ELECTRICAL SYMBOLS LIST

LIGHTING

	LED LIGHTING FIXTURE AND OUTLET BOX. HALF SHADED FIXTURE OR "EM" INDICATES FIXTURES WITH INTEGRAL BATTERY PACK FOR EMERGENCY SERVICE, U.O.N.
A O 2 a	LUMINAIRE TYPE : INDICATE BY LIPPERCASE LETTER SEE LIGHTING EXTURE SCHEDULE. CIRCUIT NUMBER : INDICATED BY NUMBER SWITCHING INDICATED BY LOWER CASE LETTERS.
EM	DENOTES LUMINAIRE ON EMERGENCY CIRCUIT.
NL	DENOTES FIXTURES DESIGNATED AS NIGHTLIGHT, WIRED TO 24 HOURS UNSWITCHED CIRCUIT.
	CEILING/WALL MOUNTED SELF POWERED EXIT LIGHT FIXTURE WITH DIRECTIONALARROWS AS INDICATED. SHADED AREA DENOTES FACE(S). ISOLITE ELITE SERIES LED EXIT SIGN
	EMERGENCY BATTERY UNIT WITH ATTACHED EMERGENCY FIXTURES AND OUTLET BOX.

SWITCHES AND CONTROLS

$a	20A SPST TOGGLE SWITCH U.O.N. "a" DENOTES LIGHTING FIXTURE CONTROLLED.
$a 3	20A 3-WAY TOGGLE SWITCH U.N.O. "a" DENOTES LIGHTING FIXTURE CONTROLLED
$a 4	20A 4-WAY TOGGLE SWITCH U.N.O. "a" DENOTES LIGHTING FIXTURE CONTROLLED
PC	PHOTOCELL IN NEMA 3R ENCLOSURE.
PC	WALL MOUNTED PHOTOCELL MOUNTED IN NEMA 3R ENCLOSURE.
OS	CEILING OCCUPANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE
$OS	WALL OCCUPANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE.
VS	WALL VACANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE.
VS	CEILING VACANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE.
DS	CEILING MOUNTED DAYLIGHT SENSOR.

WIRING SYSTEMS

3 UP–	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 1#12 ø, 1#12 N. & 1#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
3 5 UP–	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 2#12 ø, 2#12 N. & 2#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
3 5 7 UP–	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 3#12 ø, 3#12 N. & 3#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
	CONDUIT TURNING UP, SEE FLOOR PLANS FOR CONDITIONS.
	CONDUIT TUIRNING DOWN, SEE FLOOR PLANS FOR CONDITION.
	CONDUIT AND WIRE TO BUILDING GROUND.
	CABLE TRAY, WIDTH AND MOUNTING AS NOTED.
	UNDERGROUND
	EXISTING
	NEW
S	CEILING MOUNTED SMOKE DETECTOR.
S/CO	COMBINATION OF SMOKE AND CO DETECTOR.

POWER DISTRIBUTION

	MAJOR ELECTRICAL COMPONENT OR DEVICE. VOLTAGE AND AMPERAGE AS NOTED.
	BRANCH PANELBOARD, 208Y/120V–SURFACE OR FLUSH MOUNTED TRANSFORMER, SIZE AS NOTED.

POWER AND TELECOMMUNICATION

J	JUNCTION BOX WITH BLANK COVER PLATE, FLUSH IN FLOOR.
J	JUNCTION BOX WITH BLANK COVER PLATE, WALL MOUNTE, +18" AFF OR AS NOTED.
J	JUNCTION BOX WITH BLANK COVER PLATE, CEILING MOUNTED..
A	SIMPLEX RECEPTACLE, +18" AFF OR AS NOTED. SUFFIXE DENOTES FOLLOWING: A– NEMA 5–15R B– NEMA 6–15R C– NEMA 14–30R D– NEMA 14–50R
	DUPLEX CONVENIENCE RECEPTACLE, +18" AFF OR AS NOTED.
	GFI DUPLEX CONVENIENCE RECEPTACLE, +18" AFF OR AS NOTED.
CL	DUPLEX CONVENIENCE RECEPTACLE – 20A–1P, 125V, NEMA 5–20R MOUNTED FLUSH IN CELING.
	DUPLEX CONVENIENCE RECEPTACLE, CONTROLLED FROM WALL SWITCH. HALF SWITCHED, HALF CONSTANT HOT.
NID	NETWORK INTERFACE DEVICE. NID IS 'ONT' BOX WHICH INCLUDES BOTH 'ONT' AND ITS SISTER BOX AS PER VERIZON STANDARDS.
	DOUBLE DUPLEX RECEPTACLE – 20A–1P, 125V, NEMA 5–20R.
	SPECIAL RECEPTACLE AS NOTED
	TELEPHONE/DATA OUTLET, 4"SQUARE OUTLET BOX WITH SINGLE GANG COLLAR AND BLANK PLATE. PROVIDE 3/4" E.C., U.O.N., UP TO HUNG CEILING AND TERMINATE WITH 90° ELBOW, BUSHING AND DRAG WIRE.
	TELEPHONE OUTLET, WALL–MOUNTED +48" AFF UNO TEL / DATA OUTLET TO BE PROVIDED WITH 1" CONDUIT U.O.N. TO H.C. AND TERMINATED WITH 90 DEGREE REE ELBOW AND BUSHING. TEL / DATA OUTLET PLATE SHALL BE PROVIDED WITH 1 1/4"DIAMETER GROMMETED OPENING.
	DATA OUTLET – (1) PORT UNO, +18" AFF, UNO TEL / DATA OUTLET TO BE PROVIDED WITH 1" CONDUIT U.O.N. TO H.C. AND TERMINATED WITH 90 DEGREE ELBOW AND BUSHING. TEL / DATA OUTLET PLATE SHALL BE PROVIDED WITH 1 1/4" DIAMETER GROMMETED OPENING.
TV	CABLE TV OUTLET, CEILING–MOUNTED
TV	CABLE TV OUTLET, WALL–MOUNTED AT 18" AFF UNO.

MOTORS AND CONTROLS

M	AC INDOOR UNIT MOTOR AS NOTED WITH LIQUID TIGHT FLEXIBLE CONNECTION WITH JUNCTION BOX AND MOTOR SWITCH.
M WP	AC OUTDOOR UNIT MOTOR AS NOTED WITH CONTROLLER AND DISCONNECT SWITCH WITH WEATHER PROOF.
	NON FUSED DISCONNECT SWITCH AMPERAGE, AND NUMBER OF POLES AS NOTED.
A	30A/240V NON FUSED DISCONNECT SWITCH
B	60A/240V NON FUSED DISCONNECT SWITCH
C	100A/240V NON FUSED DISCONNECT SWITCH
D	200A/240V NON FUSED DISCONNECT SWITCH
	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, FURNISHED BY HVAC/CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
400 350	FUSED DISCONNECT SWITCH AND FUSE AMPERAGE AS INDICATED. TOP NUMBER DENOTS SWITCH SIZE AND BOTTOM NUMBER DENOTES FUSE.
	COMBINATION SOLID–STATE MOTOR STARTER.
MD	MOTORIZED DAMPER.
FSD	FIRE SMOKE DAMPER
M M	DUPLEX PUMP. NUMBER INDICATES HP RATING OF PUMP.
T_r	THERMAL OVERLOAD SWITCH AT MOTOR. PROVIDE THERMAL ELEMENTS AS PER MOTOR RATING.
S_M	MANUAL MOTOR SWITCH
1.5 kW	ELECTRICAL HEATER, NUMBER DENOTES HEATER RATING

ANNOTATION

+24"	INDICATES MOUNTING HEIGHT, CENTER LINE TO FINISHED FLOOR.
X	KEYED NOTE REFERENCE
1 E/2.1	DETAIL REFERENCE: DETAIL NUMBER INDICATED ON TOP; DRAWING NUMBER INDICATED ON BOTTOM

ELECTRICAL ABBREVIATIONS

A	AMPERES	EA	EACH
A/C, AC	AIR CONDITIONING UNIT	EC	EMPTY CONDUIT/ ELECTRICAL CONTRACTOR
AF	AMPERE FRAME/AMP FUSE	EF	EXHAUST FAN
AFF	ABOVE FINISHED FLOOR	EM	EMERGENCY
AS	AMP SWITCH	EMT	ELECTRICAL METALLIC TUBING
AIC	AMPS INTERRUPTING CAPACITY	EQUIP	EQUIPMENT
AT	AMP TRIP	ER	EXISTING TO BE RELOCATED
ATS	AUTOMATIC TRANSFER SWITCH	ETR	EXISTING TO REMAIN
AUTO	AUTOMATIC	EWF	ELECTRIFIED WORKSTATION FURNITURE
AWG	AMERICAN WIRE GAUGE	EWH	ELECTRIC WATER HEATER
C	CONDUIT	FA	FIRE ALARM
C/B,CB	CIRCUIT BREAKER	FBO	FURNISHED BY OTHERS, INSTALLED & WIRED BY EC
CKT	CIRCUIT	FDR	FEEDER
CLG	CEILING	FIBO	FURNISHED & INSTALLED BY OTHERS, WIRED BY EC
COMM	COMMUNICATION	FIXT	FIXTURE
CT	CURRENT TRANSFORMER	FL	FLOOR
CU	COPPER	FLUOR	FLUORESCENT
°C	DEGREE CELSIUS	G	GROUND
°F	DEGREE FAHRENHEIT	GFI	GROUND FAULT INTERRUPTER
DIA	DIAMETER	GP	GENERAL PURPOSE
DISC	DISCONNECT	HC	HUNG CEILING
DN	DOWN	HP	HORSEPOWER
DP	DISTRIBUTION PANEL	HWH	HOW WATER HEATER
DWH	DOMESTIC WATER HEATER	HZ	HERTZ
DWG	DRAWING	IC	INTERRUPTING CAPACITY
JB	JUNCTION BOX	PP	POWER PANEL
KCMIL	ONE THOUSAND CIRCULAR MILS	PVC	POLYVINYL CHLORIDE
KV	KILOVOLT	PWR	POWER
KVA	KILOVOLT–AMPERES	R	REMOVE
KW	KILOWATTS	RE	RELOCATED EXISTING
LP	LIGHTING PANEL	REC	RECEPTACLE
LTG	LIGHTING	RGS	RIGID GALVANIZED STEEL
MAX	MAXIMUM	RR	REMOVE & RELOCATE
MC	MOTOR CONTROLLER	SECT	SECTION
MCB	MAIN CIRCUIT BREAKER	SPDT	SINGLE POLE DOUBLE THROW
MER	MECHANICAL EQUIPMENT ROOM	SPST	SINGLE POLE SINGLE THROW
MIN	MINIMUM	SPEC	SPECIFICATION
MLO	MAIN LUGS ONLY	SW	SWITCH
MTD	MOUNTED	SWBD	SWITCHBOARD
MTS	MANUAL TRANSFER SWITCH	SYM	SYMMETRICAL
N	NEUTRAL	SYS	SYSTEMS
NIC	NOT IN CONTRACT	TEMP	TEMPERATURE
NL	NIGHT LIGHT	TXF	TOILET EXHAUST FAN
NTS	NOT TO SCALE	TYP	TYPICAL
OC	ON CENTER	UON	UNLESS OTHERWISE NOTED
P	POLES	V	VOLT/VOLTAGE
PB	PULLBOX	VA	VOLT AMPERE
W	WATT	WP	WEATHER PROOF
W	WIRE	XFMR	TRANSFORMER
E	EXISTING	IG	ISOLATED GROUND
VD	VEHICLE DETECTOR	UC	UNDER COUNTER

GENERAL NOTES

(APPLY TO ALL "E" DRAWINGS)

1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE NATIONAL ELECTRICAL CODE, 2017 NEC WITH VIRGINIA AMENDMENTS, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
2. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
4. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
5. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
7. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
8. CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
9. ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
10. CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE–EXISTING CONDITIONS OR BETTER.
11. MINIMUM SIZE OF CONDUIT SHALL BE ¾", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
12. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
13. PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS, SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND INSTALLED CANCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
14. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
15. FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
16. ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAINTIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
17. ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
18. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL, DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
19. ALL CONDUITS AND EQUIPMENT TO BE CONCEAL ED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
20. ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
21. OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE–RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE–RATED BOXES OR PUTTY PADS ARE UTILIZED.
22. COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
23. COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTACLES WITH THE ARCHITECTURAL CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
24. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL LUMINARIES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
25. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
26. LIGHTING FIXTURES PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL.
27. NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANELBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

ELECTRICAL SYMBOLS AND NOTES

Sheet Number

E0.1

1. GENERAL:

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED, MAINTAIN HEADROOM AND SPACE CONDITIONS.

C. BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

D. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOROPERATION,MAINTANANCE AND REPAIR, MINOR DEVIATIONS FROM DRAWING MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

E. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL.

F. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES. AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.

G. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

H. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

I. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL, UNLESS OTHERWISE NOTED.

J. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT, PROVIDE EQUIPMENT CURBS AS REQUIRED.

K. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT ND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

L. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

M. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

N. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

O. INSURANCE: PROVIDE IN ACCORDANCE WITH OWNER/BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

P. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATED OF INSPECTION AND APPROVAL.

2. GENERAL PROVISIONS FOR ELECTRICAL WORK:

A. DEFINITIONS:

1) "PROVIDE": TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE. AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.

5) "WIRING": RACEWAY. FITTINGS, WIRE, BOXES, AND RELATED ITEMS.

6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.

7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

B. TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.

C. QUALITY ASSURANCE

1) QUALITY OF MATERIALS: ALL EQUIPMENT SHALL BE NEW SPECIFICATION GRADE, FREE FROM DEFECTS AND LISTED BY APPROVED TESTING AGENCY AND BEARING THEIR LABEL MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.

2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.

3) CURRENT CHARACTERISTICS:

a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

4) HEIGHTS OF OUTLETS:

a. FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:

– RECEPTACLES AND TELEPHONES: 1 FT–6 IN.

– WALL SWITCHES: 4 FT–0 IN.

– WALL FIXTURES: 7 FT–0 IN.

– MOTOR CONTROLLERS: 5 FT–0 IN.

– CLOCKS: 7 FT 6 IN

b. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.

D. PRODUCT DELIVERY, STORAGE AND HANDLING

1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.

2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED, CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.

E. MATERIALS

1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.

2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.

3) INSERTS AND SUPPORTS:

a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.

– SINGLE ROD: SIMILAR TO GRINNELL FIG. 281.

– MULTI–ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS.

– CLIP FORM NAILS FLUSH WITH INSERTS.

– MAXIMUM LOADING 75 PERCENT OF RATING.

b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW.

c. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.

d. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.

F. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD–APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.

G. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.

H. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.

I. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

3. SCOPE OF WORK:

A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMING WITH THE 2008 NATIONAL ELECTRICAL CODE (NEC) NYC AMENDMENTS, AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLIED OR SPECIFIED HEREIN.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER, DATE IS EARLIER, THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDED THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR

D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

E. CONTRACTOR SHALL PERFORM ALL CONTROLLED INSPECTIONS IN ACCORDANCE WITH THE NYC BUILDING CODE. SECURE ALL REQUIRED PERMITS AND APPROVALS AND TRANSMIT SAME TO OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES.

F. AREAS WITH NO ELECTRICAL WORK SHALL REMAIN AS IS. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS TO ALL AREAS NOT COVERED BY THIS RENOVATION AND SHALL PROVIDE 48 HOUR NOTICE TO LANDLORD OF ANY PLANNED POWER INTERRUPTIONS OR SIGNAL SYSTEM OUTAGES.

4. SHOP DRAWINGS

A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:

1) PROJECT NAME AND LOCATION

2) NAME OF ARCHITECT AND ENGINEER

3) ITEM IDENTIFICATION

4) APPROVAL STAMP OF PRIME CONTRACTOR

C. SUBMISSIONS:

1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) SAFETY/DISCONNECT SWITCHES

2) FUSES

3) CIRCUIT BREAKERS

4) PANELBOARDS/LOADCENTER (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).

5) RACEWAYS

6) WIRE AND CABLE

7) WALL SWITCHES

8) INSERTION RECEPTACLES

9) MOMENTARY CONTACT SWITCHES

10) TIME SWITCHES

11) LIGHTING FIXTURES.

E. ASSIST AND PROVIDE ALL NECESSARY INFORMATION, DIAGRAMS, SKETCHES, ETC. TO THE HVAC CONTRACTOR, FOR THE PREPARATION OF COORDINATED SHOP DRAWINGS INDICATING ROUTING OF FEEDERS, CONTROL CONDUITS, RECESSED FIXTURES AND ADJACENT NEARBY PIPING AND DUCTWORK WHERE APPLICABLE, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT FOUR(4) BOOKBOUND OPERATING AND SERVICE MANUALS WHICH SHALL INCLUDE COPIES OF ALL SHOP DRAWING. PROVIDE SHOP DRAWINGS FOR PANELS, FIXTURES, WIRING DEVICES, CONDUIT, CABLE, DISCONNECT SWITCH, RELAYS, CONTRACTORS, AND OTHER SYSTEMS AS DIRECTED BY THE ENGINEER.

5. AS–BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8–1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

D. REPRODUCIBLE "AS–BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS–BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

6. LOW–VOLTAGE DISTRIBUTION EQUIPMENT:

A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.

B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS.

C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO–POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 6808F. THREE–POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 7810F. KNIFE–BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK–MAKE– QUICK–BREAK, UL CLASS R UP TO 600 AMP, MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP, ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO GENERAL ELECTRIC QMR. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.

7. FUSES:

A. CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW–PEAK DUAL–ELEMENT TIME–DELAY LPN–RK (AMP)SP (250V) /LPS–RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.

B. MOTOR CIRCUITS – ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW–PEAK DUAL–ELEMENT TIME–DELAY LPN–RK (AMP)SP (250V) /LPS–RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.

C. ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.

D. PROVIDE 1 SPACE MATCHING FUSE FOR EACH SET OF 3.

E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL–MAGNETIC, QUICK–MAKE–QUICK–BREAK, BOLT–ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP–FREE HANDLE. MULTI–POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT–TRIPPING, OPEN A ND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

1) 120 VOLTS, 100–AMP FRAME: 10,000 AMPS, 1 POLE.

2) 120/240 VOLTS, 225–AMP FRAME: 22,000 AMPS MINIMUM

8. DISTRIBUTION PANELBOARDS, CIRCUIT BREAKER TYPE:

A. THREE PHASE, 4 OR 5 WIRE, COPPER BUS BARS, WITH 2, 3, OR 4 WIRE BRANCHES, AS NOTED. CAPACITY OF PANEL AND CIRCUITS, AS NOTED BELOW. PANELBOARD TO HAVE GROUND BUS SAME SIZE AS PHASE BUSES.

B. CABINETS: CODE GAUGE GALVANIZED SHEET STEEL PRIMED AND PAINTED WITH TRIM AND DOOR, TYPE AS NOTED, LAP AND RIVET CORNERS OR FORM AS APPROVED.

C. TRIM: ONE PIECE FULL FINISH PRIMED AND PAINTED SHEET STEEL. TRIM SHALL BE MOUNTED WITH A CONTINUOUS PIANO HINGE CONFIGURED IN SUCH A MANNER THAT IT SHALL BE POSSIBLE TO GAIN FULL ACCESS TO CIRCUIT BREAKERS AND WIRING GUTTERS WITHOUT REMOVING THE TRIM. PROVIDE A MULTI–PIN CYLINDER LOCK (YALE, CORBIN OR EQUAL) TO LATCH THE TRIM. KEYS SHALL BE MILLED.

D. HARDWARE: MULTI–PIN, CYLINDER LOCKS WITH MILLED KEYS. ALL PANELS SHALL BE KEYED ALIKE. DOOR OVER 48" HIGH SHALL BE EQUIPPED WITH A CHROME PLATED VAULT HANDLE, BUILT–IN LOCK AND 3–POINT CATCH FASTENING DOOR AT TOP, BOTTOM AND CENTER.

E. HINGES: CONCEALED, CONTINUOUS PIANO HINGE AS DESCRIBED ABOVE.

F. DIRECTORY HOLDER: MEAL FRAME WITH NONBREAKABLE TRANSPARENT COVER AND DIRECTORY CARD. ENTRIES TO BE TYPEWRITTEN BY ELECTRICAL CONTRACTOR. PROVIDE AN ENGRAVED LAMINATED NAMEPLATE ADJACENT TO EACH BRANCH BREAKER. MOUNT WITH SELF TAPPING MACHINE SCREWS.

G. FURNISH MULTI–CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING NOT PERMITTED. SECURE LUGS TO BUS BY STUD BOLTS.

H. PANELBOARD CONSTRUCTION FOR BOLTED TYPE BREAKERS. MINIMUM SHORT CIRCUIT RATING 25,000 AMPERES, RMS SYMMETRICAL FOR ALL 120/208V APPLICATIONS. INDIVIDUAL CIRCUIT BREAKERS SHALL HAVE MINIMUM 100A FRAME, TRIPS SIZED AS SHOW ON THE PLANS.

I. MINIMUM GUTTER SPACES: PANELS WITH 225 AMPERE MAINS, 5–¾" MINIMUM, 400 AMPERES AND OVER, MINIMUM GUTTERS 8". FOR PANELS WITH THROUGH FEEDERS, INCREASE GUTTER WIDTH BY 2" MINIMUM AND PROVIDE A SHEET STEEL BARRIER BETWEEN THE PANEL GUTTER AND THE THROUGH FEEDER PORTION OF THE BACK BOX. BRANCH CIRCUIT BREAKERS SHALL BE MECHANICALLY INTERLOCKED WHEN SHOWN ON DRAWINGS.

J. DISTRIBUTION AND SUB–DISTRIBUTION PANELBOARDS SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

K. PANELBOARD SHALL HAVE MAIN CIRCUIT BREAKER OR MAIN LUGS AS INDICATED ON THE DRAWINGS. QUANTITY, POLES AND TRIP RATINGS OF BRANCH CIRCUIT BREAKERS TO BE AS INDICATED ON DRAWINGS.

L. PANELBOARD SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMACOID NAMEPLATE SCREWED ONTO PANE TRIM WITH DESIGNATION LISTED (PANELBOARD NAME, VOLTAGE, RATING OR MAINS IN AMPS).

9. DISTRIBUTION PANELBOARDS, SWITCH AND FUSE:

A. THREE PHASE, 3 OR 4 WIRE WITH COPPER BUS BARS. ALL THROUGH BUS SHALL BE INSULATED.

B. NEMA CLASS 1 CONSTRUCTION TO ACCOMMODATE FUSIBLE, INDIVIDUALLY ENCLOSED SWITCHES, FRONT REMOVABLE, SWITCH AND DOOR INTERLOCKS. COVERS TO BE PAD–LOCKABLE.

C. PANELBOARD SHALL BE CONSTRUCTED OF CODE–GAUGE STEEL, GRAY FINISH OVER RUST INHIBITOR, FOR SURFACE MOUNTING. BOX AND PANEL FRAME SHALL BE FLANGED AND REINFORCED FOR RIGID SUPPORT OF INTERIOR AND ACCURATE ALIGNMENT OF INTERIOR WITH FRONT. TRIMS TO BE FASTENED TO BACK BOX WITH SCREWS.

D. ALL BRANCH SWITCHES SHALL HAVE INDIVIDUAL ENGRAVED LAMICOID NAMEPLATES (BLACK WITH WHITE CORE).

E. DISTRIBUTION PANELBOARD CONSTRUCTION MINIMUM SHORT CIRCUIT RATING 25,000 AMPERES, RMS SYMMETRICAL FOR ALL 120/208V APPLICATIONS. APPLICATIONS.

F. DISCONNECTS

1) DISCONNECT SWITCHES SHALL CONFORM TO NEMA AND UL STANDARDS, AND SHALL BE HORSEPOWER RATED.

2) SWITCHING MECHANISM SHALL BE QUICK–MAKE, QUICK–BREAK, SINGLE THROW WITH EXTERNAL OPERATING HANDLE MECHANICALLY INTERLOCKED WITH ENCLOSURE COVER TO PROVIDE ACCESS TO INTERIOR WHEN DISCONNECT IS IN OFF POSITION ONLY. PROVIDE MEANS TO LOCK OPERATING HANDLE IN THE OPEN AND CLOSED POSITION. DESIGNATE ON THE ENCLOSURE THE OPEN AND CLOSED POSITION OF THE OPERATING HANDLE.

3) SWITCHES SHALL BE OF THE DOUBLE STATIONARY CONTACT TYPE.

4) SWITCHES SHALL BE EQUIPPED WITH REJECTION TYPE FUSE HOLDERS, FUSIBLE AS SHOWN ON THE DRAWINGS; PROVIDE COMPLETE WITH FUSES AS SCHEDULED.

G. INSTALLATION

1) DISTRIBUTION PANELBOARD SHALL BE MOUNTED TO STRUCTURAL STEEL CHANNEL (KINDORF) WHICH SHALL BE BOLTED TO THE WALL USING EXPANSION ANCHORS FOR LARGE PANELS.

H. IDENTIFICATION

1) PROVIDE NAMEPLATE AT EACH SWITCH IDENTIFYING THE LOAD SERVED.

2) NAMEPLATES SHALL BE MOUNTED ON THE FRONT COVER SECURED WITH SELF–TAPPING SCREWS OR NUTS AND BOLTS. NAMEPLATES SHALL BE LAMINATED PHENOLIC, BLACK WITH A MINIMUM OF ¼" HIGH WHITE LETTERING.

I. DISTRIBUTION AND SUB–DISTRIBUTION PANELBOARDS SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

J. POWER PANELBOARDS SHALL BE SIMILAR TO GENERAL ELECTRIC TYPE "OMR", AS MANUFACTURED BY ATLAS SWITCH COMPANY, ELECTRIC SWITCHBOARD COMPANY OR APPROVED EQUAL.

K. PANELBOARD SHALL HAVE MAIN CIRCUIT BREAKER OR MAIN LUGS AS INDICATED ON THE DRAWINGS. QUANTITY, POLES AND TRIP RATINGS OF BRANCH CIRCUIT BREAKERS TO BE AS INDICATED ON DRAWINGS.

L. PANELBOARD SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMACOID NAMEPLATE SCREWED ONTO PANE TRIM WITH DESIGNATION LISTED (PANELBOARD NAME, VOLTAGE, RATING OR MAINS IN AMPS).

M. MATERIALS

1) RACEWAYS:

a. RIGID STEEL CONDUIT: FULL–WEIGHT PIPE, GALVANIZED, THREADED.

b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.

c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED.

d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW–ON.

e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW–ON.

2) FITTINGS AND ACCESSORIES:

a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.

b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.

c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT.

d. BUSHINGS: METALLIC INSULATED TYPE.

NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

SET REVISIONS

DATE	11/26/24	AS NOTED	NYE	NYE
	DATE	SCALE	DRAWN	CKD	APPD

ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

ELECTRICAL SPECIFICATION-1

Sheet Number

E0.2

ELECTRICAL SPECIFICATIONS (CONT.)

3) BOXES:

a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1–1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2–3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1–1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK–TO–BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.

b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW–ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 265/460 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.

N. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. PROVIDE U–BOLTS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR THROUGH–THE–FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO HUBBELL FIRE RATED POKE–THROUGH–FLOOR BOX SYSTEM. FOR ABOVE FLOOR FITTINGS TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U–BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD–THREADED CONDUIT WITH GRAPHITE–BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD–CUT THREADS, CRC–COLD GALVANIZED. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL, FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE–RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

O. PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 300.19. CABLE SUPPORTS SHALL UTILIZE A ONE–PIECE PLUG WITH POZI–GRIP WEDGING PLUG AS MANUFACTIURED BY OZ–GEDNEY. TYPE SF SHALL BE USED FOR ARMORED CABLE.

INSTALL CABLE SUPPORTS AT THE TOP OF A VERTICAL RISE AND PROVIDE INTERMEDIATE ADDITIONAL SUPPORTS AS REQUIRED TO LIMIT SUPPORTED CONDUCTOR LENGTHS TO NOT GREATER THAN THOSE SPECIFIED IN TABLE 300.19(A).

P. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

Q. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR–TO–CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.

R. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE–PARTITIONS ROOMS.

S. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

10. WIRE AND CABLE:

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

C. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM. OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.

D. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF–2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS PROVIDE CROSS–LINKED POLYETHYLENE INSULATION (TYPE XHHW).

E. ARMORED CABLE (BX) SHALL BE UTILIZED FOR BRANCH CIRCUITS IN DRY HOLLOW LOCATIONS, HUNG CEILINGS, AND BLOCK WALLS. WHEN USED IN LIEU OF WIRING IN CONDUIT, STATE IN PROPOSAL THAT PRICE IS BASED UPON THE USE OF HOSPITAL GRADE 'BX'.

F. COLOR CODING SHALL BE AS FOLLOWS:

120/208 VOLT SYSTEM:
BLACK FOR A PHASE
RED FOR B PHASE
BLUE FOR C PHASE

1) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR–CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS.

G. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.

H. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION–TYPE OF TWIST–ON SPRING–LOADED CONNECTORS AND CLEAR NYLON–INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.

I. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 265/460 VOLT SYSTEMS, EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.

J. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

K. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP.

PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

11. WIRING DEVICES:

A. WIRING DEVICES SHALL BE SPECIFICATION GRADE UNLESS OTHERWISE SPECIFIED. ALL DEVICES SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE NOTED. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.

B. LOCAL WALL SWITCHES SHALL BE ROCKER TYPE, QUIET OPERATING, RATED 20 AMP, 120/277 VOLT, AC. SIMILAR TO LEVITON DECORA SERIES A5621 (SINGLE POLE), A5623 (3–WAY) AND A5624 (4–WAY).

C. STRAIGHT BLADE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT, DECORA SERIES BY LEVITON. GROUNDED, EXCEPT AS NOTED.

1)SINGLE GANG, RECESSED, DUPLEX RECEPTACLE: TAMPER RESISTANT, 2–POLE, 3–WIRE GROUNDING, 15A, 125V, NEMA 5–20R; LEVITON 689 SERIES (COLOR AS SPECIFIED BY ARCHITECT).

2) USB CHARGER/ DUPLEX TAMPER–RESISTANT RECEPTACLE: TAMPER RESISTANT,

D. INSERTION RECEPTACLES SHALL BE UL OR APPROVED EQUIVALENT DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT. GROUNDED, EXCEPT AS NOTED.

1) GENERAL UL LISTED:

a) DUPLEX, 20 AMP, 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT: SIMILAR TO HUBBELL NO. 8300 OR APPROVED EQUIVALENT.

b) SINGLE, 20 AMP, 125 VOLT, 2 POLE, 3 WIRE, U GROUND SLOT: SIMILAR TO HUBBELL NO. 8310 OR APPROVED EQUIVALENT.

2) GROUND FAULT INTERRUPTER RECEPTACLES:

a. 20 AMP DUPLEX FEED–THROUGH TYPE. SIMILAR TO NO. GF8300.

E. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.

F. COLORS: COORDINATE COLORS WITH ARCHITECT.

G. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

12. LIGHTING FIXTURES:

A. FIXTURES TO BE AS SPECIFIED BY ARCHITECT AND SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.

B. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

C. BALLAST: CLASS P, HIGH POWER FACTOR, LOWEST AVAILABLE NEMA RATED NOISE LEVEL, ET1 AND CBM APPROVED. ENERGY SAVING TYPE. TRIGGER START FOR 24–INCH LAMPS AND RAPID START FOR 48–INCH. TWO LAMP BALLASTS; NO THREE LAMP BALLASTS. BALLASTS SHALL BE ADVANCE MAGNETEK, UNIVERSAL OR EQUAL.

D. LED DRIVERS SHALL BE ELECTRONIC TYPE, LABELED AS COMPLIANT WITH RADIO FREQUENCY INTERFERENCE (RFI) REQUIREMENTS OF FCC TITLE 47, PART 15 AND COMPLY WITH NEMA SSL 1 "ELECTRONIC DRIVERS FOR LED DEVICES, ARRAYS OR SYSTEMS". LED DRIVERS SHALL HAVE A SOUND RATING OF "A", HAVE A MINIMUM EFFICIENCY OF 85% AND BE RATED FOR A THD OF LESS THAN 20% AT ALL INPUT VOLTAGES.

E. DIMMABLE LED DRIVERS SHALL BE CAPABLE OF DIMMING WITHOUT LED STROBING OR FLICKER ACROSS THEIR FULL DIMMING RANGE. PROVIDE TYPE OF LED DRIVER AS PER LIGHTING FIXTURE SCHEDULE, DIMMABLE LED DRIVERS SHALL BE 0–10V WHERE NOT INDICATED.

F. CONTINUOUS ROW, TWO LAMP STRIP FIXTURES SHALL BE STAGGERED TYPE.

G. FLUORESCENT LIGHTING FIXTURES, INCLUDING GENERAL CONSTRUCTION, LAMPS AND BALLASTS SHALL CONFORM TO THE ENERGY EFFICIENCY REQUIREMENTS, AND QUALITY FOR A UTILITY REBATE.

H. EXIT SIGNS SHALL BE PRECISION DIE–CAST ALUMINUM HOUSING WITH LASER–FORMED ACRYLIC LEGEND. EXIT SIGNS SHALL COMPLY WITH UL 924 AND BE MEA APPROVED.
AC POWERED WITH PREMIUM LONG–LIFE NICKEL CADMIUM BATTERY WITH STANDARD UL LISTED 3–HOUR RUN TIME. PROVIDE WITH INTEGRAL AUTOMATIC CHARGER IN A SELF CONTAINED POWER PACK. LED INDICATOR WITH PUSH TO TEST SWITCH.

13. TELEPHONE CONDUIT SYSTEM:

A. PROVIDE COMPLETE SYSTEM OF: RACEWAYS AND ACCESSORIES, OUTLET BOXES, SLEEVES AND FISHWIRES.

B. EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF TELEPHONE COMPANY.

C. OUTLETS SHALL BE:

1) WALL: 4 IN. SQUARE WITH BUSHED COVER PLATE.

D. PROVIDE FISHWIRES, IN RACEWAYS OVER 10 FT LONG.

E. CONDUIT SHALL BE 3/4 IN. MINIMUM. FURNISH EMPTY CONDUIT FROM OUTLET BOX TO BUSHED END THRU WALL 6" BELOW THE PLASTER CEILING.

F. FACE RACEWAYS IN ROOMS SHALL HUBBELL HBL500, HBL750 OR HBL2000 SERIES OR AS ACCEPTABLE.

14. GROUNDING AND BONDING:

A. PROVIDE GROUNDING SYSTEM IN ACCORDANCE WITH (2011 NATIONAL ELECTRICAL CODE WITH NYC AMENDMENTS), AND THESE SPECIFICATIONS. THE WIRING SYSTEM SHALL BE INSTALLED AS REQUIRED TO PROVIDE A CONTINUOUSLY GROUNDED SYSTEM. WHERE FLEXIBLE CONDUIT IS USED FOR PART OF A CONDUIT RUN, EXCEPT LIGHTING BRANCH CIRCUITS, AN INSULATED GROUNDING CONDUCTOR SHALL BE PROVIDED IN THE CONDUIT AND CONNECTED TO GROUNDING BUSHINGS AT EACH END OF THE RUN.

B. USE EXOTHERMIC WELDING PROCESS FOR INACCESSIBLE CONNECTIONS.

C. EXTEND EXISTING SYSTEM GROUND TO INCLUDE ALL THE ELECTRICAL EQUIPMENT IN THE SCOPE OF WORK.

D. WHERE FLEXIBLE METALLIC CONDUIT IS USED AN INTERNAL BONDING CONDUCTOR SHALL BE INSTALLED.

E. IN ADDITION, FURNISH A SEPARATE INSULATED GREEN EQUIPMENT GROUND CONDUCTOR WHERE INDICATED ON DRAWINGS AND FOR THE FOLLOWING BRANCH CIRCUITS:
1) CIRCUITS SERVING ANY WALL BOX DIMMER.

2) CIRCUITS SERVING ANY ISOLATED GROUND RECEPTACLES. TERMINATE GROUND DIRECTLY AT AN EQUIPMENT GROUNDING CONDUCTOR TERMINAL OF THE SOURCE AT THE SOURCE , OR AS OTHER WISE NOTED ON DRAWINGS.

3) CIRCUITS SERVING ANY DUPLEX OR SIMPLEX COMPUTER RECEPTACLES

4) ANY CIRCUIT SERVED VIA AN ISOLATION TRANSFORMER OR COMPUTER POWER DISTRIBUTION UNIT.

15. PANELBOARDS:

A. PANELBOARDS SHALL BE OF THE DEAD FRONT TYPE MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR MOUNTING AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS. ALL LOCKS SHALL BE KEYED ALIKE.

B. CIRCUIT BREAKERS SHALL BE OF THE BOLT–ON THERMAL MAGNETIC MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. MINIMUM GUTTER SPACES SHALL BE 5–3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED.

C. LOCKING TABS SHALL BE PROVIDED ON ALL CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE ALARM SYSTEM, SECURITY SYSTEMS AND OTHER EMERGENCY OR CRITICAL EQUIPMENT AND AS NOTED ON THE CONTRACT DRAWINGS. A TOTAL OF 5 SPARE LOCKING TABS SHALL BE FURNISHED TO THE OWNER.

D. BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.

E. ENCLOSURES SHALL BE SURFACE OR FLUSH AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS SHALL BE HINGED DOOR–IN–DOOR CONSTRUCTION WITH CYLINDER LOCKS AND CATCHES. LOCKS MUST BE COMPATIBLE WITH BUILDING STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE SIMILAR TO A YALE NO. 911 KEY.

F. DISTRIBUTION AND SUB–DISTRIBUTION PANELBOARD SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

G. ALL STANDARD PANELBOARDS SHALL BE A MINIMUM OF 20" WIDE AND 5 3/4" DEEP.

H. FURNISH ALL PANELBOARDS WITH FEED–THRU LUGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

I. ALL NEW PANELBOARDS SHALL BE PROVIDED WITH AN ENGRAVED WHITE CORE LAMACOID NAMEPLATE, WITH 3/4 IN. WHITE LETTERING ON A BLACK BACKGROUND, WITH DESIGNATION LISTED (PANELBOARD NAME), FASTENED WITH EPOXY CEMENT OR OVAL HEAD CHROME PLATED MACHINE SCREWS.

J. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

K. TIE–BARS SHALL NOT BE USED TO CREATE MULTI–POLE CIRCUITS. MAXIMUM 42 CIRCUITS ALLOWED.

L. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG.

M. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 10,000 AMPERES R.M.S. SYMMETRICAL FOR 208Y/120 VOLT SYSTEM AND 14,000 AMPERES R.M.S. SYMMETRICAL FOR 480Y/277 VOLT SYSTEM. SERIES RATED PANELBOARDS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.

N. FOR ALL EXISTING PANELBOARDS, CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO REPLACE EXISTING AS REQUIRED AS INDICATED ON DRAWINGS.

16. LOADCENTERS

A. LOAD CENTERS SHALL COMPLY WITH UL67 AND MEET FEDERAL SPECIFICATION W–P–115c.

B. CIRCUIT BREAKERS SHALL BE OF THE PLUG–IN, THERMAL MAGNETIC, MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. TANDEM OR DUPLEX TYPE CIRCUIT BREAKERS SHALL NOT BE PERMITTED. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG. TIE–BARS SHALL NOT BE USED TO CREATE MULTI–POLE CIRCUITS. MAXIMUM 42 CIRCUITS ALLOWED

C. BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.

D. ENCLOSURES MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR FLUSH MOUNTING AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS. ALL LOCKS SHALL BE KEYED ALIKE. MINIMUM GUTTER SPACES SHALL BE 5–3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED. ALL LOAD CENTERS SHALL BE 14 ¾" WIDE AND 3 ¾" DEEP.

E. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

F. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 22,000/10,000 AMPERES R.M.S. SYMMETRICAL SERIES RATING FOR 208Y/120 VOLT. SERIES RATED LOAD CENTERS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.

SET REVISIONS			DATE	11/26/24
NO	DESCRIPTION	DATE	SCALE	AS NOTED
1	FIELD CHANGE BY OWNER	11/26/24		
2	FIELD CHANGE BY OWNER	01/16/25	DRAWN	NYE
3	CITY COMMENTS	02/17/25		
4			CKD	NYE
5			APPD	

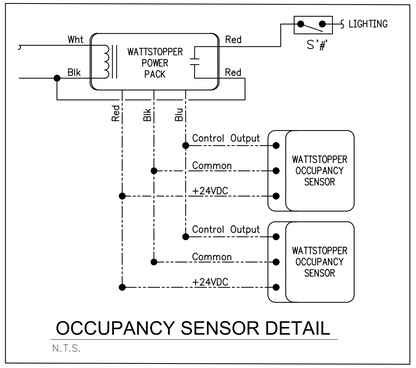
ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

ELECTRICAL SPECIFICATION-2

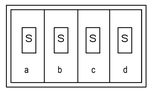
Sheet Number

E0.3



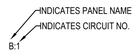
OCCUPANCY SENSOR DETAIL

N.T.S.



SWITCHBANK DETAIL

N.T.S.



LIGHTING CONTACTORS (LC) TYPICAL DETAIL

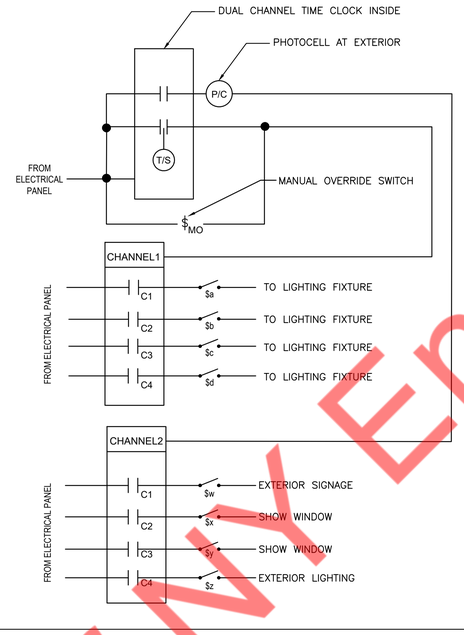
A. LIGHTING CONTACTOR PANEL SHALL BE LOCATED NEAR THE ELECTRICAL PANEL.

B. PROVIDE DUAL CHANNEL TIME CLOCK (TC), LOCATE NEAR PANEL.

C. PROVIDE MANUAL OVERRIDE SWITCH (MO) LOCATE NEAR PANEL.

D. PROVIDE PHOTOCELL (PC) LOCATE AT EXTERIOR OF THE BUILDING.

E. DIAGRAM BELOW INDICATES THE GENERAL ARRANGEMENT OF THE CONTACTOR PANEL. SEE ELECTRICAL LIGHTING PLAN FOR CIRCUIT AND CONTROL DETAILS. CONTRACTOR SHALL SELECT THE QUANTITY OF THE CONTACTORS AS REQUIRED.



LIGHTING FIXTURE SCHEDULE

TAG	FIXTURE DETAIL	MANUFACTURER/ CAT NO.	WATTS	NOTES ⚠1
A	WILCOX 24" INTEGRATED LED LIGHT	BARN LIGHT ELECTRIC CO./ LED38	38	A, B
C	INTEGRATED LED SERIES	BARN LIGHT ELECTRIC CO./ LED27	27	A, B
D	AUSTIN LED WALL SCONCE	BARN LIGHT ELECTRIC CO./ LED16	16	A, B
F	SELECTABLE BACKLIT PANEL 2"x2"	ALS/ 2–BACKLIT	40	A, B, C
G	SELECTABLE BACKLIT PANEL 2"x4"	ALS/ 4–BACKLIT	40	A, B, C
EM	EMERGENCY LIGHT FIXTURE	TBD	–	A
EXIT	EXIT SIGN WITH EM LIGHT	TBD	–	A

LIGHT FIXTURE SCHEDULE NOTES:

A. VERIFY FINAL SELECTION OF LIGHT FIXTURES WITH THE ARCHITECT PRIOR TO BID. ⚠1

B. THE ADDITIONAL ACCESSORIES (HOLDERS, ADAPTERS, DRIVERS, MOUNTING KITS) REQUIRED FOR THE PROPER INSTALLATION OF THE LIGHTING FIXTURES SHALL BE PURCHASED SEPARATELY IF NOT PROVIDED ALONG WITH THE FIXTURES.

C. SELECT RECESSED TYPE LIGHT FIXTURE FOR OFFICE AND RESTROOM.

LIGHTING GENERAL NOTES:

A. VERIFY ALL LUMINAIRE COLORS, TRIMS, LENGTHS, ETC. WITH THE ARCHITECT PRIOR TO PLACING FINAL PURCHASE ORDERS. SUBMISSION PF SHOP DRAWINGS WILL BE INTERPRETED AS HAVING BEEN COORDINATED WITH THE ARCHITECTURAL DRAWINGS.

B. PROVIDE ALL LENGTHS, FEEDS, ACCESSORIES, CONNECTORS, WIRING, POWER SUPPLIES, DRIVERS ETC. FOR A COMPLETE INSTALLATION. THE E.C. SHALL VERIFY THE COMPLETE BILL OF MATERIAL WITH MANUFACTURER'S REPRESENTATIVE AND ENSURE ALL EQUIPMENT ARE INCLUDED IN BID PRICE. COORDINATE INSTALLATION WITH ARCHITECTURAL DETAILS.

C. VERIFY FINAL LUMINAIRE LOCATIONS WITH OTHER CEILING MOUNTED EQUIPMENTS SUCH AS DIFFUSER WITH ARCHITECTURAL REFLECTED CEILING PLANS.

D. VERIFY EXACT MOUNTING HEIGHT AND LOCATIONS OF ALL WALL MOUNTED LUMINAIRE WITH ARCHITECTURAL PLANS AND ELEVATIONS PRIOR TO ROUGH–IN

E. ANY PROPOSED ALTERNATE LUMINAIRES SHALL BE APPROVED BY THE ARCHITECT PRIOR TO FINAL BID PRICING.

F. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS, EQUIPMENT AND DEVICES OTHER THAN THOSE SPECIFIED AND LISTED, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS, TO THE ENGINEERS AT LEAST TEN (10) BUSINESS DAYS PRIOR TO BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID AND SHALL INCLUDE A COMPLETE SPECIFICATIONS CUTSHEET SUBMITTAL AS OUTLINED IN THE SPECIFICATIONS, COMPLETE WITH DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. INDICATE ANY ADDITIONS OR DEDUCTIONS TO THE CONTRACT PRICE WITH THE SUBSTITUTION SUBMITTAL AND ON THE BID FORM.

G. ALL FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH 90–MINUTE BATTERY PACK AND ALL FLORECENT FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH 1300LUMENS, 90MINUTE BATTERY PACK.

H. PROVIDE SHATTER–RESISTANT LAMPS OR PROVIDE CLEAR LENSES ON ALL FIXTURES LOCATED ABOVE ALL KITCHEN AREA.

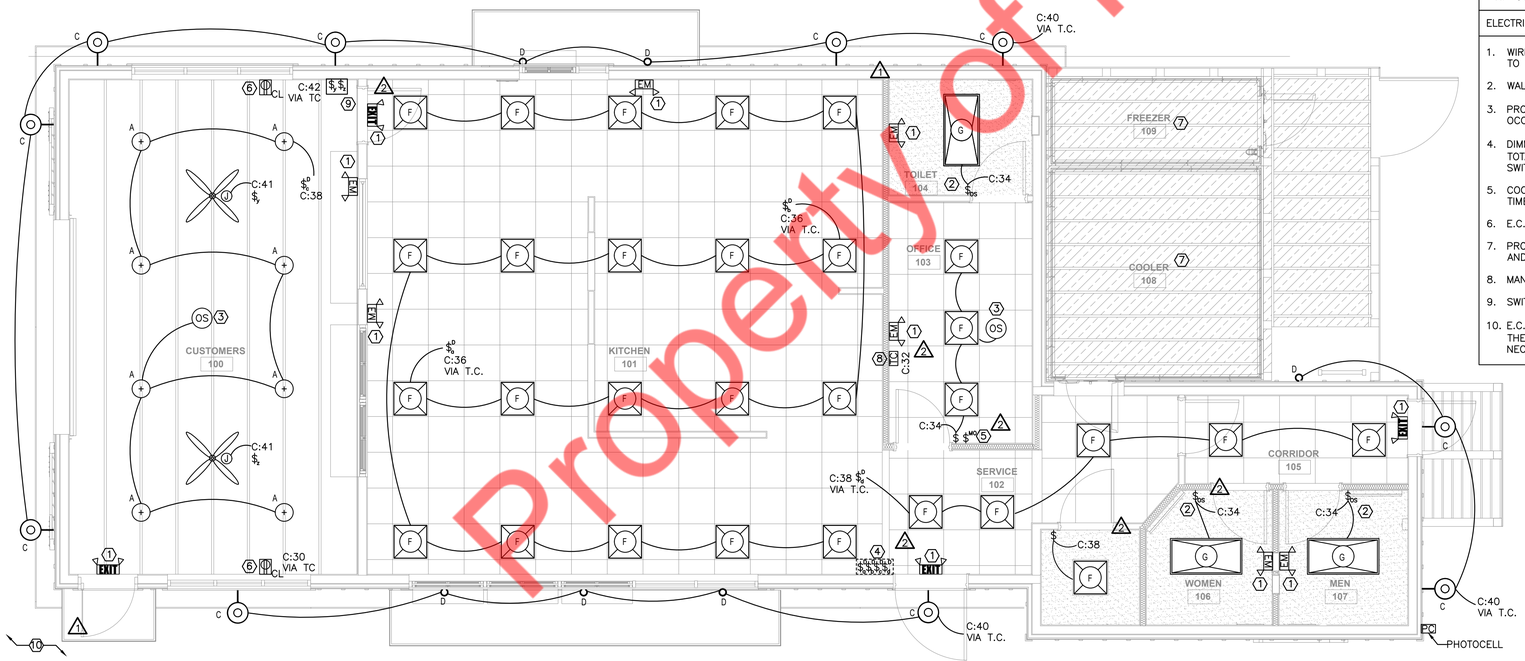
I. VERIFY FINAL SELECTION OF LIGHT FIXTURES WITH ARCHITECT.

J. E.C. SHALL COORDINATE WITH THE LIGHTING VENDOR FOR LIGHTING FIXTURE DRIVER REQUIREMENT.

K. COORDINATE LIGHTING REQUIREMENT AT MENU–BOARD. PROVIDE CIRCUIT AND CONDUIT AS REQUIRED.

ELECTRICAL LIGHTING PLAN KEY NOTES: (#)

1. WIRE ALL EMERGENCY, EXIT LIGHT AND NIGHT LAMPS AHEAD OF SWITCHING FOR CONTINUOUS OPERATIONS. CONNECT IT TO THE ADJACENT LIGHTING CIRCUIT.
2. WALL MOUNTED OCCUPANCY SENSOR WITH SWITCH. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT IN FIELD.
3. PROVIDE LOW VOLTAGE CEILING MOUNTED OCCUPANCY SENSOR WITH POWER PACK(S) AS REQUIRED. INTERCONNECT OCCUPANCY SENSORS SO THAT ANY SENSOR WILL TRIGGER ALL LIGHTS. SET OFF TIME FOR 20 MINUTES.
4. DIMMER SWITCH BANK. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. DIMMER SWITCHES SHALL BE RATED FOR TOTAL LOAD OF SWITCHED CIRCUIT AND LAMP TYPE AS REQUIRED. DIMMERS SHALL BE PROVIDED WITH AN ON/OFF SWITCH.
5. COORDINATE FINAL SELECTION AND LOCATION OF THE TIME CLOCK WITH THE ARCHITECT AND COORDINATE WITH THE TIME CLOCK VENDOR FOR MORE DETAILS AND PROVIDE ELECTRICAL CONNECTIONS AS REQUIRED.
6. E.C. TO PROVIDE SHOW WINDOW RECEPTACLES AS PER 210.62.
7. PROVIDE POWER PROVISION FOR THE WALK–IN–BOX LIGHTING. COORDINATE WITH THE WIB VENDOR FOR EXACT LOCATION AND POWER REQUIREMENT.
8. MANUAL OVERRIDE SWITCH.
9. SWITCHES FOR FAN. COORDINATE EXACT LOCATION IN FIELD.
10. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR THE EXACT LOCATION OF THE FOUR–WAY LIGHT FIXTURE IN THE OUTDOOR SEATING AREA. THE LIGHT FIXTURE SHALL BE CONNECTED TO CIRCUIT "C:31 VIA TC." PROVIDE ALL NECESSARY WIRING AND CIRCUITS TO COMPLETE THE INSTALLATION. ⚠1



N

1 LIGHTING PLAN

1/4" = 1'-0"

SET REVISIONS		
NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

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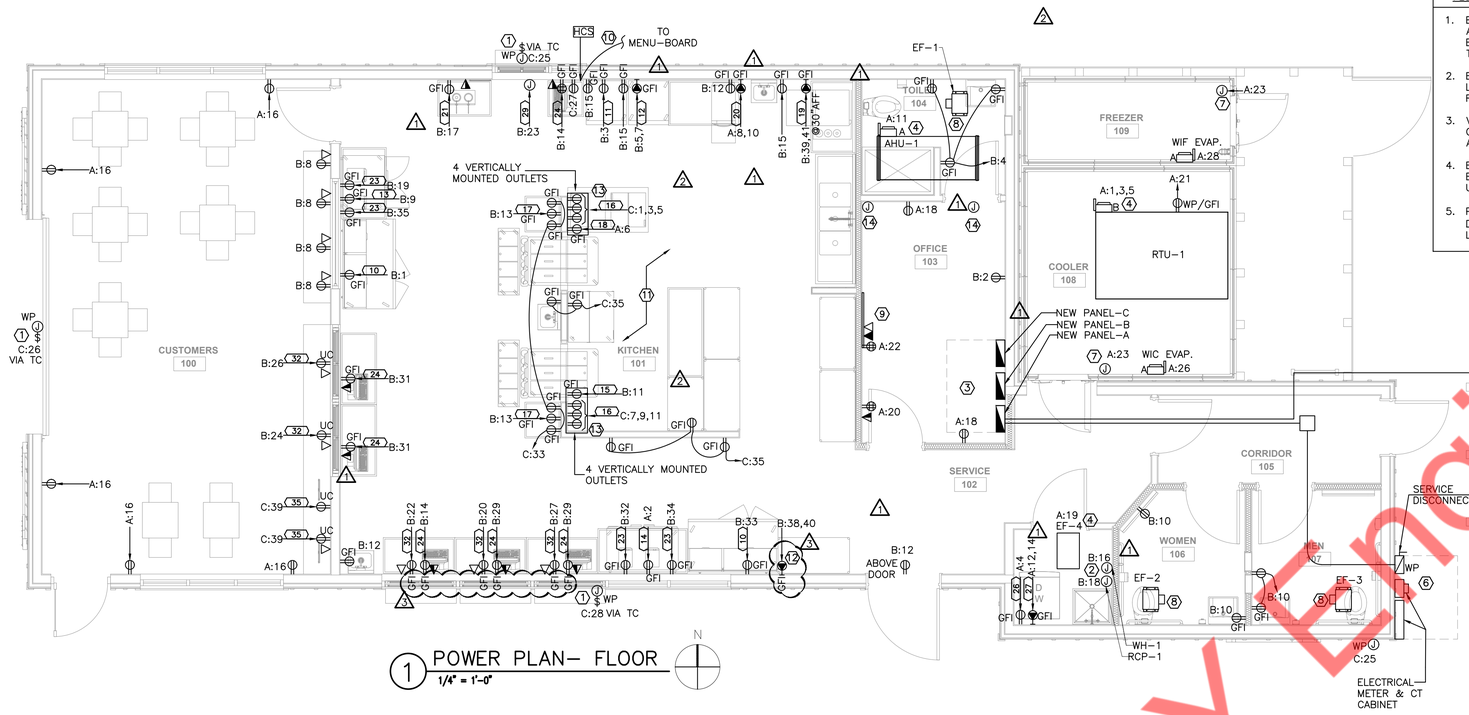
MEADOWS CUSTARD

ELECTRICAL LIGHTING PLAN

Sheet Number

E1.0



1 POWER PLAN– FLOOR
1/4" = 1'-0"

2 POWER PLAN–ROOF
1/4" = 1'-0"

FLOOR POWER PLAN KEYED NOTES: ⟨#⟩

1. E.C. SHALL COORDINATE EXACT LOCATION OF THE SIGNAGE, AND PROVIDE JUNCTION BOX AND TOGGLE SWITCH FOR EXTERIOR SIGNAGE. CONNECT TO THE INDICATED CIRCUIT VIA TIME CLOCK. COORDINATE WITH THE OWNER FOR TIME SETTING.
2. E.C. TO COORDINATE WITH PLUMBING CONTRACTOR FOR EXACT LOCATION & ELECTRICAL REQUIREMENT FOR WATER HEATER & RCP. MAKE POWER PROVISION ACCORDINGLY.
3. VERIFY EXACT LOCATION OF THE PANEL IN FIELD. ENSURE CLEAR WORKING AND DEDICATED SPACE HAVE BEEN PROVIDED AS PER NEC 110.26
4. E.C. SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF MECHANICAL UNITS. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
5. PROVIDE #4, 1" DIAMETER CONDUIT (1) FOR POWER, (1) FOR DATA, (1) FOR SPEAKER/VOICE (1) FOR VEHICLE DETECTOR LOOP.
6. E.C. SHALL COORDINATE WITH ARCHITECT / OWNER FOR EXACT LOCATION OF THE METER & DISCONNECT IN THE FIELD.
7. COORDINATE WITH WIB VENDOR FOR EXACT LOCATION & POWER REQUIREMENTS.
8. EXHAUST FAN IN THE ROOM SHALL BE CIRCUITED & CONTROLLED ALONG WITH THE LIGHTING FIXTURE IN THE SAME ROOM.
9. PLYWOOD BACK WITH THE QUAD RECEPTACLES, TO MOUNT THE BASE STATION, TIMER AND HEADSET RACK AND BATTERY CHARGER. TO BE IN THE STORE. COORDINATE EXACT LOCATION IN FIELD.
10. ONE 1" DEDICATED CONDUIT FROM MENU-BOARD TO THE HEADSET COMMUNICATION SYSTEM (HCS) NEAR DRIVE THRU. COORDINATE EXACT LOCATION IN FIELD.
11. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL THE RECEPTACLES AND DISCONNECTS ON THE CENTER OF THE KITCHEN. PRIOR TO BID. BASE BID ACCORDINGLY.
12. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT POWER REQUIREMENTS, CONDUCTOR SIZING, OCPD AND CONTROL IN THE FIELD. PROVIDE WIRING AND POWER ACCORDINGLY.
13. THREE OUTLETS ARE REQUIRED FOR THE EQUIPMENT #16. INSTALL AS PER USER MANUAL.
14. JUNCTION BOXES SHOWN FOR THE REFERENCE PURPOSE ONLY. PROVIDE POWER PROVISION FOR EQUIPMENT ACCORDINGLY. CONNECT TO C:37.

SPECIALTY EQUIPMENT SCHEDULE

Mark	DESCRIPTION	VOLTAGE	PHASE	AMPERE	CONNECTION TYPE
10	SOLID DOOR FOOD PREP TABLE	120V	1 – PHASE	3.9	NEMA5–15P
11	REACH–IN SOLID SWING DOOR COOLER	120V	1 – PHASE	2.2	NEMA5–15P
12	REACH–IN SOLID SWING DOOR FREEZER	208V	1 – PHASE	2.7	AS PER MANUFACTURER INSTALLATION MANUAL
13	FREEZER, UNDERCOUNTER	120V	1 – PHASE	5.2	NEMA5–15P
14	FREEZER, UNDERCOUNTER	120V	1 – PHASE	5.0	NEMA5–15P
15	MILK COOLER	120V	1 – PHASE	2.2	NEMA5–15P
16	FROZEN CUSTARD MACHINE	208V	3 – PHASE	9.0	AS PER MANUFACTURER INSTALLATION MANUAL
17	ICE CREAM DIPPING CABINET	120V	1 – PHASE	7.8	NEMA5–15P
18	ICE CREAM STORAGE CABINET	120V	1 – PHASE	3.6	NEMA5–15P
19	WAREWASHER	208V	1 – PHASE	32.5	COPPER WIRE
20	OVEN CONVECTION/MICROVAVE COMBI	208V	1 – PHASE	30	NEMA6–30P
21	SINGLE SPECIALTY WARMERS	120V	1 – PHASE	15	NEMA5–15P
23	FLAVOR BLENDER	120V	1 – PHASE	10	NEMA5–15P
24	P.O.S. SYSTEM & TERMINALS				AS PER MANUFACTURER INSTALLATION MANUAL
26	FRONT LOAD WASHER	120V	1 – PHASE		AS PER MANUFACTURER INSTALLATION MANUAL
27	FRONT LOAD DRYER	208V	1 – PHASE	24	AS PER MANUFACTURER INSTALLATION MANUAL
28	MANUAL SELF CLOSING SLIDING SERVICE WINDOW	120V	1 – PHASE	15	AS PER MANUFACTURER INSTALLATION MANUAL
29	MOER SLIDING SERVICE WINDOW	120V	1 – PHASE	15	AS PER MANUFACTURER INSTALLATION MANUAL
32	FLAT SCREEN TV				AS PER MANUFACTURER INSTALLATION MANUAL
33	MENU–BOARD				AS PER MANUFACTURER INSTALLATION MANUAL
35	TOUCHSCREEN	120V	1 – PHASE	5	AS PER MANUFACTURER INSTALLATION MANUAL
29	MOER SLIDING SERVICE WINDOW	120V	1 – PHASE	15	AS PER MANUFACTURER INSTALLATION MANUAL
	CONDENSING UNIT FOR CUSTARD MACHINE	208V	3 – PHASE	15	AS PER MANUFACTURER INSTALLATION MANUAL

ROOF POWER PLAN KEYED NOTES: ⟨#⟩

1. E.C. SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF MECHANICAL UNITS. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
2. COORDINATE EXACT LOCATION AND POWER REQUIREMENT OF THE CONDENSING UNIT IN THE FIELD. PROVIDE POWER PROVISION ACCORDINGLY.
3. COORDINATE EXACT LOCATION FOR THE WIB COOLER/FREEZER CONDENSER IN THE FIELD. PROVIDE CIRCUIT AND DISCONNECTS AS REQUIRED.

ELECTRICAL POWER PLAN GENERAL NOTES:

A. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE INDICATED.

B. MOUNT ALL RECEPTACLES AT 18" ABOVE FINISHED FLOOR TO CENTER OF THE COVER PLATE UNLESS OTHERWISE INDICATED.

C. COORDINATE WITH OTHER DISCIPLINES IN THE FIELD TO ENSURE THAT THE INTEGRITY OF FIRE RATED CONSTRUCTION IS PRESERVED WHERE PENETRATING RATED WALLS AND FLOORS.

D. THE CONTRACTOR SHALL ROUTE ALL EXPOSED CONDUIT NEATLY AND TIGHT TO SUPPORTING SURFACES. IN THE EVENT THAT THE OWNER IS NOT SATISFIED WITH WORKMANSHIP, THE CONTRACTOR SHALL MAKE CORRECTIONS AT NO ADDITIONAL COST TO THE OWNER. MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.

E. FOR ALL CONDUIT RUNS SHOWN ON ELECTRICAL DRAWINGS, THE ROUTING IS APPROXIMATE. THE CONTRACTOR SHALL MAKE ROUTING ADJUSTMENTS AS REQUIRED BASED ON FIELD CONDITIONS AND COORDINATION WITH OTHER DISCIPLINES.

F. IN THE EVENT THAT THERE IS A DISCREPANCY IN THE MINIMUM CIRCUIT AMPACITY (MCA) AND/OR THE MAXIMUM OVERCURRENT PROTECTION (MOCP) BETWEEN THE DIVISION 26 AND DIVISION 22/23 SCHEDULES, THE CONTRACTOR SHALL BID ACCORDING TO THE MORE STRINGENT REQUIREMENTS.

G. MECHANICAL, PLUMBING, AND OTHER EQUIPMENT FURNISHED AND INSTALLED BY OTHER DIVISIONS IS SHOWN ON ELECTRICAL DRAWINGS FOR CIRCUITING PURPOSES ONLY. THE CONTRACTOR SHALL REFER TO OTHER DISCIPLINE CONSTRUCTION DOCUMENTS FOR EXACT LOCATIONS OF EQUIPMENT PRIOR TO ROUGH–IN OF THE ASSOCIATED ELECTRICAL CIRCUITS, DISCONNECTING MEANS, OUTLETS, ETC. AND ADJUST ROUTING AND LOCATIONS ACCORDINGLY.

H. THE RECEPTACLES MARKED AS "GFI" ON THE FLOOR PLAN INDICATES THAT THE RECEPTACLE SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE GFI BREAKER IN PANEL IF GFI RECEPTACLE IS NOT READILY ACCESSIBLE OR FOR THE RECEPTACLES OTHER THAN 20A.

I. ALL THE RECEPTACLES SHALL BE GFI PROTECTED EITHER AT RECEPTACLE OR AT ELECTRICAL PANEL AS SPECIFIED IN NEC 210.8(B)

J. E.C. SHALL PROVIDE DISCONNECT WITH IN THE SIGHT FROM THE APPLIANCE OR LOCKOUT IN THE PANEL FOR ALL PERMANENTLY CONNECTED APPLIANCE, AS PER NEC 422.31.

K. E.C. TO ENSURE ALL THE RECEPTACLES LOCATED OUTSIDE OF THE BUILDING ARE GFI PROTECTED.

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

ELECTRICAL POWER PLAN

Sheet Number
E2.0

PANEL:	A	(NEW)	AIC RATING - 10kA (3)								MOUNTING:	RECESSED	
208Y/120	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:	CORRIDOR	
MCB	400A		BUS:	400A	MINIMUM						FED FROM:	METER VIA DIS. SWITCH	
NOTE:													

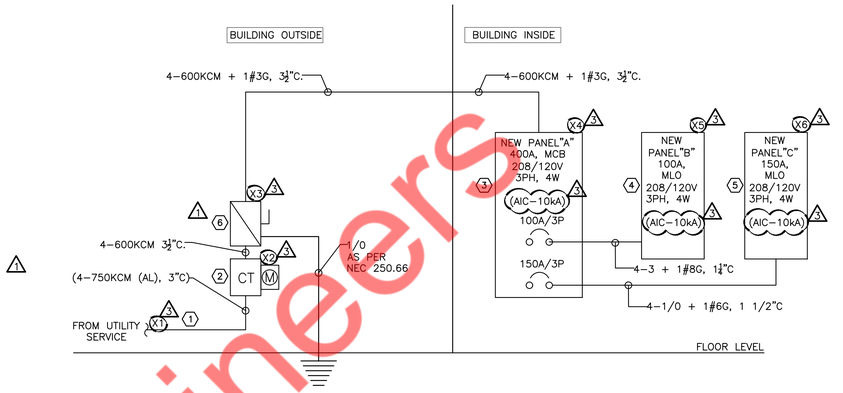
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	5.28		5.88			2-12 + 1#12G, 3/4"C	0.60	E	14-FREEZER, UNDERCOUNTER	20	2
3	60/3P	RTU-1	H	5.28	3-6 + 1#10G, 3/4"C		5.46		2-12 + 1#12G, 3/4"C	0.18	E	26-FRONT LOAD WASHER	20	4
5			H	5.28				5.71	2-12 + 1#12G, 3/4"C	0.43	E	18-ICE CREAM STORAGE CABINET	20	6
7	60/2P	ACCU-1	H	3.53	2-6 + 1#10G, 3/4"C	6.65			2-8 + 1#10G, 3/4"C	3.12	E	20-OVEN CONVECTION/MICROVAVE COMBI	40/2P	8
9			H	3.53			6.65			3.12	E			10
11	20	AHU-1	H	1.69	2-12 + 1#12G, 3/4"C			4.19	2-10 + 1#10G, 3/4"C	2.50	E	27-FRONT LOAD DRYER	30/2P	12
13			O	8.71		11.21				2.50	E			14
15	100/3P	PANEL-B	O	8.71	4-3 + 1#8G, 1-1/4"C		9.61		2-12 + 1#12G, 3/4"C	0.90 (2)	R	GENERAL RECEPTACLE	20	16
17			O	8.71				9.07	2-12 + 1#12G, 3/4"C	0.36	R	OFFICE GENERAL RECEPTACLE	20	18
19	20	EF-4	H	0.50	2-12 + 1#12G, 3/4"C	1.58			2-12 + 1#12G, 3/4"C	1.08	R	OFFICE RECEPTACLE	20	20
21	20	SERVICE RECEPTACLE	R	0.36	2-12 + 1#12G, 3/4"C		1.44		2-12 + 1#12G, 3/4"C	1.08	R	OFFICE RECEPTACLE	20	22
23	20	WIB MISCELLANEOUS LOAD	R	1.00	2-12 + 1#12G, 3/4"C			1.00				SPARE	20	24
25			O	2.70		3.20			2-12 + 1#12G, 3/4"C	0.50	O	WI COOLER EVAPORATOR	20	26
27	30/3P	WI COOLER CONDENSER	O	2.70	3-10 + 1#10G, 3/4"C		3.90		2-12 + 1#12G, 3/4"C	1.20	O	WI FREEZER EVAPORATOR	20	28
29			O	2.70				2.70				SPARE	20	30
31			O	2.70		2.70						SPARE (1)	20	32
33	30/3P	WI FREEZER CONDENSER	O	2.70	3-10 + 1#10G, 3/4"C		2.70					SPARE	20	34
35			O	2.70				2.70				SPARE	20	36
37			O	18.06		18.06						SPARE	20	38
39	150/3P	PANEL-C	O	18.06	4-1/0 + 1#6G, 1-1/2"C		18.06					SPARE	20	40
41			O	18.06				18.06				SPARE	20	42
						49.29	**47.83**	**43.44**						

PANEL:	B	(NEW)	AIC RATING - 10kA (3)								MOUNTING:	RECESSED	
208Y/120	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:	CORRIDOR	
MLO	100A		BUS:	125A	MINIMUM						FED FROM:	PANEL-A	
NOTE:													

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	10-SOLID DOOR FOOD PREP TABLE WITH ALTERNATE TOP & HYDROCARBON REFRIGERANT	E	0.47 (1)	2-12 + 1#12G, 3/4"C	0.65			2-12 + 1#12G, 3/4"C	0.18	R	RESTROOM RECEPTACLE	20 (2)	2
3	20	11-REACH-IN SOLID SWING DOOR COOLER WITH HYDROCARBON REFRIGERANT	E	0.26	2-12 + 1#12G, 3/4"C		0.80		2-12 + 1#12G, 3/4"C	0.54	R	OFFICE TOILET RECEPTACLES	20	4
5	20/2P	12-REACH-IN SOLID SWING DOOR FREEZER WITH HYDROCARBON REFRIGERANT	E	0.23	2-12 + 1#12G, 3/4"C			0.23				SPARE	20	6
7			E	0.23		0.95			2-12 + 1#12G, 3/4"C	0.72	R	GENERAL RECEPTACLE	20	8
9	20	13-FREEZER, UNDERCOUNTER	E	0.62	2-12 + 1#12G, 3/4"C		1.34		2-12 + 1#12G, 3/4"C	0.72	R	RESTROOM RECEPTACLE	20	10
11	20	15-MILK COOLER	E	0.26	2-12 + 1#12G, 3/4"C			0.62	2-12 + 1#12G, 3/4"C	0.36	R	GENERAL RECEPTACLE	20	12
13	20	17-ICE CREAM DIPPING CABINET	E	1.87 (1)	2-12 + 1#12G, 3/4"C	2.67			2-12 + 1#12G, 3/4"C	0.80	E	24-P.O.S. SYSTEM & TERMINALS	20	14
15	20	KITCHEN AREA GENERAL RECEPTACLE	R	0.54	2-12 + 1#12G, 3/4"C (1)		0.64		2-12 + 1#12G, 3/4"C	0.10	O	WH-1	20	16
17	20	21-SINGLE SPECIALTY WARMERS	E	1.80	2-12 + 1#12G, 3/4"C			2.30	2-12 + 1#12G, 3/4"C	0.50	O	RCP-1	20	18
19	20	23-FLAVOR BLENDER	E	1.20	2-12 + 1#12G, 3/4"C	2.10			2-12 + 1#12G, 3/4"C	0.90	E	32-FLAT SCREEN TV	20	20
21	20	SPARE			(1)		0.90		2-12 + 1#12G, 3/4"C	0.90	E	32-FLAT SCREEN TV	20	22
23	20	29-MOER SLIDING SERVICE WINDOW	E	1.80	2-12 + 1#12G, 3/4"C			3.70	2-12 + 1#12G, 3/4"C	1.90	E	32-FLAT SCREEN TV	20	24
25	20	SPARE				2.90			2-12 + 1#12G, 3/4"C	2.90	E	32-FLAT SCREEN TV	20	26
27	20	32-FLATCREEN TV	E	0.90	2-12 + 1#12G, 3/4"C		0.90					SPARE (1)	20	28
29	20	24-P.O.S. SYSTEM & TERMINALS	E	0.80	2-12 + 1#12G, 3/4"C			0.80				SPARE	20	30
31	20	24-P.O.S. SYSTEM & TERMINALS	E	0.80	2-12 + 1#12G, 3/4"C	2.00			2-12 + 1#12G, 3/4"C	1.20	E	23-FLAVOR BLENDER	20	32
33	20	10-SOLID DOOR FOOD PREP TABLE WITH ALTERNATE TOP & HYDROCARBON REFRIGERANT	E	0.47	2-12 + 1#12G, 3/4"C		1.67		2-12 + 1#12G, 3/4"C	1.20	E	23-FLAVOR BLENDER	20	34
35	20	23-FLAVOR BLENDER	E	1.20	2-12 + 1#12G, 3/4"C			1.20				SPARE	20	(1) 36
37	20	SPARE			(1)	1.66			2-12 + 1#12G, 3/4"C	1.66	O	SERVICE AREA SPECIAL RECEPTACLE	20/2P	38
39	50/2P	19-WAREWASHER	E	3.38	2#8 + 1#10G, 3/4"C		5.04			1.66	O			40
41			E	3.38				3.38				SPARE	20	42
						12.93	**11.30**	**12.23**						

PANEL:	C	(NEW)	AIC RATING - 10kA (3)								MOUNTING:	RECESSED	
208Y/120	VOLTS		3	PHASE	4	WIRE					PANEL LOCATION:	CORRIDOR	
MLO	150A		BUS:	225A	MINIMUM						FED FROM:	PANEL-A	
NOTE:													

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	(2)		E	2.28	(2)	4.08				1.80	H	CONDENSER UNIT FOR CUSTARD MACHINE	20/3P	2
3	30/3P*	16-FROZEN CUSTARD MACHINE	E	2.28	4-10 + 1#10G, 3/4"C		4.08		3-12 + 1#12G, 3/4"C	1.80	H			4
5			E	2.28				4.08		1.80	H			6
7			E	2.28		4.08				1.80	H	CONDENSER UNIT FOR CUSTARD MACHINE	20/3P	8
9	30/3P*	16-FROZEN CUSTARD MACHINE	E	2.28	4-10 + 1#10G, 3/4"C		4.08		3-12 + 1#12G, 3/4"C	1.80	H			10
11			E	2.28				4.08		1.80	H			12
13			H	1.80		3.60				1.80	H	CONDENSER UNIT FOR CUSTARD MACHINE	20/3P	14
15	20/3P	CONDENSER UNIT FOR CUSTARD MACHINE	H	1.80	3-12 + 1#12G, 3/4"C		3.60		3-12 + 1#12G, 3/4"C	1.80	H			16
17			H	1.80				3.60		1.80	H			18
19			H	1.80		3.60				1.80	H	CONDENSER UNIT FOR CUSTARD MACHINE	20/3P	20
21	20/3P	CONDENSER UNIT FOR CUSTARD MACHINE	H	1.80	3-12 + 1#12G, 3/4"C		3.60		3-12 + 1#12G, 3/4"C	1.80	H			22
23			H	1.80				3.60		1.80	H			24
25	20	SIGN	L	1.00	2-12 + 1#12G, 3/4"C	2.20			2-12 + 1#12G, 3/4"C	1.20	L	EXTERIOR SIGNAGE	20	26
27	20	HEADSET COMMUNICATION SYSTEM	R	0.18	2-12 + 1#12G, 3/4"C		1.38		2-12 + 1#12G, 3/4"C	1.20	L	EXTERIOR SIGNAGE	20	28
29	20	33-MENU BOARD	O	1.00	2-12 + 1#12G, 3/4"C (1)			2.00	2-12 + 1#12G, 3/4"C	1.00	R	SHOW WINDOW RECEPTACLE	20	30
31	20	EXTERIOR FOUR WAY LIGHT	L	1.00	2-12 + 1#12G, 3/4"C	1.10			2-12 + 1#12G, 3/4"C	0.10	L	TIME CLOCK	20	32
33	20	KITCHEN AREA GENERAL RECEPTACLES	R	0.72	2-12 + 1#12G, 3/4"C		0.96		2-12 + 1#12G, 3/4"C	0.24	L	LIGHTING- RESTROOM, OFFICE	20	34
35	20	KITCHEN AREA GENERAL RECEPTACLES	R	0.90 (2)	2-12 + 1#12G, 3/4"C			1.70	2-12 + 1#12G, 3/4"C	0.80 (1)	L	LIGHTING- KITCHEN	20	36
37	20	SPARE				0.58			2-12 + 1#12G, 3/4"C	0.58	L	LIGHTING- CUSTOMERS, SERVICE AREA	20	38
39	20	SPARE					0.37		2-12 + 1#12G, 3/4"C	0.37	L	EXTERIOR LIGHTING	20	40
41	20	SPARE						1.00	2-12 + 1#12G, 3/4"C	1.00	R	SHOW WINDOW RECEPTACLE	20	42
						19.24	**18.07**	**20.06**						



RISER DIAGRAM GENERAL NOTES

A. ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ AND CALCULATE ACTUAL AIC REQUIRED PRIOR TO BID.

B. E.C. TO VERIFY EXACT POWER DISTRIBUTION IN FIELD. VERIFY SCOPE OF WORK WITH OWNER/LANDLORD PRIOR TO BID.

C. E.C. TO VERIFY SCOPE OF WORK WITH OWNER/LANDLORD. PRIOR TO BID.

RISER DIAGRAM KEYED WORK NOTES

1. NEW 600A, 120V/208V 3PHASE 4W SERVICE FEEDER FROM UTILITY SERVICE. E.C. TO CO-ORDINATE WITH LANDLORD/OWNER FOR MORE DETAILS. E.C. TO VERIFY SCOPE OF WORK WITH LANDLORD/OWNER PRIOR TO BID.
2. NEW 600A, 120V/208V, 3 PH CT CABINET WITH METER BY LANDLORD. E.C. TO CO-ORDINATE WITH OWNER/UTILITY COMPANY FOR EXACT LOCATION.
3. NEW 400A, 120V/208V 3 PH, 4W, ELECTRICAL PANEL "A" PROVIDED BY LANDLORD. E.C. TO CO-ORDINATE EXACT LOCATION OF PANEL WITH ARCHITECT/OWNER.
4. NEW 100A, 120V/208V 3 PH, 4W, ELECTRICAL PANEL "B" AND ELECTRICAL PANEL "C". E.C. TO CO-ORDINATE EXACT LOCATION OF PANEL WITH ARCHITECT/OWNER.
5. NEW 150A, 120V/208V 3 PH, 4W, ELECTRICAL PANEL "C" AND ELECTRICAL PANEL "C". E.C. TO CO-ORDINATE EXACT LOCATION OF PANEL WITH ARCHITECT/OWNER.
6. NEW 400A, 120V/208V 3 PH, 4W, SERVICE DISCONNECT SWITCH. E.C. SHALL CO-ORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.

PANEL BOARD SCHEDULE GENERAL NOTES

1. ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY THE ELECTRICAL REQUIREMENT FOR CIRCUITING IN FIELD AS PER THE FINAL ELECTRICAL LOAD AND INFORM ENGINEER FOR ANY DISCREPANCIES.
2. E.C. TO VERIFY THE BREAKER AND CABLE SIZE FOR ALL THE EQUIPMENTS WITH EQUIPMENT SUPPLIER/MANUFACTURER AND ACCORDINGLY UPDATE THE BREAKER/CABLES IF REQUIRED IN FIELD AS PER FINAL EQUIPMENT SELECTION. BASE BID ACCORDINGLY.

ELECTRICAL RISER SYMBOL

- NEW
- EXISTING ITEM/FEEDER TO REMAIN
- EXISTING ITEM/FEEDER TO BE DISCONNECTED & REMOVED

ELECTRICAL PANEL SCHEDULE ABBREVIATIONS

L = LIGHTING
R = RECEPTACLE
H = HVAC
M = MOTOR
E = EQUIPMENT
O = OTHER (2)

* = COORDINATE EXACT BREAKER REQUIREMENT

LOAD SUMMARY				
	PANEL A	PANEL B	PANEL C	TOTAL
TOTAL CONNECTED LOAD (IN KVA)	46.74	36.46	57.36	140.56
TOTAL DEMAND LOAD (IN KVA)	55.86	26.14	54.19	136.20
TOTAL CONNECTED CURRENT (IN AMPS)	129.89	101.31	159.41	390.61
TOTAL DEMAND CURRENT (IN AMPS)	155.25	72.64	150.61	378.50

(3)

FAULT CURRENT CALCULATIONS						
	LOCATION OF FAULT CURRENT					
	X1	X2	X3	X4	X5	X6
FEEDER LENGTH	-	295 ft	5 ft	40 ft	3 ft	5 ft
FEEDER SIZE	-	750	600	600	3	1/0
QYT (PER PHASE)	-	1	1	1	1	1
TYPE	-	Three-conductor cable	Three-conductor cable	Three-conductor cable	Three-conductor cable	Three-conductor cable
CONDUIT	-	Nonmagnetic	Steel	Steel	Steel	Steel
WIRE	-	Al, 600V	Cu, 600V	Cu, 600V	Cu, 600V	Cu, 600V
I total s.c. (L-L-L)	12171A	5997A	5945A	5562A	5406A	5426A
V (L-L)	208V	208V	208V	208V	208V	208V
KVA	-	-	-	-	-	-
VOLTAGE secondary	-	-	-	-	-	-
%Z	-	-	-	-	-	-
%Z total	-	-	-	-	-	-

NOTE: THE ABOVE CALCULATION IS BASED ON EATON BUSSMANN SERIES FAULT CALCULATION.

SET REVISIONS NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

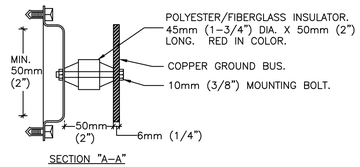
ARCHITECT OF THE RECORDS

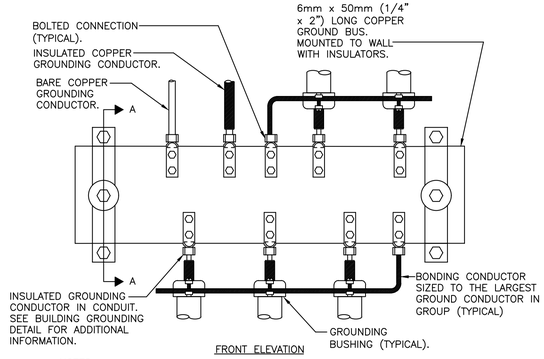
MEADOWS CUSTARD

RISER DIAGRAM & PANEL SCHEDULE

Sheet Number

E3.0



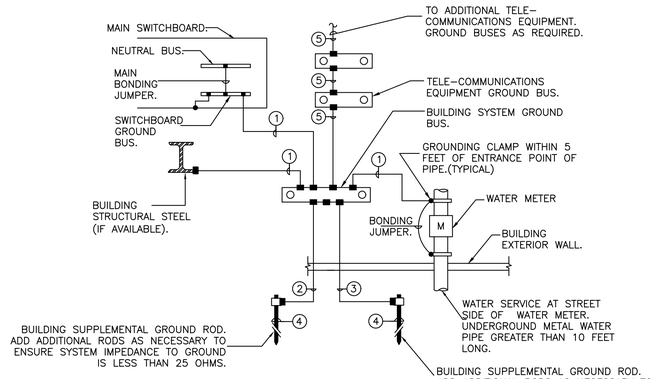


NOTES:

1. REFER TO BUILDING GROUNDING ELECTRODE SYSTEM DETAIL FOR EXACT CONFIGURATION.

1 BUILDING ELECTRICAL SYSTEMS GROUND BUS

N.T.S

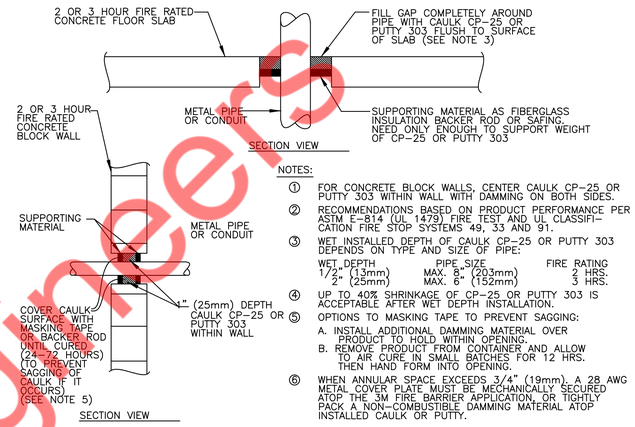


LEGEND:

- ● INDICATES BOLTED CONNECTION.
- ■ INDICATES EXOTHERMIC WELD CONNECTION, COMPATIBLE WITH MATERIALS BEING JOINED.
- (1) INSULATED COPPER GROUNDING ELECTRODE CONDUCTOR IN CONDUIT SIZED AS PER NEC ARTICLE 250.66.
- (2) INSULATED COPPER GROUNDING ELECTRODE CONDUCTOR ENCASED IN CONCRETE SIZED AS PER NEC ARTICLE 250.66
- (3) #2 IN 3/4"C AWG BARE COPPER GROUND CONDUCTOR.
- (4) 3/4" x 10'-0" LONG COPPER-CLAD GROUND ROD DRIVEN WITH TOP 12" BELOW GRADE.
- (5) #1/0 IN 1"C INSULATED COPPER GROUND CONDUCTOR IN 30mm CONDUIT.

2 BUILDING GROUNDING ELECTRODE SYSTEM

N.T.S



NOTES:

1. FOR CONCRETE BLOCK WALLS, CENTER CAULK CP-25 OR PUTTY 303 WITHIN WALL WITH DAMMING ON BOTH SIDES.
2. RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL CLASSIFICATION FIRE STOP SYSTEMS 49, 33 AND 91.
3. WET INSTALLED DEPTH OF CAULK CP-25 OR PUTTY 303 DEPENDS ON TYPE AND SIZE OF PIPE:

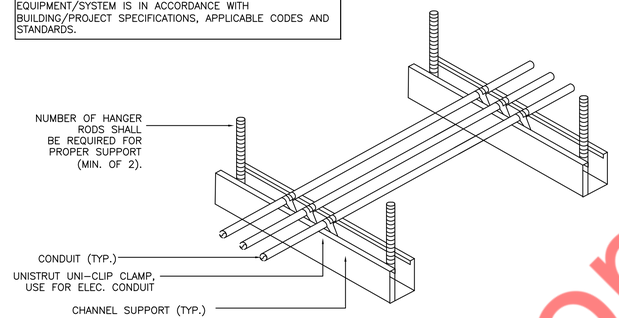
WET DEPTH	PIPE SIZE	FIRE RATING
1/2" (13mm)	MAX. 8" (203mm)	2 HRS.
2" (25mm)	MAX. 6" (152mm)	3 HRS.

4. UP TO 40% SHRINKAGE OF CP-25 OR PUTTY 303 IS ACCEPTABLE AFTER WET DEPTH INSTALLATION.
5. OPTIONS TO MASKING TAPE TO PREVENT SAGGING:
   A. INSTALL ADDITIONAL DAMMING MATERIAL OVER PRODUCT TO HOLD WITHIN OPENING.
   B. REMOVE PRODUCT FROM CONTAINER AND ALLOW TO AIR CURE IN SMALL BATCHES FOR 12 HRS. THEN HAND FORM INTO OPENING.
6. WHEN ANNULAR SPACE EXCEEDS 3/4" (19mm), A 28 AWG METAL COVER PLATE MUST BE MECHANICALLY SECURED ATOP THE 3M FIRE BARRIER APPLICATION, OR TIGHTLY PACK A NON-COMBUSTIBLE DAMMING MATERIAL ATOP INSTALLED CAULK OR PUTTY.

3 FIRE STOP DETAIL

N.T.S

NOTE:
THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USER'S RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IS IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.



NOTES:

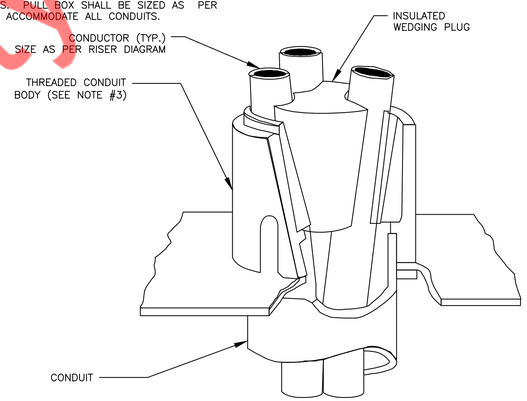
1. ALL CONDUIT MAY BE COMBINED ON SAME SUPPORT CHANNEL WHERE PRACTICAL.
2. SUPPORT CHANNEL LENGTH SHALL NOT BE DETERMINED UNTIL ALL PIPING, CONDUIT, ETC. TO BE SUPPORTED IS COORDINATED.
3. SUPPORT CHANNEL SPACING SHALL BE NO MORE THAN 10'-0"
4. UNISTRUT AND CONDUIT INSTALLATION MAY BE REVERSED.

4 CONDUIT SUPPORT DETAIL

N.T.S

NOTES:

1. ALL CONDUCTORS IN VERTICAL RACEWAYS SHALL BE SUPPORTED IN ACCORDANCE WITH ARTICLE 300.19 OF NEC. CABLE SUPPORTS SHALL BE LOCATED AT THE INTERVALS REQUIRED BY THE NEC.
2. CABLE SUPPORT SYSTEM SHALL BE AS MANUFACTURED BY O-Z GEDNEY WITH ρOZI-GRIP "S-STYLE" WEDGING PLUG OR APPROVED EQUAL.
3. FOR THREADLESS CONDUIT (RIGID, IMC OR EMT), ATTACH CONDUIT BODY TO MALE THREADS OF A SET SCREW OR COMPRESSION CONNECT, AS PERMITTED BY SPECIFICATIONS.
4. PROVIDE PULL BOX AT EACH LOCATION OF CABLE SUPPORTS. PULL BOX SHALL BE SIZED AS PER CODE TO ACCOMMODATE ALL CONDUITS.



5 VERTICAL CABLE SUPPORT DETAIL

N.T.S

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

ELECTRICAL DETAILS

Sheet Number

E4.0

PLUMBING SYMBOLS LIST

— SAN —	SANITARY SEWER (UNDERFLOOR)
— — — —	VENT PIPING
— - —	COLD WATER PIPING
— - - —	HOT WATER RETURN PIPING
— — - —	HOT WATER PIPING
— G —	GAS PIPING
— BV —	BALANCING VALVE
	FLOOR DRAIN
	P–TRAP
	PIPE UP
	PIPE DROP
	CLEANOUT
	POINT OF CONNECTION
	GAS SHUT–OFF VALVE

PLUMBING ABBREVIATIONS

FCO	FLOOR CLEANOUT
CW	COLD WATER
HW	HOT WATER
SAN	SANITARY
V	VENT
LAV	LAVATORY
WC	WATER CLOSET
RCP	RE–CIRCULATION PUMP
MS–1	MOP SINK
TYP.	TYPICAL
DN	DOWN
FD	FLOOR DRAIN
BFP	BACK FLOW PREVENTER
WH–1	WATER HEATER
N.I.C.	NOT IN CONTRACT
ET	EXPANSION TANK

PLUMBING DRAWING LIST

P0.1	PLUMBING SPECIFICATIONS
P1.0	PLUMBING FLOOR PLAN
P2.0	PLUMBING DETAILS (1 OF 2)
P2.1	PLUMBING DETAILS (2 OF 2)
P3.0	PLUMBING RISERS
P4.0	PLUMBING SCHEDULE

BUILDING DEPARTMENT PLUMBING NOTES

1. ALL PLUMBING SYSTEMS (SANITARY, WASTE, VENT, WATER, STORM) AND ASSOCIATED EQUIPMENT SHALL BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF 2018 VIRGINIA PLUMBING CODE.
2. INSTALLATION OF UNDERGROUND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 702.2
3. PROTECTION OF PIPING AND PLUMBING SYSTEM COMPONENTS AS PER SECTION PC 305.
4. TRENCHING, EXCAVATION AND BACKFILL AS PER SECTION PC 306.
5. RODENT PROOFING AS PER PC 304
6. MATERIALS USED IN PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 303, PC 605, PC 702, PC 902,PC 1102.
7. EQUIPMENT CONNECTIONS AND JOINING OF PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTERS 4, 5, 6, 7 AND 9.
8. DEEP SEAL TRAPS FOR FLOOR DRAINS SHALL BE PROVIDED AS PER PC 1002, AND CLEAN–OUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 708
9. DRAINAGE PIPE CLEANOUTS AS PER SECTION PC 708.
10. VERTICAL AND HORIZONTAL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 308
11. WATER SUPPLY SYSTEMS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 SECTION PC 601–603, 604, 606, 607, 608, 610
12. THE SANITARY DRAINAGE SYSTEM SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 SECTION PC 701, 704, 705, 706, 707, 708, 711.
13. VENT PIPING FOR THE SANITARY DRAINAGE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 9 SECTIONS PC 901 THROUGH PC 912 THROUGH PC 917
14. INSPECTION AND TESTING OF PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH SECTION PC 107.
15. GAS PIPING INSTALLATION SHALL BE IN ACCORDANCE WITH 2018 VIRGINIA FUEL GAS CODE CHAPTER 4 (ADOPTS IFGC 2018).

PLUMBING SPECIFICATIONS:

1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS

1.01 SCOPE

A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.

C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.

D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.

E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.

F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.

G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.

H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.

I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.

J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.

K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.

1. PIPE AND FITTINGS
2. VALVES
3. HANGERS AND SUPPORTS
4. PLUMBING PIPING LAYOUT
5. TESTS
6. PLUMBING FIXTURES
7. WATER HEATERS & ACCESSORIES
8. MIXING VALVES
9. ALL SCHEDULED PLUMBING EQUIPMENT

B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.

C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.

D. REVIEW OF SHOP DRAWINGS BY THE ENGINEER SHALL BE LIMITED TO THE INITIAL REVIEW, AND A SECOND REVIEW OF ANY REQUIRED RESUBMITTED DATA. IF THE ENGINEER IS REQUIRED TO REVIEW SHOP DRAWINGS FOR A THIRD (OR MORE) SUBMISSION OF THE SAME ITEM, THE CONTRACTOR SHALL BE LIABLE FOR COMPENSATING THE ENGINEER FOR THESE SUBSEQUENT REVIEWS AS PER THE ENGINEER'S CURRENT HOURLY RATE SCHEDULE.

E. SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.

F. SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.

G. FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS–BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.

H. RECORD AS–BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.

B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.05 DEFINITIONS

A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.

B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.

C. PROVIDE: TO FURNISH AND INSTALL.

D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.

1.06 DRAWINGS

A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT, ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.

B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

C. REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.

D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.

E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.

F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

1.07 PRODUCTS

A. SANITARY AND VENT PIPING:

1. SANITARY PIPING SHALL BE HUBLESS CAST IRON PIPE WITH STAINLESS STEEL COUPLINGS AND ELASTOMERIC GASKETS WITH A MINIMUM 4 BANDS PER COUPLING. PVC PIPING AS PER VIRGINIA CODE 2018, TABLE 702.1 AND TABLE 702.2 MAY BE USED IF APPROVED BY LOCAL AUTHORITIES.
2. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 2–1/2"" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.
3. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.

B. DOMESTIC WATER PIPING:

1. ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD–DRAWN COPPER TUBE.
2. FITTINGS IN DOMESTIC WATER PIPING SHALL BE WROUGHT COPPER OR CAST BRASS.
3. JOINTS SHALL BE MADE WITH LEAD–FREE SOLDER.
4. THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.
5. COMPLY WITH NSF 61 FOR MATERIALS FOR WATER–SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.
6. AS PER 2018 VIRGINIA ENERGY CONSERVATION CODE C403.11.3, PIPING FROM A WATER HEATER TO THE TERMINATION OF HEATED WATER FIXTURE SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE OF MINIMUM PIPE INSULATION THICKNESS.

MINIMUM PIPE INSULATION THICKNESS						
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)			
	CONDUCTIVITY BTU IN./ (H FT2 °F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1½	1½ to < 4	4 to < 8	≥8
141–200	0.25–0.29	125	1.5	1.5	2	2	2
105–140	0.21–0.28	100	1.0	1.0	1.5	1.5	1.5
40–60	0.21–0.27	75	0.5	0.5	1.0	1.0	1.0

7. WATER DISTRIBUTION SYSTEM AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE, C404.7, HAVING ONE OR MORE RECIRCULATION PUMPS THAT PUMP WATER FROM A HEATED–WATER SUPPLY PIPE BACK TO THE HEATED–WATER SOURCE THROUGH A COLD–WATER SUPPLY PIPE SHALL BE A DEMAND RECIRCULATION WATER SYSTEM. PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:
   a. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE OR APPLIANCE, SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE FITTING OR APPLIANCE.
   b. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD–WATER PIPING TO 104°F (40°C).
8. AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.6.1 HEATED–WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH A CIRCULATION PUMP. THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE. CONTROLS FOR CIRCULATING HOT WATER SYSTEM PUMPS SHALL START THE PUMP BASED ON THE IDENTIFICATION OF A DEMAND FOR HOT WATER WITHIN THE OCCUPANCY. THE CONTROLS SHALL AUTOMATICALLY TURN OFF THE PUMP WHEN THE WATER IN THE CIRCULATION LOOP IS AT THE DESIRED TEMPERATURE AND WHEN THERE IS NO DEMAND FOR HOT WATER.
9. HW SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE , C404.5.1. THE HOT WATER PIPE LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER FOLLOWING TABLE.

NOMINAL PIPE SIZE (INCHES)	MIXIMUM PIPING LENGTH (FEET)	
	PUBLIC LAV	OTHER FIXTURES
½"	2'	43'
¾"	0.5'	21'
1"	0.5'	13'
1¼"	0.5'	8'
1½"	0.5'	6'
2" OR LARGER	0.5'	4'

C. HANGERS AND SUPPORTS:

10. HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.
11. SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.
12. ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS.
13. PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
14. SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

D. VALVES:

1. PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT–OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT–OFF DUTY.
2. ALL FIXTURES WITH THE EXCEPTION O FLUSHOMETER–EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME–PLATED STOPS WITH CHROME–PLATED ESCUTCHEONS ON PIPING PENETRATIONS.
3. ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT–OFF VALVES ON SUPPLY LINES.
4. ALL BRANCH LINES TO HAVE SHUT–OFF VALVES.
5. ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.
6. PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.

E. GAS PIPING:

1. GAS PIPING SHALL BE SIZED IN ACCORDANCE WITH PIPE SIZING TABLES OR SIZING EQUATIONS IN ACCORDANCE WITH 2018 VIRGINIA FUEL GAS CODE SECTION 402.4.
2. METALLIC PIPE SHALL COMPLY WITH SECTIONS 403.4.1 THROUGH 403.4.4.
3. PIPING SYSTEM INSTALLATION SHALL COMPLY WITH REQUIREMENTS OF 2018 VIRGINIA FUEL GAS CODE SECTION 404.
4. AS PER 2018 VIRGINIA FUEL GAS CODE SECTION 404.4; UNDERGROUND PIPING, WHERE INSTALLED BELOW GRADE THROUGH THE OUTER FOUNDATION OR BASEMENT WALL OF A BUILDING, SHALL BE ENCASED IN A PROTECTIVE PIPE SLEEVE. THE ANNULAR SPACE BETWEEN THE GAS PIPING AND THE SLEEVE SHALL BE SEALED.
5. PIPING INSTALLED UNDERGROUND BENEATH BUILDINGS IS PROHIBITED EXCEPT WHERE THE PIPING IS ENCASED IN A CONDUIT OF WROUGHT IRON OR STEEL PIPE DESIGNED TO WITHSTAND THE SUPERIMPOSED LOADS. THE CONDUIT SHALL BE PROTECTED FROM CORROSION IN ACCORDANCE WITH SECTION 404.11 AND SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 404.11.1 OR 404.11.2 OF 2018 VIRGINIA FUEL GAS CODE.
6. AS PER 2018 VIRGINIA FUEL GAS CODE SECTION 404.12; UNDERGROUND PIPING SYSTEMS SHALL BE INSTALLED A MINIMUM DEPTH OF 12 INCHES BELOW GRADE.
7. THE GAS PIPING IS ENCASED IN A CONDUIT OF WROUGHT IRON OR STEEL PIPE TO WITH STAND THE SUPERIMPOSED LOADS.
8. SHUTOFF VALVES SHALL BE LOCATED IN PLACES SO AS TO PROVIDE ACCESS FOR OPERATION AND SHALL BE INSTALLED SO AS TO BE PROTECTED FROM DAMAGE.

F. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

G. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'–0" IN LENGTH.

H. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

I. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE–PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

J. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

K. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

L. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

M. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

N. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

O. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

P. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

Q. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

R. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

2. INSTALLATION

2.01 GENERAL

S. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

T. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

U. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

V. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

W. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.

X. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

Y. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

Z. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

AA. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

AB. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

AC. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

AD. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

A. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

B. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT–OFF VALVES AND ALL LOW POINTS IN PIPING.

C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING. LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME. ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

3. TESTING

A. AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.

B. TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.

C. THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.

D. THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT THE TESTS ARE TO BE CONDUCTED.

E. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

F. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

G. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

H. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

J. ALL EQUIPMENT WILL BE FACTORY TESTED.

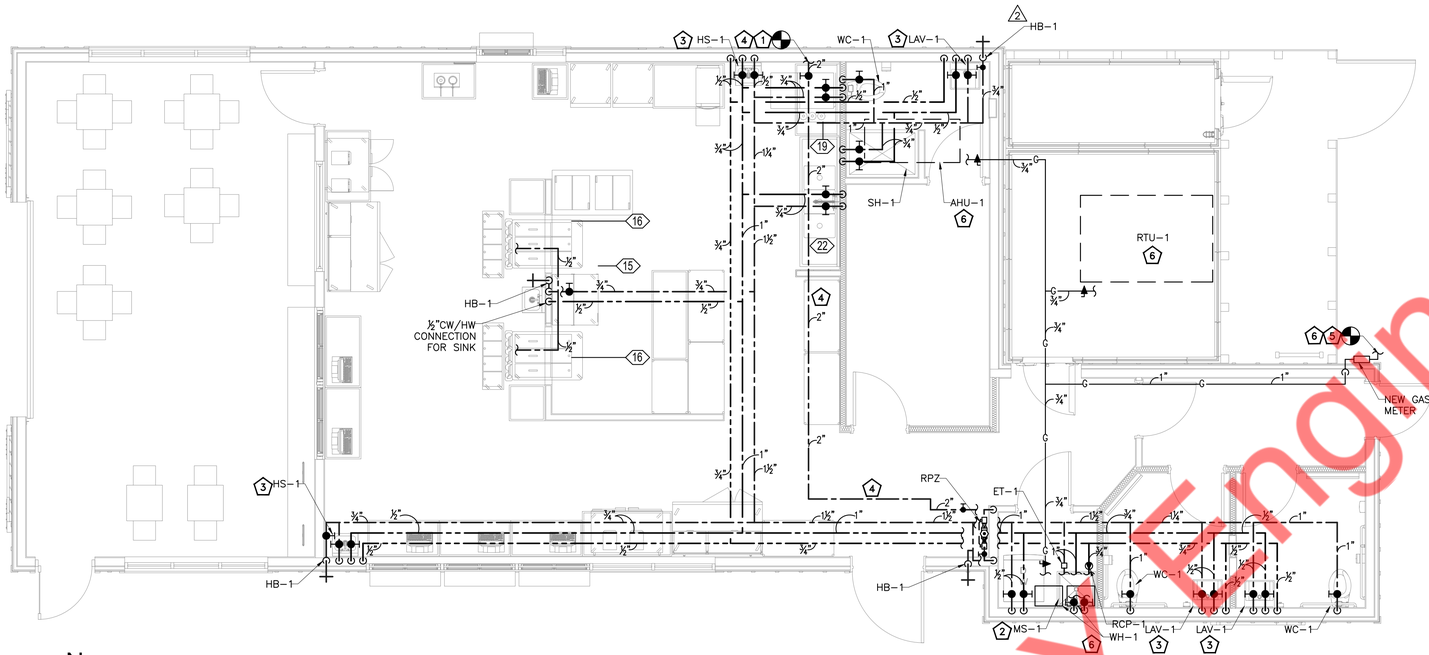
I. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

K. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

L. TESTING REQUIREMENTS
   a. TEST ALL DOMESTIC WATER PIPING HYDROSTATICALLY TO 125 PSIG.
   b. HYDROSTATIC TEST PRESSURES SHALL REMAIN CONSTANT WITH NO VARIATION FOR 120 MINUTES.
   c. TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
   d. THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.

M. REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLIN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.

N. THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY P



N

2 WATER SUPPLY AND GAS PLAN

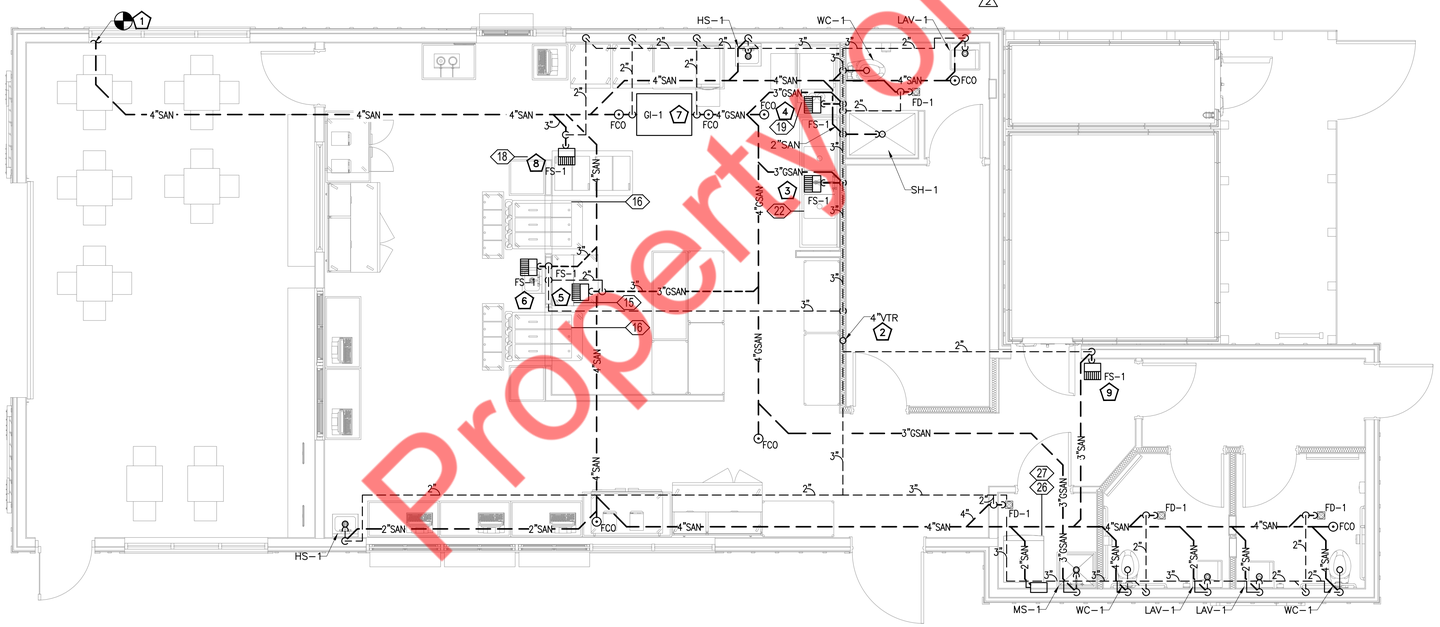
1/4" = 1'-0"

GENERAL NOTES:

1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 INTERNATIONAL ENERGY CODE CODE (REFER SHEET P0.1)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, CLEANOUTS & SHUT–OFF VALVES AS REQUIRED.
4. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.
5. PROVIDE ASSE 1010 APPROVED WATER HAMMER ARRESTOR ON QUICK CLOSING VALE.

WATER AND GAS KEYED NOTES:

1. ROUTE NEW 2" CW PIPING WITH SHUT OFF VALVE AND TIE–INTO THE EXISTING 2" WATER LINE IN SPACE. CONTRACTOR TO VERIFY ROUTING, LOCATION AND SIZE OF EXISTING WATER LINE. BASE BID ACCORDINGLY
2. ROUTE T&P RELIEF VALVE DRAIN SPILLS TO FLOOR DRAIN.
3. PROVIDE ASSE 1070 OR SIMILAR APPROVED TEMPERING VALVE FOR LAVATORIES AND HAND SINK. SET AT TEMPERATURE TO A MAXIMUM 110 °F.
4. NO TAP TO BE TAKEN BEFORE RPZ.
5. CONNECT NEW 1" GAS WITH NEW GAS METER TO INCORPORATE HIGH PRESSURE GAS MAIN IN THIS AREA FOR TENANT. EXTEND NEW PIPING AS INDICATED. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING MAIN. CONTRACTOR TO COORDINATE WITH LANDLORD/UTILITY COMPANY FOR ALL WORK AND FINAL GAS METER LOCATION.
6. CONTRACTOR TO FIELD VERIFY AVAILABLE GAS PRESSURE AND MAKE SURE TO PROVIDE ADEQUATE INLET PRESSURE REQUIRED FOR RTU–1 AND WATER HEATER.



N

1 SANITARY WASTE AND VENT PLAN

1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
2. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.
3. PROVIDE TRAP PRIMER FOR FLOOR DRAIN AS PER LOCAL JURISDICTION.

SANITARY KEYED NOTES:

1. CONNECT NEW 4" SANITARY LINE TO EXISTING 6" SANITARY LINE. CONTRACTOR TO FIELD VERIFY SIZE, ROUTING AND INVERT ON SITE.
2. NEW 4" VENT UP THROUGH ROOF.
3. INDIRECT WASTE FROM 3 COMP SINK TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
4. INDIRECT WASTE FROM WAREWASHER TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
5. INDIRECT WASTE FROM MILK COOLER TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
6. INDIRECT WASTE FROM FROZEN CUSTARD MACHINE TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
7. INSTALL SCHIER GB–3 GREASE INTERCEPTOR OR EQUIVALENT AS PER MANUFACTURER'S RECOMMENDATION. CONTRACTOR TO COORDINATE FINAL LOCATION WITH LANDLORD.
8. INDIRECT WASTE FROM ICE CREAM STORAGE CABINET TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
9. ROUTE CONDENSATE DRAIN FROM COOLER/FREEZER TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

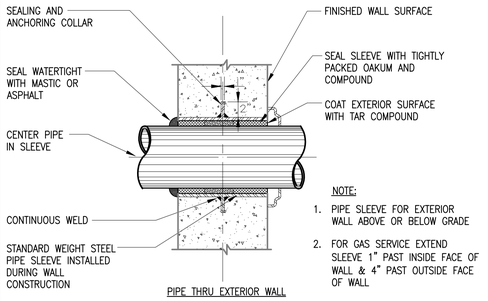
ARCHITECT OF THE RECORDS

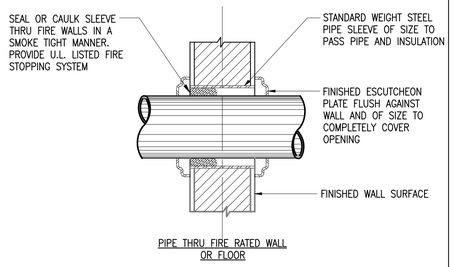
MEADOWS CUSTARD

PLUMBING FLOOR PLAN

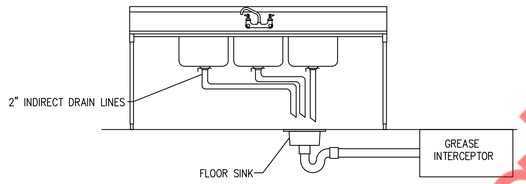
Sheet Number

P1.0

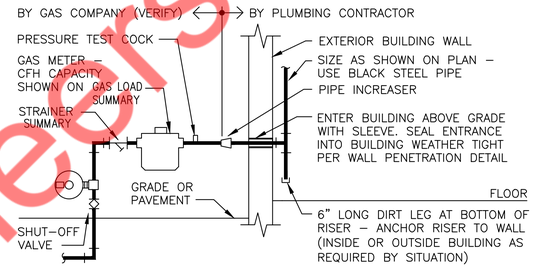




1 P2.0 PIPE SLEEVE THRU WALL SECTION N.T.S

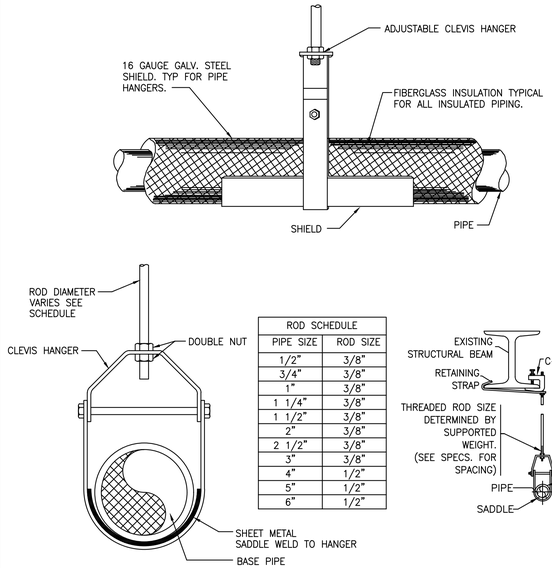


2 P2.0 3 COMPARTMENT SINK DETAILS N.T.S

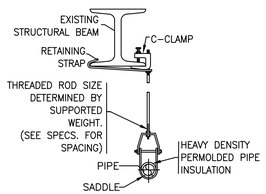


VERIFY REQUIREMENTS FOR METERING AND PIPING WITH GAS COMPANY. GAS COMPANY SHALL EXCAVATE, BACKFILL, AND REPAIR PAVING AND SOD FOR GAS SERVICE LINE INSTALLATION FROM MAIN TO BUILDING. PLUMBING CONTRACTOR TO PAY ALL GAS COMPANY FEES FOR THIS INSTALLATION. USE WELDED OR SCREWED PIPE AND FITTINGS PER SPECIFICATIONS. PAINT EXPOSED METAL GAS PIPE, FITTINGS AND ITEMS LIGHT GREEN. PROVIDE SEISMIC GAS VALVE AS REQUIRED; COORDINATE REQUIREMENTS WITH GAS COMPANY.

3 P2.0 GAS SERVICE DETAIL N.T.S



ROD SCHEDULE	
PIPE SIZE	ROD SIZE
1/2"	3/8"
3/4"	3/8"
1"	3/8"
1 1/4"	3/8"
1 1/2"	3/8"
2"	3/8"
2 1/2"	3/8"
3"	3/8"
4"	1/2"
5"	1/2"
6"	1/2"



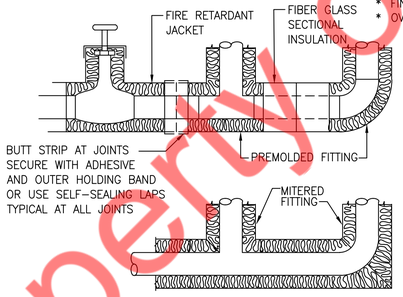
4 P2.0 HANGER DETAIL N.T.S

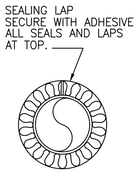
CONCEALED VALVES AND FITTINGS

* WRAP WITH 1-INCH THICK, 1-POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS
* SECURE WITH WIRE OR TAPE.
* VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.

CONCEALED VALVES AND FITTINGS

* PREMOLDED FIBER GLASS OR RADIAL MITERED PIPE INSULATION
* SKIM COAT OF INSULATION CEMENT
* COAT OF MASTIC
* WRAP WITH FIBER GLASS REINFORCING CLOTH.
* FINISH COAT OF MASTIC
* OVERLAP 2-INCHES ON PIPE INSULATION.



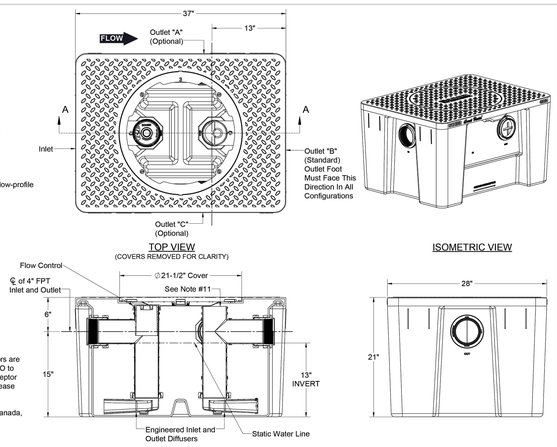


5 P2.0 INSULATION OF PIPING, VALVES AND FITTINGS FOR EXPOSED AND CONCEALED LOCATIONS N.T.S

SPECIFICATIONS
Notes:
1. 4" FPT inlet/outlet with 4" plain end fittings.
2. Unit weight - 69 lbs. (wet weight 404 lbs.)
3. Maximum operating temperature: 150º F continuous
4. Capacities - Liquid: 40 gal. Grease: 272 lbs. (37.2 gal.) @50 GPM Grease: 175 lbs. (17.4 gal.) @75 GPM Solids: 1.9 gal.
5. Built-in flow control.
6. For gravity drainage applications only.
7. Do not use for pressure applications.
8. Cover placement allows full access to tank for proper maintenance.
9. Vent not required unless per local code.
10. Engineered inlet and outlet diffusers are removable to inspect/clean piping.
11. Integral air relief / anti-siphon.
12. Designed for indoor, on-floor, below-grade or low-profile under sink installations.

ENGINEER SPECIFICATION GUIDE
Schier Great Basin™ grease interceptor model # GB3 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded polyethylene with minimum 5/16" uniform wall thickness. Interceptor shall be furnished for above or below grade installation. Interceptor shall be certified to ASME A112.14.3 (Type C) and CSA B481.1, with field cut riser system, built-in flow control and three outlet options. Interceptor flow rate shall be 50 or 75 GPM. Interceptor grease capacity shall be 272 lbs. @ 50 GPM or 175 lbs. @ 75 GPM. Cover shall provide water/gas-tight seal and have minimum 450 lbs. load capacity.

CERTIFIED PERFORMANCE
Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code, the National Standard Plumbing Code, the National Plumbing Code of Canada, and the International Plumbing Code.



SPECIFICATION SHEET

MODEL NUMBER: GB3	**PART NUMBER:** 4070-001-04
	DESCRIPTION: GB3 GREASE INTERCEPTOR 50 GPM / 75 GPM, 4" FPT INLET/OUTLET, WITH 4" PLAIN END FITTING ADAPTERS AND PEDESTRIAN RATED COVER

PROPRIETARY AND CONFIDENTIAL
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DWG BY: C.SINCLAIR | DATE: 5/5/2022 | REV: - | ECO: -

SCHIER
6455 Woodland Dr
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

6 P2.0 GREASE INTERCEPTOR DETAIL N.T.S

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

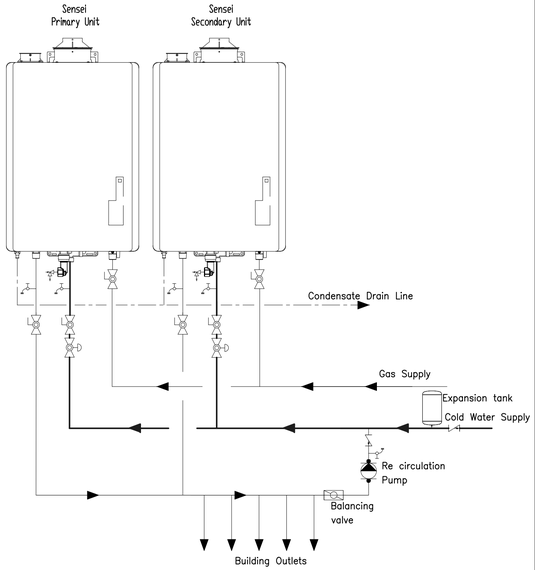
NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

ARCHITECT OF THE RECORDS

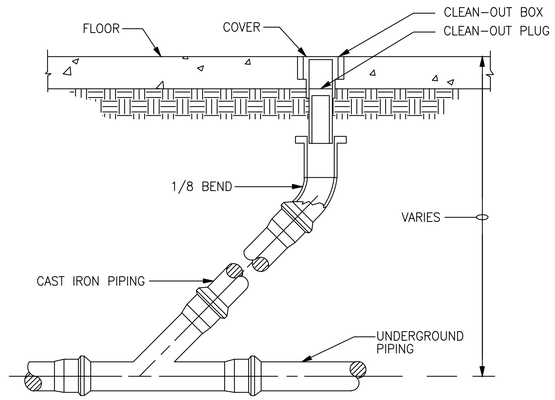
MEADOWS CUSTARD

PLUMBING DETAILS (1 OF 2)

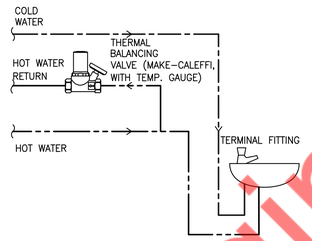
Sheet Number
P2.0



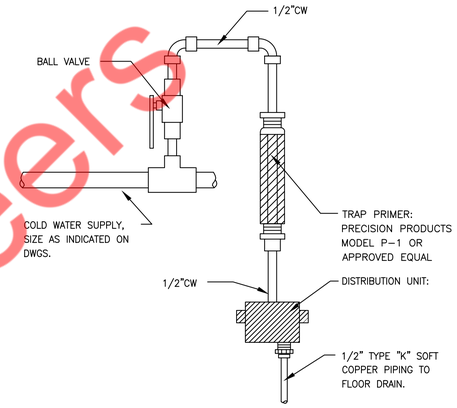
1 / P2.1 INSTANANEOUS WATER HEATER (WH-1)
N.T.S



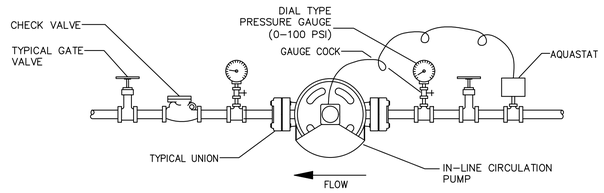
2 / P2.1 FLOOR CLEANOUT DETAIL
N.T.S



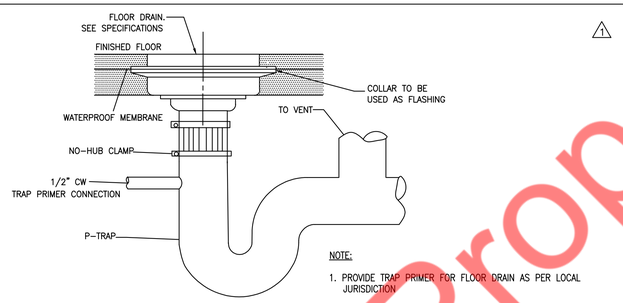
3 / P2.1 BALANCING VALVE PIPING DETAIL
N.T.S



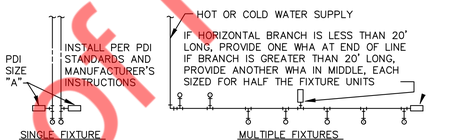
4 / P2.1 TRAP PRIMER DETAIL
N.T.S



5 / P2.1 INLINE RECIRCULATING PUMP DETAIL
N.T.S



6 / P2.1 FLOOR DRAIN DETAIL
N.T.S



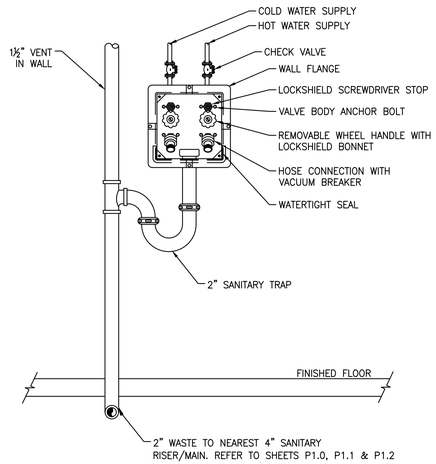
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	154-330

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2

PC TO PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN . INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE . SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE

NOTE:
1. PROVIDE ASSE 1010 APPROVED WATER HAMMER ARRESTOR FOR FIXTURES WITH QUICK CLOSING VALVE.

7 / P2.1 WATER HAMMER ARRESTORS
N.T.S



8 / P2.1 WASHER SUPPLY/ DRAIN BOX DETAIL
N.T.S

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

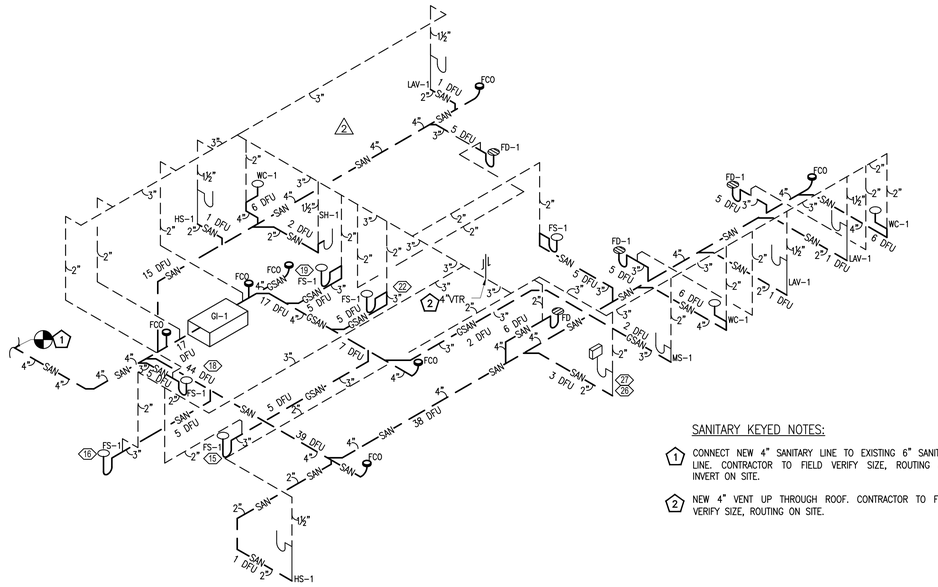
NO	DESCRIPTION	DATE
1	FIELD CHANGE BY OWNER	11/26/24
2	FIELD CHANGE BY OWNER	01/16/25
3	CITY COMMENTS	02/17/25
4		
5		

ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

PLUMBING DETAILS (2 OF 2)

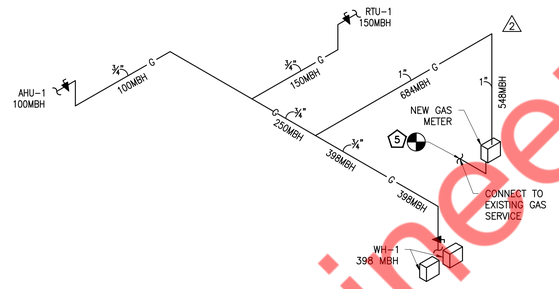
Sheet Number
P2.1



1 SANITARY AND VENT RISER
NTS

SANITARY KEYED NOTES:

1. CONNECT NEW 4" SANITARY LINE TO EXISTING 6" SANITARY LINE. CONTRACTOR TO FIELD VERIFY SIZE, ROUTING AND INVERT ON SITE.
2. NEW 4" VENT UP THROUGH ROOF. CONTRACTOR TO FIELD VERIFY SIZE, ROUTING ON SITE.



3 GAS RISER
NTS

GAS DEMAND LOAD SUMMARY					
MARK	FIXTURE/EQUIPMENT	QUANTITY	UNIT DEMAND BTUH	TOTAL DEMAND BTUH	TOTAL CFH
RTU-1	ROOFTOP UNIT	1	150,000	150,000	150
AHU-1	ROOFTOP UNIT	1	150,000	100,000	100
WH-1	WATER HEATER	2	199,000	398,000	398
TOTAL				648,000	648

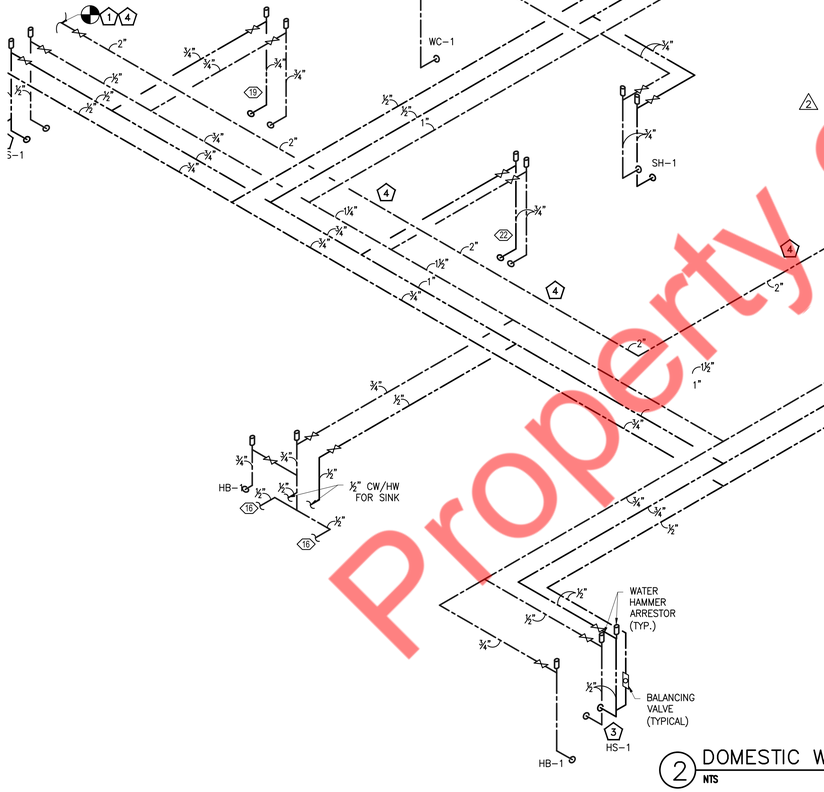
GAS PIPE SIZING PER VIRGINIA FUEL GAS CODE 2018

INLET PRESSURE- 2 PSI (2)
PRESSURE DROP 1.0" WC
SPECIFIC GRAVITY- 0.6

EQUIVALENT LENGTH OF PIPE =
105 + FITTINGS (+40%) = 150 FEET

GAS NOTE:

1. PROVIDE SHUT-OFF VALVE AN ACCESSIBLE LOCATION. PROVIDE GAS PRESSURE REGULATOR FOR ALL GAS EQUIPMENT IF REQUIRED.
2. CONTRACTOR SHALL VERIFY ACTUAL GAS PRESSURE AND LONGEST LENGTH OF RUN TO FARTHEST APPLIANCE PRIOR TO INSTALLATION AND NOTIFY ENGINEER IF CONDITION DIFFER THAN SHOWN ON THIS PLAN.



2 DOMESTIC WATER RISER
NTS

WATER AND GAS KEYED NOTES:

1. ROUTE NEW 2" CW PIPING WITH SHUT OFF VALVE AND TIE-INTO THE EXISTING 2" WATER LINE IN SPACE. CONTRACTOR TO VERIFY ROUTING, LOCATION AND SIZE.PROVIDE BACKFLOW PREVENTER. BASE BID ACCORDINGLY.
2. ROUTE T&P RELIEF VALVE DRAIN SPILLS TO MOP SINK.
3. PROVIDE ASSE 1070 OR SIMILAR APPROVED TEMPERING VALVE FOR LAVATORIES. SET AT TEMPERATURE TO A MAXIMUM 110 °F.
4. NO TAP TO BE TAKEN BEFORE RPZ.
5. CONNECT NEW 1" GAS WITH NEW GAS METER TO INCORPORATE HIGH PRESSURE GAS MAIN IN THIS AREA FOR TENANT. EXTEND NEW PIPING AS INDICATED. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING MAIN. CONTRACTOR TO COORDINATE WITH LANDLORD/UTILITY COMPANY FOR ALL WORK AND FINAL GAS METER LOCATION.

DATE	11/26/24
SCALE	AS NOTED
DRAWN	NYE
CKD	NYE
APPD	

SET REVISIONS

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ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

PLUMBING RISERS

Sheet Number
P3.0

TANKLESS GAS WATER HEATER SCHEDULE

HEATER TAG	QUANTITY	LOCATION	ELECTRICAL CHARACTERISTICS	TYPE	GAS CONSUMPTION (BTU/HR)	FLOW RATE (GPM)@90°F	MANUFACTURER /MODEL	WEIGHT (LBS)
WH-1	2	ABOVE MOP SINK	120V/60HZ	GAS	199,000	4.3	RINNAI/CU199i	64

PUMP SCHEDULE

TAG	DESCRIPTION	TYPE	CAPACITY		ELECTRICAL DATA				SELECTION BASED ON		REMARKS/OPTIONS
			GPM	HEAD (ft.)	HP	V	PH	HZ	MANUFACTURER	MODEL NUMBER	
RCP-1	HOT WATER RECIRC. PUMP	IN-LINE	2.0	9	1/12	120	1	60	BELL & GOSSETT	PL-30-B	NOTE 1,2

OPTIONS (ALL RCP UNIIS)
- AQUA-STAT & NIGHT TIMER
- BALANCING VALVE & CHECK VALVE
- FLANGED PUMP
- MAINTENANCE BALL VALVES ON BOTH SIDES OF PUMP

NOTES:
1. SET AQUA-STAT WITH SET POINT 10 DEGREES BELOW SYSTEM SUPPLY TEMP.
2. INSTALL RECIRCULATION PUMP PER MANUFACTURERS REQUIREMENTS.

GREASE INTERCEPTOR SCHEDULE

ITEM	SERVICE	LOCATION	FLOW CAPACITY (GPM)	GREASE CAPACITY (LBS)	LIQUID CAPACITY (GALLON)	MANUFACTURER AND MODEL
GREASE INTERCEPTOR GI-1	KITCHEN WASTE	UNDER GROUND	75	175	40	SCHIER MODEL GB-3

NOTE-
1. CONTRACTOR TO PROVIDE ALL REQUIRED ACCESSORIES FOR SATISFACTORY WORKING OF GREASE INTERCEPTOR AS PER SITE CONDITIONS.

MINIMUM PIPE INSULATION THICKNESS

AS PER 2018 VIRGINIA PLUMBING CODE SECTION 607.5 AND 2018 VIRGINIA ENERGY CONSERVATION CODE SECTION 404.4 AND TABLE 403.11.3, PIPING FROM A WATER HEATER TO THE TERMINATION OF HEATED WATER FIXTURE SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE OF MINIMUM PIPE INSULATION THICKNESS.

MINIMUM PIPE INSULATION THICKNESS

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU· IN./ (H· FT2· °F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1½	1½ to < 4	4 to < 8	≥8
141-200	0.25-0.29	125	1.5	1.5	2	2	2
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0

EXPANSION TANK SCHEDULE

UNIT	NUMBER	MANUFACTURER & MODEL NUMBER	SERVICE	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	PRESSURE RATING (PSI)	DIMENSIONS		OPERATING WEIGHT (LBS)	NOTES
							DIAMETER (INCH)	HEIGHT (INCH)		
ET-1	1	AMTROL	ST-5	2	0.9	150	8	12.5	25	1

GENERAL NOTES:
1. SET THE TANK PRESSURE TO EQUAL THE SYSTEM OPERATING PRESSURE. TANK MUST BE DRAINED BEFORE ADJUSTING SET PRESSURE.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS ON INCOMING COLD WATER LINE.

GREASE INTERCEPTOR SIZING CALCULATION (AS PER VPC 2018 SECTION 1003.3.5)

FIXTURE	QUANTITY	DIMENSIONS			VOLUME		PERCENTAGE USAGE(%)	ACTUAL USAGE (GALLONS)	FLOW RATE(GPM)
		LENGTH(IN)	WIDTH(IN)	DEPTH(IN)	CUBIC INCHES	GALLONS			1 MIN.
3 COMP SINK	1	21	16	14	11412	61.09	0.75	45.81	45.81
DISH WASHER*	1	–	–	–	–	–	–	–	5.0
FLOOR SINK**	1	–	–	–	–	–	–	–	2.5
MOP SINK	1	21	23	10	4830	20.90	0.75	15.68	15.68
								TOTAL:	67.99
								PROPOSED GREASE TRAP:	SCHIER GB-3

REMARK :-
1. * WASTE DISCHARGE FLOW RATE (GPM) AS PER MANUFACTURER'S SPECIFICATION SHEET.
2. ** 1 GPM OF FLOW IS EQUIVALENT TO 2 DRAINAGE FIXTURE UNIT AS PER VPC 2018 SECTION 709.3 AND 709.4.
3. FLOOR SINK DFU – 5.

PLUMBING FIXTURE SCHEDULE

LEGEND	PLUMBING FIXTURE	MANUFACTURER	MODEL	CONNECTION SIZE – INCHES							REMARKS
				TRAP	SOIL/WASTE		VENT	COLD WATER	HOT WATER	THERMOSTATIC MIXING VALVE	
					DIRECT	INDIRECT					
WC-1	WATER CLOSET	–	–	–	4"	–	2"	1"	–	–	FLUSH VALVE WATER CLOSET SEATS PROVIDED FOR PUBLIC USE MUST BE OF THE OPEN FRONT TYPE.
LAV-1	LAVATORY	–	–	1½"	2"	–	1½"	½"	½"	PROVIDE	P-TRAP
HS-1	HAND SINK	–	–	1½"	2"	–	1½"	½"	½"	PROVIDE	P-TRAP
MS-1	MOP SINK	–	–	2"	3"	–	2"	½"	¾"	–	P-TRAP
SH-1	SHOWER	–	–	2"	2"	–	1½"	¾"	¾"	–	P-TRAP
⟨15⟩	MILK COOLER	BEVERAGE-AIR	SM49HC-W	–	–	½"	–	–	–	–	INDIRECT DRAIN TO FLOOR SINK WITH APPROVED AIR GAP
⟨16⟩	FROZEN CUSTARD MACHINE	STOELTING ROSS	CC303	–	–	1½"	–	½"	–	–	INDIRECT DRAIN TO FLOOR SINK WITH APPROVED AIR GAP
⟨18⟩	ICE CREAM STORAGE CABINET	MASTER-BILT	DC-8D	–	–	½"	–	–	–	–	INDIRECT DRAIN TO FLOOR SINK WITH APPROVED AIR GAP
⟨19⟩	WAREWASHER	HOBART	LXe	–	–	2"	–	¾"	¾"	–	INDIRECT DRAIN TO FLOOR SINK WITH APPROVED AIR GAP
⟨22⟩	3 COMPARTMENT SINK	AERO MANUFACTUREING	3F3-2116-18LR	–	–	2"	–	¾"	¾"	–	INDIRECT DRAIN TO FLOOR SINK WITH APPROVED AIR GAP
⟨26⟩	FRONT LOAD WASHER	KENMORE	ELITE HE4t	2"	2"	–	1½"	½"	½"	–	P-TRAP
⟨27⟩	FRONT LOAD DRYER	KENMORE	ELITE HE4t	–	–	–	–	–	–	–	–
FD-1	FLOOR DRAIN	–	–	2"	3",4"	–	2"	–	–	–	–
FS-1	FLOOR SINK	–	–	2"	3"	–	2"	–	–	–	–
HB-1	HOSE BIB	–	–	–	–	–	–	¾"	–	–	–

NOTE: CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURES SPECIFICATIONS AND MOUNTING HEIGHT INSTALLATION.

FIXTURE UNIT CALCULATION

TAG	QTY	EQUIPMENT	FIXTURE UNITS			
			D.F.U.	TOTAL D.F.U.	W.S.F.U.	TOTAL W.S.F.U.
WC-1	3	WATER CLOSET	6	18	10	30
LAV-1	3	LAVATORY	1	3	2	6
HS-1	2	HAND SINK	1	2	0.7	1.4
MS-1	1	MOP SINK	2	2	3	3
SH-1	1	SHOWER	2	2	2	2
⟨15⟩	1	MILK COOLER	0.5	INDIRECT DRAIN TO FLOOR SINK WITH APPROVED AIR GAP	0.25	0.25
⟨16⟩	2	FROZEN CUSTARD MACHINE	0.5		0.25	0.5
⟨18⟩	1	ICE CREAM STORAGE CABINET	0.5		0.25	0.25
⟨19⟩	1	WAREWASHER	2		1.4	1.4
⟨22⟩	1	3 COMPARTMENT SINK	2		4	4
⟨26⟩⟨27⟩	1	WASHER AND DRYER	3	3	1.4	1.4
FD-1	3	FLOOR DRAIN (3")	5	15	–	–
FD-1	1	FLOOR DRAIN (4")	6	6	–	–
FS-1	6	FLOOR SINK	5	30	–	–
HB-1	4	HOSE BIB	–	–	2	8
TOTAL FIXTURE UNITS				81		58.2

W.S.F.U. VALUES AS PER VIRGINIA PLUMBING CODE 2018 (IPC 2018) TABLE E 103.3(2) FOR 58.2 W.S.F.U = 54 GPM.

D.F.U. VALUES AS PER VIRGINIA PLUMBING CODE 2018 (IPC 2018) TABLE 709.1 FOR 81 D.F.U. = 4" PIPING HORIZONTAL @ 1/8" PER FOOT SLOPE.

NOTE-
AS PER 2018 VIRGINIA PLUMBING CODE SECTION 610.1. THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION (50 MG/L) OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED OFF AND ALLOWED TO STAND FOR 24 HOURS; OR THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION CONTAINING NOT LESS THAN 200 PARTS PER MILLION (200 MG/L) OF CHLORINE AND ALLOWED TO STAND FOR 3 HOURS.

DATE 11/26/24 | SCALE AS NOTED | DRAWN NYE | CKD NYE | APPD

SET REVISIONS

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ARCHITECT OF THE RECORDS

MEADOWS CUSTARD

PLUMBING SCHEDULE

Sheet Number
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