ALL PIPING SHALL BE CONCEALED IN WALLS, ABOVE CEILING, AND BEHIND FIXED FURNISHINGS UNLESS OTHERWISE INDICATED ALL PIPING EXPOSED TO VIEW SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO THE UNDERSIDE OF THE STRUCTURAL STEEL.
- 2. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
- 3. WHEREVER FOUNDATION WALLS, OUTSIDE WALLS, ROOF, ETC. ARE PENETRATED FOR INSTALLATION OF SYSTEMS. THEY SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION AND SEALED WEATHER TIGHT. WORK SHALL BE PERFORMED BY CRAFTSMEN SKILLED IN THEIR RESPECTIVE TRADES.
- 4. ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES, SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION.
- 5. INSTALL PIPING AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK INCLUDING DUCTS AND ELECTRICAL CONDUIT.
- 6. PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEMS FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.
- 7. ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, ETC. ARE CONCEALED WITHIN WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.
- S. NATURAL GAS PIPING NOT USED.

#### MECHANICAL SEQUENCE OF OPERATION

#### ENGINE 54

- GENERAL
- 1. BUILDING SHALL BE PROVIDED WITH STANDALONE HVAC CONTROLS FOR EACH SYSTEM.
- WATCH DESK ROOM CONTROLS HEATING, COOLING AND VENTILATING 1. MINI-SPLIT HEAT PUMP SYSTEM (HPI-1 AND HPO-1) SHALL RUN ON A CALL OF TURNING ON. HPI/HPO-1 SHALL BE IN COOLING MODE ON A RISE OF ROOM TEMPERATURE HIGHER THAN 72°F (ADJUSTABLE). HPI/HPO-1 SHALL BE IN HEATING MODE ON A DROP OF ROOM TEMPERATURE LOWER THAN 70°F (ADJUSTABLE).

#### **ABBREVIATIONS:**

ABV	ABOVE
ABV CLG	ABOVE CEILING
COND	CONDENSATE
DN	DOWN
EA	EXHAUST AIR
HPI	HEAT PUMP SPLIT SYSTEM INDOOR UNIT
HP0	HEAT PUMP SPLIT SYSTEM OUTDOOR UNIT
OA	OUTSIDE AIR
RA	RETURN AIR
RG	RETURN GRILLE
SA	SUPPLY AIR
SG	SUPPLY GRILLE
WH	WATER HEATER

DUCT-L	DUCT-LESS SPLIT TYPE HEAT PUMP UNIT SCHEDULE (ENGINE 54)													HPI-INDOOR SE	CTION SECTION			
	Indoor Section Outdoor Section																	
No.	EXT		EXT		EXT	EXT	EXT Electrical Characteristics		Hea	Heating Cooling at 95°Fdb Ambient			Electrical Characteristics				Manufacturer & Model No.	Remarks
	CFM	OA	SP		Fan		at 17°F	at 47°F	Total	Sensible	SEED	MCA	MCA MOCP Compressor Violto Dhan		Phase			
			" WG	F.L.A.	Volts	Phase	BTUH	BTUH	BTUH	BTUH	JLIN			R.L.A.	VOIIS	Filase		
1	350	20	-	0.23	230/208	1	6,200	10,900	8,400	7,056	15	12	15	6.6	230/208	1	MITSUBISHI SLZ-KAO9NA (INDOOR)	1
																	SUZ-KA09NA (OUTDOOR)	

NOTE: 1. REFRIGERANT PIPING SHALL BE AS RECOMMENDED BY UNIT MANUFACTURER.

MECHANICAL INSULATION SCHEDULE (ENGINE 54)												
System	Application	Temperature Range	Location	Insulation Type	Thickness/R-Value	Lined or Wrapped	Vapor Barrier	Finish				
SPLIT SYSTEM REFRIC	GERANT LIQUID <1.5"	BELOW AMBIENT	INDOOR/OUTDOOR	CLOSED CELL ELASTOMERIC	1"	_	YES	PAINT OUTDOOR WHITE				
SPLIT SYSTEM REFRIGI	ERANT SUCTION <1.5"	ABOVE AMBIENT	INDOOR/OUTDOOR	CLOSED CELL ELASTOMERIC	1"	_	YES	PAINT OUTDOOR WHITE				

NOTES: 1. EXCLUDES FACTORY INSULATED EQUIPMENT.

MECHANICAL PUMP SCHEDULE (ENGINE 54)												
No.	System	G.P.H.	Water	Volts	Phase	Watts	Amps	Manufacturer & Model	Remarks			
1	CONDENSATE PUMP	3	12	100-250 VAC	1	19	0.17	ASPEN PUMPS, MINI WHITE UNIVOLT @60HZ				

VENTILATION SCHEDULE										
Space	Area (S.F.)	Occupant Load	Ventilation Basis	Required OA CFM						
ENGINE 54 - WATCH DESK	76	1	5 OA CFM/PERSON+.06 OA CFM/S.F.	10						

ROOM PRESSURE VERIFICATION										
Space	OA Intake	Exhaust	Room Pressu							
ENGINE 54 – WATCH DESK	20 CFM	0	POSITIVE							

1. BASED ON IMC 2018.







#### GENERAL PLUMBING NOTES:

- 1. LOCATION AND SIZES OF ALL EXISTING SERVICES ARE APPROXIMATE. VERIFY ALL UTILITIES PRIOR TO COMMENCING
- 2. FOR EXACT LOCATION OF PLUMBING FIXTURES, DRAINS AND EQUIPMENT SEE ARCHITECTURAL DRAWINGS.

WORK.

- 3. ALL DOMESTIC WATER AND VENT PIPING SHOWN TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
- 4. ALL SANITARY PIPING SHOWN TO BE RUN BELOW FLOOR UNLESS OTHERWISE NOTED.
- 5. ENTIRE INSTALLATION INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL CONFORM WITH ALL APPLICABLE LAWS. CODES AND REGULATIONS OF MUNICIPAL, STATE, FEDERAL, AND OTHER REGULATORY BODIES HAVING JURISDICTION OVER THE CLASS OF WORK, WHICH INCLUDING PHILADELPHIA PLUMBING CODE 2018 AND INTERNATIONAL BUILDING CODE 2018. ESPECIALLY, PHILADELPHIA SINGLE-STACK WASTE AND VENT SYSTEM DESCRIED IN THE SECTION 919 OF PHILADELPHIA PLUMBING CODE IS ADOPTED IN THE DESIGN.
- 6. THE CONTRACTOR SHALL MAKE TESTS FOR ACCEPTANCE AND APPROVAL AS REQUIRED BY THE CODE. REQUIRED TESTS SHALL BE PERFORMED IN THE PRESENCE OF OWNER'S REPRESENTATIVE UNLESS WAIVED IN WRITING.
- 7. THE CONTRACTOR SHALL FIELD COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES.
- 8. ALL DOMESTIC WATER PIPING SHALL BE LEVEL WITHOUT PITCH AND PLUMB AND INSULATED AS REQUIRED.
- 9. INSTALL CLEANOUT AT OR NEAR THE BOTTOM OF SANITARY/WASTE STACK.
- 10. PROVIDE PROPER ACCESS PANELS AS SPECIFIED IN WALLS AND CEILINGS FOR ANY EQUIPMENT, DEVICES, VALVES, SHOCK ABSORBERS, TRAP PRIMERS, CLEANOUTS ETC. REQUIRING ACCESS.
- 11. PROVIDE FIRE STOPPING FOR ALL PIPING PENETRATIONS THROUGH FIRE-RATED WALLS.
- 12. PROVIDE SEALANT FOR ALL PIPING PENETRATIONS THROUGH NON-FIRE RATED WALLS.
- 13. ALL DOMESTIC WATER PIPING TO INLET OF A WATER HEATER AND PIPING CONVEYING HOT WATER SHALL BE INSULATED IN ACCORDANCE WITH IECC 2018: SECTION R403.5.3 FOR RESIDENTIAL OR SECTION C403.11.3 FOR COMMERCIAL. THE INSULATION IS PROPOSED TO BE POLYETHYLENE FOAM OR FIBER GLASS INSULATION. POLYETHYLENE SHOULD KEEP 8" AWAY FROM THE FLUE.

FOR THE COMMERCIAL: THE THERMAL CONDUCTIVITY OF INSULATION MATERIAL SHOULD NOT BE HIGHER THAN 0.29  $BTU-IN/(HR-FT^2-{}^{O}F)$ . THE MINIMUM THICKNESS OF INSULATION SHOULD BE 1-1/2" FOR PIPING SMALLER THAN 1-1/2", AND 2" FOR PIPING 1-1/2" OR LARGER.

- 14. THE PLUMBING PIPING SHOULD BE SUPPORTED ACCORDING TO THE MANUFACTURE REQUIREMENT. AND NOT LESS THAN THE MINIMUM REQUIREMENT SPECIFIED IN THE TABLE 308.5 OF PHILADELPHIA PLUMBING CODE.
- 15. BEYOND THE BUILDING STRUCTURE, UNDERGROUND DOMESTIC WATER PIPING SHALL BE HORIZONTALLY SEPARATED BY NOT LESS THAN 5 FEET OF UNDISTURBED OR COMPACTED EARTH WHEN IT IS ADJACENT TO NONMETALLIC SEWER PIPE. DOMESTIC WATER SHALL BE SEPARATED BY NOT LESS THAN 12 INCHES VERTICAL AND 12 INCHES HORIZONTALLY FROM THE OUTER EDGE OF METALLIC SEWER PIPE. THE REQUIRED DISTANCE SHALL NOT APPLY WHERE A DOMESTIC WATER PIPE CROSSES THE SEWER PIPE PROVIDED THAT THE DOMESTIC WATER IS AT LEAST 12 INCHES ABOVE THE SUCH PIPE AND SLEEVED TO BE A POINT NO LESS THAN 5 FEET HORIZONTALLY FROM THE SEWER CENTERLINE ON BOTH SIDES OF CROSSING.

#### GENERAL PLUMBING SELECTIVE DEMOLITION NOTES:

1. LOCATION AND SIZES OF ALL EXISTING SERVICES ARE APPROXIMATE. VERIFY ALL UTILITIES PRIOR TO COMMENCING WORK.

2. DISCONNECT AND REMOVE EXISTING EQUIPMENT SHOWN TO BE REMOVED UNLESS OTHERWISE NOTED.

3. PLUG OR CAP ALL SERVICES IN WALL, ABOVE CEILING AND BELOW FLOOR AS REQUIRED.

4. REMOVE ABANDONED PIPING WHERE IT IS IN CONFLICT WITH NEW WORK. PLUG OR CAP AS REQUIRED.

5. NOTIFY LOCAL FIRE DEPARTMENT BEFORE ANY SHUTDOWN OF EXISTING FIRE PROTECTION SYSTEM.

6. EXISTING SPRINKLERS TO STAY IN SERVICE DURING DEMOLITION.

7. THE CONTRACTOR SHALL INCLUDE IN THE PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES AND/OR RELOCATIONS/REMOVALS NOT SHOWN ON THE DRAWINGS WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT.

8. ALL WORK UNDER THIS SECTION SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

9. CONTRACTOR SHALL REVIEW WITH OWNER ALL MATERIALS TO BE REMOVED PRIOR TO DEMOLITION WORK. UPON ANY REQUEST BY OWNER TO KEEP ANY MATERIALS, THE CONTRACTOR SHALL REMOVE AND DELIVER THE MATERIALS TO AN APPROVED LOCATION. OTHERWISE, THE CONTRACTOR OWNS ALL DEMOLISHED OR REMOVED MATERIALS ON SITE, AND IS RESPONSIBLE TO DISPOSE IN A LEGAL MANNER.

10. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING PLUMBING WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL LAYOUTS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE REMOVED BACK TO ACTIVE LINES WITH THE SURROUNDING SURFACE REFINISHED IN AN APPROVED MANNER.

11. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING PLUMBING SYSTEMS. ALL EXISTING SYSTEM REMAINING IN SERVICE DURING DEMOLITION OPERATION SHALL BE PROTECTED AGAINST DAMAGE. SHOULD ANY EXISTING UTILITY SYSTEM BE AFFECTED, THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH OWNER AND THE AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.

10. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.

12. THE CONTRACTOR SHALL REMOVE ALL PIPING SUPPORTS, ETC. FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING PIPING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL AND PROVIDE BYPASS CONNECTIONS NECESSARY.

13. NOT USED.

14. PORTIONS OF MAINS TO BE REMOVED OR ABANDONED AS A RESULT OD DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ACTIVE, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED.

15. ALL EQUIPMENT AND MATERIALS TO BE REUSED AS INDICATED BY THE PLAN SHALL BE CLEANED. RECONDITIONED. CALIBRATED AND ADJUSTED TO THE CONTRACTOR'S BEST CAPACITY. IN CASE WHERE THE EXISTING EQUIPMENT OR MATERIALS CANNOT BE PROPERLY RESTORED DUE TO PRIOR DEFECTS, THE CONTRACTOR SHALL REPORT TO ENGINEER AND OWNER FOR DIRECTIONS.

16. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS.

17. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME, IF REQUIRED TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.

18. THE SHUTDOWN OF EXISTING BUILDING PLUMBING SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN. OTHER AREAS IN THE BUILDING MUST REMAIN ACTIVE, UNLESS OTHERWISE DIRECTED BY THE OWNER.

17. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR THE PRESENT BUILDING AND ITS CONTENTS, TEMPORARY DUST-PROOF BARRIERS AND BARRICADES SHALL BE PROVIDED AND ERECTED IN LOCATIONS WHERE PERSONNEL PROTECTION. DUST/DIRT PROTECTION, SECURITY OR WEATHER PROTECTION IS REQUIRED. WORKSPACE SHALL HAVE FIRE DEPARTMENT TYPE HOSES AND PORTABLE FIRE EXTINGUISHERS AS REQUIRED BY OSHA AND/OR THE OWNERS'S INSURANCE UNDERWRITER.

PLUMBING FIXTURE RUNOUT SCHEDULE											
Fixture     Symbol     Waste     Cold Water     Hot Water     MANUFACTURER & MODEL NUMBER											
FLOOR DRAIN	DRAIN FD-1 3" WATTS FD-100-DD										
FLOOR DRAIN W/STRAINER	FD-2	3"	-	-	WATTS FD-100-L						
HUB DRAIN HD 2" – – JAY R. SMITH 3821 SERIES											

NOTE 1: ALL MODEL NUMBER ARE BASED ON DESIGN. CONTRACTOR SHALL SELECT AS THE SAME OR WITH EQUIVALENT DESIGN FEATURES.

#### PLUMBING MATERIAL NOTES:

1. SANITARY / STORM WATER DRAINAGE AND VENT PIPING

PROPOSE TO BE CAST IRON CONFORMING TO ASTM A888 OR ASTM A74, AS ALLOWED BY PHILADELPHIA PLUMBING CODE. CAST IRON PIPING SHALL BE SUPPORTED AT MAX. 5' IN HORIZONTAL SPACING AND MAX. 15' IN VERTICAL SPACING. THE HORIZONTAL SPACING CAN BE INCREASED TO 10' WHERE 10 FOOT OF PIPE IS INSTALLED.

MECHANICAL JOINT COUPLINGS FOR HUBLESS PIPE AND FITTINGS SHALL CONSIST OF AN ELASTOMERIC SEALING SLEEVE AND A METALLIC SHIELD THAT COMPLY WITH CISPI 310, ASTM C1277 OR ASTM C1540. THE ELASTOMERIC SEALING SLEEVE SHALL CONFORM TO ASTM C564 OR CSA B602 AND SHALL BE PROVIDED WITH A CENTER STOP. UNSHIELDED MECHANICAL COUPLINGS ARE NOT PERMITTED. THE MECHANICAL JOINTS ARE PROHIBITED FOR UNDERGROUND APPLICATION.

CAULKED JOINT FOR HUB PIPE AND FITTINGS SHALL BE FIRMLY PACKED WITH OAKUM. MOLTEN LEAD SHALL BE POURED IN ONE OPERATION TO A DEPTH OF NOT LESS THAN 1 INCH.

2. DOMESTIC WATER PIPING SYSTEM

(NOT USED.)

#### SYMBOLS:

N	CHECK VALVE GATE VALVE
	SANITARY PIPING
	SANITARY VENT PIPING
	BALL VALVE
CO	CLEANOUT
	DOMESTIC COLD WATER (CW)
· ·	DOMESTIC HOT WATER (HW)







#### **ABBREVIATIONS:**

ABV	ABOVE
ABV CLG	ABOVE CEILING
BF	BELOW FLOOR
BFP	BACK FLOW PREVENTOR
CD	CONDENSATE
(F/G/W)CO	(FLOOR/GOUND/WALL) CLEAN OUT
CW	COLD WATER
DN	DOWN
EWH	ELECTRIC WATER HEATER
FAI	FRESH AIR INTAKE
FD	FLOOR DRAIN
FU	FIXTURE UNITS
EWH	ELECTRICAL WATER HEATER
HD	HUB DRAIN
N.I.C.	NOT IN CONTRACT
S	SANITARY
ST	STORM
V	VENT
V.T.R.	VENT THROUGH ROOF
W	WASTE

#### SCOPE OF WORK NOTES:

. THE PLAN'S SCOPE WORK ONLY INCLUDE THE RENOVATION AREA ON 1ST FLOOR AND BASEMENT OF EACH BUILDING. OTHER AREAS IN EACH BUILDING ARE EXISTING TO REMAIN. ALL PIPING FOR SANITARY, VENTING AND DOMESTIC WATER, SERVING OTHER AREAS ARE EXISTING TO REMAIN AND NOT IN SCOPE.

2. STORM WATER SYSTEM IN EACH BUILDING, INCLUDING PRIMARY AND OVERFLOW ROOF DRAINS AND ALL STORM WATER PIPING, IS EXISTING TO REMAIN AND NOT SHOWN ON PLAN.

3. BACK FLOW PREVENTOR FOR EACH BUILDING'S COLD WATER SERVICE IS EXISTING TO REMAIN AND NOT IN SCOPE.









ISSUE	DATE		REVISIONS
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		S AND CO	NDITIONS SHALL BE
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![](_page_20_Figure_1.jpeg)

![](_page_20_Picture_2.jpeg)

![](_page_21_Figure_0.jpeg)

	PLUMBING PLAN NOTES
E	INSTALL PROPOSED FLOOR DRAIN WITH STRAINER ON 1ST FLOOR (REFER TO 1ST FLOOR PLUMBING PLAN). PROVIDE P-TRAP AND SURESEAL #97042 OR EQUAL TRAP PRIMER FOR FLOOR DRAINS. INSTALL PER MANUFACTURER'S REQUIREMENTS.
E	P CONNECT FLOOR DRAIN WASTE PIPING (WITH MIN.1% SLOPE) TO (E)SANITARY 2 BRANCH BELOW BASEMENT CEILING.
E	2"V. CONNECT TO EXISTING 4"V. BELOW CEILING. LOCATION TO BE FIELD VERIFIED.
E	TEMPORARILY REMOVE EXISTING RADIATOR FOR NEW FLOOR SLAB WORK. DISCONNECT AND CAP ALL ASSOCIATED PIPING AND VALVES BELOW FLOOR. RECONNECT AND REINSTALL AFTER FLOOR SLAB WORK.

![](_page_21_Picture_2.jpeg)

![](_page_21_Picture_3.jpeg)

ALL DIMENSIONS AND CONDITIONS SHALL BE Verified by the contractor at the site Before proceeding with the work.

#### ABBREVIATIONS

•	A <b>T</b>	FC	FLUID COOLER	OC	ON CENTER
		F.	FUSE(D)	OCB	OIL CIRCUIT BREAKER
ABV	ABUVE	FA	FIRE ALARM	OCP	OVERCURRENT PROTECTION
ADO	AUTOMATIC DOUR OPENER	FACP	FIRE ALARM CONTROL PANEL		
	ALRIAL ELECTRIC	FAAP	FIRE ALARM ANNUNCIATOR PANEL		
		FCU	FAN COIL UNIT		PLUMBING CONTRACTOR
	ADOVE FINISHED ELOOP	FDR	FEEDER		
					DOWER PACION
AIC	AMPERE INTERROFTING CAFACITI	FIXI	FIXTURE		DUASE
	ALOMINOM	FL	FLUOR	DI	
	AMMETER	FLUUR			PANFI
	AMPERE	F S FSS		DRI	
ANNUN	ANNUNCIATOR	FUT	EITIDE		
ANT	ANTENNA	GA	GALIGE	PSI	POUNDS PER SQUARE INCH
AS	AMMETER SWITCH	20	GENERAL CONTRACTOR	PT	POTENTIAL TRANSFORMER
AT	AMP TRIP	GEN	GENERATOR	PWR	POWER
ATC	AUTOMATIC TEMPERATURE CONTROL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	PP	POWER PANEL
ATS	AUTOMATIC TRANSFER SWITCH	GFSC	GROUND FAULT SENSING RELAY COIL	R	EXISTING TO RELOCATE
AUX	AUXILIARY	G/GND	GROUND	RECPT	RECEPTACLE(S)
BC	BARE COPPER	GTB	GROUND TERMINAL BOX	RGIP	REMOTE GROUND INDICATOR PANEL
BKBD	BACKBOARD				
BKB	DDENKED	HH	HANDHOLE	REQ	REQUIRED
BKR	BREAKER	HOA	HAND-OFF-AUTO	SEC	SECONDARY
BLDG	BUILDING	HT	HEIGHT	SIG	SIGNAL
B2W1		HVAC	HEATING/VENTILATING/AIR CONDITIONING	SPEC	SPECIFICATION
		HID	HIGH INTENSITY DISCHARGE	55 ST	SAFIY SWITCH
		HORZ	HORIZONIAL	51	SHUNI IRIP
		HV		STD	STANDARD
				STR	STARTER
CUH	CABINET LINIT HEATER			SW	SWITCH
CKT	CIRCUIT			SWGR	SWITCHGEAR
	CFILING		INTERMEDIATE METAL CONDUIT	SYS	SYSTEM
CONN	CONNECTION		INTERMEDIATE METAL CONDOT	TFI	TFLEPHONE
CONST	CONSTRUCTION			TEMP	TEMPERATURE
CONT	CONTROLLER	kVA		TP	TAMPERPROOF (CONSTRUCTION)
CONTR	CONTRACTOR	kW	KILOWATT	TV	TELEVISION
CT	CURRENT TRANSFORMER	kWH	KILOWATT HOUR	TVSS	TRANSIENT VOLTAGE SURGE
Cu	COPPER	LIM	LINE ISOLATION MONITOR		SUPPRESSER
DB	DIRECT BURIAL	LO	LUGS ONLY	TYP	TYPICAL
DEMO	DEMOLITION	LS	LIMIT SWITCH	UC	UNDERCOUNTER
DC	DIRECT CURRENT	LTS	LIGHTS	U/F	UNFUSED
DIA	DIAMETER			UNO	UNLESS NOTED OTHERWISE
	DISCONNECT	LTG	LIGHTING		
DISC		LP	LIGHTING PANEL	UL	UNDERWRITERS LABORATORY
		LV	LOW VOLTAGE	UV	UNDER VOLTAGE
Dwg F		MC	MECHANICAL CONTRACTOR	UH	UNIT HEATER
ΓΔ		MCB	MAIN CIRCUIT BREAKER	V	VOLI
FC		MUP	MAIN LUCS ONLY	VERI	
FF	EXHAUST FAN				
FG	FQUIPMENT GROUND	MH		VF	VAPUR PROUF
EJ	EXPANSION JOINT	MTS	MANUAL TRANSFER SWITCH	VS WSHD	WATER SOURCE HEAT DUMP
ELEC	ELECTRICAL	MCC	MOTOR CONTROL CENTER	W	WATER SOURCE HEAT FUMF
ELEV	ELEVATOR	MOO		W	WIRE
EMERG	EMERGENCY	MIN	MINIMUM	ŴΡ	WEATHERPROOF
EUH	ELECTRIC UNIT HEATER	MSP	MOTOR STARTER PANEL	WT	WATER TIGHT
EMT	ELECTRICAL METALLIC TUBING	MTD	MOUNTED	XFMR	TRANSFORMER
ENCL	ENCLOSURE	MTG HGT	MOUNTING HEIGHT	XFR	TRANSFER
EO	ELECTRICALLY OPERATED	NC	NORMALLY CLOSED	XMTR	TRANSMITTER
EBBH	ELECTRIC BASEBOARD HEATER	NIC	NOT IN CONTRACT	XPDR	TRANSPONDER
EQUIP	EQUIPMENT	NFSS	NON-FUSED SAFETY SWITCH	XP	EXPLOSION PROOF
EWC	ELECTRIC WATER COOLER	NO	NORMALLY OPEN	Ø	PHASE
EX	EXISTING	NTS	NOT TO SCALE		
FXP	EXPLOSION PROOF				

#### **LEGEND**

\$	MULTI STATION HARD-WIRED W/ BATTERY BACK-UP OR BATTERY OPERATED SMOKE ALARM
•	

SI MULTI STATION HARD-WIRED W/ BATTERY BACK-UP OR S/CO BATTERY OPERATED SMOKE & CARBON MONOXIDE COMBINATION ALARM MULTI STATION HARD-WIRED W/ BATTERY BACK-UP OR \$ BATTERY OPERATED SMOKE ALARM, W/BUILT IN ADA

ŠTR STROBE S/CO BATTERY OPERATED SMOKE & CARBON MONOXIDE MULTI STATION HARD-WIRED W/ BATTERY BACK-UP OR

STR COMBINATION ALARM, W/ BUILT-IN ADA STROBE DISCONNECT SWITCH

- □ FUSED SAFETY DISCONNECT SWITCH JUNCTION BOX
- - SWITCH ATTRIBUTE:
- D DIMMER SWITCH 3 – THREE WAY SWITCH
- 4 FOUR WAY SWITCH T - TIMER SWITCH
- GD GARBAGE DISPOSAL AIR SWITCH OS - OCCUPANCY SENSOR SWITCH
- PT PROGRAMMABLE TIMER SWITCH
- DUPLEX OUTLET
- GROUND FAULT CIRCUIT INTERRUPTER DUPLEX OUTLET
- WEATHER PROOF EXTERIOR GFCI OUTLET
- SINGLE SPECIAL PURPOSE OUTLET WITH NEMA CONFIGURATION TO BE FIELD DETERMINED BASED ON INSTALLED EQUIPMENT
- CEILING MOUNTED MOTION SENSOR SWITCH. COORDINATE W/ MANUFACTURER FOR OPTIMAL SPACING
- CEILING MOUNTED OCCUPANCY SENSOR SWITCH.
- <u>(</u>05) COORDINATE W/ MANUFACTURER FOR OPTIMAL SPACING

CEILING FAN/LIGHT COMBO

- $\mathcal{O}$ BATHROOM FAN
- BATHROOM FAN/LIGHT COMBO
- o o BREAKER
- OSTO BREAKER W/ SHUNT TRIP FUNCTION/ACCESSORY
- o DISCONNECT
- O ST O DISCONNECT W/ SHUNT TRIP FUNCTION/ACCESSORY
- Μ FIRE ALARM ADDRESSABLE MONITOR MODULE
- R FIRE ALARM ADDRESSABLE RELAY MODULE
- F FIRE ALARM MANUAL PULL STATION, WIRE TO FACP
- FACP FIRE ALARM CONTROL PANEL BOX FAAP FIRE ALARM ANNUNCIATOR PANEL
- FAPM FIRE ALARM DISTRIBUTED POWER MODULE
- С 2-WAY COMMUNICATION CALL BOX
- BS 2-WAY COMMUNICATION SYSTEM BASE STATION CP CONTROL PANEL
- EXF STROBE/HORN, WIRE TO FACP
- EFE LOW FREQUENCY SOUNDER/STROBE, WIRE TO FACP
- STROBE ONLY, WIRE TO FACP

- H.P.I MINI-SPLIT HEAT PUMP INDOOR UNIT

- DAMAGE DURING DEMOLITION.

- OF CIRCUIT.

- FOR DIRECTIONS.
- MANNER.
- REQUIREMENTS.

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61-ED-1 61-E-1	ENGINE ENGINE	61 61
64-ED-1 64-E-1	ENGINE ENGINE	64 64

- ₩ LOW FREQUENCY SOUNDER, WIRE TO FACP
- $\bigcirc$  FS FLOW SWITCH "ALARM"
- ©_™ TS TAMPER SWITCH "ALARM"
- (D). SYSTEM HEAT DETECTOR, WIRE TO FACP
- ^(D)s SYSTEM SMOKE DETECTOR, WIRE TO FACP
- SYSTEM DUCT SMOKE DETECTOR, WIRE TO FACP
- H.P.O MINI-SPLIT HEAT PUMP INDOOR UNIT

#### ELECTRICAL SELECTIVE DEMOLITION GENERAL NOTES:

1. ALL ITEMS SHOWN DASHED IN DEMOLITION PLANS ARE EXISTING AND SHALL BE REMOVED.

2. ALL ITEMS SHOWN SOLID IN DEMOLITION PLANS ARE EXISTING TO REMAIN. ELECTRICAL DEVICES, EQUIPMENT THAT ARE NOT SHOWN IN DEMOLITION PLANS ARE EXISTING TO REMAIN. PROPERLY PROTECT THEM FROM

3. THE WORK HEREIN CONSISTS OF PROVIDING MATERIALS, EQUIPMENT, LABOR AND SERVICES, AND PERFORMING OPERATIONS REQUIRED TO REMOVE/RELOCATE ANY ELECTRICAL CONDUITS, EQUIPMENT AND ASSOCIATED ACCESSORIES THAT INTERFERE WITH THE PERFORMING OF THE STRUCTURAL REPAIRS.

4. CONTRACTOR SHALL VISIT THE EXISTING BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR THE EXISTING CONDITIONS AND IN ORDER TO AVOID CONFLICTS. LOCATION OF ALL EXISTING EQUIPMENT, DEVICES ARE APPROXIMATE. VERIFY IN FIELD PRIOR TO COMMENCING WORK.

5. PRIOR TO ANY REMOVAL, THE CONTRACTOR IS RESPONSIBLE TO IDENTIFY ALL EXISTING CIRCUITS/WIRING IN FIELD AND MAINTAIN EXISTING CIRCUITS/WIRING OF ANY EQUIPMENT AND OTHER AREAS ARE EXISTING TO REMAIN IN SERVICE UPON THE COMPLETION OF DEMOLITION & STRUCTURAL REPAIR WORK. EXISTING CIRCUITS/WIRING SHALL BE RECONNECTED OR REROUTED, AS REQUIRED, IN ORDER TO MAINTAIN CONTINUITY

6. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE POWER SUPPLY, CIRCUIT INTEGRITY AND FULLY FUNCTION OF THE EXISTING FIRE ALARM & COMMUNICATION SYSTEM. IF ANY TEMPORARILY REMOVAL OF FIRE ALARM & COMMUNICATION DEVICES AND WIRING IS REQUIRED, CONTRACTOR SHALL COORDINATE WITH OWNER, FIRE ALARM COMPANY AND FIRE DEPARTMENT PRIOR TO THE REMOVAL.

7. THE CONTRACTOR SHALL PERFORM ALL THE WORK UNDER THIS SECTION WITH MINIMAL INTERFERENCE WITH FUNCTIONING EXISTING ELECTRICAL SYSTEMS WITHIN AND OUTSIDE THE CONTRACT AREAS. ALL EXISTING ELECTRICAL SYSTEMS/EQUIPMENT THAT NEED TO REMAIN IN SERVICES SHALL BE PROTECTED AGAINST DAMAGE. SHOULD ANY EXISTING SYSTEMS OF THEM BE AFFECTED, THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH OWNER AND THE AFFECTED SYSTEMS SHALL BE RESTORED AT NO ADDITIONAL COST.

8. DEMOLITION WORK SHALL BE SUBJECT TO DIRECTION AND APPROVAL OF THE CITY OR THE CITY'S REPRESENTATIVE, AND SHALL NOT INTERFERE WITH ACTIVITIES IN OTHER BUILDING AREAS.

9. THE WORK UNDER THIS SECTION SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH. REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION/OR TO RECEIVE NEW FINISHES AT NO ADDITIONAL COST.

10. THE CONTRACTOR SHALL REVIEW WITH OWNER ALL MATERIALS TO BE REMOVED OR DEMOLISHED PRIOR TO DEMOLITION WORK, UPON ANY REQUEST BY OWNER TO KEEP ANY MATERIALS, THE CONTRACTOR SHALL REMOVE AND DELIVER THE MATERIALS TO AN APPROVED LOCATION.

11. UNLESS OTHERWISE NOTED, ALL EXISTING EQUIPMENT AND MATERIALS TO BE SALVAGED OR FUTURE REINSTALLED AS INDICATED BY THE PLAN SHALL BE CLEANED, RECONDITIONED, CALIBRATED AND ADJUSTED TO THE CONTRACTOR'S BEST CAPACITY. IN CASE WHERE THE EXISTING EQUIPMENT OR MATERIALS CANNOT BE PROPERLY RESTORED DUE TO PRIOR DEFECTS, THE CONTRACTOR SHALL REPORT TO ENGINEER AND OWNER

12. DISCARD ALL REMOVED CONDUITS, JUNCTION BOXES AND ASSOCIATED ACCESSORIES THAT ARE RUSTED OR NOT IN GOOD CONDITION. REPLACE WITH NEW ONE FOR FUTURE REINSTALL. 13. UNLESS OTHERWISE NOTED IN THIS SECTION, THE CONTRACTOR OWNS ALL DEMOLISHED OR REMOVED

MATERIALS ON SITE, AND IS RESPONSIBLE TO PROMPTLY REMOVE FROM SITE AND DISPOSE IN A LEGAL

14. THE CONTRACTOR SHALL COORDINATE THE PROJECTED DEMOLITION WORK AND PHASING SCHEDULES WITH OWNER AND OTHER TRADES AT THE APPROPRIATE TIME SO THAT THE REMOVAL OR RELOCATION OF ANY EXISTING CONDUITS, WIRING AND EQUIPMENT MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT

15. ANY ELECTRICAL SERVICE SHUTDOWNS REQUIRED SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER BEFORE THEY ARE IMPLEMENTED. SUFFICIENT ADVANCE NOTICE MUST BE PROVIDED TO THE OWNER. 16. ALL WORK UNDER THIS SECTION SHALL BE COORDINATED WITH ALL OTHER DISCIPLINES PRIOR TO THE WORK. IDENTIFY ALL ELECTRICAL CONDUIT TO REMAIN. TRANSMIT TO OTHER TRADES AND PARTICIPATE IN ALL TRADES COORDINATION DRAWINGS.

17. WHERE EXISTING ELECTRICAL OR COMMUNICATION SERVICES ARE TO BE ABANDONED IN PLACE, SERVICES SHALL BE TERMINATED IN ACCORDANCE WITH THE N.E.C.

COVER SHEET(1/2) COVER SHEET(2/2)ELECTRICAL SELECTIVE DEMO PLAN BASEMENT ELECTRICAL PLAN ELECTRICAL SELECTIVE DEMO PLAN BASEMENT & FIRST FLOOR ELECTRICAL PLAN SECOND FLOOR ELECTRICAL PLAN, SINGLE LINE LOAD CALCULATIONS ELECTRICAL SELECTIVE DEMO PLAN BASEMENT ELECTRICAL PLAN

ELECTRICAL SELECTIVE DEMO PLAN BASEMENT ELECTRICAL PLAN

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#### BASIC ELECTRICAL REQUIREMENTS:

- 1. GENERAL: ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST APPROVED 11.CLEANING: UPON COMPLETION OF INSTALLATION, INSPECT INTERIOR AND EXTERIOR OF ALL PHILADELPHIA CODE AND NATIONAL ELECTRICAL CODE (NEC) AND NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED. ALL ELECTRICAL WORK SHALL COMPLY WITH ADA RECOMMENDATIONS. ALL ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER BY A LICENSED ELECTRICIAN, OR A CERTIFIED APPRENTICE WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED ELECTRICIAN, USING THE BEST METHODS KNOWN TO THE TRADE AND SHALL PRESENT A NEAT AND PROFESSIONAL APPEARANCE WHEN COMPLETED. THE OWNER RESERVES THE RIGHT TO CHANGE, WITHOUT ADDITIONAL COST, THE LOCATION OF ANY APPARATUS OR OUTLET, PROVIDED SUCH CHANGE DOES NOT ADD MORE THAN 10 FT TO THE FEEDER AND IS ORDERED BEFORE INSTALLATION OF THE AFFECTED PORTION OF THE WORK IS COMMENCED. CONTRACTOR SHALL BRING ALL CONFLICTS ON THE DRAWINGS TO THE OWNERS ATTENTION FOR HIS RESOLUTION PRIOR TO PERFORMING THAT WORK.
- 2. THE CONTRACTOR SHALL SURVEY THE PROJECT SITE PRIOR TO THE BID TO ASSESS ACTUAL FIELD CONDITIONS. FAILURE TO PERFORM THIS INSPECTION BINDS THE CONTRACTOR TO PERFORM THE WORK WITH OUT EXTRA CHARGES DESPITE THE IGNORANCE OF REASONABLY ANTICIPATED CONDITIONS.
- 3. ROUGH-INS: THE CONTRACTOR SHALL VERIFY AND COORDINATE THE ROUGH-IN REQUIREMENTS OF EACH ITEM OF EQUIPMENT WITH THE CONTRACTOR SUPPLYING THE EQUIPMENT.
- 4. INSTALLATION: THE ELECTRICAL DRAWINGS INDICATE THE EXTENT AND GENERAL LOCATION AND ARRANGEMENT OF EQUIPMENT AND MATERIALS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL DETAILS OF THE WORK AND VERIFY ALL DIMENSIONS IN THE FIELD SO THAT EQUIPMENT AND MATERIALS WILL BE PROPERLY LOCATED AND READILY ACCESSIBLE. THE CONTRACTOR SHALL SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS. COMPLY WITH THE FOLLOWING REQUIREMENTS:
- VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS.
- COORDINATE ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS AND TRADES.
- ARRANGE FOR CHASES, SLOTS, AND OPENINGS IN OTHER BUILDING COMPONENTS DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR INSTALLATION OF ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS.
- SEQUENCE. COORDINATE. AND INTEGRATE INSTALLATION OF ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS FOR EFFICIENT FLOW OF THE WORK.
- WHERE MOUNTING HEIGHTS ARE NOT INDICATED, INSTALL ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS TO PROVIDE MAXIMUM HEADROOM POSSIBLE.
- INSTALL ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS TO CONFORM WITH APPROVED SUBMITTAL DATA TO THE GREATEST EXTENT POSSIBLE. CONFORM TO THE ARRANGEMENTS INDICATED ON THE ELECTRICAL DRAWINGS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMATIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE ARCHITECT/ENGINEER OR OWNER'S REPRESENTATIVE FOR RESOLUTION.
- IN GENERAL, INSTALL ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS LEVEL AND PLUMB, G. PARALLEL AND PERPENDICULAR TO BUILDING LINES AND/OR FEATURES AND/OR OTHER BUILDING SYSTEMS.
- INSTALL ELECTRICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT AND COMPONENT PARTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS.
- INSTALL ELECTRICAL SYSTEMS, EQUIPMENT, AND MATERIALS GIVING RIGHT-OF-WAY PRIORITY TO SYSTEMS REQUIRED TO BE INSTALLED AT A SPECIFIC SLOPE(INCL. SPRINKLER SYSTEMS).
- 5. CUTTING AND PATCHING: ALL ELECTRICAL WORK SHALL BE CAREFULLY LAID OUT IN ADVANCE, AND WHERE CUTTING, CHANNELING, CHASING, OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS, OR OTHER SURFACES IS NECESSARY FOR THE PROPER INSTALLATION, SUPPORT, OR ANCHORAGE OF CONDUIT OR OTHER ELECTRICAL WORK, THIS WORK SHALL BE CAREFULLY DONE. ANY RESULTING DAMAGE TO THE BUILDING OR OTHER SYSTEMS, EQUIPMENT, OR MATERIALS SHALL BE REPAIRED BY SKILLED MECHANICS OF THE TRADES INVOLVED, AT NO ADDITIONAL COST TO THE OWNER.
- 6. PRODUCTS: SYSTEMS, EQUIPMENT, AND MATERIALS DESCRIBED ON THE ELECTRICAL DRAWINGS ESTABLISH THE MINIMUM STANDARDS FOR QUALITY AND STYLE AND SHALL BE THE BASIS OF THE BID. ALL SYSTEMS, EQUIPMENT, AND MATERIALS SHALL BE NEW AND SHALL BEAR THE UL LABEL OR BE UL LISTED, WHERE APPLICABLE, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND NEMA STANDARDS.
- . SUBSTITUTIONS: WHERE SYSTEMS, EQUIPMENT, OR MATERIALS ARE SPECIFIED BY MANUFACTURER OR BRAND NAME AND CATALOG NUMBER, SUCH SPECIFICATION SHALL ESTABLISH THE MINIMUM STANDARDS FOR QUALITY AND STYLE AND SHALL BE THE BASIS OF THE BID. SYSTEMS, EQUIPMENT AND MATERIALS SO SPECIFIED SHALL BE FURNISHED UNDER THE CONTRACT UNLESS CHANGED BY WRITTEN AGREEMENT. SHOULD THE CONTRACTOR PROPOSE TO FURNISH PRODUCTS OTHER THAN THOSE SPECIFIED, AS PERMITTED BY "OR APPROVED EQUAL" CLAUSES, HE SHALL SUBMIT A WRITTEN REQUEST FOR SAID SUBSTITUTIONS THROUGH APPROPRIATE CHANNELS TO THE ARCHITECT/ENGINEER FOR HIS REVIEW. SUCH REQUEST SHALL BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE LITERATURE INCLUDING, BUT NOT LIMITED TO, CATALOG CUT SHEETS, BROCHURES, CIRCULARS, SPECIFICATIONS PERFORMANCE DATA, INSTALLATION INSTRUCTIONS, SHOP DRAWINGS, AND OTHER PRINTED INFORMATION IN SUFFICIENT DETAIL AND SCOPE TO VERIFY COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT. DESCRIPTIVE LITERATURE ON PROPOSED SUBSTITUTIONS SHALL BE CLEAR. CONCISE. AND LOGICALLY ARRANGED. ALL DATA WHICH IS, AND IS NOT, APPLICABLE SHALL BE CLEARLY IDENTIFIED AS SUCH. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT SAMPLES OF BOTH SPECIFIED AND PROPOSED ITEMS FOR INSPECTION. DESCRIPTIVE LITERATURE ON PROPOSED SUBSTITUTIONS SHALL BE RETURNED WITHOUT REVIEW IF NOT PROPERLY PREPARED. ACCEPTANCE OR REJECTION OF PROPOSED SUBSTITUTIONS SHALL BE UP TO THE DESCRETION OF THE ARCHITECT/ENGINEER AND/OR THE OWNER.
- 8. SUBMITTALS: THE CONTRACTOR SHALL FOLLOW THE GENERAL PROVISIONS OF THE CONTRACT AND ESTABLISHED PROCEDURES. SUBMITTALS SHALL CONSIST OF COMPLETE DESCRIPTIVE LITERATURE INCLUDING, BUT NOT LIMITED TO, CATALOG CUT SHEETS, BROCHURES, CIRCULARS, SPECIFICATIONS, PERFORMANCE DATA, INSTALLATION INSTRUCTIONS, SHOP DRAWINGS, AND OTHER PRINTED INFORMATION IN SUFFICIENT DETAIL AND SCOPE TO VERIFY COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT. DESCRIPTIVE LITERATURE SHALL BE CLEAR. CONCISE. AND LOGICALLY ARRANGED. ALL DATA WHICH IS, AND IS NOT, APPLICABLE SHALL BE CLEARLY IDENTIFIED AS SUCH. IF REQUESTED. THE CONTRACTOR SHALL SUBMIT SAMPLES OF SPECIFIED ITEMS FOR INSPECTION. DESCRIPTIVE LITERATURE SHALL BE RETURNED WITHOUT REVIEW IF NOT PROPERLY PREPARED. THE FOLLOWING SYSTEMS, EQUIPMENT, AND MATERIALS, AS A MINIMUM, REQUIRE SUBMITTALS:
- ANY PROPOSED SUBSTITUTIONS.
- B. WIRING DEVICES.
- C. PANELBOARDS.
- DISCONNECT SWITCHES.
- E. CIRCUIT BREAKERS.
- LIGHTING FIXTURES INCLUDING BALLASTS.
- RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN AT THE SITE A CLEAN, UNDAMAGED SET OF BLUE- OR BLACK-LINE WHITE PRINTS OF CONTRACT DRAWINGS. THIS RECORD SET OF CONTRACT DRAWINGS SHALL BE MARKED TO SHOW THE ACTUAL INSTALLATION AND WHERE THE ACTUAL INSTALLATION VARIES SUBSTANTIALLY FROM THE ELECTRICAL WORK AS ORIGINALLY SHOWN. MARK WHICHEVER DRAWINGS ARE MOST CAPABLE OF SHOWING CONDITIONS FULLY AND ACCURATELY. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND RECORD AT A LATER DATE. MARK RECORD DRAWINGS WITH A RED ERASABLE PENCIL; USE OTHER COLORS TO DISTINGUISH BETWEEN VARIATIONS IN SEPARATE CATEGORIES OF THE ELECTRICAL WORK. NOTE CONTRACT MODIFICATIONS AND APPROVED SUBSTITUTIONS WHERE APPLICABLE.
- 10 PROTECTION OF INSTALLED SYSTEMS, EQUIPMENT, AND MATERIALS: PROTECT INSTALLED SYSTEMS, EQUIPMENT, AND MATERIALS FROM DAMAGE UNTIL FINAL ACCEPTANCE BY THE OWNER. REPAIR OR REPLACE, AT NO ADDITIONAL COST TO THE OWNER, DAMAGED SYSTEMS, EQUIPMENT, AND MATERIALS TO THE SATISFACTION OF THE ARCHITECT/ ENGINEER AND/OR OWNER.

- ELECTRICAL EQUIPMENT. REMOVE PAINT SPLATTERS AND OTHER SPOTS, DIRT, AND DEBRIS. TOUCH-UP SCRATCHES AND MARS OF FINISH TO MATCH ORIGINAL FINISH.
- 12.CERTIFICATIONS: THE FOLLOWING SHALL BE OBTAINED AND SUBMITTED TO THE OWNER PRIOR TO FINAL PAYMENT:
- THE AUTHORITIES HAVING JURISDICTION 13.GUARANTEE: THE CONTRACTOR SHALL SUBMIT A WRITTEN GUARANTEE TO THE OWNER, PRIOR TO FINAL PAYMENT, THAT WARRANTS THE INSTALLATION SHALL REMAIN FREE OF DEFECTS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE BY THE OWNER. THE GUARANTEE SHALL STATE THAT THE OWNER IS NOT LIABLE FOR PARTS AND LABOR COSTS INCURRED BY THE CONTRACTOR IN THE REPAIR OF ACTUAL PRODUCT OR INSTALLATION DEFECTS. THE GUARANTEE SHALL ALSO STATE THAT THE ON-SITE RESPONSE TIME TO REQUESTS FOR ASSISTANCE WILL BE 24 HOURS FOR NON-EMERGENCY CONDITIONS AND 2 HOURS FOR EMERGENCY CONDITIONS.

## STANDARD MOUNTING HEIGHTS (UNLESS OTHERWISE NOTED)

' BELOW NISHED CEILING ' ABOVE FIRE	WALL-MOUNTED CLOCKS, PROGRAM BELL ARCHITECTURAL DETAILS). BLUE SIGNAL LIGHT.
)'-0"	BATTERY LIGHTING UNITS AND REMOTE W HEADS(OR 1'-0" BELOW FINISHED CEILING
-6"	PEDANT-HUNG INDUSTRIAL AND STRIP LI
NTER ABOVE	WARNING AND SIGNALING FIXTURES/SIGNS
-8"	BOTTOM OF FIRE ALARM NOTIFICATION DE (OR WITHIN 6" OF FINISHED CEILING IF C ENOUGH).
-6" -	TOP OF FLUSH AND SURFACE MOUNTED OR POWER PANELBOARDS WHOSE OPERA EXCLUDED FORM 2010 ADA STANDARD S
-0"	TOP OF HIGHEST ELECTRICAL SAFETY DIS MAGNETIC STARTERS, CONTACTORS EXCL ACCESSIBLE ADA COMPLIANT DEVICES/ C COVERED BY 2010 ADA STANDARD SECT
-0" MAX	TOP OF ACCESSIBLE PART OF LIGHT SWI MOTORS STARTERS, THERMOSTATS, GFI R TOILET ROOM OR FOR SEPARATE SINKS, STATION.TOP OF OPERABLE PARTS(CIRCU BREAKERS,SWITCHES ETC.) OF ACCESSIBL BY 2010 STANDARD SECTION 205, 309.
-4" <del>-</del>	BOTTOM OF RECEPTACLES, DESK TYPE TE TELEVISION OUTLETS, DATA OUTLETS
-0"	FINISHED FLOOR(FF)

MOUNTING HEIGHT NOTES:

- 1. STANDARD MOUNTING HEIGHTS: (COORDINATE WITH ARCH DRAWINGS) ALL MOUNTING HEIGHTS SHALL BE AS INDICATED BY ARCHITECT. IF NOT INDICATED BY ARCHITECT THEN PROVIDE AS NOTED ABOVE.
- 2. MOUNTING HEIGHTS TO CENTER OF OUTLETS UNLESS NOTED IN STANDARD MOUNTING HEIGHTS ABOVE. IN MASONRY CONTRUCTION THE ABOVE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING.
- 3. THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWING OR SPECIFICATIONS.
- 4. INDICATION (+) NEXT TO A DEVICE INDICATES THAT DEVICE IS MOUNTED ABOVE A COUNTER OR CASEWORK. COORDINATE WITH ARCHITECTURAL DETAILS AND CASEWORK CONTRACTOR.
- 5. ALL ACCESSIBLE ADA COMPLIANT DEVICES AND ITS OPERABLE PARTS SHALL BE MOUNTED PER 2010 ADA STANDARD SECTION 205,309.
- ELECTRICAL MATERIALS:
- 1. RACEWAYS:
  - RIGID GALVANIZED STEEL (RGS) CONDUIT: ANSI C80.1. ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS: ANSI C80.3 WITH COMPRESSION TYPE FITTINGS. LIQUIDTIGHT FLEXIBLE METAL CONDUIT: UL 360. FLEXIBLE STEEL CONDUIT WITH PVC JACKET. NONMETALIC CONDUIT AND TUBING (ENT): NEMA TC 13
- 2 BOXES: SHEET METAL: NEMA OS 1.
- CAST METAL: NEMA FB 1, TYPE FD, CAST FERALLOY BOX WITH GASKETED COVER. HINGED COVER ENCLOSURES: NEMA 250, GALVANIZED STEEL ENCLOSURE WITH CONTINUOUS HINGE COVER, QUICK RELEASE TYPE LATCHES, REMOVABLE INTERIOR PANEL, AND MANUFACTURER'S STANDARD GRAY ENAMEL INSIDE AND OUT. .3 WIRES AND CABLES:
- CONDUCTOR MATERIAL: ANNEALED COPPER OR ALUMINUM. Α.
- INSULATION: THHN/THWN CONFORMING TO WC 5. CONDUCTORS #16 AWG AND SMALLER SHALL BE SOLID: CONDUCTORS #14 AWG AND C. LARGER SHALL BE STRANDED. MC CABLE IS PERMITTED FOR BRANCH CIRCUITRY, AND SHALL UTILIZE SOLID CONDUCTORS. GROUND CONDUCTORS #10 AWG AND SMALLER SHALL HAVE GREEN THHN/THWN INSULATION.
- 4. WIRING DEVICES: GENERAL: COMPLY WITH NEMA WD 1, "GENERAL PURPOSE WIRING DEVICES." COLOR: WHITE, BLACK, GRAY, IVORY, OR BROWN TO BE AS SELECTED BY THE ARCHITECT/
- ENGINEER AND/OR THE OWNER. RECEPTACLES: COMPLY WITH UL 498, "ELECTRICAL ATTACHMENT PLUGS AND RECEPTACLES, "HEAVY DUTY SPECIFICATION GRADE EXCEPT AS OTHERWISE INDICATED. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLES SHALL COMPLY WITH UL 943, "GROUND FAULT
- CIRCUIT INTERRUPTERS." WITH INTEGRAL NEMA 5-20R DUPLEX RECEPTACLE DESIGNED FOR INSTALLATION IN A 2-3/4" DEEP DEVICE BOX WITHOUT ADAPTER. TOGGLE SWITCHES: 20A, 120-277V AC, QUIET TYPE, SPECIFICATION GRADE AND SHALL COMPLY WITH UL 20, "GENERAL USE SNAP SWITCHES." SINGLE-POLE, TWO-POLE, THREE-WAY, D.
- AND FOUR-WAY AS INDICATED AND/OR REQUIRED. DEVICE PLATES: SINGLE AND COMBINATION TYPES WHICH MATE AND MATCH WITH CORRESPONDING WIRING DEVICES.
- F MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS AS MANUFACTURED BY HUBBEL INC., OR APPROVED EQUAL BY LEVITON.

ELECTRICAL SYSTEMS: A CERTIFICATE OF FINAL INSPECTION AND APPROVAL BY

S(OR AS SHOWN ON

VALL MOUNTED LIGHT IG OF TOP OF UNIT).

IGHTING FIXTURES.

EVICES. EILING IS NOT HIGH

ELECTRICAL LIGHTING BLE PARTS ARE ECTION 205. SCONNECT SWITCHES.

UDED FROM OPERABLE PARTS 10N 205, 309.

TCHES, MANUAL RECEPTACLES IN

FIRE ALARM PULL

E DEVICES COVERED

ELEPHONE OUTLETS, LOW

5. GROUNDING: GROUNDING AND BONDING PRODUCTS: OF TYPES INDICATED AND/OR OF SIZES AND RATINGS TO COMPLY WITH THE NEC. WHERE TYPES, SIZES, RATINGS, AND QUANTITIES ARE IN EXCESS OF NEC REQUIREMENTS. THE MORE STRINGENT REQUIREMENTS AND THE GREATER SIZE, RATING, AND QUANTITY INDICATIONS SHALL GOVERN. SMOOTH MATCHING NYLON IN ALL AREAS.

CONDUCTOR MATERIAL: COPPER. WIRE AND CABLE CONDUCTORS: CONFORM TO NEC TABLE 8, EXCEPT AS OTHERWISE

INDICATED, FOR CONDUCTOR PROPERTIES, INCLUDING STRANDING. CONNECTOR PRODUCTS: UL LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. 6. PANELBOARDS

BREAKERS: PROVIDE TYPE, RATING, AND FEATURES INDICATED. BOLT-ON EXCEPT CIRCUIT WHERE PLUG-IN FOR USE ON EXISTING PANELBOARDS(NOT BEING UPGRADED) TANDEM CIRCUIT BREAKERS SHALL NOT BE USED. MULTIPOLE CIRCUIT BREAKERS SHALL HAVE AN INTERNAL COMMON TRIP AND A SINGLE HANDLE. ENCLOSURES: NEMA TYPE 1, UNLESS OTHERWISE INDICATED.

FRONT: SECURED TO BOX WITH CONCEALED TRIM CLAMPS EXCEPT AS INDICATED. FRONT FOR SURFACE MOUNTED PANELBOARDS SHALL BE SAME DIMENSIONS AS BOX. DIRECTORY FRAME: METAL WITH CLEAR PLASTIC COVER MOUNTED ON INSIDE OF PANELBOARD

BUS WORK: HARD DRAWN COPPER OF 98% CONDUCTIVITY. MAIN AND NEUTRAL LUGS: COMPRESSION TYPE.

EQUIPMENT GROUND BUS: ADEQUATE FOR FEEDER AND BRANCH CIRCUIT EQUIPMENT GROUND CONDUCTORS. BONDED TO BOX. PROVISIONS FOR FUTURE DEVICES: EQUIP WITH MOUNTING BRACKETS, BUS CONNECTION, AND NECESSARY APPURTENANCES, FOR THE CIRCUIT BREAKER AMPERE RATINGS INDICATED FOR

FUTURE INSTALLATION OF DEVICES. MAIN AND SUBFEED LUGS: PROVIDE WHERE INDICATED. NAMEPLATE: CUSTOM ENGRAVED PLASTIC LAMINATE, WHITE LETTERS ON BLACK FIELD, FOR EACH PANELBOARD MOUNTED WITH EPOXY OR INDUSTRIAL CEMENT OR ADHESIVE. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS AS

MANUFACTURED BY SQUARE-D, SIEMENS OR CUTLER HAMMER CO. 7. DISCONNECTS AND CIRCUIT BREAKERS: FUSIBLE SWITCH, 800A AND SMALLER: NEMA KS 1, TYPE HD, CLIPS TO ACCOMODATE SPECIFIED FUSES, ENCLOSURE SUITABLE FOR THE ENVIRONMENT WHERE INSTALLED, HANDLE LOCKABLE WITH TWO (2) PAD LOCKS, AND INTERLOCKED WITH COVER IN "CLOSED" POSITION. ENCLOSURES SHALL COMPLY WITH NEMA KS 1; TYPE 1 INDOOR DRY LOCATIONS;

MOLDED CASE CIRCUIT BREAKER: NEMA AB 1, HANDLE LOCKABLE WITH TWO (2) PADLOCKS. FRAME SIZE, TRIP RATING, NUMBER OF POLES, AND AUXILLARY DEVICES AS INDICATED. ENCLOSURES SHALL COMPLY WITH NEMA AB 1; TYPE 1. INDOOR DRY LOCATIONS. CIRCUIT BREAKERS SHALL HAVE A MINIMUM INTERRUPTING CAPACITY AS FOLLOWS:

MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS AS C. SUITABLE FOR INSTALLATION IN EXISTING PANELS. DISCONNECTS SHALL BE BY SQUARE-D.

#### GENERAL ELECTRICAL NOTES:

1. WIRING METHODS: WIRING SHALL CONSIST OF CABLES AND WIRES INSTALLED IN RGS CONDUIT, EMT. LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND MC CABLES. RACEWAYS SHALL BE CONCEALED WITHIN FINISHED WALLS AND CEILINGS UNLESS OTHERWISE INDICATED. OTHER THAN ROOF PENETRATIONS REQUIRED TO FEED ROOF MOUNTED EQUIPMENT, RACEWAYS WILL NOT BE ROUTED EXPOSED OUTSIDE OF THE BUILDING. EXPOSED & OUTDOOR PART OF WIRE SHALL BE PROTECTED AGAINST PHYSICAL DAMAGE USING APPROVED CONDUITS.

2. RACEWAYS: RACEWAYS SHALL BE PROVIDED WHERE INDICATED AND REQUIRED AND SHALL BE INSTALLED AS SPECIFIED BELOW, UNLESS OTHERWISE INDICATED. MINIMUM RACEWAY SIZE SHALL BE 3/4 IN. RGS CONDUIT SHALL BE USED FOR ALL OUTDOOR INSTALLATIONS. EMT SHALL BE USED FOR ALL INDOOR INSTALLATIONS. LIQUIDTIGHT FLEXIBLE METAL CONDUIT. 6 FT MAXIMUM LENGTH, SHALL BE USED FOR ALL CONDUIT TERMINATIONS AT EQUIPMENT SUBJECT TO VIBRATION. BUSHINGS, MANUFACTURED FITTINGS, OR BOXES PROVIDING EQUIVALENT MEANS OF PROTECTION SHALL BE INSTALLED ON THE ENDS OF ALL CONDUITS AND SHALL BE OF THE INSULATING TYPE WHERE REQUIRED BY THE N.E.C. ONLY LISTED ADAPTERS SHALL BE USED TO CONNECT EMT TO RGS CONDUIT AND CAST METAL BOXES AND CONDUIT BODIES. PENETRATIONS OF SLABS AND FIRE RATED WALLS SHALL BE FIRESTOPPED.

KEEP RACEWAYS AT LEAST 6 IN. AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT WATER PIPING. INSTALL HORIZONTAL RACEWAY RUNS HIGHER THAN WATER AND STEAM PIPING. RACEWAYS CROSSING STRUCTURAL EXPANSION JOINTS SHALL BE PROVIDED WITH SUITABLE EXPANSION FITTINGS OR OTHER SUITABLE MEANS TO COMPENSATE FOR THE BUILDING EXPANSION AND CONTRACTION. RACEWAYS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS AND FEATURES, MECHANICAL DUCT AND PIPING SYSTEMS, OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. CHANGES IN DIRECTION OF RUNS SHALL BE ACCOMPLISHED WITH SYMMETRICAL BENDS OR CAST METAL FITTINGS. FIELD-MADE ELBOWS AND OFFSETS SHALL BE MADE WITH AN APPROVED HICKEY OR CONDUIT BENDING MACHINE. CRUSHED OR DEFORMED RACEWAY SHALL NOT BE INSTALLED. CARE SHALL BE TAKEN TO PREVENT THE LODGMENT OF DIRT, AND CONSTRUCTION MATERIALS AND DEBRIS IN RACEWAYS DURING THE COURSE OF CONSTRUCTION. CLOGGED RACEWAYS SHALL BE ENTIRELY FREED OF OBSTRUCTIONS OR SHALL BE REPLACED.

RGS CONDUIT AND EMT SHALL BE SECURELY AND RIGIDLY FASTENED IN PLACE AT INTERVALS OF NOT MORE THAN 10 FT AND WITHIN 3 FT OF FITTINGS AND BOXES WITH APPROVED PIPE STRAPS, WALL BRACKETS, CONDUIT CLAMPS, CONDUIT HANGERS, THREADED C-CLAMPS, OR CEILING TRAPEZE. C-CLAMPS OR BEAM CLAMPS SHALL HAVE STRAP OR ROD TYPE RETAINERS. LOADS AND SUPPORTS SHALL BE COORDINATED WITH SUPPORTING STRUCTURES TO PREVENT DEFORMATION OR DAMAGE TO STRUCTURES, BUT NO LOAD SHALL BE APPLIED TO JOIST BRIDGING. FASTENINGS SHALL BE BY WOOD SCREWS OR SCREW TYPE NAILS TO WOOD: BY TOGGLE BOLTS ON HOLLOW CMU: BY EXPANSION BOLTS ON CONCRETE OR BRICK: AND BY MACHINE SCREWS, WELDED THREADED STUDS, HEAT TREATED OR SPRING STEEL TENSION CLAMPS ON STEEL WORK. NAIL TYPE NYLON ANCHORS OR THREADED STUDS DRIVEN IN BY A POWDER CHARGE AND PROVIDED WITH LOCK WASHERS AND NUTS MAY BE USED IN LIEU OF EXPANSION BOLTS OR MACHINE SCREWS. RACEWAYS OR PIPE STRAPS SHALL NOT BE WELDED TO STEEL STRUCTURES. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, SHEET METAL SCREWS MAY BE USED. CONDUIT SHALL NOT BE SUPPORTED USING WIRE OR NYLON TIES. RACEWAYS SHALL BE INSTALLED AS A COMPLETE SYSTEM AND BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE. UPPER RACEWAYS SHALL NOT BE THE SUPPORT OF LOWER RACEWAYS. SUPPORTING MEANS WILL NOT BE SHARED BETWEEN ELECTRICAL RACEWAYS AND MECHANICAL DUCTS OR PIPING. MOUNTING HARDWARE SHALL NOT PRESENT SHARP EDGES WHERE PERSONNEL CONTACT IS POSSIBLE. IN MECHANICAL SPACES, "MINERALAC" SUPPORTS SHALL NOT BE USED BELOW 10' A.F.F.

3. BOXES: BOXES SHALL BE PROVIDED IN RACEWAY SYSTEMS WHEREVER REQUIRED FOR PULLING OF WIRES, MAKING CONNECTIONS. AND MOUNTING OF DEVICES OR LIGHTING FIXTURES. IN GENERAL, BOXES SHALL BE CONSTRUCTED OF HOT-DIPPED GALVANIZED FINISHED SHEET STEEL. BOXES FOR METALLIC RACEWAYS. 4 IN. BY 4 IN. NOMINAL SIZE AND SMALLER, SHALL BE OF THE CAST METAL HUB TYPE AND GASKETED WHEN LOCATED OUTSIDE OF THE BUILDING. BOXES SHALL BE LISTED AS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE LOCATION THEY ARE INSTALLED. BOXES FOR MOUNTING OF LIGHTING FIXTURES SHALL BE NOT LESS THAN 4 IN. SQUARE EXCEPT SMALLER BOXES SHALL BE INSTALLED WHERE REQUIRED BY FIXTURE CONFIGURATION. UNLESS OTHERWISE INDICATED, DEVICE BOXES FOR RECEPTACLES SHALL BE MOUNTED WITH THE CENTER OF THE DEVICE BOX APPROXIMATELY 18 IN. AFF. INDICATED, DEVICE BOXES FOR TOGGLE SWITCHES SHALL BE MOUNTED WITH THE TOP OF THE ACCESSIBLE PART APPROXIMATELY 48 IN. AFF. BOXES AND BOX SUPPORTS SHALL BE FASTENED TO WOOD WITH WOOD SCREWS OR SCREW TYPE NAILS OF EQUAL HOLDING STRENGTH, WITH BOLTS AND METAL EXPANSION SHIELDS ON CONCRETE AND BRICK, WITH TOGGLE BOLTS ON HOLLOW CMU, AND WITH MACHINE SCREWS OR WELDED STUDS ON STEEL WORK. THREADED STUDS DRIVEN IN BY POWDER CHARGE AND PROVIDED WITH LOCKWASHERS AND NUTS. OR NAIL TYPE NYLON ANCHORS MAY BE USED IN LIEU OF EXPANSION SHIELDS

OR MACHINE SCREWS. HANGERS SHALL NOT BE FASTENED OR SUPPORTED FROM JOIST BRIDGING. 4. WIRES AND CABLES: EXAMINE RACEWAYS AND BUILDING FINISHES TO RECEIVE WIRES AND CABLES FOR COMPLIANCE WITH INSTALLATION TOLERANCES AND OTHER CONDITIONS. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. PULL WIRES AND CABLES INTO RACEWAY SIMULTANEOUSLY WHERE MORE THAN ONE IS BEING INSTALLED IN THE SAME RACEWAY. USE PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT DETERIORATE CONDUCTORS OR INSULATION. USE PULLING MEANS, INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS THAT WILL NOT DAMAGE WIRES/CABLES OR RACEWAY. INSTALL EXPOSED CABLE, PARALLEL AND PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS AND FEATURES, MECHANICAL DUCT AND PIPING SYSTEMS, OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. HORIZONTAL RUNS OF MC CABLE SHALL BE SUPPORTED ON 3 FT MAXIMUM CENTERS. VERTICAL RUNS OF MC CABLES SHALL BE SUPPORTED ON 6 FT MAXIMUM CENTERS. EXPOSED PLENUM CABLE SHALL BE SUPPORTED ON 3 FT MAXIMUM CENTERS. THE NUMBER OF SPLICES SHALL BE KEPT TO AN ABSOLUTE MINIMUM. WIRING AT EACH OUTLET SHALL BE INSTALLED WITH AT LEAST 8 IN. SLACK.

5. WIRING DEVICES: INSTALL WIRING DEVICES WHERE INDICATED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTION, APPLICABLE REQUIREMENTS OF THE NEC, AND RECOGNIZED INDUSTRY PRACTICES. INSTALL WIRING DEVICES IN DEVICE BOXES WHICH ARE CLEAN AND FREE FROM DIRT AND CONSTRUCTION MATERIALS AND DEBRIS. INSTALL WIRING DEVICES AFTER WIRING WORK IS COMPLETE. INSTALL DEVICE PLATES AFTER PAINTING WORK IS COMPLETE. TIGHTEN CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. PRIOR TO ENERGIZING CIRCUITS, TEST WIRING FOR ELECTRICAL CONTINUITY AND SHORTS. ENSURE PROPER POLARITY OF CONNECTIONS IS MAINTAINED. SUBSEQUENT TO ENERGIZING, TEST WIRING DEVICES AND DEMONSTRATE COMPLIANCE WITH REQUIREMENTS.

6. GROUNDING: ELECTRICAL SYSTEMS AND EQUIPMENT, METALLIC RACEWAYS AND BOXES, CABLE SHIELDS, METALLIC CABLE SHEATHS AND ARMOR, AND OTHER NON-CURRENT CARRYING METALLIC PARTS OF EQUIPMENT SHALL BE GROUNDED IN CONFORMANCE WITH THE NEC. EQUIPMENT GROUND CONDUCTORS SHALL COMPLY WITH NEC ARTICLE 250 FOR SIZES AND QUANTITIES, EXCEPT WHERE LARGER SIZES AND/OR MORE CONDUCTORS ARE INDICATED. PROVIDE SEPARATE INSULATED GROUND CONDUCTOR IN ALL RACEWAYS, REGARDLESS OF RACEWAY TYPE. SEPARATELY DERIVED SYSTEMS AS DEFINED BY THE NEC SHALL BE GROUNDED IN CONFORMANCE WITH NEC ARTICLE 250 PARA. 26. TERMINATE EQUIPMENT GROUND WIRES FOR FEEDERS AND BRANCH CIRCUITS WITH PRESSURE TYPE GROUND LUGS. WHERE METALLIC CONDUITS TERMINATE AT METALLIC HOUSINGS WITHOUT MECHANICAL AND ELECTRICAL CONNECTION TO HOUSING, TERMINATE EACH CONDUIT WITH A GROUNDING BUSHING. CONNECT GROUNDING BUSHINGS WITH A GROUND WIRE TO THE GROUND BUS IN THE HOUSING. BOND ELECTRICALLY NONCONTINUOUS CONDUITS AT BOTH ENTRANCES AND EXITS WITH GROUNDING BUSHINGS AND GROUND WIRES. TIGHTEN GROUNDING AND BONDING CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES.

- MEGOHM IS UNACCEPTABLE.
- AND RETEST.
- AND REPLACE WITH NEW UNITS AND PROCEED WITH RETESTING.
- W/ GENERAL CONTRACTOR AND OWNER PRIOR TO START OF ROUGH-IN.

11. THE MOUNTING HEIGHT OF ALL ELECTRICAL DEVICES, EQUIPMENT, FIXTURES SHALL COMPLY WITH THE STANDARD MOUNTING HEIGHT TABLE AND MOUNTING HEIGHT NOTES UNLESS OTHERWISE NOTED. ALL ELECTRICAL AND LIGHTING DEVICE INSTALLATION SHALL MAINTAIN THE FIRE RATING SPECIFIED BY THE 12. ARCHITECTURE PLANS

7. PANELBOARDS: INSTALL PANELBOARDS AND ACCESSORY ITEMS IN ACCORDANCE WITH NEMA PB 1.1, "GENERAL INSTRUCTIONS FOR PROPER INSTALLATION, OPERATION, AND MAINTENANCE OF PANELBOARDS RATED 600 VOLTS OR LESS," AND MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. MOUNT PANELBOARDS PLUMB AND RIGID WITHOUT DISTORTION OF BOX AND WITH THE TOP OF THE TRIM AT 78 IN. AFF UNLESS OTHERWISE INDICATED. PROVIDE NEATLY TYPED AND ACCURATE CIRCUIT DIRECTORIES IN EACH PANELBOARD, REFLECTIVE OF FINAL CIRCUIT CONFIGURATION. PROVIDE FILLER PLATES IN ALL UNUSED SPACES. TRAIN WIRES IN PANELBOARDS GUTTERS NEATLY IN GROUPS, BUNDLE, AND WRAP WITH WIRE TIES. GROUND PANELBOARD IN CONFORMANCE WITH THE NEC. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING GROUNDING CONNECTIONS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. PERFORM INSULATION RESISTANCE TESTS OF PANELBOARD BUSES, COMPONENTS, AND FEEDER AND BRANCH CIRCUIT WIRING; INSULATION RESISTANCE LESS THAN 100

8. DISCONNECTS AND CIRCUIT BREAKERS: PROVIDE DISCONNECTS AND CIRCUIT BREAKERS WHERE INDICATED ON THE ELECTRICAL DRAWINGS AND/OR WHERE REQUIRED BY THE NEC, WHETHER INDICATED ON THE ELECTRICAL DRAWINGS OR NOT. INSTALL DISCONNECTS AND CIRCUIT BREAKERS PLUMB AND LEVEL AND IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. UPON COMPLETION OF INSTALLATION OF DISCONNECTS AND CIRCUIT BREAKERS, ENERGIZE CIRCUITS AND DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS. EXCEPT AS OTHERWISE INDICATED. DO NOT DEMONSTRATE DISCONNECTS AND CIRCUIT BREAKERS BY OPERATING THEM UNDER LOAD; HOWEVER, DEMONSTRATE DISCONNECT AND CIRCUIT BREAKER OPERATION THROUGH SIX OPENING/CLOSING CYCLES WITH CIRCUIT UNLOADED. OPEN DISCONNECT AND CIRCUIT BREAKER ENCLOSURES FOR INSPECTION OF INTERIOR, MECHANICAL AND ELECTRICAL CONNECTIONS, FUSE INSTALLATION IF APPLICABLE, AND FOR VERIFICATION OF TYPE AND RATING OF FUSES INSTALLED IF APPLICABLE. CORRECT DEFICIENCIES THEN RETEST TO DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. REMOVE AND REPLACE DEFECTIVE UNITS WITH NEW UNITS

9. LIGHTING FIXTURES: INSTALL FIXTURES WHERE, AND AT HEIGHTS, INDICATED IN ACCORDANCE WITH FIXTURE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS, REQUIREMENTS OF THE NEC. AND RECOGNIZED INDUSTRY PRACTICES. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING GROUND CONNECTIONS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. RECESSED OR SEMIRECESSED FIXTURES MAY BE SUPPORTED BY CEILING SUPPORT SYSTEM. INSTALL CEILING SUPPORT SYSTEM RODS OR WIRES AT A MINIMUM OF FOUR (4) RODS OR WIRES PER FIXTURE LOCATED NOT MORE THAN 6 IN. FROM FIXTURE CORNERS. FIXTURES WHICH ARE SMALLER THAN CEILING GRID SHALL BE CENTERED IN ACOUSTICAL CEILING PANEL AND SUPPORTED BY AT LEAST TWO (2) 3/4 IN. METAL CHANNELS SPANNING AND SECURED TO CEILING SYSTEM GRID TEES. FIXTURES WHICH LAY-IN CEILING GRID SYSTEM SHALL BE SECURED IN PLACE BY INSTALLATION OF CLIPS WHICH SECURELY FASTEN FIXTURE TO CEILING GRID TEES. SUPPORT SURFACE MOUNT FIXTURES GREATER THAN 2 FT IN LENGTH AT A POINT IN ADDITION TO THE OUTLET BOX FIXTURE STUD. UPON COMPLETION OF INSTALLATION AND JUST PRIOR TO DEMONSTRATION, CLEAN AND RELAMP FIXTURES. LAMP FIXTURES WITH SPECIFIED LAMPS IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS. UPON COMPLETION OF INSTALLATION, DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS. WHERE POSSIBLE, CORRECT MALFUNCTIONING FIXTURES AT THE SITE, THEN RETEST TO DEMONSTRATE COMPLIANCE; OTHERWISE, REMOVE MALFUNCTIONING UNITS

10. ELECTRICAL POWER & LIGHTING PLANS ARE DIAGRAMMATIC, FINAL LOCATIONS OF OUTLETS AND LIGHT FIXTURES ARE APPROXIMATE. EXACT ROUTING OF WIRING, LOCATIONS OF SWITCHES, OUTLETS & LIGHT FIXTURES SHALL BE GOVERNED BY STRUCTURAL, MECHANICAL AND PLUMBING CONDITIONS AND OBSTRUCTIONS. FINAL LOCATIONS OF ELECTRICAL FIXTURES SHALL BE DETERMINED DURING WALKTHROUGH

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ED 2	DISCONNECT A WIRING/CONDU ATTACHED TO REINSTALLATIO	ND F IT B/ THE N A1	REM ACK CE TH	OVE TO ILIN HE
ED 3	TEMPORARILY AND ASSOCIAT MAINTAIN EXIS AT THE ORIGIN FIRE ALARM S	REMO TING AL L YSTE	OVE ACC CIF LOC	TH ESS RCU ATIO N C
ED 4	DISCONNECT A MOUNTED JUNG REMOVE THE E 1ST FLOOR. MA CIRCUITS. PREI CONDUITS.	ND F CTION XIST AINTA PARE	REM I B ING AIN E F(	ove ox Rl Thi Dr
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ED 10	TEMPORARILY CONDUIT DOWN REINSTALLATIO REPAIR WORK.	DISCO I TO N/RE	ONN FL( ECO	IEC DOF NNI
ED 11	EXISTING SMOK DETECTION FOR	KE DE RM D	ETE US	CTC T A
Ê	DISCONNECT A FROM BASEMEI	ND F	REM O 1	OVE ST

![](_page_24_Figure_2.jpeg)

CONTRACT (N.I.C.).

#### ECTIVE DEMOLITION PLAN KEY NOTES

VE THE EXISTING ELECTRICAL CONDUIT AND ASSOCIATED I THE EXISTING CIRCUITS. PREPARE FOR NECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL

VE THE EXISTING LIGHT FIXTURE, ASSOCIATED TO THE JUNCTION BOX. REMOVE ANY ACCESSORIES NG. SALVAGE THE EXISTING LIGHT FIXTURE FOR ORIGINAL LOCATION.

THE EXISTING SMOKE DETECTOR, HORIZONTAL CONDUITS SSORIES WITHIN THE STRUCTURAL REPAIR AREA. UITS. PREPARE FOR REINSTALLING THE SMOKE DETECTOR FION. MAINTAIN THE FULLY FUNCTION OF THE EXISTING OTHER AREAS.

VE THE EXISTING HORIZONTAL CONDUIT, RUSTED CEILING K AND ASSOCIATED ACCESSORIES. DISCONNECT AND RUSTED/BROKEN VERTICAL CONDUIT FROM BASEMENT TO HE EXISTING PENETRATION. MAINTAIN THE EXISTING REINSTALLATION/RECONNECTION OF CIRCUITS &

THE EXISTING FIRE ALARM CONDUITS/JUNCTION BOX AND ES BELOW CEILING. MAINTAIN EXISTING CIRCUITS. PREPARE THE ORIGINAL LOCATION. MAINTAIN THE FULLY FUNCTION ALARM SYSTEM IN OTHER AREAS.

VE THE EXISTING VERTICAL ELECTRICAL CONDUIT AND IES FROM THE CEILING. MAINTAIN THE EXISTING CIRCUITS, LLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER ORK.

VERIFY EXISTING EQUIPMENT/WIRING NO LONGER IN ND REMOVE THE ABANDONED ELECTRICAL SERVICE, LOW ID WIRING AND ASSOCIATED ACCESSORIES, ACCESSIBLE MINATE THE ABANDONED ELECTRICAL SERVICE AT THE WALL OR CEILING. PROVIDE NEW SMALLER ELECTRICAL IT AND WIRING TO REMAIN. REUSE EXISTING SUPPORT AND ARD AS REQUIRED.

FLUSH MOUNTED JUNCTION BOX. MAINTAIN THE EXISTING REINSTALLATION & RECONNECTION.

E THE EXISTING SURFACE MOUNTED JUNCTION BOX AND S, MAINTAIN THE EXISTING CIRCUITS. PREPARE FOR NNECTION.

CT AND REMOVE THE EXISTING VERTICAL ELECTRICAL OR. MAINTAIN THE EXISTING CIRCUITS. PREPARE FOR NECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL

TOR TO REMAIN. PROVIDE COVER TO PROTECT THE AND DAMAGE DURING STRUCTURAL REPAIR WORK.

DISCONNECT AND REMOVE THE EXISTING RUSTED/BROKEN ELECTRICAL CONDUIT FROM BASEMENT TO 1ST FLOOR AND ASSOCIATED ACCESSORIES. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL REPAIR WORK.

![](_page_24_Picture_17.jpeg)

![](_page_25_Figure_0.jpeg)

WATTAGE VOLTS

120V

13.9W

LAMP

LED

LIGHTING FIXTURE SCHEDULE				
SYMBOL/TAG	DESCRIPTION	BASIS OF DESIGN	CATALOG NUMBER	
$\diamond$	LED LOW PROFILE SQUARE FLUSH MOUNT LIGHT	COOPER LIGHTING	METALUX FM11WSCCR	

NOTE: 1. ALL MANUFACTURE AND CATALOG NUMBER IN LIGHTING FIXTURE SCHEDULE ARE BASIS OF DESIGN. CONTRACTOR SHALL SELECT AS THE SAME OR THE EQUIVALENT.

![](_page_25_Figure_3.jpeg)

	PER NEC.
Ê 2	REUSE ANE ORIGINAL L
E 3	REUSE ANE CONDUIT A ORIGINAL L 72.
	<b>RFINSTALI</b>

4

6 PREVIOUS.

![](_page_25_Figure_8.jpeg)

![](_page_25_Picture_9.jpeg)

### ELECTRICAL PLAN GENERAL NOTES

# AL DEVICES, EQUIPMENT, WIRES, CONDUITS THAT ARE HE PLAN ARE EXISTING TO REMAIN, NO WORK ESS OTHERWISE NOTED.

AL PLAN KEY NOTES

E REINSTALL AND RECONNECT CONDUITS. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS PER NEC.

D REINSTALL THE EXISTING LIGHT FIXTURE AT THE LOCATION.

ND REINSTALL THE EXISTING SMOKE DETECTOR, WIRING, AND ASSOCIATED SUPPORTS AND ACCESSORIES AT THE LOCATION AS SHOWN IN THE PLAN PER NEC AND NFPA

AND RECONNECT CONDUITS AT CEILING. REUSE AND RECONNECT EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS PER NEC.

E REPLACE THE EXISTING BROKEN LIGHT FIXTURE WITH NEW SURFACE MOUNTED LIGHT FIXTURE.

INSTALL AND RECONNECT VERTICAL CONDUITS FROM BASEMENT TO 1ST FLOOR THROUGH EXISTING PENETRATION. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS PER NEC. MAINTAIN THE PENETRATION FIRE RATING AS

![](_page_25_Picture_19.jpeg)

ALL DIMENSIONS AND CONDITIONS SHALL BE Verified by the contractor at the site Before proceeding with the work.

![](_page_26_Figure_0.jpeg)

 $1 \rightarrow BASEMENT ELECTRICAL SELECTIVE DEMOLITION PLAN$ 54-ED-1 SCALE: 1/4"=1'-0"

 $\checkmark$ 

N

#### ELECTRICAL SELECTIVE DEMOLITION PLAN KEY NOTES

DISCONNECT AND REMOVE THE RUSTED PORTION OF EXISTING ELECTRICAL CONDUITS AND ASSOCIATED ACCESSORIES. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL REPAIR WORK.

DISCONNECT AND REMOVE THE EXISTING ELECTRICAL CONDUITS AND ASSOCIATED ACCESSORIES ATTACHED TO THE STEEL BEAM TO BE REPLACED. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS AFTER BEAM REPLACEMENT.

REMOVE ALL CONDUITS ACCESSORIES ATTACHED TO THE STEEL BEAM TO PERFORM THE STRUCTURAL REPAIR WORK. CLEAN EXISTING CONDUITS TO

DISCONNECT AND REMOVE THE RUSTED JUNCTION BOX AND ACCESSORIES ATTACHED TO THE STEEL BEAM. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS AFTER STRUCTURAL

TEMPORARILY REMOVE THE CONDUITS ACCESSORIES ATTACHED TO THE RUSTED STEEL BEAM, BEARING PLATES, AND FLANGES TO BE CLEAN 5 PAINTED THROUGH OUT THE BASEMENT. REINSTALL THE CONDUITS RUSTED STEEL BEAM, BEARING PLATES, AND FLANGES TO BE CLEANED AND SUPPORTS/ACCESSORIES AFTER THE CLEAN AND PAINT WORK.

![](_page_26_Picture_10.jpeg)

![](_page_27_Figure_0.jpeg)

LIGHTING FIXTURE SCHEDULE						
SYMBOL/TAG	DESCRIPTION	BASIS OF DESIGN	CATALOG NUMBER	LAMP	WATTAGE	VOLTS
	2'X 2'LED TROFFER	LITHONIA	2GTL2 A12 120 LP840	LED	16.2W	120V
	EMERGENCY BATTERY WALL-PACK LIGHT	LITHONIA	ELM4L	LED	5W	120V
⊗	EMERGENCY EXIT SIGN WITH BATTERY BACKUP	LITHONIA	EXR EL M6	LED	3.8W	120V
2 <del></del>	EMERGENCY EXIT SIGN WITH EMERGENCY DUAL HEADS AND BATTERY BACKUP	LITHONIA	ECR SQ M6	LED	3.8W	120V

NOTE: 1. ALL MANUFACTURE AND CATALOG NUMBER IN LIGHTING FIXTURE SCHEDULE ARE BASIS OF DESIGN. CONTRACTOR SHALL SELECT AS THE SAME OR THE EQUIVALENT.

#### ELECTRICAL PLAN GENERAL NOTES

1. ALL ELECTRICAL DEVICES, EQUIPMENT, WIRES, CONDUITS THAT ARE NOT SHOWN IN THE PLAN ARE EXISTING TO REMAIN, NO WORK PERFORMED UNLESS OTHERWISE NOTED.

#### ELECTRICAL PLAN KEY NOTES

- E REINSTALL AND RECONNECT CONDUITS AFTER STRUCTURAL REPAIR WORK. RECONNECT THE EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS PER NEC.
- E PROVIDE SUPPORTS ATTACHED TO THE STEEL BEAM FOR EXISTING CONDUITS PER NEC.
  - REINSTALL NEW ELECTRICAL JUNCTION BOX AFTER STRUCTURAL REPAIR WORK. RECONNECT THE EXISTING CIRCUITS AND CONDUITS. PROVIDE NEW SUPPORT FASTENER ATTACHED TO STEEL BEAM.
- E INSTALL NEW EMERGENCY LIGHT WALL PACK/EXIT SIGN W/ BATTERY BACK UP, WIRE FROM THE EXISTING BRANCH CIRCUIT THAT SERVING THE NORMAL LIGHTING IN THIS AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCHES.
- E INSTALL (2) NEW LIGHT FIXTURES AT NEW CEILING GRID. WIRE THE NEW LIGHT FIXTURES AND SWITCH FROM THE EXISTING CIRCUITS OF APPARATUS ROOM EXISTING LIGHTS.
- E 6 INSTALL NEW WEATHER PROOF GFCI RECEPTACLE OUTLET. WIRE THE NEW OUTLET FROM EXISTING CIRCUITS OF EXISTING GENERAL OUTLETS AT WATCH DESK.
- UPGRADE THE EXISTING ELECTRICAL PANEL TO HAVE MORE CIRCUITS/SPACES WITH THE SAME RATING AS EXISTING ONE. SEE PANEL SCHEDULES IN 54-E-2 FOR MORE DETAILS.
  - REINSTALL THE TEMPORARILY REMOVED CONDUITS SUPPORTS/ACCESSORIES BECAUSE OF THE CLEAN AND PAINT WORK OF RUSTED STEEL BEAM, BEARING PLATES, AND FLANGES, REPLACE WITH NEW SUPPORTS/ACCESSORIES IF THEY ARE IN BAD CONDITION.

![](_page_27_Picture_14.jpeg)

![](_page_28_Figure_0.jpeg)

![](_page_28_Figure_1.jpeg)

SECOND FLOOR ELECTRICAL PLAN 1 54-E-2 SCALE: 1/4"=1'-0"

#### ELECTRICAL PANEL SCHEDULES

							Panel: L						
Electrical Load Calc			Auxiliary Gutter X Neutral Bus						Voltage	Phase	Wire	Bus	
111										240	1	3	
L				Double	Lugged	1 100	X	Grou	nd Bus	Amp MC	B/MLO	Mountin	ng
Panel so	hedule						-			200	AMCB	Surface	
							_	Isolat	ed Ground Bus	ISC Ratin	g:	22,000	
Light	Recpt.	Equip.	Mech.	Description	Bkr	No.	No.	Bkr	Description	Light	Recpt.	Equip.	Mech.
225	540	2,150	4,200	E SUP DANEL "D"	20/1	1	2	20/1	(E.) BSMT. REC.		900		
225	540	2,150	4,200	(E.) SUB PANEL P	20/1	3	4	20/1	(E.) BSMT. LTG.	1,000			
	900			(E.) KITCHEN COUNTER	20/1	5	6	20/1	(E.) FIRE LIGHT			100	
	900	-		(E.) KITCHEN COUNTER	20/1	7	8	20/1	(E.) FIRE BELL		100	100	
	900			(E.) KITCHEN COUNTER	20/1	9	10	20/1	(E.) COMM. REC.		900		
	900			(E.) KITCHEN COUNTER	20/1	11	12	20/1	(E.) APP. ROOM REC.		900		
		1,000	6	(E.) REFRIG.	20/1	13	14	20/1	(E.) APP. ROOM REC.		900		
				SPACE	EL M	15	16	100/2	E DOPM DANEL	500	2,430		1,250
500				(E.) KITCHEN LIGHTS	20/1	17	18	100/2	(L.) DORWIPANEL	500	2,430		1,250
	900			(E.) FRONT DESK	20/1	19	20	20/1	(E.) APP. ROOM REC.	1.2.4	900		
		100		(E.) BATH FAN	20/1	21	22	20/1	(E.) BATH HEATER				500
1,000		11.27		(E.) APP. ROOM LIGHTS	20/1	23	24	30/2	(E.) DRYER	1.1.1		2,500	
1,000		1	1 - 14	(E.) EXTERIOR LIGHTS	20/1	25	26	30/2				2,500	
	900			(E.) COMM. REC.	20/1	27	28	30/2	E DIESEL DI IMP				1,440
			1,440	(N.) WATCH DESK MINI	15/2	29	30	50/2			1		1,440
		1.112	1,440	SPLIT	15/2	31	32	20/1	SPARE		1		
		11.11		SPARE	20/1	33	34	20/1	SPARE				
				SPACE		35	36	20/1	SPARE				
2,950	6,480	5,400	11,280	Sub-Total					Sub-Total	2,000	9,360	5,200	5,880
Notes:									Sub-total (from left side)	2,950	6,480	5,400	11,280
1. The e	xisiting lo	oads are	estimate	d only. EC to verify electric	al ratings	for all	equipm	ent.	Totals Connected:	4,950	15,840	10,600	17,160
2. (E.) in	dicates	existing I	oad/circu	it/breaker to remain, recor	nect to P	NLL.			Totals Demand:	4,950	12,336	10,600	17,160
3. (N.) in	dicates	new insta	alled load	circuit/ breaker.					Total Load:	45,046	VA	188	Amps

#### ELECTRICAL LOAD CALCULATIONS

220.87 Exisitng Loads		
Maxi	Maximum Peak KW Over Last 24 months(W):	
	Power Factor:	0.9
Maximum	Load Demand Over Last 24 months(VA):	23333
Maximum Load Demand @ 125% (KVA):		<u>29167</u>
New Added Loads(Watch Desk Lights & Mini Split & Outdoor Outlet) (VA):		<u>3160</u>
	Total Demand Loads	32327
	Service Voltage (V):	240
	Minimum Service Size (A): 1PH	122

![](_page_28_Figure_8.jpeg)

![](_page_28_Figure_9.jpeg)

![](_page_28_Figure_11.jpeg)

1. ALL ELECTRICAL DEVICES, EQUIPMENT, WIRES, CONDUITS THAT ARE NOT SHOWN IN THE PLAN ARE EXISTING TO REMAIN, NO WORK PERFORMED UNLESS OTHERWISE NOTED.

ELECTRICAL PLAN KEY NOTES

INSTALL NEW EMERGENCY LIGHT WALL PACK/EXIT SIGN W/ BATTERY E 1 BACK UP, WIRE FROM THE EXISTING BRANCH CIRCUIT THAT SERVING THE NORMAL LIGHTING IN THIS AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCHES.

![](_page_28_Picture_16.jpeg)

ALL DIMENSIONS AND CONDITIONS SHALL BE Verified by the contractor at the site Before proceeding with the work.

#### ELECTRICAL SELECTIVE DEMOLITION PLAN KEY NOTES

- DISCONNECT AND REMOVE THE EXISTING ELECTRICAL CONDUIT BELOW THE BEAM TO THE EXISTING WASHER OUTLET AND ASSOCIATED ACCESSORIES THAT ARE ATTACHED TO THE BOTTOM SURFACE OF THE BEAM. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL REPAIR WORK. DISCONNECT AND REMOVE THE EXISTING ELECTRICAL CONDUITS, CONDUIT BODIES AND ASSOCIATED ACCESSORIES FROM THE EXISTING VERTICAL CONDUIT ABOVE THE STAIR TO /ED THE EXISTING FIRE ALARM HORN/STROBE. KEEP THE EXISTING PENETRATION. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL REPAIR WORK. DISCONNECT AND REMOVE THE PORTION OF EXISTING ELECTRICAL CONDUIT UNDER THE
- ED 3 BEAM FOR LOUVER MOTOR. REMOVE ASSOCIATED ACCESSORIES. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL REPAIR WORK.
- DISCONNECT AND REMOVE THE PORTION OF EXISTING ELECTRICAL CONDUIT UNDER THE ED 4 BEAM FOR BOILER EMERGENCY SHUT OFF. REMOVE ASSOCIATED ACCESSORIES. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER STRUCTURAL REPAIR WORK. PRIOR TO WORK, COORDINATE WITH OWNER ABOUT THE WORK SCHEDULE ACCORDING HEATING SEASON TO ALLOW FOR HEAT DISCONNECT.
- DISCONNECT AND DEMOLISH THE EXISTING ABANDONED ELECTRICAL BOX AND ASSOCIATED ACCESSIBLE VERTICAL CONDUITS ABOVE THE FLOOR. TERMINATE THE 5 EXISTING CIRCUITS AND CAP THE CONDUITS AT THE FLOOR.

![](_page_29_Figure_5.jpeg)

![](_page_29_Figure_6.jpeg)

![](_page_29_Figure_12.jpeg)

#### ELECTRICAL PLAN GENERAL NOTES

1. ALL ELECTRICAL DEVICES, EQUIPMENT, WIRES, CONDUITS THAT ARE NOT SHOWN IN THE PLAN ARE EXISTING TO REMAIN, NO WORK PERFORMED UNLESS OTHERWISE NOTED.

#### ELECTRICAL PLAN KEY NOTES

- E REINSTALL AND RECONNECT CONDUITS UNDER THE NEW BEAM STRUCTURE. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS FOR WASHER OUTLET. PROVIDE CONDUITS SUPPORTS PER NEC.
- NEC. MAINTAIN THE PENETRATION FIRE RATING AS PREVIOUS.
- REINSTALL AND RECONNECT CONDUITS AFTER STRUCTURAL WORK. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS FOR LOUVER MOTOR. PROVIDE CONDUITS Ē 3 SUPPORTS PER NEC.
- REINSTALL AND RECONNECT CONDUITS AFTER STRUCTURAL WORK. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS FOR BOILER EMERGENCY SHUT OFF. <u>E</u> 4 PROVIDE CONDUITS SUPPORTS PER NEC.

![](_page_30_Figure_7.jpeg)

![](_page_30_Figure_8.jpeg)

² BASEMENT ELECTRICAL PLAN 61-E-1 SCALE: 3/8"=1'-0"

![](_page_30_Picture_11.jpeg)

ENGINES 43, 54, 61, 64 STRUCTURAL IMPROVEMENTS DRAWING TITLE ENGINE 61 BASEMENT ELECTRICAL PLAN

ALL DIMENSIONS AND CONDITIONS SHALL BE Verified by the contractor at the site Before proceeding with the work.

PROJECT NO. DRAWING NO. 13-21-4726-04 DATE 12/09/2021 61 - E - 1SCALE AS NOTED DRAWN BY ZMD

CHECKED BY

NOTE:

### <u>KEY:</u>

	NOT IN CONTRACT (N.I.C.).
ELE	CTRICAL SELECTIVE DEMOLITION PLA
ED 1	DISCONNECT AND REMOVE THE EXISTING ELECTRICAL CONDUITS AND ACCESSORIES ATTACHED TO THE BEAM. MAINTAIN THE EXISTING CIF FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFT REPAIR WORK.
ED 2	DISCONNECT AND REMOVE THE EXISTING ELECTRICAL BOX AND ASS ACCESSORIES ATTACHED TO THE BEAM. SALVAGE THE EXISTING JUN FEASIBLE.
ED 3	DISCONNECT AND REMOVE THE EXISTING ELECTRICAL CONDUIT AND ACCESSORIES. MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER S WORK.
ED 4	DISCONNECT AND REMOVE THE EXISTING RUSTED CONDUITS AND AS ACCESSORIES FROM BASEMENT TO 1ST FLOOR, REPLACE WITH NEW BEAM CLEAN & PAINT WORK. MAINTAIN THE EXISTING CIRCUITS, PR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER B PAINT WORK.
ED 5	CUT/DISCONNECT AND REMOVE THE EXISTING RUSTED CONDUITS AN ACCESSORIES ATTACHED TO BEAM. MAINTAIN THE EXISTING CIRCUIT REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS AFTER B PAINT WORK.
ED 6	FIELD VERIFY EXISTING ELECTRICAL CONDUITS & CIRCUITS IN CEILIN DISCONNECT AND REMOVE THE CONDUITS FROM EACH END. IF EXIS STILL IN SERVICE, MAINTAIN THE EXISTING CIRCUITS, PREPARE FOR REINSTALLATION/RECONNECTION OF CIRCUITS & CONDUITS STRUCTU OTHERWISE TERMINATE AND CAP THE EXISTING CIRCUITS AND COND
ED 7	EXISTING LIGHT FIXTURE TO BE SALVAGED AND RELOCATED. DISCON EXISTING CONDUITS, MAINTAIN THE EXISTING CIRCUITS.

![](_page_31_Figure_2.jpeg)

![](_page_31_Picture_3.jpeg)

![](_page_31_Picture_4.jpeg)

# AN KEY NOTES

ND ASSOCIATED CIRCUITS, PREPARE FTER STRUCTURAL

SSOCIATED

ASSOCIATED STRUCTURAL REPAIR

ASSOCIATED W CONDUITS AFTER PREPARE FOR BEAM CLEAN &

AND ASSOCIATED ITS, PREPARE FOR BEAM CLEAN &

ING CONCRETE. ISTING CIRCUITS ARE

TURAL REPAIR WORK. IDUITS IN PLACE.

NNECT AND REMOVE

![](_page_31_Figure_15.jpeg)

ALL DIMENSIONS AND CONDITIONS SHALL BE Verified by the contractor at the site Before proceeding with the work. NOTE:

#### <u>KEY:</u>

NOT IN CONTRACT (N.I.C.). ELECTRICAL PLAN GENERAL NOTES 1. ALL ELECTRICAL DEVICES, EQUIPMENT, WIRES, CONDUITS THAT ARE NOT SHOWN IN THE PLAN ARE EXISTING TO REMAIN, NO WORK PERFORMED UNLESS OTHERWISE NOTED. ELECTRICAL PLAN KEY NOTES REINSTALL AND RECONNECT CONDUITS UNDER THE NEW/REPAIRED BEAM STRUCTURE. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS PER NEC. E 1 E REINSTALL JUNCTION BOX, 2 FASTENER AS REQUIRED. REINSTALL JUNCTION BOX, RECONNECT THE CONDUITS AND EXISTING CIRCUITS. PROVIDE E 3 REINSTALL AND RECONNECT CONDUITS FROM BASEMENT TO 1ST FLOOR REUSE EXISTING PENETRATION. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS PER NEC. MAINTAIN THE PENETRATION FIRE RATING AS PREVIOUS. REINSTALL AND RECONNECT CONDUITS AFTER BEAM CLEAN & PAINT WORK. REUSE, EXTEND IF NEEDED AND RECONNECT EXISTING CIRCUITS. PROVIDE CONDUITS SUPPORTS E 4 PER NEC. E IF THE EXISTING CIRCUITS ARE STILL IN SERVICE, REINSTALL 5 CONDUITS AND CIRCUITS AFTER STRUCTURAL REPAIR WORK. IF THE EXISTING CIRCUITS ARE STILL IN SERVICE, REINSTALL AND RECONNECT

REINSTALL THE EXISTING SALVAGED LIGHT FIXTURE AT THE NEW LOCATION AS SHOWN E 6 IN THE PLAN. REUSE AND EXTEND EXISTING CIRCUITS TO NEW LOCATION, PROVIDE NEW CONDUITS.

![](_page_32_Figure_3.jpeg)

![](_page_32_Picture_4.jpeg)

![](_page_32_Figure_12.jpeg)

![](_page_32_Picture_13.jpeg)

![](_page_32_Picture_14.jpeg)

NOTE: